

V. 394 PROCEEDINGS

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OF THE

# International Sanitary Conference

OPENED AT CONSTANTINOPLE

On the 13th February 1866.



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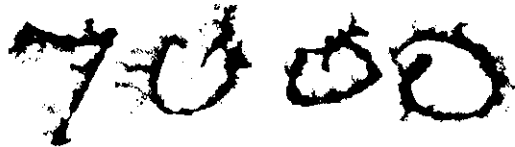
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PROCEEDINGS  
OF THE  
INTERNATIONAL SANITARY CONFERENCE  
OPENED AT CONSTANTINOPLE

On the 13th February 1866.

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No. 62, dated 16th July 1866.

*From—Her Majesty's Secretary of State for India,*  
*To—The Government of India, HOME DEPT. (Public)*

I forward herewith for your information, and for such publicity as you may consider necessary, six copies of conclusions arrived at by the British Cholera Commissioners upon the most important points relating to the propagation of the disease.

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No 21, dated 25th May 1866.

*From—The British Cholera Commissioners,*  
*To—The EARL OF CLARENDON.*

In our Despatch No. 20 of the 22nd instant, we informed your Lordship that the "Commission Plénière" of the Cholera Conference, appointed to report upon the first and second groups of the programme, had finished their labors, and that their Report would be submitted to the Conference immediately after being printed.

We should have deferred any further notice of the above-mentioned Report until the Conference had decided upon it; but as we have observed in the public prints just received that England is threatened with an invasion of Cholera from neighbouring Continental ports, and that some difference of opinion appears to exist as to the measures to be adopted, we think the emergency justifies us in departing from the ordinary course, and in forwarding at once to your Lordship the conclusions of the "Commission Plénière" bearing upon the most important points of the propagation of the disease.

We may observe that the "Commission" whose conclusions are embodied herein is composed of three of the diplomatic and of all the medical delegates, comprising altogether twenty-four out of the thirty-six

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members of the Conference, and that with the exception of one medical delegate, who was absent on duty during the latter half of the discussions, the sense of the conclusions numbered 1 to 6 was unani-  
~~mously~~ adopted. We have reason to believe that the absent delegate would have voted with the rest of his colleagues. On the 7th there was some difference of opinion.

The conclusions comprise the following points:—

- 1.—That Cholera is communicable from the diseased to the healthy.
- 2.—That it may be communicated—
  - (a). By persons in the state of developed cholera;
  - (b). By persons suffering from Choleraic diarrhœa, who can move about, and who are apparently in health for some days during the progress of the disease.

These last, from their passing unquestioned and unsuspected, are the most dangerous to the communities amongst whom they may move.

3. That the discharges of those in a state of developed Cholera or in a state of choleraic diarrhœa, become the chief means by which the Cholera poison escapes from the system, and by mingling with air or water diffuses the disease.

4. That Cholera may be transmitted by exposures of persons to the atmosphere of buildings, places, or vessels which have been occupied by Cholera patients, and to the emanations from clothes, bedding, or other articles which have been in contact with diseased individuals, or which may have become soiled by their discharges.

5. That when infected articles or places are shut up and excluded from free air, they preserve their dangerous qualities for an indefinite length of time, and, on the other hand, the freer the exposure to ventilation, the more rapidly they become innocuous.

6. That there is no reason to suppose that Cholera is communicable by actual contact between individuals.

7. That the period of incubation, counting from the time of the reception of the poison to its manifestation in some form or other, is short. That the disease may show itself in two ways,—*first*, by inducing fully developed Cholera decidedly and rapidly; *secondly*, by producing slight disturbances, among which diarrhœa may be considered the chief, and which may sooner or later pass into some more or less decided choleraic manifestation. The "Commission" consider that the incubation in the acute form is generally rapid, and that it seldom or never extends beyond a few days from the moment of infection. There was some difference of opinion as to the duration of choleraic diarrhœa, and as to the time that it may continue to be infectious, the great majority of the Commission considering that persons with diarrhœa which has lasted eight full days from the commencement of the period of observation, without showing any indications of a choleraic nature, may be excluded from the class of Cholera patients. The minority think that the choleraic and infectious diarrhœa may last for several weeks.

In mentioning the views of the Commission upon some of the most important points in the history of Cholera, we beg to lay before your Lordship our own opinion of their practical bearing. We have little doubt that the Conference will recommend measures of restriction of intercourse between the sick and the healthy; but as it has not yet entered upon the measures to be taken, we must be considered as representing our own views only in stating that we believe that it logically follows from the above conclusions that if we wish to prevent the spread of Cholera, or its introduction into places free from it, measures should be taken to restrain communication between those suffering from Cholera and the healthy.

Examples taken from the history of the present epidemic most strongly support the opinion of the great advantage of such measures. We may mention that Sicily and Greece completely escaped the disease which was raging around them in 1865. Sicily entirely cut herself off from all communication with diseased places. Greece caused all arrivals from infected localities to perform severe quarantine at four islands—Delos, Pondiconyssi (Salamis), Skiathos, and Vido—and held no intercourse with infected places.

The good results of isolation in the cases of Sicily and Greece are hardly negatived by the examples of what occurred in other places said to be invaded in spite of restrictive measures. The quarantines enforced at Marseilles and some other ports of the Mediterranean were ineffective, either from their incompleteness or from their having been established too late, that is, after direct communication with infected ports had taken place.

It seems to us that in the case of ships or passengers arriving from infected neighbouring ports, the following measures might advantageously be adopted :—

1.—No persons should be allowed to land previous to efficient inspection by medical men appointed for the duty.

2.—The healthy passengers should be removed from the ship, and isolated for a period which need not exceed five days, at the end of which time they should be again inspected, and if found without choleraic symptoms, should receive pratique.

3.—All persons with cholera or diarrhœa at the time of arrival, or at any period of the detention, should be isolated from the rest, and removed to a separate place. Cases of diarrhœa should be retained under observation until the diarrhœa is cured, or until the medical officer in charge is satisfied, from the features of the disease, that it is not of choleraic nature.

We think that the time of observation in such cases of diarrhœa should not be less than eight days from the commencement of seclusion.

Persons having a medical certificate of being sufferers from chronic or symptomatic diarrhœa should follow the rule of the healthy, subject, however, to the discretion of the medical officer in charge.

As the time occupied in the voyage between England and the neighbouring ports is short, we have not included it in the period of observation.

We further think that the complete disinfection of the effects of persons coming from contaminated places should be insisted on, and that the period of isolation of the persons should be from the time that they are separated from their suspected property.

All persons (including medical officers) employed in the Quarantine Department who in any way come in contact with the ships, passengers, crews, or effects that have arrived from contaminated places, should follow the same rules as the arrivals themselves.

With respect to persons detained in the sick departments of the quarantine stations, the destruction or disinfection of all articles used by them should be imperative.

The application of chemical disinfectants to the discharges, the disposal of these below the surface of the soil, if on shore, and beyond the possibility of contaminating water used for drinking purposes, are indispensable.

The above measures would require the following conditions at each quarantine station :—

1.—An establishment for the reception of the healthy, capable of completely isolating successive parties of arrivals in distinct classes, well separated from each other.

2.—An establishment for the reception of the sick, with an isolated convalescent establishment.

Each of the above should be provided with latrines, having moveable receptacles, which should be daily emptied and purified.

3.—An establishment for the purification of effects.

The establishments required would certainly be large, but a small number of them placed on a few points of the coast would suffice if all ships carrying passengers from infected ports were made to pass through them before receiving free pratique.

We consider that islands lying at some distance from the coast would be the most desirable spots for the institution of quarantine stations. On these, wooden—or, still better, iron—constructions might be rapidly raised. In summer weather isolated camps with tents might be formed.

In the event of islands not being available, it would be well to select some place on shore capable of complete isolation, and at a considerable distance from any inhabited quarter, or hulks moored at some distance from the land, but never within rivers. It will be obvious that several ships at each station would be necessary for the efficient working, of the plans proposed.

The principle of isolation, adapted to special circumstances, should, we think, be carried out within the country when the disease has found a footing on shore.

We cannot too strongly urge the necessity of excluding from work-houses and general hospitals any forms of choleraic disease.

The sick poor should be cared for in special and isolated institutions.

We have based the suggestions which we have taken the liberty of submitting to your Lordship upon the supposition that all the agents employed shall be of an intelligent and upright class; that they shall be specially instructed to watch attentively and without exciting their suspicion the persons placed under observation, and report to the medical officers every visit made by any one to the latrines. Without the aid of intelligent and trustworthy agents, it would hardly be possible to limit safely the period of observation to so short a time as above stated.

While convinced that all personal effects should be thoroughly disinfected, we do not think it necessary to extend the measure to mail or to ordinary merchandize.

At this distance we forbear to enter into the question of the possibility of practically enforcing the foregoing measures for general passengers in the narrow seas, though, if applied, we do not doubt of their advantage in a medical point of view. We feel confident, however, that they could be readily carried out in the cases of masses of persons, as in those of the German emigrants who conveyed the disease from Rotterdam to Liverpool.

We also abstain from entering into special details upon measures of restriction and matters of general hygiene, which we consider are none the less called for, because we hold the disease to be capable of transmission.

We therefore limit ourselves to repeating generally that, whatever other important measures are taken, among the most essential should be reckoned, at all times and in all places, those which recognize the possible communicability of the disease; the necessity of complete isolation of all choleraic patients from healthy individuals; the destruction or disinfection of all wearing apparel that may have been in any way contaminated by the sick; the complete disinfection, by chemical means, of all discharges derived from them; the evacuation, if possible, of contaminated ships and habitations of all kinds, and their complete purification.

We beg to observe that, while recognizing the communicability of cholera, we consider that, with due precautions as to ventilation, scrupulous cleanliness, and attention to the disposal of the clothes and other effects, and of the discharges of the sick, the patients can be handled without undue risk to those employed, and that therefore nursing in cholera is less dangerous than in some other contagious diseases.

We are well aware that measures similar in character to those which we suggest have already been recommended by Dr. Budd and others. We do not, therefore, present them as new; but having had the honor of being appointed by your Lordship to attend the Cholera Conferences, the main object of which is to prevent the spread of the disease, and having been obliged by the nature of our duties here to direct special attention to all that relates to it, we hope that we shall not be considered as going

beyond our province if, in this actual crisis, we add our voices to those who advocate restrictive measures, and state our conviction that these would be most effective in their result if employed early with vigour and completeness.

No. 78, dated 14th September, 1866.

*From—Her Majesty's Secretary of State for India,*  
*To—The Government of India, HOME DEPT. (Public)*

In continuation of my despatch of the 16th of July last, No. 62, and with reference to your service message from Simla, dated the 27th of that month, I herewith forward a copy of a report dated the 6th ultimo, with an appendix, by the Cholera Commissioners at Constantinople and likewise an amended Report by the Commissioners, dated the 21st of May last, on the origin, endemicity, transmissibility and propagation of cholera.

[*Annexure to the Minutes of the 2nd Sitting.*]

Report on the hygienic measures to be adopted for preservation against Asiatic Cholera, drawn up by a Commission consisting of M. M. Gomes, Goodeve, Lenz, Millington, Monlau, Mühlig, and Spadaro (physicians), and M. M. Keun, Malkom Kuan, Sagovia, and Vetséra (diplomatists).

DR. MONLAU,

*Reporter.*

GENTLEMEN AND RIGHT HON'BLE COLLEAGUES,—The Conference has reached the most difficult, if not the most important, part of its labors: after long study of the origin and development, the transmission and propagation of Asiatic Cholera, it is about to occupy itself with the means of preservation against this scourge, which, by its too frequent invasions for the last half century, has been spreading consternation and death over the entire surface of the globe.

In accordance with the nature of the problem, you have decided that the system of preservation should comprise three kinds of measures; 1st hygienic measures; 2nd, measures of quarantine; 3rd, special measures for the East.

You have confided the examination of these three kinds of measures to three Commissions, and the Commission on measures of hygiene now submits to you the results of its deliberations. It does not flatter itself that it has entirely carried out your intentions, but it has no doubt that its work will be perfected under your revision.

In the physical, as in the moral world, the employment of preventive measures against evil is preferable to the necessity of repression, and this is so apparent and so simple that it would be superfluous to

give the reasons in detail. Hence we have the importance of *hygiene*, which is merely the art of preserving the health of man and of the places inhabited by him.

The great importance of hygienic measures may naturally be inferred from the injurious effects resultant upon their being forgotten or transgressed. Not a disease exists which has not originated in, or been aided by, the forgetfulness of hygienic precepts; and, for the rest, every body is acquainted with the important services rendered to therapeutics by hygiene. The earth has been a thousand times ravaged by pestilence merely because the rules of hygiene have been infringed or neglected, and these scourges of pestilence have been chiefly caused to disappear from civilised countries by hygiene. Accordingly, in our opinion, the preservative means furnished by hygiene should have the first place among the measures we are about to recommend against Cholera.

These hygienic measures have the advantage of opposing the progress not only of Asiatic Cholera, but also of every kind of pestilential disease, and of lessening their effect when the invasion cannot be prevented. Therapeutics possess no panaceas, but in hygiene all remedies have a certain character on universality.

Hygienic measures produce, in addition, efficacious and permanent results, which is not always the case with coercive or curative measures. Hygiene never loses any of its conquests.

Let us hasten to add, however, that the efficacy of hygiene depends on the loyal, opportune, energetic, and complete execution of its measures: half measures, lukewarmness, or carelessness in carrying them out never will lead to any satisfactory result, and it is very important that Governments and even individuals should never forget this capital principle, which is the *conditio sine qua non* of the efficiency of hygiene.

It is objected that the action of hygienic measures, although sure and efficacious, is ordinarily slow, appreciable results not being obtained until years, and sometimes centuries, have elapsed. This is true to a certain extent, when auxiliary means are not at hand; but, at the present day, when the progress of human industry has placed almost magical resources in our hands, hygienic measures are capable of receiving the most powerful impetus; the hygiene of the 19th century can and ought to be greatly more active than the hygiene of the Mosaic Age for instance, or the hygiene of the Middle Ages; and the earnest concurrence of Governments, and the support of public opinion, lead us to believe that hygienic measures will henceforth be conceived on a grand scale and put into execution with all the energy and intelligence which should be expected from contemporary science.

Moreover, the public administration of every country in the world has become convinced, by reason as well as by cruel experience, that the expenditure necessitated by preventive measures is eminently reproductive. This conviction will pass to the masses, and everybody will end by admitting, with us, that no hygienic measure is ever too *costly*, and that the disbursement of even the largest sums in carrying out

measures of health is simply equal to laying out money at a very considerable interest. Enormous sums have been spent in bringing the means of destruction to perfection; and can there be any hesitation to spend something for hygiene, which is the art of preservation, the art of sustaining life, and warding off disease and death? No: for the countries in the van of modern civilisation are already undertaking works of hygiene for the improvement of salubrity, such as we now admire, either finished or in progress, in Holland, at Paris, and at Marseilles, for instance, or such as the sewers of London, where £3,000,000 sterling have already been spent merely in the last works of drainage. Great Britain has also extended her solicitude to India, and we have learnt with the most lively satisfaction that she is now devoting a million sterling to drainage, and that she is about to lay out six hundred thousand pounds more for the supply of drinking water to the city of Calcutta.

The hour of sanitary regeneration has come, for the benefits of this regeneration begin to be felt, and we entertain the hope that modern civilization, by its ardor and by the magnificent arsenal of means at its disposal, will soon surpass the gigantic works of ancient Rome as well as the colossal structures and hygienic institutions of the primitive East.

Another final consideration in favor of hygienic measures is that the time is not far distant when they will become perhaps the only measures possible, the only measures capable of inspiring any confidence. The West was recently moved, it is true, by the Cholera invasion of 1865. Asiatic Cholera profiting, like man, by modern discoveries, makes its incursions much more easily than it did fifty years ago, and spreads itself far and wide with all the rapidity of steamboats and railroads. Europe has, therefore, been forced to reflect seriously on the means of baffling future incursions of this Asiatic scourge, and we find ourselves assembled here to seek out in common the best system of defence to be adopted. At this moment, people are disposed to agree to everything; all the world is agreed that measures of quarantine are, after all, considerably less prejudicial to industry and commerce than the invasions of Cholera and their consequences; but in the course of time, it will happen that each country will alter the rules of quarantines so as to make them correspond merely with its own peculiar interests. Navigation and commerce, apparently docile, at present, under the yoke of lazarettos and purifying agents, will soon return to their natural antipathy against any kind of impediment in their way; wars, great colonial interests, vast undertakings of transport, will, compelled by their necessities, swell the cry of navigation, and it may well happen that the indispensable severity of measures, of quarantine will be lessened, and they will fall into disuse. But Asiatic Cholera, or any other pestilence, may very probably reappear sooner or later; and when it does, the people of the West will be glad again to have recourse to serious quarantines; but, taken by surprise, it will be too late to oppose its invasion, and they will, perhaps, have no other means of defence than the hygienic improvements effected in their ports and foci of population, in naval construction, and in the sanitary regulations of the great assemblages who keep moving about.



Influenced by these considerations, the Commission devoted itself to the examination of measures of preservation by means of hygiene.

After having examined them, we decided on the following mode of exposition :—

- 1st.—Hygienic measures to be adopted in localities or countries reputed to be permanent foci of Cholera.
- 2nd.—Hygienic measures to prevent, as far as possible, the importation of Cholera by sea (*Naval hygiene*).
- 3rd.—Hygienic measures to diminish the chances of reception of the disease in ports (*Improvement of the health of ports*).
- 4th.—Hygienic measures to diminish the predisposition of localities to contract the disease (*Improvement of health of cities*).
- 5th.—Hygienic measures to arrest, as much as possible, the spreading of the disease to the heart of a country.
- 6th.—Lastly, hygienic measures to prevent the formation of, and to extinguish, existing foci of infection by destroying the germs of the disease either in the air or in contaminated articles (*Disinfection*).

Thus, then, the plan of preservation and defence which the Commission is about to develop is to exhaust, within possible limits, the generating sources of Asiatic Cholera; then to oppose the importation of the disease; to keep incessantly removing the predisposition of localities to contract it, and to mitigate its ravages when, spite of all precautions, the disease has penetrated to a spot, and all this by means of hygiene.

In this sketch all prophylactic measures will naturally find their place; and, moreover, this method of exposition has the advantage of being in perfect accordance with the programme which the Conference was good enough to draw up as a guide to the labors of the Commission.

## I

To trace the source of the evil, to lay it bear in all its extent, to combat it forcibly until its final extinction, are, it is evident, the means by which to prevent its return for ever. And this is why, gentlemen, the first question proposed to us for solution in your programme is to find out whether there are any preventive means for the extinction of the original foci of Cholera in India.

The problem is somewhat difficult of solution, and you have yourselves acknowledged this almost insurmountable difficulty by confessing in one of the conclusions already adopted by the Conference, that we are ignorant of the special conditions under which Cholera is generated in India and stays there endemically in certain localities. The matter in hand, in fact, relates to an endemic disease, and endemic diseases, to use the ordinary pathological expression of any country, contain at the

bottom something specific, constituting, as it were, the morbid idiosyncrasy of certain countries. Some of these endemic diseases are easily enough explained by the action of known influences; but there are others which are most disastrous, and whose etiology is most obscure. We know nothing precise about them, but we believe that the mysterious and impalpable production of epidemics is really nothing but the result of the combination of anti-hygienic influences. It is unquestionable that hygienic measures, or the progress of hygiene, always tend to destroy the causes of endemic diseases, or to mitigate their sad results.

What we have just said causes us to attempt, with some hope of success, the solution of the problem of the extinction of endemic Cholera. We cannot, it is true, act directly on the prime working cause of Cholera in India; we do not maintain that we can stifle it in its cradle; but in removing the various causes which experience has led us to consider as occasioning, or being auxiliary to, the generation of the scourge, perhaps we may succeed in depriving it of its chief strength, to confine it within fixed limits, to do away with its characteristic of being capable of importation, and, at all events, we are sure of arriving at profitable results. We cannot act directly on what is unknown to us, but we can act indirectly, by a sort of perturbation, that is, in disturbing by means of hygiene the course of the fatal elaboration of Cholera, or, which comes to the same thing, by modifying the static and dynamic condition of the inhabitants of the country, thus destroying their individual liability to contract the disease.

And now, the Commission thinks it indispensable that what it means by the expression *original focus* of Cholera should be distinctly understood. The Commission, wishing to leave every sort of theory aside in the course of its labors, and not desiring to enter upon sterile controversies, considers simply that an *original focus* means every locality in which Cholera has established itself *permanently*, without enquiring whether this permanence is due to certain natural conditions of soil and climate, or to artificial conditions created by man himself, to renewed and continual causes of generation, or simply to repeated transmissions of the disease. By regarding original foci of Cholera in this aspect, we dispense with all search after *special* means, and need only occupy ourselves with such hygienic measures as are everywhere admitted to be efficacious against every kind of pestilential disease, and consequently against Cholera. The Commission then will have to examine to what extent these measures are applicable, or have been already applied, in India, and what results may reasonably be expected from them.

The Commission is fortunate in having as one of its members Dr. Goodeve, the most competent man, by his long residence in India, for pointing out, on the one hand, the difficulties opposed in that country to the introduction of hygienic measures on a grand scale, these difficulties arising from the extent of the country, the conditions of the soil, the number of the people, and their intellectual condition; and, on the other hand, to show to what extent these measures have already been carried out by the solicitude of the British Government.

Lastly, the deplorable custom of casting corpses into the Hooghly has been absolutely prohibited in town; the corpses are burnt, and the fuel for incineration is furnished to the poor at the cost of the municipality.

In the town of Bombay, not to speak of many improvements which have long been in existence, a commencement has recently been made towards the formation of a most complete system of cleanliness; the streets have been widened, and by this means, as also by the levelling of the walls of the old fort, ventilation has been considerably increased. By the construction of new districts in the town, an endeavor has been made to remedy the crowding of the dwellings of the poorer classes. The Government has also an *Act* under consideration for regulating these matters by law, as well as the height of houses, the minimum of openings for the ventilation of apartments, &c.

In the town of Madras plans are in course of preparation for the construction of great aqueducts for the supply of excellent water to the town, an improvement to which will be added an excellent system of drainage.

We may add that, besides these works in the presidency towns, the improvement of the sanitary condition of many other towns, especially those adjoining military stations, is already in full course of execution.

The detailed enumeration of the hygienic measures adopted *with regard to troops* and now in execution for a long series of years would lead us too far. Amongst these measures, those relative to the removal and dispersion of the men in times of cholera deserve special mention, which shall be made hereafter. It suffices to say here that, thanks to all these measures, the sanitary condition of the troops has been considerably improved within the last 10 or 15 years. The barracks in military stations have been enlarged and improved, and in many cantonments altogether rebuilt according to a model in accordance with the most advanced conditions that hygiene has a right to expect in connexion with position, aspect, abundance of water, means of ablution, latrines, &c. The latrines are cleaned and emptied daily; the *dejecta* of cholera patients are disinfected by chemical agents and buried far away from barracks and encampments; sick men have to make use of separate latrines; they are placed under treatment in special hospitals; their beds and linen are burnt, the barracks and other dwellings are purified and whitewashed before the return of the troops who have been removed or separated on the outbreak of any epidemic.

The transmissibility of cholera having been recognised in India, as elsewhere, within a short time past only, it is only lately that sanitary measures have commenced to be based upon the principle of transmissibility. In India special measures founded on the transmissibility of the disease were not taken into serious consideration until after the submission of the report of Mr. Strachey, President of the Committee of enquiry into the epidemic of 1861 in the North-Western Provinces; and it was not till a still more recent period that any serious thought

was given to the danger arising from the *pilgrimages of the Hindoos*, though the danger was, it is true, pointed out long ago by Graves and others. In the Annual Report of Bombay for 1863 (*Deaths in Bombay during 1863*), Dr. Haines shows in detail the probable influence of pilgrimages on the town of Bombay. The Principal Inspector General of the Medical Department at Madras, in his report on the mortality at Madras in 1864 (*Tenth Annual Report on the causes of death in Madras for 1864*), again attributes to individuals returning from the festivals at Conjeveram, Tripetty, Trivellore, &c., the frequent importation of cholera into the town of Madras, in the same way that he had already, in 1860, attributed the propagation of cholera through the Central Provinces to the pilgrims returning from the temples of Mahadeo. Dr. Leith, President of the Sanitary Commission of Bombay, tells us, in his Report of the 10th March 1866, that, in consequence of measures taken for the prevention of the ravages of cholera among the pilgrims, a singularly successful result was obtained: there were *ninety-four* places of pilgrimage, and though cholera raged in the Presidency, it broke out in *two* only of these places, *viz.*, at Jeypoorie, where 5,000 devotees were assembled, and at Sumgum, where the assemblage amounted to 50,000. The mortality was not considerable at either of these places. We have here a striking example of the power of hygienic measures.

The measures taken for the prevention of the dangers arising from pilgrimages are of two sorts:—*1st*, measures to prevent the development of cholera at the places of pilgrimage during the stay of the pilgrims; *2nd*, measures to prevent the propagation of the disease by the pilgrims on their way back to their homes.

The measures taken at the places of pilgrimage were, in regard to Conjeveram, the construction of sufficient latrines, the removal and burial at a distance twice a day of alvine *dejecta*, the daily sweeping and watering of the streets, and the removal in carts of all filth and rubbish; the town was provided with good drinking water in sufficient quantity and accessible to all; and cattle was removed from the town. Thanks to these measures, there was no cholera at Conjeveram during the festivals of 1864 and 1865, a thing unheard of till then.

At Bombay vast camps were established for the pilgrims, so as to prevent crowding in the towns; there were hospitals for the pilgrims and a system of cleanliness; latrines were constructed, which in some places consisted merely of trenches dug in the earth to leeward, at a convenient distance from the encampments, and filled with earth after being used.

In regard to the *return of the pilgrims*, the Government of Bombay applies Section 271 of the Penal Code, relative to contagious diseases, and causes the entrance of the pilgrims into towns and military stations to be watched, requiring, before permission to enter is given them, that proof should be afforded that they are not suffering from diarrhoea or other indications of cholera, and that they have had no communication

for 48 hours with any persons showing such symptoms. In the absence of such proof, the pilgrims are retained under observation for 48 hours, after which, if no sign of the disease is shown, they are admitted to the town. In the contrary event, the sick are separated from the healthy, and the latter have to recommence the quarantine of observation of 48 hours. In the application of these measures, arrangements are made for the supply to the pilgrims of provisions, shelter, and even medical attendance. If there are no means of supplying them with ordinary tents, tents are made in the native fashion; latrines have to be constructed to the leeward of the encampment; these may consist simply of trenches of a foot and a half in depth by as many in breadth; these latrines to be the only places resorted to by the pilgrims, and the pilgrims are required, immediately after having made use of them, to cover their excrement with earth. The sick have to be separated from the other pilgrims, and disinfectants applied to their *dejecta*, such as the solution of permanganate of potash, chloride of zinc, carbolic acid, or, if these substances are not available, quicklime.

Great difficulties are met with in carrying into operation the regulation of these pilgrimages; it may be seen that it has not yet been definitively settled, and it is to be hoped that these rules will year by year receive all the modifications, the utility and even necessity of which shall be demonstrated by experience.

In closely examining all the hygienic measures in course of execution in India, nobody can deny the great and salutary influence which they must necessarily exercise on the intensity of epidemics in general, and especially on an epidemic of cholera, by diminishing the predilection to choleraic infection, and by destroying many of the auxiliary causes of cholera. Still, we may be permitted to bring to recollection that hygienic measures, by themselves, will not suffice for the extinction of cholera at no distant date, for although their influence is sure and indubitable, and though no other means can be substituted for this influence, they merely act progressively; they will perhaps end by extinguishing cholera, by mitigating its ravages in the first instance, but we should like to have less slow results. It is necessary that we should forewarn ourselves against importation, we must oppose serious and decisive obstacles to the propagation of a disease so transmissible as cholera: this transmissibility may give rise to murderous epidemics while a single permanent focus of cholera remains in existence, and it may even be said while a single individual suffering from cholera remains in existence. It may be distinctly seen then that direct measures against importation and propagation (*restrictive measures*) are indispensable, and that they will remain so for a long time to come. Although they do not properly belong to the province of general hygiene, we cannot but recommend them now as being, at the present time, the most valuable precaution against the importation of the scourge; but this same advice will probably be given you, and with more authority and in greater detail, by the Commission charged with the submission of a complete plan for the sanitary regulation of pilgrimages.

The Commission hopes that every Government having possessions in India will think fit to work towards the same humane end by the adoption of hygienic measures similar to those taken in British India, and by having them carried into effect in their respective territories in accordance with local necessities.

In recognising and appreciating all the advantages already partly acquired, and in larger degree still to be expected, from the hygienic measures adopted in India, the Commission concludes that—

*There are no direct means of extinguishing the endemic foci of cholera, but we hope to arrive at that object by means of a uniform series of measures, in which the most important part will be played by hygienic measures.*

The Commission hopes also that the British Government will pursue and widen the road of reform on which it has so successfully entered; but we would recommend it specially not to abandon *coercive* measures. The transmissibility of cholera being granted, and the slow action of hygienic measures being recognized, measures of restriction and isolation will be indispensable for a long time yet, in the first place, to prevent importation, which is always imminent, and then to give time to hygienic measures to make their effects felt.

## II.

Notwithstanding all the efficacy of the preventive means employed in India, their action, it must be repeated, is always slow: it is the peculiarity of all hygienic measures, as we said at the commencement. After having, as far as possible, prevented the production of the evil, it is necessary, as often as it is produced, to bar its passage and prevent its importation, above all by sea, the most dangerous of all ways of communication, but that which, at the same time, is the best adapted for the application of efficacious precautions. These precautions we can take in abundance from *Naval hygiene*.

Navigation daily becomes more active and more rapid. The number of ships has increased surprisingly within the last 60 years. Reckon men-of-war and merchant vessels, ships that take the long sea route and coasting vessels, sailing ships and steamboats; count the thousands of men comprising their crews; the thousands of passengers; the millions of tons of merchandise carried by these ships; and the immense number of families whose subsistence depends on naval industry; then only can you calculate the number of lives and the amount of material and even moral interests, whose destinies are bound up with the destiny of navigation and with the progress of hygiene in ships.

Such progress has been very considerable for a century past; the average annual number of deaths in the English marine, for instance, which is now 11·8 in 1,000 was, years ago, 91 and even 125 in 1,000. Health and morality are always and everywhere strictly connected with measures of hygiene. Great improvements have been effected, but much yet remains to be done.

In regard to cholera, the Conference has declared in accordance with experience, that maritime communications are the most dangerous, and that they spread the disease far and wide with the greatest certainty. To this danger we must oppose the most severe naval hygiene. The Commission cannot descend to details, which besides will be found in the excellent treatises with which you are all acquainted on naval hygiene, and it therefore confines itself to a rapid enumeration of its principal measures.

In the first place, the ship must be regarded as a habitation and as the eventual receptacle of the morbid germs. Naval hygiene commences in the ship-builder's yard. Thus then we must take into consideration the improvements to be introduced in the preparation of the wood, the planks and timbers used in naval constructions; the impermeability of the planks and ribs forming the hull of a ship; the width of the hatchways; the disposition of the hatches, the port-holes and light ports, and everything relating to the circulation and renewal of air; the cleanliness of the hold and the well; the supply, preparation and preservation of the food and drink; the material and shape of the clothing of the crews, &c., &c.

The study of everything in connexion with the attainment of perfection in naval architecture, or the economy of ships, should be encouraged by the Governments of maritime powers. Prizes and marks of distinction should be conferred on the discoverers of inventions favorable to the salubrity of ships and the health of crews and passengers.

Let us now suppose the ship to be ready for starting. The *hygiene of departure* comprises quite a series of measures which the Commission will only mention.

In the first place, the material and sanitary condition of ships about to leave a port, especially those which are about to undertake a long voyage, should be carefully looked to. The owners should be bound to remedy any inconveniences pointed out to them by the authorities or official agents. The insalubrity of many old vessels is too notorious; official provision should be carried to the extent even of prohibiting the sailing of vessels whose bad condition converts them into so many endemic foci of fever, dysentery, and every kind of disease.

The condition of the merchandise, having regard to its conditions of salubrity, also deserves attention. For instance, the shipment of damp goods, or things recently wet by rain, should be prevented; logs or heavy planks, coming from rivers or marshy lands, should be washed and dried as much as possible before being put on board; and the shipment of goods or raw material, especially of an organic nature, should be prevented if they are soiled, damaged, or decomposed.

The nature of the ballast, as well as the mode of stowage, should be the object of most important precautions.

The clothes of the sailors should be carefully looked after, as well as the details of the number of changes they have, and the condition of their bunks and hammocks.

Before the departure of a vessel, it is necessary to look after the quantity and quality of the food and drink. In the latter, drinking water deserves attention, particularly while cholera is raging. The shipment of muddy or contaminated water should always be prevented, but especially then. Even in ordinary times, a strict prohibition should be placed upon the taking of water from streams, rivers, or springs, the water of which may be suspected to be unwholesome.

On the departure of a vessel, hygiene also demands that the state of health of the crew should be strictly looked to by a medical man. The number of sailors, moreover, should be in proportion to the tonnage of the ship, and the duration of the voyage.

It is also of the highest importance that the health of the passengers should be enquired into as far as possible. Their number should always be proportionate to the tonnage of the ship, to the capacity of its cabins, the number of beds, mattresses, coverings, the length of the voyage, &c.

Crowding is the great inconvenience on boardships, especially in times of cholera. The Commission has no hesitation in proposing that there should be rules fixing the maximum number of passengers whose embarkation should be permitted, and a resolute restraint placed upon the cupidity of transport companies and masters of merchant vessels, who are always ready to take in passengers and crowd the cabins and even the decks of their ships with them, in contravention of the elementary conditions of life and health.

The cubic space of air is often insufficient in ships, especially at night, and the ventilation is not often perfect. What will be the result when these two radical causes of insalubrity are combined with overcrowding, with the product of the respiration and perspiration of so many men gathered together, the evaporation from damp clothes, the effluvia evolved from hammocks and bunks, soiled linen, sick people, &c. ? It is not difficult to foresee the grievous results of such permanent mephitism, which is one of the auxiliary causes of the development of every sort of evil.

The transport of living animals claims all the attention of naval hygiene on the departure of a ship. Leaving aside the capability of cholera being imported by living animals, a question on which the Conference has refrained from giving a formal opinion, it is necessary carefully to prevent infection on board by overcrowding amongst cattle, and to save ports of destination the revolting spectacle of animals being landed in a state of asphyxia. The heedlessness, not to say cruelty, of certain captains, or masters of vessels, is incredible; and remarkable facts bearing on this point have been adduced before the Commission.



We would also call the attention of sanitary authorities to the necessity for the presence of a physician, or a surgeon, on board such vessels as generally carry passengers, or where the crew exceeds a certain number. We have a remark to make in connection with this matter; the presence of a physician on board is always a benefit to the sailors and passengers; but when it is viewed as a guarantee against the importation of cholera, as a source of information, and, above all, as an extenuating circumstance in the matter of quarantine, it becomes a question worthy of deep and deliberate reflection. The conditions of entrance into the service, the mode of nominating these physicians, their titles and their pay, their character, official and private, &c., are all circumstances which should be taken into consideration. Your Commission confines itself to saying that the sanitary duties on boardships of the mercantile marine should be regulated by the public administration.

As a last measure of hygiene on the departure of a vessel, the Commission is of opinion that all vessels should be bound to supply themselves with a portable medicine chest containing the usual supply of medicines and with all the necessary instruments for surgical operations. The sanitary authorities should prepare the catalogue of these medicines, draw up *Medical Instructions*, in regard to their use for ships having no physician on board, and render it obligatory on every vessel to take the medicine chest on board before departure. Disinfecting substances should have a large place in it.

All these measures, or the majority of them, are very well known, and are even obligatory in some countries, and it is greatly to be desired that they should be rendered obligatory everywhere.

The *hygiene of the voyage* is merely the sequel of the hygiene of departure. A ship which has left under all desirable good sanitary conditions may very easily lose all these advantages, if it neglects to adopt the precautions prescribed by the hygiene of the voyage.

This hygiene is not difficult to define; it comprises all the precepts of general hygiene, modified in accordance with the special exigencies of the maritime atmosphere, the ship, and the naval profession.

In the first place, the most exquisite neatness in the ship, the accommodation for the crew, and the passenger cabins, cannot be too strongly recommended.

The hold transforms ships into perfect floating swamps if the cleanliness of this most difficult part of naval habitations is even slightly neglected. This cleanliness may be obtained by methodical stowage, by the proper preservation of the cargo and provisions, by continual ventilation, and by the renewal of the water in the hold. Frequent pumping must be resorted to for the removal of the stagnant water in the well; the formation of the blackish filth which is deposited at the bottom must be prevented as much as possible; and, finally, this part of the vessel must be effectually disinfected when ventilation and the addition of clean water are insufficient to render this perpetual focus of unhealthiness inoffensive.

Insufficiency of ventilation, difficulty of penetration by the sun's rays to the interior of a ship, and consequent dampness,—such are the inconveniences which must be fought against, by continual ventilation through the ordinary openings (to be properly situated and of sufficient diameter), and artificial ventilation, by means of the various apparatus which have been suggested, and amongst which the double ventilator of M. Peyre deserves special remark.

The practice of taking advantage of fine weather to open the hatches and of exposing the clothes and bedding of the crew to the sun and air must never be neglected under any pretext whatever. The sailors should wash themselves frequently, change their linen at least once a week, take off their wet clothes before going to sleep; in a word, every care must be taken to remove every cause, direct or indirect, of uncleanness, crowding, and infection.

As for the dietary, it need not be said that great attention must be paid to the condition of the provisions, fresh and salt, biscuits and drinking water, as well as of the culinary vessels and utensils.

Finally, during the voyage, even the slightest symptom of indisposition must not be neglected. And in ships which have left a port infected with cholera, the slightest diarrhoea, the most simple derangement of the digestive organs, must be the object of most special attention. Persons showing suspicious symptoms must be kept apart as far as possible, and disinfectants must be made use of in accordance with the prescriptions of the Medical *instructions* of which we have spoken above.

Such are the general principles of the hygiene of the voyage.

In regard to the *hygiene of arrival*, it consists only of a series of precautionary measures suited to the sanitary condition of the persons embarked and the hygienic conditions of the vessel. The hygiene of arrival depends in great measure upon the hygiene of departure and the hygiene of the voyage.

When naval hygiene shall have attained a higher degree of perfection, when more attention is devoted to the strict application of its rules, ships will not so frequently carry the germs of death between their sides, or, at least, the chances of the importation of pestilence will be very largely diminished. In the mean time, until the mercantile marine decides more generally to regard the health of ships as one of the great interests of commerce, and habituates itself to the regulation of the sanitary state of its crews and the preservation of the health of its passengers, the public administration must of necessity watch over the preservation of the public health in ports of arrival.

Thus, therefore, all ships, before being admitted to pratique, should be visited with view to the inspection of their condition, and to seeing in what way sanitary measures have been practised at the departure of the vessel and during the voyage.

In ordinary times, a well kept ship need not necessarily be subjected to any sort of measures; but in the contrary case, the sanitary authorities of the port will use their discretion in regard to the necessity of taking the necessary hygienic measures.

It is to be remarked here that the hygiene of departure and that of arrival fall more directly within the province of the administration, and that it devolves more especially on captains and masters of vessels to adopt proper hygienic measures during the voyage. All these measures should be compiled in a *Manual*, most space being devoted to those to be adopted during the voyage, to be drawn up by the sanitary administration of every country for the use of the mercantile marine. The principal provisions of this code of health and common preservation should be rendered obligatory, and captains should be bound to have some copies of this *Manual* constantly on board, the *Manual* to comprise, in addition, the *Instructions* in regard to the use of the medicines on board. It need scarcely be said that, for the use of coasting vessels, this *Manual* might be made to assume the form of an abridged summary or small *Guide*, and that for ships of heavy tonnage, or which make long sea voyages, it should contain more details, more special provisions, and should even be completed by information regarding the sanitary regulations of the countries or coasts they most frequent.

The salutary effect of the hygienic measures we have mentioned, applied on a large scale to navigation, would soon begin to make itself felt particularly during invasions of cholera. A statistical table of the mercantile marine of every country, with the number of cases of sickness and death on boardships during the year, would form an excellent means of discovering exactly the effect of the serious application of naval hygiene, and of recording its progress. The office of registry, and the rule obtaining in Great Britain on this subject, correspond, or very nearly so, with what the Commission desires. We would wish besides that owners, captains, and masters of vessels whose crews furnish the smallest proportion of illness and mortality, should receive a prize or some other recompense as an encouragement of their zeal.

Would it be desirable to institute punishments as well as rewards? The government of every country must be the best judge of the fitness of penal provisions in regard to this matter. The Commission would merely bring to mind that the system of pecuniary rewards, given with a view to the preservation of passengers and crews, has frequently been tried, and particularly in England, and always with the best results. Many thousands of emigrants, of transported felons, and of soldiers, have been indebted for their lives to the application of this system. To base the price of transport, and even the fees of surgeons of boardships, on the number of passengers landed in good health, is an indirect but very efficacious way of arriving at perfection in naval hygiene.

Having demonstrated the importance of this hygiene, and having briefly indicated the rules of which it consists, the conclusion to be

established follows naturally from the considerations put forth. In the opinion of the Commission, then, what should be done is as follows:—

*1st.—The opening out of competition and the award of rewards to the authors of discoveries or improvements the immediate result of which would be some progress in the sanitation of vessels, the hygienic condition of the crews, and the well being of the passengers.*

*2nd.—The publication of a MANUAL OF NAVAL HYGIENE adapted to the use of the mercantile marine of every country. The carrying out of the most important provisions in the MANUAL should be obligatory on captains and masters.*

*3rd.—The encouragement by rewards and recompenses of such owners, captains, and masters of vessels as distinguish themselves by the good and careful preservation of their ships and crews.*

### III.

A mere arrival from an infected locality is not of itself sufficient to produce the outbreak of Asiatic cholera in any place: there must be a capacity for its reception in that place, and there must be circumstances favoring its transmission. Cholera may be imported, and it is so very frequently, without being transmitted or received.

What are these circumstances favoring its transmission? Hygiene would gain greatly in precision and authority if it could succeed in defining them all; preservation against cholera would not then be such a difficult task. Unhappily we have no correct knowledge of these circumstances; but at the same time we can, under certain limits, base our precepts upon a solid foundation. If we do not know all the conditions of receptivity, we are, at any rate, acquainted with certain unfortunate circumstances almost always favorable to the transmission and rapid extension of pestilential diseases. The unhealthiness of ports is one. The importation being granted, the transmission is always more to be feared in an infected than in a healthy port.

The sanitation of ports is, then, one of the measures of hygiene contributing most to our preservation against the scourge by the diminution of the local capacity for reception. At any rate, a sensible mitigation of the eventual ravages of the disease would result from the measure. Moreover, after having insisted so strongly on the improvement of the health of generating foci of cholera, and after having so warmly recommended hygienic precautions to ships, the most ordinary conducting vehicles of the disease, it is logical to improve equally the health of ports, which are the first places to receive cholera. The sanitation of ports is always the fulfilment of a duty towards the inhabitants of the sea board, and it forms also a diminution of the chances of receiving diseases capable of importation, while at the same time it affords much stronger grounds for acting with vigor against arrivals whose hygienic condition are not altogether irreproachable. Unfortunately, many Mediterranean ports still deserve, in a hygienic point of view, reproaches not less severe than ill kept ships.

To soil the pure water of streams and rivers with filth, to cover the limpid depths of anchoring grounds with excrementitious matters, and to transform the basins of our ports into *cloaca*, is always a sort of profanation, an act of barbarism, an attack against health. It is, in fact, only too common to choose the basins of seaports as receptacles of all the ordure of the town. It is said indeed that these matters do not exercise any influence on the inhabitants, because they are carried far out to sea and submerged. This, however, is nothing: it is forgotten that, by their specific gravity, these matters are quickly deposited at the bottom, but that the tide, or the currents and winds in the direction of the sea coast, keep driving them continually towards the shore. It is only necessary to visit one of these ports at low tide, or on the approach of a storm, or in foggy weather, to be convinced by the fetid exhalations from this enormous bed of slime and black dirt, how pernicious they must prove to those who inhale them. It is evident that the hotter the climate of the port is, the more this deleterious influence must manifest itself.

We are well aware that ships in port naturally soil the water of the basin by cinders and ashes, *dejecta*, and other filth, but this inconvenience must be diminished as much as possible by means of police regulations on shore so as to avert from ports the innumerable causes of infection which gather together there. On account of this unavoidable soiling of seaports, it is necessary, moreover, to drag and cleanse them at more or less frequent intervals, according to the number of ships, the climate, &c. Considering that the cleansing of the basin becomes indispensable from the mere fact of the frequenting of the port, it is deplorable to see the infection caused by ships added to by that from the sinks and latrines of the town. The considerable part performed in the manifestation and propagation of cholera by alvine *dejecta* is well known; it is also known that the disease is very frequently imported by sea; consequently, arrivals from an infected locality find in these ports a soil eminently propitious to the development of the morbid germs, and there is no reason for astonishment that cholera should be transmitted so speedily from the sea board to the towns and be propagated with such murderous effect. It is a matter of extreme urgency to sanitize our ports, to enlarge them, to establish a strict interior police, and especially to keep off from all connexion with the basin all filthy water and the sinks and latrines of the town.

We would also direct the attention of the administration to the environs ordinarily formed round the most frequented ports. The operations of large ports require, in fact, numbers of caulkers and other workmen for the repairs of ships, workmen employed in the manufacture of rigging and sailmaking; and porters for the shipping, landing, and carriage of merchandise. All these people, with the families of the crews, and a certain number of sailors, sick or out of work, fishermen, &c., naturally live as close as they can to the port, and give rise to the creation of a sort of maritime quarter attached to the town. This quarter is far from fulfilling the conditions desired by

municipal hygiene. Small liquor shops, dirty taverns, filthy and infectious lodging-houses, vice and misery, are the prominent features of such a place. The population of this maritime quarter is in constant communication with the ships in port, and the first cases of cholera almost always display themselves in its midst. Measures of isolation would be the best means of protecting the town; but the inconveniences attendant upon these measures are ordinarily very grave and almost insurmountable. It becomes, then, a matter of necessity to forearm ourselves by hygiene, by improving the health of these localities, by diminishing the chances of receiving the disease, and, by the careful carrying out of the strictest sanitary regulations under the supervision of health officers, preventing the formation of foci of infection. In some ports of England and Holland, one of the necessities of these quarters has been very wisely provided for: a sort of asylum (a sailors' home) has been provided for unemployed seamen, where they are suitably lodged, and taken care of in the event of sickness. We think this example is deserving of imitation in all great ports.

The Commission now sums up its ideas in the following conclusion:—

*The sanitation of ports, and a strict prohibition against the emptying of sewers into them, their periodical dragging, and their good interior sanitary police, are all hygienic measures of the highest importance with regard to preservation against transmissible diseases in general and cholera in particular. The sanitation of the maritime quarters attached to sea ports, and the establishment in them of the strictest sanitary police, are also most important measures of preservation.*

#### IV.

After the sanitation of ports, we must look to the sanitation of towns. The causes of infection retained by a town in its midst are numerous: the emanations arising from persons crowded together in confined dwellings; the exhalations from stables and cattle sheds, sinks, sewers, and latrines; the emanations from manufactories, mills, and workshops; the influence of dirt accumulated on the roads; the influence of the shambles, hospitals, alms-houses, cemeteries, barracks, and prisons, as well as the want of the fresh air, the absence of sunlight, and dampness; such are the causes (and we have not by any means enumerated all) of the general unhealthiness of centres of population. Hygiene did not preside at the formation of these centres; on the contrary, municipal hygiene took rise only in consequence of the evils of which they became the centres. The science, created *à posteriori*, has as its mission the amendment of the disorders occasioned by the ignorance or negligence of every principle of public health. This amendment has hitherto been only too slow; we believe it is high time to accelerate it, in the first place because there are abundant means for the improvement of health, and because the necessity of saving entire classes of the population from cachexy and death becomes more pressing every day.

The sanitation of a town is, in point of fact, the diminution of the rate of mortality, and the increase of its general well-being: it is also the destruction or at least the very considerable decrease of the local and individual predisposition to receive and contract diseases capable of importation, and it is moreover the no less sensible mitigation of the ravages of these diseases when it has not been found possible to prevent their transmission. From this latter point of view, and especially in connection with Asiatic cholera, the Commission regards the sanitation of towns.

This sanitation embraces hygiene in its entirety, but we limit ourselves to passing in review the three most important heads, *viz.*, *air*, *water*, and *soil*. Their importance has been recognised for ages past, for, in point of fact, it is evident that every thing directly, or indirectly, connected with the healthiness of any inhabited place may be summed up in the *purity of the air*, the *wholesomeness of the water*, and the *good quality of the soil*.

*Air*.—The height of the buildings, the narrowness and tortuousness of the streets, the continual emanations from human and animal excretions, the rubbish of markets, and a thousand other causes, make the atmosphere of great towns come very nearly under the conditions of confined air. The insalubrity of an urban atmosphere strikes the senses merely on entering the gates of great towns on a return from the country. It is not difficult to foresee the effects of such an atmosphere, with which the inhabitant of a city is brought into constant and necessary connexion.

Let us examine, in a practical point of view, some of the causes of the vitiation of the air.

The air may be vitiated in the first place by its insufficiency in proportion to the number of individuals breathing it. These individuals would not have been able to pollute the atmosphere if they had been spread over a suitable space, at any rate no sensible pollution would have resulted; but crowded together in a narrow, confined space, they corrupt it by their various emanations. To this cause may be ascribed the deleterious effects of the crowding together in lodgings of the poorer classes, who should be specially watched over by Government. *Commissions on unhealthy dwellings*, like those of Paris, or other associations specially devoted to the lodgings of the poorer classes, as in London for example, would render the greatest service to public health if established in every town. In many of the great cities of Europe the construction of special houses has been commenced, designed to afford cheap and healthy lodgings to the working classes, and the Commission can only express a fervent hope that this signal means of beneficence may be imitated and spread far and wide.

*Stagnation*, that is, the absence of renewal, is also one of the principal causes of the vitiation of the air. The same cubic space of air may serve without inconvenience to a much greater number of individuals if it is continually renewed. Hence the importance of free ventilation for

dodgings as well as for the entire town; for streets which are too narrow and angular, and small squares surrounded by high houses, extend to an entire population the hurtful influence exercised on individuals by badly ventilated chambers. This influence manifests itself especially during the prevalence of cholera (for which the air serves as the chief vehicle), because the air, slowly and insufficiently renewed, may communicate the disease to many more individuals than it could were it constantly agitated by the wind. On the other hand, we deprive ourselves, by insufficient ventilation, of one of the most powerful and facile agents of disinfection, *viz.*, *fresh air*: houses which have remained shut up after having been visited by cholera have transmitted the disease even after the extinction of the epidemic.

We may also mention a third source of impurity in the air, its *direct intermixture* with *deleterious gases*, and especially its intermixture with gases developed by the decomposition of organic matter. To this cause are to be ascribed the exhalations from the soil, of which we shall speak presently. We confine ourselves to remarking at present that substances which infect the air through the intermediate agency of the soil may do so in quite as direct a manner before having impregnated the soil. For this reason, industrial establishments giving rise to putrid emanations of this nature should not be tolerated within the limits of a town, as for example, manufactories of desiccated night-soil, tanneries, glue manufactories, soap-boiling establishments, as also slaughter-houses. In fact, the greatest neatness and cleanliness should generally exist in towns; puddles of stagnant water, accumulations of dirt in streets and public places, should not be allowed. Ordure, of whatever nature, should be carried off under the direction of the municipal administration rather than that of individuals or owners of houses. Of all causes of impurity in the air of towns, cesspools and latrines are the most active. We shall return to them in connection with the soil. It may suffice to say here that the gases evolved by excrementitious matters in a state of decomposition (especially carbonate and sulph-hydrate of ammonia and hydrosulphuric gas) have a direct morbid influence on man. We take two examples from the *Report of the General Board of Health on the Epidemic Cholera of 1848 and 1849*, reporting the sudden appearance in Spitalfields and Southwark of violent diarrhœa in a large number of persons exposed to the emanations from a neighbouring manufactory of desiccated night-soil. In both cases the diarrhœa ceased when the manufactories were shut up. The experiments tried in 1848 by Mr. Herbert Baker upon dogs are equally conclusive. He exposed the animals to exhalations from *cloacæ*, and they invariably, after a few hours, displayed symptoms of *diarrhœa* and *vomiting*. This deleterious effect of the above-mentioned gases proves the necessity of immediately carrying away excrementitious matter, or at least of disinfecting it on the spot, and of neutralising or absorbing these gases by antiseptic substances.

We shall terminate this chapter by some striking instances which will demonstrate the good results which may be arrived at by the purification of the air. Dr. Marshall relates that at Ely, in



England, after having improved the condition of the sewers and stopped up the pools of water and open cesspools, the mortality was reduced from 25·6 to 17·2 in a thousand, and that the average duration of life was raised by four years and a half. Dr. Carpenter says that since the construction of good sewers and sinks at Croydon (in 1853) the mortality has been reduced from 28·5 to 15·9 in a thousand, and that typhus has nearly been extinguished in those parts where formerly it was almost endemic. Finally, in the district of the Woolwich arsenal, the suppression of the open cesspools has occasioned a reduction in the mortality from 33 to 19 in a thousand.

*Water.*—We shall not enter upon a long explanation of the important part performed by good and abundant water in connexion with public health, and the ample supply of which is one of the most sacred duties of municipal administrations. It would be important to show the influence of impure water, as a predisposing cause, and of water contaminated by the choleraic germ, as a direct cause, of the development and propagation of cholera, if this influence were not already generally admitted. We confine ourselves, therefore, to adding a few examples to those which have already been quoted in the report submitted to you on the questions in the first and second groups of the general programme.

The water for the town of Exeter was raised from a part of the river contaminated by *cloaca*; the number of attacks of cholera in 1832 amounted to a 1,000, of which 347 resulted fatally. After that time the water was brought from a distance of two leagues above the town, and in 1849 there were only 44 cases of cholera: in 1854 there were scarcely any. At Nottingham in 1832, the water being bad, 289 cases of cholera occurred. The water was changed by bringing it from the Trent above the town, and in 1849 there were only 13 cases of cholera, 7 of which ended in death. At Dumfries, in 1832, 1 death from cholera took place in every 28 inhabitants, and in 1849 there was 1 in 32. Better water was then procured, and in 1854 Dumfries escaped almost entirely. At Hull, in 1832, there was not a sufficient quantity of water, but it was pure and good, and there was a total of 300 deaths from cholera. After that period, the water for the port was taken from a part of the river exposed to the influence of the tide and to contamination from *cloaca*, and in 1849 there were 1,834 fatal cholera cases. One of the most signal examples is recorded by Dr. Acland in his account of the outbreak of cholera at Oxford. There are two gaols at Oxford,—the town prison and the county gaol. In the latter there were 3 cases of cholera in 1832 and 14 in 1845, while the former remained altogether exempt from the disease during both epidemics. The same exemption occurred in 1854, while the county gaol was again attacked. Thirty-seven cases of diarrhoea occurred among 95 prisoners, and 5 attacks of cholera, 4 of which ended fatally. The contrast was too striking not to lead to a search into its causes; an enquiry was instituted, and it was proved that the water which was drunk by the prisoners in the county gaol flowed past a mill, above which it was kept back by an embankment so as to form a dam. While the mill was at work, the

water flowed rapidly, carrying with it all the filth and ordure of the dam, but when the mill stopped work, the flow of the water was interrupted and it formed a sort of pond. In 1854, the river was extremely low, and during the period of the epidemic, the mill-dam was filled from its surface to its lowest depth with every kind of organic detritus; and still more, one of the gaol sewers emptied itself into the pond, and the prison water-pipe took its supply only ten feet away from the sewer. As soon as the causes were known, the use of this contaminated water was discontinued, and this was the result: previous to the 29th of September, the date on which the water was changed, there had been 20 cases of choleraic diarrhœa and 5 cases of cholera, 4 of which resulted in death. Subsequent to the 29th, there were only 3 cases of diarrhœa and 1 of cholera, none of which proved fatal. Not less remarkable was the fact observed in the New-Bailey prison, as reported by Dr. Greenhow. On the morning of the 28th September 1859, there was a sudden outbreak of an epidemic of diarrhœa, some cases of which showed choleraic symptoms (though cholera did not exist in the country). In a total of 466 prisoners, 196 were attacked during the course of four-and-twenty hours, and during the four following days the number of daily attacks was 56, 7, 5, and 2, forming a total of 266, none of which resulted in death. The causes of the epidemic were sought for, and it was discovered that the wastepipe of the reservoir, the opening of which was kept carefully closed, ended in a sewer. The use of this water was discontinued and the epidemic instantly disappeared. It is remarkable that there was not a single case of diarrhœa among the 53 persons employed in the prison, though they drank water which was brought from the same place as that for the prisoners. It was conducted however, to a different reservoir, which had no pipe in communication with the sewer. This fact would suffice to establish what is indeed easily demonstrable by reasoning, that the absorption by water of putrid gases, without any admixture of liquid or solid matter, may contaminate it, and that the use of such water may occasion choleraic accidents,

The Commission has no doubt that from these examples, the necessity of having pure water will be understood, as well as the danger of its contamination.

We would call to mind, lastly, that water may be contaminated by the *saturation of the soil* (as in the case of wells and reservoirs), or by the *direct introduction of organic matters* (as in the case of streams and rivers).  
Whence the double inference:—

1st.—To keep every reservoir of drinking water far away from all latrines, stables, &c.

2nd.—To prevent the water of streams and rivers from which towns take their supply from being soiled by filth and dirt, and the rubbish of manufactories, mills, and workshops, and especially to take care that the contents of sewers and latrines are never discharged into it.

If for any reason the use of more or less impure water should be a matter of necessity, it should previously be purified by boiling, by filtering it through charcoal, and by other means known to be adapted to the

end of purification. In regard to large open reservoirs, such as those which supply Constantinople, the water in which holds a great deal of matter in solution or suspension, it would be well to cause it to pass, before distribution, through a filtering apparatus. The means to be employed will be decided by the special circumstances of each locality. What is important to know is, that organic matter, and especially animal matter, is that which most injures drinking water. It is necessary, therefore, to purify it from these elements, when means have not been made use of to prevent its contamination.

*Soil.*—The soil, no doubt, performs an important part in the etiology of endemics and epidemics; but it owes its importance rather to its corruption than to its nature. This corruption, in towns, is almost always owing to the carelessness and neglect of man. Instead of preventing, at any cost, the injurious impregnation of the earth on which he treads, he scatters around him broadcast all kinds of organic detritus. Now, everything which tends to saturate the soil of a city with organic matter is a proximate or remote cause of unhealthiness. Yet man, reckless of this truth, turns against his own health, that which on the other hand, he robs from the fertility of the fields. The soil of most towns is at present only a vast receptacle of ordure of every kind, to an extent of which few persons have any adequate conception, and the continual decomposition of this matter contaminates the air and water especially. The prevention of the impurity of the soil should, therefore, be one of the capital points in the sanitation of towns.

Amongst the numerous causes of the infection of the soil, we shall only notice those which are most important by reason of their influence and their connexion with the development of cholera. Pettenkofer has calculated that *the excrement of a hundred thousand inhabitants of a town annually impregnates the soil with a mass of putrescible matter equal to that which would result from the decomposition of fifty thousand corpses buried every year in the same place, i. e., around the houses.* From this calculation, it will be seen at once how great is the infection of the soil by excrementitious matter. It is very easy then to deduce the hygienic rule, which is *to carry away immediately and remove far from inhabited localities the excrement of men and animals.* Such is the precept, but it is scarcely put into practice. In small villages, and even in certain quarters of towns not possessing public latrines, the habit is still retained of depositing excrementitious matter *directly on the soil!* In certain great towns, which one might reasonably expect to be advanced in refinement and civilisation, *open sewers* and cesspools, or *black blind sinks*, also show what small progress they have made in the path of sanitation.

In most towns, the systems of latrines adopted are, 1st, *cesspools*; 2nd, *pipes and sewers*; 3rd, *movable necessaries.*

The most extended system is that of *cesspools.* They are walled and sometimes cemented, and retain the excrementitious matter in deposit during a lapse of time of more or less duration. The impregnation resulting from this vicious system is so strong that, after the great

fire at Hamburg in May 1842, on digging the earth, layers were found of *struvit*, a mineral composed of phosphate of ammonia and magnesia, and which could not but have been the result of the decomposition of human or animal excrementitious matter. In unwalled cesspools the infiltration is so considerable, that there is no occasion to empty them except for one or two years after their construction. Even cemented cesspools do not preserve the soil from being impregnated by excrementitious matter, not only because the cement is not altogether impermeable, especially by gases, but also because the nitrate of ammonia, which forms in cesspools, impairs cement in such a manner as to render it permeable even by liquids. Hirsch quotes the instance of a well, situated at a distance of ten feet from a strongly cemented cesspool, which, six months after the construction of the cesspool, contained such a quantity of putrescent matter as to render it impossible to use the water any longer. As for uncemented cesspools, Stamm remarks that out of 900 wells at Berlin, in the year 1864, the water of 86 was undrinkable, on account of the putrid organic matter contained in them. It is also well known that at Leipsic the water of the Pleisse and of the majority of the wells was so vitiated by the cesspools that it was found necessary to construct an aqueduct for the supply of drinking water to the town.

The system of *pipes* and *sewers*, in use principally in England extends further every day with the use of water-closets. The excrementitious matter is conducted by a system of pipes and sewers (whose incline, as well as the considerable masses of water thrown into them from each necessary, accelerates the flow) either to the sea (about which we have spoken in connexion with ports) or into canals and streams, that is, into drinking water, and we have mentioned the effects of such a custom & *propos* of water. The soil, no doubt, is less impregnated with excrementitious matter by this system than by that of cesspools, but water is proportionably more impregnated; and if sewers are emptied into drinkable water, the system of pipes and sewers is at least as reprehensible as the other in a hygienic point of view. Each of them favors the predisposition to choleraic infection, and each of them may favor the propagation of cholera in the event of invasion by this disease. The system of pipes and sewers is sometimes even more likely to lead to this latter danger, because great numbers of necessaries are in direct communication with great sewers and the dwelling chambers of many houses. The *dejecta* of a single cholera patient cast into a common sewer may suffice to poison many houses at once, by the gases flowing back from the latrine and communicating with the rooms, in houses carrying with them the choleraic principle. This circumstance will explain how it is that cholera often spreads to a great number of houses, all situated on one side of a street, during the course of a single night. This most frequently happens at night, because, all the doors and windows being closed, there is no ventilation to prevent the gases from exercising their influence on the inhabitants for many hours together. Whence the necessity of placing rooms, and especially bedrooms, altogether beyond the influence of water closets communicating with a common sewer.

The Commission will not enter upon a detailed estimate of the improvements in the system of pipes and sewers carried out in many towns in Scotland, and proposed in London, the intention of which is, on the one hand, to preserve streams from excrementitious matter conducted to them by this system, and on the other hand, to utilise such matter for the fertilisation of the fields. The chief end of these improvements is to discharge sewers, not into rivers and streams, but into great reservoirs, whence their liquid contents are raised, as occasion requires, to a certain height by steam-engines, and conducted by inclined pipes, either immediately or after previous disinfection, into the fields. The expenses of such establishments are enormous, while at the same time local conditions, such as the low situation of a town, insufficiency of water, or a great frost during winter, may render it impossible to work them properly, and a certain amount of penetration of the soil by the excrementitious matter is not avoided.

The third system, that of *movable cesspools* (with or without the separation of the liquid matter and the immediate disinfection of the contents) has a tendency to spread in many towns of France, Belgium, Germany and England; it comprises the best hygienic conditions at small cost and without any loss of the excrementitious matter for the fertilisation of the fields. Under this system, the excrements are deposited in a vessel which it is easy to carry away and replace by another, so as to take away the excrements in the vessel itself. Successive improvements in this system have resulted in the entire separation of the liquid from the solid matter (which greatly retards the putrefaction of the latter) and their immediate disinfection. We cannot enter into the details of this system, and we shall only briefly mention three modifications of it: 1st, movable cesspools according to the dividing system of Mosselmann, in which disinfection is effected excluding the urine, by means of quicklime. 2nd, the system of Mueller-Schuer, in which the disinfection of the solid matter is effected by means of quicklime or vegetable charcoal, and that of the urine by peat. The use of this substance is strongly to be recommended for public urinals and for water used for household purposes. 3rd, the English system (dry method) in which the liquid and solid matters are separated, and the latter covered with clay or marl well dried and pulverised.

As the system of movable cesspools in all its modifications requires the more or less immediate removal of the excrementitious matter, it is necessarily placed under two conditions: 1st, a well-regulated system of cleaning; and 2nd, the choice of some fixed spot beyond the town for the deposit of the excrement. In regard to the latter, an especial recommendation is made to have an establishment in connexion with a manufactory of artificial manure (pulverised night-soil.)

All the hygienic advantages of the system of movable cesspools will make themselves specially felt in times of cholera, when it is necessary altogether to avoid the use of latrines communicating with a common sewer; but it is still more preferable during such epidemics

to make use in houses of separate vessels to the exclusion of latrines, it being understood of course that the vessels are immediately emptied and cleaned, and if necessary disinfected.

What we have just said of human *dejecta* applies equally to the *dejecta* of cattle. Accumulations of dung should not be tolerated either in cattle yards, or in the places reserved for its deposit. Urine should be disinfected by peat or other means, before it can infiltrate into the soil.

We would also remark that an effort is frequently made to oppose an epidemic of cholera in its commencement by the general and complete emptying out and cleaning of the latrines and sewers, while at the same time this operation is, by its nature, rather calculated to favor the propagation of the disease. During the presence of an epidemic it is even dangerous to unpave or in any other way disturb the soil of a town.

As organic matter is very speedily and very easily decomposed in damp soil, it is necessary to dry and drain the soil of towns. A system of *trenches*, well walled up and cemented, would cause rain water to flow so as not to infiltrate the soil, and a system of *subterranean drainage* would dry the soil, the dampness of which has always been acknowledged to be a condition favorable to the propagation of cholera, as well as of all endemic diseases.

The mephitism of the soil exercises a great influence on the development of ordinary diarrhœa. According to the official reports on the public health of England the annual mortality from diarrhœa in the districts (*registration districts*) regarded as being the most healthy, does not exceed 30 in a hundred thousand inhabitants, whilst in the ten districts of Coventry, Birmingham, Wolverhampton, Dudley, Merthyr-Tydvil, Nottingham, Leeds, Manchester, Chorlton, and Salford, during the period 1854-1859, it attained (excluding cases of cholera) a figure varying from 106 to 266 in a hundred thousand, *i. e.*, from  $3\frac{1}{2}$  to 9 times more than in the model districts. It has been remarked that the larger proportion of deaths has always corresponded with the vitiation of the local atmosphere by the product of organic decomposition, especially human excrement, or the habitual use of contaminated water; and that a diminution of mortality has followed on the improvement of the hygienic conditions of the air and water and the sanitation of the soil (*2nd Report of the Medical Officer of the Privy Council*, London, 1860). This sanitation then will preserve centres of population from simple diarrhœa, which is so frequent in large towns, and will thus diminish the predisposition to choleraic diarrhœa, for it has been observed that every locality where diarrhœa prevails generally is also favorable to the development of cholera.

Another source of infection of the soil still remains to be mentioned, *viz.*, corpses and the mode of *interring* them. Most towns have their cemeteries *extra muros*, but there are still many where burials take place within the town, and even in the churches. It will not be out of place

therefore to recal to mind that to avoid the influence of the putrid emanations from cemeteries, it is necessary to place them at a good distance from the precincts and suburbs of the town, the depth of the grave should not be less than six feet for each corpse.

To the general measures concerning burials, it is necessary to add some more specially applicable to periods when cholera is epidemic. It would be well to remove the corpses of cholera patients from the house as soon as possible, and they should be interred within twenty-four hours; washing them should be avoided, and they should be placed in well-pitched coffins, with the body and bed-linen, without any other clothing, and covered with a layer of quicklime before closing the coffin, which latter should also be covered with quicklime after being laid in the grave. The conveyance of corpses of persons who have died of cholera to an uninfected place should be prohibited.

From the rapid review we have made of the principal causes of the insalubrity of centres of population, we draw the following conclusion:—

*The sanitation of towns is an efficacious preventive means to be employed in opposing the reception of cholera, and in mitigating its ravages.*

*This sanitation should be based chiefly on a variety of measures tending to maintain the purity of the air, the supply of pure and abundant water to towns, and the prevention of the contamination of the soil by organic matter.*

*Instantaneous disinfection and the immediate removal of excrementitious matter are hygienic measures of the highest importance, especially while cholera exists.*

## V.

And now we are asked if there are public or private measures of hygiene, measures of sanitation, applicable on such a scale as to enable them to destroy or sensibly diminish the predisposition to choleraic infection. Such measures, we reply, do exist, and we have just detailed the most important. Let them be instituted in accordance with a complete system, and energetically put into execution, and their salutary effects will soon be felt. The sanitation of countries where malarious affections are endemic is always successful in putting an end to them; and almost every locality which has made some slight progress in the path of sanitation in the interval between two invasions of cholera, has experienced, in the second invasion, the beneficial effect of hygienic measures. In this very Report, we have quoted some signal instances of the effects produced in various towns by sanitary improvements in the supply of water, or in regard to the infection of the soil. If even partial improvements give rise to such surprising results, what may we not expect from a general system of sanitation, composed of a harmonious collection of measures well combined and simultaneously and vigorously carried into execution in every country, or at any rate in their chief provinces?

We are aware of all the difficulties of such a vast enterprise, but it will become more and more easy as governments, as well as populations, begin to understand that most endemics and epidemics owe their

violence and their extension only to the crowding together of men, and to the fatal habits contracted in such crowded assemblages. And when the minds of all are able to appreciate this truth, every body will understand also that it is in the power of man—that it is even his duty—to use his utmost efforts to destroy what he created in his ignorance.

We expect that an objection will be raised on the score of the enormous expenditure necessitated by the execution of all these hygienic measures on a great scale; but we have already met this objection: *the disbursement of even the largest sums (we have said on page 2) in carrying out measures of health is, simply, equal to laying out money at very considerable interest.* We shall only add here that in one of the countries in which most attention is devoted to public health, and where sanitary enquiries are instituted in all towns where the annual mortality exceeds 23 in a thousand, it is an almost popular proverb that national health is national wealth.

Heretofore we have studied preservation against Asiatic cholera by rigorously *preventive* hygienic measures; we now proceed to consider measures of the same sort which should be adopted in the event of a threatened invasion of the disease, or in case the invasion has actually taken place. When prophylactic measures have been neglected, or when they have from some cause been rendered ineffective, hygiene does not abandon the struggle: it may still aid us in preventing many evils, or, at any rate, in mitigating them.

The provident organisation of *public assistance*, always a pressing duty, becomes an urgent necessity during times of epidemic. This necessity must be provided for beforehand, and every thing must be prepared to diminish as largely as possible the number of victims, as well as to render the result of attacks less fatal.

*Home succor* is what is needful in regard to the first of these points. It is not only necessary to come to the aid of the poor population with all the means made use of by public beneficence, but it is also very desirable to watch by means of *domiciliary visits*, over the salubrity of dwellings and the state of health of individuals, particularly those belonging to the indigent classes.

These visits are of capital importance. They ought to be *general* and *daily*, as far as local resources permit. The object of these visits should be to seize cholera as soon as it makes its first appearance, and, by that means, even to prevent its further development. Not only would many people be saved by these visits, but the intensity of an epidemic would be weakened, if it could not be quite stifled. The statistics of the epidemics of 1848-49 and 1853 at London, Dumfries, Glasgow, Munich, &c., where this sanitary inspection was established more or less generally, give very satisfactory results. The Commission cannot but recommend the immediate adoption of this system of surveillance, especially in great towns, which are generally the first localities that are attacked and which eventually become centres of propagation.



This measure deserves in every respect the name of *preventive*; but, like all other hygienic measures, its execution should be timely, complete, and conscientious, if we wish to calculate upon its efficacy.

The local administration should make a large and gratuitous distribution of copies of popular *Instructions* containing the principal precepts of individual preservation and of the first remedies to be adopted in case of attack. These *Instructions*, of which, by the way, there are many models extant, should be written in language suited to the comprehension of the people, and adapted to local conditions.

Amongst general hygienic recommendations, the danger of excrementitious emanations should be very specially insisted on. It would not be unreasonable to go so far as to prohibit absolutely the use of common latrines, and to make the general disinfection of excrementitious matter obligatory. This measure, carried out generally in the beginning of an outbreak, and with the greatest care and observance, would be calculated to oppose the development of cholera, especially if it could be completed by the addition of watchful medical visits daily.

The injurious effects of depressing passions, of fear especially, being known, every possible means should be adopted to raise the spirits of the populace by making the most of the confidence which should be inspired by the efficacy of the measures adopted. In connexion with this matter, the question has been raised whether, in an epidemic invasion, it is preferable to conceal the danger, to diminish the real number of attacks and deaths, &c., or frankly to confess the danger, and the extent, whatever it may be, of the ravages of the disease. The Commission places itself on the side of the whole truth: this mode will prevent the abandonment of precautions on the part of individuals, as well as the exaggeration to which the public is but too inclined. The contrary system most often only produces effects diametrically opposed to those which are expected. Moreover, official tabulated statements and other documents are lasting, and are consulted hereafter, and we must try not to furnish false information and incorrect figures to the history and statistics of epidemics. This detailed history is an important document: it is also a duty of the administration to cause it to be written conscientiously, for useful information is always to be drawn from it in regard to present and future epidemics.

By the official publication of the truth, and by the employment of the most rational and efficacious measures, the inhabitants of an infected town will be much more reassured than by the system of disguising what is actually occurring. Full of confidence, they will then lend their zealous aid to the administration, whose proclamations and rules will then have all the authority which is so necessary in the serious event of the occurrence of an epidemic.

The general medical visits, which we have so strongly recommended, would prevent a great number of cases of cholera, and they would also permit of a great number of sick people, even the poorest, being attended in their own homes. For this reason, if the general preventive visits to

houses have been omitted, immediate visits to infected houses should on no account be dispensed with. It is then that medical attentions, hygienic precautions, isolation, and disinfection, may result most successfully.

But at the same time, hospital assistance,—a mode of assistance which cannot be dispensed with,—must be carefully considered.

The hygiene of *hospitals* is sufficiently known to permit us to pass in silence over the general conditions relative to the site, distribution, internal economy, &c., of these establishments. It suffices to call attention to the most salient points in respect to cholera hospitals.

It would be desirable that every large town should have a permanent hospital for epidemic diseases. This hospital should be situated without the town, and should receive the first persons attacked by any epidemic whatever, cholera for instance, persons whom it is often found necessary at present to admit into ordinary hospitals, which there is no time to clear of other patients. Generally speaking, it would be preferable to send cholera patients, whose condition is not yet such as to inhibit conveyance to a distance, to hospitals situate without centres of population; but for patients who require prompt succour, care should be taken, when an invasion of cholera is imminent, to establish small improvised hospitals in the very heart of the city, or in hired houses (and in this case the adjacent dwelling should be vacated) or in barracks constructed with this object in the great squares and places. It is needless to say that when, for want of special hospitals, cholera patients have to be admitted into the ordinary hospital (which, considering the transmissibility of the disease, should be avoided at any cost), they should at least be placed in separate and isolated wards. The conveyance of the sick should be effected in vehicles devoted exclusively to this service and stationed in the larger squares and cross roads.

Common latrines should be suppressed in these hospitals; the *dejecta* should be deposited in special vessels, disinfected on the spot, and carried away twice a day in tubs or other vessels well closed, to be removed far away, buried in trenches, and covered with quicklime.

The soiled linen of the hospital should be immediately immersed in water containing disinfecting substances. As for the bedding, straw pallets are preferable to mattresses, and the straw should be burnt after having been made use of by a patient.

It is no less indispensable to disinfect immediately the linen and clothing brought with the patients on admission to the hospital. If there are sufficient resources, it would be preferable to burn all the effects of the patients admitted: this latter measure should be applied, at any rate, to the clothing of deceased patients.

As for the attendants on the sick, the Commission recommends that they should be selected, if possible, from among persons who have already been affected by cholera, and in such numbers as to permit of their having frequent relief, to give them some hours of rest (which it would be desirable for them to pass out of the hospital), and to insist upon their maintaining the utmost cleanliness and neatness.

We recommend particularly that the families of cholera patients should not be forgotten, when it is found urgently necessary to close an infected house and to disinfect it; abundant relief and shelter should be given to women, orphans, and invalids: to comply with these demands of public charity and health, we cannot insist too strongly on the advantages of the institution of temporary orphanages and of *houses of refuge* during an epidemic.

As a corollary of these considerations, we lay down that—

*A prudent organisation of public assistance—general preventive visits, or, in their absence, medical visits to infected houses—immediate help to those attacked—the publication of popular instructions—the encouragement afforded by confidence in the promptitude and extent of succour and the publication of the true state of the epidemic—as well as the establishment of special hospitals and temporary houses of refuge to shelter the families of poor patients, are very efficacious hygienic and administrative measures in the prevention of the propagation of cholera, and in the mitigation of its ravages in localities that have been invaded.*

The transmissibility of cholera being adopted as a principle, the law of propagation to be deduced from it is evident. The Conference has already proclaimed it: *Cholera spreads everywhere in proportion to the facility and multiplicity of communications.* Starting with this law, the hygiene of cholera has studied the general means to diminish as much as possible, on the approach of and during an epidemic, the density of populations and the multiplicity of individual intercommunications resulting therefrom, so as efficaciously to oppose the diffusion of the plague through the heart of a town already infected and the propagation of the disease to localities hitherto uninfected. Hence are derived the advantages which, in this point of view, may result from *emigration, dissemination, and removal.*

The temporary *interruption* of all communication with countries, localities, or persons affected by cholera is, of all prophylactic measures, the surest, the simplest, and the first suggested by the very instinct of preservation. But this measure is not easy of execution; it may be applied to an island, to a peninsula not too large, to a restricted locality, to a quarter, or to a particular house; but it becomes impracticable when it is sought to generalise it. The difficulties of maintaining this isolation as absolutely as it should be, and the economical disadvantages which would result from the absolute interruption of communications, are too grave to permit of its always being established with advantage. So that it has been found necessary to modify this radical and decisive measure under the form and name of quarantine. We recommend it, however, in every case in which it can be adopted.

As soon as the absolute isolation of vast choleraic foci becomes an impossibility, we must expect a diffusion of the germ of the disease, more or less to be feared. Now, this diffusion is effected by means of travellers and fugitives, as well as by all sorts of arrivals from infected places.

Amongst the agents by which Asiatic Cholera is disseminated, we must include in the first place those large moving assemblages which may easily remove from one place to another, such as caravans, armies, &c., coming from an infected country, or already infected themselves.

The removal from one place to another of these assemblages is ordinarily a benefit to the individuals composing them, but it is a danger to the countries they traverse or the localities where they stop.

The study of the question of *pilgrimages* having been confided to a special Commission, we have nothing to add here relative to *caravans* and assemblages of pilgrims.

In regard to *bodies of troops* in movement, it is only too well known that they have often been the most active agents in the propagation of cholera: and hence the necessity of refraining, as far as possible, from ordering the march of troops, the relief of garrisons, &c., during an epidemic. It is known, too, how dangerous it is, during an epidemic, to effect the junction of the different divisions of an army, to incorporate recruits, &c.

The special assemblages known under the name of *fairs* have contributed more than once to the rapid diffusions of cholera. The suspension of great fairs during an epidemic would, therefore, very naturally be an excellent preventive measure against its propagation; this measure, moreover, is only too well justified by the instances adduced in the Report of your general Commission in connexion with the subject of the influence exercised by large infected assemblages of men on the development and propagation of cholera.

Up to this point we have considered *dissemination* as the dispersion of the seeds or germs of cholera by large moving assemblages. At present it must be regarded from the point of view of the scattering of every sort of assemblage of men. *Dissemination*, in the first sense, is an evil to places yet uninfected, but, taken in the second acceptation, and in connexion with assemblages invaded, or menaced with invasion by cholera, it may become a great prophylactic measure. This measure for the rest is merely a second derivation from the law of propagation already admitted: the denser the population, and the more multiplied the communications and relations of the assemblage or locality where cholera appears, the more rapid are the diffusion and extension of the disease. There is, therefore, no doubt that everything tending to thin the population and to diminish the number of relations, will result in moderating the propagation of cholera, and in preserving a great number of persons.

Thus, moving assemblages are only benefited by well regulated *removals from one place to another* which improve their hygienic conditions, and by methodical *dissemination* which diminishes the risks of transmission.

This removal and this dissemination seem to have had a very favorable influence, in times of epidemic, on the sanitary conditions of bodies of troops amongst whom these measures were applied. The most

remarkable examples are found in the military stations of India; but in India we find the model of the application of these measures.\* In regard to inhabited places, or to fixed assemblages, dissemination commences by free *emigration*. Removal is the prophylactic means which first enters the minds of individuals. In large towns, with dense populations, the emigration of persons, useless, or disengaged owing to their condition, old men and children, may well be encouraged.

This emigration should commence as soon as the epidemic threatens to invade a locality: when cholera has already broken out, and especially when it rages, emigration loses almost its efficacy, becomes dangerous to the places where the fugitives have sought an asylum, and in this case the authorities should make it a point of showing to the public all the dangers of such emigration.

Tardy emigration, in fact, while often being perfectly useless, so far as the fugitives are concerned, may compromise the health of some places yet untainted, and may increase terror within the precincts of the infected town from which the emigrants fly.

The administration, on its side, will favor the effect of emigration by diminishing the deplorable overcrowding but too common in many public asylums and establishments. For instance, to clear out an almshouse placed in bad hygienic conditions, by causing the inmates to pass on to another town or place, or by distributing them between different establishments, to temporarily suspend admissions to a crowded hospital, to thin the population of a penal dépôt, or overcrowded prison, &c., &c., are all measures which, while assuring the lives of the emigrants, serve to improve the conditions of those who remain.

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\* In addition to measures of isolation and disinfection, the establishment of separate hospitals and special latrines, &c., removal and dissemination are the rule in times of cholera for troops in India. The chief official provisions on this subject are as follows:—

1st.—A selection should be made beforehand, within a radius of 20 miles around military stations, of all the sites suitable for an encampment of troops on the outbreak of cholera. These localities should be at a distance from the highways, from the ordinary encampments, and about 8 or 10 kilomètres (5 or 6 miles) from military stations; the site should be elevated, and afford facilities for drainage.

2nd.—If cholera makes its appearance among the troops, and the medical officer in charge of the station declares that there is reason to apprehend that it may become epidemic, (i. e., if two or more cases, for instance, occur in the course of a week after the outbreak of the first case), the troops must leave without regard to time or weather. The local authorities are to decide the degree of dissemination, namely, whether the entire body or only the portion attacked should be removed, or separated, with an interruption of communications between this part and the rest of the troops.

3rd.—The body of troops to be removed shall be divided into as many detachments as there are surgeons, who will be brought, if necessary, from neighbouring stations.

4th.—The encampment is to consist of tents which, in cholera seasons, must afford shelter to only half the number of men they cover in ordinary times, and the men are to be provided with cots in the rains. The same rules apply to the soldiers' wives and children.

5th.—If cholera continues among the troops, the encampment will be removed, when necessary, every two or three days, without fatiguing the soldiers, who must march as much as possible at right angles to the direction of the prevailing wind.

6th.—The troops shall not return to the stations until at least ten days after the complete disappearance of the disease in the stations, and after the thorough disinfection of the barracks, hospitals, and other dwellings.

Let us add that while it is necessary to emigrate as soon as possible, it is at the same time necessary to return as late as possible : without this precaution, necessitated by the possibility of an attack some days still after the extinction of the epidemic, there is a great risk of nullifying all the advantages of timely emigration.

Emigration is a species of dissemination to a distance, and is ordinarily anterior to the invasion of the disease ; but there is another *dissemination*, which consists in dispersing the population within the precincts of the locality already invaded, or in its suburbs. This dissemination is the complement or auxiliary measure of emigration. When, notwithstanding emigration, the density of the population still remains considerable, it becomes a matter of urgent necessity to apply a remedy by the dissemination of the mass of inhabitants throughout all the available space, without any danger, let it be understood, to the neighbouring localities.

If this dissemination has not been made beforehand, it should take place immediately after, or simultaneously with the emigration, and be applied to poor-houses, prisons, barracks, colleges, boarding schools, furnished lodgings, the dwellings of the indigent classes, public sleeping-rooms, every place indeed where there is any sort of crowding. Overcrowding in times of cholera is a hundred times more dangerous than in ordinary seasons.

As for the mode of application and the details of execution, all these are subordinate to the topographical conditions of the town (number and capacity of empty houses and houses to let, places, squares, promenades, parade grounds, &c.), to local resources, and somewhat also to the season of the year and atmospheric circumstances.

When a site exists in the neighbourhood of an infected town sufficiently large and with the desired conditions of elevation, exposure, good supply of water, &c., *encampments* may be, and have been, established there with some success. These encampments, generally composed of wooden houses, huts, or tents, receive the superabundance of the city population. They may render real service, but on condition that the hygienic and sanitary police of these improvised towns is strict and complete, without which the only result will be new crowding no less dangerous than that what was desired to be remedied. Thus, the chief desiderata to be complied with are, width of streets, ample ventilation, easy drainage, exquisite neatness and order, latrines removed and disinfected, general preventive visits, isolation or a regulated mode of communication.

*Dissemination* is also applicable to the sick, and to persons in quarantine, by means of the construction of hospitals and lazarettos in the form of encampments. It is scarcely credible how greatly the dissemination of cholera patients, for instance, their isolation, their treatment in the open air, the separation of convalescents, &c., contributes to abridge the duration of epidemics and to result in the recovery of the sick ; but always on condition of the strict observance of the fundamental precepts we have mentioned.

From all that we have said above, we draw the following conclusion :—

*The temporary interruption of communication with infected places, provided it can be made absolute, is the surest preservative against the transmission of cholera.*

*Opportune removal from one place to another, and the methodical dissemination of moving assemblages (caravans, bodies of troops, &c.), are very efficacious hygienic measures adapted to prevent the outbreak of cholera in their midst, as well as to arrest its extension, and diminish its violence.*

*Opportune emigration and well regulated dissemination may give rise to the same favorable results in fixed assemblages (localities and public establishments).*

## VI.

It remains to speak of *disinfection*, a word we have employed and a method we have often recommended in the course of this Report. We must, in fact, destroy infection when we have not been able to prevent it.

In cases of simple infection, of infection by known principles, it is easy to cause its cessation, in the first place by employing the same hygienic means which prevent it, and in the next place by the employment of various active agents of direct destruction.

In cases of choleraic infection, the facility of destroying it is not so great, for the infecting principle is as unknown to us as the rest of specific germs. But experience having taught us that the air is its principal vehicle, that it does not act except within a limited distance from foci of emission, and that it often adheres to certain material objects, we may endeavor to destroy it, to neutralise it, and to drive it away by various means. The choice of these means is the work of experience pursued with ardor, of which the results are far from being discouraging. Notwithstanding all the theories that have been put forward, we do not always know exactly what passes in our processes of disinfection, but we obtain results which lead us to believe that we have destroyed the choleraic miasma, or deadened its deleterious action. It is thus that in our disinfecting operations we find powerful auxiliaries for the diminution in the first place of the receptivity of a place menaced by cholera, for the destruction of the germ of the disease when already imported, and lastly, for the limitation of the extension of an epidemic.

The nature of a simple Report does not permit us to descend to details, but there are some details in this matter so essential that we cannot refrain from giving them. We have, therefore, endeavored to do justice to the subject by means of a summary special treatise, drawn up by one of the members of the Commission (Dr. Mühlig), and annexed as an appendix to this Report.

We can, therefore, confine ourselves here to impressing the supreme importance of *immediate* disinfection on the appearance of cholera. The energetic disinfection of the first choleraic foci results in impeding the development of an epidemic and sometimes in stifling it in its birth.

This is so; and this is our reply to the question whether it is possible to extinguish the first centres of importation. Experience teaches us that this possibility exists, provided these centres are still few in number, and that their complete isolation comes to the aid of measures of disinfection. As for the latter, to be methodical, they should commence, as much as possible, with the sources of emission of the choleraic principle, *i. e.*, with the *dejecta*, linen, &c., of a cholera patient; next should come the room occupied by him, with every thing contained in it and, finally, the whole house.

We hold then, that *disinfection applied to cholera according to a rational method and with perseverance presents itself as a powerful auxiliary*:—

1st.—*In the diminution of the receptivity of a locality menaced by cholera;*

2nd.—*In the destruction of the germ of the disease when imported into a locality; and*

3rd.—*In the limitation, under certain favorable circumstances, of the extension of an epidemic.*

We have now passed in review the entire series of measures of hygiene which may be opposed to the production, importation, and propagation of Asiatic Cholera. They are, for the most part, general, for there is no hygiene exclusively applicable to cholera, but they always succeed in restricting and mitigating it; a double advantage sufficiently proved in all the choleraic invasions of Europe, as well as in the localities themselves where cholera has its permanent centres. We have recommended them because they constitute a very important part of the prophylactics against cholera; because, as the Conference has already laid down, and as we wish to repeat, measures of hygiene are the *essential* complement of measures of quarantine.

A. M. SEGOVIA, *President.*  
DR. GOMES.  
DR. GOODEVE.  
KEUN.  
DR. LENZ, *Secretary.*  
MALKOM-KHAN.

DR. MILLINGEN.  
DR. MUHLIG (*with limitations*).  
DR. SPADARO.  
VETSER.  
DR. MONLAU, *Reporter.*

Galata-Serai, August 6, 1866.



*Appendix to the Report of the Commission on hygienic measures on disinfection as applied to Cholera.*

Revised and approved by the Commission.

(BY DR. MUHLIG).

Amongst the prophylactic measures recommended against cholera,

*1st.*—Importance of the question of disinfection as applied to cholera.

disinfection has always occupied an important place, especially since opinion has pronounced, rightly or wrongly, that measures of quarantine are powerless against the propagation of the disease. It was thought, therefore, that disinfection, applied methodically and in time, would not only be a desirable substitute for every measure of quarantine, but that it was the true and only method of opposing the propagation of the disease. It will be seen from this of what importance it is to examine this question thoroughly; for if we were indeed in possession of a sure means of opposing the morbidification of the choleraic germ, our task would be singularly simplified, and the severity of measures of quarantine might be greatly mitigated; but if we were to find, on the contrary, after an attentive examination of the question that the pretended means of disinfection are simply illusory, that they offer no security, should we not naturally be led to infer that we must look elsewhere, to redoubled severity in the matter of quarantine for instance, for guarantees against the propagation of cholera?

Disinfection is understood in two senses: in the one, the object is to

*2nd.*—What is the object of disinfection in general?

destroy certain organic matter which is considered to be injurious to health, and of which the nature is more or less known already: in the other, the object in view is equally to destroy, in a direct or indirect manner, the morbidic germs, whose real nature is unknown, and which only indicate their existence by the effects produced by them in living organisms. Now, in the first case, as we are more or less acquainted with the elements on which we propose to act, we can choose our mode of action with precision and security; thus, suppose, for instance, the confined atmosphere of a room is laden with ammoniacal exhalations, in this case chemistry affords us many means of neutralising the ammoniacal vapors, for example, chlorines, nitric acid, &c., and experience confirms their disinfecting effect. But it is not so in the second case, for here we operate against elements whose existence even is a hypothesis, and our means of action consequently partake of all the uncertainty which still exists in regard to the nature of the morbidic germs; it has been admitted, for instance, that chlorines destroy contagion, but nothing affords us any certainty of the fact; contagion does not, like the organic exhalations of which we have just spoken, indicate its existence by a peculiar odor, and consequently we cannot control it by smell. It is true that instances have been quoted where pestilential diseases, prison typhus for example, have ceased to rage after the persevering use of the vapors of chlorine; but daily experience goes to prove, in direct opposition to these examples, in which perhaps coincidence has had most to

do, that contagious diseases, such as typhus, scarlatina, nosocomial gangrene, puerperal fever, &c., continue their ravages in the midst of assembled masses, in hospitals for instance, notwithstanding the methodical use of chlorine or any other disinfectant. There are, nevertheless, certain cases in which, according to the teachings of experience, we may hope to get directly at the morbid germs, if we know their ordinary vehicle or receptacle, provided at the same time it is not atmospheric air, or if we know the place of their germination in the organism, and it is accessible to certain agencies, provided the application of these agencies does not result in any inconvenience to the organism. In the first category we shall cite as an example the stools of cholera patients; in the second, nosocomial gangrene. Thus, in cases of nosocomial gangrene, we know by experience that certain substances, especially corrosive chemical preparations, applied to the parts of the body affected by gangrene, are pretty certain to change the nature of the sores by destroying, probably at the same time with the tissues, the morbid germs, and it would be permissible to allow, therefore, by analogy, the probability of a similar result in other cases also in which the teachings of experience are not yet so conclusive, as, for example, in the case of choleraic stools. But, independently of these more direct means, yet another mode of action upon the morbid germs is admissible by indirect methods; on the one hand, it has been sought to neutralise the morbid action of these germs by favoring their volatilisation; on the other, by diminishing their vitality in subtracting from them the organic matters which are considered, with more or less reason, as the indispensable medium of their existence and development. In fact, ammoniacal emanations play a great part in a great number of contagious diseases, and it is known how they favor the development of typhus, typhoid fever, cholera, &c. In regard to the last especially, M. Pettenkofer thinks that in attacking these emanations, at their very source, we should very probably succeed in rendering the choleraic germ altogether inoffensive. But let us hasten to add that the facts furnished by experience are not yet so numerous as to permit us at present to decide as to the value of this hypothesis.

Whether we make use of disinfection as a simple agent of purification against emanations the nature of which is more or less known, or as a real anticontagious agent, we arrive at this object by two different ways; either we seek to prevent the formation and evolution of the insalubrious and hurtful matter by destroying the source from which it is furnished, as for example when we attack cases of nosocomial gangrene by caustic or other agents reputed to be *antiseptic*, or we set ourselves to work to attack it after its evolution and diffusion in a spot. Frequently the agencies made use of are known to operate in two ways at the same time. We may, however, at present, advance our opinion that the first of these modes of action presents infinitely more guarantees of efficacy than the second.

Before examining the different modes of disinfection, as applied to

3rd.—What are the results obtained by disinfection in connexion with cholera?

cholera, it will be well, perhaps, to consider first of all in a general way the question whether it is proved by distinctly conclusive facts that it is possible to prevent the propagation of cholera by the

known modes of disinfection. Unfortunately it must be confessed that the instances where disinfection has been put in practice in a sufficiently continued and sufficiently rational manner are not so numerous as to permit of any conclusion whatsoever being based on them; on the other hand, the few known cases where continued disinfection has appeared to give favorable results always leave the door open to the supposition that they constitute one of those examples of immunity which we must limit ourselves to mentioning without being permitted to explain them. In order to decide definitely upon this question, it would be necessary to be in possession of a very considerable number of facts where the same method of disinfection, having been applied under the same conditions and by competent persons, the result has always been the same; but these facts do not exist, and from those which do exist we can only draw conclusions more or less probable, and which at the same time are not unfavorable to the practice of disinfection. It would appear thus that experience rather comes to the support of the conclusion at which we have already arrived *à priori* by theoretical considerations. Before quoting some of these facts now, we must again observe that modes of disinfection have been applied sometimes before the manifestation of cholera in a locality exposed to contamination, *i. e.*, as really preventive means, sometimes after its importation with the object of arresting its spreading.\*

The case of the two prisons at Munich has often been quoted as a very decisive fact. Cholera was brought to the prison of Kaisheim by a prisoner who died there. The hygienic conditions of the prison could not have been worse, but the stools of all the prisoners and other inhabitants of the prison were subjected to rigorous disinfection. Now, only one of the 500 prisoners was attacked. On the contrary, in the prison of Ebrach, where no measures of this kind were adopted, of 350 prisoners 15 per cent. perished victims to cholera.

This fact is reported by Petteukofer.\* The same physician brings to notice the case of Traunstein in Bavaria, where it was proved, during the same epidemic (of 1854) that whenever the choleraic evacuations were disinfected by sulphate of iron, the disease contented itself, contrary to the general rule, with its first victim, and a quantity of other analogous examples during the same epidemic has been brought to notice. Thus, Dr. A. Wimmer reports of the result of the disinfection he put into practice while cholera was raging at Landsbut. Means of disinfection were adopted in thirteen houses, *viz.*, in nine cases by sulphate of iron thrown into the water-pipes as well as night-stools, and in four cases by chloride of lime. The latter preparation, however, was not made use of to disinfect the latrines and cesspools, but was merely strewn about in the sleeping rooms of the patients and in the corridors as a disinfectant of the air. The time during which these means of disinfection continued in use varied from two to three weeks, with intervals of about eight days. Dr. Wimmer came to the following conclusions: *1st*, the means of disinfection were not applied in these cases until after the first manifestation of cholera or the first death; *2nd*, in every instance where sulphate of

\* Petteukofer Verbreitungs-Art der cholera (Article Kloster-Ebrach), p. 119.

iron was used for the disinfection of latrines and cesspools, no fresh case of cholera was manifested after it was first applied; 3rd, in those houses where chloride of lime was used in the manner abovementioned, fresh cases were afterwards seen; 4th, finally, in every house where sulphate of iron was employed in the manner indicated, as a prophylactic, i. e., before any choleraic manifestation, not a single attack of cholera was observed.\* In England Mr. W. Budd made use of disinfection with the best results. On the 12th October 1854 cholera showed itself in Horfield barracks, near Bristol, where the disease was raging, the barracks containing five or six hundred men. Mr. Budd was called in on the 13th and found two cases of cholera in the cold stage and two cases of strong choleraic diarrhœa. He immediately recommended the adoption of the following measures: 1st, the reception of the stools of the patients, if possible direct, in vessels containing a strong solution of chloride of zinc; 2nd, that the soiled linen should be immediately thrown into water containing the same disinfectant, and that the mattresses and other articles not susceptible of this mode of disinfection should be burnt; 3rd, the exclusive reservation for choleraic *dejecta* of latrines into which the stools of the sick have already been thrown; 4th, the disinfection twice a day of all other latrines by means of the liberal use of chloride of lime and chloride of zinc; 5th, the examination twice a day of all the men in the barracks in regard to the condition of their intestinal functions; 6th, to place guards before the latrines, and to treat every man making use of them twice within a brief space of time as a cholera patient; 7th, to prevent the men from visiting the contaminated surrounding localities until the extinction of the choleraic epidemic. The result of these measures was that, during the course of the following days, eight or ten cases of intense diarrhœa having been discovered and properly treated, no fresh case of confirmed cholera manifested itself in the barrack. On many other occasions, Mr. Budd made use of this method of disinfection, and always with the same favorable result. According to Dr. Cornish, it has been proved that in one of the hospitals at Madras, after choleraic stools were treated by disinfectants, the disease never once spread in the hospital. In the same pamphlet by Mr. Budd, in which these cases are related (Memoranda on Asiatic Cholera, its mode of spreading and its prevention, 1865), a planter of the Island of St. Vincent is spoken of who, by measures of disinfection, preserved his negroes almost entirely from the ravages which were being made in the neighbouring possessions; as soon as cholera appeared amongst them, he placed them under tents and caused the *dejecta* of the sick to be thrown into a trench dug in the earth and furnished with a large quantity of chloride of lime. There is no doubt that in the grounds of this planter the manifestation of cholera was very slight, while the surrounding grounds were decimated and some almost depeopled.

We are now about to pass in review the different methods of disinfection applicable to cholera.

I. *Ventilation*.—The exposure of contaminated objects to the fresh air has always been rightly considered one of the most efficacious means of disinfection;

4th.—Means of disinfection.

\* Haupt-Bericht über die cholera-Epidemie des Jahres 1854 im Königreiche Bayern.

we may judge of its utility particularly by the fatal results observed in contrary cases where contaminated articles have been deprived of ventilation and kept shut up when, as experience has taught us, contaminated objects retain for a very long time the property of spreading the disease, as has been shown in the General Report. But it is evident that this method, which should not be neglected in any case, cannot everywhere be applied thoroughly and easily; thus nothing is so easy as to purify linen by exposing it to fresh air, but nothing is so difficult as to sufficiently ventilate the interior of a ship. Moreover, this method is not altogether devoid of danger, unless surrounded with certain precautions, for persons who might find themselves within a certain radius of the place where the objects to be purified are exposed would run the risk of being infected by the choleraic germ evolved from them. As to the time necessary for a complete purification by ventilation, it would depend on several conditions, which could not always be precisely indicated beforehand: for instance, it would depend on the more or less perfect accessibility to the air of the contaminated objects on their texture, and on certain other physical qualities making the morbidic germs adhere to them more or less intimately and causing the air to penetrate more or less easily, &c. We think, however, that, considering the pronounced tendency of the choleraic germ to volatilisation (see the General Report), in the most favorable cases, some days, eight at most, would suffice for complete purification. It remains to be added that ventilation would never allow us to dispense at the same time with having recourse to other methods of disinfection wherever they are applicable.

II. *Calorification*.—A greatly elevated temperature has been considered to be one of the best means of destroying the morbidic germs, and this opinion is based specially on the observation that certain contagious diseases, like the plague, have never passed the tropics. Nevertheless, in regard to the choleraic germ, it does not appear that a very elevated temperature has the same destroying effect, cholera having manifested itself under all conditions of temperature, and having even appeared to prefer an elevated temperature. Now, in order to be able to rely on the disinfecting effect of heat, it would be necessary to raise it to a degree which would destroy all organic matter: it follows that calorification, to be undoubtedly efficacious, should reach *combustion*: and so the destruction by fire of infected articles has always been put in practice wherever other means of disinfection are not very well applicable. It is very probable, however, that a degree of heat closely approximating to combustion, the heat of an oven for instance, may also destroy the choleraic germ; but hitherto this has been simply a hypothesis, so that we should never confide too much in this method. Dr. Henry, of Manchester, thinks that a temperature above 200° Fahr. (94° centigrade) destroys the morbidic germs.\*

III. *Immersion in water*.—Prolonged immersion in water certainly disinfects contaminated articles, provided the water is constantly renewed

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\* Dr. Henry has disinfected the linen of patients suffering from scarlatina by a temperature of 212° Fahr. (100° centigrade); the woollen clothes of the patients were exposed for twenty-four hours to a heat of 144 to 167° Fahr. (62 to 75° centigrade) and worn for 14 days by 56 persons without any injurious result. *Parker's Manual of Practical Hygiene*, 1866, p. 82.

as is the case, for instance, when the objects are immersed in the running water of a stream or in tow of a ship. It must not be lost sight of, however, that contaminated articles are disinfected by this means only at the cost of the contamination of the water itself, which receives the choleraic germ without destroying it, and that, therefore, this method may, in certain cases, become all the more dangerous in proportion to the larger quantity of contaminated articles and the smaller quantity of water in which they are immersed. Every body knows indeed to what danger washerwomen are exposed by simply washing linen. It has been shown in the General Report that the contamination of the water of a stream may become fatal in many ways, and that the contamination of the sea water of a port is dangerous to ships anchored there, &c. From all this it results that immersion in water, while being one of the most powerful means of disinfection, cannot be practised except under certain conditions and with certain precautions which may easily be discovered from what is about to follow.

IV. *Chemical agents.*—Numerous and various chemical agents have been recommended for disinfection; the most ancient and the most primitive are fumigation by the combustion of certain vegetables, especially aromatic herbs, the evaporation of vinegar, immersion in vinegar, &c. These means cannot be considered as efficacious disinfectants; the first most frequently only disguise the foetid odors, and the others, like vinegar, act principally by washing and perhaps also by acetic acid; these methods, therefore, can scarcely be reckoned upon, and they can only remain in practice as useful auxiliaries to methods of disinfection.

Amongst chemical disinfectants, that which has enjoyed the greatest reputation and which has attained to almost general use, is *chlorine* evolved in a gaseous form by various familiar chemical processes. People were not content with considering it as a sure mode of causing the almost immediate disappearance of putrid emanations from infected places, but also attributed to it the virtue of destroying all miasma and contagion, and of thus being a powerful prophylactic against the plague, typhus, scarlatina, small-pox, &c. Cases have even been brought forward in which epidemics of prison typhus are said to have been suppressed by the vapors of chlorine. Nevertheless, the exaggerated hopes which attached themselves from the very first to the use of chlorine, were no longer sustained as soon as everyday experience demonstrated that it is only of very limited utility as compared with the great results expected from it in the first moments of infatuation. At present, if it still remains uncertain whether it has or has not some sort of action on the morbid germs, it is at any rate very positive that there is not a single conclusive fact proving that chlorine can prevent the propagation of any contagious disease whatever. As for its action on putrid emanations, it is better supported by proven facts, in this sense that the evolution of chlorine causes the somewhat certain disappearance of infectious odors in confined spaces by resolving itself, in combination with the odors, into inoffensive chemical combinations. Thus it rapidly decomposes sulphuretted hydrogen, ammonia, sulphuret of ammonia, protophosphoretted hydrogen,

&c., but even here we cannot altogether suppress the question whether this disinfecting virtue is not illusory, the strong impression that chlorine exercises on the sense of smell weakening the sensibility of the latter, in other words whether we do not mask one odor by another. To this it must be added that chlorine is a very intense irritant of the respiratory organs, and that consequently it is impossible to impregnate the atmosphere of habitations with the required quantity of a gas which is seriously inconvenient to those who inhale it. The celebrated Guytonian fumigations are simply fumigations by chlorine obtained by the mixture of three parts of sea salt and one part of bioxide of manganese, two parts of sulphuric acid, and an equal part of water. The inconvenience we have mentioned resulting from the vapors of chlorine is, no doubt, one of the causes of its very limited use at present, and chloride of lime has been substituted for it in daily use. This preparation is made use of in the first place with the same object of the purification of the air either by causing a rapid evolution of chloric gas by the addition at intervals of small quantities of sulphuric acid, or by exposing it as it is in earthen vessels permitting of a slow evolution of the gas. Now, as for chloride of lime as a purifier of the air, we have nothing to add to what we have already said of chlorine, except that its action will be more uncertain in proportion to the more feeble evolution of chlorine. But the disinfecting action of chloride of lime does not end here; it would appear, on the contrary, that the lime which enters into this composition gives it its chief value as a disinfectant employed directly on the objects to be disinfected. In this case it is essential that the latter should be well penetrated by it, which is not possible if the object to be disinfected is itself liquid, or if the chloride is diluted with a certain quantity of water. The *liquor of Labarraque* is a solution of hypochloride of soda made use of for sprinkling the places or objects to be disinfected.

*Quicklime* is a very useful disinfectant, for, besides its chemical action on organic matter, it enters into them, solidifies them at the same time, and thus prevents the evolution of the emanation. It absorbs with avidity water and the aqueous vapors of the atmosphere with every thing they hold in suspension, without becoming liquefied itself, and evolving a great deal of caloric in the operation. Let us hasten to add, however, that the lime has the great inconvenience of favoring the evolution of ammonia, and that in general it only delays the work of putrefaction without completely preventing it. Lime mixed with water is more generally used, and for certain purposes no other method can be substituted for it, as, for instance, whitewashing. *Charcoal dust* is a very good disinfectant; it absorbs every gas without distinction, and at the same time decomposes some; it promptly attracts the emanation contained in the atmosphere; while still fresh it can take in, it is said, from 15 to 20 times its own bulk of these emanations, and the absorption and decomposition continue for two or three weeks. We shall see further on that charcoal is one of the best disinfectants of sewers. Various combinations of the two last substances have also been proposed as very useful. Thus Dr. Squibb, of Brooklyn, proposes a disinfecting powder composed of two parts of quicklime to one of charcoal, well

preserved in hermetically sealed casks. Thompson's disinfectant consists of six parts of charcoal to two parts of lime, with ashes and salt in smaller proportions. *Dry earth*, especially marly and clayey earth, act in an analogous manner; they destroy bad odors. *Peat* absorbs the constituent elements of ammonia, and thus forms the best disinfectant of urine.

The *mineral acids*, nitric, sulphuric, and hydrochloric, are disinfectants by their antiseptic action. The vapors which are evolved from *nitrous acid* either by adding nitrate of potash to sulphuric acid, or by placing a piece of copper and a little water in nitric acid, enjoy a great reputation and have been eried up not only as purifiers of the air, but also as being true anticontagious agents. However, the irritation they produce in the respiratory canals necessarily limits their use, and, after all, they have only partially justified the confidence reposed in them. Ramon daLuna assures us that nitrous acid has really a preservative power against cholera, and that of those who made use at Madrid of nitrous fumigations not one was attacked. But this negative result would not be of much value till confirmed by experiments made on a larger scale. (Parke's *Manual of Practical Hygiene*, 1866, p. 85). Smith's method of fumigation is nitric fumigation obtained in this manner: sulphuric acid, water *ana* 15 mix, hold the mixture over live embers and add gradually nitrate of potash 15. This dose may disinfect a space of 120 cubic metrs. The same remarks apply to *sulphurous acid*, obtained by the combustion of sulphur. In cases where it may be employed without incouvenience, it is, nevertheless, a useful method to oppose to putrid emanations, and it is of especially easy application, though it is not very certain that it destroys miasma and contagion, as many medical men still believe.

*Carbolic* or *phenic acid*, which forms the base of *coal-tar* and of the impure *creosote* of commerce,\* is an antiseptic which has been largely employed of late. One part of impure carbolic acid is mixed with 50 or 100 parts of water. Lemaire has studied the disinfecting properties of this acid: a hole of 2.21 cubic metres in capacity, into which two or three millimètres of coal-tar had been put, was filled with solid and liquid excrement. In a few minutes the odor of the excrementitious matter had entirely ceased, and was not perceptible two months afterwards (in summer). A pail capable of containing 250 pounds of water was smeared on the inside with coal-tar, filled with excrement, and then buried in dung. Six months afterwards no other smell but that of the coal-tar was perceptible. Lemaire proposes to impregnate bran with a solution of the acid and scatter the bran about under the bed clothes of cholera patients: but good ventilation must be introduced at the same time. During the epidemic of 1865 at Marseilles, very extended use was made of diluted carbolic acid (1 in 100).

\* Carbolic or phenic acid, discovered by Bunge, is produced by the distillation of coal-tar; we may add that it is also found in creosote. What is generally sold under the name of creosote is often only impure phenol, but the true creosote, extracted from wood-tar by Reichenbach, has characteristics clearly separating it from this composition. (Malaguti. *Loccus Elementairés de Chimie*. Paris: 1863, pp. 424 and 440).



for the disinfection of ships. It appears to contain something which bites into the organic part of vegetable fibre, which is easily impregnated by it, and the texture of which it appears to harden. As for iron ships, it has this advantage over chlorine, that it does not exercise the same destructive action on the metal. Carbolic acid enters also into the composition of McDougall's disinfectant, which is greatly esteemed in England; the sulphates of lime and magnesia are mixed with the products of the tar and with impure phenol, and the carbolates of lime and magnesia are thus obtained.

*Permanganate of potash* is considered to be a powerful antiseptic as well as an efficacious disinfectant, but it is very little used on account of its high price. For the disinfection of the air of apartments, American physicians saturate pieces of cloth with a strong solution of this preparation and allow it to evaporate. It is very useful in purifying water from organic matter by simply adding a few drops of the solution until the tint of the permanganate appears in the water. On shaking it, the water becomes perfectly limpid and inodorous, while the minute quantity of permanganate added, far from having any inconvenient results, rather renders it tonic.

*Sulphate of iron* is, perhaps, more frequently employed at present than any other chemical disinfectant against choleraic infection, and the results hitherto obtained are rather in its favor. Dissolved in water in the proportion of one to eight, it serves as a local disinfectant by preventing emanations from putrid gases, and thus rendering inodorous the infected matter treated with this solution. What also facilitates its general use is the moderate cost at which it is obtained.

*Chloride of zinc* is without doubt greatly superior to sulphate of iron. A concentrated solution of this salt thrown upon the organic matter to be disinfected rapidly carries off all traces of infectious odor, and—in which consists its superiority—it destroys all organic matter by its powerfully corrosive action. The only obstacle to its general use is its high price.

Experiments have often been tried with *essential oils*, especially those of turpentine and juniper, as disinfectants of the air, during the recent cholera epidemics. The Bavarian report on the epidemic of 1854 cannot show any real advantage derived from the vapors of the oil of turpentine and juniper whether employed in private dwellings or in hospitals.

We have hitherto enumerated the principal chemical agents employed with the object of disinfection, but these are not all; a host of other preparations of zinc, of iron, of lead, of lime, of soda, of pyroligneous acid, &c., have been recommended, which it would not be futile to consider in detail. It need not be said that theory has not sometimes failed to occupy the principal part in these recommendations. For instance, the theory has been upheld of the disinfection of the air of apartments by assisting the formation of ozone in them, a result

which it was hoped to obtain by the exhibition of bits of phosphorus partly immersed in water. Nobody will trust himself implicitly to this method of disinfection.

The value of all the various chemical agents which we have just partially passed in review is not the same. Those which deserve most confidence belong to the class of caustics which profoundly injure organic matter, as for instance, chloride of zinc. Then follow preparations or substances which neutralise putrid emanations by absorption, such as the sulphate of iron, quicklime, chloride of lime, charcoal, &c. As for the chloride of lime, however, it would appear that its disinfecting power has been slightly exaggerated by relying on its property of very easily destroying colors. Now, those who are in the habit of making *post mortem* examinations, are only too well aware that chloride of lime only imperfectly removes the odor of the corpse from the hands of the operator. It is true it disguises it at first, but after the evaporation of the chlorine, the odor is again very sensible. As for *fumigations*, whatever their nature may be, their value is, no doubt, most open to dispute; for it is very difficult, on the one hand, to cause the gaseous emanations to penetrate everywhere, and on the other hand the efficacy of these emanations is anything but proved.

In general, the chief end of disinfection as applied to cholera should be much less to purify the contaminated air of a focus than to prevent such contamination by acting energetically against the receptacles of the choleraic germ. It is very probable, as we have already observed, that this end is not beyond our means. It is scarcely, however, by the application of one method in preference to another that we will arrive at it, but rather by the intelligent combination of several of the agents passed in review; in other words, by a method of disinfection. We are, therefore, now about to take up the subject of methods of disinfection in their practical application.

*Disinfection of choleraic dejecta.*—It appears well demonstrated at the present day, as has been shown in the General Report, that the choleraic germ is supplied from choleraic *dejecta*, and perhaps vomited matter, and from them alone probably. It is asserted besides as very probable that the germ is not evolved from recent *dejecta*, and that the danger commences at the moment when a certain degree of decomposition and evaporation is established. It follows that it would be of the highest importance to prevent in time the putrid decomposition and evaporation of *dejecta* and vomited matter; a result which may be obtained, if we subject these *dejecta* to the action of certain chemical agents at the very moment of their evacuation: so that the vessels intended to receive the *dejecta* should already contain the chemical preparation, and it would suffice then to agitate the whole mass with a stick so as to allow no portion to escape the action of the disinfectant. The best preparation applicable in this instance appears to us to be a strong solution of chloride of zinc, of which Dr. Budd has made use with constant success. In the absence of this preparation, solution of sulphate of iron

(one in eight parts of water), the use of which is more general, may be employed: M. Pettenkofer adopts this method. Dr. Squibb, in America, recommends that a preparation should be placed in the vessels intended for the reception of the *dejecta*, consisting of salt and the bioxide of manganese, on which a little diluted sulphuric acid should be thrown. He thus trusts to obtain at the same time the disinfection of the *dejecta* by means of the residue of the chlorine, the sulphate of protoxide of manganese and the sulphate of soda which are formed, and finally by the excess sulphuric acid; 200 grains of these salts and half an ounce of diluted sulphuric acid would suffice to disinfect one dejection.\* We do not think that this method is worth as much as either of the other two abovementioned, and it is evident that the active evolution of the chlorine may render it altogether inadmissible, especially if the frequency of the evacuations of the number of sick render it necessary to have frequent recourse to it. A simple and efficacious method of disinfecting choleraic *dejecta* is to cover them *immediately after their deposit* with quicklime, but it should be sufficiently abundant to absorb the liquid portions entirely. In carbolic acid, or coal-tar, we have another agent, considered very effective. It is needless to say that if we have the choice of many preparations, we must yet never employ more than one, or chemical combinations would arise neutralising the result already obtained, and *dejecta*, after being disinfected in some way, should never be thrown into latrines which have not previously been completely disinfected, for otherwise the action of the disinfectant, having to be exercised on a larger quantity of excrementitious matter, would, of necessity, be weakened. Let us also observe, in passing, that it is always best to bury the disinfected *dejecta* of cholera patients in isolated places, and with the necessary precautions to avoid the contamination of water.

The disinfection of *latrines and sewers* is effected in accordance with the same principles, but its efficacy varies according to the system of sewers in use, for in fact the only system permitting of complete disinfection is that of movable cesspools. In this case, the empty pans should already contain the preparation preferred, *e. g.*, the solution of the chloride of zinc, of sulphate of iron, or coal-tar, and the same preparation should be thrown into the latrines as often as circumstances require. If it is desired to throw already disinfected *dejecta* into the latrines, care should still be taken always to make use of the same disinfecting substance. As for the system of immovable cesspools, these same disinfectants should be made use of, and they should be thrown into the latrines as often as possible; but in this case one can never be quite sure that the excrementitious matter in deposit in them has undergone the required chemical change, and consequently it becomes necessary, in addition, to prevent the evolution of the putrid emanations which continue to form, by other means, by a supplementary measure, *i. e.*, by casting charcoal dust in abundance into the latrines. But if finally the latrines consist of a system of pipes and tubes, then the

\* The Medical Record. New York: May 1866.

same method no longer possesses such efficacy, for it would be altogether impossible to act by chemical preparations on such an enormous quantity of excrementitious matter contained in pipes which have a crowd of intercommunications. Here the best means would be to cause the decomposition and absorption of the emanations which are evolved by large quantities of charcoal dust and quicklime frequently thrown into the latrines. Here again coal-tar would perhaps be found useful in application.

The disinfection of latrines and sewers has been practised not only during the presence of cholera in a locality, but also before its appearance there, as a prophylactic measure, and there are already some facts inclining strongly in favor of this mode of action. The disinfection of the latrines and sewers of a locality should then be commenced as soon as it is threatened with an invasion of cholera, and it should be continued after the manifestation of the disease. Only it would be idle to expect a favorable result if the disinfection is not practised on a large scale: in a word, it should be general. For this reason it is very important that the authorities should instruct the people on the utility and practical application of measures of disinfection, and that they should furnish the poorer classes with the necessary agents *gratis*.

The disinfection of *drinking water* is all the more necessary during an epidemic of cholera, or when an invasion is threatened, if the water is not of the first quality. The best method of disinfection is filtration by means of vegetable charcoal. A solution of permanganate of potash is also recommended as an excellent disinfectant of water, the addition of a few drops only being necessary for the attainment of the desired result. Lastly, water is disinfected by simple boiling, but this method does not appear to us to be always sufficient.

*Disinfection of dwellings.*—More or less extended, more or less severe measures must be had recourse to accordingly as it is desired to apply the disinfection as a merely prophylactic measure, or to destroy a choleraic focus already in existence. In the first case, measures of ordinary ventilation, a continued disinfection of latrines, and, simply as an auxiliary, chloride of lime contained in small, flat, earthen vessels and exposed in apartments, will suffice to maintain the salubrity of the air. But if a dwelling infected by cholera is in question, while recurring to the same sort of means, we must endeavor to augment their efficacy by more thorough application. Thus, in order to render ventilation more complete, we should not limit ourselves merely to keeping the windows and doors open for many days together and almost continually, but we should also try to establish currents of air by elevating the temperature inside the house by means of heated ovens or braziers of charcoal placed in the different rooms; the disinfection of the latrines should be carried on with still greater perseverance; the entire inside of the house should afterwards be sprinkled and washed, walls, ceiling, and flooring, with a solution of chloride of lime and carbolic acid; after which fumigations should be practised in accordance with the directions of Guyton, or, more simply, by burning sulphur, care being taken to make the

vapors penetrate everywhere, which result will be more readily obtained if the operation is performed in the cellars or at least on the lower flats, the doors and windows being kept close. After having employed these means alternatively and for many days in succession, the disinfection should be completed by whitewashing the walls with lime and washing the ceilings and floors with water copiously used. We think that, on the average, not less than eight days will be required for the complete disinfection of a dwelling contaminated by cholera, for it is never to be forgotten that we are not at all certain regarding the direct action of our agents as opposed to the choleraic germ, and that the principal part to be performed will always devolve upon *prolonged* ventilation. It need not be said that large buildings, barracks for example, are more difficult to disinfect than private dwellings, and that on every occasion measures are to be taken adapted to each particular case.

*Disinfection of effects, clothing, and merchandise.*—The propagation of cholera by contaminated articles of personal use being a fact proved by experience, the disinfection of such articles should be especially cared for. *Contaminated linen and bedding* should not be given out to wash before having undergone an operation of disinfection. With this object it would be well to have these things immediately immersed in water containing chloride of lime, or hypochloride of soda, which is known not to injure linen in the slightest degree, and to leave them there for at least four-and-twenty hours, after which they may be sent to the wash, in which carbonate of potash and soap should be used, as in the ordinary way. They should be dried in the open air and left exposed to it for the time strictly necessary to dry them completely. For greater certainty the operation may be completed by boiling. The experience of last year in the hospital of the Imperial Marine at Constantinople would appear to be in favor of this method. In the course of the first few days after the appearance of cholera in that hospital, a washerman was attacked by the disease and died. Recourse was then had to the use of chloride of lime in the manner indicated, and from that moment not one of the washermen caught the disease. Dr. W. Budd makes use, with the same object, of a solution of chloride of zinc. But all contaminated articles in domestic use are not equally affected by the chemical agents indicated; some are seriously injured by them, others are too thick or too voluminous to permit of their being subjected to this process. In this case, destruction by fire is the best course, and recourse should be had to it whenever circumstances permit. Straw pallets, mattresses, coverings, woollen clothing, belong to this category; but if circumstances do not admit of their destruction, they should at least be exposed to the action of very great heat. We have already remarked that Dr. Henry, of Manchester, believes that he has proved that a heat above 200° Fahr. (250° for instance) would suffice for the destruction of the morbid germs. Now, for the purpose of carrying out this operation, well closed rooms might be constructed or ovens heated by hot air conducted through pipes. After having subjected these effects, during 24 hours, to a degree of heat like that just mentioned, they should still be exposed for some days to the open air. In

general, the means of disinfection to be employed in every case will depend in great measure on the conditions presented by the objects to be disinfected. Thus, articles which have been made use of by cholera patients, unwashed linen, dirty clothing, demand the application of the most rigorous means, and especially destruction by fire as often as circumstances will permit; while, in regard to articles presenting themselves under opposite conditions, it will often suffice to expose them to the open air for a series of days. As for clothes, they belong naturally to the first category; it is necessary, therefore, to submit them, like the linen of cholera patients, to the action of chloride of lime or chloride of zinc; and to be more certain still of the result, this operation may be repeated for two or three days, after which they should be exposed to the open air. But, as we have already observed, these operations cannot be applied to every kind of wearing apparel indiscriminately, and it is then especially that it becomes necessary to have recourse to fumigation by sulphurous acid, &c.

The General Report shows that hitherto no fact has been brought forward in support of the propagation of cholera by merchandise, though that it is possible cannot be denied. In point of fact, the contamination of goods, as new articles which have not been used, is not very probable, and prolonged ventilation for some days would then ordinarily suffice to obviate all danger. In certain cases, however, ventilation may be aided by calorification by exposing them to a higher temperature than 200° Fahr. In other cases, if the probability of contamination is greater, to these means may be added, if it can be safely done, fumigation by sulphurous acid in a hermetically closed space, or the goods might be immersed in solutions of chloride of lime or chloride of zinc.

*Disinfection of ships.*—The measures of disinfection to be adopted in order to prevent the contamination of ships, are sufficiently simple. Extreme neatness, good ventilation through the hatchways, &c., joined to the most scrupulous cleanliness in the well, are all that are there required. The water in the hold should be emptied out every day, but only after its previous disinfection by a solution of sulphate of iron, or by some other disinfectant of equal efficacy and not injurious to the ship. A composition of one part of carbolic (phenic) acid to nine parts of vinegar with a little camphor, has been praised as a useful disinfectant of cabins. But it is not the same thing when the question is to disinfect a ship contaminated by cholera. In this case the disinfection often becomes an excessively difficult operation, particularly when ordinary merchant vessels are concerned, for they most frequently contain the very worst hygienic conditions. M. Mélier, in his memorandum on the yellow fever at St. Nazaire, in 1861, has shown how difficult it is to completely disinfect a ship under such conditions, and what laborious operations must be had recourse to in order to achieve that object. Now, we think that measures of disinfection in regard to ships contaminated by cholera should be based on the same principles which have guided the disinfection of ships contaminated by yellow fever. Nevertheless, we must not lose sight of the existence of an essential difference between contamination

by yellow fever on the one hand and contamination by cholera on the other, a difference which makes us hope that we shall be able to arrive, in our case, at complete disinfection. It is proved by numerous facts that yellow fever adheres with remarkable tenacity to ships and especially to the hold, and that, notwithstanding the perfect health of the crew, a ship may contain the morbid germ and retain it in spite of the measures taken for its destruction. Now, no analogous facts exist with regard to cholera. Instances have indeed been known of epidemics of cholera which have caused great ravages on board crowded vessels, but in the course of some weeks, at furthest, these epidemics have ceased never to re-appear. These facts form a general rule, for we have seen that the choleraic germ is of limited vitality and easy of volatilisation. It does not follow, however, that, under peculiar conditions of uncleanness, want of ventilation, &c., a contaminated vessel may not retain the choleraic germ for a longer time and become dangerous to persons who have not acquired immunity by a sojourn in a choleraic focus. We would say then that, though the disinfection of ships contaminated by cholera may present itself under the most favorable conditions, it should nevertheless be practised with the greatest care. These measures of disinfection will be more or less rigorous, *1st*, according to the degree of intensity of the first focus manifested on board; *2nd*, according to the lapse of time since the departure of the vessel from an infected port; and *3rd*, according to the degree of health on board. But as these questions more specially appertain to the Commission charged with the study of measures of quarantine, we shall limit ourselves here to some general remarks, so as to pass immediately to the disinfecting operations necessary in cases presenting themselves under less favorable conditions.

Under the most favorable conditions, for instance, in the case of a packet boat of a navigation company, which during its passage, has had no cases of cholera on board, especially if the passage has not lasted for more than 10 days, the preventive measures of disinfection already detailed will suffice. But if cases of cholera have occurred on board during the passage of a vessel which, for the rest, is in a favorable condition of salubrity, the disinfecting operation should be completed by the washing of every part of the vessel, and specially of the hold, with a solution of chloride of lime or of phenic (carbolic) acid, which must be made to act by means of pumps on parts difficult of access, and white-washing with lime, and, if necessary, re-painting. It need scarcely be said that the cabin or other part of the vessel where the cases of cholera occurred demands most special attention in this connexion, and that the linen, bedding, and all the effects of the patients should be treated in accordance with the rules laid down elsewhere. To come now to the most difficult case: Suppose a sailing vessel, laden with merchandise, and in conditions of insalubrity such as they exist in different degrees on board all ships of this class; suppose, moreover, that cholera has raged, and still rages, on board: in this case the disinfecting measures should commence with the unloading of the vessel, effected with every precaution necessary to prevent the infection of the persons employed

in the unloading: this operation is called *sanitary unloading*. The first question presenting itself here is this: should not the unloading be carried on by the crew itself without any assistance from persons yet free from infection? We reply affirmatively if cholera no longer exists on board, provided, of course, the number of the crew is not absolutely insufficient: under these conditions, the best course would be to effect the sanitary unloading by the crew itself under the direction of competent persons. But if cholera still exists on board, or if the crew is not large enough to do the work, there must be no hesitation in first of all landing the crew with the object of subjecting the men themselves to disinfecting operations and others necessitated by circumstances. The unloading and disinfection should be effected in places kept free from any sort of communication, the ship being anchored, in the first place, as far as possible from shore. After having thrown a solution of sulphate of iron and of carbolic acid into the hold, as complete ventilation as possible should be established by the opening of all the hatchways, &c., and by putting up ventilating hose and tubes, as well as by the partial removal of the accessible portion of the cargo. Then the decks, sides, and in a word, every accessible part of the vessel, as well as the goods, if their nature will admit of it, should be sprinkled with a concentrated solution of chloride of lime, watering engines or pumps being made use of so as to reach every hole and corner with greater facility. One or two days should then be allowed to pass in order to give full play to the effect of the ventilation, after which the first layer of goods must be unshipped and the second one removed; the places now made accessible must be sprinkled afresh as above, and so on until the complete unloading of the ship. As a general rule, the unloading should proceed rather slowly and by intervals, so as to diminish the danger to the men employed in the work of the unwholesome emanations, unless indeed other imperious causes exist necessitating contrary proceedings. The men just mentioned should be guarded with the minutest hygienic precautions: they should be well nourished and allowed intervals of rest and recreation; they should never pass the night on board; their clothes should be changed whenever they leave the ship after working hours; in a word, they should not be exposed to the focus except for the time strictly necessary for work; the use of *respirators* of vegetable charcoal has also been recommended under these circumstances. As soon as the unloading is completed, the well must first of all be taken in hand. First, pure water, to which may be added carbolic acid or chloride of lime, should be poured into it in abundance. The motion caused by the wind and sea in the vessel, having partly dissolved the filth in the hold, the pumps must be set to work; more clean water must be thrown in and emptied out again, and so on in succession until the water brought up by the pumps is as clean as when it was poured down. The condition of the inner sides of the vessel must then be carefully seen to, and if the space between the inner and outer sides be found to contain organic matter in a state of putrefaction, it must be cleared out, after the injection of chloride of lime or carbolic acid. This is a very difficult operation, which should be entrusted to a ship builder; and it will often necessitate the partial removal of the planking. Finally the disinfection



should be completed by fumigations of sulphurous acid, scrapping, washing with large quantities of water, which may be mixed as mentioned above, and whitewashing. In place of scrapping, disinfection by the *flame of gas* has been lately recommended. By means of an apparatus a flame of gas is made to act successively on all parts of the interior of the vessel until a slight degree of carbonisation is obtained: it is no doubt a very efficacious mode of disinfection. The painting of the interior of the vessel in oil may also be employed as a useful adjunct to disinfection. It need not be said that every article found in the various recesses of the ship during these operations should, according to circumstances, be either destroyed or disinfected. In the most extreme case, where the infection is such, that it becomes a doubtful question whether these measures will be of any use, the question arises of the destruction by fire, or of the submersion of the ship. In disinfecting the *Anne Marie*, which became a focus of yellow fever, M. Méliér caused the disinfection of the hold to be preceded by submersion, so effected as to permit of the ship being raised afterwards without danger. At a certain well calculated height in the sides of the vessel, the elevation to be decided by a ship builder, openings are made after bringing the vessel close in-shore; at high tide the water enters through these openings and washes the entire hold, and then partially retires at ebb tide. Now, as the tide comes in twice a day, this washing takes place twice a day, and the ship should be left in that position for several days, after which the openings should be closed as soon as the tide begins to ebb and the ship will easily float again when high tide comes in. The water in the hold should be pumped out and disinfection proceeded with according to the rules laid down. The name of *portholing* (*sabordement*) has been given to this operation. It is evident that this operation can only be effected in places where the tide ebbs and flows as mentioned above. Now this is not so everywhere, and the measure cannot be carried out, for instance, in the Mediterranean. Let us hasten to add, however, that for reasons already set forth, there will rarely be any occasion to have recourse to such stringent measures in connexion with ships contaminated by cholera. Submersion, moreover, is always seriously injurious to the vessel, under whatever conditions it may be effected, by causing a degree of humidity very difficult to be remedied.

And now, after having studied disinfection in all the details of its application, a word remains to be said regarding the question whether it is possible by this method to extinguish primary foci of importation. Now, positive facts lead us to believe that this possibility exists, provided these foci are still few in number, and that the complete isolation of the foci comes to the aid of measures of disinfection. As for these last, to be methodical, they should commence as much as possible with the source of emission of the choleraic principle, *i. e.*, with the *dejecta*, linen, &c., of a cholera patient; next should come the chamber occupied by him, with everything contained in it, and finally, the entire house.

And here we draw the following conclusions as a corollary of the 6th. Conclusions. preceding considerations:—

*Disinfection applied to cholera in a rational manner and perseveringly offers itself as a powerful auxiliary: 1st, in the diminution of the receptivity of a locality menaced by cholera; 2nd, in the destruction of the germ of the disease; and 3rd, in the limitation, under certain favorable circumstances, of the extension of an epidemic.*

[*Annexure to Minute No. 9*]\*

Report to the International Sanitary Conference on the questions of the programme, relative to the origin, endemicity, transmissibility, and propagation of Cholera, made by a Commission composed of MM. le Comte de Lallemand, le Comte de Noidans and Segovia, *Diplomatists*, and of Drs. Bartoletti, Bykow, Bosi, Dickson, Fauvel, Goodeve, Gomès, Baron Hübsch, Lenz, Maccas, Millingen, Monlau, Mühlig, Pélikan, Polak, Salem, Salvatori, Sawas, Sotto, I. Spadaro, and Van-Geuns, *Physicians*.

DR. A. FAUVEL, *Reporter General*.

GENTLEMEN,—Before proceeding to detail to you the results of its labors, the Commission thinks it right to let you know how it has proceeded, so that you may be able to appreciate the care it has taken to elucidate the numerous questions confided to it for examination. The Commission in the first place organized itself, choosing Dr. Bartoletti for President, and the Comte deNoidans and Baron Dr. Hübsch for Secretaries. Then, to facilitate operations, it divided itself into six sub-committees or Sections, each having a distinct task assigned to it.

*First Section:—President, M. Segovia; Messrs. Goodeve, Polak, VanGeuns; Pélikan, Reporter.*

The first Section, composed of five members, was directed to reply to the questions comprised in the first group of the programme, on the origin of Cholera; *i. e.*, to elucidate the important and difficult questions of the endemicity and epidemicity of this disease in India.

*Second Section:—President, M. deLallemand; Hübsch, Pélikan; Mühlig, Reporter.*

The second Section was to occupy itself with the facts relative to the importation and transmissibility of the disease: its field of study comprised the three first paragraphs of the second group of questions.

*Third Section:—President, M. Sotto; Messieurs Monlau, deNoidans, Sawas; Maccas, Reporter.*

The third Section was to study more particularly the circumstances of the transmission; how and by what intermediate means Cholera can be transmitted in a word, what are the agents of transmission.

\* The Conference decided in its sitting of the 2nd July (Minute No. 22), that the present Report should be re-printed, the modifications adopted by it being shown in notes.

This Section, in addition, was to discuss the question of immunity, considered with reference to certain countries, to certain localities, and to individuals dwelling in the midst of a choleraic focus.

*Fourth Section:—President, M. Gomès; Fauvel, Salem; Lenz, Reporter.*

On the Fourth Section was imposed the task of establishing the influence of assemblages of men on the violence of Cholera epidemics as well as on the propagation of the disease. It had to enquire into this influence wherever it might exist, on board ships, in lazarettos, in connexion with armies, fairs, pilgrimages, in short in connexion with all assemblages. And on the other hand it had to determine the influence of dissemination under all points of view.

It had also to take in hand the hygienic conditions regarded as concurrent causes in cholera epidemics.

*Fifth Section:—President, M. Millingen; Dickson; Bosi, Reporter.*

The fifth Section had to review all the facts acquired for the purpose of deducing from them, as far as possible, a doctrine in connexion with the attributes of the generating principle of cholera, looked at in a prophylactic point of view.

*Sixth Section:—President, Dr. Goodeve; Bykow, Salvatori; Bartolletti, Reporter.*

Lastly, the sixth Section had to give a general review of the march and propagation of cholera in 1865.

This simple enumeration, which gives an idea of the importance of the numerous questions to be solved by the Commission, sufficiently explains why almost two months have elapsed since its first sitting to the completion of its task. During this lapse of time the Commission has devoted no fewer than nineteen full sittings to the discussion of the partial reports elaborated by the Sections. All the questions proposed have been handled with the greatest care and an entire absence of bias, and with no other wish but that of arriving at the truth by a rigorous deduction from facts. The Commission has never lost sight of the practical end of its studies, and has, therefore, strictly avoided introducing any speculative theories into its discussions. It has not forgotten that its labors should serve as a base to prophylactic measures; and as it is convinced that the greater part of the conclusions it has recorded can, in point of fact, conduce to the application of very important measures, it regrets neither the time nor the trouble it has devoted to their solid establishment.

The Commission did not rest content with the first elaboration, necessarily somewhat incoherent, which resulted from the discussion of the partial reports; it desired that these scattered elements should be reunited, arranged in order, and condensed into a general report, which should be the expression of its judgment, and to which the partial reports, with their annexures, should serve as justificatory documents.

It is this labor of uniformity adopted by it, that the Commission has the honor of submitting to the Conference, a labor which, as may be seen, is the result of three successive discussions.

The Commission is, therefore, not afraid of being accused of having pronounced its judgment lightly and without examination: it is conscious of having proceeded with all suitable deliberation, and if it has not succeeded in solving all the problems placed before it, it is because the present condition of knowledge is not such as to permit of its doing so.

#### FIRST GROUP OF QUESTIONS.

##### *Origin and development of Cholera; endemicity and epidemicity of the disease in India.*

If the Commission had been able to solve all the problems contained in this first group, it would have, in effect, attained to the principal object of the Conference, which is to seek out the origin and primordial causes of Cholera, so as to arrive at practical means of circumscribing it and stifling it at its point of departure. Unhappily it is not so. The Commission has, no doubt, been able to reply categorically to many of the questions proposed; but those which it was of the most importance to solve have remained undecided for want of sufficient documents. Nevertheless, even though remaining in doubt on obscure points, the Commission has applied itself to making the terms of the problem the solution of which interests the world more precise than they have hitherto been: and, in this, it believes it has done a thing of great utility.

And here, the Commission thinks it right to announce that it has not restricted itself to the order or the letter of the questions of the programme, the discussion having demonstrated the necessity of introducing into it certain modifications necessary for imparting greater clearness to the exposition.

#### I.

##### *Whence has Asiatic Cholera originated? And in what countries does it exist endemically at the present day?*

To reply to the first of these two questions, the Commission has not deemed it necessary to undertake fresh researches, with a view to determine whether the Cholera we see at the present day is a recent or an old disease: all that it will ever be permitted to us to know on this point has, most probably, already been said.

It is beyond question that long before 1817, and even at an epoch dating from the first establishment of Europeans in India, there had been observed in that and some of the neighbouring countries, a disease bearing the greatest analogy to the Cholera of our times, and raging sometimes under the form of violent epidemics. Thus a well known Portuguese physician, Garcia da Horta, showed the existence in India,

since the 16th century, of a disease called *Mordechin* or *Mordezin*, which, according to the description of it, as given by him, was no other than the Cholera, (*communication made by Dr. Gomez*). But, not to go back further than times of which we have precise knowledge, it suffices to call to mind that in the latter part of the 18th century (1781, 1783, 1791,) several murderous epidemics of Cholera are known to have existed in different parts of India, and sometimes in provinces very distant from each other. Such were the epidemics observed in 1783 in the north of Hindoostan, and at about the same period at Travancore in the south of the Peninsula.

But—what is equally certain and important to note,—is that, after the end of the last century, whether that the disease had become entirely extinct, or that it had escaped the attention of physicians by reason of its not being of much importance, there was no longer any appearance of epidemic Cholera in India, or elsewhere, until 1817. What is also certain is that English physicians (Dr. Tytler among others) who found themselves among the first in presence of the epidemic at Jessore, did not at first recognise the Cholera, which they had ordinarily seen in a sporadic condition, but thought they were dealing with a new disease, a circumstance which would tend to the admission that, in fact, the new Cholera differed in certain respects from the old.

Be this as it may, whether the disease of 1817 was identical or not with preceding epidemics, it is certain that from that time we see a new phase in the history of Cholera. Instead of remaining, as before, circumscribed within the provinces where it appeared from time to time in the form of an epidemic which exhausted itself on the spot, Cholera takes of a sudden an *invading* character.

It gains, from place to place, in every direction, and in a short time diffuses itself through the greater part of India, showing occasionally, in the course of its extensive progress, temporary and passing remissions. It soon steps over the limits of this country, not in one direction alone, but by every issue giving passage to human currents.

For many years this choleraic emission from India kept repeating itself. The greater number of these currents, proceeding in every direction, exhausted themselves in the course of their passage; but finally it found vent by the north-west, and for the first time made its appearance in Europe in 1830.\* This epidemic, after having ravaged the world for years, finally became extinct in every spot to which it had penetrated, with the exception of India, and perhaps also some adjacent countries; but in India itself, from the year 1817, Cholera has remained permanently established. Since that time successive observations and authentic documents prove its constant presence, either in an endemic condition in certain localities, or as an epidemic more or less general, sometimes in one, and sometimes in another province: these epidemics being repeated frequently at very short intervals. It was no longer, as formerly,

\* In 1823 Cholera had shown itself momentarily at Astrakan.

a disease that might be compared, in ordinary times, with the *Cholera nostras* of our countries, assuming at very distant intervals the form of limited epidemics; it was a disease in many respects new, having foci of emission always in active play, permanent foci whence the disease spread and propagated itself abroad under the form of invading epidemics.

This is what is most important to know; for this is what gives the Cholera of 1817 a peculiar interest for us.

What, in fact, resulted from this new state of things in India? This: that by reason of this permanent focus and the issues from it, countries near or bordering upon India became the theatre of repeated epidemics of Cholera, and that twice already, up to the present day, Cholera has succeeded in finding a way for itself into Europe, not, as has been pretended, by following one fixed direction, but by the routes which suited it best on its passage. It was thus that in 1847 it entered Europe simultaneously by two ways, the Caspian and the Black Seas, while towards the south its course was arrested in Mesopotamia and in the Hadjaz. It was thus again in 1865,—and on this occasion, thanks to the rapid means of transport, it made its appearance in a very short time and by the shortest route,—that it penetrated to the basin of the Mediterranean.

From this simple observation, based on the attentive study of facts, two conclusions are drawn, which are not disputed, viz., that the Cholera from which Europe has suffered at three different periods, had its point of original departure in India, properly speaking, and that since 1817, that country has constantly been the focus from which the disease radiates in every direction. Thus the entire Commission has been able to reply without hesitation that *Asiatic Cholera, that which at various periods has traversed the world, has its origin in India, where it first took its rise, and where it exists permanently in an endemic condition.*—(Adopted unanimously).

## II.

*Does Asiatic Cholera exist endemically in any place, out of India, at the present day?*

Although no facts have hitherto reached us to show that Asiatic Cholera has ever had its point of departure elsewhere than in India, and though it is probable that it does not exist in any other country in an endemic state and capable of giving rise to invading epidemics, yet the Commission has thought it right to establish a distinction between the countries bordering on and near India, with regard to which there are not sufficient data on which to proceed, and those countries where it is incontestable that Cholera has always come from without.

In the first category we find Indo-China, China, the Islands of the Indian Archipelago,\* and closer to us, Affghanistan, Beloochistan,

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\* The Conference adopted the following resolution in its meeting of the 14th June (Minute No. 16):—"The Dutch possessions in Indian Archipelago, with regard to which there is no suspicion of endemicity, should be excluded from the category of doubtful countries."

Persia,\* and the eastern and southern coast of the Arabian Peninsula. In fact, for fifty years, these countries have been the theatre of epidemics of Cholera frequently repeated, which, no doubt, are easily explained by reiterated importations from India; and the Commission admits that this is very probably the case; but as it has been asserted that endemic Cholera has lately manifested itself in certain parts of India, as, for example, at Cawnpore and Allahabad, where it was previously unknown, and as the same thing could very well take place elsewhere, the Commission, in the absence of sufficient data with regard to these countries, has deemed it right to remain in doubt.†

It is not so with what concerns Europe, the Caucasian Provinces, Turkey in Asia, all the north of Africa, and the two Americas. In regard to all these countries, the Commission does not hesitate to declare that Asiatic Cholera—the *invading* Cholera—never took its rise in them. Not a single epidemic of this nature can be cited as having its origin in any place whatever in these countries. On the other hand, it has always been possible to follow, so to say, from stage to stage all the choleraic epidemics which have been observed in these countries; and, in proceeding closer to their source, assign to them an Indian origin.

Doubtless, it has not always been possible to follow, without interruption, the linking of facts, and there are cases to prove that cholera, once planted in a European locality, at St. Petersburg for example, has been able to maintain itself there for several years in succession; but as

\* The Conference decided (setting of 11th June, Minute No. 15) that Persia should be excluded from this paragraph.

† The Conference decided (sitting of 14th June, Minute No. 16,) that here should be added, relative to Persia, a special paragraph thus conceived:

“The Conference does not desire that Persia should be included among the countries which have just been enumerated; it thinks that this country, on account of its geographical position, the importance of its relations, and the numerous epidemics of Cholera of which it has been the scene, merits special mention.

“It is proved in fact, by authentic documents furnished by the Ottoman Sanitary Administration, that, without taking into consideration previous periods of which we have no precise notion, in the space of eleven years (from 1851 to 1862), Persia has been afflicted with choleraic epidemics during nine years, viz., in 1851, 1852, 1853, 1855, 1856, 1857, 1858, 1860, 1861. It is proved by these same documents that of these nine epidemics, that of 1851 seems to have been imported into Persia *via* Busorah, where it raged at first, then by several other points in the Province of Bagdad; that in regard to the eight others, on the contrary, Cholera existed in Persia before invading the Ottoman territory in the wake of the pilgrims, either by Muhammerah, or by many other points of the frontier, notably by Khaneguine and Mendel. It must be added, however, that in three of these eight invasions, the linking of facts to demonstrate the importation from Persia into Turkey could not be established.

“In the opinion of the Conference, this frequency of epidemics of Cholera in Persia does not prove that this disease is endemic there; since from 1862 to 1865, there was an interval of three years and a half during which no choleraic manifestations were noticed; it only deserves attention.”

At the request of the Persian delegates, the Conference decided in addition (*vide* the same Minute No. 16,) to add to the preceding the three following declarations:—*First*, that before 1821 Cholera did not exist in Persia; *Second*, that until this time this disease was not known by any special name; *Third*, that during forty-three years Persia has transmitted Cholera to Russia only four times.”

it does not enter into our plan to treat in this paragraph of the mode of propagation, nor of the causes favoring the tenacity of the malady, we shall confine ourselves to the preceding considerations.

It is needless to say that there is no question here of the disease commonly known under the name of *Cholera nostras*, which, though ordinarily sporadic in our countries, can also exceptionally and in hot seasons assume the epidemic form. It is sufficient to establish the distinction to remark that this disease, under whatever form it may show itself, generally shows neither the same intensity, nor the same symptoms as Indian cholera and, moreover,—a distinctive and fundamental characteristic—an epidemic of this kind has never become a *propagating* focus of the disease.

*The Commission, therefore, considers it to be demonstrated that Asiatic Cholera—the invading Cholera—has never developed itself spontaneously, and has never been observed in an endemic state (it is necessary to distinguish secondary foci more or less tenacious) in any of the countries which have just been enumerated (Europe, &c.,) and that it has always come to them from without. As to the countries in the neighbourhood of India, while admitting it to be probable that Cholera does not exist there endemically, the Commission does not believe itself authorised to come to any formal conclusion on the point.*

(Adopted by all the Members of the Commission, except MM. Polak, Sawas, and Van-Geuns.)

### III.

*Is there not reason to fear the acclimatization of Cholera in our countries?*

The reply to this question cannot but be doubtful. In fact, if it is considered that the epidemic which reached Europe in 1847 maintained itself there much longer than the former one, and gave rise in certain localities, at St. Petersburg for example, to secondary circles of a somewhat long duration, it would seem that repeated invasions would be capable of acclimatizing in some sort the principle of the disease; but as we do not know yet on what data to rest in regard to this point in connexion with countries bordering on India, *à fortiori* we are not authorised to admit that it would necessarily be so in our countries. For this reason, *the Commission without rejecting the possibility of the fact, regards it as problematic.*—(Adopted unanimously.)

### IV.

*Is there an original focus of Cholera, permanent or periodic, in the Hedjaz?*

The Conference having decided that, having regard to the peculiar importance attaching to it, the question of cholera in the Hedjaz should be studied in an entirely special manner, it was in the first instance shown that the celebrated travellers (Niebuhr and Burekhardt particularly) who visited the country before the invasion of 1831, make no



mention of epidemic cholera, though they speak very explicitly of the diseases prevailing in the country. Moreover, it appears certain that before the said invasion there did not exist in the Hedjaz even a denomination applicable to epidemic cholera.

On the other hand, it is proved from numerous documents, published or unedited, that since 1831, epidemic Cholera has frequently made its appearance in the Hedjaz: thus (to quote only those cases of which we have correct and detailed information) it appeared in 1835, 1840, 1847, 1848, 1859, and the following years until the great epidemic of 1865,\* with this distinction, however, that, during the six consecutive years from 1859 to 1864, the disease showed no great development. If to these circumstances it is added that the manifestation of cholera in the Hedjaz has always coincided with the period of the pilgrimage, that the general opinion of the country is that it is always imported by pilgrims from India, and that, finally, on many occasions, and notably in 1865, it is asserted that, in fact, passengers from India attacked by Cholera have arrived in the Hedjaz before the disease had yet manifested itself in the country; the conclusion is arrived at, and it is the conclusion adopted by the Commission, *that Asiatic Cholera does not appear to have any original focus in the Hedjaz, but that hitherto it always appears to have been introduced into the country from without.*

(Adopted unanimously, except by Dr. Goodeve, dissentient.)

#### V.

*Are there in India certain localities possessing the exclusive property of engendering Cholera, or which are more particularly favourable to its development? In other words, is Cholera endemic in all parts of India, or only in certain regions which it may be possible to circumscribe?*

It is acknowledged that in India, Cholera does not manifest itself everywhere with the same frequency, nor in the same manner. The observations made on this subject have established the following distinctions:

Cholera reigns by preference as an *endemic* disease, with a tendency to assume, at certain times, an epidemic form, in Bengal in general, but above all in the city of Calcutta, and with less intensity, in the stations of Cawnpore and Allahabad and their environs; and, in regard to the parts of India, at Arcot near Madras and at Bombay.

It shows itself as an *epidemic* disease, appearing *every year, or almost every year*, with more or less violence, in the towns of Madras, Conjeveram, Pooree (Juggurnath), Tripetty, Mahadeo, Trivellore, and other places where there are assemblages of Hindoo pilgrims.

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\* It is as well to observe that the presence of cholera at Jeddah every year at the time, of the return of the pilgrims from 1859 to 1864, is attested by a report by Mr. Stanley British Consul at Jeddah, during these six years; and is also proved, as regards, 1864 by M. de Sainte-Marie, French Consular Agent at the same town.

It appeared again as an *epidemic* disease, but at intermediate times, the intervals of which generally did not exceed four or five years, in the North-Western Provinces of Hindoostan, in 1845, 1852, 1856, 1861, as well as in all parts of the Presidencies of Madras and Bombay, and in Pegu.

It would result then from this distinction that cholera is not endemic except in a somewhat limited portion of India, more especially in the valley of the Ganges, properly so called, and that all the other parts of that vast continent would be, in connexion with cholera, in the same condition almost as countries in the neighbourhood of India, that is, that the disease does not show itself there except accidentally and epidemically, under the influence of causes more or less appreciable.

But that this distinction should have all its importance, and should conduce to a practical result, it was necessary to establish it with precision. Now this is not so. To say that cholera is endemic in the valley of the Ganges and in the Delta formed by this river and the Brahmapootra, without indicating, otherwise than has been done, the places in this vast extent possessing the property of endemicity, is to leave the question in a haze from which nothing positive can be concluded. The Commission hoped to receive official documents which would serve to clear up this capital point in the subject of the causes of cholera; but it has not received them, no doubt for want of time to prepare them and send them from India. It can, therefore, only bring to notice this important lacuna.

It would not even suffice to know precisely the localities where Cholera now-a-days rages perennially; it would be necessary still to know whether there are places whence the disease has disappeared since it has been studied; if there are any where it has disappeared as an endemic to be renewed; and, lastly, what are exactly the localities where the endemic nature of the disease as it exists, is comparatively a new fact? And again, is it certain that Cholera is not endemic except in the circumscribed localities indicated; and is there not reason to suspect that it is so in some of those places of pilgrimage where cholera takes an epidemic form every year?

From the more or less categorical nature of the reply to these questions, we should find indications by which to arrive at the conditions of the origin of the disease, and to the prophylactic measures to oppose it.

However, the exact knowledge of the endemic foci of the disease would still be insufficient: it would be necessary to add that of the principal epidemics which have raged in India since 1817, with an indication, as precise as possible, of their point of departure, so as to see whether these epidemics have or have not had their origin in a focus of endemic disease, or by the effect of transmissions from this focus. It is probable that on this question the Indian archives might give us some decisive and clear information. Finally, it would be interesting to know if, in India, there are regions or localities which, up to the present moment, have shown themselves refractory to the propagation of cholera.

In aid of all these notions, it would, perhaps, be permitted to establish what we may already be supposed to know, namely, that in India there is but a small number of endemic foci of cholera, whence have emanated the epidemics which have ravaged that country first and then the world.

For the present the Commission can only reply *that there are in India certain localities, comprised principally in the valley of the Ganges, where cholera is endemic, without its being possible to specify them all, or to affirm that they have the exclusive property of giving birth to the disease.*— (Adopted unanimously.)

## VI.

*Do you know the causes by the concurrence of which cholera has its birth spontaneously in India, as well as the circumstances making it assume an epidemic form?*

If it is incontestable that cholera does not exist endemically in India, except in certain circumscribed localities more or less well determined, it is there, and not elsewhere, that it is necessary to seek out the circumstances which can give birth to the disease or produce endemicity. Now either from no continuous research having been devoted to the subject, or from the difficulty of the problem, or from some other motive, it is positive that it has not been found possible as yet to fix the circumstances in a satisfactory manner.

Hypothesis, however, have not been wanting. The principal consists in attributing the endemicity of cholera in Bengal to the alluvial Delta of the Ganges and Brahmapootra, alluvial lands rendered particularly deleterious, under a burning climate, by the fermentation of animal and vegetable detritus with which the soil is impregnated. Under this supposition, endemic cholera would be the result of certain emanations from the marshy soil. It is added that the traditional custom of the Hindoos casting half-burnt corpses into the sacred river can explain the privilege of endemicity of which the delta of the Ganges may be possessed. Lastly, some persons, and among others Dr. Bonnafont,\* believe that they can account for the permanence of cholera in India and for the greater frequency of the epidemics since the close of the last century, and notably since 1817, by the ruin of the great hydraulic works executed by the ancient possessors of the country, which had for their object the collection, the distribution, and the easy flow of the water, the ruin being due, according to some passages extracted from a book written more than 20 years ago by Count de Warren, and others taken from an English journal of the same epoch (*India News*, 1844), to the neglect and want of care of the East India Company, and which must have had for result the insalubrity of countries until then comparatively healthy.

All these assertions, which tend to nothing less than to determine precisely the cause of cholera in India, and which appear to enjoy a certain amount of credit in Europe, have been the object of attentive examination by the Commission.

\* "Le Choléra et le Congrès Sanitaire." Paris : 1866.

To the hypothesis which attributes the origin of cholera to the alluvial Delta of the Ganges, Mr. Goodeve, to whose opinion a long sojourn in India gives great authority, replies that, in India, other rivers beside the Ganges show analogous alluvions, and yet, for all that, cholera does not rage, as a consequence, endemically on the soil washed by them. Such is the Irrawaddy in a neighbouring country, an immense river, whose delta, however, has not the same property as that of the Ganges, and where cholera appears only from time to time under an epidemic form; no doubt, the alluvions of the Ganges are for Bengal, as similar alluvions are elsewhere, a great cause of insalubrity, which may up to a certain point favor the manifestation of cholera, but cannot explain its origin. In regard to the human bodies cast into the current of the river, Mr. Goodeve, agreeing in this with M. de Valbesen, formerly Consul-General of France at Calcutta, sees in the matter only a morbid influence whose importance has been exaggerated; and moreover, it is not to be forgotten that this custom goes back to time immemorial, while the permanent existence of cholera on the banks of the Ganges is a new fact.

Finally, in regard to the explanation founded upon the assertions of M. de Warren, Mr. Goodeve declares it to be utterly contradicted by the facts. In the first place the canals which had been spoken of had been destroyed, or had ceased to work, long before the English domination in India, and in the second place they existed principally in the Carnatic in the south of the Peninsula, and not in the Delta of the Ganges and Brahmapotra, where the cholera of 1817 originated. This Delta has never had any of these hydraulic works, and the rivers there have flowed for centuries under the same conditions. Those who believe in the possibility of rendering this region healthy by works of this nature would do well to study the question on the spot; they would see, at the period of the great harvest, in September, with what force these wide and deep rivers, fed by a multitude of affluents, rush towards the sea in an immense number of mouths, over a space of more than a hundred miles in width; they would every where see the very small elevation of the soil, and the immense territory to be drained, and then, perhaps, they would understand the difficulties of such a work to obtain a result, moreover, very problematical, *viz.*, the extinction of cholera, which result would more probably be obtained by hygienic measures applicable to the manner of living of the population. It is in this view, adds Mr. Goodeve; that the three permanent Sanitary Commissions of India already work.

In regard to the destruction of canals and dykes, Mr. Goodeve demonstrates, according to an article in the *Edinburgh Review* of January 1864 based on official documents, that in the Carnatic and the north of Hindoostan, the destruction spoken of goes as far back as the decadence of the great Mahomedan Empire, and after that to the wars of the Mah-rattas against that empire, and, consequently, long previous to the English domination, which has only inherited ruins already existing. As to the canals of the north of India, and those of Delhi in particular, they had ceased to work beneficially from the middle of the last century, and far from having been ruined by the neglect of the English, those of

Delhi have been restored and augmented under their administration by works commenced in 1808 and finished in 1822. In every province the English have been obliged to recommence canal works *de novo*, and the sole reproach that can be urged against them is that, absorbed by war and politics, they have proceeded with a series of reproductive and beneficial works with imprudent slowness. Amongst the great works of canalisation undertaken by the British Government can be mentioned, in addition to those alluded to above, the *Eastern Jumna Canal*, 150 miles in length in its principal course, and having 500 miles of branches and outlets, irrigating 58,287 hectares (143,896 acres), and the *Western Jumna Canal*, which has a main length of 445 miles, without reckoning branches and outlets, and which has given life and fertility to a vast extent of territory hitherto sterile and depopulated. But, above all, must be mentioned the *Ganges Canal*, a gigantic and exclusively British enterprise, with a main length of 1,437 kilomètres (893 miles), to which in the month of May 1862 had been added 2,963 kilomètres (1,847 miles) of branches, without reckoning secondary conduits. In addition there are to be enumerated the great works, by means of which the principal rivers in the south of the Presidency of Madras have been ameliorated in their course and diverted for the irrigation of the fields. These works were commenced in 1836, and consequently before the date of publication of M. de Warren's book.

By this simple review, which might be still further developed, Mr. Goodeve hopes he has demonstrated—and the entire Commission is of his opinion—how unjust is the opinion which accuses the East India Company of having allowed the ancient hydraulic works to fall to ruin, and of having done nothing itself in this way for the sanitation and fertilisation of the country. The truth is that many years before the publication of M. de Warren's book, hundreds of thousands of canals had been undertaken and restored in the Presidency of Madras and in the north. In fine, Mr. Goodeve thinks he has proved, and the Commission thinks so with him, that the development of epidemic cholera in India cannot be attributed to new conditions of insalubrity due to the negligence of the English administration.

The Commission has not thought proper to stop at the other hypotheses which might explain the origin or endemicity of cholera by hygienic conditions which are met with in the same degree in those parts of India where it is endemic as well as in those where it is not. The moment it is asserted that the endemic condition is peculiar to certain parts of India, although these parts have not been shown with sufficient precision, and although it may be maintained, in addition, that this circumstance is in some sort a new fact, *it follows of necessity that this cholera, established permanently a short time since, must be referred to some new and special circumstance in those localities.* Now, as has been said above, no new or special circumstance has as yet been shown to exist in the delta of the Ganges since cholera has been established there endemically. And nevertheless the whole question is in that. *The permanence of the disease in certain places cannot be explained by successive transmissions, but only by something inherent in the places themselves.*

As for the alluvial deltas, the climate, hygienic habits, misery, &c., it is evident that all these morbid causes cannot be cited here except as auxiliary circumstances.

The problem of the origin of cholera cannot then be solved except by a patient and attentive enquiry made on the very spot where cholera is endemic. Certainly, it is impossible to foretell the result of such an enquiry, or whether it would ever arrive at a solution of the problem; but it may be affirmed that something useful would result from it in connexion with the prophylactic measures against cholera.

In the mean time the Commission should confine itself to replying that *we do not know the special conditions under the influence of which cholera is originated in India and stays there endemically in certain places.*—(Adopted unanimously.)

## VII.

*What are the circumstances which conduce to the development and propagation of epidemics of cholera in India?*

As to the second part of the question, namely, what are the circumstances which, in India, concur in producing epidemics of cholera, we are further advanced. No doubt the problems relative to its epidemic nature in India have not yet been solved, but our acquired knowledge permits us to indicate a certain number of circumstances whose action is incontestable. It is in the sources or in the immediate neighbourhood of the foci of endemic cholera that it is necessary apparently, above all, to study the causes which appear to favor its epidemicity, for it is there that documents show us principally its epidemic tendency; not that it follows from this that in these places the epidemics are severer than elsewhere,—the contrary would rather be the rule, no doubt, on account of a certain acquired immunity,—but because it appears that there the causes of its epidemicity should become more evident. It is not so, however, because in Lower Bengal for instance, in the absence of precise ideas as to the places which have the exclusive property of endemicity, the endemic and the epidemic state are so mixed up together that it is impossible to analyse the conditions which favor the one or the other condition.

Moreover, the special part which one would be tempted to assign to causes of insalubrity, such as those which result from the alluvial deltas of the Ganges in Bengal on the epidemic development of cholera, would be contradicted by the fact that this development takes place as well under totally different conditions of soil and climate.

This only can be affirmed with reference to this subject that, in Bengal, cholera assumes the epidemic form, particularly during the hot season, from April to August, while it is otherwise in the Provinces of the North-West, where the greatest epidemics (notably that of 1861) have raged more especially during the month of July and August, and have terminated at the commencement of winter. At Bombay things are much the same as they are in Calcutta, that is to say, cholera epidemics generally rage there from April to September,

In the Presidency of Madras, where the seasons are less sharply defined, it is also in the hottest period of the year that cholera shows itself epidemically with the greatest intensity.

Lastly, the great manifestation of cholera of 1817, which, it may be said *en passant*, did not have its principal point of departure, but only its principal focus, at Jessore (it being proved by official documents of the period that, many weeks before it broke out at Jessore, the disease had already been ravaging two places very distant from that town, one, Chittagong, on the Gulf, 50 leagues to the east, and the other, Patna, on the Ganges, 100 leagues to the north-west of Jessore); this great manifestation, we say, of which the cholera of the present day is the interrupted succession, also commenced in the hot weather. So that it is impossible not to admit that in Bengal, as well as in the generality of India, and, for that matter, every where else, the hot season exercises a favorable influence on the epidemic development of cholera. But this is only an auxiliary circumstance, subject to numerous exceptions; it is impossible to find, even in India, a *sine quâ non* condition for the epidemic development of cholera; *a fortiori*, this circumstance, considered by itself alone, cannot be regarded even as the cause of the epidemicity.

The Commission does not think it necessary to take up a crowd of conditions more or less favorable to the epidemic development of cholera in India; nothing would result from the discussion which would not be applicable to many other diseases, and which would be but of secondary interest. The Commission hastens to arrive at those circumstances whose special action is otherwise very evident: we mean the great *assemblages* and *migrations* of men, and particularly the *pilgrimages* made at stated times to different places in India.

It has been seen above that cholera raged with more or less intensity in an epidemic form, almost every year, in those places where Hindoo pilgrims were gathered together. Amongst these places, some of which are at the same time places of worship and fairs, some of the most holy are Hurdwar, Ramdeo, Muttra, Ajudhia, Allahabad, Mirzapore, and Gya in the northern parts of India; Balasore, Mahadeo and Juggernath (near Pooree) more to the south; Trivellore, Tripetti, Conjeveram, Seringham, and Ramiseraam in the Presidency of Madras; Dakoor, Kodunpore, Sholapore, Sungum, in the Bombay Presidency.

It will suffice, to give an idea of these assemblages, to say a few words about Hurdwar, Juggernath, and Conjeveram, which are about the most important among the places of pilgrimage, the number of which is very considerable.

Hurdwar is in the north of Hindoostan, situate on the Ganges, on the spot where that river quits the mountains to commence its course in the plains. The fair is held every year at full-moon in April, and every 12 years a pilgrimage to this place is reputed to be more than ordinarily efficacious, so that at this time the gathering is enormous. It is stated that in 1783 more than a million people were assembled there,

when cholera broke out and 20,000 individuals perished in the space of eight days; it is added that on the termination of the fair, after the crowd had dispersed, the epidemic died away without propagating itself, without even attacking the village of Jamalpore, only a few leagues distant. It is not so ordinarily at the present day. At present cholera shows itself at Hurdwar almost every year on the occasion of the fair.

Juggernath, on the coast of Orissa, towards the north-west of the Gulf of Bengal, is one of the most sacred places. The ceremonies take place in the months of June and July. The town of Pooree, which is in the neighbourhood, and which in ordinary times numbers 85,000 souls, has its population, during the fêtes, augmented by 100 to 150,000 people, and, according to certain authors, even a great deal more.

Cholera breaks out there every year two or three days after the gathering of the crowd, and ceases only with its dispersion after the ceremonies.

Conjeveram is 45 miles to the south of Madras, and receives every year, during the month of May, at least 200,000 pilgrims. The ceremonies last ten days. Dr. Montgomery, in his interesting recital (*Medical Times and Gazette*, January 1866) says that in ordinary times the conditions of health of the town of Conjeveram are not bad, but that it is not so at the time of the pilgrimage, when cholera breaks out every year. He adds that in 1864, the Government having commenced to adopt hygienic measures (the removal of dirt, the establishment of latrines, the sending away of cattle, abundance of drinking water, &c.) the pilgrimage passed over without cholera. It is true, he remarks, that in that year there was very little cholera in the south of the Presidency; but, he adds, as a result of the same precautions, Conjeveram again remained untouched by cholera, although the season was very unhealthy.

What happens in the places above mentioned occurs in almost every sacred place. The pilgrims congregate from all parts, and, often after a journey of many hundred leagues almost always made on foot during the hot season, arrive at their destination exhausted by fatigue and misery. Once in the holy towns, their miserable condition is aggravated by a horrible crowding, by all the causes of infection resulting therefrom, by bad nourishment, bad water, debauchery—in a word, by a multitude of circumstances tending to the development of cholera amongst them. Then, at last, when these crowds have dispersed, they go about carrying cholera every where with them in their journey, and thus become the agents, more or less active, for the propagation of the epidemic.

In these descriptions, which are the result of observations made principally within a few years past, do we not find, *on a larger scale*, the exact representation of what passes at Mecca? Here, as at Mecca, cholera does not break out with violence till some days after the assemblage of the pilgrims, and it disperses and propagates itself in all directions with them. Pilgrimages in India, as at Mecca, would then at



the same time be augmenting and disseminating foci of the disease. There is, however, one important feature wanting to make the resemblance complete, or rather the existence of this feature, which seems to be wanting, has not yet been incontestably demonstrated. At Mecca it appears well established that cholera is always imported. Is it the same as regards assemblages in India? or rather does the disease develop itself there spontaneously without any prior importation?

It is to be remarked that the localities in question are not considered as foci of endemic cholera; cholera dies away there after the departure of the pilgrims; and reappears, more or less periodically, only on the occasion of the pilgrimage. It would be very important then to seek to know, by making careful enquiries, whether cholera is or is not always imported into places of pilgrimage by individuals coming from endemic or epidemic foci. In the meantime, if we are to judge by analogy, *the probability is that in India, as everywhere else, beyond the limits of endemic foci, the importation of cholera is the necessary condition of its epidemic development.*

Be this as it may, after what has been said, it is impossible not to admit that in India the pilgrimages have a most important influence on the development and propagation of choleraic epidemics. Then come, but in a much smaller degree, the movements of troops, as they have been observed principally in the Presidency of Madras.

Lastly, if to these causes be added the growing facility of rapid communication, whether by railroads or by steam vessels, is there not reason to fear a growing frequency and a more and more rapid extension of epidemics of cholera in India, and consequently a danger of equally increasing importation into Europe?

The Commission, then, believes itself authorised to reply that *pilgrimages are, in India, the most powerful of all the causes which tend to the development and propagation of epidemics of cholera.*—(Adopted unanimously.)

#### SECOND GROUP OF QUESTIONS.

##### *Transmissibility and Propagation of Cholera.*

In regard to this group, as to the preceding one, the Commission has not thought it necessary to restrict itself either to the strict order or the letter of the questions laid down in the programme: it has thought it better to present facts, as well as the deduction drawn from them, in their natural order.

#### VIII.

*Is the transmissibility of cholera proved in the present day by facts admitting of no other interpretation?*

The transmissibility of cholera is at present a fact so well known to science, that it has seemed to many persons almost superfluous to demonstrate it; but the immense majority of the Commission thought

that this demonstration might not be useless either in convincing some incredulous people who are in want of illumination, or, at any rate, in showing that the Commission has pronounced its judgment with deliberation and full knowledge.

The transmissibility of cholera is proved—1st, by the progress of the epidemics considered in general; 2nd, by well established facts showing the propagation of the disease after its importation; 3rd, by the evolution of the epidemics in the infected localities; 4th and last, by the efficaciousness of certain preventive measures.

*1st.—Proofs drawn from the progress of the epidemics generally considered.*

From the time of the appearance of the first epidemic of cholera in Europe, it was already remarked that the disease preferred to follow the great ways of communication, navigable rivers, frequented routes, and masses of men in movement. Later epidemics have only confirmed this observation; like the first, it has been found possible to follow them, as it were, step by step, from their place of origin in India till their arrival at some point or other; and whether, as in the first two invasions of Europe, the disease has followed the land route, or whether, as in 1865, it has more especially preferred a sea-passage, the law of propagation has remained the same, that is to say, the extension of the disease has always taken place in the direction of the human currents which have set out from a place where it was raging.

Cholera has never, in its progress, preferentially taken, as believed by some, a fatal direction from east to west; but, on the contrary, it has radiated and radiates in India in every direction, to the south as to the north, to the east as to the west, spreading itself everywhere in consequence of the facility and multiplicity of the communications. Those who think otherwise, have not studied the facts and reason as the Chinese would do, who pretend that cholera invariably proceeds from west to east.

This law of propagation by purely human currents has never been supported by better evidence than by the epidemic of 1865.

Imported by pilgrims arrived from India, it broke out at Mecca during the festival of the Courban-Bairam in May; it followed the pilgrims in their return *viâ* Egypt and appeared at Alexandria in the early part of June after the arrival of the pilgrims from Suez by railway. Now, did the cholera take a single direction from Alexandria, which rapidly became a vast focus of admission? No; it radiated in every direction with which there was communication by steam. It soon burst forth almost simultaneously at Beyrout, Sapurna, Constantinople, Malta, Ancona, and Marseilles, that is to say, at the termini of the principal human currents leaving Alexandria; while it did not show itself, at the time, on any of the other points of the littoral. These ports, once invaded, became in their turn new foci of emission, whence the disease spread itself on all sides, but always by the great ways of communication; and it was then that the railways became, as we shall see further on, a means of rapid importation to great distances.

This is not all: while the epidemic radiated thus on the side of Europe, on the other side it returned, as it were, on its own steps in the track of the Javanese and Persian pilgrims leaving Mecca. The return of the Persians was signalised by the breaking out of the disease at Bassora, in the Persian Gulf, and there is reason to believe, from information communicated by our honorable colleague, Dr. Van-Geuns, that it must have been re-imported into Samarang (Java) by the Javanese pilgrims.

This march of the epidemic in 1865 is so distinctly marked, that it has cleared away many doubts; but still analogous facts are not wanting in previous epidemics, and in order to show how greatly the direction of choleraic epidemics is subordinate to that of human currents, let us recal the memorable fact of the importation of cholera (in 1854) to the East, and its communication to the French army by vessels from Marseilles with troops on board, who had come from the neighbourhood of places where cholera had been raging.

In support of this same law, the constant fact can be cited that every time that cholera has shown itself in an island, or has attacked America, it has always been in a maritime town, ordinarily in a chief port, and not in the interior of the country, that it broke out first: thus in 1832 at Quebec, and in 1848 at New York and New Orleans. It is therefore a feature common to all choleraic epidemics observed up to the present day that they have constantly followed man in his migrations from an infected to an untainted place.

This common feature, which shows us the principle of cholera always attached, so to say, to man, and not travelling except with him, is still further corroborated by the circumstance, well-worthy of attention, that the swiftness of choleraic epidemics, coming to us from India, has been increasing with the growth of communication, and above all with the acceleration of means of transport. It will suffice, to be convinced of this, to compare the march of the two first epidemics which came overland, animated by an unequal speed and often impeded by the difficulties of the route, with the prodigious rapidity—a rapidity, however, not greater than that of the means of transport in use—of the passage made by the epidemic of 1865, which, leaving India at the end of winter, or, leaving Mecca at the end of the month of May, was able to arrive in America in the course of October, after having traversed France, without reckoning the places to which it penetrated on various sides, in England, to the heart of Germany, and in Russia,—thus, in the course of its long passage, from India to America, passing over half the circumference of the earth in the space of nine months, and coming from the holy places of Islamism to Paris in three months and a half.

*Do not all these facts demonstrate most strongly that cholera is propagated by man, and with a greater swiftness in proportion to the greater rapidity and activity of his own migrations? The Commission does not hesitate to reply in the affirmative.—(Adopted unanimously.)*

2nd.—Proofs deduced from facts establishing the propagation of cholera by importation.

If, from this first order of proofs, very convincing to any unprejudiced mind, we proceed in search of facts which incontestably establish the transmission of disease by the arrival of articles from an infected locality in a place until then healthy, we shall find ourselves embarrassed in our choice. It is to be distinctly understood that only those facts are meant which can receive no other reasonable interpretation. The Commission will content itself with some examples of this sort; for the question at present is merely to prove that cholera may be transmitted by importation.

These incontestable facts are not to be sought for in the great populous centres of the European continent where the relations between individuals and movements to and fro are so multiplied and intricate that it is almost impossible to deduce from them a strict linking of circumstances; conclusive facts are furnished principally by small places and by those seaports where it is easy to place arrivals under control. In this point of view, the present epidemic is fertile in proof.

But before coming to recent facts, the Commission remembers that Dr. Jukes, in a report to the Government of Bombay, had already said in regard to the Indian epidemic of 1817: "Nobody can have failed to see that the disease followed the great roads of the Deccan to Panwell, and I am not acquainted with a single village in the Concan which was attacked by the disease without having been visited by persons coming from some one of the infected places."—(*Report of the Medical Board of Bombay, 1819.*)

The Commission thinks it right also to draw attention to the well known and characteristic fact of the English frigate *Topaze* which, in 1859, coming from Calcutta, brought the cholera to the Mauritius. It will confine itself to mentioning, in addition, the importation, in 1832, of cholera from England into Holland; at Scheveningue, a small village about half a league from La Haye, by a boat (*Kiehl 1865*); at Quebec during the same year by emigrants from England; in 1832 at Porto, by a troop ship from Ostend, and which had touched at some place in England (*Gomés*); 14 very conclusive facts communicated by Dr. Pélikan relative to the epidemic of 1847 in Russia; another manifest case of importation into Sebastopol, in 1848, by a ship from Nicolaïen (*Pélikan*); in the same year the importation of cholera into New York and New Orleans by emigrant vessels from Havre; its importation, so clearly demonstrated in 1849 at Nogent-le-Rotrou, by nurses and their nurslings coming from Paris (*Brochart: Mémoire présenté à l'Académie de Médecine, April 13, 1850*); and in 1853 in the arrondissement of Montargis, under the influence of the same circumstances, by Dr. Huette (*Archives Générales de Médecine*); in 1854 the importation, before spoken of, of cholera into the East by troop-ships from Marseilles: in 1853 its importation into Vigo by a ship from the Havana, and in 1855 into the island of Fogo,

one of the Cape Verd Archipelago, by a Sardinian emigrant vessel from Savona bound for Monte Video; the following year into Madeira by a troop-ship from Lisbon (*Gomés*).

Without dwelling upon facts already published, nor upon many others of the same kind and equally known to science, the Commission prefers to limit itself to less well known or unpublished facts in connection with the last epidemic.

It will commence with the fact of the importation of cholera into Constantinople.

#### *Importation into Constantinople.*

The state of public health in this city manifested nothing which would lead to the apprehension of the advent of a choleraic epidemic, when, on the 28th June 1865, the frigate *Moukbari-Sourour* arrived from Alexandria, where cholera was raging. This vessel having made a voyage of more than five days' duration, was, on the declaration of the surgeon that there was no suspicion of disease on board, in consequence admitted to pratique, according to the regulations in force. This declaration was false. On the evening of the same day, 12 sick men were landed from the ship, of whom one attacked by confirmed cholera sank during the night, the other 11 showing only symptoms of cholera. It was learnt the next day that ever since the ship had left Alexandria, cases of diarrhœa had been observed on board, and that in the passage from the Dardanelles to Constantinople two men, who had died of cholera, had been thrown into the sea. On the 30th June, nine other cases, two of distinctly marked cholera, were again landed from the same ship, which, after having completed its complement of men, was sent into quarantine near the mouth of the Black Sea.

The sick were taken to the Marine Hospital, near the Arsenal; but as the road from the landing-place to the hospital was encumbered with stores and materials, it was found necessary to make them pass through a barrack occupied by military workmen in the Arsenal. This circumstance should be noted, for the first indigenous cases of Cholera took place among these workmen, and on board of a corvette moored hard by their barrack.

On the 3rd July, one of these military workmen was received into hospital with Choleraic diarrhœa, and on the 5th he showed all the symptoms of Cholera. On the same day a new case was sent in from among the workmen, and another from the corvette mentioned above. The barrack was then evacuated, and the workmen were placed in tents on the heights of the Ok-meidan. Nevertheless, Cholera continued to rage amongst them and on board the ships moored before the Arsenal; it attacked, besides, on the one hand, the guard of the interior of this establishment, and on the other, the masons engaged at work on the building of the Ministry of Marine situated quite close to the barrack of the military workmen. On the 8th July two cases, which resulted in death, were reported outside the Arsenal on a fishing boat and a

waterman's boat. In the meantime, from the 10th July, the epidemic commenced to invade the quarter of Kassim-Pacha, in the neighbourhood of the Arsenal and inhabited by workmen employed on the abovementioned structure. Thence it spread itself, as will be seen further on, throughout the town.

This account, whose principal details have been collected and communicated by Dr. Mühlig (*Gazette Médicale d' Orient*, August 1865), an account whose accuracy in every particular is indisputable, offers an example, which it is impossible to doubt, of the transmission of Cholera by importation, which, though very restricted, was followed by a very grave epidemic. It does not appear possible to place in doubt here the connexion of cause and effect between the imported disease and that developed consecutively in the very spot where the importation took place.

We give next an example of importation overland from a somewhat great distance from the infected locality and without contaminating the intermediate localities, an importation which occasioned a most murderous epidemic.

#### *Importation into Borchhi.*

On the 7th August 1865, several German families coming from Prussia, arrived in the village of Borchhi, in the district of Balta in Russia, for employment on the railway. During their journey they had stopped one day, the 4th, at Galatz, where Cholera was raging, and they had passed through Odessa on the 5th August. All these Germans appeared, on their arrival at Borchhi, to be in good health, with the exception of a child, belonging to the family Jans, who had the diarrhœa and died on the 10th August. From this date Cholera began to manifest itself and to rage violently amongst the inhabitants of the village as well as amongst the newly arrived Germans. The mother of the child Jans fell ill on the 18th August, and died on the 20th. Soon afterwards two more children of this woman sank. Out of eight Germans attacked by Cholera one alone recovered. From Borchhi the disease spread to the village of Gavinossa, and then extended far and wide. (*Extract from an official communication—Journal de St. Pétersburg*, No. 283, 1865.)

The Commission thinks it useless to dilate on the necessary deduction from this fact, the authenticity of which is indisputable.

The Commission passes on to a still more interesting example, in so far that it proves that a single case of Cholera, imported by railway from a great distance, may give rise to an epidemic.

#### *Importation into Altenburg.*

Towards the end of August 1865, Cholera suddenly broke out at Altenburg in Saxony, in the centre of Germany. The first case that was reported was that of a Mrs. E., who had left Odessa on the 16th August and had arrived at Altenburg on the 24th, without having stopped

anywhere. This lady had her infant with her, 21 months old, suffering from diarrhoea. She had lodged with her brother in the Kunstgasse, No. 678. On the 27th August Dr. Geinitz was called to attend the infant, whose diarrhoea had become very severe. The mother, who was perfectly well, stated that on her departure from Odessa there was no sickness in the town (we know that there were then in the lazaretto six cases of Cholera imported from Constantinople and that the day after her departure the disease appeared in the town) and that having embarked to proceed up the Danube, every body on board appeared to her to be in good health, although the steamer passed before several places where Cholera was raging (it is not mentioned in the narrative whether in this part of the passage there was any communication between the steamer and these localities). Be this as it may, three days after her arrival at Altenburg, on the 27th August, the same day that Dr. Geinitz had visited her child, Mrs. E. fell sick, and the next day Dr. Geinitz recognised all the symptoms of Asiatic Cholera. She died on the 29th. On the same day, in the same house, the sister-in-law of Mrs. E. was attacked and sank on the 30th. The infant died on the 31st, of exhaustion says the narrative. From this house Cholera spread to the town and its environs. The family of an artisan, who died at Altenburg on the 13th September, carried the disease to Werdaw. The dwelling occupied by this family was the point of departure of an epidemic which carried off two per cent. of the population of the town (Pettenkofer).

This was a case which, if it had not been made the object of an attentive enquiry by distinguished physicians, would, no doubt, have been cited as an example of the spontaneous development of Cholera in the centre of Germany; but the great authority of Pettenkofer, who has made a special study of this epidemic, leaves no room for uncertainty. In whatever place Mrs. E. and her child may have contracted Cholera, still they passed through places where the disease existed, and, as soon as they arrived at Altenburg, became the starting points of an epidemic. Cases of this kind are certainly not rare, and with the increasing rapidity of communications, it is probable that they will become more and more frequent; but what is rare is their making their appearance at first with such great clearness, and that afterwards the trouble was taken, or that it was possible, to verify by an enquiry whether in cases, the contrary in appearance, the importation in reality did not take place.

In the case in question, was it the infant suffering by Choleraic diarrhoea, who transmitted the disease to the mother, as one would be inclined to admit, judging from the perfect health of Mrs. E. on her arrival at Altenburg? or were the germs of the disease implanted in the latter under circumstances similar to those under which it was acquired by the infant? It is impossible to say. However, it should not escape attention that under the first supposition, it would be asserted that a single case of Cholera imported into a healthy locality can be made the starting-point of an epidemic of Cholera. But the Commission does not think this fact sufficiently convincing to draw this conclusion from it.

The Commission will finish its quotations on the subject of Cholera transmitted by importation, with a fact as characteristic as the preceding, although more limited in its consequences.

*Importation into Thoydon-Wood in England.*

In 1865 the appearance of Cholera in England was very confined, but carried with it the proof of its transmissibility. In September it showed itself at Southampton.

At this time a person named Groombridge and his wife, belonging to the village of Thoydon-Wood, two miles from Epping, in Essex, went to Weymouth on account of their health. Mr. Groombridge was suffering from an intestinal affection. On the 25th September they returned to Thoydon, after having passed through Southampton, where Cholera existed.

In her return journey, Mrs. Groombridge felt herself indisposed. On the 26th September the Drs. MacNab were called to see her, and, apart from a slight diarrhoea, found nothing alarming in her condition. On the 28th symptoms of Asiatic Cholera broke out, following on which she died on the 9th October. On the 30th September her daughter Emily, seven years old, was attacked and died in the space of nine hours. The same day a servant in the house was also attacked, but he recovered.

The Drs. MacNab, during all this time, had been very attentive to their patients. On the 2nd October, Mr. MacNab, senior, was seized by Cholera and died on the 3rd. Two more cases took place on the 2nd in the house of Mr. Groombridge: his daughter Kate and a servant were attacked and recovered. On the 6th October Mr. Groombridge himself, one of his laborers named Riley, Mrs. Groombridge's mother, and Mr. Charles Groombridge were all seized, and all died with one single exception.

The man Riley, who had been taken to his own home, sank on the 7th; a woman, named Saville, who had nursed him and laid out the corpse, was attacked on the 7th and died the next day. The disease spread no further. Nevertheless, two other cases, in connexion with the preceding, took place afterwards at Coppice Row, half a league from Mr. Groombridge's house, in the family of a laborer named Haggar. One of these cases, that of Henry Haggar, ended with his death, on the 2nd November, in the space of 22 hours. Now the wife of Haggar was the daughter of the woman Saville, named above, and had attended her during her illness. She had changed her clothes before returning home; but she had washed them afterwards in her own house (*Medical Times and Gazette*, 1865).

It would be difficult to find a more conclusive case of Cholera contracted in an infected locality (Southampton,) and imported into a healthy place (the house of Mr. Groombridge at Thoydon) where the disease spread itself exclusively among persons connected, more or less directly, with the diseased persons. There will be no mention made



here of an epidemic influence hanging over the locality, since the epidemic, circumscribed, as it were, in one single house, showed itself nowhere else in the country. We are ignorant of the reason why the disease did not extend itself, as we are of many other circumstances; but what this fact establishes, without any other reasonable interpretation, is the transmission of the disease by connexion with people afflicted with it.

To facts of this nature are opposed cases where, after communication with an infected place, the first attacks of Cholera have not manifested themselves on persons coming from that place, but on the inhabitants of a hitherto healthy locality and where the relations between the one place and the other were inappreciable. But those who make this objection set out with a principle contradicted by observation, a dangerous principle, which consists in not admitting the possibility of the importation and propagation of Cholera, except by individuals themselves attacked by the confirmed disease.

The Commission for the present confines itself to this simple remark, not wishing to anticipate what should be the subject of a later examination.

*3rd.—Proofs taken from the progress of epidemics in infected localities.*

A third order of proofs of the transmissibility of Cholera is afforded by the mode of progress of epidemics, either in different parts of a country, or, in the same locality, from one quarter to another.

This order of proofs, to tell the truth, is not different from the preceding; it is the verification of the transmissibility by the manner in which a disease once declared diffuses itself.

This fact, demonstrated by observation, can be established, that the denser the population of a country where Cholera makes its appearance, the more multiplied the relations there, and the more accelerated the means of communication, the more rapid are the diffusion and extension of the disease; though it must be understood that it does not necessarily follow that it is more violent. It is the confirmation of the law applicable to the progress of epidemics of Cholera generally considered. It is clear that to properly appreciate the succession of facts in the point of view we occupy, it is no longer to populous places, where relations are inextricable, that we must go to study them; but only amongst scattered populations, forming small assemblages, and having only communications easily appreciable. At the same time Constantinople, which may be considered in the aggregate as a vast assemblage of distinct localities, separated by natural obstacles, is an exception in this respect; and, therefore, it has been found possible to follow with a certain amount of precision the extension of the last epidemic up to the moment of its general diffusion.

Another rule can be established, as being deduced from observation, that an epidemic of Cholera, in its commencement, does not appear

simultaneously in many localities within a territorial circumscription, but breaks out in one of these localities. It is the same generally as regards great cities where the epidemic at first does not manifest itself in many places at the same time, but ordinarily bursts forth in a series of cases in one quarter, sometimes in one house, before it makes its appearance in other parts of the city. Here, however, the general rule is not without exceptions; because in a great city, where arrivals are very frequent, importation may take place simultaneously in many places.

*Progress of the Epidemic at Constantinople.*

At Constantinople, as has been seen above, Cholera made its appearance at first in the Arsenal, where it had been brought by the sick who were landed from the frigate *Moukkiri-Sourour* on the 28th June; from the Arsenal it spread to the adjoining quarter, Kassim-Pacha; then some cases, few in number, made their appearance in various parts of the town, the persons attacked being mostly those who had fled from the quarter first infected.

Up to the 16th July the total number of deaths from Cholera reported in the city (exclusive of those in the Marine Hospital), amounted to 130, when it was suddenly learnt that the disease had just broken out with violence at Ieni-Keui, a village situate on the Bosphorus, 12 or 15 kilomètres from the quarter where the epidemic was raging. Was this one of those caprices, one of those inexplicable leaps which used to be attributed to epidemic Cholera, and which used to be brought forward as a fact demonstrating the epidemicity, pure and simple, of the disease? Not at all. It was proved that the first case of Cholera at Ieni-Keui took place on the 11th July in a Turkish café, the person attacked being a workman who had come from Kassim-Pacha; that the next day several of the persons who frequented this café fell sick, and that two of them died; that on the following days the disease spread in the quarter up to the 16th, on which date, in consequence of several deaths among important families, the entire population of the village was seized with a terrible panic, and almost all took to flight in various directions. Mussulmans, Greeks, Armenians, and Jews, all sought refuge in other villages and in quarters of the city hitherto uninfected, bringing the disease with them. The Jews especially, who had suffered most, and who, in their precipitation, carried with them their soiled effects and their dead, became the principal propagating agents of the disease. At Kouskoundjouk, at Has-Keui, and at Balata, the epidemic burst forth immediately after the arrival of these fugitives: the statements of the Sanitary Intendancy, and those of the Special Commission leave no doubt on this point. From this moment the generalisation of the epidemic may be dated, and after this, except in regard to certain villages, it becomes more difficult to follow it up. These facts are, in addition, related with many details in several articles of the *Gazette Médical d'Orient* (1865-66,) and in a recent work of Dr. Mongéri (*Etude sur l'épidémie de Cholera à Constantinople en 1865*).

If the Commission did not think it superfluous to insist on this order of proofs, and did not fear to lengthen this report uselessly, it would quote a multitude of authentic narratives in support of the successive development of Choleraic epidemics by successive communications between infected places and places afterwards attacked, wherever it has been found possible to pursue the study with precision. It could quote, among others, the development of the last epidemic at Odessa in the month of August last, having its starting point in individuals occupied in the neighbourhood of the lazaretto, where there were six Cholera patients who had come from Constantinople, these individuals spreading the disease in their own quarter and through the rest of the town.

It could, moreover, quote the recent progress of the epidemic in Podolia having its origin in the importation of cholera into Borchy by the German families spoken of above ; but the Commission, after all it has put forward above, thinks it useless to go further into detail.

*4th.—Proofs taken from the efficacy of certain preventive measures.*

A last order of facts militating indirectly in favor of transmissibility relates to the efficacy of certain preventive measures. The Commission means isolation, that is, rigorous isolation, and above all the interruption of maritime communication with infected places.

In 1831 the Imperial Court of Russia, comprising in all 10,000 persons, isolated itself at Peterhoff and at Tsarskoje-Selo, and no attack of cholera was observed in it (Report of Drs. Barry and Russell, 1831).

During the epidemic of 1865, at Constantinople, the pupils of the Military School, to the number of 500, were isolated in the establishment, and cholera did not penetrate to it, though it raged in the neighbourhood. It would be easy to bring forward many analogous facts in all epidemics.

Greece had escaped former epidemics of cholera while a rigorous quarantine had been maintained on choleraic arrivals ; in 1854 cholera was imported into the Piræus without obstacle, and a cruel epidemic was the result. In 1865 Greece maintained a rigorous system of isolation and was safe, although the disease raged in the neighbourhood.

Sicily, which, in 1854, had, like Greece and for the same cause, suffered severely, did more than the latter country during the last epidemic ; it interrupted all communication with infected localities, and notwithstanding the continual passage, at a little distance, through the Straits of Messina, of ships coming from countries where cholera prevailed, Messina and all Sicily quite escaped.

To these facts it is objected that other places visited unrestrictedly by arrivals from cholera-infected places have also been spared, while others again have not escaped even with the aid of cordons, or of very severe quarantines, so that the coincidence between the employment of preventive measures and preservation is far from being a constant fact.

To these objections the Commission replies in the first place that it does not pretend and nobody maintains that imported cholera is always transmitted. Transmission necessitates auxiliary circumstances which happily are not always met with, or the ravages of cholera would soon cause the extinction of the human species.

And as to the frequent inefficacy of measures of quarantine, the Commission estimates that, before concluding thus, it is necessary to see whether the measures spoken of have answered well, either in their nature, or in their application, to the proposed end, and whether means really adapted to spread the disease—sanitary cordons for example—have not often been taken for preservative measures? In such matters words do not suffice: there are measures and measures. It is necessary to see before deciding in a sweeping way if such and such means, which might be thought efficacious and which have shown themselves useless, were really adapted to the evil they were meant to prevent.

The Commission therefore considers the arguments abovementioned to be of little weight. In any case, it is clear that nothing can be concluded against the transmissibility of cholera from the inefficacy of quarantine.

The Commission unanimously concludes that *the transmissibility of Asiatic cholera is an incontestable truth proved by facts admitting of no other interpretation.*—(Adopted unanimously.)

## IX.

*Are there conclusive facts compelling the admission that cholera can spread itself far and wide by certain conditions of the atmosphere, by winds, or by some vicissitude or modification in mid-air?*

Directly it is demonstrated that out of India, or at least in the countries previously enumerated, epidemic cholera has never been spontaneously developed, and that it has always reached those countries in the shape of invading epidemics; there is no longer any necessity to enquire whether, in our countries, certain conditions of the atmosphere or of the soil, or certain hygienic conditions, give birth to epidemic cholera; it need only be asked whether, independently of importation by man, cholera can be transported to a great distance by a contaminated or modified atmosphere: in other words, whether the atmosphere can act as a vehicle for the principle of the disease and spread it abroad.

The question thus put is one of great importance, since, if it were answered in the affirmative, it would follow that measures of quarantine would be only of very doubtful efficacy. The Commission has therefore studied it with great care.

To prove that cholera can be propagated by the atmosphere beyond a certain distance, at least one conclusive fact is necessary, *viz.*, that which establishes *the passage of the disease from an infected to a healthy locality, without any possible previous communication.* Now, this fact has no existence in science; and the Commission has been able to

convince itself of the want of weight of all the assertions made on this subject. When mention was made of deserts leaped over, of seas traversed, of useless sanitary cordons, it was evident that no pains were taken to see if these assertions were borne out by the facts; it was not known that observation had demonstrated that deserts had always been the most efficacious barriers against the propagation of cholera, for the simple reason that the means of communication there are more difficult than elsewhere; it was lost sight of that if the sea is an obstacle, it admits, on the other hand, of easy and dangerous communication; and it was not even asked whether sanitary cordons, as they have been organized in populous countries, were not in fact very efficacious means of propagation.

No doubt, it has not been possible everywhere to demonstrate the previous communication between an infected place and one subsequently attacked, for the reasons mentioned above; but wherever search has been carefully made, and wherever the conditions of a locality lend themselves to the verification, it has been found possible to prove this previous communication.

No conclusive fact therefore proves that cholera has been imported from a distance, from one place to another, simply by atmospheric agency. And it is indisputable nevertheless, as will be seen below, that the circumambient air is the chief, if not the sole, vehicle of the choleraic principle. This is a circumstance to be noted, but which, in regard to cholera as well as to typhus fever, does not carry with it the possibility of transport to a great distance.

In the absence of any convincing fact, the possibility of importation by the atmosphere alone could still be concluded if it could be established that the transmission of cholera from one place to another has been, in any given case, more rapid than the means of communication employed by man. Now, *it is a law, hitherto without exception, that cholera has never progressed more rapidly than man in his migrations.*

If the last epidemic of cholera is attentively considered, it will be found that, in the entire basin of the Mediterranean, there was not one single place where cholera broke out before any communication had taken place with some choleraic centre. Did the cholera advance by degrees in the direction of certain atmospheric currents? No; *it radiated and declared itself only in places where there had been arrivals from infected localities and nowhere else.* Would it have been the same if cholera had travelled through the atmosphere? No; it would have been seen in places exempt from all communication with infected localities.

The Commission replies therefore that *no fact has hitherto been brought forward to prove that cholera is spread abroad by the atmosphere alone whatever may be its condition; and that moreover it is a law without exception that an epidemic of cholera has never spread from one place to another in a shorter time than that necessary for man to journey between both places.*—(Adopted unanimously.)

## X.

*How is the importation of cholera effected, and what are the agents of transmission?*

According to all known facts, two conditions are necessary for the outbreak and propagation of Asiatic cholera in any locality: arrivals from an infected place, and circumstances favoring the transmission. At present we shall occupy ourselves with the former of these conditions. A choleraic arrival, so called, is a complex thing; it comprises man and everything coming directly from him, then his clothing, his effects, his goods, his animals, the ship that carries him, and, in fact, every thing that can accompany man. Cholera is, no doubt, transmissible by choleraic arrivals; but is a production of this nature capable of transmitting the disease? and is everything constituting a choleraic production equally susceptible of effecting the transmission?

It has been long believed that, so far as maritime arrivals are concerned, the lapse of some days between the departure and arrival, without any manifestation of cholera, was a sufficient guarantee against the importation of the disease. Now, experience has shown that it is nothing of the kind, and certain well established facts tend to prove that even a long passage without appreciable accidents is no guarantee against danger. On the other hand, it is certain that the regular steamers from India, which have been working for a great number of years, have never imported cholera into Suez; so that it may be said, without specifying more at present, that if every arrival from countries infected by cholera is not adapted to propagate the disease, it is not the less prudent, until something fresh is known, to consider every such arrival with suspicion. A more detailed examination of the question will demonstrate it.—(Adopted unanimously.)

## XI.

*Under what conditions does man import cholera?*

There is no doubt that man, infected with cholera, is the principal importing agent of the disease. There are abundant facts to demonstrate this. In the greater number of epidemics whose origin has been shown, one or two cases of cholera, come from some other place, are found at the point of departure. It would be idle to add other facts to those we have already quoted. It is equally proved by observation that the arrival of a large number of cholera cases in a healthy locality is not necessary to develop a great epidemic in that place. Most frequently it is only a few cases, as at the Piræus, at Varna in 1864, at Constantinople last year, and at various other places too numerous to mention; sometimes one single case, as at Altenburg, has been the starting point of an epidemic. In this connexion, the study of facts demonstrates that there is no sort of proportion between the amount of cholera imported and the intensity of the epidemic consequent upon it; this

intensity is proportionate to the more or less favorable conditions of the locality to which the disease has penetrated, in the same way that a conflagration is not proportionate to the spark which gave rise to it, but to the combustible nature and the accumulation of the material it finds in its way.

Therefore, man, tainted with cholera, is by himself the principal propagating agent of the disease, and a single case of cholera may give rise to the development of an epidemic.—(Adopted unanimously.)

## XII.

We go still further: Writers of great authority (Pettenkofer, Hirsch, Griesinger) maintain and bring forward facts tending to prove that an individual coming from a choleraic focus, and suffering merely from diarrhœa, may import and propagate cholera in a healthy locality. A member of the Commission, Dr. Millingen, has brought forward many analogous facts extracted from a work on cholera published at Copenhagen in 1855 by Dr. Brika. The greater number of the facts quoted are very interesting, and render the theory very probable; but they do not possess all the clearness necessary for a rigorous demonstration.

A very convincing example, on account of the details accompanying it, is the fact reported in the *Gazette Medical é de Paris* (28th April 1849) by Dr. Alexandre, of which we give an abstract here: There was not the least sign of cholera at Hamel, a rural commune, 25 kilomètres from Amiens, where, on the 4th April, a soldier named Guilbert, suffering from diarrhœa, arrived at the village from Paris, where cholera was raging. He was received into his father's house, where he remained in bed for three days; on the fourth day he went to the hospital at Amiens. On the same day André Guilbert, the soldier's brother, was attacked by cholera in its worst form, and died in twelve hours. This man did not dwell under the paternal roof; but he had gone to the house many times every day since the arrival of his brother. The wife of André Guilbert was seized, three days after the death of her husband, by cholera, speedily followed by cholera, and died on the 16th April. Guilbert (the father) who, during the stay of his son the soldier, had already felt symptoms of cholera, was attacked by cholera on the 11th, and died on the 15th. Another son of this man, 17 years old, and a child of four years, the son of André, suffered from cholera, but recovered. The father of André's wife, who had been attending to his son-in-law and daughter, was attacked by confirmed cholera, but recovered. A child 11 years old, who frequented Guilbert's house, and whose relatives had also been nursing André and his wife, was seized by cholera on the 14th, and died the next day. As for the soldier who had sown the seeds of the disease in the village, he left the hospital in the course of some days perfectly cured, and without its being perceived that he left behind him any disease analogous to his own. Dr. Alexandre adds, with a good deal of reason, that this fact proves that cholera is nothing else but cholera in a less severe form.

This fact is, it must be admitted, very conclusive, and, added to published cases more or less analogous, invests the opinion of authors who hold that premonitory diarrhœa, or cholérine, may transmit cholera, with a great deal of probability.

We do not possess such a characteristic example, so far as arrivals by sea from infected countries are concerned.

The fact indeed has been quoted to the Commission, of the importation of cholera into the Piræus in 1854, in consequence of the landing of four sick people, suffering only from cholérine, and who recovered; but there had already been, on board the ship, two cases of cholera followed by death, and the sailors had gone on shore; so that it is impossible to conclude with certainty that the sick people were the transmitting agents of the disease.

The Commission has been led, by these considerations, to conclude that *certain facts tend to prove that a single individual (and à fortiori many) coming from a contaminated locality, and suffering from diarrhœa, may suffice to occasion the development of an epidemic of cholera, or, in other words, that premonitory diarrhœa, as it is called, may transmit Cholera.*

As to whether individuals leaving a choleraic focus, and enjoying, on their arrival in an uninfected locality, apparently perfect health, can, of themselves, carry the disease with them, the Commission replies that *there is nothing to prove that it is so.*

There are no doubt examples which show that cholera has broken out in a locality after the arrival of individuals in this condition, but has it been found possible to prove that these individuals were really in a perfect state of health, that they had not the diarrhœa? No; such proof, except under peculiar conditions, is, and always will be, in by far the larger number of cases, impossible. And then, supposing the absence of any well-proven premonitory symptom, if cholera breaks out, as it has been seen to do, subsequent to such arrivals, is it reasonable to conclude that healthy individuals, of themselves, have brought the disease with them? might they not have infected articles with them?

After all, when the details of the question are entered upon, it is seen how difficult it is to determine precisely what is the part played in importation by such and such a choleraic arrival.—(Adopted unanimously.)

### XIII.

#### *What is the duration of incubation?*

The question of the importation of Cholera by man leads us naturally to examine what is the *maximum* duration of the incubation of Cholera, and up to what point it is to be taken into consideration in a prophylactic point of view.



The duration of the incubation of Cholera, that is to say the time which elapses between the supposed moment of the penetration of the morbid agent into the organisation and the moment when the first symptoms of the disease show themselves, is generally very short. Observation shows, in fact, that in the immense majority of cases, a few days suffice for the incubation, and that sometimes this period does not exceed a few hours. This general rule is placed beyond doubt by the first cases which follow the importation of the disease into a healthy locality; it is seen then that, when the disease is transmitted, a few days (a week at most) scarcely elapse between the imported cases and those following upon them. Later, when the epidemic is established, the connexion between facts becoming very difficult to establish, nothing certain can any longer be concluded as to the incubation.

The general rule is still further placed beyond doubt by what ordinarily occurs on board ships leaving a Cholera focus. If Cholera breaks out in them at all, it does so in the greater number of cases during the first days of the voyage, and acting on this generally admitted fact, the quarantine for arrivals from localities infected with Cholera was fixed at five days. Such then is the general rule. But there are exceptional cases which would lead to the belief that the period of incubation may be prolonged for more than 20 days.

These facts, to have a precise value, can only be taken from on board ships. Now, under this condition, it is not very rare to find confirmed Cholera not breaking out on board until six or seven days after the departure of the ship from the infected locality. The last epidemic affords examples of this.

The case has been quoted of an emigrant vessel which left Havre for New York on the 9th November 1848, and on board of which Cholera did not show itself until the 16th day of the voyage. When these emigrants, numbering 346, the majority being Germans, embarked, Cholera had ceased at Havre, but many of them came from Germany, where the disease existed. Nineteen were attacked, and seven died. It is to be remarked that they transmitted the Cholera to thirteen persons in Staten Island, where the ship was placed in quarantine.

At the same period (3rd November 1848) the ship *Swanton* also left Havre with 230 emigrants on board for New Orleans. Cholera did not break out on board till the 25th November, that is, the twenty-third day of the voyage, occasioning thirteen deaths. A certain number of these emigrants came, like those on board the other ship, from places in Germany where Cholera was raging (*Baly. Report on Cholera, &c., 1854*).

We give another fact in connexion with the last epidemic at Gibraltar. On the 21st August 1865, while Cholera was prevailing in the town, a portion of the 1st battalion of the 9th Regiment, which until then had maintained good health, received orders to leave for the Cape, and were embarked on board the *Renown*, a large new ship, well ventilated. The next day, 22nd August, a case of Cholera, which rapidly resulted fatally, took place on board. The ship was towed out, and as

no other case showed itself, it went out to sea after the lapse of 30 hours. Every thing went well till the 5th September; but on that date, after having been 13 days at sea Cholera broke out on board, and in the course of 14 days carried off nine men, one woman, and several children, as well as the surgeon of the ship. (*Extracted from an official communication by Mr. Rutherford, Army Inspector General at Gibraltar.*)

These cases, though rare, constitute exceptions which it is important not to neglect. It is to be remarked in the first place that confirmed Cholera is spoken of in every case. Now, as it is distinctly proved at present that premonitory diarrhoea is an effect of choleraic poisoning, a lighter degree of the disease itself, and, in all probability, is capable of transmitting Cholera, it follows that, in a practical point of view, this diarrhoea should be assimilated to the attack of Cholera itself, and should not be reckoned in the period of incubation. In other words, according to the Commission, the manifestation of Cholera on board a ship, as everywhere else, does not commence only with the first attack, but with the symptoms of premonitory diarrhoea which so often precede Cholera properly so called, and which in the great majority of cases do not quite reach it.

Who then can assert that in these exceptional cases there were not before the attacks, cases of diarrhoea marking the breaking out of the disease?

On the other hand, admitting that it was not so, directly it is proved (as we shall say further on) that baggage or clothes coming from a choleraic focus may be made the receptacle of the morbid principle and communicate the disease, is there not occasion to ask whether, in these exceptional cases, the disease was not contracted on board during the voyage?

These exceptions then prove nothing against the general rule showing that the duration of choleraic incubation does not exceed a small number of days; but they prove that the duration of a voyage, even though it be somewhat long, without an attack of Cholera, is no sure guarantee against the importation of the disease.

The *Maximum* duration of choleraic incubation can be fixed with precision only by facts collected beyond the limits of any possible contamination, that is to say, in connexion, with individuals who have quitted a Cholera focus and been placed out of reach of any fresh infection; such would be an isolated traveller in whom Cholera does not show itself until a certain time after quitting the infected place, provided the traveller does not bring with him any object adapted to serve as a receptacle of the morbid principle; such would be the woman of Altenburg, if she had not had her sick child and her clothes with her; but such, above all, would be facts collected in connexion with individuals subjected to strict isolation after having been separated from every object capable of transmitting the disease. In these cases, the longest time which would elapse between the isolation and the manifestation of choleraic symptoms would give, supposing that the study was extended over a large number of facts, the maximum of choleraic incubation.

But the Commission is obliged to admit that facts collected under such conditions do not exist, for the very simple reason that it having scarcely been supposed hitherto that Cholera is transmissible except by man suffering from the disease in its height of intensity, and no account having been made of its transmissibility by contaminated objects, measures adapted to bring these facts forward as evidence have not been instituted generally.

For this reason, the Commission, adhering to the general rule, has recorded the following conclusion: *In almost every case the period of incubation, that is to say, the time which elapses between the moment when an individual may have contracted the choleraic poisoning and the breaking out of the premonitory diarrhoea or of confirmed Cholera, does not exceed a few days; every fact quoted of a longer incubation relates to cases in which the contamination may have taken place after departure from the infected locality.\*—(Adopted unanimously.)*

#### XIV.

##### *Can Cholera be imported and transmitted by living animals.*

This question should be regarded under two different points of view it may be asked whether certain animals are not adapted to contract Cholera, and consequently to transmit it under the same conditions as man, or whether living animals not sick, may not in the same manner as a contaminated object, serve as a receptacle of the principle of the disease and import it.

Very respectable writers, and notably Griesinger, do not doubt that certain animals may attain a morbid condition having the greatest analogy with Cholera. They quote the murrains which, during epidemics of Cholera, have frequently raged amongst birds, cattle, horses, &c., and from this coincidence, joined with a certain analogy in the symptoms, they draw the conclusion of a certain identity of nature. Moreover, from some experiments made by M. Meyer, Thiersch, &c., it has been proved that choleraic dejections may transmit Cholera to animals. But all these facts, let us hasten to say, are very far from being convincing, and admitting even the analogy of certain murrains with Cholera, and admitting also that the white mice poisoned by Thiersch showed all the symptoms of this disease, we are far from being authorised to deduce the identity of nature and still less the transmissibility from the animal to man. In reality no fact has hitherto been brought forward attaching any value to this opinion.

It remains to ascertain whether a living animal can, through it-  
 overing, serve as a receptacle for the principle of the disease. One unders

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\* The Conference has modified as follows the second part of the conclusion of Chapter XIII. (Sitting of 16th June, Minute No. 28) :—

“ Every fact quoted of a longer incubation relates to cases which are not conclusive either because the premonitory diarrhoea has been comprised in the period of incubation, or because the contamination may have taken place after departure from the infected locality.”

stands that this may be so, and this is all that the Commission can say. In this connexion, living animals would enter into the category of objects capable of importing Cholera. In consequence, and without dwelling further on this point, which will be considered in connexion with prophylactic measures, the Commission confines itself to the following answer: *There is no known fact establishing the importation of Cholera by living animals; but it is reasonable, nevertheless, to consider them, in certain cases, as being amongst susceptible objects, so called.*—(Adopted unanimously, except by M.M. Bykow and Lenz, dissentient.

### XV.

*Can Cholera be transmitted by linen, clothes, and articles of common domestic use generally?*

The Commission is unanimous in recognising that articles of domestic use belonging to persons tainted with Cholera or soiled by their dejections, may transmit Cholera; and yet to afford a strict demonstration of this opinion by examples admitting of no other possible interpretation only a very small number can be collected. Not that facts militating in favor of this opinion are rare: on the contrary, they are very numerous; but, as occurs almost always in similar cases they present themselves surrounded by circumstances permitting of different interpretations. Such are facts collected in a choleraic focus. Thus the remark generally made that laundresses and washerwomen are special sufferers during epidemics comes forcibly in support of transmissibility by soiled linen; but as the disease might possibly have been contracted otherwise, it would be necessary, to convert the probability of the transmission into certainty, that the probability should result from the comparative study of a great number of facts.

Convincing examples then can only be drawn from places beyond the limits of choleraic foci. Now, under this limitation, we find cases recorded in science of the transmission of Cholera by linen brought from an infected locality. It was in this way in 1853, at Cessantès, near Vigo, that Cholera was communicated to two washerwomen who had just washed some foul linen which had been brought from the lazaretto where the disease existed, while at the same time their village, the town, and the entire province were still untainted (*Monlau*).

The first case of Cholera observed in the village of Moor-Monkton, six miles from York, occurred on the 28th December 1832. The disease did not exist at the time in the neighbourhood, or in any place within 30 miles. John Barnes, a laborer 39 years old, had been suffering for two days from diarrhœa and cramp, when on the 28th December he was taken with all the symptoms of Cholera, accompanied with a general coldness of the members, and died the next day. The sick man had been visited by two respectable physicians, the brothers Hopps, one of whom, a very experienced practitioner from York, immediately set to work to arrive at the probable source of the disease. His first investigations were made in vain. In the mean time the wife of John Barnes, and two other per-

sons, Metcalfe and Muscroft, who had visited the sick man the day before themselves seized by Cholera; they recovered. In addition, Job Foster, Ann Dunn, and a widow Breyke, who had all been in communication with the above mentioned Cholera patients, all suffered from severe premonitory indisposition, which, however, was checked. While the physicians were vainly seeking to discover the origin of the disease the mystery was revealed in an unexpected way by the arrival of a son of the deceased. The young man had been apprenticed to his uncle, shoemaker in Leeds. He informed the physicians that his aunt (his father's sister) had died of Cholera fifteen days before, and that, as she had no children, her effects had been transmitted to John Barnes through the common carrier, and without having been washed. The trunk containing the things had been opened by John Barnes in the evening and the next day he fell ill. (*J. Simpson. Observations on Asiatic Cholera London, 1849.*)

Dr. Simpson in the same work, relates a very curious fact which would tend to prove that an article, contaminated and shut up, communicated Cholera after the lapse of ten months. The occurrence was observed at York in 1833 by Dr. Brown. A woman aged 67 years, died of Cholera in August 1832. Ten months later, at Whitsuntide, two nieces of this woman having come to visit their uncle, the latter for the first time opened a drawer containing, besides some trinkets which he offered to his nieces, the cap worn by his wife at the moment of her death. This man was seized by Cholera the same evening and died the next day. What gives this fact some value is that Dr. Simpson does not doubt the veracity of Dr. Brown's narrative.

Dr. Simpson adds: "The cases quoted above are of indisputable authority. They evidently show that the disease may be carried from place to place by means of clothes."

We give another remarkable fact taken from Pettenkofer's work. (*Untersuchungen und Beobachtungen ueber die Verbreitungsart der Cholera: Munchen, 1865.*)

At Lustheim, a commune of Schleisheim, near Munich, the first case of Cholera occurred in a family of day-laborers, consisting of father, mother, daughter and a female relative. Another daughter was in service in Munich. The latter sent her parents some food and the old clothes of a family some members of which had just died of Cholera. The meat, which was already slightly tainted, was eaten and the clothes were worn. On the third day, the 21st September 1854, the father and mother were attacked by Cholera, and died. On the 22nd their daughter was attacked. On the 25th the son, who was in service elsewhere, came to the house to attend the funerals. He fell ill in the course of the afternoon and died in five hours. The daughter who was in service at Munich, and who had sent the things spoken of above, having come on the 22nd to nurse her sister, fell ill on the same day and died also. On the 26th the

female relative who lived with the family, was seized in her turn, and finally sank. The only member of the family who survived was the daughter who was attacked on the 22nd.

There is also to be found in Pettenkofer's work the very interesting case of a prisoner who, transferred from the police lock-up at Munich, where many cases of Cholera had occurred, to the prison of Ebrach, which was as yet healthy, carried the disease with him, although he only had diarrhoea on his arrival. He entered on the 20th August 1854, and showed the characteristic symptoms of Cholera on the 26th, but recovered; his gaoler, however, who was attacked the next day, died in a few hours. An epidemic was the result. The disease broke out on the 28th in the part of the prison reserved for women, which is completely separated from that set apart for men. Pettenkofer proved on enquiry that the first woman attacked had been employed on the 21st in washing the foul linen taken off on the 20th by the prisoner above mentioned.

Lebert (*Choléra en Suisse*: Francfort 1856) reports the very interesting case of a man who was seized with Cholera at Lugano after the complete cessation of the disease in the town, and after having made use of clothes which had been worn by a Cholera patient, who had died two months previously in the same house. Dr. Pappenheim has related in the *Journal de Casper* (Tome V. 1854) facts from which it results that persons have contracted Cholera, after the disease had entirely ceased by sleeping in beds which had been made use of by Cholera patients during the epidemic and which had been put aside and kept locked up since then.

If all these facts, which we could multiply, do not afford us an absolute certainty, they establish at least a probability so great that we cannot refuse to attach a very great value to it.

In the case quoted before of an emigrant ship leaving Havre in 1848 for America, and on board of which Cholera did not break out till the sixteenth day of the voyage, it was said that the out-break of the disease was to be attributed to the opening of their chests by the emigrants, these chests containing contaminated baggage. This, no doubt, is only a supposition, but it is one which becomes very probable when we consider, on the one hand, the time which elapsed between the departure from Havre, where Cholera had ceased (many of these emigrants came from a part of Germany where the disease existed), and the moment of the first attack; and, on the other hand, all the facts militating in favor of the transmission by articles coming in some way in contact with persons infected with Cholera. In the interpretation of this fact, there are not in reality more than four possible suppositions: either the spontaneous development of Cholera on board the ship, which is unexampled as a matter of fact; or an incubation of at least sixteen days, which would constitute an infinitely rare exception; or a concealment of the first indications of choleraic poisoning, which would not fail to be discovered afterwards; or finally, a contamination contracted on board, which is more in harmony with what we know of the modes of transmission.

Besides facts proving that Cholera may be transmitted by means of articles which have been made use of by Cholera patients, there are others which show that the camping ground where an epidemic has taken place (in India), hospital wards, rooms, and ships which have contained persons suffering from Cholera, may sometimes preserve for a certain period and under certain conditions, the property of transmitting the disease. It would take too much time to enumerate the facts, which are besides well known and place this assertion beyond doubt.

But, in regard to the well proven possibility of the transmission of Cholera by articles coming from a choleraic focus, and above all by articles which have been handled by Cholera patients, it is as well to remark that, in the generality of cases, articles of domestic use coming from a place infected by Cholera do not import the disease. If it were otherwise, in all the different epidemics which have occurred and notably in the last, the generalisation of the disease in every direction would have been much greater. In fact, if we consider the immense number of travellers who in 1865 left a choleraic focus, and who spread themselves with their baggage over every country of Europe, and, consequently, the number of places exposed to infection by the importation of articles of domestic use coming from contaminated localities, we must of necessity acknowledge that if transmission through this means may have been caused in certain places, it has not occurred in the immense majority of cases.

There are then certain necessary conditions, which happily are rare, to qualify articles of domestic use for the importation and transmission of Cholera.

These conditions are indicated to us in the very instances where the transmission has been effected. In regard to transmission to a short distance, it is necessary that the articles in question must have come recently in direct or indirect contact with Cholera patients, and have above all been soiled by their dejections. This is the circumstance which causes laundresses, washerwomen, and people generally who handle things belonging to Cholera patients to fall special victims to the disease. Now it is clear that this contingency must be of rare occurrence, so far as the effects of a traveller are concerned. It is not impossible, nevertheless, that linen soiled by an individual having merely simple, choleraic diarrhoea may be shut up in a trunk. What is shown to us by facts where the transmission has taken place long after the cessation of the epidemic, or in a place far from the starting point? They show that then the contaminated articles have always been shut up, confined, and kept more or less from contact with fresh air. There is no instance of articles exposed freely to the atmosphere having in a short time (which, however, cannot be precisely estimated for want of sufficient data) transmitted Cholera, while there are cases tending to prove that transmission has occurred by means of articles kept shut up for several months.

It follows from all this that articles of personal use owe their property of transmitting Cholera to their impregnation with matter proceeding from Cholera patients, particularly their alvine dejections, which,

it may be said here, appear to retain in an especial manner the principle of the disease. It follows also that articles thus contaminated rapidly lose, when freely exposed to the air, the property of transmission, but that they retain it when kept confined.

A free current of air then is a purificatory agent for contaminated articles; and so far from being able to transmit the generating principle of Cholera intact to great distances, rapidly destroys it, as we shall demonstrate by and by.

Thus much said, the Commission replies that *Cholera may be transmitted by articles of personal use brought from an infected locality, and especially by those made use of by Cholera patients; and that it also follows from ascertained facts that the disease may be imported to a distance by the same articles shut up from contact with fresh air.*—(Adopted unanimously.)

## XVI.

*Can Cholera be imported and transmitted by means of merchandise?*

No case is known establishing the transmission of Cholera by merchandise imported from a country where the disease prevails.

In particular, merchandise imported from India, either to Suez or to Europe direct, has never transmitted Cholera. This would not prove, however, that the thing is impossible, or may not have taken place elsewhere under circumstances which have not been perceived, especially if it is considered that under the name of merchandise are comprised articles eminently adapted for impregnation by the morbid principle, such as drill rags, skins, &c.

*The Commission, therefore, while admitting unanimously the absence of proofs in support of the transmission of Cholera by merchandise, admits (by a majority of 16 votes to 6) the possibility of the fact under certain conditions.*

(Dissentient: MM. Bykow, Goodeve, Lenz, Pelikan, Polak, and Van Geuns.)

If what has just been said of the agents by which, it is admitted with more or less reason, Cholera may be imported or transmitted, is now recalled to mind, it will be seen, as we showed at the beginning, how difficult it is, in the present state of our knowledge of the subject to distinguish the particular part belonging to each different element in choleraic arrivals, to man, to his luggage, to his merchandise, to the ship. All these elements are not, doubtless, dangerous to the same extent; but they may all be so independently of each other by the simple fact of having come from a locality infected by Cholera.

*In consequence, the Commission believes it would be wise, until more ample information is available, to consider, except under peculiar and defined conditions, every arrival from a choleraic focus as suspicious.*

(Adopted unanimously, except by MM. Goodeve, Pelikan, and Polak, who have abstained from voting.)



## XVII.

*Can the corpses of persons who have died of Cholera import and transmit the disease?*

In Europe there is scarcely any ground to fear that the corpses of Cholera patients carry the disease from one place to another, because when they are conveyed to a distance, precautions are used which remove all danger; but it is not so in Asia, where in obedience to certain religious customs, it is usual in many countries to send a corpse to great distances. In this point of view, the question has a peculiar interest for Turkey.

It is known, in fact, that at a fixed time every year, the Persians perform a pilgrimage to certain holy places in the environs of Bagdad, and that they are in the habit of bringing with them a great number of corpses in every stage of decomposition, from bones shut up in bags or boxes, to the dead of yesterday, reposing in badly joined chests. These human remains, exhaling a fœtid odour, are brought to be buried near the venerated tombs of the great saints of Islamism. Very frequently these pilgrims also bring Cholera with them, which they spread, more or less, in Bagdad and through the entire province.

The part borne by corpses in such cases is not doubtful; they create conditions of impurity which contribute to augment the ravages of the disease, as we know from all the information we possess on this subject. But has the importation of corpses ever given birth to the disease? The only reply that can be given to this is that every time Cholera has been brought to Bagdad by the Persian pilgrims, they themselves had it amongst them long before their arrival at Bagdad; so that it is difficult to define the part borne by the dead and that by the living. On the other hand, when the pilgrims have arrived free from Cholera, the disease has never broken out either amongst them, or beyond their community, during the ceremonies attendant upon the inhumation of the corpses, whatever may have been the infection resulting from putrid exhalations. All that we can conclude is, that the Persian corpses, putrid as they were, did not give birth to Cholera; but we cannot say that this is so with the corpses of persons who have died of Cholera.

The opinion held by many physicians who have attentively studied the question of late is that the corpses of Cholera patients are very active agents of transmission. It seems indeed very natural, the transmissibility being admitted, that this should be so, the corpse being supposed to contain all the elements having the property of reproducing the disease. It is nevertheless, a matter of fact that physicians who have made a speciality of the pathological anatomy of Cholera, and who have made hundreds of *post mortem* examinations, have not suffered more from the disease than others. This fact has been noticed in India as well as in Europe. Can it be because *post mortem* examinations on the corpses of Cholera patients are generally held while the body is fresh, at a time when a certain degree of fermentation, which is perhaps essential to the development of the morbid principle, has not yet been produced? It is possible. But, on the other hand, when conclusive facts in support

of the transmission by means of corpses are sought for, they are not found, or rather complex facts are found which leave it undecided whether the transmission of the disease is effected by the dead body more than by the dejections previous to death, or by any other circumstance.

In reality, there is no strict proof of the fact, and it does not necessarily follow that, because a Cholera patient or his dejections may transmit Cholera, the corpse of a Cholera patient, with all that it contains retains the same property.

In this state of doubt, the Commission replies; *Although it is not proved by conclusive facts that the corpses of Cholera patients can transmit Cholera, it is prudent to regard them as dangerous.*—(Adopted unanimously, except by M. Sawas, who abstains from voting.)

#### OF THE INFLUENCE OF MEANS OF COMMUNICATION.

After having studied and defined as far as possible the part borne by the principal agents to which the importation of Cholera can be attributed, it is right to examine at present the part which is borne by means of communication in the propagation of epidemics.

### XVIII.

*What influence do the different modes of communication, by land and by sea, exercise on the propagation of Cholera.*

The progress of epidemics has made us see that the propagation of Cholera always takes place in the direction of human currents; that the more active and multiplied communications are in a country, or from one country to another, the greater is the tendency to the wider propagation of the disease; and that the more rapid the means of transport are, the more rapid is its extension. We have quoted facts in support of these propositions and need not return to them.

Of all modes of transport, the most dangerous, and the most adapted to import the disease, though not the most rapid, is maritime transport: because a ship may contain within it all that constitutes a choleraic focus. It may not only convey an entire epidemic, but it carries with it conditions of confinement and infection the most adapted to the transmission of the disease. A ship infected with Cholera may, therefore, be considered, we say, as the surest means of propagation, and the shorter its voyage the more is it to be feared.

Railway communications, though capable of carrying the disease with greater rapidity from one place to another, as was seen in the last epidemic, are yet not so adapted to propagate an epidemic with such certainty. This has been demonstrated by experience, and may be reasonably understood. Railways have very seldom to convey Cholera patients, and the population which takes to flight by this means from an infected locality does not generally belong to the classes more particularly liable to be stricken by Cholera. These circumstances, joined to the free ventilation and to all the other causes of extinction of the choleraic

principle in such a journey, counterbalance and more than counterbalance the danger resulting from the number of travellers. Let us hasten to add, however, that next to means of transport by sea, railways are incontestably the most active agents in the rapid extension of epidemics ; and it must be admitted that, under certain conditions (the conveyance of troops for instance) they may be the cause of the certain propagation of the disease. The development of Cholera at Alexandria after the arrival of the pilgrims by train from Suez affords us the proof of this.

*In consequence, the Commission replies that maritime communications are, from their nature, the most dangerous ; that they propagate Cholera to a distance most surely, and that next to them are railways, which, in a short time, can carry the disease to a great distance.—(Adopted unanimously.)*

### XIX.

*What is the influence of deserts on the propagation of Cholera ?*

Amongst all the means of communication between one country and another, one especially deserves attention, because, far from favoring the propagation of the disease, it has never served as a conducting agent in its progress : we mean communication across great deserts by means of caravans. Experience, going back as far as the first appearances of Cholera beyond India, has taught, in fact, that a great desert is the best of all obstacles to the propagation of Cholera. It has demonstrated that not only has such a space never been cleared at a bound by the disease, but also that a large caravan, starting from a place where Cholera is raging, gets rid of the disease gradually in its progress through the desert and arrives entirely purified, provided its journey is more than twenty days in duration. The Ottoman Sanitary Administration possesses very valuable information on this point. The caravan of pilgrims leaving Mecca while the town is a prey to Cholera (and this circumstance has often been repeated) has never yet carried the disease to Damascus. Documents prove that when this caravan has quitted Mecca with Cholera in its midst, the disease has always died away within a week or two of its journey. The same may be said of the caravan leaving Mecca to return to Egypt via Suez : this latter also has never carried Cholera into Egypt ; and it has been proved that if, in 1831, this disease was carried there by pilgrims on their return from Mecca, those who returned by sea were the importing agents and not the caravan, which arrived later.

The same remark is applicable to the journey across the deserts separating Bagdad from Damascus and Mecca ; and when, in 1823, and later again in 1847, the Cholera, coming from Persia, advanced to the north of Syria, it went up the Tigris and Euphrates, by Diarbekir, Orfa, Biredjik, and not across the desert. An assertion to be found in the very respectable work of Verrollot on the march of Cholera in 1845-46, and 1847, would seem to prove an exception to this rule. Verrollot supposes that Cholera was imported into Mecca in November 1846, the time of the pilgrimage, by the Persians who had come from Kerbela, basing his opinion merely

on the fact that Cholera was raging at Kerbela in August of that year; but he forgets that the disease had existed at Jeddah since May, and that it is much more reasonable to suppose that the Cholera spread from that town to Mecca, where it became fully developed at the time of the pilgrimage. The opinion of Verrolot then is not such as to invalidate a rule established by long experience. Let us add that the same rule holds good in regard to the deserts on the north of Africa, having been found by our colleague, Dr. Dickson, to exist during the epidemics of 1850 and 1855, when the Cholera never spread beyond three stages of the journey across the desert, and also that it has been similarly proved, by observations made by Dr. Byrne, to exist in the United States of America.—(*Essay on Cholera, 1855.*)

It may be said then that it is a well established truth that a great space, a desert, where the people are scattered and have but little communication with each other, is the best of all barriers against the importation of Cholera, and that, when the disease penetrates to it, it evaporates as it were and is rapidly extinguished. Thus, free air, the atmosphere through which it has been supposed the principle of Cholera is able to pass to great distances, is, on the contrary, the purifier and destroyer of this principle.

*The Commission, relying on facts established by experience, concludes that great deserts form a very efficacious barrier against the propagation of Cholera, and declares its conviction that in no instance has the disease been imported into Egypt or Syria, across the desert, by caravans from Mecca.*

(Adopted by all the members of the Commission, except MM. Monlau, Pélikan, Polak, and Van-Geuns, who have abstained from voting.)

#### OF THE INFLUENCE OF ASSEMBLAGES.

#### XX.

*What is the influence of assemblages of men on the intensity of epidemics of Cholera, as well as on the propagation of the disease? Under what conditions does it exercise this influence?*

To solve these questions, it is necessary to regard this influence as it displays itself on board ships, in lazarettos, in armies, in fairs and in pilgrimages, and notably in the pilgrimage to Mecca. On the other hand, it is necessary to show the influence of dissemination, both as a means of diminishing the intensity of choleraic epidemics, and as a means of propagating them.

But before passing to the detailed study of these different points, the Commission thinks it is able to reply, at once, in a general way, to the questions proposed, that *every assemblage of men amongst whom Cholera is introduced, is favorable to the rapid extension of the disease; and, if an assemblage is in a bad hygienic condition, to the violence of the epidemic which breaks out in it;*

*That in such cases the rapidity of the extension is proportionate to the concentration of the assembled masses, while, cæteris paribus, if the individuals composing the assemblage have been but slightly under the influence of Cholera, or if they have been exempt from it, the greater is the violence of the epidemic, that is, in other words, that individuals who have already been under the influence of a choleraic focus enjoy a sort of comparative and temporary immunity which counterbalances the grievous effects of the assemblage ;*

*And lastly, that in an assemblage the greater the extension of the epidemic the more speedy will its cessation be, provided there are no fresh healthy arrivals to furnish the disease with more aliment, and thus keep it in existence.—(Adopted unanimously.)*

Nobody can fail to see the importance of some of these propositions. They maintain the very remarkable fact that the greater the concentration of an assemblage, the speedier is the propagation of Cholera, as well as its final extinction, no matter what may be the conditions of the locality. Experience demonstrates that, under these conditions, Cholera, after having carried off a number, more or less considerable, of victims—the number, however, never rising above a certain proportion—is promptly extinguished in consequence of the immunity enjoyed by the survivors. The practical result of this fact is that when Cholera shows itself in such a place, there is no reason to fear its continuance there beyond a certain time, or the destruction of an indefinite number of victims. It remains now to be demonstrated that these conclusions, which are applicable generally to all assemblages, are justified by the study of facts, considered with regard to every kind of assemblage.

## XXI.

*What is the intensity and the continuance of epidemics of Cholera on board ships?*

The conditions under which people are collected on board a ship are, there can be no doubt, the most favorable to the rapid development and violence of choleraic epidemics. The narrow and badly ventilated space, the impossibility of sufficiently isolating the sick, the infection resulting from this, cause a ship crowded with men to constitute a place the most adapted to favor an epidemic and apparently to sustain it. It need not be said that the greater the crowding, and the worse the sanitary conditions, the greater fear is there of the probability of a violent epidemic. On this head experience agrees with reason.

It does not follow at all, however, that every ship, with an equal number of passengers, runs the same risk in the event of an attack of Cholera. It is necessary to make a distinction in this respect between vessels coming from a choleraic focus, that is to say, which have on board individuals who have been staying for a time, more or less, in a locality where Cholera has been raging, and ships having on board a crew and passengers exempt from all choleraic influence, and who have just placed themselves in contact with places or individuals tainted with Cholera.

First as regards ships leaving an infected place, though the crowding may be very great, if Cholera breaks out on Board, ordinarily it carries off only a small number of victims during the first few days of the voyage, and, if the voyage is prolonged, it is extinguished, not to reappear. Most often indeed Cholera, properly so called, does not show itself on board.

The proof of this has been given in the most convincing manner during the last epidemic.

Thirty-three steamers and 112 sailing vessels arrived in the Dardanelles last year during the epidemic in the course of a month and a half, most of them having come from Alexandria. On these vessels there were not, during the entire voyage, more than 5 deaths, and about 16 men attacked by Cholera, who were taken to the lazaretto. The crews of these ships numbered altogether 3,058, and more than this number of passengers, of whom 2,268 entered the lazaretto. The number of those who passed through quarantine on board is not indicated. This makes altogether a total of more than 5,326 men, without reckoning those who remained on board, furnishing 5 deaths besides 16 attacks, which occurred for the most part on board the steamers.\* We shall see further on what passed in the lazaretto.

What we say of the arrivals in the Dardanelles has been observed, in almost the same proportion, in all the ports of the Ottoman Empire. The report of Dr. Bartoletti on the march of Cholera in 1865, leaves no doubt in this respect. We may add that it has been the same in every place where there have been arrivals from Alexandria, and particularly so at Marseilles, where scarcely any cases of Cholera were observed on any of these ships, bringing as they did, within a short space of time, such a large number of fugitives to the town.

The same fact was remarked at the commencement of the war in the Crimea. The ships from Marseilles, which brought the first infected troops by whom cholera was spread, had only a few cases on board during the voyage, notwithstanding the enormous crowding.

In 1832, while Cholera was raging in England amongst the numerous vessels, which carried 33,000 passengers to Quebec, only two, the *Carrick* and the *Royalist*, had any cases of cholera on board during the voyage.

It is then a general fact that ships coming from an infected locality, and having on board individuals who have made a stay in that locality, are not often made a theatre for choleraic manifestations, and if the disease breaks out on board it is generally of very small extension, even in case of crowding. It is proved, besides, that ships leaving a place during the progressive period of an epidemic have most sick on board.

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\* The vessels named as having had Cholera on board are the *Archiduc Maximilian*, arrived 30th June, 2 cases 1 death; *Mirra* 2nd July, 1 death; *Charlie* 7th July, 1 case; *Minia*, 8th July, 2 deaths, *Djafria*, 5 cases landed on the 14th and 15th; *Tomise*, 22nd July, 2 cases, *Eding*, sailing vessel, 22nd July, 1 death. The other vessels completing the 16 sick persons landed are not mentioned.

If we had relied on information received from Egypt, there would have been an exception to this rule last year. The masters of the vessels which carried the pilgrims from Jeddah to Suez declared, on their arrival, that they had had no cases of cholera on board during the voyage. Now this declaration has been found to have been false; but some go even further and assert that one of these vessels, the *Sydney*, carrying 2,000 pilgrims, lost more than 100 during the voyage.\* This is only a supposition, which was not verified. May we not be permitted to believe that there was concealment on the one hand and exaggeration on the other? Be this as it may, it is, after all, an exception which may be easily explained; besides the Commission does not pretend that there are no exceptions to the rule laid down above. A certain number may be quoted, capable of being differently interpreted, but they do not in the least invalidate the general rule.†

As for ships having on board an assemblage which has never been subjected to any sort of choleraic influence, if the disease shows itself on board, as a rule it rapidly develops itself and the epidemic is more severe than on the others, going through all its phases in a short time, and to a certain extent, proportioned to the concentration of the people on board.

The history of the epidemic of cholera which raged on board the French fleet in the Black Sea in 1854 offers a remarkable example in support of this proposition. This epidemic, an excellent account of which has been given by Dr. Marroin, chief physician to the fleet (*Paris*, 1861,) shows that cholera effected its entrance into the Black Sea on the 13th and 14th July, with the *Primauguet* and the *Magellan*, from Gallipoli. The importation first took place at Varna, whence the disease spread to the army on land. Up to the 22nd July, with the exception of the two ships in question, the fleet, the greater part of which was anchored off Baltchick, remained uninfected; but from that date cases of cholera and some few attacks of cholera occurred on board several vessels. This state of things continued till the 7th August, when the division under command of General Bosquet, which was being ravaged by cholera, went into camp at Baltchick. Frequent and necessary communications at once commenced between the camp and the squadron. Two days afterwards cholera broke out with extreme violence on board the ships. It must be added (for in such matters if every thing is not said, some reason will be given for the opinion that certain things are not admitted) that two vessels, the *Friedland* and the *Jean-Bart*, on their return from a cruise round the Crimean coast, had each a

\* The captain of the *Sydney*, who was recently questioned at Jeddah, has just declared that last year he threw overboard only 8 bodies (deaths from Cholera) in his voyage to Suez.

† The most remarkable, perhaps, of these exceptions are to be found in the two ships *North Wind* and *Persia*, which, leaving Singapore in December 1864, for Jeddah, lost from Cholera, during the voyage, the first 50 men out of 632 and the other 93 out of 520 persons on board. But the question under discussion is precisely to know whether Cholera had broken out on board these ships in the voyage from Singapore to Mokalla, in which case they must have imported the locality into this latter place; or whether, on the contrary, they contracted Cholera while they were lying to off Mokalla. Under the latter supposition these ships should be placed in the category of those which have never been subjected to choleraic influence, and they would present nothing but what is very common

case of cholera on board before they had any communication with the land or with the fleet. This fact may be interpreted as people like: let us return to the vessels anchored off Baltchick.

From the 9th August, the epidemic assumed great proportions: in three days it attained its maximum of intensity, and terminated at the end of ten days. During this time, the five vessels on which it raged most severely lost altogether 456 men from cholera; and in eight days, the entire fleet lost 800 out of an effective force of 13,000 sailors. From this time to the conclusion of the war, there were only isolated cases of cholera and slight passing outbreaks on board the French fleet, and these occurred principally on board ships conveying troops not yet acclimatised.

If pains are taken to consult all known facts, it will be seen that all or nearly all of the severest epidemics of cholera on board ships have been observed in ships carrying a large number of men who have never, previous to their embarkation, been under the influence of choleraic focus.

But it must not be concluded, from the distinction which we have made in accordance with experience, that ships which have left an infected locality and which have accomplished their voyage without accidents, or with only a few cases of cholera more or less distinctly characterised, and which appear quite innocuous, are altogether exempt from the danger of importing cholera: no, this would be a dangerous error. It was believed for a considerable time, and apparently with reasons, that this was the case; but the facts observed last year no longer admit of the belief.

The great majority of the ships leaving Alexandria had no cases of cholera on board during their voyage. Did they not, nevertheless, propagate the disease, even in the absence of proof of any choleraic accident on board? If they did, how was it done? We cannot say exactly; but it is certain that they spread the disease, for the *decisive* reason that cholera showed itself only where they touched.

Here we come to the question raised by the development of the terrible epidemic of cholera which raged last year in Guadaloupe. We have only two theories to select from: either cholera developed itself spontaneously in the island, and this would be a fact hitherto unexampled out of India; or it was imported. But how could it have been imported? Could it have been by the winds blowing across the Atlantic, when we know that cholera cannot even pass across a desert not nearly so wide as the Atlantic? or could it have been by a ship? If so, what ship was it? Was it, as was at first pretended, the *Virginia*, which left Marseilles on the 3rd September (that is, during the epidemic) and arrived at Pointe-à-Pitre on the 9th October, after a voyage of 36 days, without having shown, as we are assured, a trace of cholera on board? It is to be remarked that the outbreak of cholera in Guadaloupe did not occur till the 22nd or 25th October, while the ship was unloading. Or rather was it, as was said afterwards, the ship *Sainte-Marie*, which was



the means of the importation? This latter vessel left Bordeaux on the 15th September, with a clean bill of health, and when there was no cholera in the town. But it was asserted by those who attributed the importation to this vessel that there were on board sailors who had come from Marseilles, and that two men had died of Cholera during her voyage from Bordeaux to Pointe-à-Pitre, where she arrived on the 20th October, and that the disease must have been communicated in the first instance to two washerwomen who had washed the foul linen of her crew. Now, official information has proved to us that the two sailors in question did not come from Marseilles, and that there was no cholera on board the ship. This version then loses all value.

There remains the first version, according to which the disease must have been imported, after a long voyage, by a ship coming from an infected locality, but which had had no choleraic accident on board. Whatever the value of this version may be, and the Commission is unable to pronounce on the point, it not the less follows, *and this is the capital fact*, that cholera did not break out at Guadaloupe until after an arrival from a locality infected by cholera. The circumstance that similar arrivals in other places have not been followed by the same result, proves nothing against the importation in this instance; it proves simply either that the analogy was not complete, or that in those cases the conditions favorable to transmission did not exist.

Upon the whole, *the Commission replies that the intensity of epidemics of cholera on board ships crowded with men is, in general, proportionate to the crowding, and is all the more violent, ceteris paribus, if these men have not come from a choleraic focus; that in crowded vessels the progress of epidemics is generally rapid; and, finally, the Commission adds that the danger of importation by ships and that of the outbreak of a grave epidemic are not entirely subordinate to its intensity, nor even to the occurrence of choleraic accidents on board during the voyage.*— (Adopted unanimously, except by M. Monlau, who abstained from voting.)

## XXII.

*What influence does the assemblage in lazarettos of individuals coming from a choleraic focus exercise on the development of cholera among the individuals in quarantine and in the neighbourhood of lazarettos.*

The question of the influence, on persons in quarantine who have come from a choleraic focus, of assemblages in lazarettos is most interesting as a study; it originates in a fear frequently expressed that Cholera may effect great ravages among persons placed in quarantine. We can reply, at once, that this fear is in no way justified by the facts. What occurs in lazarettos is exactly what occurs on boardships, that is, when individuals who are thus gathered together, have, previous to their entrance into the lazaretto, been subject to choleraic influences, they possess a sort of immunity which in the immense majority of cases cannot be overcome by the bad effects of the crowding. We give some facts here in proof, extracted from Dr. Bartoletti's work on the march

of Cholera in 1865. During the last epidemic of Cholera, most of the Turkish lazarettos were crowded by masses of fugitives who had fled from places attacked by Cholera. We have been able to obtain precise details only in regard to eleven of these lazarettos, but these eleven are the most important, and the results they show are all the more significant that in every one of these lazarettos, cases of Cholera occurred among the persons performing quarantine. In many instances the crowding was immense, principally at the Dardanelles, at Beyrout and at Trebizond. These eleven lazarettos received altogether 25,819 persons, of whom 480 were attacked by Cholera, 238 cases resulting in death. Reckoning the deaths merely, this would only give a proportion of less than 1 per cent. It must be added that a great many of the attacks were not developed in the lazarettos, but that the individuals affected were already sick when landed. Thus in 9 lazarettos, in regard to which we have details, we find that out of 185 cases, resulting in 101 deaths, 67 had Cholera before they were landed. This, it will be seen, very much reduces the number of cases which can be attributed to the crowding in the lazarettos.

The following table drawn up from facts collected by Dr. Bartoletti, is in support of what we say:—

*Table showing the number of persons admitted into the principal Turkish Lazarettos during the epidemic of 1865, with the number of cases of Cholera and the number of deaths that occurred in them.*

LAZARETTO.	Number of Persons admitted.	Cases developed before entrance into the Lazaretto.	Cases developed in the Lazaretto.	Total Number of Cases.	Number of deaths in the Lazarettos.
Dardanelles ... ..	2,268	16	6	22	15
Smyrna ... ..	1,701	...	14	14	9
Salonica ... ..	4,257	not known	not known	265	122
Volo ... ..	2,265	5	57	62	23
Beyrout ... ..	3,200	not known	not known	30	15
Cyprus ... ..	1,199	19	3	22	7
Crete ... ..	778	3	11	14	10
Benghazi ... ..	812	...	1	1	1
Trebizond ... ..	5,073	1	20	21	19
Samsoun ... ..	3,170	18	6	24	12
Boargas ... ..	1,096	5	...	5	5
<b>TOTAL ... ..</b>	<b>25,819</b>	<b>67</b>	<b>118</b>	<b>480</b>	<b>238</b>

It will be remarked in this table, a very strict examination of which, however, is not necessary, a glance being sufficient, that the number of attacks developed in these lazarettos, and that of deaths, are not always in proportion to the number of persons placed in quarantine; at Benghazi, for instance, there was only one case among 812 persons in quarantine, while at Volo there were 57 out of 2,265, so that it is impossible to decide conclusively as to the influence that crowding has on

the proportion of attacks. To decide this, details would have been necessary, which unhappily are not available, of the condition of the persons in quarantine in each lazaretto. These details have, for the most part, not been furnished, notwithstanding a special circular on the subject from the Turkish Administration.

The Office of the Dardanelles only has furnished the required information on this head. We find that there were as many as 900 individuals at a time in this lazaretto; showing considerable overcrowding, having reference to the capacity of the establishment. In this state of things, however, which did not permit of the isolation from each other of the different categories of persons in quarantine, from the 29th June to the first days of August, there were not more than six cases of Cholera developed in the lazaretto among 2,268 persons. Nevertheless, as we shall see further on, the disease spread from the lazaretto to the town, causing dreadful havoc there.

It would have been very interesting to know what occurred at Salonica, in which place a mass of fugitives hurrying from Constantinople crowded together in a very short space of time, from the middle of July to the middle of August. The lazaretto, which was near the town, was so crowded, that the alarmed population called for the expulsion of many new arrivals, part of whom set out for Volo, and in addition compelled the local authorities to establish a new lazaretto at a great distance from the town. But how many Cholera patients were landed at the first lazaretto (for it was there that almost all the cases occurred)? How many attacks were developed in the establishment? We have no documents to tell us. We only know that nine persons employed in the lazaretto were included in the number of deaths, an enormous proportion as compared with the number of persons in quarantine.

Be this as it may, it not the less follows from the preceding table, and this is all we mean to deduce from it, that Cholera was only very slightly developed among the occupants of the Turkish lazarettos, although the crowding was considerable.

It remains to be seen now what took place in localities more or less in the vicinity of these lazarettos.

At the Dardanelles, at Smyrna, at Cyprus, at Beyrout, at Trebizond, at Kustendje, and at Sulina, Cholera spread from the lazaretto to the neighbouring town, or, at any rate, developed itself in the town subsequent to the admission of Cholera patients into the lazaretto. It would be very interesting here to be able to say exactly in what manner things proceeded in each of the above-mentioned localities; but the want of precise information does not permit of it. It may be understood besides how many interests there are, in the greater number of cases, conflicting with the knowledge of the truth. Still, at Smyrna and Larwaca (Cyprus) and especially at the Dardanelles, it was found possible to follow up the connexion of facts and to demonstrate the passage of the disease from the lazaretto to the town.

This is what took place at the Dardanelles: several cases of Cholera had been admitted to or developed in the lazaretto since the commencement of July, and on the 12th a soldier on guard at the gate of the establishment was attacked by the disease, and was taken to the neighbouring hospital, where he sank rapidly. The next day there were eight cases of Cholera, *viz.*, two amongst the soldiers on guard at the gate of the lazaretto, 3 amongst the garrison of the fort touching on the establishment, one in the town (about an hour's walk from the lazaretto by land, but much closer by sea,) in the person of a Health Officer who had come from the lazaretto two days previous, 1 in another quarter of the town, in the person of an individual who sold cakes and sweetmeats every day at the lazaretto, and finally one in the person of a boatman attached to the Health Office. Such was the starting point of the epidemic, which afterwards broke out in the town and ravaged it severely, as may be seen from the following figures: Out of a population of 8,000 souls, rapidly reduced to 6,000 by emigration, there were, from the 12th July to the 2nd September, 344 deaths from Cholera not including 25 deaths amongst the garrison of the forts, *i. e.*, nearly 6 per cent. of the population.

In this instance, therefore, the mode of propagation is not doubtful; and it is to be noted that while not more than 6 attacks amongst 2,268 individuals were developed in the lazaretto, the town, on the contrary, was cruelly ravaged. Does not this show that persons in quarantine enjoy a sort of comparative and acquired immunity?

At Smyrna the propagation from the lazaretto to the town is less evident. The first ship from Alexandria with a foul bill of health arrived on the 23rd June, and on that day a cholera patient was landed at the lazaretto. But it must be said that, before this arrival, there had been others, which had also left Alexandria after the appearance of cholera in that town, and which had been admitted with a clean bill of health, in accordance with the rules, having nothing suspicious on board, and having accomplished the voyage in five days. Be this as it may, the first case of cholera observed in the town of Smyrna took place on the 24th June, the person attacked being an Armenian female; other cases followed, at rare intervals at first till the 11th July, and then in quick succession, until during the greatest intensity of the epidemic, from the 30th July to the 7th August, the daily mortality was as high as 80.

It cannot be maintained that at Smyrna, cholera spread from the lazaretto to the town, although they are contiguous; but it is not the less remarkable that the persons in quarantine suffered much less from cholera, considering their relative proportions, than the inhabitants. Thus it has been estimated that the mortality in the town amounted to about 2,500 in a population reduced to 100,000, that is 1 in 40; while amongst the 1,701 occupants of the lazaretto, there were only 9, or 1 in 189.

In regard to Larnaca, all we know is that the lazaretto is very near the town, and that, from the 24th June to the 18th July, 1,199 people

were admitted to quarantine, of whom 19 had cholera before admission, and 8 were attacked subsequent to entering the lazaretto. On the 7th July the first case in the town took place, the man attacked being the keeper of a café, who had lodged several persons after they had quitted the lazaretto. Thence the disease spread through the town, and afterwards through the island.

In regard to Beyrout, the information we possess shows that from the 17th June to the 25th July, 8,200 persons, coming from Alexandria, were subjected to a quarantine of from 5 to 10 days, either in the lazaretto, a well ventilated establishment but too small for so many people, or in isolated houses on the sea coast on the other side of the house. The crowding, nevertheless, was very great, and a time arrived when the persons in quarantine, who could no longer be kept in, openly broke bounds. But cholera already existed in the town. The first case took place on the 1st July on the person of a man named Farrah, who had not apparently been in communication with the lazaretto where the persons infected with cholera were confined. The second case in the town took place on the 3rd July, the person attacked being the Abbé Viale, Secretary to the Patriarch of Jerusalem, on the very day he left the lazaretto, where he had undergone a quarantine of ten days. He died in a few hours. Notwithstanding this fact, it is impossible to establish a precise relation between the lazaretto and the first person attacked in the town. The epidemic which followed was not very severe at Beyrout, for during three months, out of a population reduced by emigration to 50,000 souls, there were not more than 593 deaths, or 1 in 88; but even here the proportion is much greater than among the occupants of the lazaretto.

There are no documents available from which any definite conclusion can be drawn with regard to Trebizond. Cholera, however, was but very slightly developed in this town, which the year previous had suffered so much from typhus.

At Sulina, the ravages of cholera were dreadful, and two cases had occurred among the occupants of the lazaretto before it broke out in the town. This is all that we can draw from the information we have received.

To sum up: the propagation of cholera from the lazaretto to the town is incontestable in regard to the Dardanelles; it is very probable, so far as Larnaca is concerned, and is doubtful in respect to the other places mentioned above.

Amongst the localities comprised in the table, six were spared by the cholera, and two of them, Salonica and Volo, deserve special mention.

At Salonica, where, as has been seen, fugitives assembled from various parts, we find circumstances very favorable to the propagation of the disease: considerable over-crowding (amounting to 1,300 at a time) in the lazaretto situated near the town, and a great number of cholera cases (265) in the establishment. It is true we are told that

these cholera patients were carefully isolated from the other occupants of the lazaretto (what such an isolation was may easily be imagined) and that afterwards the lazaretto was removed to a great distance from the town; but it is not the less certain that almost every case of cholera took place in the first lazaretto, and that, notwithstanding the isolation, attacks of cholera were more numerous at Salonica than any where else. There is even something more to be added: an individual who broke bounds after having undergone 14 days of quarantine, must have, according to an account worthy of credit, been seized by cholera four days afterwards in the town. This attack, resulting in death, was followed by two other cases, one of which was fatal, in the same house; which was immediately put in quarantine. Be this as it may, Salonica was spared. Whatever may be the explanation given of this fact, it deserves to be recorded. Nevertheless, several villages in the vicinity of Salonica, to which several persons who had come out of the lazaretto had gone, were not so fortunate; cholera showed itself in them with great intensity.

Volo in a manner received the superabundance of those who should have gone into quarantine at Salonica: 1,649 out of 2,265 passengers on board ships were landed there on a desert islet and placed under canvas; 62 attacks, 23 of which resulted fatally, took place among these people from the 26th July to the 10th August. The town was saved; although the writer in the Health Office was attacked and died beyond the limits of the lazaretto, and the physician of that establishment himself attacked sought refuge in the town; but the disease showed itself in many villages from five to ten miles distant from Volo, where, 42 days after the last case observed in the lazaretto, an individual coming from one of these villages was attacked. Thus, with a few exceptions, the epidemic spared the town of Volo.

We conclude these details with some particulars about Rhodes and Crete.

Rhodes received no less than 2,618 persons, who went into quarantine during the course of two months, dating from the 19th June. Considering the smallness of the lazaretto, they were for the most part placed under canvas, under favorable conditions. On the 20th June, one of the people in quarantine, who had landed the day before from an Egyptian ship from Alexandria, and which had had no cholera patients on board, fell sick of cholera and died the same day. The other passengers by this ship, to the number of 86, were removed elsewhere under tents, and completed ten days of quarantine without any accidents. It was the only case of cholera observed at Rhodes during the period of quarantine. The island was altogether spared.

The island of Crete, during the course of about two months, received 972 persons into quarantine (not including the crews), of whom 184 remained on board and 788 passed through quarantine in three islets of the Gulf of the Suda, where tents and barracks had been erected. The surveillance was very strict: all communication between one islet and another was interdicted. The quarantine was to last for ten days,

and in the event of cholera, it was to be prolonged for ten days more after the occurrence of the case. Two ships, coming from Alexandria, brought with them cholera patients. One, which arrived on the 28th June, had had two fatal cases in port. Amongst the passengers landed, amounting to 250, there were, during this period of quarantine, 8 cases and 4 deaths, to which must be added the death of a guard of health. The other ship, a Turkish brig, arrived on the 27th July with 58 passengers on board, the greater part consisting of workmen from Suez. She had had 5 cases on board during the voyage. Only one of the sick men was landed at the lazaretto. Amongst these passengers, from the 7th of August to the 3rd of September, 5 deaths took place from Cholera. It is to be noted as most remarkable that not only did the Cholera not spread to the island of Crete, but also that there were no cases of Cholera among the persons in quarantine, except among the passengers from on board the two ships just mentioned, and who it is true had been placed apart from all others and from each other on two different islets.

We shall not proceed any further with our quotations. It is only necessary to add that the duration of quarantine in the Turkish lazarettos was not always the same; at first it lasted from 5 to 10 days, according to regulations, and accordingly as a ship had or had not had any cases of Cholera on board during the voyage; it was soon extended generally to ten full days in every case and to a still further period in some places. This is not the place in which to dilate on the value to be attached to this duration.

From all that has been said, the Commission concludes that the assemblage in a lazaretto of individuals coming from a place where Cholera is raging does not tend to produce the extension of the disease among the persons in quarantine, but that such an assemblage is not the less very dangerous to the neighbourhood, in so far that it is adapted to favor the propagation of Cholera.—(Adopted unanimously, with the exception of M. Moulau.)

### XXIII.

*What influence do great assemblages of men, armies, fairs, pilgrimages, exercise on the development and propagation of epidemics of Cholera?*

The remark made with regard to ships is applicable to all great assemblages of men having peculiarities similar to the various conditions of the former.

When Cholera penetrates amongst a body of troops, in a concentrated army, until then free from all choleraic influence, it develops itself rapidly and rages in proportion to the hygienic and moral conditions of the army, and the epidemic passes through all its phases with a good deal of rapidity, though not quite so speedily as it does on board a ship. It is also rapidly extinguished provided there are no fresh arrivals, hitherto unsubjected to choleraic influences, to feel the disease and give it new life. In this event, those who have already been

attacked suffer much less proportionately than the new comers, in consequence of their enjoying a sort of comparative and acquired immunity. Numerous instances might be brought forward in support of this theory. We shall content ourselves with quoting what was observed in the French army during the Crimean war.

The first invasion of the army by Cholera, at Gallipoli and at Varna, was terrible; but it was a kind of hurricane which, in the course of a month, left only a few scattered traces of its presence. The disease, however, never completely disappeared until towards the end of the war, and from time to time it broke out afresh, and always when fresh troops arrived. These latter always suffered more or less largely at these times; a few of the more weakly amongst the more experienced troops were also stricken down, and then the disease subsided.

A very remarkable example will show how fresh troops may reanimate an epidemic believed to be extinct. In the commencement of April 1855, 15 to 20,000 troops, consisting in part of the Imperial Guard, arrived at Constantinople from France. There had not been a single case of Cholera amongst these troops during their voyage. They were encamped on the heights of Maslak, a well chosen site in a hygienic point of view. At this time there were only some very rare cases of Cholera in Constantinople. The statements of the French military hospitals did not show more than 53 cases for the month of March. The statement for the 10th April showed none. In the Crimea, at the same period, cases were equally rare. The troops in question were scarcely settled at Maslak when the disease burst out among them on the night of the 14-15th April. It must be said that for some days before cases of diarrhoea had become numerous in the camp. A rather severe epidemic followed, which rapidly declined but accompanied the troops to the Crimea, where they arrived in the beginning of June, and where their arrival was marked by a fresh and serious outbreak of the disease. It must be added also that from the camp at Maslak the disease spread to Pera and to those villages on the Bosphorus which were nearest the choleraic focus.—(*Extracted from official documents.*)

As for the propagation of Cholera by armies or bodies of troops in motion, it is a fact so well known, that it is unnecessary to go into much detail on the subject. It suffices to bring to mind the war in Poland in 1831, which was the great cause of the rapid propagation of Cholera in Europe; the circumstances of the civil war in Portugal in 1833 (*Gomda*), when Cholera was transmitted to the province of Algarves and to the towns of Torres Vedras, Caldas, Leiria, and Coimbra, by the movements of troops. According to information furnished by Dr. Lenz, during the epidemic of 1847 and 1848, in Russia, Cholera was frequently imported in countries, hitherto untainted by troops coming from an infected locality. Thus, in 1847, the disease was transmitted to Kisliar by a troop of soldiers from Temir-khan-Choury; in 1848, in the government of Smolensk, by two regiments of hussars from Moscow.



who communicated Cholera not only to the towns where they left their sick, but even to the villages where they had made only a single night's halt. The same thing has been observed in connexion with the movements of troops in India. In the governments of Nijni-Novgorod, Kostroma, Jaroslav, and Vladimir, all the local authorities attributed the rapid propagation of Cholera, in the spring of 1848, when the navigation of the Volga was opened out, to the masses of men employed in towing boats, and who, being the first who were attacked, took to flight in all directions.

Fairs, like all great assemblages, have the effect, on the manifestation of Cholera in them, of creating great foci of infection, with this aggravating circumstance, when compared with armies, which at any rate always remain more or less compact, that when the infected crowd disperses in every direction, it tends to spread the disease on all sides. We can quote, as having had this effect, the fair of Tui which in 1855 spread Cholera in the province of Minho in Portugal (*Gomès*); that of Samara, whence Cholera was propagated to the government of Orenburg (*Lenz*); the great fairs of India and notably that of Hurdwar, of which we have spoken in connexion with pilgrimages; and, lastly, that of Tantah in Egypt, which, in 1848, contributed greatly to the propagation of Cholera. We must say, however, with regard to the Tantah fair, that having taken place this year shortly after the Cholera epidemic, it did not produce any serious effect on the public health; thus confirming what we said before regarding the comparative immunity enjoyed by an assemblage which has just been under the influence of an epidemic of Cholera.—(*Communication from Dr. Salem Bey*)

Lastly, so far as pilgrimages are concerned, we have said enough in detail, in connexion with Cholera in India, to enable the reader to appreciate the important part performed by assemblages of this nature, in choleraic and similar epidemics. We shall besides return to it further on when we speak of the pilgrimage to Mecca.

Thus great assemblages of men contribute greatly to the rapid development of epidemics of Cholera; they constitute foci of choleraic dissemination, and by their dispersion and their emigrations to localities hitherto uninfected, they favor the propagation of the disease, for the importation of a single case of Cholera into a healthy locality suffices for the development of an epidemic there, as was proved at Altenburg, and this development is, *à fortiori*, rendered more probable by the arrival of hundreds of infected individuals.

The Commission concludes then that great assemblages of men (*armies, fairs, pilgrimages*), are one of the surest means of the propagation of Cholera; that they constitute great epidemic foci, and whether they march after the manner of an army, or are disseminated like fairs and pilgrimages, carry the disease into the countries through which they pass; that these assemblages after having undergone, in an ordinarily rapid manner, the influence of Cholera, become much less sensitive to it, and that the disease disappears very promptly, provided there are no fresh arrivals to keep it alive.—(*Adopted unanimously.*)

## XXIV.

*What is the influence of dissemination on the intensity and development of epidemics of Cholera?*

What has been already said shows that the dissemination of choleraic foci in healthy localities is an almost sure means of the propagation of the disease, and we need not return to the subject; but, on the other hand, experience proves that the dispersion of an assemblage where Cholera has penetrated is a measure adapted to lessen the violence of the epidemic, to diminish the number of attacks in the assemblage, provided the dispersion does not take place too late, and is effected immediately on the appearance of the disease. Dispersion in such cases diminishes the chances of propagation in the entire mass attacked; but it is essential to recognise that, most frequently, on account of the conditions under which it is effected, it only serves to retard the progress of the epidemic; so that, when results are compared, it is found that in the dispersed mass, where individuals are more or less separated from each other, but always in communication, the mortality is almost the same as in a compact mass; it only takes a longer time. It is evident that, in many cases, the rapid extinction of an epidemic which has greatly ravaged an assembled mass, has been wrongly ascribed to the dispersion of that mass, while it was merely the consequence of the natural evolution of choleraic epidemics in such cases.

Be this as it may, dispersion, effected in good time, has produced favorable results which cannot be denied, and it could not be too strongly recommended even if it merely improved the hygienic condition of individuals.

But it ought to be properly understood that such a dispersion should never be effected in healthy localities, in which it would result in the importation of the disease, while at the same time it would be of no advantage to the individuals attacked; it should, on the contrary, remain confined within the limits of the locality where the infection was developed.

*In consequence, the Commission concludes that the dispersion of an assembled mass, effected in good time, may lessen the violence of an epidemic of Cholera which has just appeared, and even arrest its extension; but that such a dispersion would, on the contrary, give rise to great danger of propagation, if effected in localities hitherto untainted.—*  
(Adopted unanimously.)

## XXV.

*What is the part performed by the pilgrimage to Mecca in the epidemics of Cholera which have occurred up to the present day?*

The part appertaining to the pilgrimage to Mecca, in connexion with assemblages of men, has already been sufficiently indicated; like all pilgrimages, this one consists of a collection of individuals from various countries and consequently, for the most part, quite free, on their arrival

in the Hedjaz, from all choleraic influence. To this last circumstance it is due that, if Cholera manifests itself in such an assemblage a rapid and violent epidemic is ordinarily the result,\* an epidemic all the more pernicious because this assemblage exists in the worst hygienic and climatic conditions. The renewal every year of individuals assembled at Mecca, on the one hand, and the habitual arrival, on the other, of pilgrims from infected countries, explain the reason of the frequency of the epidemics which have succeeded each other since 1831. The dispersion of the pilgrims, on the development of the epidemic, constitutes a danger so much the greater if it is effected with rapidity and during the hot weather. It was in this way last year, as has been seen, that the rapid dispersion of pilgrims by steamers resulted first in the rapid propagation of Cholera in Egypt, and afterwards in its dissemination in the basin of the Mediterranean. But, on the other hand, as has been said above, the dispersion of the pilgrims and their caravan journey across the desert, in almost unpeopled countries, so far from favoring the propagation of the disease, is, on the contrary, one of the best means of its extinction.

In regard now to the part performed by the pilgrimage to Mecca in successive epidemics of Cholera, particularly in India, it is to be noted that out of five epidemics which have desolated this latter country since 1831, two only have coincided with the return of the pilgrims, and then the return took place in the hot season: in July 1831 and in June in 1865. Of these two epidemics, the first, which commenced with their return by sea, was probably imported by the pilgrims, although the fact has not been clearly proved, but the second was most certainly so.

Thus then, twice only, and with an interval of 34 years, can Cholera have been imported into Egypt by pilgrims returning by sea from Mecca; although during this interval the disease often raged at Mecca during the season of the pilgrimage; but, in connexion with this, it may be remarked that the transport of pilgrims on steamers from Jeddah to Suez does not go further back than the year 1858. This infrequency, therefore, is no security for the future.

*In conclusion, the part of the pilgrimage to Mecca, as a propagating agent of Cholera with regard to the neighbouring countries of Europe (with reference to which alone we have definite information) has been the importation of the disease into Egypt twice at an interval of 34 years, during the hot season.—(Adopted unanimously, except by M. Polak, who abstain from voting.)*

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\* This theory would seem to be contradicted by the report of the British Consul at Jeddah, who, during the six years of his residence in the town, constantly remarked cases of Cholera there on the return of the pilgrims; but were these really cases of Asiatic Cholera, or were they merely sporadic cases, such as are ordinarily observed in these countries during the summer.

## OF THE INFLUENCE OF HYGIENIC CONDITIONS.

## XXVI.

*What is the influence exercised on the violence of choleraic epidemics by the hygienic and other conditions of a locality; in other words, what are the auxiliary causes of Cholera?*

We do not think it essential to the object of our labors to dilate longer here on all the conditions which favor the greater number of epidemic diseases; we shall speak only of those which appear to have a peculiar influence on the development of Cholera.

*Misery*, with all its debilitating consequences, such as bad nourishment, bad dwellings, uncleanness, crowding, &c., renders people more apt to undergo the influence of most epidemic diseases, but of none more than Cholera. The preference with which this disease seizes upon peoples, or sections of peoples, among whom misery and wretchedness are predominant, is a fact too well known to need much argument. Next to misery we have fatigue, excesses acting in every way in exhausting the frame, and all those morbid conditions which diminish vital resistance, particularly those which act upon the digestive organs.

All of which is, in short, tantamount to saying that Cholera preferentially attacks individuals suffering from debility arising from any cause whatever.

The Commission has not thought it necessary to lay stress upon the influence of diet, which in times of Cholera acts in two ways: either by its nutritive insufficiency, in debilitating the frame and rendering it more apt to contract the disease, or by its hurtfulness to the digestive organs (such are all substances recognised as indigestible, and notably unripe fruit, &c.), thus causing disorders which tend to produce the outbreak of Cholera.

We need not return to what we have already said on the subject of the influence of crowding: let us add only that the crowding of individuals, combined with misery and all its attendant results, constitutes one of the best adapted conditions for the augmentation of the violence of a choleraic epidemic.

Let us proceed to influences of another sort.

*Temperature, Climate.*—Although Cholera is not excluded by any climate, or any temperature, still it has been demonstrated by observation that in general the more or less rapid course of a choleraic epidemic and its more or less invading progress are in proportion to the elevation of the temperature; thus hot weather accelerates the march as well as the evolution of an epidemic, while winter retards and sometimes arrests them altogether. This is a general rule, remarked in every country, and confirmed by the researches of Hirsch. An exceptional instance occurred in Moscow and Orenburg, where the ravages of an epidemic of the disease were not checked by a severe winter; but such exceptions might

reasonably be attributed, in cold climates, to the mode of existence during the winter, to the manner of obtaining warmth, and to the absence of ventilation in dwellings. The only instance proving that a very severe winter does not always prove an obstacle to the invading march of an epidemic of Cholera was observed in Russia in 1830 and 1831 during the Polish insurrection; and appears to be properly attributable to the movements of great masses of troops, who were marching towards the scene of action.—(*Lenz.*)

*Air.*—There is no doubt that in general, confined air, or air vitiated by exhalations from animal or vegetable matter in a state of decomposition, acts in such a way as to render the human frame adapted to contract Cholera, and thus contributes to render the disease more murderous in its effects; but in the event of an epidemic, confined air acts still more disastrously, as will be seen further on, as a vehicle for the choleraic principle.

*Water* appears, according to experiments made principally in England by Dr. Snow, and in Germany by Dr. Pettenkofer, to contribute, under certain circumstances, to the development of cholera in a locality.

This occurs when water is impregnated with organic matter, as it is in rivers which flow past great cities, or the water of wells which receive the filtrations of a porous soil impregnated with decomposed matter, coming from sinks and even from cesspools. In times of choleraic epidemics, these waters, says Snow, are thus impregnated with the morbid principle, and as they are used for domestic purposes, propagate the disease. This opinion is supported by observations made in London, where in 1848 and 1849, the mortality ranged at 12.5 in 1,000 amongst those who made use of the water of the Thames raised by the Lambeth Company in the midst of the city; while in 1854 it did not exceed 3.4 per 1,000 amongst those who made use of water brought by the same Company from above the city; while those who continued to make use of water raised *intra murous* died at the rate of 13 per 1,000. (*Simon.*) Dr. Snow has quoted also, as a characteristic fact, the great choleraic mortality which took place exclusively among those persons in Broad Street who made use of the water of a certain pump which received the filtrations from a sink. If this water were transported to a certain distance, it would, it is asserted, communicate Cholera to a person drinking it. Analogous facts have been noticed elsewhere.

In this instance, water, like air, of which we have already spoken, would serve as a vehicle for the introduction of the morbid principle into the human frame.

But, according to most German authors, and especially according to M. Pettenkofer who has made this question the subject of the most interesting researches, it is elsewhere, it is in cesspools, latrines, and sinks, in the soil itself, that we must look for the chief receptacles of the principle of Cholera. Though the Conference need not give itself up to theories, M. Pettenkofer's theory is so supported, it is bound up with such important facts in connexion with prophylactic measures, that we

cannot put it aside. It rests on the generally admitted proposition that the alvine dejections of Cholera patients contain, in any condition whatever, the propagating principle of the disease. This proposition, laid down so far back as 1849 by Dr. Pellarin (*Gazette Medecale de Paris*,) who insisted even then on the necessity of disinfecting the dejections of Cholera patients by sulphate of iron, was corroborated by the observations of Budd, published in 1854, and by those of Snow, and finally, it may be said, placed definitively beyond a doubt by the researches of Dr. Pettenkofer. It is merely a legitimate deduction from numerous facts proving that latrines, cesspools, sinks, and accumulations of filth are the chief receptacles, whence is exhaled the morbid principle of Cholera. The facts are so well known, that it is unnecessary to mention them in detail here. These *cloaca* would have precisely the same effect on a population that we have been led to attribute to linen and other articles soiled by Cholera patients, *i. e.*, being in a manner the natural receptacles of the alvine dejections of Cholera patients, they would become the propagating agents of the disease.

M. Pettenkofer goes much further: he considers it to be demonstrated by observation that, in an epidemic of Cholera, the very soil of the locality where the disease rages plays a great part in its development by the exhalations arising from it. He asserts that a porous soil easily permeable by water and air, and impregnated with excrementitious matter (consequently an alluvial, marshy soil especially), by being impregnated with choleraic dejections, becomes at first a receptacle, and then, according to circumstances, a more or less active focus for the dissemination of the principle of the disease. The activity of the choleraic dissemination would depend on the level of the water below the surface of the soil, and consequently would be in proportion to the greater or less humidity of the superficial stratum of the soil. This capacity of the soil for the reception of the principle of Cholera is an excellent explanation of the obstinacy of the disease in certain localities, and even of its apparently spontaneous reappearance, after a more or less complete disappearance. The truth of the doctrine in question should be verified in India, and particularly in parts where Cholera is endemic. Perhaps the result of the inquiry would afford the explanation of the endemicity. It is, moreover, a fact well known in India, and instances of which are on record, that the soil on which an assemblage of men (soldiers or others) suffering from Cholera has encamped, may transmit the disease.\* Be this as it may, whether this theory is or is not completely justified by the facts, it appears to be well established that a porous soil, impregnated with detritus† such as is described by M. Pettenkofer, in fact an alluvial

\* S. Rogers. Report on Asiatic Cholera (p. 18), Lond. 1848.

Scott. Report on Cholera in Madras, (p. 1112). Lond. 1849.

Dr. W. C. Maclean. Report of the Royal Commission on the sanitary state of the Army in India (Vol. 1, p. 114). Lond. 1863.

† M. Pettenkofer explains very ingeniously how conditions of soil altogether opposed may, nevertheless, conduce to the formation of partial depots of analogous detritus. He explains also by a very subtle theory, through which we shall not follow him, how exhalations

soil favors the development of choleraic epidemics; and even if all these epidemics cannot be explained by this circumstance, the rule would not be invalidated, but what would be proved would simply be that other conditions are equally favorable to the development of Cholera.

If all the hygienic conditions which have already been spoken of may be considered in general as favorable to epidemics of Cholera, there are, nevertheless, certain facts showing that conditions, equally injurious apparently, have not had the same result. Many cases have been quoted where a town, or infected quarters, which seemed destined to become the prey of Cholera, have been specially spared. We note an instance of this kind observed last year at Constantinople: while Cholera was raging in the arsenal, there were in the *bagne*, situated within its precincts, 700 galley slaves, 500 of whom were sent out every day for employment on different works. Now, the *bagne* is, in point of fact, a perfect sink, where all the vilest hygienic conditions are massed together. During the height of the epidemic, the galley slaves were spared, and it was only when its violence diminished that one of three guards of the *bagne* was attacked. Soon after, 15 cases occurred among the 700 convicts, and only 7 resulted fatally. On the other hand, the soldiers and marines of the arsenal lost 1 in 9 from Cholera. Is it not very remarkable that, while the latter were placed in comparatively good hygienic conditions, they should show a mortality of 11 per cent. on their effective strength, as compared with a mortality of 1 per cent. among the convicts?

The Commission confines itself to noting these facts, which show that everything has not yet been said of the auxiliary causes of Cholera.

tions from such a soil, which would give rise to combinations favoring the development of Cholera, need not necessarily be preceded by the impregnation of the soil in question by choleraic matter (a).

(a).—The Conference thinks it advisable to record here the complete exposition of this theory of M. Pettenkofer as brought forward by Dr Meehlig (Sitting of 28th June, Minute No. 21).

"... The researches of Pettenkofer do not relate to the quality of the soil considered as a receptacle of the choleraic principle; Pettenkofer established, what had already been advanced by others before him, that the quantity of the soil of a locality is the most powerful among the auxiliary causes of Cholera; only he goes a great deal further, in so far that he asserts that a soil possessed of the qualities he describes is so essential to the development of Cholera, that the choleraic germ, imported into a locality with a soil possessed of qualities quite different, would be perfectly innocuous.

"A soil favorable to the development of Cholera should, according to Pettenkofer, be easily permeable by water and air, and impregnated with organic matter (excrementitious matter especially) and show from time to time a change in the level of the water below its surface; now, the instant that the water below the surface sinks, or when, in consequence, a sort of comparative dryness succeeds to unusual humidity, that, according to him, would be the most favorable moment for the development of Cholera.

"Thus Pettenkofer concludes that two elements are indispensable to the development of Cholera: 1.—The importation of the choleraic germ into a locality; 2.—A peculiarly constituted soil. Neither of these two elements is sufficient in itself, the simultaneous action of both is necessary; people suffering from Cholera would furnish the germ, and the soil would furnish certain exhalations, the combination of both of which, whether in the atmosphere, or in the human frame, would result in choleraic infection ....."

In conclusion, *the Commission recognises that the hygienic and other conditions, which in general predispose a population to contract Cholera, and consequently favor the intensity of epidemics, are misery and want, with all their consequences—the crowded and sickly condition of individuals, hot weather, absence of ventilation, exhalations from a porous soil impregnated with organic matter, especially if such matter proceeds from choleraic dejections.*

*Moreover, the Commission is of opinion that, as it appears to be demonstrated by experience that the dejections of Cholera patients contain the generating principle of Cholera, it is reasonable to hold that sinks, cesspools, latrines, and the contaminated water of a city may become the propagating agents of the disease.*

*The Commission adds that it seems to result from positive facts that the soil of a locality once impregnated with choleraic matter has been able to retain for a long time the property of evolving the principle of the disease and thus keep an epidemic alive, or even regenerate it after its extinction.—(Adopted unanimously, except by M. Pélikan.)*

#### OF IMMUNITY WITH RESPECT TO CHOLERA.

#### XXVII.

##### *How is immunity with respect to Cholera to be understood?*

The Commission would not think it had properly accomplished its task, if, after having proved the transmissibility of Cholera and shown as far as possible, the conditions favoring its propagation, it did not take into consideration the resistance opposed to its development by certain countries, certain localities, and the greater number of people. It is to this resistance, which it may be said is very variable, that we give the name of immunity. By this is understood that the locality which has enjoyed the immunity has resisted the importation of Cholera, and that the person who has escaped has been exposed to the contagion of the disease, as for instance, a physician in the midst of an epidemic focus.

It is all the more desirable to take this immunity, into consideration, because it has often been wrongly brought forward against the transmissibility of Cholera, and because, on the other hand, it leads to very important considerations in regard to prophylactic measures.

Those medical men who thought that they saw in this immunity the proof that Cholera was not transmissible, forgot that the same immunity, the same resistance, more or less, is found in all diseases, without exception, reputed to be the most transmissible or contagious. It is found to exist with regard to the plague, the yellow fever, small-pox, scarlatina, &c. If it were otherwise, if all these diseases were transmitted by the mere fact of their being transmissible and the subjection of persons to their influence, the human species would long since have disappeared from off the face of the globe. Happily it



is not so, and a well balanced frame in the majority of cases opposes an efficacious resistance to all these diseases. The principle of all contagious diseases cannot be regenerated except under certain conditions, in the absence of which it dies away; in the same way that it is not enough merely to cast a grain on the soil haphazard to cause the reproduction of the plant from which it was taken: it is necessary that the soil should contain all the elements favorable to the germination of the seed. No doubt all morbid principles are not alike in requiring the same amount of favoring circumstances for their development, but the necessity of an organisation favorable to the regenerating evolution of a morbid principle is not the less a fundamental point in the doctrine of the transmission of diseases.

Let us proceed to facts relative to Cholera. It is a matter of remark that certain countries and certain localities have completely or partially resisted the importation of Cholera, and that this disease has reached them only to become extinct without spreading. Amongst the European countries which have enjoyed this immunity may be mentioned Alpine Switzerland, properly so called (excepting a certain number of cases in Aargau, Thurgau, and Ticino [Tessin] in 1855, which, besieged as it were by the disease, resisted its invasion. (*Marc d'Espine, Archives gén de Méd.* 1857.) The same result took place with regard to a certain number of groups of mountains. We are acquainted with the interesting researches of M. Fourcault in 1849, and those of M. M. Boubée and Vial, in 1853, on the influence of certain geological conditions with regard to Cholera, and notably on the repulsive influence of a granitic soil, whence the conclusion was drawn that a granitic soil is an obstacle to the development of Cholera. This conclusion expresses a general, though at the same time far from an unexceptional, fact. The same may be said with regard to heights: Cholera has been observed at considerable elevations; but it is a fact, nevertheless, that, in a country ravaged by Cholera, the highlands have suffered much less than the plains. Dr. Polak has communicated to the Commission the interesting fact that when Cholera rages at Teheran (3,500 English feet above the level of the sea), the disease spreads to the villages not far from it, on the slopes of the Elburz, at an altitude of 6,000 feet, where it only shows itself in isolated cases; but it goes no higher. During the progress of three epidemics by which these villages were attacked, the Shah of Persia having moved his camp, consisting of 10,000 persons, to the valley, at an altitude of 7,500 feet, at the foot of the volcanic peak of Demawend, the camp altogether escaped contagion in spite of incessant communications with the infected villages.

But let us proceed to more important facts in connexion with towns which have hitherto resisted, more or less, the influence of cholera.

These towns are numerous in Europe, but the one which most of all others deserves mention, in this respect, is Lyons. This town consisting of 400,000 souls, seems at first sight to contain all the conditions propitious to an epidemic of Cholera. Situate at the confluence of two rivers, if, on the one side, it is built on an alpine soil, on the other it rests on alluvial ground; it contains a considerable number of workmen;

causes of insalubrity and wretchedness are not absent; and moreover, it is situated on the great way of communication which traverses France, from south to north, and it has served as an asylum for a great number of fugitives from places infected by Cholera. And yet notwithstanding all this, Lyons has, so to say hitherto resisted the choleraic influence. It entirely escaped the first epidemic which, in 1832, ravaged the north of France, and again that which went up the Rhône in 1835. Later still, during the epidemic of 1849, a barrack was invaded and some cases were seen in the neighbourhood around, but the disease entirely disappeared in the course of three weeks. In the autumn of 1853, while the disease was ravaging the department of the Drôme, it appeared at Lyons, seizing upon 400 people, and causing 196 deaths: there it ceased. Lastly, in the year 1865, Cholera was not known in the town, so far as we are aware, except, perhaps, in the shape of a few isolated cases from other places. It cannot be said that Lyons escaped because there were no choleraic arrivals in the town; on the contrary, such arrivals took place in plenty; the disease was imported and sometimes developed just sufficiently to prove the resistance of the indigenous population, or, of the locality, to its propagation.

Do these and many other analogous facts prove that Cholera is not transmissible? Not the least in the world. They prove simply that there are localities, like individuals, which enjoy a sort of immunity against the transmission, an immunity which, so far as the localities are concerned, may be complete or partial, permanent or temporary. We say temporary, because there are instances showing that a locality which has resisted the disease at one time has been invaded by it at another, and *vice versa*. These local immunities, moreover, are not special to Cholera, but also exist in regard to the plague and the yellow fever.

As for the reason of complete or almost complete immunity when, as at Lyons, we find it exist under conditions which might be believed favorable to the development of Cholera, we cannot arrive at it.

It is simply an important fact to record and one worthy of serious study.

It is not so with regard to the comparative and more or less pronounced immunity which certain countries have always enjoyed, or have begun to enjoy within a few years past: this immunity, as a general rule, when closely looked at, may be attributed to the good hygienic conditions existing in these localities, or to special improvements which have been lately effected. This comparative immunity is a sufficient reply to those who are too much inclined to look exclusively to measures of quarantine for the safety of populations from Cholera; it proves, not that such measures are useless, far from that—but that hygienic measures are their essential complement.

The fact of the immunity of individuals in the midst of a choleraic focus is not less worthy of attention than the immunity of localities.

It has been seen, by what has been said before, that when Cholera breaks out in a concentrated mass of men, it carries off a limited number of victims, a number which varies according to the circumstances we have mentioned in detail, but which, even under the very worst conditions, has never exceeded, 20 per cent. of the multitude. It may even be said that an epidemic of Cholera, where the number of attacks, properly so-called, amounts to 5 per cent. of the population, is very grave. Even this proportion was not attained last year at Constantinople.

The resistance to the choleraic poison offered by the human frame in the midst of a focus of cholera is complete in some persons, that is, their organisation experiences no sort of appreciable disturbance. In the greater number of cases the poison shows itself by a derangement in health, varying from a simple epigastric uneasiness, accompanied with flatulence and vertigo, to cholera; but in the immense majority of instances the organisation offers resistance, and no attack of Cholera, properly so called, results. Lastly, in a comparatively restricted, but very variable, number, the organisation succumbs and Cholera declares itself. These last cases denote the degree of gravity of the epidemic. This is what observation shows.

Complete immunity, therefore, against choleraic influences is not the rule, and moreover, whether complete or not, it may be only temporary, *i. e.*, a man who has enjoyed complete immunity during the course of one epidemic may succumb to the next, and an individual who has resisted the disease for a certain period of the epidemic may end by being attacked by it. This has often been observed in medical men, who, over-excited by the sentiment of duty, resist the disease during its height, but sometimes succumb during the decline of the epidemic when exhausted by fatigue.

Immunity against Cholera, therefore, is in definite proportion to, and as variable, as the vital resistance of individuals. And this is the reason why, in the matter of immunity, the past never is a guarantee for the future.

To this result of observation it has been objected that, during epidemics of Cholera, it is not rare to see very vigorous individuals stricken down by the side of persons, apparently feeble, who escape unscathed; but medical men know well that the vital resistance is no way proportionate to muscular energy, and that a nervous, though apparently lean and feeble man, may resist morbid influences much better than a colossus who is, after all, only an ill-balanced phenomenon.

In addition to the more or less complete immunity appertaining to individuals, there is also the temporary immunity left behind it by a recent epidemic. The rapid extinction of Cholera in masses of men can only be explained, as has been seen above, by this sort of acquired immunity; and this immunity is the reason why—until after a certain interval of time (the duration of which however cannot as yet be defined)—a serious epidemic of Cholera cannot burst out afresh, notwithstanding

ing fresh importations of the disease in a locality which has just been ravaged by it. This, it must be distinctly understood, is not applicable to places of pilgrimage where *renewed* masses of men assemble periodically.

If, as we have just seen, the immunity against Cholera is proportionate to the vital resistance, and if what we have said of the auxiliary causes of the disease is referred to, it will be found that these causes are just of the same nature as those which diminish the vitality of individuals as well as of an entire population, and the conclusion will be arrived at that immunity from Cholera results from all the conditions contrary to these auxiliary causes, that is, from good hygienic conditions; that the influence of these last is such, that if we could succeed in generalising these good conditions, and thus reduce Cholera to the proportions it attains among classes, and even populations, in easy circumstances it would become a disease of but small importance in its results.

The Commissioner recognises, then, that in opposition to the transmissibility of Cholera, there exists in healthy men, a resistance capable of neutralising the influence of the poisoning agent, and that this, resistance, weakened among poor and wretched populations and in individuals suffering from exhaustion arising from any cause whatever, may, by the progress of material prosperity and by good hygienic measures, become so generalised as to render Cholera a disease not to be feared. But unhappily we are far from having arrived at this stage yet, and, therefore, measures of isolation are and will long remain necessary.

It must be properly understood that Cholera, although transmissible, does not fatally attack individuals under its influence; that a well regulated life and good hygienic conditions are almost certain guarantees against its action; that it rages preferentially in unhealthy spots, amongst populations bowed down by want and wretchedness, and amongst individuals whose constitutions have already been undermined by disease or excesses.

The Commission, therefore, while asserting the transmissibility of Cholera as an incontestible fact, thinks it necessary to add the proviso fixing limits to the transmission.

It is more dangerous, in the opinion of the Commission, to conceal any part of the truth on this head than to speak it out plainly in its entirety.

In conclusion, *the immunity enjoyed by certain localities, i. e., the resistance, permanent or temporary, general or partial, opposed by these localities to the development of Cholera within their limits, is a fact which does not exclude the transmissibility, but which shows that certain local conditions, not yet quite defined, are an obstacle to the development of the disease.*

*Also, the more or less complete and more or less durable immunity enjoyed by the greater number of persons in the midst of a choleraic focus, an immunity which proves the individual resistance to the poisoning principle, is a circumstance which must be considered as most important.*

*Regarded in connexion with the development of an epidemic, it is the corrective of the transmissibility, and, in a prophylactic point of view, it affords means for the restriction of the ravages of the disease.*

(Adopted unanimously, with the exception of MM. Monlau and Pélikan, who abstained from voting).

#### DEDUCTIONS REGARDING THE ATTRIBUTES OF THE GENERATING PRINCIPLE OF CHOLERA.

The Commission does not mean to occupy itself with the numerous hypotheses enunciated on the nature of the cause by which Cholera is produced; it merely wishes to evolve, as corollaries of facts shown in the course of its labors, certain attributes of the generating principle of the disease, the knowledge of which may conduce to the application of prophylactic measures.

#### XXVIII.

*Can any thing precise be deduced from the facts already brought forward in connexion with the origin, propagation, and transmissibility of Cholera, with regard to the generating principle of the disease, (or at any rate the media which serve as its vehicle or receptacle,) to the conditions of its penetration into the organisation, to the manner in which the organisation escapes it, and to the duration of its morbid activity; in short, with regard to all its attributes the knowledge of which is important in a prophylactic point of view?*

Whether the generating principle of Cholera be styled contagion, germ, or miasma; whether it be supposed to consist of an organic substance or not, it is clear that it has evaded all investigation; that it has never yet been found possible to analyse it; and that it is only known to us by its effects. In this point of view it does not differ from other morbid principles.

What we know is that it regenerates itself in man by the fact of the morbid evolution to which it gives rise.

In our countries it has never been seen to originate otherwise; it is by successive regenerations in man that it multiplies and propagates itself; it has never been originated by the nature of the soil or the worst hygienic conditions. But in regard to its origin in India, where Cholera is endemic, is this the case also? Is the morbid principle spontaneously developed there, without the aid of the human frame, as a result of conditions as yet unknown and which do not exist anywhere else? Or, applying the theory of M. Pettenkofer, is the soil alone of those places in which the disease is endemic the receptacle of its germ, and has it the property of preserving it so long as to permit of its being incessantly evolved more or less actively, without this constant evolution tending to exhaust it before it can be renewed? What we have said of the obstinacy of Cholera in some parts of Europe would in a manner support this hypothesis. The Commission merely brings to notice these important problems which it is not in a position to solve.

Be this as it may, the principle of Cholera, that Cholera which has invaded the world, seems to have originated in the valley of the Ganges, and it is chiefly there that, on a low and damp alluvial soil, it maintains itself endemically at the present day. From this fact, and from a certain analogy in the symptoms, are we authorized to infer that Cholera has a miasmatic origin, and is only a sort of malarious disease produced by the marshes of the Ganges? The Commission does not think so. It is in fact proved by observation that, on the banks of the Ganges, there is no proportion between the intensity of a malarious and of a Choleraic epidemic; each has its own peculiar features, and reaches the climax of its intensity at a different season of the year. There is, moreover, a fundamental characteristic distinguishing Cholera from malarious affections: the latter only rage on the spot, and the principle by which they are produced does not re-develop itself in man, and, consequently, is not capable of being transmitted.

To sum up:—*In the present state of science, we can only pronounce hypothetically on the nature of the generating principle of Cholera; we only know that it originates in certain parts of India, where it permanently maintains itself; that the principle is regenerated in man, and accompanies him in all his peregrinations; that it may thus be spread far and wide, from country to country, by successive regenerations, never producing itself spontaneously except in the human frame.*—(Adopted unanimously, with the exception of Dr. Goodeve, who abstained from voting.)

## XXIX.

### *What are the vehicles of the generating principle of Cholera?*

By the word vehicles, the Commission means merely the agents by means of which the morbid principle penetrates the organisation. To this question facts reply that the atmosphere is the principal vehicle of the choleraic principle. The rapid dissemination of the disease in an infected locality, the simultaneous occurrence of a great number of attacks in a given assemblage when there was no possibility of direct or indirect contact with those first stricken down, the general influence which, during the progress of an epidemic, weighs more or less heavily on individuals placed within the limits of a choleraic focus, these circumstances, joined to facts showing that persons have been attacked by Cholera at some distance from a focus of the disease with which they had had no communication, prove, in point of fact, that the atmosphere is the principal vehicle of Cholera. The choleraic principle then is volatile, and would act, in this point of view, like miasmatic exhalations, by infecting the atmosphere.

But does it follow that because the air is the vehicle for the choleraic principle, that this principle can be carried to a distance by the air? To this question facts give a reply in the negative. They show that the action of the choleraic miasma is much surer in its effects if produced in a confined atmosphere and in proximity to a focus of emission, whether this focus be a choleraic patient, or his dejections, or an article contaminated by them. A writer of great authority (Griesinger) maintains that the probability of action on the part of the choleraic germ diffused in the

atmosphere diminishes in direct proportion to the square of the distance from the point of emission, *i. e.*, its action will be ten thousand times surer at a distance of one foot than at 100 feet. It appears then that the miasma of Cholera is like typhoid miasma, inasmuch as its activity is rapidly exhausted in a free current of air at some distance from its focus.

### XXX.

*To what distance from a focus of emission can the principle of Cholera be carried by the atmosphere?*

Here we have a question of the greatest practical importance: To what distance from a focus of emission can the atmosphere carry the principle of Cholera? The general rule, based upon observation, shows that Cholera is scarcely ever carried beyond a very short distance by the agency of the open air (let us say 100 *metres* [109·8633 yards] as an approximate idea of what we mean); and that in the immense majority of instances the transmission is not carried out so far as this. But are there facts tending to make us admit that it may be carried out a great deal further from the focus of emission?

Those instances in which Cholera has spread from a lazaretto to the neighbourhood would be of great service in the solution of this question, if every one of these cases was not susceptible of a much more probable interpretation than that of atmospheric transport. It has been seen, from what we have said of the Turkish lazarettos, that the atmosphere cannot be accused of having carried the disease to them, when a town close by one of them was tainted with the disease; the conveyance of the disease was effected either by contravention of rules, or insufficiency of preventive measures.

Last year, at Malta, the first case of Cholera in the town (Valetta) broke out at a point 662 feet distant from the lazaretto, without there having been any certainty of intercommunication; but it must be added that, before that, numerous vessels from Alexandria had been admitted to Malta in pratique. At Ancona, Cholera showed itself in the town after the arrival of a ship from Alexandria, from which a Cholera patient had been landed at the lazaretto; but there is good reason to believe that it was not the wind passing over the lazaretto which communicated the infection to the town. It was the same with regard to Spain: the propagation of Cholera in that country in 1865 was not the result of its transport by the air from the lazarettos in which it was confined.

Lazarettos then do not afford us any example which may be accepted in support of the transport of the choleraic principle to a certain distance. It is not the less true, however, that the proximity of a lazaretto is dangerous to a healthy locality.

A fact has been quoted as having occurred at Sunderland in 1849, when the disease was transmitted to the distance of a mile; and again in Ireland, where the transmission seems to have been effected in the same direction as a violent wind.

But we would have more distinctive facts in ships coming from healthy countries and attacked by Cholera at sea, at a certain distance from an infected place and previous to any communication with it. Two facts of this nature have been brought forward before the Commission: one relative to two vessels of the French Black Sea squadron, each of which had a case of Cholera on board in sight of land and before arriving at Baltchick. This case was detailed before. It will be admitted that too many important details are absent to permit of much value being attached to it. The other is even still less circumstantial: it relates to an English fleet, which had some cases of Cholera on board in sight of Malta where the disease was raging. But where did the fleet come from? and was there an epidemic on board? We do not know. All these examples are fruitful of doubt.

Taking known facts into consideration, the Commission has arrived at the following conclusion:—

*The atmosphere is the principal vehicle and generating agent of Cholera; but the transmission of the disease by the atmosphere remains, in the immense majority of instances, limited to a very short distance from the focus of emission. As for the facts brought forward to prove the transport of the disease by the atmosphere to a distance of one or more miles, they are not sufficiently conclusive.*

(Adopted unanimously, with the exception of Dr. Goodeve, who abstained from voting.)

### XXXI.

*Independently of the atmosphere, what are the other vehicles of the Choleraic principle?*

The atmosphere is not the only vehicle for the conveyance of the choleraic principle. Facts observed in England seem to place it beyond doubt that *water*—either soiled, as we have said, by matter proceeding from choleraic dejections, or contaminated by the morbid agent diffused in the atmosphere—may be the means of introducing this agent into the human system. We need not return to facts in support of this opinion.

It is reasonable to admit, in the same way, although supporting evidence cannot be brought forward, that certain alimentary substances may become the vehicles of the same morbid principle.

Thus according to the Commission, *water and certain ingesta may also serve as vehicles for the introduction of the generating principle of Cholera into the human organism.*

This being so, it follows necessarily, it may be said, that *the passages by which the poisoning agent penetrates the system are principally the respiratory and very probably the digestive organs also. As for penetration through the skin, nothing tends to prove it.*—(Adopted unanimously.)



## XXXII.

*What are the principal receptacles of the Choleraic principle ?*

The principle of Cholera, we have said, regenerates itself in man by the fact of the morbid evolution to which it gives rise; but by what passages does it escape and what are the media, the matters which serve it as receptacles? Here again the question is answered by very positive facts. It is in the alimentary canal that the morbid agent appears to be created. But whether this is so or not, it is certain that the matter issuing from the alimentary canal of a Cholera patient contains the morbid agent. The observations of which we have spoken, and which prove this, are so numerous and distinctive that there is no longer room for doubt on the subject. This being so, it would appear, according to the researches of Pettenkofer and Theirsch, that in the fresh dejections of Cholera patients the morbid agent is merely latent, and that a certain degree of fermentation is necessary for the development of poisoning activity and the evolution of the morbid principle. This no doubt is only a theory, but a theory in accordance with facts, and moreover so fertile in practical deductions that it must be very seriously considered.

According to this theory, then, the generating principle of Cholera is, in point of fact, the result of the fermentation of matter voided by Cholera patients: so that every thing that tends to prevent the fermentation of this matter, without destroying it, tends also to preserve the germ of Cholera intact, which germ will develop itself afterwards if circumstances concur to favor fermentation; and so that, too, the principle of Cholera, being the volatile product of fermentation, can, as such, have only an ephemeral activity. And this is, in fact, what observation has proved.

Whatever may be the worth of this doctrine, it is incontestable that the dejections of Cholera patients are the primary receptacles of the morbid principle, and that, after them, linen, clothes, everything indeed that can be soiled by these dejections, and, *à fortiori*, cesspools, sinks, latrines, water, porous soil, may become the secondary receptacles of the morbid principle, whence it evolves itself sooner or later, more or less energetically, according to circumstances. Hence the necessity of taking all these elements into consideration in connexion with prophylactic measures.

But is there no reason to suppose that the principle of Cholera evolves itself from the organism by other passages than the alimentary canals, by pulmonary exhalation, for instance? All that we can say in answer to this question is that the fact has not been demonstrated, and that, moreover, the morbid phenomena which characterise Cholera would scarcely make it probable.

In conclusion, the matter of choleraic dejections being incontestably the principal receptacle of the morbid agent, it follows that every thing contaminated by such dejections also becomes a receptacle whence the generating principle of Cholera is evolved under the influence of favorable conditions; it also follows that the choleraic germ very probably has its origin in the digestive canals, to the exclusion, perhaps, of every other part of the organism.—(Adopted unanimously.)

## XXXIII.

*What is the duration of the morbid activity of the generating principle of Cholera ?*

This question should be regarded from two different points of view, both of which are of practical importance:—

In the first place, how long does the morbid agent retain its activity after expulsion from the organism? or, in other words, does it retain the property of retaining the disease? This serious question is in great part solved by facts. They show that the choleraic principle is in general of only ephemeral activity: that it is rapidly destroyed on exposure to the open air, so completely so, that if it is not reproduced and maintained by successive regenerations, or if it is not kept up in a latent state under peculiar and very rare circumstances, the locality where an epidemic has burst forth very soon loses the property of giving birth to the disease again. This is, in fact, what is proved by the study of epidemics of Cholera considered in the most limited condition possible. We have seen that then, in a given assemblage, the rapidity of the development of the epidemic is proportionate to the concentration of the mass, and that, if this mass does not receive fresh additions, the disease definitely ceases, until a fresh importation takes place. In this case, the cessation of the epidemic can only be explained by the combination of two circumstances: on the one hand, the natural or acquired immunity of the mass of survivors, which prevents the regeneration of the morbid principle; and, on the other hand, the more or less rapid extinction of the principle itself directly it is not renewed. Now, experience shows that, as a general rule, under ordinary circumstances, a locality which has just been devastated by Cholera loses the property of transmitting the disease to the new arrivals very soon after the complete extinction of the epidemic. The epidemic does not cease because the existing morbid principle loses its malignity, the proof being that if (as we have seen) there are new arrivals, as yet quite free from choleraic influences, in a place where the disease is on the point of becoming extinct, the choleraic influence will produce effects on them as terrible as if the disease were only commencing its ravages, and that if individuals leave this same place for healthy localities the disease which they spread loses nothing in intensity. The cessation of an epidemic, therefore, is not owing to the loss by the existing morbid principle of its malignity, but to the acquired immunity of the population amongst whom it has been raging, combined with the rapid extinction of the principle itself.

We say that such is the general rule; but we hasten to allow that there are important exceptions. Positive facts prove that, even in our countries, certain localities have been able to maintain Cholera for a number of years, while this maintenance cannot be entirely explained by the renewal of the population. It appears that in those places peculiar conditions, either in the soil or in habits, contributed to prevent the rapid destruction of the morbid principle; whence arise the kind of efflorescences which have been seen in certain parts of Europe after great

epidemics. It should be noticed here that the study of the circumstances under which such exceptions occur may lead to the knowledge of the causes of endemic Cholera.

But the most interesting exceptional facts to be noticed, in our point of view, are those which show us the retention for a long time of the property of transmitting Cholera by the linen and baggage of a Cholera patient kept from contact with the open air. These facts prove that, under certain conditions of confinement, the Choleraic principle may retain, for several months perhaps, in a latent state, a sort of vitality, which displays itself on contact with the open air. But if the fact is incontestable, the instances in proof of it are so rare, that they do not permit us to deduce any thing precise as to the length of time during which the morbid activity continues in a state of confinement.

Thus, according to the Commission, *it follows from the study of facts that the generating principle of Cholera rapidly loses its morbid activity in the open air, and that such is the rule; but that, under certain peculiar conditions of confinement, this activity may be retained for an indefinite time.*—(Adopted unanimously.)

Lastly, it remains to be known in what space of time the morbid principle may be reproduced and eliminated by a diseased organism, or, in other words, in what time an individual suffering from premonitory diarrhœa, or confirmed Cholera, may transmit the disease. This question, with which is connected that of the duration of the period of isolation, is very difficult of solution, and has been warmly discussed by the Commission. The discussion hinged principally upon the possible duration of the (so-called) premonitory diarrhœa, which, judging by experience, must have, like confirmed Cholera, the property of transmitting the disease.

The opinion that this contagious diarrhœa might, in certain cases, be prolonged for several weeks was maintained with great warmth, being supported by great authority and particularly by that of Griesinger. Cases were quoted of individuals, who had been suffering from diarrhœa for several weeks, transmitting Cholera, and finally succumbing to it themselves. Now, as it is impossible during the progress of an epidemic, to distinguish properly cases of this kind from those into which Cholera does not enter at all, it follows, it has been concluded, that all these cases of prolonged diarrhœa should be regarded as suspicious.

To this the reply has been given that it is a matter of observation that premonitory diarrhœa, so called, scarcely ever lasts for more than three days, and, if prolonged beyond that time, very rarely exceeds a week; that nothing shows that the instances adduced were not cases of diarrhœa altogether distinct from Cholera and during the course of which the latter might have intervened, as has often been seen during the course of an epidemic; that it is the same with the disease as with its incubation that the immense majority of cases prove that both are of very brief duration in Cholera; and that, consequently, it may safely be held that a person has not got Cholera if he has been isolated from all danger of contagion, and if his diarrhœa is prolonged for more than eight days after he has been placed in isolation without showing any distinctive mark of the disease.

Finally, the Commission adopts the following conclusion: *Observation shows that the duration of so-called premonitory choleraic diarrhœa—which must not be confounded with the various diarrhœas that exist while Cholera is raging—does not exceed some days.*

*The facts quoted as exceptional do not prove that those cases of diarrhœa which last longer are choleraic and are capable of transmitting the disease, when the person attacked has been kept safe from every source of contamination.—(Adopted by a majority of 14 votes against 4. MM. Gomes, Millingen, Mühlig, and Salvatori in the minority. M. Monlau abstained from voting.)*

Here terminate the labors of the Commission on the origin, endemicity, transmissibility and propagation of Cholera, the historic review of the march of the epidemic in 1865, drawn up by a Sub-Committee, the Reporter to which is Dr. Bartoletti, having to be separately presented to the Conference.

In replying, as it has just done, to the various questions of the programme, *i. e.*, in confining itself to deduce from facts the reasonable conclusions to be inferred from them, the Commission thinks it has established such sure bases as to permit the Conference to give its opinion on the question of prophylactic measures with good and sufficient knowledge and reason.

A. FAUVEL,

*Reporter General.*

The present Report, after having been discussed and adopted chapter by chapter, has been approved as a whole by all the Members of the Commission.

*Members of the Commission :*

BARTOLETTI.	Count A. DE LALLEMAND.	J. E. POLAK.
A. BYKOW.	E. LENZ.	SALEM BEY.
F. BOSI.	A. MACCAs.	S. SALVATORI.
E. D. DICKSON.	J. MILLINGEN.	SAWAS.
A. FAUVEL.	P. F. MONLAU.	A. M. SEGOVIA.
E. GOODEVE.	MUHLIG.	A. SOTTO.
B. A. GOMES.	Count DE NOIDANS.	I. SPADARO.
Baron DE HUBSCH.	E. PELIKAN.	I. VAN-GRUNS.

*Constantinople, 12th May 1865.*

The above Report has been discussed and adopted by the Conference (text and conclusions) with the few modifications and additions shown in notes in the present reprint, 3rd August 1866. (*See the Minutes of the Conference from 9th June to 2nd July.*)

No. 112, dated 17th December 1866.

*From—The Secretary of State for India,*

*To—The Government of India.*

In continuation of correspondence which has already been forwarded to you relative to the Proceedings of the International Cholera Conference at Constantinople, I now forward for your information a copy of further letters, with their enclosures, which have been received from the Foreign Office on the subject, together with the answers which have been returned to those communications.

List of correspondence annexed.

2. You will observe that in the Report of the Committee of the Conference on the "Mesures à prendre en Orient pour prévenir de Nouvelles Invasions du Cholera en Europe," which forms one of the latest printed documents in the series, various measures are suggested for adoption by the Governments in India, with a view both to the extinction, or at least to the restriction of range, of cholera in India itself, and to the prevention of the spread of cholera from India to the countries to the westward.

3. The special measures suggested by the Commission for limiting the ravages of cholera in India consist, in addition to the operations of the Sanitary Commissions at the different Presidencies, of the maintenance and extension of the steps taken by the Governments of Madras and Bombay for the regulation of the periodical pilgrimages to the several places held sacred by the Hindoos; while for preventing the spread of cholera from the shores of India to Europe and the intermediate countries, the Commission recommend a system of passports on the principle in force in the Dutch possessions in the Eastern Seas, and the extension and increased stringency of the Native Passengers' Act of 1858.

4. Her Majesty's Government are fully aware that the objects, which the Cholera Conference has in view have not been neglected by your Government, or by the Governments of the several Presidencies, and they do not doubt that the various measures now in operation will have a sensible effect in producing a permanent improvement in the state of the public health in India, and in limiting the amount of disease which was engendered on board the pilgrim ships for Arabia before those ships were subjected to regulation.

5. Her Majesty's Government are desirous, however, that the subject should receive further and careful consideration, with special reference to the proceedings of the Conference and to the recommendations made by it with regard to India, and I have accordingly to request that, in communication with the several local Governments, you will carefully consider what further measures it may be practicable to adopt for the purpose at once of improving the sanitary condition of the people in India, and of promoting the special objects for which the Cholera Conference was instituted.

6. The conclusions at which you may arrive should be reported for the information of Her Majesty's Government, and I request that I may at the same time be furnished with any remarks which you may have to offer on the various other points which have formed the subjects of discussion between this Department and the Foreign office in relation to the proceedings of the Conference.

*List of Correspondence referred to in the foregoing Despatch.*

INDIAN PILGRIM TO MECCA.

Letter—

From Foreign Office,	9th March 1866,	7	enclosures.
"	"	10th	" " "
"	"	12th	" " 4 "
"	"	13th	" " 4 "
To	"	15th	" " "
From	"	16th	" " 1 "
"	"	21st	" " 4 "
"	"	24th	" " 2 "
To	"	8th April	" " "
"	"	26th March	" " "
From	"	23rd April	" " 1 "
"	"	28th	" " 2 "
To	"	30th	" " "
From	"	3rd Dec.	" " 1 "
To	"	14th	" " "

*Proceedings of the Conference at Constantinople.*

Letter—

From Foreign Office,	24th March 1866,	9	enclosures.
"	"	27th	" " 2 "
"	"	23rd April	" " 1 "
"	"	11th June	" " 1 "
"	"	16th	" " 5 "
"	"	30th	" " 4 "
"	"	21st July	" " 1 "
"	"	28th	" " 6 "
"	"	7th Sept.	" " 3 "
"	"	22nd	" " 6 "
"	"	12th Oct.	" " 1 "
"	"	18th	" " 3 "
To	"	9th Nov.	" " "
From	"	26th Oct.	" " 6 "
"	"	17th Nov.	" " 3 "
"	"	3rd Dec.	" " 3 "

Dated 9th March, 1866.

*From*—J. MURRAY, Esq.,

*To*—*The Under Secy. of State for India.*

I am directed by the Earl of Clarendon to transmit to you, for the information of the Secretary of State for India, the accompanying papers as noted in the margin, relative to the course adopted by the Cholera Commission at Constantinople in order to prevent the spread of cholera by Indian pilgrims, and I am to request that these papers may be returned to this Office after perusal.

From British Cholera Commissioners, Nos. 3 and 4.

To Mr. Stuart, No. 4, Feb. 28th.

To Mr. Stuart and Dr. Good-ave, March 8th.

Tel., March 2nd, March 4th.

No. 3, dated 16th February, 1866.

*From*—MESSRS. W. STUART, F. GOODEVE, and E. D. DICKSON,

*To*—*The EARL OF CLARENDON, K. G., &c. &c.*

We have the honor to enclose herewith two printed copies of the proposal of the French delegates, requesting the Conference to devise immediate provisional measures to arrest the progress of cholera on the shores of the Red Sea, in the event of that malady breaking out amongst the pilgrims who have gone this year to Mecca.

The Committee appointed by the Conference to examine the French proposal is composed of—

Mr. Stuart, President.

Dr. Bartoletti (Turkey), *Secrétaire-Rapporteur.*

Mr. Vetsera (Austria).

Dr. Fanvel (France).

Dr. Bosi (Italy).

Dr. Sawas (Persia).

Dr. Lenz (Russia).

When it met yesterday, Mr. Stuart thought it right to object to the proposal, principally upon the grounds of its being beyond the province of the Conference; and rather that of the Council of Health, or of the Sublime Porte, to take such measures as might appear desirable with respect to the present pilgrimage; that the invitation of the French Government to the other powers defined the objects of the Conference to be, in the first place, the investigation of the causes of cholera, and, subsequently, the suggestion of measures for arresting it; that the proposal took much for granted which it was the duty of the Conference to investigate; that before suggesting measures, even provisionally, which might be the cause of serious hardships and inconvenience to pilgrims and materially interfere with commerce, we ought to be thoroughly convinced of

the necessity of such measures; and that we (the British Commissioners) were not authorized to agree to a proposal of that nature without referring to Her Majesty's Government for instructions.

As all the other members of the Committee were of opinion that the proposal came within their competence, Mr. Stuart could only repeat his objections, and reserve his right to submit the result of the deliberations of the Conference upon the question to Her Majesty's Government, before becoming a party to it.

There is to be another meeting of the Committee to-morrow, at which the details of the proposal will be examined; and there can be little doubt from the general feeling upon the subject, that the measures suggested will be adopted by the Conference, after undergoing perhaps some few modifications. There is so far no question of any unusual interference with vessels coming to Suez from beyond the Red Sea; but it is not impossible that some alterations may be proposed with a view to render the measures applicable to such vessels.

The report of the Committee will be presented to the Conference on Thursday next, the 22nd instant and every effort will be made by the French Commissioners to procure its immediate adoption. We should therefore be obliged to your Lordship if you will inform us by telegraph what course you would wish us to pursue in the matter.

Your Lordship will observe that the measures are intended to be exclusively applied to the present pilgrimage, and not at all unless the cholera should unfortunately break out amongst the pilgrims.

The Committee appointed to report upon a plan for carrying out the work of the Conference consists of nine members—

Salih Effendi (Turkey), President.  
Count de Lallemand (France), Vice-President.  
Dr. Mühlig (Prussia), Secrétaire-Rapporteur.  
Malkom Khan (Persia).  
Mr. Vernoni (Italy).  
Dr. Pelikan (Russia).  
Dr. Sotto (Austria).  
Dr. E. Goodeve.  
Dr. Monlau (Spain).

At the first meeting of this Committee, it was maintained by a great majority that it would be desirable at once to consider measures of protection against cholera, based upon its transmissibility; and that, if necessary, reasons might be given for these in an Appendix. Dr. E. Goodeve maintained that, whatever might be the opinions of the members of the Conference themselves, it was absolutely necessary, for the sake of those beyond its circle, to collect and record prominently full evidence of the manner in which cholera has spread into Europe in the last epidemic, before deciding upon measures of precaution based upon particular views.

We concur with him in this.



The meeting separated without coming to any decision; but at a sitting held yesterday, propositions were made by Count Lallemand which embrace the objects contended for by us; and on the question of the origin and cause of cholera generally, go even beyond what we think absolutely necessary. The feeling of the members seemed in favor of adopting these propositions.

## INTERNATIONAL SANITARY CONFERENCE.

### ANNEXURE TO MINUTE No. 1.

*Proposition regarding the measures to be adopted in the event of cholera breaking out this year among the pilgrims at Mecca, put forward by the French delegates.*

GENTLEMEN,—Among the numerous questions which demand the attention of the Conference, there is one distinguished from all others by its peculiar claim of urgency, and which, therefore, should have our consideration before the others.

We mean the measures to be adopted in the event of cholera breaking out this year among the pilgrims in Mecca.

We cherish the hope that this contingency will not occur; but there is no guarantee, after all, that it will not, and it is our duty, in order to respond worthily to the confidence reposed in us by our respective Governments, to be forearmed against this danger.

What a misfortune indeed it would be, gentlemen, if, while we were gravely discussing the origin and the means of preventing the importation of cholera, the disease were to make a fresh irruption in the wake of the pilgrims.

It is, therefore, a measure of precaution with a view to a proximate peril that we are about to submit for your urgent consideration.

We must not forget that the pilgrims are already on their way to the holy places, and that the period of their return is not remote.

Thus much said, let us proceed to the question itself. Let us look at it as it presents itself this year, that is to say, when the pilgrimage is in course of completion, and the hadjis are on the point of returning.

Let us now suppose that cholera exists among them: In what would the danger consist, and what should be done to avert it?

The danger would consist, as you are aware, in the probability of the importation of the disease into Egypt by the pilgrims returning *by sea*, crowded on board steamers, and landed in thousands, in a very short space of time, on the Egyptian coast.

This is the new danger which was revealed to us in all its gravity by the events of last year. The peril was much less formerly when the pilgrims travelled in caravans, or had no other sea-going conveyances than frail barques which, coasted along, and made very long voyages.

As for importation by pilgrims returning by land, there is little fear of it. Experience, in fact, has proved that a long march by stages through the desert, was against cholera, the best of all quarantines applicable to a multitude.

Last year, the caravans which left Mecca a prey to cholera reached Damascus and Suez perfectly free from the disease. During the last eighteen years that I have devoted myself to this question, no fact, to my knowledge, has contradicted this innocuousness.

Thus, the danger against which it is necessary to be fore-armed exists almost solely in the return *by sea*.

What is to be done then ?

Should a quarantine be imposed upon the pilgrims on their arrival at Suez or any other Egyptian port ? Yes, if we had to deal with only a few hundreds of travellers in ordinary conditions ; and again, when we come to discuss the question of the lazarettos applicable to cholera we shall see how full of difficulties this question is ; but to desire to subject to serious measures of quarantine on their arrival thousands of pilgrims, carrying cholera with them and disembarking almost simultaneously on Egyptian soil, would be an unreasonable pretension. To our thinking, such a quarantine would be a deceptive mockery, and not such a guarantee as should be expected from the Conference.

Should an attempt be made, in order to diminish the number of simultaneous arrivals on Egypt, to regulate the embarkation at Jeddah in a suitable manner, to make a selection, to fix the numbers embarked, &c. ?

This order of precautions, however, would necessitate, for their practical execution, a considerable armed force at the port of embarkation. Represent this multitude to yourselves a prey to cholera, terror-stricken and wishing for flight at any price, and judge if measures of the kind in question would not infallibly lead to sanguinary collisions.

Last year, outward-bound vessels were in a manner taken by assault by the fugitives. It may be asserted that it will be the same again this year under analogous circumstances ; and if the forcible seizure of the ships were prevented by a naval force, you can easily imagine what would happen on land where everybody would endeavor to be among the number of those leaving. We think then that measures of this kind cannot be depended upon for this year at any rate. We add that, in any case, they would only be a means of diminishing, and not at all of suppressing the danger.

It has also been thought possible, in the event of the appearance of cholera, to land the pilgrims already embarked on some point of the coast half-way between Hedjaz and Egypt, at Tor, for instance, at the foot of Mount Sinai, and to subject them there to a suitable quarantine. This idea ought no doubt to be taken into consideration with reference to the future, though it is not devoid of serious inconveniences ; but you easily perceive that such an establishment cannot be improvised in a few days, and that the measure would be impracticable this year.

What then remains to be done? There remains only, we think, to put in practice the simplest, the promptest, the most easily executed and the surest measure, one which is attended with the fewest disadvantages in every respect: which is, *in the event of cholera breaking out amongst the pilgrims, to cut off for a time during the existence of the epidemic, all maritime communication between the Arabian ports and the Egyptian coast*, leaving open to the hadjis, for their return to Egypt, the land route followed by the caravan. In other words, the pilgrims should be made to perform quarantine, either on the spot for those who might elect to wait the termination of the epidemic in the Hedjaz, or in the desert for the greater number who would follow the caravan.

There would be no reason to fear that the complete prohibition of the return by sea would give rise to any danger of collisions occasioned under the pretext of regulating the embarkation, considering that the pilgrims, having nothing to hope for in that direction, would have no interest in giving themselves up to violence.

Now we proceed to show how we understand the execution of this measure.

In the first place, its execution would naturally be entrusted to the Ottoman Government, in concert with the Egyptian administration, and if necessary, with the aid of the allied Governments in the matter of naval help.

It would necessitate the concurrence—

*1st.*—Of the Ottoman Sanitary Commission sent to the Hedjaz which would show the sanitary condition of the pilgrims.

*2nd.*—Of some men-of-war to interrupt maritime communications; and

*3rd.*—Of an organised surveillance of the Egyptian coast to oppose landing in the event of the rules being infringed.

This being so, the execution of the measures should be proceeded with as follows, of course with any modifications deemed proper by the Conference:

*1st.*—In the event of the manifestations of cholera among the pilgrims, the members of the Ottoman Commission, assisted if necessary, by other physicians commissioned *ad hoc*, should report the fact to the local authorities as well as to the men-of-war stationed off Jeddah and Yambo, and should also at the same time send intimation of the fact to Egypt.

*2nd.*—On the declaration of the abovementioned physicians, the authorities should proclaim the prohibition, until further orders, of all embarkation, and should invite the pilgrims bound to Egypt to take the land route.

*3rd.*—At the same time, the men-of-war should remove to a distance all steamers or sailing vessels which might happen to be in the ports of embarkation, and should exercise as strict a watch as possible with a view to prevent any clandestine departure.

4th.—On the receipt of advice of the presence of cholera among the pilgrims, the Egyptian authorities should forbid entrance to everything and everybody from the Arabian coast, starting from a point south of Jeddah, which should be determined; moreover, they should assign to the infected vessels, after re-victualling them if necessary, a locality on the Arabian coast, Tor, for instance, where they should perform quarantine.

5th.—As for the caravan, it should, as usual, be stopped at several days' march from Suez; there it should be visited by a Medical Commission, and it should not be allowed to enter Egypt until its sanitary condition was recognised to be exempt from danger.

6th.—Regarding the pilgrims bound to India or other countries beyond the Red Sea, it would be best, in order to avoid the peril of a partial embarkation to subject them to a general rule, *i. e.*, to await the termination of the prohibition. Perhaps, however, it might be possible to assign them a special port of embarkation several days' march to the south of Jeddah.

7th.—The prohibition of embarkation would cease *fifteen days* after the last case of cholera reported in the Hedjaz.

8th.—The prohibition against performing quarantine in Egypt would not be applicable to ships coming from beyond the Red Sea; these ships, with foul bills of health (showing cholera) should be subjected to the rule in force at Suez in such cases.

Such, gentlemen, is the proposal we have the honor of submitting for your consideration. It responds to the object for which the Government we represent moved the convening of this Conference. It appears to us to invite all the guarantees and all the advantages that could be desired. It in no way binds us in the future, that is to say, that, without opposing any obstacle to the employment of such measures as the Conference may deem proper to prevent the importation of cholera into the Hedjaz, or to definitive precautions in regard to Egypt, it offers notwithstanding a substantial means of guaranteeing ourselves from the present moment, against a proximate and redoubtable eventuality, and thus affords us the security necessary for deliberating with calmness on the other measures which will be submitted to us.

Lastly, it leaves to the Ottoman Government the full plenitude of its authority and dispenses us from direct intervention in the delicate and perilous question of the sanitary police of the pilgrimage.

The only disadvantage of our proposition would be should a case occur to disturb temporarily the trade carried on in the conveyance of the pilgrims by sea; but this inconvenience does not seem to us to be so serious that it can be allowed to weigh in the balance for an instant.

For these reasons then we have had no hesitation in submitting this proposition to the Conference at its first sitting.

Whatever may be the result of your deliberations on this subject, we think that your decision ought to be submitted immediately for the concurrence of the Sublime Porte and all the Governments represented in this Conference, in order that it may be carried into effect with as little delay as possible.

Consequently, we ask for the immediate nomination of a Committee to examine our proposition and report upon it at the next meeting of the Conference.

13th February, 1866.

A. DE LALLEMAND,  
A. FANVEL,

*Delegates of the French Government.*

No. 4, dated 23rd February, 1866.

*From*—MESSES. W. STUART, E. GOODEVE, and E. D. DICKSON,

*To*—The EARL OF CLAENDON, & c., & c.

With reference to our despatch No. 3 of the 16th instant, we have the honor to report that, at the subsequent meetings of the Committee appointed by the Conference to examine the proposal of the French delegates for the adoption of immediate measures with a view to prevent the importation of cholera by the pilgrims now on their way to Mecca, several differences of opinion arose; more particularly when it was announced by the Turkish delegate, in answer to questions which the Committee had put to him, that there was great reason to fear that, in the event of the pilgrims being required to choose between returning to Egypt by land or remaining at Jeddah until the fifteenth day after the final disappearance of cholera, there might be a deficiency of provisions and water, as well as of means of transport, for those preferring the land journey. Mr. Bartoletti then said that it was his intention to propose some modification of the French measures, upon the principle of regulating the departures by sea from Jeddah, so as to prevent the steam vessels from being overcrowded, and of providing quarantine establishments at three or four points on the shores of the Red Sea in the neighbourhood of Suez.

When the Conference met yesterday, it was announced that the Committee had not had time to draw up its report, and an adjournment of the debate was asked for. After much discussion, in the course of which it was contended that the adoption of measures was of such urgency that the debate should be at once proceeded with without waiting for the Committee's report, it was decided to adjourn until Monday next the 26th instant, and that the debate should then take place, whether the report of the Committee is ready or not.

The Committee met afterwards to hear the details of Mr. Bartoletti's proposal to which various serious objections were raised

by Dr. Fauvel. An amendment was proposed by Dr. Sawas, the Persian delegate, suggesting that Yambo should be made a free port of embarkation. According to him the journey from Mecca to Medina occupies a fortnight: and as the pilgrimage is more complete when it includes Medina, the pilgrims would not object to take that route: and after spending four or five days there in the performance of religious observances, they would not reach Yambo until nearly a month after their departure from Mecca. Besides the beneficial effects of such a long land journey as regards disinfection from cholera, this plan would have the advantage of giving a month's more time for sending ships and provisions to Yambo for their removal.

As there was no chance of arriving at an agreement with respect to any of the plans proposed, Mr. Bartoletti was requested to draw up the report of the Committee, describing the divergent views of its members, for presentation to the Conference on Monday.

There are so many objections to every plan which has been hitherto proposed, and the information upon which we are asked to vote is so insufficient for forming our judgments, that unless we should in the meantime be otherwise instructed by your Lordship, we shall not feel justified in voting for the hasty adoption of any such measures, although there is great reason to fear that those proposed by the French delegates will be adopted by a large majority of the Conference; the delegates of Turkey, Russia and Persia being so far the only members who seem inclined to oppose them.

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No. 4, dated 28th February, 1866.

*From*—JAMES MURRAY, Esq., *Foreign Office,*

*To*—MR. STUART.

I sent you to-day the following telegram in cypher:—

Her Majesty's Government approve your proceedings as reported in your despatch No. 3, and concur in course maintained by Dr. E. Goodeve at first meeting of Committee for carrying out the work of the Conference to be absolutely necessary before deciding upon measures of precaution.

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No. 5, dated 8th March, 1866.

*From*—J. MURRAY, Esq., *Foreign Office,*

*To*—MR. STUART and DR. GOODEVE.

I have to acquaint you that I approve the course you propose to pursue as reported in your Despatch No. 4, of the 23rd ultimo, in regard to the plan suggested by the French delegates for preventing the importation of cholera by pilgrims on their way to Mecca.

Dated 2nd March, 1866.

*Telegram to—LORD LYONS, Pera.*

In Cholera Conference yesterday the principle of French proposal was carried by a large majority, in spite of Turkish declaration that the Porte considered the execution of such a measure impossible. The British, Turkish, Russian, and Persian Commissioners alone voted against. Austrian diplomatic Commissioner abstained. Should we not have naval force at Jeddah? Besides other possible complications, our Indian pilgrims may be in a critical position if the Porte is driven to act upon the French proposal, and the excitement might spread to Mussulman population of India and its north-west frontier.

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Dated 4th March, 1866.

*Telegram to—LORD LYONS, Constantinople.*

The British Cholera Commissioners report that the details of French proposition were passed in Conference yesterday with several modifications, including the following: Indian pilgrims to embark at Jeddah if local authorities think they can do so without danger. Article 8 suppressed altogether, as the measures only apply to pilgrim ships. The British Commissioners did not take part in the discussion, and requested that their abstention should be mentioned in proposal.

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Dated 10th March, 1866.

*From—J. MURRAY, Esq., Foreign Office,*

*To—The Under Secretary of State, India Office.*

With reference to my letter of yesterday's date, I am directed to request you will inform the Secretary of State for India that Lord Clarendon would be glad to be favored with any observations which Earl de Grey and Ripon may have to offer respecting the proceedings of the Cholera Conference at Constantinople with regard to Indian pilgrims.

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Dated 12th March, 1866.

*From—J. MURRAY, Esq., Foreign Office,*

*To—The Under Secretary of State for India.*

With reference to my letter of the 10th instant, I am directed by the Earl of Clarendon to transmit to you two further Despatches from the British Members of the Cholera Conference now sitting at Constantinople; and I am to request that, in laying the same before Earl de Grey and Ripon, you will move him to inform Lord Clarendon whether the India Office has any knowledge of the Indian pilgrims to Mecca having brought the cholera with them.

Nos. 5 and 6.

No. 5, dated 27th February, 1866.

*From—MESSRS. W. STUART, E. GOODEVE, and E. D. DICKSON,*

*To—The Right Hon'ble the EARL OF CLARENDON, K. G., &c., &c.*

The meeting of the "Commission de Programme" took place on Saturday the 24th instant, and agreed upon a plan of proceeding to be submitted to the Conference at an early sitting.

We enclose two printed copies of the proposed plans.

The members of the Committee reserved to themselves the power to object to any particular parts of the scheme during its discussion by the Conference. The plan is mainly that proposed by Count Lallemand, referred to in our report No. 3. It contains, however, some modifications introduced by members during the discussion.

We think that the scheme, especially in the first section, contains several questions which cannot be satisfactorily solved; but as they are comprised in the circular of Monsieur Drouyn de Lhuys, and cannot reasonably be excluded from the programme proposed by the French Delegate, care has been taken that the study of the history, course, and mode of spreading of the epidemic of 1865 shall be taken into consideration; and this, we think, is the most important part of the enquiry.

We fear that there is still a strong disposition in the majority of the members of the Conference to get over this part of the enquiry rapidly. They seem impatient of every investigation which prevents immediate deliberation upon protective measures.



## INTERNATIONAL SANITARY CONFERENCE.

## ANNEXURE TO MINUTE No. 7.

*Report on a Draft Programme of the labors of the Conference, drawn up in the name of a Committee composed of MM. Dr. Sotto, Dr. Monlau, Count de Lallemand, Vice-President; Dr. Goodeve, Ferroni, Mirza Malkom Khan, Dr. Muhlig, Dr. Pelikan, and Salih Effendi, President.*

(BY DR. MUHLIG, *Secretary-Reporter*).

GENTLEMEN AND VERY HON'BLE COLLEAGUES.—In submitting for your consideration the programme of the labors with which the Conference will have successively to occupy itself, the Committee to which you have assigned this duty is of opinion that it should, in the first place, show you the principles it has followed. You will agree that the object of our labors possesses an essentially practical character, viz., to propose the most fitting methods to prevent, if possible, the periodical invasions of Asiatic cholera. We shall have, therefore, to see how we can suppress this scourge in its origin, and how we can arrest it in its progress.

This portion of our labors will necessarily comprehend the examination of the system at present in force, as well as the consideration of new measures to be proposed for the future. But you understand well, gentlemen, that these practical studies cannot be made with any chance of success, unless we previously form clear and well-defined opinions on the disease against which we are called upon to adopt measures. So that, before, touching upon the practical part of the question, we should occupy ourselves in the first place with certain preliminary questions of a nature more specially medical,—that, for instance, of the origin and mode of propagation of cholera. And here we are specially bound to establish distinctly in what our positive knowledge of the subject in question consists, leaving to the study of learned bodies everything foreign to the practical object of the Conference.

What we have said leads us naturally to divide our labors into three great groups:—The first, comprehending the question of the generation of cholera; the second, that of its transmissibility and propagation; and the third and last, the most important question for us, that of preservation. Each of these groups will raise up a certain number of questions which should more particularly attract your attention, and which we are about to submit to you, not with the object of assigning limits to the studies of the Conference, but simply to invest them with that order which is indispensable for the purpose of arriving with certainty and promptitude at a practical result. The Committee does not hide from itself that, in the actual state of our knowledge, several of the questions we are about to lay down will very probably not receive an altogether satisfactory solution. Yet

even a negative result will have its advantage in a practical point of view, in this way—that it will aid us in avoiding unsafe and treacherous ground, and in laying the foundations of our edifice on a more solid basis. It would, perhaps, be fitting to add to these three groups a fourth, in which the practical application of the measures adopted by the International Conference would be considered.

And now we proceed to the details of our programme.

1ST GROUP.—*Of the generation of Cholera.*

This group embraces the following questions :—

Does epidemic cholera develop itself spontaneously, under certain conditions, in our countries, or is it always brought from without ?

What are the countries in which it can be shown incontestably that cholera has been generated ?

Does cholera always exist in India, or only at certain times and at certain seasons of the year ; and does it show itself with more violence at particular seasons than at others ?

Are there certain localities in India possessing the exclusive quality of engendering cholera, or which are at any rate peculiarly favorable to its development ?

Do we know the causes by the concurrence of which cholera is generated in India, or in any other locality, as well as the circumstances causing it to assume periodically an epidemic form ?

Is there an original focus of cholera, permanent or periodical, in the Hadjaz ; if there is, under what conditions does it develop itself ?

Is there not reason to fear that cholera may become acclimatised in our countries ?

How are we to understand the immunity against cholera which certain localities always appear to enjoy ?

2ND GROUP.—*Of the transmissibility and propagation of Cholera.*

Is the transmissibility of Cholera proved at the present day by facts admitting of but one interpretation ; taking the hypothesis for granted, what are the principal facts proving it ?

Are there conclusive facts forcing us to admit that cholera may propagate itself by certain atmospheric conditions, as for instance, by the winds, by the proportion of ozone in the atmosphere, &c. ; or rather do certain natural causes only favor its propagation ?

Do the various epidemics which have traversed the world since 1817 present certain common traits in their progression, or certain differences connected with the different conditions under which the ways of communication and commercial transactions have successively presented themselves ?

Is it man, coming from a place infected by cholera, who imports the disease into places hitherto uninfected; and, if this is so, under what sanitary conditions should he find himself in order to be able to import the disease? Does the arrival from a choleraic focus of a single individual suffering from diarrhoea suffice to give rise to the development of an epidemic?

Can cholera be imported by luggage, merchandise, &c., and under what circumstances?

Transmission of cholera by water, latrines, sewers, corpses, &c.; importance of dejecta.

What difference is observed in the mode of propagation of cholera according to the different ways of communication: by sea and by land, for instance, highroads, rivers, railroads, desert routes, steamers, sailing vessels, &c.?

It is not possible, and even probable, that, since, (owing to the development of steam navigation) the traffic with India has in great measure taken the sea route, the invasions of cholera by land have become rarer, while the danger increases on the side of the sea?

When a choleraic focus is developed on board a ship, what peculiarities does it present, what is its probable duration, and its tenacity?

Does not the assemblage of great masses of men, as for instance, fairs, the movements of troops, pilgrimages, &c., singularly facilitate the propagation of cholera, and in what manner?

What part has been played by the pilgrimage to Mecca in the choleraic epidemics which have succeeded each other down to the present day?

Influence exercised on the violence of choleraic epidemics by the hygienic conditions of a locality.

From the facts already known with regard to the transmissibility and propagation of cholera, can anything precise be deduced as to the generating principle of the disease, or, at any rate, as to the conditions of its penetration into the organism, the channels by which it escapes from it, the agent acting as its vehicle, the period during which it retains its morbid activity; in a word, as to all the attributes the knowledge of which is important in a prophylactic point of view?

General review of the progress and mode of propagation of cholera during the epidemics of 1865.

### 3RD GROUP.—*Preservation.*

#### *A.—Preventive means.*

Are there preventive means permitting of the extinction of the original foci of cholera in India; are there means of suppressing the foci occasioned by importation?

Are there measures of public and private hygiene, sanitary measures, applicable on a scale sufficiently great to be able to destroy or sensibly diminish the predisposition to choleraic infection, such as the sanitation of ports, the mode of burial of corpses, &c.?

*B.—Restrictive means.*

Should we not start with the fundamental principle that the closer to the primitive focus these measures are applied, the more their efficacy may be reckoned upon?

What is the utility of sanitary cordons, and where and how should they be applied?

Temporary interruption of communication with infected places, prohibition of emigration, of fairs, &c.

What are the lessons of experience with regard to the systems of quarantine at present in force in various countries against the invasions of cholera: have we ground to hope for better success from quarantines established on some other basis?

Question of the incubation of cholera; what is its import in the question of the quarantines proposed against cholera?

Is it not necessary to choose, for lazarettos, certain defined localities far from centres of population and ways of communication?

Difference to be established between quarantines of observation and rigorous quarantines, and the determination of their duration. What difference should be established, in connexion with this, between individuals and their luggage, merchandise and ships, accordingly as there have or have not been cases of cholera on board, and between the crew and passengers?

Should the days spent on the voyage be reckoned as days of quarantine, and if so, in what cases?

Foul bill of health, suspected bill of health, clean bill of health, in their application to cholera.

In a hygienic point of view, what are the guarantees to be exacted from lazarettos and cholera hospitals in general?

Disinfection of ships, dwellings, effects, &c.

Powers and duties of sanitary physicians.

Is it not necessary to establish a rule that pilgrims from India, or any other country where cholera exists, should always undergo a quarantine of observation; and, if necessary, a rigorous quarantine in a fixed spot on the Arabian coast, before they are permitted to proceed to the general rendezvous of the pilgrims at Mecca?

Sanitary police regulations of the pilgrimage.

Is there occasion to apply measures of quarantine to arrivals from the East Indies in general; and under what circumstances, and to what extent?

What measures would it be well to adopt in the event of a threatened invasion of cholera either by sea or by land ?

Question of posts of observation for sanitary physicians, for instance, at Jeddah, Yambo, Suez, Alexandria, in Persia, &c.

If we weigh, on the one hand, the disadvantages resulting to commerce from restrictive measures ; and, on the other, the disturbance occasioned to industry and commercial transactions by an invasion of cholera, on which side do we think the balance would incline ?

#### 4TH GROUP.

What definitive form should the Conference give to the resolutions it may adopt ?

The solution of the questions comprised in the 1st and 2nd groups of our programme being indispensable to enable the Conference to enter upon the great task imposed upon it, your Committee proposes, in conclusion, gentlemen, to appoint a Committee of eleven members, which should form itself into Sub-committees, with the object of studying these questions, and submitting to you the result of its investigations with as little delay as possible.

DR. SOTTO, DR. MONLAU, A. DE LALLEMAND, DR. GOODEVE, A. VERNONI, MIRZA MALKOM KHAN, DR. PELIKAN; SALIH, *President*; DR. MUHLIG, *Secretary-Reporter*.

No. 6, dated 27th February 1865.

*From*—MESSRS. W. STUART, E. GOODEVE, and E. D. DICKSON,

*To*—*The Right Hon'ble the EARL OF CLARENDON, K. G., &c. &c.*

In continuation of our Report No. 4 of the 23rd instant, we have the honor to inform your Lordship that at a meeting of the Conference which took place yestertay, the Report of the Committee appointed to consider the French proposal for the adoption of immediate measures in the Red Sea was read by the Secretary, and that Salih Effendi then read a statement in support of Dr. Bartoletti's amendment. In this statement, of which two copies are herewith enclosed, Salih Effendi objects to the French proposal and suggests protective measures in the shape of quarantine in the Gulf of Suez.

After having this, and observations from several members, including Dr. Sawas arguments in favor of his own amendment, the meeting adjourned until to-day, upon the motion of Dr. Fauvel.

To-day the sitting was chiefly occupied in hearing Dr. Fauvel's development of his proposal, and his condemnation of the Turkish amendment. His speech was long and eloquent, and appeared to produce a great impression upon the majority of the Conference. The debate was shortly afterwards adjourned until the 1st March.

We have also the honor to enclose two copies of the Protocol of the first sitting of the Conference, the same having been handed to us to-day.

### INTERNATIONAL SANITARY CONFERENCE.

*Proposed amendment of the urgent proposition of the Delegates of the French Government, presented by the Delegates of the Sublime Porte.*

GENTLEMEN,—Turkey being exposed, more than any other country, to the importation of cholera morbus, the Ottoman Government would be the first to accept and put into practice the proposition presented by the delegates of the French Government, if, by putting the proposed measures into execution, it could hope to acquire efficacious and durable guarantees against the irruption of a fresh epidemic.

We make it a duty, therefore, to assure you that it is neither from ill-will, nor a spirit of opposition that we propose, in our quality as Delegates of the Sublime Porte, to submit a project of amendment for your appreciation.

In calling your attention to the inconveniences and difficulties which we think render it almost impossible to put the proposed measures into execution, our only object is to invite discussion on such a serious subject.

The discussion ought to be deep and exhaustive, in order that the resolutions arising out of it should be of indisputable utility and connected with the true interests of peoples and the exigencies of civilization.

The proposition of the Honorable French Delegates may be summed up thus:—

*1st.*—The danger against which it is important that we should forearm ourselves consists almost entirely in the *return of the pilgrims by sea.*

*2nd.*—The danger would consist in the probability of the importation of the Indian disease into Egypt.

*3rd.*—It would suffice, to avert this danger, to adopt one sole but very efficacious measure, to wit, *the entire prohibition of the return of the pilgrims by sea.*

It must be confessed that this proposition, as drawn up, has all the appearance of truth, of logic, and appropriateness. But if, at the first glance, it appears seducing, an attentive and strict examination lays bare its weak points and especially its practical defects.

In fact, gentlemen, this proposition is nothing less than the solution of one of the most difficult and most controverted of scientific questions. Before bringing forward its numerous inconveniences, and the serious difficulties opposed to its application, we should like to commence with some scientific arguments capable of invalidating the assertions of the honorable delegates of the French Government.

It is necessary to put the question clearly, for on its solution depends, we believe, the fate of the proposition with which we are pre-occupied.

The question is this:—If a murderous epidemic has already broken out in the Hedjaz, before the departure of the pilgrims, it is thought to forearm Egypt against the danger of the importation of the Indian disease by prohibiting the return of the pilgrims by sea.

The epidemics of 1830-31, and some other prior and subsequent epidemics, imported into, and propagated in, Europe by land routes, successfully combat such an assertion.

In the first International Conference, the Chevalier de Rosemberger, delegate from Russia, stated that at Odessa the plague and cholera were unable to penetrate by sea, thanks to wise sanitary measures; but that the last epidemic of cholera but one had been imported by land.

It is also known that cholera, in the last epidemic but one, was communicated through France to Piedmont by land, and that from Piedmont it was imported by land again into Tuscany. And yet the ports of Genoa and Leghorn had been closed against all suspicious arrivals.

For the sake of brevity, we refrain from mentioning other analogous and very conclusive facts. At the present day all competent men admit the well-proven fact that cholera spreads itself by way of the most frequented communications connecting the great centres of population. If cholera affects a kind of predilection for the course of rivers or the coasts of seas, very often it prefers to follow great land routes in its march. Many epidemics abundantly demonstrate this.

To maintain the contrary thesis would imply the negation of most authentic facts.

Who then shall dare to say that Egypt will be preserved because *all return by sea* is refused to the pilgrims?

It is true the danger will be diminished; but has the Conference the right to enchain personal liberty, to hamper and arrest commercial transactions, to impose a most severe law on thousands of men, with the mere object of lessening an evil it is not able completely to suppress, and which may even be occasioned in spite of the violent measures adopted by it? We do not believe that this is the mission

of the Conference; and we prefer to hope that the task which is incumbent on it is to ameliorate, in a hygienic point of view, the fate of the pilgrims and the peoples with whom they mingle, at the same time upholding the great interests of Governments.

The report and the circular of His Excellency M. Drouyn de Lhuys are conceived in this sense.

What we have just said concerns the theoretical part of the proposition of the honorable delegates of the French Government.

This will render it easier to understand the remarks and observations we are about to submit relative to its practical part, in the hope that, with the aid of your lights, this important question will be solved in the sense best corresponding, in our belief, with the exigencies of the situation.

The inconveniences and difficulties attributed by us to the practical part of the proposition of the honorable French Delegates are as follow:—

*1st.*—That portion of the Ottoman territory called the Hedjaz is a sterile country, particularly in cereals, which makes it necessary that it should be incessantly replenished with supplies of provisions. Now, to make the interdiction of the return by sea efficacious, it would also be necessary to prohibit ships from approaching the towns to which these provisions are being constantly brought.

This must of necessity be carefully looked to—the hadjis who have gone this year by sea to the holy places will do all they can to get back to their homes by sea—they will endeavour to seize upon every ship within their reach—a collision will be inevitable, and it may even be predicted that a revolt must be the result.

It becomes a matter of necessity, therefore, to forbid the approach of ships to ports and roadsteads to which the pilgrims go. But this would expose to famine, not only the pilgrims, but also the inhabitants of the maritime towns in which they congregate.

*2nd.*—Supposing even that it is possible to prevent steam vessels and merchant ships from entering ports frequented by the pilgrims, how could the hadjis be prevented from embarking on djerims, on barques and boats, and proceeding home by sea. And if this happens, the danger will be very much greater than if they were permitted to take passage on board steamers or sailing vessels under the surveillance of the local sanitary authorities, and also under the surveillance and responsibility of the physicians on board. Crowded together in barques, which certainly will take longer in arriving at their destination than large vessels, the hadjis, who will have brought with them the Indian disease, or its germ, will be obliged to make several stages: they will reach many places in a sick or dying condition, and will spread the disease much more, than if they had travelled at their ease on spacious and well kept vessels.



Another inconvenience would result, *viz.*, that the sanitary authorities of the whole Arabian sea-coast would have to subject all barques, without distinction, to a severe quarantine.

3rd.—The interdiction of the return of the pilgrims by sea would give rise to a serious difficulty in regard to their return overland. Let no illusions be given way to as regards the gravity of this difficulty, which, to all who are well acquainted with the Hedjaz and the mode of formation of the caravans, is almost insurmountable, and would of itself suffice to render the measure of the interdiction of the return of the pilgrims by sea altogether impracticable.

In fact, gentlemen, compelled as they would be to travel by land, it would become necessary for the pilgrims to be provided with a sufficient number of camels. Now let us see whether this is possible.

Since the different points of the Red Sea have been connected together by the Egyptian and English steam navigation companies, the number of pilgrims making the land journey has very much diminished.

In support of this assertion, let us cite the following facts:—

1st.—The Damascus caravan, which comprises the pilgrims from Asia Minor and those who pass by Constantinople, last year consisted of only a thousand persons, while formerly it amounted to 12 or 15,000.

2nd.—The Egyptian caravan, formerly very numerous, consisted last year of only 6,000 pilgrims.

Where then will the pilgrims be able to find the requisite number of camels? Those to be found in the Hedjaz would be altogether disproportionate to the number of hadjis unprovided with the means of transport overland. They would scarcely be able to get a thousand camels from the conductors of the small caravans which go to Mecca and Medina before and after the ceremonies of the sacrifices.

According to Dr. Gianelli, who in his last work, *Le Second Congres Sanitaire International*, attests the fact, last year the hadjis in the holy places amounted to the extraordinary number of 200,000. The exact number of the pilgrims this year is not yet known, but there is reason to believe that it is very high. Taking only the half, we would have this year 100,000 pilgrims, the greater part having reached the Hedjaz by sea. How then could the caravan be joined by those pilgrims who would not be able to find the means of transport overland to their homes?

Let the Ottoman or Egyptian Government, it will be said, look to the matter. *The thing certainly will not appear easy to any but those who do not know that last year*—and it is Dr. Bartoletti who informs us of this fact—from 18 to 20,000 pilgrims travelled by sea. Would it be an easy matter, we ask, for the richest and best organised Government to procure 18 to 20,000 camels within the space of a month and a half, reckoning from the present moment?

In the absence of camels, then, what course are the pilgrims to adopt? Is it not evident that they will prolong their stay at the holy places? Hitherto they have remained there for from three to five days, rarely as many as seven; and it is a proven fact that the great reservoirs of water at Mecca and Medina had become dry by the time the pilgrims had left.

Nobody is unaware that there is a want of drinking water in almost every town of the Hedjaz. These towns possess only as much as is contained in some cisterns and wells. The supplies of provisions for the towns are regulated also according to the population they contain. The traders know the period when the great floating population of pilgrims detaches itself from the fixed population, and then they also cease to furnish the towns with provisions. Here, then, we see the whole of the Hedjaz threatened with a want of water and provisions.

What would be the deplorable consequences, we may even say the calamities, which would result?

The assemblage and crowding, indefinitely prolonged, in towns already compromised beyond expression, would infallibly result in the creation of immense pestilential foci,—not one of their inhabitants would survive for more than a few days,—and these towns of living, sentient beings would soon be transformed into necropoli. But if a murderous epidemic devastates the holy cities, if famine and thirst multiply the ravages and horrors of the Indian scourge a hundredfold, can we believe that their population—native or foreign—would rest passive spectators of so many calamities? Can it be thought that they would resign themselves to death as quietly as the sheep and camels slaughtered by them during the sacrificial ceremonies?

Independently of this, and leaving aside the want of camels, the desert route itself, such as it is at the present day, cannot provide a caravan, as large as the one we are supposing, with the means of subsistence to the end of the journey.

When the pilgrims took the desert route by choice, they were in the habit of making several stages during the journey. From Damascus to the Hedjaz several forts had been constructed close by wells or reservoirs intended for the caravan. These forts were sufficiently garrisoned, with a view to the protection of the caravan against the attacks of the Bedouins who tried to seize upon the wells *vi et armis*. Many of these forts and wells still exist, but the water would not suffice if the caravan were very numerous.

We have to mention another and most serious and grave disadvantage with respect to the pilgrims from the south, who to the number of 25 or 30,000 arrive every year in the Hedjaz. These are the pilgrims from the south, coming from the British possessions and other places in Asia *viâ* the Straits of Bab-el-Mandeb.

This passage occurs in the proposition of the honorable delegates of the French Government:—

“Regarding the pilgrims bound to India or other places beyond the Red Sea, it would be best, to avoid the peril of partial embarkation, to subject them to a general rule, *viz.*, to await the termination of the interdiction: it might, however, be found possible perhaps to assign to them a particular point of embarkation several days’ journey to the south of Jeddah.”

We are obliged to confess, gentlemen, that we do not know whether there is several days’ journey to the south of Jeddah, any point whatever where an army of pilgrims, amounting to 25 or 30,000 men, could be sheltered for several days. And if this place exists, what is to be done to supply it with provisions and water?

It is a question we cannot solve: we have carefully looked over the map for such a point, and have not found it.

We think, therefore, that this measure would be impracticable, even if it were desired to encamp the southern pilgrims around Jeddah or in Jeddah itself.

Such, gentlemen, are the inconveniences and dangers, such are the serious difficulties opposed to the full and entire adoption of the proposition of the French Delegates.

We are greatly pained to find we cannot agree with them, and to be under the necessity of asking for the amendment of their proposition.

We have found ourselves placed in this position against our will, and this is why, without any pretension, without any after-thought, with the frankness imposed upon us by the sentiment of public duty, we have permitted ourselves to expose what have appeared to us to be its weak points.

But the case is urgent, the peril eminent, and the necessity of action imperious.

It is necessary then, without delay, to adopt efficacious measures, easy of application, before the return of the pilgrims.

The measures we proposed, and which we believe to be of immediate utility, are very much like those proposed by the French Delegates.

They are as follow:—

1st.—To render the return of pilgrims by sea as difficult as possible, without, however, going so far as complete interdiction.

Instead of imposing what they would consider a despotic and unjust law upon them, let us endeavour, either by the counsel and advice we will give them, or by the obstacles we will raise up in their path without their knowledge, to make the pilgrims take the land route spontaneously and of their own free will.

To provide against every eventuality, and to prevent any serious collision, the Ottoman Government will augment its garrisons in the various ports, and will place garrisons where there are none at present. In the same way some Egyptian men-of-war will be stationed off the ports.

2nd.—The Ottoman Government will take upon itself the duty of choosing, according to the indications and instructions given either by the Conference or the sanitary authorities of the Empire, three or four suitable localities, as far as possible from populous centres, on the eastern coast of the Red Sea, for the establishment of provisional lazarettos and also of encampments and barracks. As the first arrivals pass through their quarantine, they will be replaced by others until the complete evacuation of the Hedjaz by the pilgrims. It is to be clearly understood that physicians and apothecaries are to be attached to these lazarettos, and that they are to be provided with medicines and every thing necessary for the sick. Every place where a lazaretto is established is also to be provided with provisions and drinking water. The Government of His Majesty the Sultan, which does not recede before any pecuniary sacrifice, has already decided on augmenting the number of physicians composing the Commission of the Hedjaz.

The pilgrims, before starting for Egypt, will have to be subjected to a quarantine, of the time and form desired, in one of the lazarettos on the coast of the Red Sea.

We think, gentlemen, we have said enough to induce you to discuss the amendment we have the honor to submit for your consideration. It will receive, no doubt, thanks to your experience and lights, the rectifications and the development it stands in need of.

We shall esteem ourselves happy in having contributed, to the full measure of our feeble means, to throw light upon the important question which the delegates of the French Government have the merit of having brought to your attention. This question has appeared to us to be so grave that we have wished not to be the last to take it into serious consideration. Its definitive solution appertains to you, and it will be the most signal proof of your solicitude for the prosperity of peoples and the progress of civilization.

PERA: GALATA-SERAI; }  
The 26th February 1866. }

SALIH.  
BARTOLETTI.

Dated 13th March, 1866.

*From*—J. MURRAY, Esq., *Foreign Office,*

*To*—*The Under Secretary of State, India Office.*

With reference to my letters of the 10th and 12th instant, I am directed by the Earl of Clarendon to transmit to you, for any observations which Earl de Grey and Ripon may have to offer thereupon, the accompanying Despatches from Lord Lyons and from the British Commissioners respecting the further proceedings of the Cholera Conference at Constantinople, and I am to request that these original papers may be returned to this Office with your reply.

Lord Lyons, No. 68, March 2.  
British Cholera Commission-  
ers, No. 7, March 2.

No. 68, dated 2nd March, 1866.

*From*—LORD LYONS,

*To*—*The Right Hon'ble the EARL OF CLARENDON, K. G., &c.*

The British Cholera Commissioners have called my attention to the proceedings of the Conference, and more especially to the adoption by the majority of that body yesterday of the principle upon which is based the proposal of the French Delegates for the immediate interruption of all maritime communications between the Arabian ports and the Egyptian coast, in the event of cholera breaking out amongst the pilgrims of this year who are already on their way to Mecca. The Commissioners represent that serious complications may possibly arise if the Porte should be induced by the French Government to carry out the measures proposed. The Porte considers that the execution of such measures is impracticable or next to impossible, and it made a declaration to that effect through its delegates to the Conference yesterday. It seems, however, that in consequence of objections raised by the French and other delegates to the reception of any direct communication from the Turkish Government, Salih Effendi eventually withdraw the declaration. It was in spite of this incident that the French proposal was carried.

To speak, first of all of the difficulties in which the Porte might be placed in attempting to close the Arabian ports, including Jeddah, to the exit of the pilgrims who have gone to Mecca in complete ignorance of the obstacles which may be placed in the way of their return, it is represented that it cannot be a matter of doubt that these persons will be exposed to sufferings for which they are quite unprepared, such as want of provisions, of water and of means of transport, and to much consequent sickness and death; that the prolonged agglomeration of masses of human beings so situated will require a considerable armed force to control them, and be likely not only to lead to collisions and massacres amongst themselves under the influence of panic, but also to imperil the lives of the Christian inhabitants of

Jeddah, should the measures taken be attributed to the pressure of the Christian powers. It is feared that in either case there would be a general outcry amongst the Mussulman populations, both in Arabia and in Turkey, against the Sultan and his Government as having taken the first step towards the suppression of pilgrimage, and that there might even be an outcry which would be menacing to the Sultan's throne.

To turn to more immediate British interests: The proposal contemplates the forcible detention at Jeddah of the Indian and Javanese, as well as of the pilgrims from the north and west, unless a separate port of embarkation can be found within a reasonable distance to the south of Jeddah. The British Commissioners believe that such a port cannot be found nearer than Hodeida or Moka; as the port of Gonfudah, which has been indicated by the French as affording all the conditions required, is said, by persons likely to be better informed, to be quite inadequate both in respect to shelter and to depth of water for the 50 or 60 ships which trade in the conveyance of the Indian and other eastern pilgrims. At all events, a considerable naval force would be required to prevent the ships, whether at Jeddah or off other points on the coast, from communicating with the pilgrims on shore. It is true that the proposal talks of maritime assistance being rendered, if necessary, to the allied powers. For this, therefore, as well as for other eventualities, it is necessary that we should be prepared. The reason alleged for detaining the Indian pilgrims, when it would appear to be so much more advantageous for Europe to get rid of them as quickly as possible, is that collisions would ensue if Indian vessels alone were allowed to approach the port when all others were excluded. But the danger of collisions would surely not be lessened by the severe measures proposed, and there is another danger still more serious, because on a greater scale, which is pointed out by Dr. Goodeve. He has reason to suppose that there are many of the Indian mutineers settled at Jeddah, by means of whom the excitement caused by the disasters brought upon the Indian pilgrims, with the actual or supposed connivance of Great Britain, might spread to the Mussulman populations of India and its north-western frontier, and cause much discontent in that quarter.

It is possible that our Commissioners may be more alarmed than is necessary with regard to the dangerous consequences of the French proposal; but their objections appear to me to be of so much importance that I think it right to direct your Lordship's attention to them without delay, and in particular to suggest for your Lordship's consideration the propriety of our having a naval force at Jeddah, or some other point in the Red Sea, to watch events and provide for the safety of our Indian pilgrims.

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No. 7, dated 2nd March, 1866.

*From*—MESSRS. W. STUART, E. GOODEVE, and E. D. DICKSON

*To*—*The Right Hon'ble the EARL OF CLARENDON, G. C. B.*

In continuation of our Despatch No. 6, dated the 28th ultimo, we have the honor to inform you that a meeting of the Conference took place yesterday, at which the principle of the French proposal was adopted by a large majority, *viz.*, of 17 to 8. The votes for and against were as follows :—

FOR—	AGAINST—
France ... .. 2	Turkey ... .. 2
Holland... .. 2	Russia ... .. 2
Belgium ... .. 1	Persia ... .. 2
Italy ... .. 3	England ... .. 2
Prussia ... .. 2	
Sweden ... .. 2	Total ... 8
Portugal ... .. 2	—
Spain ... .. 2	
Greece ... .. 1	
Austria... .. 1	
Total ... 17	
	—

The Austrian political delegate abstained from voting.

Before the votes were taken, Dr. Bartoletti laid before the meeting in a detailed manner the objections raised by the delegates of the Sublime Porte against the French proposals; and Dr. Sawas, the Persian Delegate, read a full and luminous statement showing the impossibility of the pilgrims being able to return to Egypt this year by caravans, owing to the total absence of camels necessary for the carriage of the travellers and their provisions, and also showing the absence of shelter and probably of food and provision for the large number of pilgrims who would be detained in the Hedjaz in the event of the French proposal being carried into effect. He likewise dwelt upon the danger of revolt and massacre which might be expected to arise under such circumstances. He concluded an admirable address, which occupied about two hours in delivery, with recommending the adoption of the Persian proposal of inducing the pilgrims to visit Medina and afterwards allowing them to embark from Yambo.

After the delivery of Dr. Bartoletti's address, His Excellency Salih Effendi read a statement from the Sublime Porte declaring that it could not undertake to give effect to the French project if it were recommended by the Conference. The production of this as official was objected to by Count Lallemand as partaking of the nature of intimidation on the part of the Sublime Porte. Salih Effendi declared that no such intention was meant, and withdrew it as an official presentation without any vote upon the question of the introduction having been taken.

Mr. Stuart and Dr. E. Goodeve objected to the principle that any delegate should be precluded from communicating to the Conference the nature of any instructions received from his Government.

Dr. E. Goodeve laid before the meeting a statement of the dangers and inconveniences to which the fleet of Indian pilgrim ships might be exposed if driven out to sea from the ports of the Hedjaz in the event of an outbreak of cholera in the course of the execution of the French proposal.

We enclose copies of the amendment proposed by Dr. Sawas at the Conference of the 26th ultimo, and also of Malkom Khan's observations in support thereof.

## INTERNATIONAL SANITARY CONFERENCE.

### ANNEXURE TO MINUTE No. 3.

*Proposed amendment of the urgent proposition of the French Delegates, presented by DR. SAWAS, Persian Delegate.*

GENTLEMEN,—You have just heard read the report of the Committee appointed to consider the project presented by the French Delegates. The project in question, as well as that of Dr. Bartoletti, not having succeeded in gaining the suffrages of the Committee, I have proposed the amendment which you have just heard. This amendment, put forward with a view to conciliation, in my opinion, renders the French project acceptable. That project, thus modified, ceases to present the grave disadvantages to which its execution might give rise, and it retains in great measure its primitive facility of application. Such is my conviction. It may be erroneous, but it is sincere. In submitting it to you, I have not the intention, and still less have I the pretension, to induce you to share my error; on the contrary, I expect you to judge my proposal with the greatest severity. I only ask to be heard with patience and without prejudice.

The proposed amendment differs very little from the fundamental project; I only ask for one single exception to the measure of interdiction in favor of the maritime town of Yambo—a port of the Eyalet of Heereni Navebi, the chief town of which is Medina.

Medina is the second Arabian town the pilgrims have to visit. Some go there before they visit Mecca, some after. The former are generally those who come from the north, making the journey by land; the latter are naturally those who make the sea voyage, and disembark at Jeddah. It is this latter class that is specially affected by the measures proposed by the French Delegates. The interdiction of maritime communication would evidently be a matter of small account to the pilgrims coming to Mecca overland, especially if they were aware beforehand that they would have to return by the same route,



But it is not so with the others. They must of necessity be in want of the means of transport which it would be impossible for them to procure on the spot. They would be, therefore, condemned to await the termination of the epidemic on the spot.

A truce to illusions, gentlemen! Every pilgrim, to take the desert route, stands in need of some camels; two are necessary for the poorest. Under the burning sun of Arabia, and over the scorching sands of the desert, it is impossible that any man could walk for eight or ten hours a day. Now, taking every thing into account, you have at Mecca a multitude which cannot leave it, which cannot stay in it, and for which some road, other than Jeddah, must be opened. For this road, I propose that of Medina, an intermediate station between the town of Mecca, the centre of the epidemic, and the port of Yambo, which I wish to exempt from the prohibitory measure of the primitive project. In other words, I invite the multitude, famished, thirsty, suffering from cholera, whom it was intended to retain at Mecca; I invite them, I say, to come and embark at Yambo. I open to them a comparatively easy route. I give to their minds a direction lessening the severity and hardship which an altogether exclusive measure would impose upon them.

So much said, let us proceed to the examination of this proposition in its details. Let us suppose that (which God forbid!) cholera breaks out at Mecca, and that the general prohibition of maritime communication is proclaimed. Those of the pilgrims who can leave with the caravan will do so at once, listening neither to our advice nor to the orders of the authorities; but let us see what these same authorities ought to say to those who find it impossible to follow the caravan. For these latter, it will be said, the authorities have only to facilitate the means of departure; they have only to devote to this object the money that they would spend in establishing encampments, and deceptive and pernicious lazarettos; so that they will have the pleasure of seeing the pilgrims depart happy and peaceful, taking the desert route as quietly as lambs. This possibility has been so contested that it seems to me to be idle to re-examine it further in the point of view of material difficulties. I will only say that, even were the authorities in a condition to provide for all the necessities of the irritated and fanatical multitude which they propose to guide, they would still have to be very careful not to disclose the fact that they had closed all the ports of the Red Sea against it. Those amongst you, gentlemen, who know the East, need not be told the reason why. As for those who are unacquainted with our manners, our ideas, and the tendency of the minds of our populations, they would only be able to see untenable paradoxes in the brief explanations it would be possible for me to enter into here. I abstain from entering upon them, therefore, and proceed.

According to my project, the authorities would not find themselves compelled to make declarations subversive of religious order; they would say simply that the port of Jeddah having been condemned for sanitary reasons, steam-vessels would receive the pilgrims at

Yambo, and carry them across to the Egyptian coast, and they would offer their aid to the latter in their voyage. In saying this, the Government would make an engagement which it would find itself able to fulfil—*1st*, because the journey between Mecca and Medina is only a third of the distance the caravan would have to traverse before arriving by the desert route at the isthmus of Suez; *2nd*, because a caravan leaves Mecca for Medina every year, and with a light sacrifice the authorities might strengthen it, and add to it the pilgrims unsupplied with means; *3rd*, because every pilgrim is content and happy to visit Medina, and even to repeat the visit. The Government, I repeat, imposes an easy task on itself; it walks in the path of the pilgrims, and points out to them a comparatively short road, the end of which is a point quite in conformity with the tendency of their inclinations, of their convictions, and of their religious exigencies. Arrived at Medina, I cease to concern myself about the fate of the pilgrims; they find themselves on a fertile soil, in a pleasant town; they may, without fear of famine, wait there for the termination of the epidemic. It would be superfluous to tell you that wherever there is pasturage cattle abounds; and that the means of transport, camels, &c., are equally plentiful there for locomotion in the province.

This being so, let us enumerate the inconveniences which are removed by the simple fact of the transport of the pilgrims to Medina. We shall return presently to the question of their embarkation at Yambo:

*1st inconvenience removed.*—At Medina they have means of subsistence for themselves and their animals; while at Mecca they are exposed to death from starvation.

*2nd inconvenience removed.*—That of the dangers which would fall upon Jeddah during the whole time that a famished multitude, a prey to cholera, might be retained at Mecca.

*3rd inconvenience removed.*—That of the sanguinary collisions which would be the inevitable result of any attempt made to supply Jeddah with provisions by sea under the eyes of the famished pilgrims.

These three inherent inconveniences of the French project cease, and even disappear, by the simple fact of the departure of the pilgrims for Medina.

A fourth inconvenience, this last inherent in Dr. Bartoletti's project, also disappears, namely, that of the struggles between armed parties which would be excited, if the French project were adopted, by the partial clearing out and methodical embarkation of the pilgrims of Jeddah.

But I shall be asked who prevents the pilgrims from going to Medina? We proclaim the complete prohibition of maritime communication, and we leave the pilgrims quite at liberty to proceed by land, and await the termination of the epidemic in any part of Arabia they please. If they prefer Medina, let our best wishes go with them. It

is here exactly that we deceive ourselves : the pilgrim will go to Medina when you show him the port of Yambo open, with an organized service of vessels ready to carry him to Egypt, when you facilitate the means of his arrival there ; and lastly, when, in so acting, you do not appear to interfere with his most cherished beliefs. With this system, the pilgrim will no longer perceive in absolute measures a hindrance to the fulfilment of a sacred duty,—measures which he, in his ignorance, regards as unjust and hostile. I have said that we deceive ourselves, and I repeat it. We deceive ourselves because we reason like intelligent men ; but let us place ourselves, in the point of view of the pilgrims ; let us reason for a moment like the pilgrims, and we shall easily understand the whole error. The pilgrims are far from considering our measures to be humane, far from believing that we pre-occupy ourselves with them, and that we have a lively interest in their fate. They are led to see in our interdictions only measures of annoyance to their religious practices, attempts at invading the sacred territory on which they are apprehensive of seeing us place our profane feet. I resume ; tell the pilgrim, when he finds himself at Mecca, that you debar him from any kind of maritime communication, and you are sure of seeing him rebel. Tell him, on the contrary, that you only debar him from one port, that of Jeddah ; that as a compensation you open to him that of Yambo with new facilities, and you may reasonably entertain every hope of leading him without shock or violence to Medina.

The pilgrims, again, are not the only men in Arabia whom we have to manage ; it is necessary, too, that our measures should not be of such a nature as to excite discontent in the tribes and their sheikhs, otherwise we create the most serious embarrassments to the Local Government, if we lay down rules of a kind calculated to impede the free exercise of territorial sovereignty. But to return to our amendment.

The pilgrims would require at least 15 days for the march from Mecca to Medina, where they would stay for two or three days at the holy places, finally taking the road to Yambo. They would take five or six days to arrive there ; so that their journey would last for about 23 days,—a lapse of time rendering it very probable that cholera would have left them in the interval. "The journey through the desert," we are told in the French project, "is the best quarantine to be applied to a multitude." And we know, for the rest, that separation and removal are the best means that can be employed for the extinction of this scourge.

*Cæteris paribus*, to omit nothing, let us suppose it possible for the pilgrims to arrive at Yambo after a month's journey still carrying the cholera with them. Well, it appears to us infinitely easier to subject them at Yambo to the measures proposed by Dr. Bartoletti to be applied to them at Jeddah. We possess abundant proofs of this, which we shall put forward ; but first of all, let us again take up the objections urged against us in committee, and which figure in the report you have taken into consideration.

In the first place, it is disputed that the journey from Mecca to Medina occupies 15 days at least. Now, it is of public notoriety that the distance between the two towns is 430 kilometres; it is equally well known that a camel can scarcely do three kilometres an hour in the sandy soil of the desert; and that a caravan can with difficulty march for more than eight hours a day in that burning climate. But to be more accommodating, we grant a journey of ten hours a day. Now the caravan going over 30 kilometres in a day cannot reach Medina before the 15th day, and that without any prolonged halt, which, however, caravans are in the habit of making. This is what the first objection is reduced to. Let us see if the second is better founded.

It consists in the difficulties offered to the pilgrims by the journey between Medina and Yambo. The country is mountainous, it is said unsubdued tribes impede the passage, and altogether the obstacles to be overcome are so great that but few pilgrims, the wealthiest and the bravest—dare attempt the journey. If those who urge these objections against us had charged themselves with the task of supporting our amendment, they could certainly not have been able to accord it higher praise. The greater the difficulties between Medina and Yambo, the smaller the number of pilgrims who will be able to reach the latter town, the smaller the number of pilgrims reaching Yambo, the less the difficulties presented by their embarkation, and so much the less are the disadvantages of our amendment.

From information we have acquired from several pilgrims, we know that the journey between Medina and Yambo is really difficult; and this is why we maintain that the latter port might advantageously be left open. The number of pilgrims arriving there would be comparatively very small; the eight steamers spoken of in Dr. Bartoletti's project might carry them all to Egypt in one voyage, and all danger of collision would have disappeared. There can be no manner of doubt that there will be more accommodation than there will be pilgrims, and the embarkation would be unattended, or nearly so, by any difficulty.

And the other pilgrims, those who cannot go to Yambo, what is to become of them, you will ask me, gentlemen? I shall not exceed my right by replying to your question by another. I shall be justified in asking you what is to become of those pilgrims who cannot follow the caravan, and whom you condemn to remain at Mecca? The fate of both presents only two or three points of difference,—points which again militate in favor of the amendment we propose. According to the French project, a great number of pilgrims is destined to undergo quarantine at Mecca, where they run the risk of perishing by famine, and where they threaten to throw themselves upon Jeddah. According to the same project, with the Persian amendment, a smaller number of pilgrims is made to await the termination of the epidemic at Medina, where means of subsistence abound. And again, is it necessary that we should remind you that it is impossible for the latter to throw themselves into Jeddah, Jeddah being far distant? Should they

think of returning to it, they would not arrive before the termination of the interdiction, and they might be allowed to embark freely, and go where they pleased.

The pilgrims arriving at Yambo would be embarked, as we have just said, and transported to the Egyptian coast; in the event of there still being any persons among them suffering from cholera, they would be landed at Tor and Calaat-el-Moire. These two places alone would amply suffice for the number of pilgrims who would embark at Yambo. There they would be received in suitably organised lazarettos, and they might undergo their quarantine without any inconvenience. The amendment we propose allows us time to organise everything: for, besides the two months yet to elapse between this and the Courban-Bairam, we have in addition the 15 days the pilgrims would occupy in reaching Yambo.

If our proposed amendment were adopted, the project would be executed in the following manner, with such modifications as might be deemed necessary by the Conference:—

*1st.*—The number of members of the sanitary commission of the Hedjaz would be immediately strengthened.

*2nd.*—The commission, thus strengthened, would be divided into three sections; one of which would immediately proceed to Tor and Calaat-el-Moire to organise the lazarettos and encampments. The second would establish itself at Medina. The third, composed of at least three members, would form the reserve, and remain at Jeddah.

*3rd.*—The local authorities would employ every mode of persuasion to make the pilgrims understand that it was their interest to take the overland route. They would come to the help of the needy in the matter of the comparatively short journey between Mecca and Medina.

*4th.*—The section of the medical commission at Medina would prepare, in concert with the authorities on the spot, every thing necessary for provisioning and encamping the caravan on its arrival. If the caravan were to arrive with persons suffering from cholera, everything possible would be done to persuade it to remain for some days in its encampment. It would even be possible, by providing it with means of subsistence, to complete its quarantine altogether on the spot. It is understood, of course, that the medical commission would adopt all the hygienic measures necessary on such occasions before the arrival of the caravan, and would keep them in force during its stay.

*5th.*—Those of the pilgrims who would reach Yambo, where all suitable measures as above would be taken by the same section of the medical commission, would be sent straight to Tor and Calaat-el-Moire.

*6th.*—The members of the medical commission stationed at these two lazarettos would subject the arrivals to the necessary sanitary operations, or would allow them to continue their voyage, taking care, however, to keep them under observation for three whole days.

My amendment has been characterised by two members of the Committee *ad hoc* as being a combination of the disadvantages of the two projects; and I consequently expect, and am prepared for, severe criticism, which I shall be in a position to refute. After the discussion which will be raised, you will be more enlightened on the question, and better enabled to pronounce your opinion. I beg only that, during the discussion, you will not lose sight of the following points:—

1st.—That it is a physical impossibility for a multitude to remain at Mecca after the ceremonies, even for three days.

2nd.—That the same multitude can remain at Medina comfortably.

3rd.—That it is possible for the authorities to convey this multitude from Mecca to Medina. The measures required are not much; it would suffice to put them into force with circumspection and consideration, so as not to shock religious belief.

4th.—That once the multitude reaches Medina, all danger disappears, and that the port of Jeddah remains open.

5th.—That the pilgrims, who would go from Medina to Yambo, would be infinitely less numerous than those whom it would be necessary to embark at Jeddah.

6th.—That the question of embarkation at Yambo, and the placing of the pilgrims in quarantine in the lazarettos, become by my amendment very much easier of execution.

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## INTERNATIONAL SANITARY CONFERENCE.

*Considerations urged by GENERAL MIRZA MALKOM KHAN in support of the proposed amendment of his colleague, Dr. Sawas, Persian Delegate.*

Since the first sitting of the Conference, I have known nothing more urgent than the proposal of the French Delegates. How unhappy indeed would our situation be, if, while assembled in this place, cholera were again to invade our countries! It is, therefore, of the greatest importance that we should all employ our utmost efforts to avert such a disastrous contingency. Within the last few years Persia has been, of all countries, one of the most cruelly stricken by cholera; it is useless, therefore, to tell you that, in this Conference also, Persia will necessarily be, of all powers, one of the most anxious and eager to oppose the return of this terrible scourge.

As for the means of obtaining the result we seek, I confess that we Persians, are entirely ignorant of them. But if the principles on which your proposal of urgency is based are true, I am enabled to announce to you that I have discovered another much more rational means of obtaining the same result, and which will certainly be much more effectual

than any thing that has hitherto been proposed. I propose simply the complete prohibition of the pilgrimage to Mecca; this proposition is based upon precisely the same principles as the urgent proposal you are now considering. If we can condemn the pilgrims to perish in the desert for the good of humanity, why should we not have the right of forcing them, with the same object, to stay quietly at home? If we can send ships-of-war to the ports of the Hedjaz to prevent the pilgrims from returning to the places whence they came, why should we not go a step further? Why should we not go to Mecca itself to prevent the assemblage of those more or less barbarous people who come from all parts of the world to lose their lives and property in a wild valley, and afterwards to spread a horrible calamity over the whole civilised world? It is clear that my project cannot be reproached as being more cruel and severe than the measures of your proposal. For if I sacrifice the pilgrimage, I have at any rate the satisfaction of saving the pilgrims; while your proposal, at the same time that it pretends to save the pilgrimage, pitilessly sacrifices the pilgrims. If you tell me that the restriction of the pilgrimage is contrary to the principles of Islamism, and that the Head of Islamism cannot reasonably be asked to sanction such a measure, I shall reply to you that, with your proposal, you do exactly what, in principle, you admit to be inadmissible. For to permit entrance and to prevent exit is clearly more than a restriction. I am well aware that the desert route is pointed out to us. But would it be really worthy of the intelligence of the Conference seriously to present such a route as practicable?

Well, gentlemen, examine my proposition in every way you please, and you will find that, while it offers greater security against cholera, it does not make a greater attack upon rights and liberty, nor does it create more difficulties than your urgent proposition. How is it then, gentlemen, that, in spite of the security and simplicity of my proposition, not one of you has regarded it as serious? For I am persuaded you are all agreed that the idea I have here given utterance to is altogether inadmissible. It is evident nevertheless that, if the only object you should have in view is that of repulsing cholera, my proposition should be admitted at once. What then are the considerations which cause the rejection of my proposal, in spite of the very object of your mission? And how great should be the importance of these considerations, if you can subordinate to them this grave question of preserving Europe from being again invaded by the Asiatic scourge! It is quite useless to explain here the reasons which induce you to reject my proposal, it suffices to state that these reasons exist, and that they outweigh in your own minds even the object of your Conference. Well, gentlemen, the same reasons and the same considerations which cause you to reject my proposition, ought to convince you that the urgent proposal, in the shape in which it was put forward before you, cannot receive your sanction. The measures of this proposal, attack precisely the same principles which you would wish to respect in rejecting my proposition; the only difference is that my proposition, would attack directly what these lauded urgent measures would destroy indirectly. I will be asked perhaps,

what can be destroyed in changing the route of a multitude? This is exactly the difficulty of our problem: the ideas, the manners, the doctrines, and the logic of Asia are so different from those of Europe that, in spite of all the extent and all the profundity of European science, I have never been able to understand how a European could grasp the bizarre concatenation of so many contradictory ideas and so many inconceivable prejudices which make up the social edifice of the Orientals. The one idea alone that the Mussulman sovereigns had come to an understanding with the powers of Europe to regulate the march of the pilgrims, would suffice completely to change the relations between our sovereigns and their peoples.

I beg of you then, gentlemen, to remark one thing. In submitting my observations to you, I do not in any way mean that Europe ought to sacrifice the health and the interests of her populations to respect the prejudices of Asia. If I were a dweller on the banks of the Rhine, I should have demanded, in order to preserve myself against cholera, not only the measures of your project, but even the destruction of Mecca and Medina; but I am an Oriental at the same time that I am a member of this Conference. I desire to aid in the object of the Conference, without forgetting any thing that is due to the Asiatic mind.

Thus, gentlemen, I do not pretend to divert you, for the love of our pilgrims, from the object of your noble mission; on the contrary, I exhort you firmly to adopt all the measures you may deem necessary for the security of Europe against the ravages of cholera. The only point I dare ask of you is to be always consistent with your principles. If you are occupied only with the object of your mission, then seek out the most efficacious measures without stopping at extraneous considerations. If, on the contrary, you attach sufficient importance to these considerations to place them above your mission, then I would beg your utmost attention, so that you may not indirectly, and almost unknown to yourselves, destroy what it was your desire to preserve. Now, we must not hide from ourselves that the adoption of the measures of your proposal would lead to the most unexpected complications in Eastern affairs. The most strange and fanatical interpretations would raise a tempest of hate in the Mussulman world which nothing could appease. I do not wish to appear to exaggerate the consequences of these measures, and I know perfectly well that Europe never will have any thing to fear from Asia; but is the position of the Mahomedan Governments so indifferent to the peace of the world, that Europe can allow them to be abandoned without regret to the attacks of a fanaticism, all the more violent that it has of late been repressed with so much effort by these same Mahomedan Governments, and with the object even of entering into the views of the powers of Europe.

However, admitting all this, I am far from thinking that the Conference has nothing to do in the Hedjaz. I believe, on the contrary, that it has a great deal to do in those parts, and that it has the means of doing every thing there that may be necessary to be done. For



my own part, the only difficulty that exists is in the choice of the forms the Conference should give to its measures. I am bound to state a truth here not flattering to us Asiatics, but which may serve as an excellent guide to us in our measures of application. This truth is as follows :—

The powers of Europe can obtain any thing from Asiatics, provided they know how to put their demand in a proper form ; and I am convinced that we could apply all our measures of urgency also, but with the essential condition of keeping up appearances. It is with this object alone that we have just asked you to leave the ports of Yambo and Omar open ; I confess that the opening of these two ports will very slightly change the material position of our pilgrims, but their moral condition will be completely modified by this fact alone ; and it is unnecessary to repeat to you that, in leaving the port of Yambo open, you in no way diminish the efficiency of your measures of urgency. The details and the practical explanations of our amendment have been furnished to you by my honorable colleague, and I confine myself to recommending them here to your serious consideration.

In submitting my observations to you, gentlemen, I am happy to be able to assure you that in this Conference you will find Persia always ready to do every thing that may depend upon her for the success of your mission. The Conference should not be unaware that the task of the Mussulman powers, under these circumstances, is excessively delicate and abounding with grave difficulties. We are firmly resolved to overcome these difficulties, and the only assistance we ask of civilized Europe is to remember that it is not within the power of any Government to destroy the prejudices of its people at will, and that, even in the midst of the enlightenment of civilisation, we often see the most firmly established powers compelled to share in a vulgar prejudice with the mass of the people.

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Dated 15th March, 1866.

*From—H. MERIVALE, Esq., India Office,*

*To—The Under-Secy. of State for Foreign Affairs.*

I have laid before the Secretary of State for India in Council your letters noted in the margin, relative to the proceedings of the International Cholera Conference now sitting at Constantinople ; and in returning the correspondence which accompanied them, I am directed to request that you will convey to the Earl of Clarendon the thanks of Earl de Grey for the opportunity of perusing it.

With regard to the questions put in your letter of the 10th instant, I have to state that no information has reached this Office of the Indian pilgrims of this season having brought the cholera with them.

On the subject of the proposal adopted at the Conference at Constantinople that in the event of cholera breaking out this year among the pilgrims at Mecca the pilgrims shall be absolutely prohibited from leaving Jedda by sea, Lord de Grey entirely concurs in the objections to the measure stated by Lord Lyons.

Lord de Grey is of opinion that even were the Indian pilgrims exempted from its operation, there would still be great risk that the excitement to which the measure might be expected to give rise among the Mussulman population of Arabia and Turkey would extend to the Mahomedans of India, and that serious difficulty and embarrassment would thus be caused to the Indian Government.

It would, however, appear that, from the want of a suitable port to the south of Jedda, the exemption proposed to be made in favor of the Indian pilgrims would be found impracticable, and that those pilgrims would therefore be liable, under the resolution of the Conference, to the operation of the measure in its full rigour.

Any danger or difficulty to which the Indian Government might be exposed would not fail to be greatly aggravated under these circumstances. If fanatical excitement may be expected to arise among the subjects of Mahomedan Governments from interference with their movements in connection with their pilgrimages, such a feeling is far more likely to be excited among the Mussulmans of India, who are known to be so keenly alive to the least appearance of interference with their religion or their religious observances. Any restrictions of the nature proposed would scarcely fail, therefore, to be attributed by the Indian pilgrims to a desire on the part of the Government of India to put a stop to the pilgrimage to Mecca, and the danger would be greatly increased by the opportunity which the prolonged detention of the pilgrims would afford to the Wahabees of Central Arabia and to the mutinies of the late Bengal Army who are understood to be at Jedda to obtain access to the pilgrims, and to instil feelings of suspicion into their minds.

Lord de Grey has so far confined his remarks to the public dangers to be apprehended from the proposed prohibition of the departure of the pilgrims from Arabia through the usual channel, but his Lordship directs me to add that the sufferings and inconveniences to which the Indian pilgrims would be exposed by a prolonged detention in Arabia constitute in his opinion a strong and sufficient reason against the adoption of the measure. The pilgrims for the most part belong to the poorer classes, and are entirely destitute of the means of providing for themselves during a lengthened absence from home. There can be no doubt that a large proportion of them would be unable to obtain the bare necessaries of life if kept in Arabia beyond the time anticipated by them on leaving India, and they would thus be peculiarly exposed to the attacks of disease aggravated as these would be by the crowds of pilgrims from all quarters who would be detained under similar circumstances.

On the grounds above stated, it will be gratifying to Lord de Grey if it should be found practicable to prevent the proposal of the Cholera Conference for prohibiting the return of pilgrims by sea from Jeddah from being brought into operation. At all events, I am directed to express the earnest hope of His Lordship that Lord Clarendon will be able to obtain such a modification of the measure as shall confine its operation to pilgrims returning to Egypt, and that ships may be allowed to leave Jeddah as usual for India and for all parts to the southward.

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Dated 16th March, 1866.

*From—E. HAMMOND, Esq., Foreign Office,*

*To—The Under-Secy. of State, India Office.*

I am directed by the Earl of Clarendon to transmit to you, to be laid before Earl de Grey and Ripon, the accompanying copy of an instruction which has been addressed to Her Majesty's Ambassador at Paris, with reference to the evils which may ensue from the proposal of the French Delegates which was carried at the Cholera Conference held at Constantinople on the 1st instant, as set forth in the documents enclosed in Mr. Murray's letter of the 13th instant.

No. 307.

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No. 307, dated 14th March, 1866.

*From—The EARL OF CLARENDON, Foreign Office,*

*To—HIS EXCELLENCY THE EARL COWLEY, K. G.,*

*&c.,*

*&c.,*

*&c.*

I transmit to your Excellency herewith a copy of a Despatch which I have received from the British Cholera Commission at Constantinople reporting the proceedings of the Conference on the 1st instant, on which occasion the proposal of the French Delegates for the immediate interruption of all maritime communications between the Arabian ports of the Red Sea and the Egyptian coast in the event of cholera breaking out this year amongst the pilgrims who are already on their way to Mecca, was carried, against the votes of the delegates of England, Russia, Turkey, and Persia.

I also enclose a copy of a Despatch from Her Majesty's Ambassador at Constantinople, adverting to the serious complications and even dangers which may arise if the Porte should be induced by the French Government to carry out the measures proposed, supposing them even to be practicable.

I have to instruct your Excellency to communicate Lord Lyons' Despatch to M. Drouyn de Lhuys, and to call his most serious and immediate attention to the evils which the proposal of the French Delegates, if carried out, is likely to cause, and your Excellency will enquire whether any instructions have been sent to the French Commissioners for mitigating the evils which appear to be inseparable from the plan proposed by them.

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Dated 21st March, 1866.

*From*—E. HAMMOND, Esq., *Foreign Office,*

*To*—*The Under-Secy. of State, India Office.*

With reference to my letter of the 17th instant, I am directed by the Earl of Clarendon to transmit to you, for such observations as Earl de Grey and Ripon may have to offer there-upon, the accompanying further Despatches from the British Members of the Cholera Conference at Constantinople; and I am to request that the same may be returned to this Office at your early convenience.

Nos. 8, 9, and 10.

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No. 8, dated 7th March, 1866.

*From*—MESSRS. W. STUART, E. GOODEVE, and E. D. DICKSON,

*To*—*The EARL OF CLARENDON, K. G., &c., &c.*

We have the honor to inform your Lordship that a meeting of the Conference was held on Saturday last, to consider the executive clauses of the French "*proposition d'urgence.*"

The Ottoman delegates put on record that they would not take part in the deliberations, unless it was held that they would in no way be committed thereby to the principle of the plan. This was assented to.

At the commencement of the sitting we made the same reserve as the Ottoman delegates, and at its close we requested that the fact that we had taken no part in the discussion might be recorded in the protocol.

The Austrian Political delegates and the Russian and Persian delegates abstained from voting. The three articles of the preamble to the executive clauses were adopted, and some of the preceding paragraphs modified, as *marked* upon the enclosures.

The Clauses 3, 4, 5 and 6 were altered, and Clause 8 was entirely suppressed. The words "au besoin" were inserted between the words "feraient" and "eloigner" of Clause 3, in order to make it optional with the authorities at Jeddah to permit vessels to remain in port, should their presence there occasion no disturbance, and consistently with this modification, Clause 6 was changed so that the authorities at Jeddah might allow the Indian pilgrims to embark from Jeddah itself, instead of doing so from a distant port, if they thought that this could be done without danger to the public peace.

By these alterations, the Indian pilgrims will be at liberty to depart as usual, unless there is risk of riot and of forcible seizure of the ships by the other pilgrims.

We believe that these changes were due to our previous opposition to the measure, as well as to the opinions expressed by the Dutch delegates, who although they fully supported the *fundamental* principle of the plan, voted, at the meeting of the 3rd, for modifications with regard to the Indian pilgrim ships, the Island of Java sends pilgrims to Mecca.

Clause 4 was amplified, so as to define the character and duration of the quarantine for pilgrim ships arriving in the Gulf of Suez.

Clause 5 received an addition declaring the necessity of the caravan being accompanied by medical men throughout its march, in order that trustworthy reports of the health of the pilgrims en route might be obtained.

In discussing Clause 8, an attempt was made by the Prussian delegates to recommend that the Indian passenger steamers should be liable to quarantine at some distant station below Suez; and that in case of the importation of cholera into Suez "cordons sanitaires" should be instituted there. The French delegates, interested on behalf of the "Messageries Imperiales" packet boats of the Indian seas, strongly opposed this amendment, and stated that it did not come within the scope of the "*proposition d'urgence*." Finally, the whole clause was struck out.

We enclose for your Lordship's information two copies of the French proposal, with the amendments written in ink. We hope soon to be able to forward copies with these amendments in print.

The delegates were requested to report to their respective Governments the adoption of the "*proposition d'urgence*" as amended.

The President of the Committee of the programme of proceedings having announced that his report was ready for distribution, the Conference fixed upon Thursday, the 8th instant, for taking it into consideration.

## INTERNATIONAL SANITARY CONFERENCE.

## ANNEXURE TO MINUTE No. 6.

*Measures adopted by the International Sanitary Conference, in its meetings of the 1st and 3rd March 1866, to be carried out in the event of cholera showing itself this year among the pilgrims assembled at Mecca.*

## 1ST.—FUNDAMENTAL PRINCIPLE.

The Conference is of opinion that, in the event of cholera breaking out this year amongst the pilgrims, there will be occasion to interrupt temporarily, *i. e.*, while the epidemic lasts, all maritime communication between the Arabian ports and the Egyptian coasts, leaving the land route followed by the caravan open to the hadjis for their return to Egypt.

## 2ND.—SECONDARY PROPOSITION REGARDING THE EXECUTION OF THIS MEASURE.

The Conference is of opinion that the execution of the said measure would necessitate the concurrence—

1st.—Of the Ottoman Sanitary Commission sent to the Hedjaz, which would look to the sanitary condition of the pilgrims;

2nd.—Of some men-of-war for the interruption of maritime communication; and

3rd.—Of an organised surveillance of the Egyptian coast to oppose any attempts at landing, in case of infraction of these rules.

This being so, the Conference estimates that the execution of the measures could be carried out in the following manner, modified, *without touching the fundamental principle of the measure*, in such manner as might be thought proper to facilitate its application:—

*Article 1st.*—In the event of the manifestation of cholera among the pilgrims, the members of the Ottoman Commission assisted, if need be, by other physicians deputed for the purpose, should make the fact known to the local authorities, as well as to the men-of-war stationed at Jeddah and Yambo, and should send notice of the matter to Egypt.

*Article 2nd.*—Acting on the declaration of the above-mentioned physicians, the authorities should proclaim the interdiction, until further orders, of all embarkation, and should invite the pilgrims bound for Egypt to take the land route.

*Article 3rd.*—At the same time, the men-of-war should, as occasion might rise, send away from the ports of embarkation, all steamers and sailing vessels that might be found there, and should exercise as strict surveillance as possible, with a view to prevent any clandestine departures.

*Article 4th.*—On the receipt of intimation of the existence of cholera amongst the pilgrims, the Egyptian authorities should prohibit the entrance of all arrivals from the Arabian coast, starting from a point to be fixed to the south of Jeddah; and should, moreover, assign to ships breaking the

rules (after having supplied them, if necessary, with provisions) a place on the Arabian coast, Tor, for instance, where they would remain in quarantine.

This quarantine should last for fifteen days, including the time occupied in making the voyage; and in the event of cholera breaking out on board, the ships should not be admitted to pratique until fifteen days after the last known case, and after as complete a disinfection as possible.

*Article 5th.*—As for the caravan, it would have to be stopped, according to custom, at several days' march from Suez; there it should be visited by a Medical Commission, and it should not be authorised to enter Egypt until its sanitary condition was recognised as being entirely exempt from danger. It would be well if the caravan were accompanied by sanitary physicians commissioned *ad hoc*.

*Article 6th.*—Regarding the pilgrims bound to India or other places beyond the Red Sea, it would be best to assign to them a particular place of embarkation several days' march to the south of Jeddah, unless the authorities should deem their embarkation at Jeddah itself to be free from danger.

*Article 7th.*—The interdiction of embarkation would cease fifteen days after the last case of cholera known in the Hedjaz.

The previously expressed desires of the Conference will be communicated to any body entitled to be made aware of them by the delegates of each of the Powers represented.

SALIH,

*President of the Sanitary Conference.*

PERA, GALATA-SERAI ;	}	DR. NARANZI,	}	<i>Secretaries.</i>
<i>The 3rd March 1866.</i>		BARON DE COLLONGUE,		

No. 9, dated 9th March, 1866.

*From*—MESSRS. W. STUART, E. GOODEVE, and E. D. DICKSON,

*To*—The EARL OF CLARENDON, K. G.,

&c.,                      &c.,                      &c.

With reference to our Despatch No. 4 of the 23rd ultimo, we have now the honor to enclose two copies of protocol No. 2, containing the official account of what occurred at the meeting of the Cholera Conference on the 22nd ultimo.

This protocol was not ready for distribution until yesterday, and there are numerous errors in it, the typographical resources of the Porte being both scanty and imperfect.

## No. 10.

*From*—MESSRS. W. STUART, E. GOODEVE, and E. D. DICKSON,

*To*—The EARL OF CLARENDON, K. G.,

&c.,                      &c.,                      &c.

The seventh meeting of the Cholera Conference took place yesterday for the purpose of taking into consideration the Report (as enclosed to your Lordship in our Despatch No. 5 of the 27th ultimo) of the Committee which had been appointed to draw up the plan of our future proceedings.

The Report was adopted with some few modifications, the most important of which was the suppression, at Dr. Goodeve's suggestion, of the words "routes à tracer aux Pèlerins" in the 10th paragraph of the 5th page.

After some discussion as to the number and composition of the Committee to be appointed to report upon the questions comprised in groups 1st and 2nd, relating to the origin and transmissibility of cholera, an amendment of Dr. Goodeve's was eventually carried, in accordance with which the Committee has been made to consist of all the medical delegates of the Conference, with the addition of the Belgian, Spanish, and French Diplomatic Delegates, whose names had been previously mentioned in one of the other combinations proposed.

It is clearly understood that the present Committee is to confine its enquiry to the questions comprised in the two first "groups," and that until these shall have been disposed of, the discussion of preventive and restrictive measures is to be suspended.

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Dated 24th March, 1866.

*From*—E. HAMMOND, Esq., *Foreign Office,*

*To*—The Under Secretary of State, *India Office.*

I am directed by the Earl of Clarendon to request you will move Earl de Grey and Ripon to favor His Lordship with his opinion as to the course which the British Cholera Commissioners at Constantinople should be directed to pursue on the discussion of the questions referred to in the accompanying extract of a letter, dated the 14th March, which has this day been received from Mr. Stuart.

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*Extract of a letter from MR. STUART, date Constantinople, the 14th  
March 1866.*

"There will be some troublesome questions in group 3 of the Report when it comes under discussion, and it might be worth while for you to instruct us as to what we should be on our guard against.



“As to group 4, *viz.*, the form which we are to give to the resolutions adopted, I have reason to believe that the French will endeavor to get them embodied into a draft of convention for us to submit to our respective Governments persuading us that it is only a recommendation of the Conference which consequently will not be binding on any Government which disapproves. What line should we take in that case?”

“The French measures of urgency as adopted by the majority have, as you will see, been printed as adopted by the Conference, without any allusion to there having been a minority, and the signature of Salih Effendi, the President, is by way of being affixed, whereas he voted against them, and was not aware that they were being so printed. However, they are not likely to come to any thing; as, besides their being impracticable, there is not likely to be any occasion for them, now that the cholera appears to have broken out at Alexandria, before the unfortunate pilgrims can be accused of having any thing to do with it.”

## INTERNATIONAL SANITARY CONFERENCE.

### ANNEXURE TO MINUTE No. 7.

*Report on a Draft Programme of the labors of the Conference, drawn up in the name of a Committee composed of MM. Dr. Sotto, Dr. Monlau, Count de Lallemand, Vice-President; Dr. Goodere, Vernoni, Mirza Malkom Khan, Dr. Mühlig, Dr. Pelikan, and Salih Effendi, President.*

(By DR. MUHLIG, Secretary-Reporter.)

[This will be found at page 146.]

Dated 6th April, 1866.

From—H. MERIVALE, Esq., *India Office.*

To—*The Under-Secy. of State for Foreign Affairs.*

I have laid before the Secretary of State for India in Council your letter, dated 24th ultimo, requesting that His Lordship will furnish the Earl of Clarendon with his opinion as to the course to be taken by the British Delegates at the Cholera Conference at Constantinople in the discussion of certain questions which are expected to arise under groups three and four of their proceedings.

The special questions under group three, are—

- 1st.—Are there any means for destroying the seeds of cholera in India?
- 2nd.—Ought not the rule to be established that pilgrims arriving (in Arabia) from India or from any other country where cholera prevails, should always be subjected to a qua-

quarantine of greater or less strictness at some settled point on the Arabian coast before being allowed to proceed to the usual place of resort of the Mecca pilgrims?

3rd.—Is there occasion to apply measures of quarantine to the provinces of the East Indies generally, under what circumstances and to what extent?

On the first of the above questions it is obviously impossible for Earl de Grey to give an answer without a reference to the several Governments in India; and those Governments, if referred to, would doubtless be unable to give a satisfactory answer without consultation with the principal medical authorities at the several Presidencies. Lord de Grey will be prepared, if it is desired by Lord Clarendon, to call for the opinion of the several Indian Governments; but as Dr. Goodeve is an Officer of the Indian service, he will probably be able to give opinions which will assist his colleagues in the Conference in arriving at a solution of the question more or less satisfactory, and he will also be able to communicate privately with the medical officers in India, and get, in an unofficial form, their views as to any means being available there for preventing the spread of cholera in a westerly direction.

As regards the establishment of measures of quarantine, it is, of course, open to the Turkish Government, as to all other Governments, to enforce quarantine on all ships arriving from ports where cholera prevails, and notice has lately been received through the Foreign Office (and communicated to India) that such quarantine is to be established at Jeddah. But if it is proposed to go beyond this, and to require that all ships coming from India, whether the cholera is or is not known to prevail in the ports or districts from which they sailed, are to be subjected to quarantine, Lord de Grey is of opinion that there are no sufficient reasons for such exceptional treatment. There can be no doubt that on political grounds it is most important that there should be as little interference as possible with the movements of the Mussulman population of India in connection with the Mecca pilgrimage; and therefore though Lord de Grey will not object to the Mahomedans of India being subjected to the same measures of restriction as are enforced against the natives of other countries, with the object of preventing the spread of fatal and epidemic diseases, His Lordship most strongly and earnestly deprecates the application to India of measures of special and exceptional severity.

With regard to the question under group four, *viz.*, what form shall be given to the resolutions at which the congress may arrive, it scarcely seems that the Secretary of State for India can be called on to give any opinion. All that Earl de Grey, therefore, thinks it necessary to say is that, if the resolutions are (as appears to be thought likely) put into the form of a convention, Her Majesty's Government should, in his Lordship's opinion, refuse to concur in any provisions which would carry into effect those conditions of the Conference to which he has found it necessary strongly to object, such as that among others, which involves the prohibition of all departures by sea from Jeddah so long as cholera may be known to prevail among the pilgrims in Arabia.

Dated 26th March, 1866.

*From*—H. MERIVALE, Esq., *India Office,*

*To*—*The Under-Secy. of State for Foreign Affairs.*

In acknowledging the receipt of your letter, dated the 21st instant, forwarding further correspondence relative to the proceedings of the Cholera Conference at Constantinople, I am directed to state for the information of the Earl of Clarendon, that the only observation which Earl de Grey has to make on the correspondence is that the modifications made by the Conference in the scheme of the French Delegates for prohibiting the embarkation of pilgrims at Jeddah during the existence of cholera on that coast appear to him to be practically unimportant, and to have failed to mitigate the objections which he entertains to the proposed measure as expressed in my letter of the 15th instant.

The enclosures in your letter are returned in accordance with your request.

Dated 23rd April, 1866.

*From*—E. HAMMOND, Esq., *Foreign Office,*

*To*—*The Under-Secretary of State, India Office.*

With reference to your letters of the 15th and 26th ultimo, I am directed by the Earl of Clarendon to transmit to you, for the information of Earl de Grey and Ripon, the accompanying copy of a despatch from Her Majesty's Ambassador at Constantinople, reporting his conversation with Aali Pacha on the subject of the proceedings of the Cholera Conference.

No. 126, dated 11th April, 1866.

*From*—LORD LYONS, *Constantinople,*

*To*—*The EARL OF CLARENDON, K. G.,*

*&c.,*

*&c.,*

*&c.*

With reference to your Lordship's Despatches No. 97 of the 22nd ultimo, and No. 115 of the 29th ultimo, I have the honor to inform your Lordship that, on the 2nd instant, I called the attention of Aali Pacha verbally to the very serious objections entertained by Her Majesty's Government to the proposal adopted by the Cholera Conference, at the instance of the French Delegate, for the interruption of maritime communication between the Arabian ports of the Red Sea and the Egyptian coast.

\*Aali Pacha said that this proposal appeared to him still more open to objection than it did to Her Majesty's Government; that, in fact, the Porte considered that it could not be carried into execution. The Ottoman Government felt, indeed, the responsibility which must fall upon it if the cholera should break out among the pilgrims, and spread from them to Europe; it was making enquiries with a view to devising practical measures to be adopted in case of need, but it could not regard the measures proposed by the French Delegate as practical.

Aali Pacha concluded by promising not to take any steps in the matter without consulting me.

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Dated 28th April, 1866.

*From*—E HAMMOND, Esq., *Foreign Office,*

*To*—*The Under-Secretary of State, India Office.*

With reference to your letters of the 26th and 15th ultimo, I am directed by the Earl of Clarendon to transmit to you, herewith, a copy of a despatch from Her Majesty's Ambassador at Paris, enclosing a copy of a note verbale, which Monsieur Drouyn de Lhuys has placed in His Excellency's hands containing a reply to the representation which Lord Cowley was instructed to make to him with regard to the proposal of the French Delegates to the Sanitary Conference at Constantinople, that, in the event of cholera breaking out this year among the Pilgrims at Mecca, they should be prohibited from leaving Jeddah by sea; and I have to request that, in laying these papers before Earl de Grey and Ripon, you will move him to cause Lord Clarendon to be furnished, at as early a moment as possible, with any observations which he may have to make thereupon.

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No. 536, dated 27th April, 1866.

*From*—LORD COWLEY, *Paris,*

*To*—*The EARL OF CLARENDON, K. G.,*

*&c., &c., &c.*

With reference to your Lordship's Despatches No. 307, No. 319, and No. 387 of the 14th, 17th and 28th ultimo, instructing me to call the immediate and serious attention of the Imperial Government to the evils which it was anticipated would result from the proposal of the French Delegates to the Sanitary Conference at Constantinople, that, in the event of cholera breaking out this year among the pilgrims at Mecca, the pilgrims should be absolutely prohibited from leaving

Jeddah by sea, I have the honor to state that I embodied the observations of your Lordship or of Lord de Grey almost textually in a note verbale, which I placed in M. Drouyn de Lhuys' hands on the 6th instant. The note verbale, of which I have now the honor to enclose a copy, was given to me by M. Drouyn de Lhuys this morning. His Excellency, as your Lordship will perceive, states that the objection of Lord de Grey would be of undoubted importance, if the proposal made to the Conference at Constantinople had really been *absolutely* to prohibit the embarkation of pilgrims at Jeddah. Such however was not the case, in so far at least as pilgrims from beyond the Red Sea were concerned. The Conference, being anxious to guard against the possibility of such pilgrims being detained on land, had expressly stated that, should no other port suitable for the purpose be found on the Arabian coast, permission should be given to them to embark at Jeddah, unless opposition were made by the local authorities.

Viewed in this light, His Excellency does not consider that the resolution adopted by the Conference is of a nature to cause apprehension to Her Majesty's Government; and he adds that the delegates from Holland, the interests of which country are identical with those of England appeared fully to concur in it.

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HIS EXCELLENCY EARL COWLEY has explained to me the anxiety felt by Her Britannic Majesty's Secretary of State for India in regard to the practical execution of the measures recommended by the International Sanitary Conference of Constantinople in the event of the recurrence of cholera this year at Mecca. The prohibition of the embarkation of the pilgrims at Jeddah, even as mitigated with regard to those coming from countries lying on the further side of the Red Sea, by giving them liberty to embark at some place in the Red Sea to the south of that town, appears to Lord de Grey to be likely to cause great discontent amongst the Indian pilgrims, and consequently to give rise to serious difficulties to the Government of that country. The concession made to them being, in his opinion, illusory, because there does not exist on the coasts indicated any accessible or convenient port, the Indian pilgrims would in reality have no alternative to adopt but that of waiting in Arabia for the re-opening of maritime communications. Now this sort of detention, in the midst of a fanatical and hostile population, could not but inspire them with sentiments of suspicion and disaffection towards the Government to which they are subject, and which they would not fail to make responsible for the restrictions introduced in the movement of the pilgrimage.

Lord de Grey's objections would have been of incontestable value if the Conference had proposed, in effect, *absolutely* to prohibit the embarkation of the hadjis at Jeddah; but it has not done so, at least in so far as concerns pilgrims from countries situated beyond the Red Sea. In regard to these, the Conference has altogether dispelled the idea that it is possible to retain them on land; and anticipating that it

might not be possible to find any other town on the Arabian coast adapted to their embarkation, it expressly allowed them the privilege of embarking at Jeddah itself, if the local authorities should not consider it inconvenient.

In these terms, the resolution adopted by the Conference does not seem to be of a nature to cause apprehensions to the Government of Her Britannic Majesty, and it may be added that it seems to have afforded entire satisfaction to the delegates from the Netherlands, whose interests in this question are the same as those of England.

PARIS, *the 26th April 1866.*

Dated 30th April, 1866.

*From—H. MERIVALE, Esq., India Office,*

*To—The Under-Secretary of State for Foreign Affairs.*

I have laid before the Secretary of State for India in Council your letter, dated 28th instant, forwarding a copy of a Despatch from Her Majesty's Ambassador at Paris, with the accompanying note verbale from M. Drouyn de Lhuys, on the subject of the objections stated by Earl de Grey to the proposal of the Cholera Conference at Constantinople, that, in the event of cholera breaking out this year among the pilgrims at Mecca, the return of pilgrims by sea from Jeddah should be prohibited.

In reply, I am directed to state, with reference to the remarks of M. Drouyn de Lhuys, that Lord de Grey was fully aware that it was not intended that Indian pilgrims should be prohibited absolutely from returning to their own country by sea from Arabia in the event of the proposed measure being brought into general operation. It appeared to His Lordship, however, that the provisos by which it was proposed to meet the case of these pilgrims are not such as are likely to prove of any value in practice. In the first place, it is believed that there is no suitable port within a practicable distance to the south of Jeddah where the embarkation of Indian pilgrims can be effected, and secondly, Lord de Grey believes that such difficulties would attend any arrangements for the embarkation at Jeddah of the Indian pilgrims, should the pilgrims from Egypt be prohibited from leaving Arabia by sea, that the Turkish Government would not be likely to give their voluntary consent to any such difference of treatment as is contemplated by the proviso in favor of the pilgrims from India.

It was on these grounds that Lord de Grey formed the opinion, communicated to you in my letter of the 26th March, that the modifications in the scheme of the Conference before its final adoption were practically unimportant; and I am now directed to state, for the information of the Earl of Clarendon, that His Lordship's objections to

the general measure as recommended by the Conference remain unaffected by what has since been said ; and to repeat the request that, should the measure be brought into operation generally, an exemption, in direct and explicit terms, may be made in favor of Indian pilgrims.

Dated 3rd December, 1866.

*From*—E. HAMMOND, Esq., *Foreign Office,*

*To*—*The Under-Secretary of State, India Office.*

I am directed by Lord Stanley to transmit to you, to be laid before Lord Cranborne, a copy of a Report which has been addressed to Her Majesty's Ambassador at Constantinople by Dr. Dickson, relative to precautionary measures against cholera which the Egyptian Government propose to adopt on the occasion of the next pilgrimage to Mecca.

Dated 21st November, 1866.

*From*—G. DICKSON, Esq., *Constantinople,*

*To*—*His Excellency LORD LYONS, G. C. B.*

*&c.,                      &c.,                      &c.*

I have the honor to inform your Lordship that the Board of Health has received a report from Dr. Binsenstein, its Agent at Alexandria, dated the 14th instant, stating that, in expectation of the approaching pilgrimage to Mecca, the Egyptian Board of Health had drawn up a project to be carried out at the time of this pilgrimage, consisting of the following measures :—

- 1.—Pilgrim ships arriving from India in the Red Sea are to stop at Moka and undergo an interrogatory there.
- 2.—Vessels without a bill of health, and those upon which cases of cholera have occurred, will be sent to Massowah to perform 15 days' quarantine.
- 3.—Vessels which arrive at Jeddah or at any other port of the Hedjaz, without having previously stopped at Moka to show their bills of health, will be sent to Massowah to perform quarantine.
- 4.—Should cholera break out in the Hedjaz, all communications by sea between that province and Egypt shall be strictly prohibited.

- 5.—Caravans returning from the Hedjaz will undergo their quarantine at Sweysch, where vast lazarettos are to be established.
- 6.—Arrivals from the Hedjaz with a clear bill will have to perform a quarantine of observation of five days either at Tor or at Kosseir.

A Commission composed of members of the Board had been named to examine this project, and their report upon it will be submitted for approval to the Viceroy.

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Dated 14th December, 1866.

*From—H. MERIVALE, Esq., India Office,*

*To—The Under Secretary of State for Foreign Affairs.*

I am directed by the Secretary of State for India in Council to acknowledge the receipt of your letter, dated the 3rd instant, forwarding a copy of a report from Dr. Dickson, relative to the precautionary measures to be taken against cholera on occasion of the approaching pilgrimage to Mecca, which had been submitted for the consideration of the Egyptian Government; and, in reply, I am directed to request that Lord Stanley may be moved to communicate to Viscount Cranborne, whenever it may be received at the Foreign Office, the project which may eventually be approved by the Egyptian Government, in order that the Government of India may be informed, as soon as possible, of the measures of inspection and quarantine which will be enforced in the case of Indian pilgrim ships.

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Dated 24th March, 1866.

*From—E. HAMMOND, Esq., Foreign Office,*

*To—The Under Secretary of State for India.*

I am directed by the Earl of Clarendon to transmit to you, to be laid before Her Majesty's Secretary of State for India, the accompanying further reports of the proceedings of the Cholera Commissioners at Constantinople, and to request that these papers may be returned to this Office at Earl de Grey and Rippon's earliest convenience.



No. 89, dated 14th March, 1866.

*From*—LORD LYONS, *Constantinople,*

*To*—*The Right Hon'ble* EARL OF CLARENDON, K. G.,

*&c., &c., &c.*

I have the honor to forward herewith two despatches\* addressed to your Lordship, which have been sent to me under flying seal by the British Commissioners to the Cholera Conference, in which their latest proceedings are reported.

\* No. 11.

No. 12.

No. 11, dated 13th March, 1866.

*From*—MESSRS. W. STUART, E. GOODEVE, and E. D. DICKSON,

*To*—*The Right Hon'ble* EARL OF CLARENDON, K. G.

*&c., &c., &c.*

We have the honor to enclose herewith copies of Protocol No. 3, containing a summary of the proceedings of the Cholera Conference at its sitting of the 26th ultimo, together with copies of the several annexes (as marked in the margin), belonging thereto.

*Protocol No. 3.*—(Sitting of February 26).  
*Annex No. 1.*—Report of Committee on French proposal.  
*Annex No. 2.*—Amendment of Persian Delegate.  
*Annex No. 3.*—Amendment of Ottoman Delegate.

We have also the honor to enclose correct printed copies of the amended French proposal adopted by the majority of the Conference at the sittings of the 1st and 3rd instant, in contemplation of cholera breaking out amongst the pilgrims who have gone this year to Mecca; the copy forwarded in our despatch No. 8 of the 7th instant having been hastily prepared by us for your Lordship's earlier information.

*Amended French proposal*  
Adopted by majority of Conference, (March 1st and 3rd).

No. 3.

## INTERNATIONAL SANITARY CONFERENCE.

*Meeting of the 26th February 1866.*

HIS EXCELLENCY SALIH EFFENDI,—*Presiding.*

The International Sanitary Conference held its third Meeting on the 26th February 1866, at Galata-Serai.

**PRESENT :***For Austria :*

M. Vetsera, Councillor of the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

*For Belgium :*

Count de Noidans, Secretary to the Legation of His Majesty the King of the Belgians.

*For Spain :*

Don Antonio Maria Segovia, Consul General, Chargé d' Affaires.

Dr. Monlau, Member of the Superior Council of Health of Spain.

*For France :*

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician of France.

*For Great Britain :*

The Hon. M. W. Stuart, Secretary to Her Britannic Majesty's Embassy.

Dr. E. Goodeve, Surgeon Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

*For Greece :*

M. Kalergi, Secretary to His Hellenic Majesty's Legation.

*For Italy :*

M. Alexandre Vernoni, Chief Interpreter to the Italian Legation.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

*For the Netherlands :*

M. Kenn, Councillor of the Dutch Legation.

*For Persia :*

Mirza Malkom Khan, Aide-de-Camp General to his Majesty the Shah, Councillor of the Persian Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health, Constantinople, Persian Delegate to the Superior Council of Health.

*For Portugal :*

Chevalier Edward Pinto de Soveral, Charge d' Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

*For Prussia :*

M. H. de Krause, Secretary to the Prussian Legation.

Dr. Muhlig, Physician to the Legation, Chief Physician of the Hospital of the Ottoman Marine.

*For Russia :*

Dr. Pelikan, Councillor of State, Director of the Russian Medical Department.

Dr. Lenz, Councillor of College, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, Co-Military Medical Inspector of the Arrondissement of Wilna.

*For Sweden and Norway :*

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, and Secretary to the Swedish Legation.

Dr. Baron Hübsch.

*For Turkey :*

His Excellency Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Service.

Dr. Bartoletti, Inspector General of the Ottoman Sanitary Department, Member of the Council of Health at Constantinople.

The Meeting was opened at 1 p. m.

Dr. Naranzi, one of the Secretaries of the Conference, read the minutes of the last meeting.

Referring to the part of the minutes where his observation in reply to Mr. Stuart was recorded, *viz.*, that the circular of His Excellency the Minister for Foreign Affairs in France had foreseen the necessity of adopting precautionary measures in regard to pilgrims already on their way to Mecca, Count de Lallemand explained that the phrase to which he had wished to allude, and which, in fact, was not contained in the said circular, existed in the instructions which had been conveyed to him. Count de Lallemand added that these instructions were not secret; and if the Conference desired it, he was ready to disclose them.

Dr. Bartoletti, as Secretary-Reporter of the Committee, appointed to consider the French proposition, remarked that it would seem to be inferred from the minutes that it was owing to him that that Committee had been unable to present its report at the second sitting of the Conference. Dr. Bartoletti thought it right to remark that his work might have been finished in time, but that he had to wait for the information promised by his Government, with which it was indispensably necessary that the Committee should be acquainted, in order to be able to decide on the merits of the Ottoman counter-proposition.

Some other members of the Conference having also offered their observations on certain passages of the minutes, the Secretary replied that the necessary corrections, which were only in matters of detail, would be made by him before the minutes were printed.

The minutes were then adopted by the Conference, which cordially agreed with Dr. Sawas in congratulating Dr. Naranzi on the excellent manner in which he had drawn them up.

Dr. Bartoletti then read the report (Annexure No. 1 to the present minutes) of the Committee appointed to examine the proposition of the French Delegates, and the counter-proposition, or amendment, put forward by him on the part of his Government. From the first of these documents it appeared that the Committee, which was composed of MM. Vetsera, Fauvel, Stuart, Professor Bosi, Sawas, Lenz, and Bartoletti, was unable to agree in opinion. Three of its members voted for the adoption of the principle of the French proposition, *viz.*, M. Vetsera, Dr. Fauvel and Professor Bosi; and three voted against, *viz.*, Drs. Sawas, Lenz, and Bartoletti; Mr. Stewart declining to vote. As for the Ottoman counter-proposition, the text of which is annexed to Dr. Bartoletti's report and which consists substantially in the embarkation of the pilgrims in groups and their dissemination in lazarettos to be prepared on various points of the coast of the Red Sea, it was voted only by its mover. Lastly, an amendment proposed by Dr. Sawas obtained only his vote and that of Dr. Lenz.

Dr. Sawas spoke after Dr. Bartoletti, and read his proposed amendment, (Annexure No. 2 of the present minutes). The Persian Delegate proposed, while adopting the principle of the interdiction of maritime communications, to make an exception in favor of the port of Yambo, which would remain open to pilgrims. This combination seemed to him

to possess the double advantage of offering sufficient guarantees for the public health, while, on the other hand, it saved the pilgrims from dangers of every kind to which they would be exposed if they were forced to take the desert route, or to remain at Mecca after the ceremonies of the pilgrimage.

After this had been read, His Excellency Salih Effendi submitted a fresh project or amendment to the Conference (Annexure No. 3 of the present minutes), in which he developed Dr. Bartoletti's amendment, completing the measures proposed by the latter by the addition of more physicians to the Ottoman Medical Commission sent to the Hedjaz, and insisting on the serious inconveniences which, it appeared to the Turkish Delegates, would result in many points of view from the adoption of the French proposition.

Having read this, Salih Effendi followed it up with some reflections on the subject of the Indian pilgrims, whom the French Delegates would retain like the others in case of cholera, admitting at the same time the possibility of assigning them some port to the south of Jeddah where they might embark. His Excellency would like to know what would be the use of preventing their departure. To avoid over-crowding? If so, it would be all the more advantageous, in his opinion, to put them on board English steamers, so that they might the sooner get back to their respective homes, inasmuch as it was not certain that a port could be found to the south of Jeddah; and, again, if such a safe place existed, that it would be found to be connected with that town by a practicable road. In regard to the increase of the number of members of the Medical Commission of the Hedjaz, the Government of H. I. M. the Sultan was ready to take measures accordingly, and His Excellency Salih Effendi consequently begged the honorable Conference to fix the number of additional physicians it would be necessary to add to the Commission, as also to prepare, if necessary, the instructions required to complete those with which it was already furnished. His Excellency concluded by begging his colleagues to take the double proposition into their serious consideration, so as to be able at their next meeting to decide on its merits.

The Conference decided, on the motion of Dr. Lenz, that the documents just read should be printed and added to the minutes.

Dr. Fauvel was then called upon to speak with regard to the French proposition. Before entering into its details, he said he thought it would be well, with the view of facilitating the discussion, that any members of the Conference, still having amendments or counter-propositions to bring forward, should do so at once.

This remark gave rise to some observations, and some members said it was contrary to parliamentary usage. Dr. Fauvel then explained that he only meant to speak of amendments, or counter-propositions, which their authors must have prepared in advance; and that it was evident

that the adoption of his proposal would not in any way affect the incontestable right of every member of the Conference to bring forward any amendment he pleased during the course of the discussion.

This explanation given, Dr. Fauvel's motion was put to the Conference. No new amendment was brought forward.

Professor Bosi also demanded, with the view of assisting the progress of the debates, that it should be decided, as was the custom in certain assemblies, that only such amendments should be taken into consideration as were previously supported by a certain number of members to be fixed by the Conference. Several delegates opposed this proposition; and, after a conversation, in which Dr. Sawas, Chevalier Pinto de Soveral, Dr. Goodeve, M. Stenersen, and Count de Lallemand took part, the Conference voted in favor of complete liberty during the discussion. Every Member would be free to introduce any amendment or counter-proposition he thought proper.

Dr. Fauvel, having been invited to speak upon this urgent proposition, declared that the very extended developments upon which he saw he would be forced to enter, would take up some time; and, considering the advanced hour, he preferred to abandon his right to speak for the present in favor of Dr. Pelikan, who was named to speak after him.

Dr. Pelikan read a note which mainly contested the urgency of the measures proposed by the French Delegates. The Russian Delegate relied, with regard to this point, upon the fact that the statistical information possessed by science since 1817 proved that the epidemic, always starting from India, had never followed the same route to England for two years in succession, for the reason, doubtless, that *the epidemic development of cholera could not be explained merely by its transmissibility*. The epidemic of 1865 had, moreover, left a mass of choleraic germs in Europe, and these germs, developing themselves in the spring, would constitute a danger much more to be dreaded than the conjectural importation of the Indian scourge by means of the pilgrimage. Dr. Pelikan thought, for these reasons, that the French proposition could not but gain by being deprived of the character of urgency which had been attached to it. It would then certainly be less open to the objections which had been urged against it, and which, for the most part, applied to the difficulty of practically applying the proposed measures, and also to the necessity of completing them by such precise and local information as was not yet available.

Mirza Malkom Khan then read a memorandum, arguing in behalf of the adoption of the amendment proposed by his honorable colleague Dr. Sawas, demanding, however, that the exception made by him in favor of Yambo should be extended to the port of Omar. It would be much better, in his opinion, to suppress the pilgrimage altogether, and compel the pilgrims to stay quietly at home rather than to prohibit altogether their use of the sea route; or, in other words, to condemn them, in the

name of humanity, to perish of famine and misery in the desert. The Persian Delegate believed that the French proposition, not to speak of its other inconveniences, would have that of raising tempests of heat in the Mussulman world, and of creating the most serious difficulties for Oriental Governments. The ideas, the manners, the doctrines, and the logic of Asia were so different from those of Europe, that the mere idea, that Mahomedan sovereigns had come to an understanding with European powers to regulate the route and progress of the pilgrims, would suffice completely to change existing relations between the sovereigns and their subjects, and lay them open to the attacks of a fanaticism all the more violent because so much had been lately done with a view to suppress it.

The powers of Europe, continued Mirza Malkom Khan, may obtain anything from the people of Asia, provided they know how to save appearances, and put their requests in a shape rendering them admissible, and for this reason, it is necessary to leave the ports of Yambo and Oma open. The measure proposed by the French Delegates would lose nothing of its efficacy by this, and thus any attack upon religious feelings, which it is always dangerous to oppose, would be avoided. So far as Persia is concerned she is ready to do all she can to ensure the success of the mission confided to the Conference; but the Conference should not forget that, under these circumstances, the task of the Mahomedan powers is beset with difficulties and dangers, and that it is not given to any Government, even in the most civilised countries, to annihilate at pleasure the prejudices of its people.

After this discourse, Dr. Monlau asked and obtained leave to speak to order. The Spanish Delegate thought that, considering the numerous propositions and counter-propositions which had been brought forward, it would be necessary to decide as to the order in which they should be discussed. After having heard Dr. Sawas, Dr. Monlau, Count de Lallemand, de Krause, Segovia, and Dr. Sotto, the Conference decided that the discussion was open on the propositions of the French Delegates, and, also, by a majority of seventeen votes against three, that the next meeting should take place the next day, Tuesday, the 27th instant, at 1 P. M.

Count de Lallemand stated, immediately after this vote, that the Committee, to which the duty of drawing up a draft programme had been assigned, had finished its labors, that its report was already in the press, and consequently at the immediate disposal of the Conference.

In reply to a request then made by M. Segovia, His Excellency Salih Effendi intimated that he would take the necessary steps to have hydrographic charts of the Red Sea placed at the disposal of the Conference.

The meeting terminated at 5 P. M.

SALIH,

*President of the Sanitary Conference.*

BARON DE COLLONGUE,  
DR. NARANZI,

} *Secretaries.*

## INTERNATIONAL SANITARY CONFERENCE.

## ANNEXURE NO. 1 TO THE MINUTES OF THE 3RD MEETING.

*Report of the Committee appointed to examine the proposition put forward by the Delegates of the French Government, regarding the measures to be adopted in the event of cholera showing itself this year among the pilgrims assembled at Mecca.*

## MEMBERS OF THE COMMITTEE.

HON. MR. STUART, *President.*

M. VETSER.  
DR. FAUVEL.  
PROFESSOR BOSL.

DR. SAWAS.  
DR. LENZ.  
DR. BARTOLETTI, *Secretary-Reporter.*

GENTLEMEN,—You have very rightly, from your first meeting, devoted your attention to an urgent question, worthy of being taken before anything else, into serious consideration.

Such is the opinion of the majority of the Committee on the measures to be adopted in the event of cholera breaking out this year among the pilgrims assembled at Mecca. These measures have been proposed to you by the French Delegates.

Acting in a spirit of general interest, you have named a Committee of seven members, charged with the examination of this important question.

Your Committee now presents its report to you. It could have wished to be able to announce a result arrived at by unanimous consent, and to propose a homogeneous solution one way or the other. But, notwithstanding all the efforts it has made in four long sittings, in which everything was discussed and analysed, it has not been able to make the divergent opinions of its members concur upon one single point.

The question of opportunity and competence was first of all raised: the question whether the Committee could, without judging as to the future, be called upon to propose measures of quarantine before the principle of the transmissibility of cholera was affirmed by the Conference; and whether, in consequence, it was not necessary beforehand to obtain the consent of the different Governments.

To this first objection, it was replied that the very assemblage of the Conference implied the recognition of the principle of transmissibility, and the majority of the Committee, by six votes to one, decided in this sense. But it is not the less to be regretted that, following on this solution, one of its members Mr. Stuart thought himself bound to confine himself to a system of abstention which deprived the Committee of an important vote in all the other questions successively brought under discussion.

The proposition of the French Delegates consists principally, as you are aware, gentlemen, *in the prohibition, during the epidemic of all maritime communication between the Arabian ports and the Egyptian sea board, leaving the desert route open to the pilgrims for their return to Egypt.*



In other words, as said in the proposition, the pilgrims would be subjected to quarantine, either on the spot for those who might prefer to await the termination of the epidemic in the Hedjaz, or in the desert for the larger number who would follow the caravan. We pass over the accessory details of the proposition, for the greater part of the objections were directed against its very essence.

Let us state in the first place that the Committee unanimously recognised the gravity of the threatened danger, if unhappily cholera were to show itself again this year among the pilgrims at Mecca, and that it admitted, with one exception, the necessity of opposing an efficacious barrier to a fresh invasion of the scourge. Let us note also that the measure proposed by the French Delegates was admitted to be in principle the surest means of success in face of the danger, and was only opposed in the method of its application. It was, in fact, only in regard to its execution that it was found not to be in accord with the sentiments of humanity which should dictate the measures to be imposed on the pilgrims, and it was there that the difficulties arose.

Thus, serious fears were expressed of leaving the thousands of pilgrims to wait at Mecca for the termination of the epidemic unprovided with water and provisions, and the impossibility was urged of providing, under existing circumstances, means of transport for the pilgrims who would have to follow the caravan, the practice of forming great caravans having been abandoned, even among the Arabs, since the introduction of steam navigation in the Red Sea; and great stress was specially laid on the dangers to which the population of Jeddah would be exposed, if the pilgrims massed together at Mecca, and a prey to the epidemic and to famine, should crowd into that town to seek for means of subsistence by pillage, or with the object of embarking.

These apprehensions, maintained persistently on the one side, were energetically opposed on the other as being illusory and untenable. In fact, it was said, what could be more erroneous than to believe that a town like Mecca, which, as has sometimes been seen, can feed as many as 80,000 pilgrims, would fail to supply provisions, because it had to nourish a comparatively small number of pilgrims for a rather longer time? And as with provisions, it was said again, so there could be no want of water which, if not of the best quality, would not the less suffice for the requirements of a much smaller number of pilgrims this year than was supposed. Moreover, it was added, nothing was easier than to throw provisions into Mecca *via* Jeddah, if the Arabs, who supply it in abundance during the pilgrimage, should happen (which is impossible) not to do so this year. In reply to the question about means of transport, it was said that it was enough to know that part of the wealth of the country consisted in camels in order to allay all apprehensions of the pilgrims not having modes of conveyance. It would only be necessary to give notice to cause them to arrive in thousands, and in this case, there would be no want of speculators ready to supply them. If then, it was concluded, provisions and means of transport were not wanting, where would be the danger of the collisions apprehended at Jeddah? This danger, on the contrary, would become real if the pilgrims were allowed to reckon upon finding ships there, which they would not be able to do if maritime communications were suspended.

It was under these circumstances, everybody holding to his own convictions, that the Turkish Delegate, a member of the Committee, proposed the substitution of a methodical system of embarkation for the absolute prohibition of maritime communication. The pilgrims would take passage in batches on steamboats exclusively reserved for this service, and would be placed in lazarettos conveniently situated on different points of the Egyptian sea-board of the Red Sea, such as Tor, Cosseir, and others, where they might go through a strict quarantine. Entire liberty would be allowed to those pilgrims who might choose to follow the desert route, in order to avoid the quarantine (see the Annexure to the present Report).

This amendment or proposition was met on one side with sustained opposition as being diametrically opposed to the proposition of the French Delegates; while on the other, it did not meet with the support that might have been expected even from those who would not adopt the French proposition.

The Delegate of the French Government maintained that the system proposed was illusory, because the lazarettos thus improvised offered no guarantee of security; that it was cruel to the pilgrims, because it would be difficult to feed them at Mecca; that it was perilous to the place of embarkation, on account of the collisions which might ensue, and all the more perilous, because, according to the Ottoman project, of the considerable time which would be necessary to get the pilgrims away. All these measures, he said, which were so many sacrifices for the pilgrims, would be powerless to save the country from an invasion of cholera. He reserved to himself the right of developing this argument before the Conference.

Another member of the Committee objected to the small security which was offered against the importation of cholera from such lazarettos as were proposed by the Delegate of the Porte.

The Persian Delegate put forward another amendment, essentially different from the above. He proposed to maintain the interdiction of maritime communication so far as Jeddah was concerned, and to proclaim the desert route as the only way by which the pilgrims would be allowed to return. The caravan would thus proceed as far as Medina whence it would go to Yambo, where the pilgrims would be permitted to embark for Egypt. In the event of cholera still existing among them, they would be obliged to undergo quarantine in the lazarettos organized on the Egyptian sea-board in accordance with the plan proposed by the Ottoman Delegate.

This second amendment was considered by two members as uniting to all the disadvantages attributed to the French project, those of the Ottoman proposition, that is to say, it offered neither comfort to the pilgrims, nor security against the propagation of cholera in Egypt.

After a long discussion, the various propositions were put to the vote.

The principle of the proposition of the French Delegates obtained three votes in its favor, and three against, one member declining to vote.

The amendment of the Turkish Delegate was rejected by five votes to one; one member declining to vote.

The amendment of the Persian Delegate was supported by only two votes against four, one member declining to vote.

Gentlemen, the Committee, as we said at the commencement of this Report, examined the project of the French Delegates, and the two proposed amendments, with equal attention and interest. It entered lengthily into the discussion of the question of provisions, water, and the means of transport, the want of which might have placed the greatest obstacles in the way of the return of the caravan through the desert. But the explanations afforded on either side did not terminate in the desirable result of a mutual understanding, and every member retained his own convictions, although they were all agreed, with one exception, on the necessity of taking immediate measures against the imminent danger of a fresh invasion of cholera.

We hope, nevertheless, that the Conference, appreciating the humane interest called out on every side, and which seems to have been the sole and only cause of discord in the Committee, will pronounce its verdict with the authority appertaining to it.

## INTERNATIONAL SANITARY CONFERENCE.

### ANNEXURE TO THE REPORT OF THE COMMITTEE.

*Amendment submitted by DR. BARTOLETTI to the Committee appointed to examine the proposition of the French Delegates.*

GENTLEMEN,—Permit me to remind you of the apprehensions that have been expressed in the Committee on the subject of the want of provisions, water, and means of transport, and of all the consequences resulting thereupon, with regard to the caravan of the pilgrims, if it were obliged to take the desert route to Egypt. I shall not return to the details of this question, which have been so frequently developed and discussed; but these apprehensions, which have been confirmed by a communication, dated the 19th February, in my possession, have strengthened the opinion that the absolute interdiction of the sea-route might prove fatal to the pilgrims in Mecca, where they would be forced to await the termination of the epidemic, as well as in the journey through the desert for those who might take it.

The question was also raised of the dangers that would be incurred by the population of Jeddah, if the pilgrims, decimated by disease and abandoned to famine and despair, were to take it into their heads to make an irruption into that town for the purpose of procuring provisions by pillage, or embarking there by violence.

These powerful considerations, urged by some, and energetically combated by others, have induced great hesitation in the minds of many members of the Committee called upon to give counsel on the proposition of the French Delegates. It was in the face of these difficulties that I

proposed to you to obviate them by abandoning the absolute interdiction of the sea-route, and by adopting a series of measures which you have called upon me to develop to-day. I have made haste, gentlemen, to comply with your wishes, for it is a matter of urgent necessity to lay down the premises of the Report which we have to present to the Conference.

I shall endeavour to classify the measures to be adopted in three series, so as to impart as much clearness as possible to the expression of my ideas. I intend, therefore, to propose measures applicable to the departure—a methodical regulation of the transport by sea, quarantines, and everything connected with the place of arrival.

In regard to the first point, the measures would consist—

*1st.*—In increasing the number of members of the Ottoman Commission of the Hedjaz, whose principal sphere of operations would be at Jeddah for the whole time during which the embarkation of the pilgrims would continue.

*2nd.*—In aiding the Commission by the efficacious concurrence of the local authorities who would furnish it with any assistance of which it might stand in need, for the regulation of the departure of the pilgrims in accordance with the instructions given to it by the Council of Health, and which might be added to as thought proper by the Conference.

The measures applicable to the place of departure being thus laid down, I pass to the measures to be adopted at the places of arrival, and then proceed, finally, to the conditions of the transport of the pilgrims on steamboats.

To arrive at the end we desire to obtain from the measures applicable to arrival, that is, the greatest amount of security against the invasion of cholera, I think it would be necessary—

*1st.*—To improvise at once, having regard to the urgent nature of the matter, several lazarettos, composed of barracks and tents, on different points of the Egyptian coast of the Red Sea. These lazarettos should be situated at points of easy access, strictly isolated, and provided with water in sufficient quantity to satisfy the necessities of a great mass of men assembled together. They should be situated at great distances from each other, and, as far as possible, from any inhabited place. Besides Tor, which is known to be adapted to the institution of a quarantine of this sort, I believe I am able to propose, on the African coast, a place in the neighbourhood of Cassir, which would facilitate the return to their homes of a large proportion of the pilgrims, and another place on the Arabian coast at the entrance of the Gulf of Akaba, such as Kalaat-el-Moir, a place remarkable for the excellence of its pasturage and the good quality of its water. There might be, perhaps, a fourth place to be chosen, but I am unable to decide in regard to the spot from want of information. The pilgrims from Nubia would proceed to Souakin and Massowah, where there might also be lazarettos expressly established for them. However, this question of the localities to be fixed upon is one which must be studied well before being brought forward in a sure and definite manner. And, in order to be able to arrive at an exact knowledge of the localities to be chosen, a telegram has been despatched to the Egyptian Government asking for the necessary information, and we trust soon

to be able to communicate the answer to you. The lazarettos established—lazarettos, it should be well understood, consisting of sheds and tents,—it would rest with the Ottoman Government, acting in concert with that of Egypt, to provide the means of subsistence for the persons in quarantine, and to employ a number of persons in the lazarettos as well as to provide them with the military force necessary for the maintenance of order and discipline among the pilgrims.

It now remains to propose to you the manner of carrying out the transport of the pilgrims from Jeddah, the place of embarkation, to the various quarantine. Last year there were 17,000 pilgrims who returned *via* Suez; and assuming a figure of 16,000, which will not probably be attained this year, each of the four lazarettos would receive 4,000. Eight steamboats might be appointed to make four voyages each, having 500 pilgrims on board at a time. This number should not be exceeded, not only with a view to avoid over-crowding on board, but also to allow time to the preceding batches to finish their quarantine and leave the lazarettos, which the succeeding batches would find at their disposal on their arrival. In this manner the great crowding together of the pilgrims, which is so much to be dreaded during an epidemic, need not be feared, and their victualling would be all the easier. In other words, the transport of the pilgrims would be effected progressively and in batches. By this combination the police on land and sea would be carried out by the Ottoman and Egyptian forces, and the Porte would assume the duty of settling with Egypt the question of the supply of provisions so as not to allow the persons in quarantine to want for anything.

I would ask you, gentlemen, to take particular notice that this is not a counter-proposition that we mean to bring forward, but simply a modification of that which the Committee has been appointed to examine. We do not propose to substitute the sea-route for that of the desert, but to leave the pilgrims at liberty to embark on board ship, or to perform the journey in a caravan, warning them of the difficulties with which they may be beset in adopting the system opposed to the sea-voyage. If this point were distinctly understood by the pilgrims, it would have the effect of diminishing the number of departures by sea in proportion to the number of pilgrims who might freely elect to follow the desert route.

### INTERNATIONAL SANITARY CONFERENCE.

2ND ANNEXURE TO MINUTE No. 2.

*Proposed amendment of the urgent proposition of the French Delegates presented by Dr. Sawas, Persian Delegates.*

[This will be found at page 161.]

### INTERNATIONAL SANITARY CONFERENCE.

3RD ANNEXURE TO MINUTE No. 2.

*Proposed amendment of the urgent proposition of the Delegates of the French Government, presented by the Delegates of the sublime Porte.*

[This will be found at page 151.]

## INTERNATIONAL SANITARY CONFERENCE.

## ANNEXURE TO MINUTE No. 8.

*Measures adopted by the International Sanitary Conference, in its meetings of the 1st and 3rd March 1866, to be carried out in the event of cholera showing itself this year among the pilgrims assembled at Mecca.*

[This will be found at page 175.]

No. 12, dated 14th March, 1866.

*From—Messrs. W. STUART, E. GOODEVE, and E. D. DICKSON,*

*To—The Right Hon'ble EARL OF CLARENDON, K. G. &c.*

In continuation of our Report No. 10, we have the honor to inform your Lordship that the Committee appointed by the Conference to report on the two first groups of questions set forth in the plan of proceedings, met on the 10th instant.

This Committee sub-divided itself into six sections: The first was appointed to consider the 1st group of questions, excluding the last paragraph. The second, to consider the first three questions comprised in the second group. The third, the next five questions and the paragraph excluded from the 1st group. The fourth, the following four questions of the second group. The fifth, a question added to this group at the suggestion of Doctor Fauvel. The sixth, the last question of the 2nd group.

The sections were composed as follows:—In the first, Doctor Goodeve, M. Segovia, Doctor Pelikan, Doctor Polak, and Doctor Van-Geuns. In the second, Doctor Hübsch, Count Lallemand, and Doctor Mühlig. In the third, Doctor Maccas, Doctor Monlau, Count Noidans, Doctor Sawas, and Doctor Sotto. In the fourth, Doctor Fauvel, Doctor Gomez, Doctor Lenz, and Doctor Salem. In the fifth, Professor Bosi, Doctor Dickson, and Doctor Millingen. In the sixth, Doctor Bartoletti, Doctor Bykow, Doctor Goodeve, and Doctor Salvatori.

We beg to enclose two copies of the amended plan of proceedings referred to above.

We have, moreover, the honor to inform your Lordship that four other members have recently been added to the Conference, viz.:—Salem Effendi, Delegate from the Egyptian Government; Doctor Polak, Delegate from the Austrian Government; Doctor Van-Geuns, Delegate from the Dutch Government; Doctor Maccas, Delegate from the Hellenic Government.

## INTERNATIONAL SANITARY CONFERENCE.

ANNEXURE TO MINUTE No. 7.

*Report on a draft programme of the labors of the Conference, drawn up in the name of a Committee composed of MM. Dr. Sotto, Dr. Monlau, Count de Lallemand, Vice-President, Dr. Goodeve, Vernoni, Mirza Malkon Khan, Dr. Mühlig, Dr. Pelikan, and Salih Effendi, President.*

*(By DR. MÜHLIG, Secretary-Reporter.)*

[This will be found at page 146.]

Dated 27th March, 1866.

*From—E. HAMMOND, Esq.,*

*To—The Under Secretary of State, India Office.*

With reference to my letter of the 24th instant, I am directed by the Earl of Clarendon to transmit to you, for the information of Earl de Grey and Ripon and for any observations his Lordship may have to offer thereupon, the accompanying further papers respecting the proceedings of the Cholera Conference at Constantinople, and I am to request that they may be returned to this Office at your earliest convenience.

In Lord Lyons' No. 92.

No. 92, dated 16th March, 1866.

*From—LORD LYONS,*

*To—The Right Hon'ble the EARL OF CLARENDON, K. G., &c.*

I have the honor to forward herewith a Despatch addressed to your Lordship, which has been sent to me under flying seal by the British Commissioners at the Cholera Conference, in which their latest proceedings are reported.

No. 13 of March 16th.

No. 13, dated 16th March, 1866.

*From—MESSRS. W. STUART, E. GOODEVE, and E. D. DICKSON,*

*To—The Right Hon'ble the EARL OF CLARENDON, K. G., &c.*

With reference to our Despatch No. 6 of the 27th ultimo, we have now the honor to enclose two copies of the protocol (No. 4) of the fourth sitting of the Cholera Conference, which took place upon that day.

Dated 23rd April, 1866.

From—E. HAMMOND, Esq.,

To—The Under Secretary of State, India Office.

I am directed by the Earl of Clarendon to transmit to you, for the information of Earl de Grey and British Cholera Commissioners, No. 17. Ripon, the accompanying copy of a report on the proceedings of the Cholera Conference at Constantinople,

Dated 11th April, 1866.

From—MESSRS. W. STUART, E. GOODEVE, and E. D. DICKSON,

To—The Right Hon'ble the EARL OF CLARENDON, K. G., &c.

We have the honor to report the progress made by the General Committee of the Cholera Conference and its Sub-Committees in answering the questions of the two first groups of the programme already forwarded to your Lordship.

The Sub-Committees of four of the six sections into which the work was divided have completed their reports. Three of these have been disposed of by the General Committee. The 4th and the part of the 5th have been read and are now under discussion; when all the reports have been received a general report will be drawn up and again submitted to the General Committee for final consideration.

Dr. Fauvel has been appointed "rapporteur," and it is hoped that his report will be ready by the end of the present month. After adoption by the Committee, it will be submitted to the full Conference.

At one of the sittings of the General Committee, Dr. Fauvel asked for information relative to the question of Cholera having acquired additional intensity, and put on a diffusive character in and beyond India owing to the insalubrity produced by the destruction of embankments, canals and reservoirs, since the occupation of India by the English, and from these not having been kept in repair by them. He stated that this opinion was widely spread in France. Dr. Goodeve was able to give an answer to this, and to shew that the epidemic cholera which broke out in Bengal in 1817, and from which period the disease acquired its diffusive character, had nothing whatever to do with the destruction or neglect of water works, as these had never existed in the parts of Bengal in which the disease broke out. He took the opportunity of showing that the water works so much spoken of were chiefly in the southern parts of Madras, had gone to decay before our establishment in India took place, and that instead of letting things go to ruin as the French supposed, we had not only largely restored destroyed works of irrigation, but had added extensively to them.



Dated 11th June, 1866.

From—E. HAMMOND, Esq.,

To—The Under Secretary of State, India Office.

I am directed by the Earl of Clarendon to transmit to you, for the information of Earl de Grey and Ripon, the accompanying copy of a Despatch\* from No. 20, the British Cholera Commissioners reporting the further proceedings of the Cholera Conference at Constantinople.

No. 20, dated 22nd May, 1866.

From—MESSRS. W. STUART, E. GOODEVE, and E. D. DICKSON,

To—The EARL OF CLARENDON, K. G., &c.

In continuance of our Despatch No. 17 of the 11th ultimo, we beg to inform your Lordship that the reports of all the Sub-Committees appointed for the examination of the questions of the 1st and 2nd groups of the programme of the Conference having been completed and submitted to the General Commission, the report founded thereon was, after several discussions, finally disposed of yesterday. It will be submitted to the Conference as soon as it can be printed.

At the request of Count Lallemand and some other delegates, a meeting of the Conference was held on the 3rd instant. It was attended by three additional members who have joined since we last reported the names of our colleagues. They are—

*For Denmark.*—Mr. Dumreicher, Diplomatic.

*For the Roman States.*—Monsignor Binnoni, Archbishop of Jaron, Diplomatic, Dr. Spadaro, Medical.

The object of the conveners of the meeting was to ascertain the wishes of the Conference on the immediate appointment of Committees to consider the 3rd group of the programme. The meeting decided, before proceeding further, to wait for the report of the Committee of the 1st and 2nd groups.

It appointed a Committee to re-arrange the questions of the 3rd group. The members of this are—

MM. Segovia, *President.*  
 " Monlau.  
 " Van-Geuna.  
 " Gomez.  
 " Pelikan, *Rapporteur.*  
 " Spadaro.  
 " Goodeve.

The report of the Committee is finished, but it has not yet been submitted to the Conference.

The protocol of the 7th sitting of the Conference was read at the meeting, attention was drawn to the inaccuracies in the report contained in protocol No. 5 of the observations of Dr. Goodeve, mention of which was made in our despatch to your Lordship No. 14 of the 23rd of March. Notice of our complaints will be inserted in the protocol of the last sitting.

Dr. Dickson drew attention also to the advisability of affording the members some means of correcting the reports of their observations, beyond those furnished by the mere reading of the protocol at a sitting of the Conference. It was agreed that they should have the opportunity of inspecting the reports of the Secretaries before they are read at the meetings.

Dated 16th June, 1866.

From—E. HAMMOND, Esq.,

To—The Under Secretary of State for India.

I AM directed by the Earl of Clarendon to transmit to you, to be laid before the Earl de Grey and Ripon, the accompanying copies of two further Despatches\* from the British Members of the Cholera Conference at Constantinople, reporting the proceedings of the Conference.

\* No. 22.  
No. 23.

No. 22, dated 5th June 1866.

From—E. D. DICKSON, Esq.,

To—The Right Hon'ble the EARL OF CLARENDON, K. G., &c.

We beg to report that meetings of the Conference were held on the 28th and 31st of last, and on the 2nd and 4th of the present month.

The Report of the Commission plénière on the 1st and 2nd groups of the programme was presented, but it has not been discussed. We have the honor to enclose the three accompanying copies of it.

The time of the meetings was occupied chiefly with the reception and discussion of the revised programme of the 3rd group of questions. This was adopted with some modifications. Another amendment was proposed, but was not adopted. It will be found in the *procès verbal* of the meeting of the 2nd June. In the Committee of the programme of the 3rd group it was proposed that an International Commission should be sent to India to study the original propagation of cholera. This was not actually adopted in the Report of the Commission; but it was recommended that a Commission should be sent to India, leaving it undefined how it should be composed, and by whom it should be instituted. The matter is treated of in page 3, in Clause 20, page 6 of the above Report forwarded herewith. Clause

20 contains the proposition, and runs thus—"Commission des recherches scientifiques sur l'origine et la genese du choléra dans les lieux que l'on croit être le berceau de cette maladie."

From the first we opposed the idea of any investigation of an international description; but we think that the British Government would not object to undertake itself such enquiries as might be useful to the world, and this is expressed in a note which precedes Dr. Goodeve's signature of the Report.

When the matter came up for the consideration of the Conference, we proposed an amendment upon Clause 20 in the following terms:—

"Appeler l'attention des gouvernements respectifs des pays que l'on croit être le berceau du choléra sur l'utilité d'entreprendre ou de continuer des recherches locales vigoureuse sur l'origine et la propagation de la maladie.

"Enumerez les questions dont la solution, ou une connaissance plus profonde est demander par la science."

The original proposition had 17 votes against, and two for it. There were several abstentions.

Our proposition was carried,—17 votes being recorded for, and none against, it. The two supporters of the original proposition desired it to be noted that they had not voted against the amendment.

At the meeting of the 31st May the French Delegates requested that business of the day might be suspended to enable them to read the enclosed communication, the submission of which had been approved of by the French Government, relative to the increase of the Ottoman Health Dues by substituting Tonnage Dues instead of the trifling tax at present derived from Bills of Health, in order that the Turkish Quarantine Establishments might be made self-supporting.

The proposition met with opposition amongst the majority, and led to energetic discussion. The grounds of opposition were two:—One, that the matter being a question of tariffs, was beyond the competence of the Conference; and the other, that, in the absence of instructions, different Members did not feel justified in entertaining the proposition.

Dr. Dickson opposed the reception of the proposal on the ground of want of instructions. Mr. Stuart moved that the Conference, on account of its incompetence to entertain the proposal, should pass to the order of the day.

This was lost by 18-3; M. Kenn, the Dutch Diplomatic Delegate, and ourselves, voted for it. Several Members abstained.

After the strongly expressed opinion of several of the Delegates, some of whom suggested that the communication should be received, and allowed to stand over pending instructions from their respective Governments, Count Lallemand himself moved an amendment to that effect. This was carried by 20-4; M. Vetsers, the Austrian Diplomatic Delegate, and M. Keun, voted with us in the minority.

## [2nd Annexure to Minute No. 9.]

Report submitted to the International Sanitary Conference by a Committee composed of M. Segovia, President, and Doctors Gomez, Goodeve, Montan, Pelikan, Spadaro, and Van-Geuns, appointed to revise the questions in the 3rd group of the programme (preservation), and to propose the method to be followed in their consideration.

DR. E. PELIKAN, *Reporter.*

GENTLEMEN,—With the object of facilitating the consideration of the questions comprised in the 3rd group of the programme, you have charged us with their re-examination, in order to complete and modify them conformably to the researches and conclusions of the General Committee, as well as to classify them in such a way as to permit of their logical distribution between the Committees to be appointed by the Conference.

Before submitting our plan to you, we thought it would be useful to precede it with some remarks or explanations.

As for the classification of the questions, in grouping together in the first place, those that seemed to be intimately connected, we found ourselves under the necessity of giving them an order somewhat different from that of the general programme. This difference consists principally in this, that instead of dividing the measures into (a) preventive measures; and (b) restrictive measures—as is done in the programme—we propose another division, *viz.*, 1st, preservation, by local hygienic measures, including naval hygiene; 2nd, preservation by quarantine measures; and 3rd, preservation by special sanitary measures for the East. Now, any body may easily convince himself, by comparing our plan with that of the programme, that not a single question in the third group has been omitted in our classification. As for the lacunæ that may exist, we have tried to fill them up, at the same time, however, leaving to the Committees to be appointed the duty of completing them still further by more details.\*

The practical advantage of such a plan of labor is evident. It is clear that the Committees that are about to sit upon the third group will find in their respective programmes all such questions as are connected with each other, and those that are of the same nature will not remain scattered through the various sections, so that repetitions in the reports of the Committees will be obviated.

Instead of speaking merely of the sanitation of ports (Section II), we deemed that it would not be superfluous to add that of towns in general, and we have invited the attention of the future Committee, which will take up these questions, to filthy water, latrines, and sinks, as being of special importance in connection with the propagation of cholera, and which should be looked to before the appearance of the disease in any locality whatever.

\* After the number of each question we have placed, within parenthesis, the number attached to the same question in the programme. Such words and sentences as have been added are printed in italics.

The question of *naval hygiene* deserves, in our opinion, all the attention of the Conference. It comprises: (a), hygienic measures applicable to the departure of ships; (b), hygienic measures applicable during the voyage; and (c), hygienic measures applicable to the arrival of ships at their ports of destination. As a matter of course this does not comprise a complete exposition of generalities and details, which find their place in the manuals upon this subject: the Committee confines itself to requesting an indication of the practical measures that may, and ought to, contribute towards preservation from the importation of cholera.

Our Section III comprises Sections 5 and 18 of the programme. To render the first question clearer and less vague and indeterminate, we have added to it the words of *sanitary police* (not including quarantine measures). We have also added to this paragraph some details regarding the sanitary measures to be adopted in the event of cholera threatening to invade a place.

The 2nd Section is devoted to the questions touching quarantine measures; the first four questions are connected with quarantine measures in general, and the last eight with the application of those measures.

To these paragraphs we have added some details regarding the organisation of lazarettos; the question as to international lazarettos (Section VIII.), a question, we are convinced, of great importance and worthy of the most scrupulous examination on the part of the Conference; and regarding the *survey and search* of ships, considering that the rules now in force connected with this sanitary formality do not give sufficient guarantees against the importation of cholera into our countries.

In the 3rd Section, under the head of *preservation by special sanitary measures for the East*, we have enumerated, although in different order, the five questions of the programme properly connected with this subject, adding to them yet another question *as to the despatch of a commission of scientific research to study the origin of cholera in the places believed to be the birth-places of this disease*.

As the information as yet possessed by us upon this point is only too incomplete, it is evident that it is necessary to complete it by local study in the birth-places of the disease, and in accordance with a rigorous method of exploration. Let us hasten to say that our proposal has nothing whatever to do with the mode of organising this scientific commission, or with the plan of the labors to which it will have to devote itself. All these details may be agreed upon and even dictated in advance by the respective Governments of the countries which must be the theatre of these purely scientific studies. If the nature and extension of these important studies required it, we believe firmly that the necessary elements for their powerful and energetic realisation would

not be wanting, and that the Governments to which our proposition would apply would be the best disposed to co-operate in this fundamental work of efficacious and decisive preservation.

And now we show the order we have just proposed :

## I.

### PRESERVATION BY MEANS OF LOCAL HYGIENIC MEASURES.

Section I. (1).—Are there any preventive means permitting of the extinction of the original foci of cholera in India ?

Section II. (2).—Are there public or private measures of hygiene, measures of sanitation, applicable on a sufficiently large scale to admit of the destruction or sensible diminution of the predisposition to choleraic infection ? Sanitation of towns in general and of ports in particular. Town drainage : removal of filth and rubbish. Latrines and sinks. Modes of burial and sepulture of corpses. Naval hygiene.

Section III. (3 and 5).—What measures of sanitary police would it be advisable to take in the event of cholera threatening to invade a place, either by land or by sea ? Temporary interruption of communications with the infected places ; prohibition of emigration and fairs. Movements of troops. Rural emigration, dissemination, formation of camps. Public succour—separation of cholera patients in hospitals. Isolated cholera hospitals.

Section IV. (1 and 13).—Are there means of extinguishing foci formed by importation ? Disinfection of dwellings, of effects, of dejecta, of latrines, in connection with the destruction of these foci.

## II.

### PREVENTION BY MEANS OF QUARANTINE MEASURES.

Section V. (6).—What are the lessons taught by experience relative to the quarantine systems at present in force, in various countries ; against invasions of cholera ? Can we hope for greater success from quarantines established upon other basis ?

Section VI. (3).—Must we not start with this fundamental principle that the closer quarantine measures and other restrictive means are applied to the primitive focus, the more we may count upon their efficacy ?

Section VII. (20).—If we weigh, on the one hand, the disadvantages resulting to commerce from restrictive measures, and on the other, the disturbance caused to trade and commercial transactions by an invasion of cholera, to which side do we think the balance would incline ?

Section VIII. (8).—It is not necessary to choose for quarantine establishments certain fixed places, remote from centres of population and the ways of communication ? *International lazarettos.*

Section IX. (12).—What are, in the point of view of public hygiene, the guarantees to be required for lazarettos? *Site, construction, distribution, and system of lazarettos? Lazarettos of observation, Lazarettos for rigorous quarantine. Floating lazarettos. Temporary lazarettos.*

Section X. (4).—*Local isolation of original foci. Isolation of a country or locality by sanitary cordons.* What is the use of these cordons, and how should they be applied? *Land lazarettos, permanent and temporary.*

Section XI. (11).—Foul bill, suspicious bill, and clean bill of health in their application to cholera.

Section XII.—*Survey and search in a maritime sanitary aspect.*

Section XIII. (7).—Of the incubation of cholera in connection with the question of quarantine measures.

Section XIV. (10).—Ought the days spent on the voyage to be included as quarantine days, and if so in what cases?

Section XV. (9).—Difference to be established between the quarantine of observation and the rigorous quarantine; fix their duration.

Section XVI. (9 and 13).—What distinctions should be established, with respect to the quarantine of observation and the rigorous quarantine, between the crew, the passengers and their effects, the goods and the ships, accordingly as there have or have not been choleraic accidents on board? *Disinfection of ships and their effects.*

### III.

*Reservation by means of special sanitary measures for the East.*

Section XVII. (19 and 14).—Questions of posts of observation and of sanitary physicians, for instance at Jeddah, Yambo, Suez, Alexandria, in Persia, &c., Powers and duties of the sanitary physicians.

Section XVIII. (16 and 15).—*Sanitary police of the pilgrimages.* Is it not necessary to lay it down as a rule that pilgrims arriving from India, or from any other country where cholera prevails (*endemically or epidemically*) ought always to perform a quarantine of observation, and if necessary, a rigorous quarantine, in a place to be fixed upon the Arabian coast, before they should be allowed to swell the general gathering of the pilgrims at Mecca?

Section XIX. (17).—Is it necessary to apply quarantine measures to arrivals from the East Indies in general; in what circumstances and to what extent?

Section XX.—*Commission of scientific enquiry as to the origin and generation of cholera in the places believed to be the birth-places of the disease.*

Such is the order deemed by us to be the most suitable for the consideration of the questions in the 3rd group of the programme, which the Conference can confide to three Committees, according to the triple division established in our plan.

A. M. SEGOVIA, *President.*

DR. GOMEZ.

„ MONLAU.

„ SPADARO.

„ VAN-GEUNS.

„ E. PELIKAN, *Reporter.*

Dr. Goodeve signed with the following reservation:

“Before signing the report of the Committee, I think I should state that I cannot concur in that part of the plan which proposes the despatch of a scientific Commission to make a local study of cholera in the places where it is believed to have its origin. Although the case was not provided for in my instructions, I cannot believe that my Government would consent to the despatch of an official Commission to India. I am convinced, however, that if the Conference really wishes to indicate the researches and the information it may regard as useful in clearing up the important questions of the origin and generation of the disease, my Government will not fail to pay attention to its wishes by every means in its power. For the rest, the very nature of such an enquiry would require years, perhaps, before conclusions could be arrived at possessed of any scientific value, and having regard to the state of things in India, the Government alone is capable of undertaking such an enquiry with any chance of success.

E. GOODEVE.”

*Proposition made by the Delegates of the French Government at its 10th sitting.*

*Pera, the 31st May 1866.*

GENTLEMEN,—We, the undersigned Delegates of the Government of His Imperial Majesty the Emperor of the French, have the honor to call the attention of the Conference upon a question which has not been mooted in their programme, and which, though not exactly connected with their enquiry, is yet not unworthy of interest for the public health, and, under those circumstances, could not be well laid aside.



We wish to speak of the tariff for sanitary duties collected in the Ottoman ports for the purpose of recovering the expenses incurred on account of Sanitation Service.

This tariff such as it is, though still levied, is out of date, and does not answer the object intended. Established originally either before, or prior to, the introduction of the Sanitation Service in the ports of that Empire, that is to say, at a period when quarantine had been fully established, or nearly so; and, in consequence the chief source of its profits. There is now no occasion for it as quarantines are seldom used; and if used, for many years the profits accruing therefrom do not amount to more than one-fifth of the income of former years.

This state of things is not only to be deplored as unjust towards the Ottoman Government, who have often complained, but it is unfortunate for the Service, and would become much more so if allowed to continue; as it would not be a matter to marvel at, if the Government took little or no interest in the matter, considering that they are expected to defray almost all the expenses, whilst they should only bear a portion of them, it is deemed, under these circumstances, that a special Service like that of Health, to be carried out with any certainty, must reckon upon its own special resources.

Ten years have already elapsed when the Sublime Porte made an attempt to effect a reformation in the Sanitary Tariff. This attempt failed; owing to reasons unknown to us; but last year a Commission of seven Members of the Superior Board of Health, after carefully studying the subject, put forth a new project of reform, based upon the wants of a middling year of Service, reckoning upon probable collections, conformably, in consequence, to the principles enunciated by the Sanitary Conference of Paris of 1851; and by virtue of which, sanitary levies should not constitute a tax, but merely a reimbursement of expenses.

This proposal, which will be found narrated, in the Report here subjoined, bearing date the 18th February 1865, has been communicated to the different maritime Governments, who have not as yet, we believe, agreed to its terms.

The Government of the Emperor, after having maturely deliberated thereon, has authorized us to declare that he does not object that the proposal in question should be taken into consideration, and adopted as the basis of a reform of which he admits the need of.

Without raising any positive objections against the tariff of the 26th paragraph (14 centimes) per ton, which is proposed as equitable, he recommends that the sanitary duties should be made as light as possible in reference to navigation.

We are authorized, in other respects, to move the Conference on that subject, and to beg of it to state its sentiments thereon, and to express an opinion in any manner which will be deemed by that body as the most useful and just. We hope that that opinion, owing to the

respect paid to the deliberations of that Assembly, will exercise a wholesome influence upon the conclusions to be arrived at on a question which is not unworthy of notice.

We beg of you, then, gentlemen, to take into consideration our proposition, and to nominate a Committee for the purpose of enquiring into its merits, and to furnish you with their Report. You will authorize this Commission to adopt, as its basis, the examination of the proceedings and proposals of the Superior Board of Health alluded to in the Report, herewith subjoined, bearing date the 18th of February 1865. We think it advisable that the Commission should embrace amongst its Members one or two Members belonging to the Superior Board as they took part in the discussion of the proposition referred to by us.

A. DE LALLEMAND.

DR. FAUVEL.

No. 23, dated 5th June, 1861,

*From*—MESSRS. W. STUART, E. GOODEVE, and E. D. DICKSON,

*To*—The EARL OF CLARENDON, &c. &c.

In continuation of our despatch No. 22, we have the honor to inform your Lordship that at the meeting of the Conference of the 4th instant, M. Krause, the Prussian Political Delegate communicated a telegram received from the Prussian Consul at Alexandria. It was as follows:—

“ALEXANDRIE, MAI 31.

Le trente et aujourd'hui 2 navvies le sont arrivés à Suez de Damedas (Jeddah?) avec pe'lerins, patente déclarant épidémie non désignée régné à Jeddah. Sont en quarantaine du 26-29, 106 décès. A Suez deux cas de fievres pernicieuses dont un mortel. Hier ici un décès Choléra Sporadique. Intendance donne pratique nette.”

Dr. Bartoletti read telegrams announcing that within the last few days, Cholera had appeared at Tiberias. M. Krause's telegram was not very definite, but it gave rise to much discussion as to what should be the duty of the Conference on the occasion especially as a large number of Egyptian troops has just arrived from Alexandria at Constantinople, and as many more are expected from the same place.

We were of opinion that the matter should remain in the hands of the Ottoman Board of Health. It was however decided by a large majority of the Conference to express the hope that the above mentioned Board would ascertain immediately the real state of health in Egypt, and that in the mean time it would direct all arrivals from

Egypt to be subjected to the rules of the foul bill of health, the troops already arrived to be carefully inspected, and those coming from Egypt to be examined at the Dardanelles. The Conference also decided to request H. E. Salih Effendi to be good enough to proceed at once to inform the Grand Vizier and Minister of Foreign Affairs of the resolutions of the meeting.

Having expressed our opinions that the matter should be left to the Ottoman Board of Health, we abstained from taking further part in the discussion or votes.

The Conference took no steps with regard to the Cholera at Tiberias. After the foregoing had been disposed of, the Turkish delegates received a telegraphic message in Arabic from Egypt which, as far as it could be translated at the meeting, seemed to corroborate Mr. Krause's information.

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Dated 30th June, 1866.

*From*—E. HAMMOND, Esq.,

*To*—*The Under Secretary of State for India.*

I am directed by the Earl of Clarendon to transmit to you, to be laid before Earl de Grey and Ripon, copies of a Despatch from the British Cholera Commissioners and of the printed papers therein referred to, reporting the further proceedings of the Cholera Conference.

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No. 26, dated 18th June, 1866.

*From*—E. D. DICKSON, Esq.,

*To*—*The EARL OF CLARENDON, K. G.*

We have the honor to enclose three copies of protocols of the 8th and 9th meetings of the Conference.

We beg to inform your Lordship that since our last report, the Conference met on the 7th, 9th, 11th, 14th and 16th instant, and was chiefly occupied with discussions on matters of the 1st and 2nd groups of the general Report. Modifications were made in the 2nd Chapter at page 6., by which Persia and the Dutch possessions in the Indian Archipelago were removed from the doubtful class; as it was held that there were sufficient grounds to consider those countries free from endemic choleraic disease. However, as it was proved that Persia was very liable to Cholera in an epidemic form, the exemption was accompanied with the insertion of a special paragraph showing the degree of its liability to the disease.

A long discussion took place on the 4th chapter relating to the Hedjaz. Additional attempts were made to show that cholera was always imported there from India; and more especially with reference to the outbreak of last year. Doctor Dickson replied on the evidence brought forward in order to show that the alleged proofs were not conclusive. The original conclusion however of the "Commission Pleniére" was carried by a majority of 18 votes for, 8 against, and 1 abstention.

All the remaining chapters of the first group were passed without modification.

At the meeting of the 7th instant, three Committees were formed to draw up answers to the questions of 3rd group; and they were instructed to report direct to the Conference. They are composed as follows:—

*1st Committee.*—M. Segovia (as President) M. Kean; Malcolm Khan; M. Vetzera; Dr. Gomez; Dr. Goodeve; Dr. Lentz; Dr. Millingen; Dr. Mutliez; Dr. Spadaro, and Dr. Morlan as "Rapporteur."

*2nd Committee.*—Salit Efendy (as President) M. Stenersen (as vice President) Comte de Naidans, Chevalier de Soveral, Dr. Dickson, D. Hübscho, Dr. Maccas, Dr. Pelikan, Dr. Salvatori, Dr. Sawas, Dr. Bartoletti (as Rapporteur).

*3rd Committee.*—Comte Lallemand (as President) M. Kalergi; M. de Krause; M. Vomoni, Dr. Bosi, Dr. Bykon, Dr. Polak, Salem Bey, Dr. Sotto, Dr. Van Genus and Dr. Fauvel (as Rapporteur).

In our Despatch No. 23, dated 5th June, we reported to your Lordship, that on the 4th instant, the Conference had expressed a wish respecting the immediate application of quarantine measures against arrivals from Egypt. Hence a portion of the time of most of its subsequent meetings has been devoted to hearing and discussing telegrams, and reports arrived from that country, referring to the state of its public health and that of the countries bordering on the Red Sea.

At the sitting of the 7th instant, it was announced that the Ottoman Board of Health had carried out the measure recommended by the Conference, and that the Superintendent of Quarantine having afterwards learned that the state of health in Egypt was quite satisfactory, had considered himself justified in suppressing this measure. The Conference however expressed itself as far from satisfied with the news received from Egypt, and requested the Board to re-establish the quarantine without regard to the nature of the Bill of the Health issued at Alexandria. The Board has in consequence applied fifteen days' quarantine upon all arrivals from Egypt.

At the meeting of the 16th instant the telegraphic reports communicated to the Conference by Dr. Bartoletti and Salem Bey, were very satisfactory, both as regards Egypt, and the ports of the Red Sea. The Conference did not pronounce, however, any further opinion as to measures.

In conformity with the principle which we had established, of not interfering in questions connected with the duties of the Ottoman Board of Health, we abstained from taking any part in these discussions.

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No. 8.

INTERNATIONAL SANITARY CONFERENCE.

*Meeting of the 3rd May 1866.*

COUNT DE LALLEMAND, *Presiding.*

The International Sanitary Conference held its eighth meeting at Galata-Serai, at half-past one in the afternoon of the 3rd May 1866.

PRESENT:

*For Austria:*

M. Vetsera, Councillor to the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

Dr. Polak, formerly Chief Physician to his Majesty the Shah of Persia, (setting for the first time.)

*For Belgium:*

Count de Noidans, Secretary to the Legation of His Majesty the King of the Belgians.

*For Denmark:*

Chevalier de Dumreicher, Consul-General and diplomatic agent at Alexandria, (sitting for the first time.)

*For Spain:*

Don Antonio Maria Segovia, Consul-General, Chargè d' Affaires.  
Dr. Monlan, Member of the Superior Spanish Council of Health.

*For the Papal States:*

Monseigneur Brunoni, Vicar-Apostolic, } Sitting for the first time.  
Dr. Ignace Spádaro, }

*For France:*

Count de Lallemand, Minister-Plenipotentiary.  
Dr. Fauvel, Sanitary Physician.

*For Great Britain:*

The Hon. W. Stuart, Secretary to Her Britannic Majesty's Embassy.

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

*For Greece.*

M. Kalergi, Secretary to the Legation of His Hellenic Majesty.

*For Italy :*

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

*For the Netherlands ;*

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Professor Van-Geuns.

*For Persia :*

Mirza Malkom-Khan, Aide-de-Camp-General to His Majesty the Shah, Councillor to his Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

*For Portugal :*

Chevalier Edward Pinto de Soveral, Charge d'Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

*For Prussia :*

M. H. de Krause, Secretary to the Legation of His Majesty the King of Prussia.

Dr. Mühlig, Physician to the Legation, Chief Physician to the Ottoman Marine Hospital.

*For Russia :*

Dr. Pelikan, Councillor of State, Director of the Russian Civil Medical Department.

Dr. Lenz, Councillor of College, Attache in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, Assistant Military-Medical Inspector of the Arrondissement of Wilna.

*For Sweden and Norway:*

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to His Legation.

Dr. Baron Hubsch.

*For Turkey:*

Dr. Bartoletti, Inspector General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

*For Egypt.*

Dr. Salem Bey, Clerical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-mother of His Highness the Viceroy of Egypt.

On the motion of Dr. Bartoletti, the Conference elected Count de Lallemand to fill the presidential chair, it being probable, Dr. Bartoletti said, that His Excellency Salih Effendi would not attend the meeting on account of a fire which had broken out near his house.

Count de Lallemand, after thanking the Conference, asked Baron de Collongue, one of the Secretaries, to read the minutes of the meeting of the 8th March.

The minutes of the seventh meeting were adopted.

After the adoption of the minutes, several delegates asked to be allowed to speak as certain passages in Minutes Nos. 3, 5, and 6 required correction.

M. Fauvel spoke first. He called the attention of the Conference to the 5th minute, with regard to which he made the following remarks:—

“The Conference will remember, said M. Fauvel, that a portion of the 5th minute was not read because it reproduced Mr. Sawas' speech, as handed by him to the Secretary in manuscript. In looking over the said minute after it was printed, I was very much astonished to find in it a passage which M. Sawas had promised, in consequence of my observations, to suppress, and, what is more, to find in another place in the same speech an entire passage which he had never spoken. I am far from suspecting M. Sawas of any bad intention, and I believe simply that there was a mistake in the insertion of these passages.

“I therefore desire the suppression, conformably to the decision of the Conference to which M. Sawas himself submitted, of the entire passage contained in the 15th page of the 5th minute, where M. Sawas has inserted words not uttered in the speech made by him.”

M. Fauvel said he alluded to the following paragraph, which he read, in the beginning of M. Sawas' speech:—“We have rejected every”

"other means that could be proposed, and this was done to prove that every thing had been studied. In other words, he declares that his project was not presented to be discussed, that its authors had already come to the decision to reject every possible amendment or modification, that it was a project to be taken or left exactly as it stood."

M. Fauvel continued that in the second part of M. Sawas' speech, which was not written, and not reduced to writing till after its delivery, instead of replying to his (M. Fauvel's) remarks touching the ignorance of the Persian delegates as to the route followed by the pilgrims, not only did M. Sawas not allude to them at all, but in the passage, as printed, he would have them believe that he (M. Fauvel) was the person who was ignorant of the real route of the pilgrims. In fact this was what was read at page 34. "To attempt to dispute the regular march of the caravan is to seek to deny the least contestable and the most generally known facts. For our part, we were struck with the most utter astonishment when we heard M. Fauvel sneer at our ignorance of geography, and maintain that the pilgrims, rather than go to Medina, would make anxious efforts to reach Yambo in order to embark there. Our astonishment was all the greater, because M. Fauvel has studied the question for four months, and he could not be permitted to plead ignorance of the normal and invariable route of the caravan."

M. Fauvel protested against this passage, which was not contained in M. Sawas' speech, for it was evident that, if it had been pronounced and he had heard it, it would not have been left unanswered. Could M. Sawas have forgotten that it was he (M. Fauvel) who had traced out for him the true route followed by the pilgrims? How then could he have attributed to him ignorance of a fact which he had been the first to point out?

"And if now," concluded M. Fauvel, "M. Sawas maintains that he did really speak this part of the discourse, I protest none the less against the gratuitous error he attributes to me."

In reply to M. Fauvel, M. Sawas said that the passage against which M. Fauvel had protested, and which he had agreed to strike out, was not the passage in p. 15, against which M. Fauvel now complained. That passage no longer existed in the speech, for he had suppressed it. It related to what M. Fauvel had said, or, to speak more properly, what he (M. Sawas) thought he had said with regard to those who did not believe in the transmissibility of cholera. In the beginning of his speech he (M. Sawas) had said: "According to M. Fauvel, those who do not believe in the transmissibility of cholera are men who have not finished their scientific education." M. Fauvel having declared during the course of the same meeting that he had never said anything of the kind, M. Sawas had suppressed the passage in his manuscript, and it certainly did not appear in the minutes.



As for the second passage, against which M. Fauvel now protested and complained, he could assure M. Fauvel that he had spoken it, and that nobody, not even M. Fauvel, had thought of opposing him. That remark must have been made by him for it touched upon an essential part of his demonstration, and that resulted from his notes. It was important for him to demonstrate that the pilgrims, after having visited Mecca, were bound to proceed to Medina, where they had to visit many holy tombs.

M. Fauvel, continued M. Sawas, was wrong in believing that he had no desire to touch upon the question regarding the route of the caravan. On the contrary, his wish was to show him that he was not ignorant of the real route, as M. Fauvel had pretended, and, with this object in view, he had urged, contrary to the belief held by M. Fauvel, that *religious motives* prevented the pilgrims from pursuing the route traced by M. Fauvel, who thought that the pilgrims, after having left Mecca and arrived at Bader, would be obliged to proceed direct to Yambo, not being able, on account of the mountain-range, to proceed to Medina. On this occasion he said that M. Fauvel was ignorant of the religious reasons which obliged the pilgrims to go to Medina after having visited Mecca.

It appeared from all this, added M. Sawas, that the passage attacked could not but have been read: it could not have been inserted after he had read his speech, for it was too essential to his argument.

He thanked the honorable the French Delegate for thinking that there could have been no bad intentions on his part. Perhaps the passage in question had escaped him (M. Fauvel), for he had spoken it, and, if need were, he was ready to put in his manuscript.

M. Fauvel, after having insisted on the necessity of only printing such discourses in the minutes as were read in their entirety and adopted by the Conference, added that it was incumbent on the Secretaries as their duty to convince themselves that the sense of the speeches handed to them was not changed, and that they were printed as heard and adopted by the Conference.

Count de Lallemand reminded the Conference that, if some passages of the minutes of the 5th meeting were erroneous, the Secretary was not in fault, owing to his having been dispensed from reading the speech which had been handed to him by M. Sawas in writing, and that he had had it printed as received. Dr. Dickson desired that before the minutes were printed off, every speaker should have the right of rectifying the part belonging to him.

It was pointed out to him that the minutes could not be amended after adoption. Every speaker had the right of correcting the passages in which he was concerned while they were being read before the Conference.

On the motion of Count de Lallemand, the Conference decided that in future not only would the text of the minutes be read, in so far as concerned what was said on the spur of the moment, but also all motions and discourses handed in in writing.

With reference to the minutes of Meeting No. 5, Dr. Goodeve requested the amendment of a passage at p. 43, which did not exactly convey his meaning: every thing he had learnt supported what had been urged by M.M. Bartoletti and Sawas.

But in commencing a new sentence, he had spoken of the pilgrims from India to demonstrate that, by the proposed measure, ships would suddenly be compelled to put out to sea, abandoning their passengers and their commercial operations. At the same time he had pointed out the severity of the measure touching this great fleet of 40 or 50 sail, which would perhaps require a great depth of water, and which, on account of this measure, would be obliged to undertake a tedious and very dangerous navigation in the Red Sea, seeking for a port, with the capacity of which to receive and shelter it, it was unacquainted.

M. de Krause pointed out a chronological error which had crept into the minutes of the 6th meeting, and which, he might say, he had drawn attention to immediately after the reading of those minutes.

The discussion of the last and not of the second article of M. Mühlig's amendment did not take place until after the termination of the discussion and the division upon Article 8 of the French project. Consequently, continued M. de Krause, the sentence "*its suppression was accepted*" (p. 16) ought to be placed immediately after the words "*requested the suppression of the Article.*"

Moreover, continued M. de Krause, at p. 15 there was a typographical error which essentially altered the sense of his (M. de Krause's) words. In place of "*the question was not to preserve Suez, but all Egypt from a fresh invasion of cholera,*" the sentence should be read thus: "*the question was not to preserve Suez, but all Europe,*" &c.

Finally, added M. de Krause, a transposition of names completely distorted the views of the Prussian Delegates with respect to the French proposition.

At p. 11 it was said: "The second Article was adopted by 15 votes, *all the Delegates* above mentioned voting, with the exception of Messieurs, de Krause and Mühlig."

Instead of de Krause and Mühlig, the names of Salih Effendi and M. Bartoletti should have been inserted.

M. Bartoletti said he had voted in that sense.

M. Segovia pointed out a geographical error: at page 14 of the minutes of the sixth meeting he had been made to say that Aden was a volcanic island. Having been twice to Aden, no body was better qualified than himself to know that Aden was not an island—at the most, he could be made to say that it was *of volcanic formation.*

M. Lenz said that when the minutes of the sixth meeting were being read, he had not remarked that the Russian Delegates accepted Salih Effendi's declaration (p. 4, protocol No. 6). If the Russian

Delegates had pronounced in favor of the declaration of the Delegates of the Sublime Port, they had done so because they had not quite caught the meaning of what was said. But as soon as they became aware of it, they pointed out that between Salih Effendi's declaration and the proposition they meant to frame, there was a great difference. The precise meaning of his (Mr. Lenz's) declaration was this:

"The Delegates of the Russian Government declared that, not having concurred in the principle of the French proposition, they would abstain from discussing and voting upon the supplementary articles of that proposition."

Mr. Stuart observed that that was also the idea of the British Delegates. He, therefore, would like to see a correction made in a passage in p. 16 of the protocol, in which it was said that he and his colleagues had abstained from joining in the vote: it should read: "*the British Delegates refrained from taking part in the discussion and in the vote upon the secondary provisions of the French project.*"

M. Bartoletti observed that what he had said after M. Monlau's remarks (minute No. 6, p. 10) was not sufficiently clearly rendered. He had meant to say that if the Ottoman Government consented to adopt the French proposition, the Conference ought to leave to the same Government the choice, free and unlimited, of the means to be employed in its execution.

M. Naranzi, one of the Secretaries, pointed out another error which had crept into minute No. 6.

The names of professors Maccas and Van-Geuns wrongly appeared among the names of the members present. They did not take their seats among the other Delegates until the next meeting.

Mirza Malkom Khan desired to make some remarks with reference to minute No. 3.

"I was very much astonished," he said, "to find that my speech did not appear in it; and I am not aware that the Conference decided on suppressing it. I recollect only that I at once begged the Secretary to insert it in the minutes *in extenso*, and I did so because I had been interrupted in reading it to the Conference."

"As this sort of thing may occur again," continued Mirza Malkom Khan, "I wish to know whether the Secretaries have the right of suppressing the speeches of the Delegates *ad libitum*. If not, I desire that the Conference may lay down, once for all, that every speech, read or delivered extempore, must appear in the minutes."

Baron de Collongue, one of the Secretaries, explained that he had given a summary, and a very complete summary, of Mirza Malkom Khan's speech in minute No. 3. The reason which had prevented him from inserting it *in extenso* was that it had to be printed separately as an annexure to the minutes of the 3rd meeting.

Count de Lallemand spoke to the same effect.

On the motion of MM. de Krause and Fauvel, who pointed out to the Persian Delegate that the Conference had conferred upon the secretaries the power of abridging the speeches, and, if they were too long, of inserting only a substantially complete abstract of them, it was decided by the Conference (by 16 against 11) that the secretaries should remain judges as to the space to be given in the minutes to speeches read, or delivered extempore, before the Conference—though at the same time the conclusions were to be given *in extenso* (this was decided on the motion of M. Dumreicher).

“Such being the decision of the Conference,” said Mirza Malkom Khan, “I lay my printed speech upon the table, and beg the Secretaries to be good enough to distribute it during the course of the meeting.”

M. Sotto expressed a wish to communicate to the Hon'ble Conference a very interesting report received from Alexandria by M. Vetsera, regarding the sanitary state of the arrivals from Jeddah during the last two months, signed by Ahmed Effendi Hachem.

M. Sotto communicated the following particulars extracted from the report :

Between the 9th and the 18th March last, 33 ships arrived at Jeddah with 3,772 pilgrims, and crews amounting to 931 men.

Ahmed Effendi was informed by an English captain that 14 persons who had been suffering from diarrœa had died on board an English steamer from Bengal, and that there had been five fatal cases on board a Turkish vessel. On board these ships, continued M. Sotto, 21 individuals altogether had fallen ill, 19 of the cases terminating fatally.

Between the 19th and the 27th of March, added M. Sotto, there landed at Jeddah 3,366 pilgrims who had taken passage on steamers and on some sailing vessels, amounting in all to the number of 27, the crews of which consisted of 716 men. There had been 11 deaths on board a Turkish steamer which had come from Yemen, and two persons had died of *spasm* on board two other steamers.

The Egyptian Government, continued M. Sotto, established two quarantines—one near Suez, almost at Moses' Wells, and the other at El-Wesch.

The Austrian consul-general sent a medical gentleman, Dr. Reil, to Suez, to keep him informed of everything occurring. Between the 28th March and the 2nd April, wrote Dr. Reil, 38 vessels arrived from India, 13 under the British and 15 under the Ottoman flag, carrying altogether 5,227 pilgrims.

On board these vessels, said Dr. Sotto, there had been 26 deaths in 32 cases of sickness, the nature of which was not stated. In the report received by M. Vetsera, it was said that up to the date of its despatch no sort of uneasiness was felt regarding the pilgrims at Mecca.

M. Bartoletti begged M. Sotto to tell him whether all the Turkish vessels came from India, and whether it was definitively known that their number amounted to 15.

M. Sotto replied that there were really 15 vessels under the Turkish flag and 13 English vessels, and that 14 of the Turkish vessels had come from India, one steamer only coming from Hodeyda in the Red Sea.

M. Vernoni also mentioned a report which had been sent to him by the Italian consul-general at Alexandria, and which in every respect confirmed the particulars which had just been communicated to the Conference by the Austrian Delegate.

Moreover, added M. Vernoni, it was stated in the same report that the President of the Sanitary Intendancy of Alexandria had called a meeting of the Powers to make to them the following communication.

Supposing cholera should manifest itself in the Hedjaz before the adoption, by the Conference sitting at Constantinople, of the necessary measures to be carried out in good time, in what manner should the Egyptian sanitary authorities act with regard to the pilgrims?

Colucci submitted a number of questions in connection with this point for solution by the Board of Health.

Salem Bey informed the honorable Conference that he had already placed the Egyptian Sanitary Intendancy in possession of the debates and the urgent measures adopted by the Conference, and that, moreover, he made it a point to transmit to it the minutes of the meetings of the Conference. He added, however, that he was not aware whether those measures had been carried into execution.

Dr. Vernoni would then ask how it was that on the 14th of April the Sanitary Intendancy of Alexandria was not acquainted with the deliberations of the Conference and the urgent measures adopted by it? The assertion made by Dr. Salem Bey, the Egyptian Delegate, was very categorical. He had assured the Conference that he had immediately communicated to his Government the measures adopted by the Conference with a view to the possibility of another epidemic.

M. Vetsera informed the honorable Conference that the Egyptian Government was quite aware on the 23rd of April of the urgent measures adopted by the Conference. The Austrian consul, added Mr. Vetsera, had informed him of the fact, in pointing out to him that the instructions given by the Sublime Porte to the Egyptian Government were based upon the urgent measures laid down by the Conference.

Dr. Dickson said he also was ready to furnish some particulars in connection with this subject. In a report addressed by Colucci Bey to the Sanitary Intendancy of Constantinople, it was stated as follows:

“Dr. Hassan Effendi Hachem, a medical officer of the Egyptian Government, attached to the Hedjaz Commission, has been placed at Jeddah to watch the arrivals.

"From the 9th to the 27th March, 60 ships arrived at Jeddah from Suez, Bombay, Souakim, Yambo, Massowah, Aden, Hodeyda, Mocha, Muscat, Gunfoudah, Calcutta, and other places; they carried altogether 7,135 passengers, and were manned by 1,647 sailors, making a total of 8,782 persons. There were 34 cases of sickness at sea and 24 deaths, but no contagious disease.

"Dr. Hassan Effendi Hachem carefully inspected all the pilgrims landed at Jeddah for the purpose of proceeding thence to Mecca, and he reported them all to be in perfectly good health. He was careful at the same time to point out that the public health at Jeddah was excellent."

M. Bosi urged the importance of the communications made by Messieurs Sotto and Dickson, and insisted upon the conformity between the particulars furnished to the Austrian Delegate by the Austrian consul at Alexandria and the details taken from a report of the Italian consul at Alexandria.

The communication made by the Austrian Delegate surpassed that of Dr. Dickson in detail and precision. In fact, the details given by Dr. Dickson only referred to the Ottoman pilgrims arriving at Jeddah, either from the Egyptian or Arabian coast or from India; but Dr. Dickson had said nothing as to the hygienic condition of the pilgrims. Had there been any deaths or cases of sickness among them, or among the men composing the crews of the vessel carrying them? Nothing was known of the matter; but very fortunately the omission was supplied by the reports of the Austrian and Italian consuls at Alexandria, thanks to which they were informed as to the number of cases of sickness and the nature of the diseases. But the most significant fact was that regarding the English vessels from Bengal, which had touched at Calcutta, and on board which there had been 14 cases of diarrhoea and five of fever. Every man suffering from diarrhoea died.

M. Bosi finally reverted to the proceedings of Colucci Bey, in connection with the Board of Health, over which he presided, and the questions he had put to it. How could this fact be reconciled, with the measures adopted by the Conference since the month of March?

The solemn declaration made to the Austrian Delegate by the Austrian consul at Alexandria might, however, reassure them, for it informed them by the report, dated the 23rd April, that the Egyptian Government was aware of them, and had communicated the measures in question, or, properly speaking, the instructions received by the Imperial Government, to the Sanitary Intendancy of Alexandria.

M. de Krause said he had noted, as well as M. Vernoni and Professor Bosi, the words of the Austrian Delegate, words which, to his mind, had an extensive bearing, and were so important that it became necessary to know whether the Ottoman Delegates confirmed the fact. The Conference had already given its opinion regarding what was to

be done in anticipation of another fresh epidemic in the Hedjaz, so that it could not refer to it to reply to the questions put by Colucci Bey, supposing the Ottoman Government not to have given instructions to the Egyptian Administration in conformity with the measures it had adopted.

Consequently he begged the Delegate of the Sublime Porte to be so good as to say whether the Ottoman Government had made any provisions for the application of the urgent measures.

Mr. Bartoletti replied that he was not sufficiently well informed on the subject to be in a position to give a satisfactory answer to M. de Krause's question. However, he remarked that, as the fact alleged by the Austrian Delegate emanated from an official source, there was every reason to believe that, down to the 22nd April, the Egyptian Government had received from the Sublime Porte instructions based upon the measures adopted by the Conference. M. Bartoletti declared that the assurances given regarding the excellent sanitary condition of Jeddah were calculated to re-assure rather than to alarm.

Salem Bey replied to M. de Krause that the International Sanitary Conference, whose mission consisted in the consideration of questions connected with cholera, and in proposing such means as it thought capable of preserving Europe from future invasions, could only give advice, which the Ottoman Government, like any other Government might accept or reject. But to attempt to make the Ottoman Government state whether it had or had not put into execution the measures proposed by the Conference, or how it had applied or meant to apply them, was an attempt to make the Conference depart altogether from its role and its attributes.

He was of opinion that M. de Krause's proposal to convene an extraordinary meeting of the Conference in the event of cholera breaking out in Egypt would be of no use whatever, considering that the Egyptian Government had already taken and still continued to take all the necessary measures for the preservation of the country from another invasion, or to arrest the progress of the disease if an epidemic should unfortunately happen to break out.

M. de Dumreicher desired to make a motion. This motion, which, at the request of the mover, was reproduced textually, was contained in the following note:—

GENTLEMEN,—The undersigned, the Delegate of His Majesty the King of Denmark, has the honor to submit some considerations to his honorable colleagues with the object of proposing the postponement of the general discussion until after all the questions contained in the programme have been solved, and also to cause the adoption of a slight modification in the economy of these questions with a view to obtaining a decision more in conformity with the mission and character of the Conference.

Our mission comprises in fact a double object. We have in the first place to study the nature of cholera, to seek out the means best adapted to opposing it and preventing its invasions. We have next to discuss the measures that may be proposed in the point of view of practice and execution.

The first part of our task is altogether medical and sanitary; the second is practical and international. In the one medical considerations alone should predominate; in the other it is specially incumbent on the non-medical members of the Conference to consider the measures proposed with reference to their practical application.

If this two-fold object of our mission had not been already indicated by the nature of the things we have to discuss, it would be so still both by the designation that has been given to the Conference and by the quality and various specialities of the Delegates, by whom each Government is represented.

If the only matter in question were to obtain the opinion of science, it would evidently have sufficed to address the learned bodies and academies of Europe—if necessary, even a meeting would have been called of physicians from every country, so as to have a decisive verdict. But it may be said without giving rise to contradiction, that the intention of our Governments was not simply that of calling together a medical congress, and that if some non-medical delegates have been appointed to represent them, it is because they have to discuss the timeliness and the convenience of the measures proposed, and to consider how far they can be adopted, and thus furnish matter for an international act.

The two first parts of our programme contain only purely medical questions, and it would be the same with regard to the third, were it not for the last question which raises considerations of another kind, and which, by itself, deserves a special report. It would be useful, therefore, to place this question in the 4th group, and at the same time to decide on not commencing the general discussion until after the submission of the reports upon all parts of the programme.

This division is not only more conformable to the nature and intention of our orders, but it is also more practical and more to be recommended even in the interests of a useful result to our labors by permitting us to work, without afterthought, at furnishing at least the elements of the solution we seek. We shall arrive at this solution with all the greater certainty in proportion to the care we take to separate the sanitary from the international aspect of our mission.

The medical questions should be discussed by themselves without being in any way influenced by considerations regarding the greater or less convenience of the measures which may result from them. None of us should be placed under the necessity of opposing a sanitary measure or principle, by having the anticipation of its logical conse-



quences being thrust upon us, or by considerations of a totally different kind, which may be brought to bear against its adoption, on practical grounds.

More than one among us must have asked himself the question whether, with the divergence of opinions which must of necessity prevail in such a numerous assembly, it can be hoped that the Conference will arrive at any practical result. Without desiring to deduce prognostics from this which can easily be contradicted by the facts, an argument the more may be found in it in favor of the division urged.

Any way, whatever may be the opinion held upon this head, there can be but one in admitting that we owe it to the high and generous sentiment which presided at the assemblage of this Conference, to do all in our power to afford the most complete solution to the questions put to us.

Let us then allow every latitude, entire liberty, to the medical part of our Conference to form its verdict and lay down its conclusion. And let it be left to each of us to consider afterwards how far they may be accepted or recommended for execution. This mode of procedure will, moreover, have the incontestable advantage of permitting us to submit the various reports to our respective Governments as they are produced, and consequently to place each of us in a position, enabling us to give our opinion with a full knowledge of the subject when the general discussion takes place.

In conclusion, the proposition which the undersigned has the honor to make is framed as follows:—

*1st.*—The last question of the 3rd group commencing with the words, "If, on the one hand, we weigh the inconveniences resulting, &c.," should be placed in the 4th group.

*2nd.*—A special report should be made upon each of the last two groups of questions by Committees appointed *ad hoc*.

*3rd.*—The general discussion upon the various reports and their conclusions should not be commenced until after the submission of all the reports to the Conference.

A. T. DE DUMREICHER,

*Delegate of H. M. the King of Denmark.*

M. Fauvel, with reference to the preceding note, made the following remarks:—

"I have tried to catch the full meaning of M. de Dumreiche's proposition, but I have not succeeded in doing so completely. As I understand it, the chief thing resulting from it is in a sort of way

“ to cancel all that we have done down to this moment, in a word, to recommence our labors in order to give them a direction in conformity with that which has just been proposed. Nor do I comprehend what Mr. Dumreicher means by general discussion, and I fear that his proposition, which might have been excellent at the beginning of the sittings, is not at all *apropos* just now. Strictly speaking, it may be accepted for what remains to be done, except in regard to judging of its timeliness. Be this as it may, concluded M. Fauvel, the meaning of its author cannot easily be apprehended, and I beg M. Dumreicher will be good enough to put it forward in a less obscure manner.”

M. Dumreicher replied that his intention was not to re-do what had been done, and still less to consider it as nothing. His proposition only bore upon what remained to be done, and especially upon the last question of the 3rd group, which question, in his opinion, should be transposed to the 4th group. As for the general discussion, added M. Dumreicher, he meant the discussion which would be entered upon by the Conference, and which would have for its points of departure the reports of the Sub-Committees of the General Committee, and especially the conclusions of those reports.

Dr. Goodeve spoke against the motion of M. Dumreicher. Who, he asked, maintained that the last two questions were not within the competence of medical men? The question in hand was to recommend measures capable of protecting people from choleraic invasions: who then, he would ask, better than physicians, could suggest, advise, and frame sanitary measures of sufficient efficacy to attain that object? Dr. Goodeve thought that M. Dumreicher gave to physicians a much more limited rôle than properly belonged to them.

Count de Lallemand and M. Stenersen were of opinion that the time had not yet come for the discussion of considerations of this nature. They thought that, when the Conference had come to the third and fourth groups, every-body would be at liberty to express his ideas regarding the progress and the track to pursue in the consideration of the questions comprised in those two groups.

Count de Lallemand put this question :—

Does the Conference wish to take M. Dumreicher's note into consideration immediately, or would it prefer to keep it back till the proper time?

M. Salem Bey seconded Count de Lallemand,—but he added that the Conference ought at once to proceed with the discussion of such parts of the general report as were ready.

M. Stenersen reminded the Conference that it had decided not to call a full meeting until the submission of the general report. This decision, he thought, ought to be respected.

MM Bartoletti and Fauvel said that the general report was not finished. The General Committee were to assemble the next day for

the discussion of the first portion of it. What would be the advantage, added M. Fauvel, of partially discussing a report not yet completed? Was the object to save time? He showed that the Conference would lose rather than save time, for what time it would save would be so much lost to the Committee. It would be better, he thought, to wait for a few days more; the general report would perhaps be completed during the course of the approaching week, and the Conference might convene a general meeting at the end of the week to take it into consideration.

M. Bykow said that he believed that the Conference had met with the object of appointing the Committee or Committees which had to consider the third group. He added that he perceived the necessity existing for the Conference to save time, for it became a matter of greater urgency than ever, now that cholera had appeared in some places in Europe, to hasten their labors. Every Government interested, continued M. Bykow, had a right to expect that the Conference would make practical suggestions adapted to limit the progress of the evil. In his opinion, practical measures were now almost as urgent as those which had been prepared for the Hedjaz. Taking advantage, therefore, of the meeting of the Conference, he proposed the immediate appointment of Committees to enter upon the consideration of the questions of the 3rd group. If the diplomatic delegates, who would take part in these Committees, were not sufficiently convinced by the conclusions of the general report regarding the questions of the first two groups, all they had to do was to ask medical delegates for such information as they needed.

M. Stenersen did not concur in M. Bykow's views. If the Conference had appointed physicians almost exclusively to form the Committee, it had done so simply because the diplomatic delegates understood nothing at all about the questions of the first two groups. The task of the Committee was to draw up a report which might furnish to the diplomatic delegates the elements requisite to permit them to enter with a full knowledge of the subject upon the questions comprised in the 3rd group. Now, the report not supplying these, the situation remained the same, and the non-professional delegates would gain nothing by imperfect and undeveloped particulars. He (Mr. Stenersen) was of opinion that they must submit to the necessity of waiting for the general report before undertaking the consideration of the questions in the 3rd group, unless indeed they wished to compel the diplomatic delegates to submit to and accept blindly the decisions of the physicians.

M. Monlau seconded Mr. Bykow's proposition. Was there an order of the day for that day's meeting, he asked? He believed that the Conference had met with the object of making itself acquainted with the labors of the Committee, and to see whether it was necessary to appoint Committees for the consideration of the questions in the 3rd group. He believed the Committee had terminated its labours, and that nothing remained to be done but the work of revision. Quite

enough time had been lost, and it was requisite that they should put their shoulders to the wheel to make up for it, and therefore he (M. Monlau) heartily supported M. Bykow's proposition.

M. Bosi spoke to the same effect.

M. Segovia, after expressing his concurrence in M. Monlau's motion, stated the reasons which had induced some delegates to request His Excellency Salih Effendi to call a meeting of the Conference.

The meeting, said M. Segovia, was convened with a double object—an enquiry in the first place into the state of the labors of the Committee, and secondly the appointment of Committees upon the 3rd group.

M. Segovia was not aware whether that was the order of the day for the meeting.

M. Bartoletti replied that there was no order of the day. His Excellency Salih Effendi had convened the Conference only because some delegates had asked him to do so, but he knew very well that the general report was not yet finished, and that the Conference could not proceed with any thing else until it was submitted.

M. Stenersen suggested the adjournment of the Conference until the entire completion of the labors of the Committee.

MM. VanGeuns, Sawas, and Polak requested that the meeting might be turned to use, if only by the appointment of those Committees which would have to consider the questions of the third group.

M. de Soveral took into consideration the statement made by M. Fauvel, in whose charge the general report was, that it was not yet ready, and he showed that the Conference could not do better than to adjourn till it was sent in.

M. Mühligh observed to M. Monlau that his, or to speak more correctly, M. Bykow's proposition, was in opposition to those passages of the programme which showed the necessity of studying the questions in the two first groups before they could go on to the third, and yet the programme was signed by M. Monlau.

M. Monlau replied that there was no contradiction, and that a reply to M. Mühligh's remark would be found in the preceding minutes.

M. Fauvel submitted a proposal, which he called one of conciliation. The Conference, he said, had imposed on itself a serious task, and consequently it did not hesitate at any sacrifice—every delegate insisted upon the necessity of prompt and especially conscientious action. But as all the delegates were not occupied, and as inaction weighed heavily upon several of them, he proposed the immediate nomination of a Committee charged to *determine the nature, order, and division of the questions* composing the third group.

Count de Lallemand put the following motions to the vote in succession :—

1st.—M. Dunreicher's for adjournment : ayes 15, noes 13.

2nd.—M. Stenersen's negatived : ayes 13, noes 15.

3rd.—MM. Bykow and Monlau's negatived : ayes 13 noes 14.

4th.—M. Fauvel's carried : ayes 24, noes 3.

Count de Lallemand proposed to the Conference that the Committee suggested by M. Fauvel should consist of :

MM. Gomez, Goodeve, Monlau, Pelikan, Spadaro, Segovia, Van-Geuns. Carried.

M. de Krause made the following proposal :

"The news we have just heard from the Austrian, British and Italian delegates regarding the sanitary state of a part of the Hedjaz are so far from being reassuring, that the Conference cannot be certain that cholera is not breaking out again this year in Egypt in spite of the measures adopted.

"This state of things," continued M. de Krause, "imposes upon each of us the duty of being attentive, and of not forgetting for a moment that Europe relies upon our foresight. Consequently I have the honor to propose that the President of the Conference shall call an extraordinary meeting as soon as he hears of the appearance of cholera, either in Egypt or in Syria.

"In this way the Conference will find itself in a position immediately to adopt measures capable of arresting the evil, and preserving Europe."

MM. Pelikan and Van-Geuns considered M. de Krause's proposition useless. If the Conference were not to be assembled until after the outbreak of cholera in Egypt or in Syria, the measures it might adopt would come very tardily.

M. Bosi believed that it would be well to fix a day for the next meeting of the Conference, so that it might receive the news in time, and receive full information as to the measures adopted by the Sublime Porte, and the instructions transmitted by it to the Egyptian Government.

M. Bartoletti was of opinion that the Conference had no right to call upon the Ottoman Government to state the measures adopted by it, or which it proposed to adopt in the event of cholera breaking out in Egypt. The Conference fulfilled the orders given to it when it communicated the measures adopted by it to the Imperial Government,—any further proceedings concerned the Imperial Government alone.

M. Stenersen confessed his inability to understand the anxiety of some delegates with regard to Egypt. Could not cholera break out elsewhere ; and, if it could, ought not the Conference to be as anxious about it as if it made its appearance in Egypt or Syria ?

Dr. Goodeve expressed his fear of seeing the Conference invested with the character of *sanitary police*. Every Government, he said, had its Board of Health, the functions of which were those which had been said to be made over to the Conference. But the Conference, continued Dr. Goodeve, had a very different mission, and it was sufficient to recall to mind the circular of His Excellency M. Drouyn de Lhuys to be persuaded that an attempt was being made to cause it to depart from the role prescribed by that circular.

M. Bartoletti informed the honorable Conference that the Ottoman Sanitary Administration had already adopted preventive measures. It had fixed a quarantine of 15 days, exclusive of the period of the voyage, for every choleraic arrival; and it had already decided as to the localities and number of the quarantine stations which were to be fixed in six different places.

M. de Krause begged that the Conference would not think that his proposition had any other object in view but that of keeping it *au courant* of events.

M. Dumreicher opposed the proposition for fear of infringing upon the functions of the permanent sanitary authorities.

MM. Vetsera and Sawas concurred with Mr. Dumreicher, failing to perceive, as they said, either the necessity or the object of convening an extraordinary meeting of the Conference.

M. Bartoletti, on the other hand, declared that there was no inconvenience in an extraordinary meeting of the Conference for the purpose of being made acquainted with news of present importance.

M. Stenersen was of opinion that the Conference, if it wished to act in conformity with its previous decisions, ought to accept the proposition submitted by M. de Krause.

M. Fauvel supported M. de Krause's proposition. That proposition, he said, only required an extraordinary meeting of the Conference in the event of cholera breaking out in Egypt or Syria, with the object of hearing the reports, of suggesting measures, and also of deciding, if necessary, upon some arrangements with regard to the epidemic. It was possible, said M. Fauvel in conclusion, that, if cholera broke out in Egypt, the Egyptian Sanitary Administration would ask the Conference for its advice, and perhaps consult it as to the measures to be adopted. If that were to happen, the Conference would find itself, thanks to M. de Krause's proposition, furnished with the necessary information.

M. Bartoletti said he deemed it his duty to withdraw all he had said in support of M. de Krause's motion, because it had become overloaded, and had lost its primitive simplicity. M. Bartoletti declared that he would vote against this proposition.

M. Sawas made the same declaration, because he considered the Conference incompetent.

Count de Lallemand put M. de Krause's motion to the vote.

It was adopted by a majority of 15 to 12.

On the motion of several Delegates, the Conference decided not to fix any day for its next meeting.

*Order of the day for the next meeting:—*

1st.—Submission and perusal of the report of the Committee appointed to consider the third group of the programme.

2nd.—Submission and perusal of the general report of the general Committee.

The meeting terminated at 6.30 P. M.

COUNT DE LALLEMAND,

*President of the Sanitary Conference.*

DR. NARANZI,

BARON DE COLLONGUE,

} *Secretaries.*

No. 9.

INTERNATIONAL SANITARY CONFERENCE.

*Meeting of the 28th May 1866.*

HIS EXCELLENCY SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its ninth Meeting at Galata Serai on the 28th May 1866.

PRESENT:

*For Austria:*

M. Vetsera, Councillor of the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

Dr. Polak, formerly Chief Physician to His Majesty the Shah of Persia.

*For Belgium:*

Count de Noidans, Secretary to the Legation of His Majesty the King of the Belgians.

*For Spain:*

Don Antonio Maria Segovia, Consul-General, Chargé d'Affaires.

Dr. Monlau, Member of the Superior Council of Health in Spain.

*For the Papal States :*

Monseigneur Brunoni, Vicar-Apostolic.

Dr. Ignace Spadaro.

*For France :*

Coun de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physican.

*For Great Britain :*

The Hon. W. Stuart, Secretary to His Britannic Majesty's Embassy.

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

*For Greece :*

M. Kalergi, Secretary to the Legation of His Majesty the King of the Hellenes.

*For Italy :*

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

*For the Netherlands :*

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Professor J. Van-Geuns.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

*For Persia :*

Mirza Malkom Khan, Aide-de-Camp General to His Majesty the Shah, Councillor to His Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

*For Portugal :*

Chevalier Edward Pinto de Soveral, Chargéd' Affaires.



Councillor Dr. Bernardino Antoni Gomez, Chief Physician to His Most Faithful Majesty.

*For Prussia :*

M. H. de Krause, Secretary to the Legation of His Majesty the King of Prussia.

Dr. Mühlig, Physician to the Legation, Chief Physician to the Ottoman Marine Hospital.

*For Russia :*

Dr. Pelikan, Councillor of State, Director of the Russian Civil Medical Department.

Dr. Lenz, Councillor of College, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, Assistant Military Medical Inspector of the Arrondissement of Wilna.

*For Sweden and Norway :*

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to his Legation.

Dr. Baron Hübsch.

*For Turkey :*

His Excellency Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Department.

Dr. Bartoletti, Inspector General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

*For Egypt :*

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-mother of His Highness the Viceroy of Egypt.

The Meeting commenced at 1 P. M.

Dr. Naranzi, one of the Secretaries, read the minutes of the eighth meeting.

After the adoption of the minutes, Dr. Sawas offered to lay upon the table the manuscript of the speech he had read at the fifth meeting, and which, according to M. Fauvel, could not have been read as printed. Every member of the Conference could assure himself that the imputation was altogether unfounded. It would be seen, on the one hand, that the paragraph which had given rise to M. Fauvel's protest, and which would be found to be struck out in the manuscript, did not appear in the printed text. Perhaps, moreover, Dr. Fauvel

might not, in his speech, have made use of the exact words—"that the French Delegates had rejected all other means that could be proposed, which had been done to prove that everything had been considered;" but at any rate such was most positively the meaning of his words: the idea, if not the words, was there, and this was what was important not to pass by unanswered.

With regard to the passage relative to the route followed by the pilgrims on their return from Mecca, which had been pointed to as having been modified after having been read, Dr. Sawas said he was afraid the minutes were not of a nature to allow of the existence of any doubts as to the manner in which he had replied. He had frankly taken up the question, and he maintained the reproach he had cast at Dr. Fauvel of having been ignorant of the route of the pilgrimage: the Mussulman religion imposed upon the hajjis the obligation of visiting Medina, and it was a fact of constant occurrence that from Bader they all and always went to Medina, in spite of the difficulty and length of the road.

Dr. Fauvel, in reply to M. Sawas, said he regretted that he had thought it necessary to revert to this incident, but the minutes appeared to him to have said everything that was necessary, and said it well. In regard to the first point in dispute, any body who would read his speech in good faith would admit that the Delegates of the French Government had never pretended to reject all projects beforehand, and without discussion; it would, therefore be superfluous to say anything further upon this head. As for the route of the pilgrims, Dr. Fauvel remarked, in the first place, that this part of M. Sawas' speech was not written when it was spoken, and that the text was not made over to the secretaries until some days after the meeting: the manuscript he proposed to produce could, therefore, be no proof. However this might be, he (Dr. Fauvel) had asked, and he asked still what was the geographical error he was accused of having committed? Did the pilgrims from Jeddah to Bader follow another route than the one he had indicated? Did not this route bifurcate at Bader? was it not necessary for the Egyptian pilgrims, after quitting Bader, with the view of returning to their country, to take the coast route; while, on the contrary, the pilgrims going to Syria had to take the road crossing the mountains, and finally pass via Medina? M. Fauvel had never denied that a certain number of the pilgrims went to Medina, but he maintained that it was not obligatory to do so, and that a very large number did not go. It was not forgotten that Bader was only a day's march from Yambo; and that, according to the Persian plan, this port would remain open. Now, as only the Egyptian pilgrims were in question, was it not natural that, being attacked by cholera, and being so close to Yambo, they should desire to embark there rather than go to Medina, and return again by the same route they had taken going?

Dr. Sawas desired to speak, but Dr. Bartoletti and a great number of members insisted upon the discussion being brought to a termination. His Excellency Salih Effendi declared therefore, after

having consulted the Conference, that the subject must be dropped, having been sufficiently discussed, and the Conference pass on to other matters. Dr. Sawas protested that it was thus rendered impossible for him to reply and defend himself, and he relied on mention of the fact being made in the minutes.

M. Vetsera communicated to the Conference some sanitary information received from Egypt. On the 18th May, 6,219 pilgrims had landed at Suez; 2,000 had already re-embarked at Alexandria. A strict surveillance was kept up in the first of these ports under the direction of the Egyptian authorities, and no cases of suspicious disease had been observed. The sanitary condition of Egypt was satisfactory. Prudent precautionary measures had also been taken at Mecca and in the Holy Places.

Salem Bey also furnished some details regarding the measures prescribed in Egypt, by the Egyptian Sanitary Administration; and in Arabia, by the Ottoman authorities. These particulars were extracted from the minutes of a meeting held on the 16th May by the Superior Board of Health at Alexandria. This document also mentioned that the public health in Egypt was good.

Dr. Bartoletti entered into some particulars as to the results of the mission confided to the Ottoman Medical Commission sent into the Hedjas. The reports of this Commission proved that nothing had been neglected which could contribute to the improvement of the hygienic conditions of Mecca, and particularly in the valley of the Mina, where the sacrifices were performed. At Mecca, the cisterns had been cleaned as well as the sewers and ditches. The water of certain springs had been reserved for drinking purposes, and, contrary to the custom formerly observed, the same water was no longer used for this purpose, as well as for ablutions and the watering of animals. In the valley of the Mina, 45 pits had been dug for the interment of the animal remains; 500 necessaries had also been prepared. Sites had finally been chosen at a certain distance from the encampments for the opening of excavations, intended for the slaughtering of animals, others for their shelter, and others again specially reserved for the retailers of provisions. Eighty-eight ships had, moreover, brought 12,662 pilgrims; as for the number of hajjis, 21,500 had been counted before the Bairam. The ships had been carefully visited on arrival, and no cases of cholera appeared to have occurred. Similarly, at the time of departure, care was taken that no ship should carry, as had occurred formerly, too great a number of pilgrims at a time. The Turkish Delegate stated, moreover, that his Government had sent a Special Commissioner to Mecca, charged with instructions for the Governor of the Hedjaz and the Grand Sherif of Mecca, prescribing the application, as far as possible, of the measures decided upon by the Conference.

Dr. Dickson having reminded Dr. Bartoletti of the promise he had made in Committee to communicate to the Conference the reports of

the Medical Commission of the Hedjaz, the Turkish Delegate replied that all these reports had not yet been translated, but that the Conference would, in good time, receive all such information as would be of interest to it.

Dr. Mühlig said he had found himself in a position to procure information, the correctness of which he did not pretend to guarantee, but which had been imparted by a Mussulman on his return from Mecca, and which seemed to him, therefore, to be of some interest. All the pilgrims, it seemed, were unanimous in praising the well-devised measures taken by the authorities of the Hedjaz, but less credit was given to the proceedings of the Egyptian Sanitary Administration. From Suez, the pilgrims it seemed, were sent back to the place called the Springs of Moses, to be visited there by medical officers deputed *ad hoc*; there it was necessary for them to wade in the sea in order to gain the shore, which was arid, and without water or shade; and it was in these bad conditions that they had to wait, and sometimes for a long time, for the arrival of the medical officers, who had to visit them. According to the statement of the person from whom Dr. Mühlig had received this information, no case of cholera, but only some cases of dysentery, had occurred at Mecca.

Dr. Salem Bay explained that it was only from an excess of precaution that pilgrims arriving at Suez were sent to the Springs of Moses, an hour's march distant. It was true that there was no roadstead at this place, and that ships had to anchor at a considerable distance from shore, but no other inconvenience was caused to the pilgrims by this than that of being compelled to have recourse to boats for the purpose of landing. From the shore to the Springs of Moses was little more than half an hour's walk: the place was shady, and was abundantly provided with water. Most of the pilgrims had gone there and had been immediately visited; some of them had taken shelter there, and Dr. Mühlig's informant must have been one of those who did so. These last were naturally obliged to wait until the physicians had accomplished their visit to the Springs of Moses.

Dr. Bartoletti laid upon the table the report (annexure No. 1 to the present minutes) of the Committee appointed to consider the two first groups of the programme, of which he was the president, and also the minutes of the twenty-six Meetings held by the Committee, as well as the reports of the Sub-Committees between which the work had been divided.

The submission of the reports, &c., was recorded, the discussion upon them being postponed in order to allow members, who had not been on the Committee, time to study this important document.

M. Segovia, President of the Committee nominated for the preparatory consideration of the questions in the third group of the programme, also presented the report containing the result of its labors

(annexure No. 2). M. Segovia asked for the immediate commencement of the discussion upon this report, which was read by Dr. Monlau at the request of its author, Dr. Pelikan.

Dr. Polak thought that the report ought to be accepted as it stood, members being at liberty, however, to add such questions afterwards as might be shown, after discussion, to be useful.

Mr. Stuart requested the elimination of paragraph 20, (3rd section) regarding the despatch to India of a scientific Commission, with the object of making a local study of cholera in those places where it was said to have been generated. This paragraph might be amended as follows: "To call the attention of the respective Governments of the countries believed to be the birth-places of cholera to the utility of undertaking or continuing vigorous local researches as to the origin and propagation of the disease.

"To enumerate the questions, the solution of which, or a greater acquaintance with which, is required by science."

M. Segovia and Dr. Monlau said they would reply to Mr. Stuart later; for the time the discussion should be confined to the general division of the report. Questions of detail would come on afterwards, and the Committee would be found ready to consent to all such modifications and additions as might be deemed useful and necessary.

Dr. Fauvel approved of the division, which he thought good in itself, but with certain modifications however: the 3rd section notably was not conceived in the spirit of the intentions of the Conference; it ought to be more extended, and should contain a consideration of the measures adapted to prevent renewed invasions of Europe by cholera.

Dr. Mühlig was opposed to the division into three sections. Two were enough: the first should treat of prophylactic measures, or of preservation in general, and ought to be sub-divided itself into two sub-sections,—1st hygienic measures, 2nd quarantines. The dominant question of the 1st section would be that of disinfection, *i. e.*, the destruction of the choleraic germ whenever it was imported. The 2nd section would comprise everything connected with the application of measures of preservation—1st to those countries in which cholera was generated, 2nd to the intermediate countries, and 3rd to Europe.

Dr. Dickson gave the work of the Committee his approval. The 20th paragraph of the 3rd section only seemed to him, as it did to Mr. Stuart, to require suppression or modification.

Dr. Fauvel said he agreed in opinion with Dr. Mühlig as to the collection into one group of all measures of preservation in general,

M. Segovia objected that a single Committee could not discuss all the questions raised by the consideration of the third group of the programme. It ought necessarily to divide itself into Sub-Committees, and necessarily too, the same Sub-Committee which would take up the

subject of measures of hygiene could not charge itself at the same time with measures of quarantine. That alone would be an obstacle to joining the two first sections into one single section.

Dr. Mühlig replied that the important point to be sought after and discovered was a logical division of labor. The question of the Committees to be appointed was a secondary one, and need not be taken into consideration.

Chevalier Pinto de Soveral was in favor of division into two sections.

Count de Lallemand also spoke to the same effect.

Dr. Monlau said that the Committee had confined itself to classifying, as logically as possible, the questions contained in the third group of the programme as the programme stood after adoption by the Conference. Between purely hygienic measures and restrictive or quarantine measures, there were differences which required their separation into two sections; then there remained the question of the pilgrimage, which required a third. The Committee had not bound itself to follow the order of the programme, and the Committees that would be appointed ought no less to have the same latitude, and be even at liberty to introduce new questions if necessary.

MM. de Krause and Stenersen suggested the postponement of this discussion: it was necessary that everybody should have time to properly consider Dr. Mühlig's proposal.

Dr. Pelikan defended the division into three sections. The question of quarantines, which comprised the consideration of the changes which it would be advisable to make in the sanitary laws in force in various states, was of such importance that they could not possibly help making it the subject of a special group. The matter in question besides was simply whether the division proposed by the Committee was logical, and whether it accelerated the progress of the work, which was the object in view.

Professor Van Geuns spoke to the same effect: the division into three sections would, moreover, in his opinion, possess another advantage *viz.*, that of utilising the special aptitude of certain members of the Conference, and which would find their places marked out for them in the Sub-Committees, which would have to consider each of the three sections. The Dutch Delegate believed, also, that it would result in a clear saving of time. It seemed to him that at most there could be no very great difference between the division proposed by the Committee, and that proposed by Dr. Mühlig.

Professor Bosi thought himself bound also to support the conclusions of the Committee. The prolongation of this discussion would tend to defeat the object proposed in appointing it; too much importance was given to questions of classification, and, far from saving time, it

was only lost. The Committee had declared itself ready to accept modifications in detail, so they might proceed immediately to vote upon the question of the general division.

Count de Lallemand believed, on the contrary that a good classification was of the greatest importance. He thought that Dr. Mühlig's was excellent, and he did not think, as some people appeared to do, that it upset the work of the Committee.

Dr. Lenz could not see what advantage it would be to divide, in the work, the *consideration* and the *application* of prophylactic measures. These questions had already been studied by each of the members of the Conference, whose mission, moreover, it was not to write *theoretical treatises* upon prophylactic measures. What they should occupy themselves with was the *application* of these measures, taking for their basis what had been learnt by experience, and also the studies previously made in connection with the two first groups of the programme. Dr. Lenz, and with him Dr. Bykow, gave their opinions in favor of the division into three sections, *viz.*—1st, hygienic measures in general; 2nd, quarantine measures in general; and 3rd, special hygienic and quarantine measures for countries believed to be the birth-places of cholera. The Russian Delegates begged the President to put it to the vote.

Dr. Sawas made the same request; if the division adopted by the Committee were rejected, it would be a proper time to discuss and divide upon that of Dr. Mühlig.

M. de Krause still thought it would be preferable to postpone division till a future meeting.

M. Kalergi concurred in this view.

Dr. Fauvel thought they should so act as not to adopt a bad classification. The consideration of the two first groups of the programme would have taken up much less time if it had been preceded by serious preparatory consideration with the object of securing a better division of work. The result was that the same question had been discussed by several Committees simultaneously. The division recommended by Dr. Mühlig would obviate this inconvenience. It was true, as Dr. Lenz had said, that opinions had been definitely formed regarding prophylaxy, but it was still a matter of importance to make them known. On their arrival at a profound consideration of preservative measures in general, questions of application would no longer give rise to great difficulties. The division into two sections after all did not sensibly differ from that proposed by the Committee, inasmuch as Dr. Mühlig sub-divided his first group into two sub-sections.

The termination of the discussion being again called for from various quarters, Dr. Fauvel said he was ready to vote for the three sections if the Committee would consent to the modification of the headings of the sections.

Dr. Bartoletti said the same.

Count de Lallemand thought that the proposal to be voted for might be thus framed: division of the third group of the programme into three sections, with the modification of their headings, if found necessary.

Professor Bosi requested with Dr. Monlau that the division proposed by the Committee should be put to the vote as it stood. Afterwards, during the discussion of the various sections, it would be seen whether it would be advisable to change their headings.

M. Stenersen insisting that the Conference should first of all be consulted as to the question of postponement, the motion was put to the vote. The Conference decided against adjournment by a majority of 17 to 4.

The division proposed by the Committee, viz., the distribution of the questions contained in the third group of the programme into three sections, was then put to the vote by His Excellency Salih Effendi, and adopted by a majority of 13 to 8.

A discussion was then commenced regarding the titles to be given to the three sections, but it was almost immediately interrupted, at the request of a portion of the assembly, after the exchange of a few words between Drs. Fauvel, Monlau, and Mühlig.

M. Kalergi proposed that, in future, an earlier hour should be fixed for their meetings. They might meet at noon, and separate at half-past four.

The Conference agreed to the proposal, and then adjourned to Thursday, the 31st May, at noon.

The meeting terminated at 5-30 P. M.

SALIH,

*President of the Sanitary Conference.*

BARON DE COLLONGUE,

DR. NARANZI,

} *Secretaries.*

Dated 21st July, 1866.

*From—E. HAMMOND, Esq., Foreign Office,*

*To—The Under-Secretary of State, India Office.*

I am directed by Lord Stanley to transmit to you, to be laid before Viscount Cranborne, the accompanying copy of a Despatch\* from the British Cholera Commissioner, containing a further report of the proceedings of the Cholera Conference at Constantinople.

\* No. 27.



No. 27, dated 10th July, 1866.

*From*—MESSRS. E. GOODEVE, and E. D. DICKSON,

*To*—The EARL OF CLARENDON, K. G., &c.

We have the honor to inform your Lordship that the discussion of the report of the "Commission Pleniere" on the first and second groups of the programme, was closed at the meetings of the Cholera Conference held on the 3rd instant. Only very slight alterations have been made since our last report to your Lordship.

On the 5th instant the Conference heard and adopted the report of the Sub-Committee appointed to trace the history of the epidemic of 1865. The sketch was drawn up by Dr. Bartoletti, and agreed to by the Sub-Committee, with the exception of its President, Dr. Goodeve, who reserved his assent to a portion of the report which asserted, according to his opinion, much too strongly, the probability of cholera having been introduced into the Hedjaz directly by pilgrims from India. At the meeting of the Conference Dr. Dickson joined with Dr. Goodeve in making the same reserve. The document is at present only in manuscript, but as it will be printed shortly, we shall be able to forward copies to your Lordship.

We regret that owing to the unfortunate destruction by fire of all Dr. Dickson's household furniture, books, and papers two days before the departure of the last mail, we were unable to forward by it any copies of protocols, triple copies of Nos. 10 and 11 collected by him for the purpose were destroyed, and we were unable to obtain a supply of fresh copies in time to replace them. We hope to forward them by the next messenger.

We are sorry to report that the following books and papers supplied to the Commission were also destroyed by the same fire:—

Persian Gulf correspondence. Bombay Government, Drs. Baly and Gull's report on cholera. Report of cholera epidemic of 1861, in the North-Western Provinces of India. Paris Sanitary Convention of 1851, Buchanan's report on the cholera in Russia. Copies of some of our later despatches forwarded to the Foreign Office. The Registry of our correspondence, and the instructions given to us on our appointment by Lord Clarendon; and also those concerning the return of Indian pilgrims from Mecca. We beg the favor of being furnished with a copy of these instructions.

We cannot at present remember what was the number of our last report, but we believe it to have been 26. We will, therefore, with your Lordship's permission, reckon our future reports from that number.

Dated 28th July, 1866.

From—E. HAMMOND, Esq., *Foreign Office,*

To—*The Under-Secretary of State for India.*

I am directed by Lord Stanley to transmit to you, to be laid before Her Majesty's Secretary of State for India, the accompanying copies of Protocols\* of the Proceedings of the Cholera Conference at Constantinople which have been received from the British Cholera Commissioners.

\* Nos. 10 to 16.

No. 10.

INTERNATIONAL SANITARY CONFERENCE.

*Meeting of the 31st May 1866.*

H. E. SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its tenth meeting at Galata-Serai, at noon of the 31st May 1866.

PRESENT.

*For Austria:*

M. Vetsera, Councillor of the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

Dr. Polak, formerly Chief Physician to H. M. the Shah of Persia.

*For Belgium:*

The Count de Noidan, Secretary to the Legation of H. M. the King of the Belgians.

*For Spain:*

Don Antonio Maria Segovia, Consul-General, Chargé d'Affaires.

Dr. Monlau, Member of the Superior Council of Health of Spain.

*For the Papal States:*

Dr. Ignace Spadaro.

*For France:*

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician of France.

*For Great Britain :*

The Honorable M. W. Stuart, Secretary to H. B. M.'s Embassy.

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to H. B. M.'s Embassy, British Delegate to the Superior Council of Health at Constantinople.

*For Greece :*

M. Kalergi, Secretary of His Hellenic Majesty's Legation.

*For Italy :*

M. A. Vernoni, Chief Interpreter to the Legation of H. M. the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

*For the Netherlands :*

M. Kenn, Councillor of the Legation of H. M. the King of the Netherlands.

Professor J. Van Geuns.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

*For Persia :*

Mirza Malkom Khan, Aide-de-Camp General to H. M. the Shah, Councillor of H. M.'s Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health, Constantinople, Persian Delegate to the Superior Council of Health.

*For Portugal :*

Chevalier Edward Pinto de Soveral, Chargé d'Affaires.

Councillor Dr. Bernardino Antonio Gomez, 1st Physician to His Most Faithful Majesty.

*For Prussia :*

M. H. de Krause, Secretary to the Legation of H. M. the King of Prussia.

Dr. Mühlig, Physician to the Legation, Chief Physician to the Hospital of the Ottoman Marine.

*For Russia :*

Dr. Pelikan, Councillor of State, Director of the Civil, Medical Department in Russia.

Dr. Lenz, College Councillor, attached to the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, Co-Military-Medical Inspector of the Arrondissement of Wilna.

*For Sweden and Norway :*

M. Oluf Stenersen, Chamberlain to H. M. the King of Sweden and Norway, Secretary to H. M.'s Legation.

Dr. Baron Hübsch.

*For Turkey :*

H. E. Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Service.

Dr. Bartoletti, Inspector General of the Ottoman Sanitary Service, Member of the Superior Council of Health of Constantinople.

*For Egypt :*

Dr. Salem Bey, Professor of Clinical and Pathological Medicine at the School of Medicine at Cairo, Special Physician to the Princess-mother of His Highness the Viceroy of Egypt.

His Excellency the President accorded permission to the Secretary to speak for the purpose of reading the minutes of the last meeting.

M. de Collongue, one of the Secretaries, read the minutes of the meeting of the 28th May. The manner in which they were drawn up was approved.

His Excellency the President announced that the order of the day was the continuation of the discussion of the report regarding the 3rd group of the programme.

Count de Lallemand asked to be allowed to speak before the commencement of the discussion on the report in question, which he would not like to interrupt. He wanted to make a communication.

Permission being given, Count de Lallemand read the following proposition, which he made in the name of the Delegates of the French Government.

"GENTLEMEN,—We, the undersigned, the Delegates of the Government of His Majesty the Emperor of the French, have the honor to invite the attention of the Conference to a question which is not entered in the programme of its labors, nor comprised in any direct or necessary way within the circle they embrace, but which is not without

interest for the public health, and, in consequence, cannot be set aside with indifference. We wish to speak of the tariff of sanitary dues levied in the Ottoman ports to meet the expenses of the sanitary administration.

The tariff as it exists and is at present levied is old and does not answer the purpose. Established at the very origin and foundation of the sanitary administration in the ports of the Empire, that is to say, at a period when quarantines were the constant or almost constant rule of the service, and consequently the chief source of its receipts, now that quarantines have become the exception, the realizations from it are not enough, not having exceeded about a fifth of the total expenditure for several years past.

This state of things is not only irregular in itself and unjust to the Turkish Government, which has always complained of it, but it is also compromising to the sanitary administration, and may become greatly more so if prolonged, for nobody can be surprised if the Government should end by neglecting an administration almost the entire charge for which has to be met by it, while at the same time only its own quota of the common expense ought to be borne by it. Moreover, a special administration like this ought always, it is evident, for greater security, to be able to reckon upon suitable and special resources.

Ten years ago an attempt was made by the Sublime Porte to obtain the reform of the sanitary tariff. This attempt fell through, for reasons of which we are ignorant. But last year a Committee of seven members of the Superior Council of Health, after careful study of the matter, drew up a new project of reform, based upon the necessities of an average administrative year and on the probable receipts, and consequently in conformity with the principles laid down by the Paris Conference of 1851, by virtue of which sanitary duties can never constitute a tax, but merely a reimbursement of expenditure. This project, which will be found in detail in the annexed report under date the 18th February 1865 (see the end of the minute) was communicated to the Governments of the various maritime nations, and they, we believe, have declined to agree to it.

The Government of the Emperor, after a careful examination of it, has authorised us to state that it will not oppose its being taken into consideration and adopted as the basis of a reform, the necessity of which it admits. Without raising any positive objection against the tariff of 20 paras. (14 centimes) per registered ton, which is proposed in this project as equitable, it recommends that sanitary duties should be rendered as light as possible for navigation.

We are authorized, moreover, to bring this matter to the notice of the Conference, and to beg it to pronounce its opinion, and to give expression to its wishes in any way which it may deem most useful and just. We trust that these wishes, thanks to the authority attached to the deliberations of this assembly, will have a happy influence on the conclusion already too long delayed of a question not to be treated with neglect.

We beg, therefore, gentlemen, that you will take our proposition into consideration, and appoint a Committee for the purpose of examining and reporting upon it, authorising this Committee to base its examination upon the labors and the report of the Superior Council of Health recorded in the annexed Report of the 1st February 1865. We think it would be useful if the Committee were to comprise one or two of the members of the Superior Council of Health, who took part in the discussion of the project to which we refer."

A. DE LALLEMAND.

FAUVEL.

After this communication had been made by Count Lallemand, several speakers put their names down in the list to speak on the subject.

M. Stenersen, after having endeavoured to demonstrate: 1st, that the proposition of the French Delegates was not urgent: 2nd, that it had no direct connexion with the chief end of the assembly of the Conference; that it would interrupt the progress of its labors, and particularly the study of the report which ought to serve as a basis for the deliberations of the Conference; insisted that the Conference was not competent to occupy itself with a question which was beyond its province, and which could not be taken into consideration without special authority from every Government represented in the Conference.

M. Stenersen brought forward the following considerations in support of his view:

"One most serious consideration," he said, "ought, in my opinion, to prevent us from taking up at present the French proposition, *viz.*, that it appears to go beyond the limits of our competence, at least as they are understood by me and by my Government. This assembly has met with the sole object of seeking out means of preservation against cholera. But the means it is about to propose must of necessity, if it accepts the new proposition, entail certain expenses upon the Governments subscribing to it. These expenses can in no way be considered as in themselves constituting means of preservation, and therefore the question of ascertaining how these expenses are to be met does not constitute a sanitary question. The whole proposition refers simply to a new tax on foreign navigation in Turkish waters.

"Now," continued M. Stenersen, "every impost of this nature has always been regulated by diplomatic negotiations—negotiations frequently long and complicated—between the Turkish Government and the foreign missions at Constantinople. And I am not aware that the Conference has been authorised, in regard to this special case, to occupy the place of the missions. Nor without such authority, are we, in my opinion, called upon to occupy ourselves with the question of quarantine duties in Turkey any more than we would have been, at the time of its discussion, called upon to take up the question of light-houses.

"Our incompetence in regard to this subject," continued M. Stenersen, "will be more easily apparent if we were to imagine that we were about to commence the discussion here, without special authority, of the tariff of quarantine duties to be paid by foreign vessels in any country whatever, for instance, in French ports. I believe that the French Government would find such a discussion to be somewhat irregular, for it would relate to a question of internal administration, and it would certainly refuse to accept our decisions, even if they carried with them an increase to the duties already levied. Now, in my opinion, what the Conference could not do with regard to any other country, it cannot do with regard to Turkey. For, whatever may be the position of the Sublime Porte with reference to other Governments, it is in any case evident that the Conference is in exactly the same position with reference to the Ottoman Government that it is with regard to every other Government represented here.

"I am not aware," said M. Stenersen in conclusion, "of what instructions the other Delegates sitting in the Conference may be in possession of, but for my part I have to state that my instructions, as well as those of my colleague, Baron Hubsch, do not permit us to enter upon the discussion here of any but sanitary questions. We are obliged, in consequence, to abstain from discussing the proposition of the Delegates of the French Government until we have asked for special instructions from our Government on the subject. Considering all that I have had the honor to bring forward," concluded M. Stenersen, "I allow myself the liberty of proposing as follows to the honorable Conference:—

"That the discussion of the French project shall be adjourned—that the said proposition shall be printed and communicated without delay to all the Delegates, so that those who think it necessary may be able to obtain the orders of their respective Governments on the matter."

M. Kalergi was of opinion that the communication of the French Delegates was so important that it was necessary to be in possession of special instructions to take it into serious consideration. At the same time, he said, we might occupy ourselves with it in a certain point of view, if only to give our opinion on this important question. But we are not authorised, he observed, to take up a question which in the greatest degree affects the marine of my nation, which, it may be said by the way, already pays very high sanitary dues—dues which it is here proposed to increase.

M. Kalergi submitted the following proposition:—

"That the communication of Count de Lallemand shall be taken into consideration, and placed among the questions of the third group."

Dr. Goodeve said he thought the Conference incompetent to occupy itself with the proposition of the French Delegates, and as he had not received special instructions, he could not take the proposition into consideration.

Dr. Dickson, agreeing as to the incompetence of the Conference, entirely supported M. Stenersen's proposition.

M. Vernoni spoke as follows:—

“I regard the proposition brought forward by Count de Lallemand to be very equitable in principle, but I think that, being a question connected with matters of administration, it does not come within the province of the Conference, but that it properly belongs to the Superior Council of Health of the Ottoman Empire, which Council moreover has studied it, and comprises Delegates of foreign powers in its body. This communication would have found its proper place after the adoption of the new sanitary measures which the Conference will at the proper time be called upon to recommend to the Government of the Sublime Porte, in regard to the Red Sea and other places. Then we would have to see whether an increased tariff of duties should weigh exclusively upon navigation, or should rather be distributed otherwise.”

H. E. Salih Effendi, after having thanked the Delegates of the French Government for the initiative they had been good enough to take in regard to the question of sanitary duties—duties which at the present moment are scarcely in proportion to the expenditure which the Ottoman Government has to meet from its own resources alone without assistance and contrary to every principle of equity—invited his colleague, Dr. Bartoletti, who, he said, was much more competent than himself in such matters, to give the fullest information with regard to this important question. For my part, said H. E. Salih Effendi, I confine myself to observing that the sanitary administration of Turkey is very probably about to be doubled; that consequently there will be an enormous increase of expenditure in that administration, and this expenditure, without a reform in the tariff, would have to be met exclusively by the Imperial Government. This reform, His Excellency thought, should be effected on the basis of the principle laid down by Count de Lallemand.

MM. Pelikan and Lenz stated that the Delegates of the Russian Government were not in possession of the necessary instructions to take the communication made by Count de Lallemand into consideration, and that without receiving fresh instructions, they were unable to decide as to the question brought forward by the Delegates of France or to enter upon questions relating to the sanitary duties imposed in the Ottoman Empire.

M. Bykow, on his side, stated in his capacity of delegated physician from the Ministry of War, that he had been clearly and explicitly told by his Government not to discuss any questions but such as were directly connected with the study of cholera, and the measures to be adopted against that disease. Consequently, he said, I declare that I have no power or right to take part in discussions concerning the sanitary taxes, and my opinion, on this account, could be of no value to my Government. M. Bykow added that such matters, according to his view, could be discussed only by diplomatic Delegates or other persons *ad hoc*.



M. Vetsera spoke as follows :—

“ As a member of the Imperial Internonciature, special information which I possess gives me a claim to know and to say that the question of the quarantine tariff is in negotiation between the Imperial Government and the Sublime Porte. In my capacity of Delegate to this Conference, I have no instructions to occupy myself with the discussion of a question which is already being negotiated through the proper channels. The Conference cannot take the matter up except by special authority, which, in my opinion, should be obtained by means of direct steps taken on the part of the Sublime Porte with regard to the Governments represented in the Conference.”

M. Sotto brought forward the following proposition :—

“ That the International Sanitary Conference declares its incompetence to enter upon the proposition of the French Delegates.”

Mr. Stuart concurred entirely with M. Vetsera, and regarded the matter from the same point of view as that gentleman. I deem it right, he said, to state that I agree unreservedly with the opinion and remarks of my honorable colleague, M. Vetsera. We have no more power, he added, to enter upon the question of the tariff so far as Turkey is concerned than we have for any other power of Europe—and the doing so would constitute an administrative interference, which is prohibited by the circular of M. Drouyn de Lhuys. I am opposed therefore, said Mr. Stuart in conclusion, to taking the French proposition into consideration.

Dr. Bartoletti thanked the Delegates of the French Government for the initiative they had just taken in the matter of the Ottoman sanitary tariff. He thanked them in his own name and the name of his colleague who represented Turkey. He did not wish, he said, to reply at present to the objections raised against the principle of this proposition, reserving that for a fitter opportunity, but he thought it right to make some remarks which might properly be made then.

Some of the members of the Conference, said Dr. Bartoletti, were of opinion that that assembly was not competent to enter upon the question of the tariff, because the question was not one of sanitation, and because their orders limited them to matters regarding cholera. Others again thought they could not discuss the tariff without special instructions to that effect. He did not dispute the right of those who thought it necessary to ask for instructions from their Governments, but this, he thought, ought not to prevent them from receiving the French proposition. As for the incompetence of the Conference, it was a great mistake to urge this argument; and, if the French Delegates had not taken the initiative, the Turkish Delegates would have brought the proposition forward in connexion with the measures to be adopted against cholera. In fact, the question of the Ottoman tariff was so intimately connected with the entire collection of the measures to be proposed, that the execution of any measure was impossible except with this condition.

"Why" said Dr. Bartoletti, "it is proposed to set up a solid barrier, serious guarantees, against the invasion of cholera. Turkey has to assume the responsibility of the most laborious and the rudest part of the common task; and the Conference tells it—Bear the expenses—the question is not a sanitary one!" Dr. Bartoletti was obliged to say, almost *officially*, that, at this rate, the Ottoman Government would decline singly to support the burthen of a charge incumbent on all; he was of opinion that the Conference was working fruitlessly and needlessly in proposing measures which would not be carried out for want of means.

However, he hoped, in conclusion, that this dangerous path would not be followed, and he proposed to the Conference to receive the proposition of the French Delegates, and to give time to those who thought it necessary to be in possession of instructions to ask their respective Governments for them.

Salem Bey said that all the Delegates were agreed as to the equity of the principle upon which the French proposition was based. The opposition of some Delegates arose, he thought, from the want of instructions, and not from any other cause, for the necessity of reforming the tariff of the sanitary duties of the Ottoman Empire was admitted by all. This question, he added, interested all Europe, and on its solution depended the success of the labors of the Conference. It was a matter of urgency then, he thought, to ask for authority to enter upon and discuss the subject. Meantime, until every body was furnished with the requisite authority, he proposed that a Committee should be appointed for the examination of the question—and when the time arrived to bring it before the Conference, those who thought it necessary to have special authority would probably be in possession of it.

Count de Lallemand said he was in no way opposed to the proposition of M. Kalergi. The Delegates of the French Government only ask for a very simple thing—let the Conference first receive their communication, and afterwards decide upon it as it pleased. But, in regard to M. Stenersen's observations, Count de Lallemand was under the necessity of reminding him that the view he took of the matter in regard to Turkey was not correct. In fact, the position of Turkey was altogether exceptional, and that position, which was created for her by articles of capitulation, destroyed all comparison between her and the other European powers. M. Stenersen forgot that Turkey was unable to appropriate any sanitary dues without the concurrence of the European powers, and only by the intermediate agency of their consuls. It was not correct also to think that sanitary dues did not concern the public health. On the contrary, these two questions were intimately connected. For the protection of the public health, it was necessary to take precautionary measures of security, to prevent, in short, measures entailing great expenditure as their consequence. This expenditure could only be derived from sanitary dues. But these dues, according to the tariff in force were greatly inferior to the amount of expenditure, and Turkey was, against all justice, greatly burthened thereby.

The question then reduced itself to this: Without the desired resources, we cannot have a perfect and satisfactory sanitary administration: the tariff established in 1840 is altogether insufficient: It is necessary therefore to reform it. Without this reform, Turkey can refuse to follow out a sanitary system, which, instead of being shared by all the nations interested, has for a long time been supported by her alone. If this should happen, the public health, it may be easily understood, would be compromised, it would, in fact, be (to make a comparison) like pretending to have a good army without regular maintenance and sufficient pay.

M. Fauvel estimated that, if looked at as a question of tariff, several considerations must be taken advantage of, calculated to simplify the discussion. In the first place, he said, what is the pith of the matter? The French Delegates do not require the determination, the solution of the question of sanitary dues, but simply that it should be taken into consideration, and an opinion pronounced in conformity with equity and the rights of the Ottoman Government. Every body admits that the present tariff, being insufficient, may become prejudicial to the public health. All the nations having representatives at the superior Council of Health authorised their Delegates to consider this important question. In fact, it was properly studied and a report followed. This report was communicated to every Government, but it had no result, simply because the Turkish Government, on the one hand—interested as it was more than any other power, and bearing the whole charge almost singly—did not follow up the reform with sufficient energy; and because, on the other hand, the Powers which would have proportionately to make up the annual deficit, found it more convenient to leave Turkey to bear the increased expenditure. It must be said, however, M. Fauvel added, that the French Government has found that the question of the tariff deserves to be taken into serious consideration—that on this question depends the existence and the future of the sanitary department, confided, it is true, to Turkey, which is, so to say, the guardian of the public health, but which interests all nations in the highest degree. For this reason, said M. Fauvel, the French Government has authorised its Delegates in the International Sanitary Conference, where all maritime nations are represented, and whose mission it is to occupy itself with all sanitary questions, to bring this question before it with the object of obtaining its opinion. This, said M. Fauvel, is an admission that the Conference is of somewhat great importance, and at the same time a declaration that it is competent to occupy itself with such a question. The Conference, I am sure, said M. Fauvel, does not compromise itself by taking the matter up, for it simply gives an opinion on the manner in which equitably to cover the expenditure caused by the sanitary administration, an administration on which the public health is dependent.

M. Monlau begged that M. Fauvel would be good enough to tell him whether Turkey had concurred in the decisions of the Conference of 1851.

M. Fauvel replied that Turkey had concurred in them, but that she had not ratified them.

M. Stenersen, replying to MM. de Lallemand and Fauvel, said he had never dreamt of disputing the justice of the principle on which their proposition was based, and that nobody could more highly applaud the praiseworthy efforts of the Sublime Porte for the maintenance of the good organisation of the sanitary administration in Turkey than himself. He only disputed, and he still disputed, the competence of the Conference to occupy itself, without authority previously given, with the regulation of quarantine duties in Ottoman ports. It is true, added M. Stenersen, that there is a difference in the position occupied by the Ottoman Government and that taken by other Powers with regard to foreign powers. But this difference consists simply in this, that every measure affecting foreigners, which, in other countries, is decreed by the act of the local Government alone, is in Turkey carried out in conjunction with the foreign representatives. It is evident, continued M. Stenersen, that this difference can in no way influence the position of the Conference, whose authority, regarded in connexion with the Sublime Porte and foreign representatives, remains absolutely the same as every where else in connexion with local administration. To add to the authority of the Conference in the manner desired by the French Delegates, it is absolutely necessary, in my opinion, said M. Stenersen, that the different Governments should confer upon their Delegates in this assembly, by virtue of fresh instructions, a portion of the powers appertaining to their representatives at Constantinople. M. Fauvel, continued M. Stenersen, had said that there was no question of adopting a resolution, but simply of giving an opinion; but he (M. Stenersen) denied that the Conference had the right of even offering an opinion on, or of occupying itself in even the minutest manner with, one single question which was not comprised within the limits traced out for its labors. And though it had been pretended that the question of sanitary dues was so intimately connected with the question of sanitary administration, that the one could not be solved without the other, it was evident that there existed also a great number of other questions more or less directly affecting the sanitary administration and the public health, which questions nevertheless were not within the province of the Conference. As for the tariff, M. Stenersen denied that it was the result of regular negotiations between the Sublime Porte and the other Governments; the tariff was elaborated by the Council of Health, an assembly containing the Delegates of most maritime Powers, but not *of all*, and which, so far as those countries were concerned which were not represented in it, could be regarded only as a gathering of individuals possessed of no official authority. Sweden and Norway were among the unrepresented States, and if, notwithstanding that, Swedish and Norwegian captains had hitherto paid the dues imposed by the Council, it was not by any means that they had admitted the authority of the Council, or accepted the principle of having dues imposed on them in Turkey by foreigners, but simply because they had wished to avoid a scandal, a scandal, however, which would be sure to occur hereafter.

M. Mühlig thought, contrary to the opinion of several of his colleagues, that the Conference was competent, and that it had the right to take up the French proposition, even without having received special

authority to do so. The chief measures for the prevention of further invasions of cholera ought to emanate from the Conference, and the duty of putting them into execution and seeing them properly carried out would probably devolve upon Turkey. It was quite evident that the expenditure would have to be met by her—and it was a matter of necessity that the Conference should study the means of providing for the expenses and their equitable distribution. And it would do this by occupying itself with the proposition of the French Delegates.

M. de Krause said he saw no inconvenience in receiving the communication of the Count de Lallemand. And meanwhile every Delegate must, if he thought it necessary, ask his Government to authorise him to enter upon such a question.

M. de Lallemand admitted that the French Delegates wished for nothing more than that.

M. de Segovia was of opinion that it was the province of the Conference to see if the sanitary administration generally, and in particular places, was well organised, and therefore in that, as well as with regard to all questions of *principle*, the Conference, he thought, had all the right, and therefore the competence to offer a suggestion. But this was not the question raised by the communication of Count de Lallemand. His referred to sanitary dues in detail down to 14 centimes and other things, in a word, to internal administration, which was completely beyond the limits traced for the Conference by the Governments represented. He failed to perceive the reasonableness of such a communication. To take it into consideration, special authority was needed from their Governments. He could have wished that the Ottoman Government itself had made the communication in question, for then, perhaps, furnished with the necessary instructions, they would have been able to take it into consideration. But at that moment, in its present form, it had too much of the appearance of a question of internal administration, which was not within the competence of the Conference, and consequently they would have to refer to their respective Governments before taking it up.

M. de Soveral thought the question essentially within the competence of the Conference, and all the more so that the French Government which had taken the initiative in convoking the Conference, wished to invest it with the power of occupying itself with the matter. What evil could result from it? He proposed to postpone it for the time, not taking it into consideration until the Conference entered upon the discussion of sanitary measures. That would perhaps be the most favorable time for the consideration of the question of the dues to be imposed by the sanitary administration.

M. Van Geuns held that the Conference had a tendency to travel beyond the limits laid down for its labors. The French proposition seemed in the first place to be put forward at a most unreasonable time. Hitherto the Conference not having occupied itself with sanitary measures, the question of sanitary dues could not be entered upon.

This question could not be taken into consideration, in his opinion, until after the subjects in the 2nd chapter of the 3rd group had been discussed. However, it was still necessary that the Conference should declare the scope it intended to give to its labors before entering upon the question.

As for the competence of the Conference to discuss such a subject, it appeared to him (M. Van Geuns) that the Conference ought rather to occupy itself with questions in a *general* point of view and leave to diplomacy the task of drawing up international treaties. Independently of the fact that the Conference would perhaps be taking up points not within its province by discussing questions of this nature, it would require a very long time to come to an understanding on a matter which had already during several years occupied the Council of Health and the different Governments to which up to the present time two tariffs had been submitted, neither of which apparently satisfied the interested parties.

M. Van Geuns summed up as follows:—

1st.—Ask for special authority to consider the French proposition.

2nd.—Print and distribute to all the Delegates the communication of the Count de Lallemand, so that they may be able to study it.

3rd.—Postpone this question until the discussion of matters concerning sanitary measures.

M. Fauvel addressed some observations to MM. Segovia and Van Geuns:—To M. Segovia that there were no means of discussing questions in a purely *abstract*, general, and (so to speak) *platonian* manner, and moreover that it was not desirable to do so. He desired him to remark that it was necessary to descend to the question of figures when the Ottoman Government was concerned, for that Government was by treaty powerless to impose a tariff, even though it possessed all the right to do so, since it paid for all the other Governments the expenses of the sanitary administration. There were Governments which knew well how to enunciate general principles like M. Segovia, but they buried themselves in silence and inactivity when the question arose of paying their shares of the expenditure supported by the Ottoman Government on account of all the powers interested. In principle the rights of the Sublime Porte were recognised and the equity of the reform of the tariff admitted, and yet they refused to have anything to do with the question of figures.

As for M. Van Geuns, continued M. Fauvel, he ought to know that his Government, is, thanks to M. Millingen, who represents it in the Council of Health, perfectly *au courant* of the question—and therefore will easily grant its Delegates the powers necessary for entering upon its discussion.

To conclude, said M. Fauvel, the Conference must receive the proposition of the French Delegates, and each delegate must ask its Government for such instructions as he may think necessary for its discussion at a fitting opportunity.

The honorable gentleman who spoke last, said M. Segovia, maintained that several Governments, while admitting the justice of the principle of a reform in the tariff, refused to subject themselves to the charges to be incurred thereby. He (M. Segovia) would oppose such an assertion—no Government, —and Spain less than any other, though unhappily her commerce in the East had lost its ancient splendour:—no Government, he was assured, had ever refused to meet its share of the common expense. He added that he wished M. Fauvel would not insist upon maintaining this assertion. M. Fauvel should be persuaded that the proposition of Count de Lallemand was altogether of an administrative character. The Conference could not, and ought not, to occupy itself with any but questions of principle.

M. Fauvel, in reply, said that it would seem that M. Segovia had no very precise ideas in regard to the duties and treaties by which navigation in the East was regulated. Otherwise he (M. Fauvel) entertained no doubt that M. Segovia would be the first to proclaim the necessity of reforming a tariff which was burthensome to Turkey, which threatened the sanitary administration with ruin, and which was out of date. In 1856 a new duty was imposed by the Ottoman Government—well, what followed?—nobody would recognise or accept it. If it were considered desirable to maintain the sanitary administration, it was necessary that the expenses which it entailed should be covered by sufficient duties.

M. Segovia assured M. Fauvel that he was as well acquainted as anybody with the treaties by which navigation in the East was regulated, but he did not wish to lend himself to the transformation of the Conference and its conversion into an administrative Council of Health.

M. Sawas, speaking in his capacity as a Delegate to the Superior Council of Health, believed he was bound to declare that he was one of those who had supported the principle of the reform of the tariff; for the Ottoman sanitary administration, he observed, really stood in need of an increase in the tariff, and it had the right to demand it. But now, said M. Sawas, owing to the communication of Count de Lallemand, a question of competence was raised—a question in favor of which he (M. Sawas) could find nothing to say, notwithstanding all that had been urged for it, and he thought he would not be able to say anything upon the matter without asking for and receiving special instructions—he had no doubt that if the Conference declared itself to be competent, his Government, from which he would ask orders in consequence, would bid him support in all points his honorable colleagues, the Delegates of the Sublime Porte. Meanwhile, he said, he could only abstain from taking part in the discussion, and still more in voting, if the Conference were to enter upon the one and proceed to the other.

M. de Lallemand, believing he had said enough to make the Conference thoroughly acquainted with the subject, brought forward the following proposition:—

“That the Conference receive the communication of the Delegates of the French Government, and postpone the examination of the

question of the tariff of Ottoman sanitary duties, until all the Delegates shall have been put in possession of authority to enter upon the matter."

Mr. Stuart opposed the proposition, and made the following counter-proposal:—

"That the Conference, not being able, from want of competence, to take the proposition of the Delegates of the French Government into consideration, proceed to the order of the day."

M. Fauvel considered it was *bad usage* on the part of Mr. Stuart to bring forward that proposition. The French proposition, he said, was treated as if it contained something immoral, as if it did not emanate from the French Government.

M. de Lallemand expressed himself in a like sense.

Mr. Stuart assured the French Delegates that he had no intention of wounding their feelings, that there was not even the shadow of an evil intention on his part. If he proposed that they should proceed to the order of the day, it was simply because he considered that the Conference was not competent to occupy itself with their proposition.

M. Bartoletti wished it to be recorded in the minutes that, according to the Ottoman Delegates, the question of the tariff was intimately connected with the sanitary question and with all the questions with which the Conference was busied. The French proposition, he said, was in the highest degree important to the protection of the public health. It should be impressed upon the members, once again, that, if the question of the tariff was not equitably solved, the sanitary administration could not exist; for the Ottoman Government would probably be compelled to decline any longer to meet unassisted all the expenditure of that department.

MM. de Soveral and Sallem Bey supported M. Bartoletti.

M. Pinto de Soveral added—"Let it be recorded on the minutes that my opinion is totally opposed to that of M. Segovia—that I consider the conference quite competent, either as an entire body, or, if desirable, only the diplomatic portion of it, to occupy itself with administrative questions."

M. Stenersen remarked to the honorable conference that the French Delegates had consented to postpone the discussion of their proposition to another sitting. The form in which the proposition of Count de Lallemand had been last put was in accordance with his (M. Stenersen's) proposal to adjourn the discussion. As perfect accord, said M. Stenersen in conclusion, had been established on every side, they might proceed to the vote without prolonging the discussion any further.

Having taken the opinion of the Conference, H. E. the President put the several propositions to the vote.

M. de Lallemand desired that Mr. Stuart's proposition should be the first put to the vote. Only he asked, in order that his Government might know who voted against his proposition, that they should proceed, to the vote by calling out the names.



H. E. the President put the Hon. Mr. Stuart's proposition to the vote. It was rejected.

Votes for Mr. Stuart's proposition; MM. Keun, Stuart, and Good-eve (3).

Votes against the same: MM. Segovia, Monlau, Spadaro, Lallemand, Fauvel, Kalergi, Bosi, Vernoni, Van Geuns, Gomez, Soveral, de Krause, Mühlig, Lenz, Hübsch, Stenersen, Bartoletti, H. E. Salih Effendi (18).

Abstained from voting: M. Vetsera, M. de Noidans, M. Sotto, M. Sawas, Malkom Khan, M. Pelikan (6).

MM. de Soveral and Kalergi said they withdrew their propositions.

On the request of M. Stenersen, who remarked that there were two very distinct French propositions, H. E. the President put to the vote the second proposition of the Delegates of the French Government which was at the same time that of M. Stenersen himself; and which was thus conceived:

"That the Conference receive the communication of the Delegates of the French Government, and postpone the examination of the question of the tariff of the Ottoman sanitary duties until the Delegates shall have been put in possession of authority to enter upon it."

Votes in favor of the proposition, 20 Delegates:

MM. Noidans, Segovia, Monlau, Spadaro, Lallemand, Fauvel, Kalergi, Vernoni, Bosi, Van Geuns, Malkom Khan, Pinto de Soveral, Gomez, deKrause, Mühlig, Lenz, Stenersen, Hübsch, Bartoletti, H. E. Salih Effendi.

Votes against the proposition, 4 Delegates:

MM. Vetsera, Sotto, Stuart, Goodeve.

Three abstentions:

MM. Keun, Sawas, Pelikan.

Count de Lallemand asked the honorable Conference if it intended to have his communication printed.

The Conference having replied in the affirmative, M. de Lallemand handed it over to the Secretaries to be dealt with accordingly.

H. E. the President invited the Conference to proceed, after some minutes of refreshment, to the questions entered on the order of the day.

The first thing to be done being the continuation of the discussion on the report on the 3rd group of the programme, H. E. invited M. Monlau to speak, he having taken the place of the reporter, M. Pelikan.

M. Monlau began to read, paragraph by paragraph, the part of the report which has not yet been discussed, commencing with the title of the first section: "Preservation by local hygienic measures."

MM. Bartoletti and Salem Bey remarked to M. Monlau that it would be necessary to commence with the discussion of the title of the first section.

M. de Lallemand and several other Delegates reminded M. Monlau that at its previous meeting the Conference had decided on suppressing the word *local*.

M. Monlau agreed.

M. Mühlig asked permission to speak in order to make some observations touching the general distribution of the report into three sections or groups.

In the last sitting, he said it was decided to maintain the division in three sections, according to the report of the Committee. Afterwards he (M. Monlau) found that there were questions which were not included in any of the groups—yet they were very important questions which it was very necessary should be comprised in the report. He proposed accordingly to add a fourth section, in which the questions of which he meant to speak should have a place.

The third group of the report of the Committee, continued M. Mühlig is entitled "Preservation by special sanitary measures for the East." What does that mean? It means that there ought to be a system of measures for the West, very different from the necessary measures drawn up for the East.

Now, such a collection of measures, he continued, not existing in the report, it would be useful to complement it by the addition of a fourth section, exclusively devoted to special measures for the West, *i. e.*, for Europe. This group of measures might be studied by the same Committee, which would have to examine the 3rd group.

M. Monlau formally opposed any such addition. The questions indicated by M. Mühlig were to be found in the 4th paragraph of the 1st section as well as in several other places in the report. According to M. Mühlig's idea, it would be necessary to group them in a section by themselves, but the Committee did not see the necessity of doing so.

M. Mühlig insisted on the necessity of adopting for Europe measures quite different from those advised by the Committee for the East.

M. Polak opposed the proposition of M. Mühlig. The measures to be adopted for Europe could not be indicated in an altogether special manner—they could not be peculiar to Europe alone, and they were to be found among those included in the report.

M. de Krause urged the following considerations in support of M. Mühlig's proposition:

"If I have properly understood M. Mühlig, he believes that by the examination of prophylactic measures we shall be led to adopt different measures for the various countries whose preservation is in question.

The Committee itself has felt the justice of this provision: if it did not, it would not have spoken of special measures for the East. The proposal to add a 4th group embracing the measures to be taken in Europe is therefore only the complement of the idea of the Committee, which, I think, will not oppose the proposition."

M. Lenz also believed that the questions which M. Mühlig desired to add were to be found in several parts of the report.

M. Fauvel was of opinion that it should be necessary to wait till they had come to the discussion of the 3rd group, in order to give M. Mühlig's proposition a suitable place. It could not be seen till then whether it was necessary and indispensable. At that moment, he (M. Fauvel) found it out of place, and he proposed to pass it over.

M. Mühlig adhered to his idea, but he added that the question of disinfection, which it was of the greatest importance to study, ought to be placed at the head of the 3rd section.

M. Segovia observed to M. Mühlig that the Committee by which the report had been drawn up had only followed his own example. In fact, M. Mühlig himself, in the programme of the labors of the Conference, had placed the question of disinfection in the 1st paragraph of the first head. He had changed his opinion to-day, but how could that have been foreseen?

M. Polak also observed to M. Mühlig that they could not commence a treatise on hygiene having disinfectants for the subject of its first chapter. He demonstrated that the question of disinfectants had its proper place where the Committee had put it.

M. Pelikan agreed in this opinion. With regard to the 1st paragraph, he wished to see the words "*in India*" struck out.

M. Pelikan's proposal was not accepted.

M. Fauvel thought, for his part, and in conformity with the view of the matter taken by M. Mühlig, that the question of *disinfection*, which was more important than any other, and which was to play an important part in measures of hygiene, was not properly indicated, and was not in its proper place. In fact, said M. Fauvel, hygienic measures, properly so called, were comprised in the 2nd and 3rd paragraphs of the 1st section, the other paragraphs comprising only measures of quarantine. Now, in the report the phrase "means of disinfection" was used, but what were these means? It was not stated, and yet they were of several kinds. This question was so important that, if efficacious disinfectants were found, of sure and general virtue, the question of quarantines would become a matter of altogether secondary consideration. But it was not so, for unhappily science was not acquainted with any very sure disinfectants. As it would be of immense advantage to classify the questions properly and distinctly, M. Fauvel believed that the work of the Committee would gain in interest if the 1st paragraph were transposed to the 3rd and the 4th, and a part of the 3rd to the 2nd.

MM. Monlau and Pelikan brought forward several arguments to show that the 1st paragraph was where it ought to be.

M. Mühliz held that the system of the Committee was faulty at bottom, and that that was the reason why they could not come to an understanding. He thought that, for the solution of the question whether there were means of extinguishing cholera in India, it was necessary for the Conference in the first instance to see what were the efficacious means now used against cholera.

M. Mühliz said also that to the second paragraph, the word *slaughter-houses* should be added.

M. Van Geuns was of opinion that M. Mühliz thought more than was necessary about the question of disinfection. The great question in his (M. Van Geuns') opinion was the sanitation of countries not only by disinfection but by all the hygienic means in our possession. Disinfection, he added, implied the existence of infection—but Governments and men of science should have but one great and single anxiety, *viz.*, to prevent the production of infection, to extinguish its sources for ever—to prevent infection by radical measures.

The third group had quite a different tendency, for it treated of the means of stopping the progress of cholera.

M. Bykow made the following remarks:—

He was quite of accord with MM. Fauvel and Mühliz, and he was of opinion that the first question, which related to hygienic measures applicable to India, should be transposed to the 3rd section, for otherwise that section would have no object if the subjects properly belonging to it were scattered through several sections.

M. Bykow also proposed to transpose the 1st paragraph of the 1st section to the 3rd section, for which it was best adapted. As for the question of the temporary interruption of communications, it was certain that interruption was everywhere considered as a measure of quarantine, even according to the definition of M. Monlau, who showed, in the first meeting, that the difference between measures of hygiene and measures of quarantine was that a man subjected to a hygienic measure was at liberty to go where he liked, while by a measure of quarantine, his habitation was fixed, and he was deprived of the liberty of going from one place to another. Well, when communications were interrupted, and persons subjected to the measure were deprived of the right to pass beyond the prescribed limits, they became subject to *quarantine*. He (M. Bykow) was of opinion accordingly that this question should be transposed to the second section.

As for disinfection, M. Bykow believed that, without treating this question separately as M. Mühliz desired, it would be useful to place it in the third paragraph among the measures of sanitary police.

Several delegates asked that the propositions of M. Mühlig and the report of the Committee as it stood when originally drawn up, should be put to the vote.

The place given to each paragraph by the Committee was retained by a majority of 16 votes against 10.

In regard to the 2nd paragraph, M. Mühlig repeated that he wished to see *slaughter-houses* added to it.

M. Monlau replied that when the question of the sanitation of towns in general was brought up, the question of slaughter-houses would be comprised in it as well as many other things which the Committee had been careful not to specify, so that he thought this subtle addition would be superfluous.

M. Mühlig said that naval hygiene, which was mentioned at the end of the 2nd paragraph, was indicated in a very vague and general manner. He thought that *naval hygiene* should comprise all the measures to be taken with regard to ships exposed to choleraic contamination, either to prevent the formation of foci on board, or to extinguish existing foci.

M. Bykow was of opinion that that question would find a better place among the questions of the 3rd section. In any case it ought not to be included among the measures regarding the sanitation of towns. The measures which could be applied to ships on their start, during the voyage, and on their arrival, ought, he thought, to find their place in the quarantine regulations of each country. M. Bykow concluded therefore that it would be more logical to place the question of naval hygiene in the 16th paragraph of the 2nd section, where the disinfection of ships was treated of.

Dr. Dickson was of opinion that it would be necessary to divide questions of hygiene into three classes—naval hygiene—urban hygiene—and military hygiene, in which last should be included such assemblages as fairs, pilgrimages, &c. Each of these classes would comprise the various questions relating to it, and they would be better and more practically studied.

M. Gomez pointed out that the Committee did not intend to draw up a treatise on hygiene. The Committee had only desired to touch upon almost all those questions of hygiene which were more or less connected with cholera. The question of sewers, however, ought to be an exception, for it was almost demonstrated at the present day that the principal source of the propagation of the disease consisted in the *excreta* of cholera patients. As much could not be said for slaughter-houses, which only slightly influenced the progress or the violence of cholera. The same considerations, he said in conclusion, are attached to the greater or less importance of naval hygiene, the hygiene of towns, &c., in regard to cholera. Well regulated hygiene has as much influence on any other epidemic as it has on cholera.

M. Sawas declared that he was quite of the same opinion as the honorable gentleman who spoke last; only he deemed it necessary to make an exception in the East in favor of slaughter-houses, the primitive condition in which they were, gave them considerable importance. Consequently M. Sawas proposed the addition of the words *slaughter-houses* before the word *latrines*, and that they should then proceed to the vote upon the article.

M. Fauvel thought such an addition of no use. It referred to details which were studied and appreciated at their legitimate value in the general report; and for the time being, he thought that the Conference, having decided not to bind itself down to strict and methodical order in its labors, it was not necessary to attach any weight to such details.

M. Mühlig said that in that case it would be better to accept the report as a whole, and to leave it to the Committees to whom would be assigned the duty of studying the different groups of the questions, to put them in order, arranging the numerous subjects belonging to them according to their character and their reciprocal relations.

Several Delegates supported M. Mühlig's proposition, but MM. Fauvel and Sawas opposed it, urging the reasons appreciated by the Conference when it decided on discussing the report section by section and each paragraph separately.

The Conference asked H. E. the President to put the two paragraphs of the first section of the report to the vote.

H. E. the President put to the vote the first section, including the two first paragraphs, as they stood in the report.

The first section, including the two paragraphs, was adopted as it stood by a majority of 18 votes against 3.

Several Delegates proposed the next Saturday, the 2nd June, and others Monday, the 4th June, as the next day of meeting.

A vote being taken by H. E. the President, there were 14 votes for Monday, and 15 for Saturday.

The next meeting was fixed for Saturday, the 2nd June.

Order of the day for the next meeting.

- 1.—Continuation of the discussion of the report on the 3rd group of the programme.
- 2.—Reading and discussion of the general report.

The meeting terminated at 4-45 P. M.

SALIH,

*President of the Sanitary Conference.*

DR. NARANZI,

BARON DE COLLONGUE,

} *Secretaries.*

REPORT OF THE COMMITTEE APPOINTED BY THE  
COUNCIL OF HEALTH TO DRAW UP A DRAFT TARIFF  
OF SANITARY DUES IN THE OTTOMAN EMPIRE.

MEMBERS OF THE COMMITTEE.

MM. FEVZI EFFENDI.  
DICKSON.  
EUDASIAN.

MM. FAUVEL.  
LEBIDART.  
MARCHAND.

BARTOLETTI, *Reporter.*

GENTLEMEN,—Since your recognition of the necessity for a revision of the tariff of sanitary dues, this question has assumed, by the force of circumstances, a character of urgency which becomes more and more pressing, and you have appointed a Committee to elaborate a project of reform, making the receipts of dues harmonise with the necessities of the service. This draft we have now the honor to present to you, and it appears to us to comply with the necessities of the situation.

The Council of Health has before this, since 1856, occupied itself with the increase of sanitary taxation; but, whether owing to inherent defects in the proposals then made, or to reasons independent of them, that project had no result, although sanctioned by Imperial edict. Meanwhile, the evil has grown, business suffers from want of funds, and the department is menaced with extinction, slow but inevitable.

Taught by the failure of this first attempt at reform, your Committee has particularly sought to avoid the rocks on which it split. It has gathered round it all the elements of information adapted to throw light upon the subject; it has collected figures, as precise as possible, with regard to the course of navigation in Turkey, the receipts from quarantines, and the annual cost of the department; and, with the aid of this statistical information, it has drawn up a plan, not of course absolutely correct, but very closely approximating to the truth.

The object proposed to be attained by the Committee was to meet the expenses of the service from its own resources; at the same time pressing as lightly as possible on the tax-payers. This principle, established by the Paris International Sanitary Conference, was also adopted as the basis of the Turkish tariff in force since 1838; but, founded on the eventuality of quarantines, which, frequent as they were during the prevalence of the plague, have become a rare exception since the improvement of the public health everywhere, this tariff is not now sufficiently productive, and its receipts are much below the necessities it is called upon to support. In fact, the revenues from quarantines, diminishing progressively, and, so to say, in inverse ratio to the successes obtained, the result has been a constantly increasing

deficit, which the Government has to meet by an annual subvention of several millions. But in the meantime, as the financial condition of the country imperiously demands economy in every branch of the public administration, the department of quarantines has been included. On two successive occasions, in 1854 and 1859, its expenses have been reduced to two millions from six. The staff has been rendered ineffective by ill-timed suppressions, and the payments have been restricted to an insufficient minimum. Such greatly to be regretted, but now necessary measures have profoundly affected the organization of the department: for qualified persons refuse to serve under such disadvantageous conditions, and the administration has been compelled to confide its very delicate interests to mediocre and sometimes incapable people. We could unhappily quote instances of this inferiority of the actual staff of the department as compared with the past. Now, gentlemen, the re-establishment of the balance between the receipts and the expenditure is the maintenance in good working order of an institution necessary to the security of international communications, and the interests of every marine navigating the seas of the Levant. Let us, in fact, suppose for a moment what would be the result, we will not say of the outbreak of an epidemic on the Turkish coasts, but even of the rumour of a suspicious disease,—unless there is a body of instructed physicians and vigilant agents on the spot, to show its groundlessness,—in the shape of interruptions to commerce, and disturbance in all the relations between the West and the East! It is evident that the distrust which would follow, exaggerated by legitimate apprehensions, would affect interests so great as to render it imprudent to risk such a lamentable contingency.

To arrive, moreover, at the proposed equilibrium, the Committee as we have said above, had to change no principle, but simply to find the means of raising the sum of the receipts. Two modes of doing so then presented themselves to its choice: one was to increase the dues of the sanitary formalities, on the base of the actual tariff; the other, to levy one single and uniform tax, proportionate to the tonnage of ships. The Committee, after mature and deliberate examination, did not hesitate to adopt this latter system, which is at the same time more practical and more equitable than the former: for it is applicable, without distinction of categories, to all ships, according to the capacity and operations of each. It is, moreover, almost the same system which is adopted by the Mediterranean States which have reformed their regulations according to the principles of the International Sanitary Conference of 1852.

It would be a powerful argument to urge here to remind you of the services rendered by the department of quarantines since its establishment in Turkey, to the public health in general, as well as to the commercial relations of every country,—incalculable services, which compensate largely for the sacrifices demanded of navigation for its maintenance. But this side of the question, important as it is in the point of view of increase of sanitary taxation, would make



this report travel wide of its chief subject. The Committee, therefore, has confined itself to stating the fact, passing on to the examination of the plan of tariff it proposes.

The annual expenditure of the administration amounts, in round numbers, to the sum of 4,250,000 piastres, 3,900,000 of which are devoted to the salaries of the members of the department, and 350,000 to office expenses, and expenses of maintenance. The actual receipts are, on an average, 1,000,000 piastres per annum, (see the table appended to the report). We have, then, to make up a deficit of 3,500,000 piastres, in order to balance the expenditure with the receipts. The general tonnage of the navigation in Turkey being valued at an average, and deducting second or double calls at ports, at 6,000,000 tons a year, the Committee proposes a tax of 26 paras per ton, producing a sum of 3,900,000 piastres. By imposing, in addition 4 paras per ton on mail-steamers, not comprised in the general valuation of the 6,000,000 tons, we would arrive, approximately, at an annual product of 350,000 piastres, forming a total altogether of 4,250,000 piastres, or a sum equal to the expenditure of the administration.

This system being admitted, we now proceed to detail its combinations, tending at the same to give precision to its application, and to render the tax as little burthensome as possible.

Every ship, wherever it may have come from, and whatever may be its capacity, will pay a survey duty of 26 paras per ton at the port of first arrival, and once only during the course of the voyage. Ships of 801 tons and upwards, will pay duty on 800 only. Mail-steamers, making voyages on fixed and appointed days, will pay, on every occasion of touching at a port, a survey duty of 4 paras per ton.

As for contingent quarantine dues, the Committee proposes to do away with them, maintaining some only on account of reimbursement of expenditure occasioned by keeping up lazarettos, and purifying ships and goods, these expences not being comprised in the calculation of the general cost of the service, such as the payment of guards of health at the rate of 20 piastres per diem; a duty on every person staying at a lazaretto, at the rate of 5 piastres per diem for each; and a duty on goods subjected to purification: For goods in bales, 2½ piastres per 100 okes; for hides, 3 piastres per 100 pieces, and for small skins, not wrapped in bales, 2½ piastres per 100.

Thus the tax on ships in quarantine, as well as search, bill of health, and visa dues, which under the former tariff constituted the chief sources of revenue, are suppressed. In addition, ships of war, fishing-smacks, and ships compelled by stress of weather or other reasons, to put into port, are, as formerly, exempted from the tax, provided they are not admitted to pratique, and that they do not engage in commercial operations in the ports they enter.

Such, on the whole, is the plan adopted by the Committee in preference to any combination of a tariff graduated according to classes of ships. In this manner we have avoided the proposed levy of a survey duty of 30 paras per ton on ships arriving from a foreign port in an Ottoman port; of 20 paras on ships proceeding from one Ottoman port to another; of 10 paras on ships coming under this latter head, registering 50 tons and upwards; and 10 paras per ton on mail steamers. And we have done the same with another form of the same system, proposing a duty of 30 paras per ton on sailing-vessels; 20 paras on steamers other than mail-packets, and ships of 25 tons and upwards; and 5 paras on mail-steamers. This system, apparently equitable by reason of the difference generally admitted in all tariffs, is not so in reality, and still less so when one considers the circumstances peculiar to Turkey. These are as follows:—The Turkish mercantile marine consists chiefly of small coasting vessels. It is numerous, but of such tonnage that it will feel the tax of 26 paras as lightly as it did the old duty. We do not speak here of vessels of large dimensions, which are comprised in the general category. On the other hand, if the tax on small vessels were reduced, and that on those of larger size raised in proportion, the burthen would fall more heavily on foreign marines than on that of Turkey. Now Turkey, we admit, ought also to contribute, in proportion to the extent of its own marine, to the expences of her quarantines. It is right, therefore, that coasting-vessels should furnish a contingent proportionate to its tonnage and its operations. These are the motives by which the Committee has been guided in the choice it has made, from among the various combinations brought before it, of a simple tax of 26 paras, applicable to all vessels wherever they may have come from, and whatever may be their size; with the exceptions, however, we shall presently mention.

We will be told that the Committee has in effect proposed in principle a simple tax without distinction of classes; why then, we will be asked, fix a maximum of tonnage at which the tax stops, and why have the tax of 26 paras on the one side, and that of 4 paras on the other? And would it not be more reasonable to do away with these differences?

Doubtless, if the Committee had only to take into account the difficulties likely to arise, and which at a former period caused the plan of tariff to fail, it might have risked overlooking exigencies which nevertheless we believe to be sufficiently well founded to deserve that satisfaction should be given them. Starting with this consideration, and after calculating that the duty of 26 paras on six million of tons would amount to 3,900,000 piastres, the Committee believed it might adopt 800 tons as the limit of capacity for the imposition of the tax. After all, this is only a small sacrifice, which benefits a notoriously restricted number of vessels, and which, while it facilitates the acceptance of the tariff, in no way disturbs the system of equality of the tax.

As for the duty of 26 paras, equivalent to 14 centimes, it is the minimum that the Committee has been able to propose in order to obtain

a result of 3,900,000 piastres. This duty, inferior to the tariff of most Mediterranean States, the maximum of the French tariff being 15 centimes, and that of Italian Ports 80 centimes, has been so calculated by the Committee that, combined with the tax of 4 paras imposed on mail-steamers, it produces the amount corresponding with the expenditure of the department.

The figure of 4 paras demanded from mail-packets is, moreover, far from being an arbitrary one: it is based on substantial grounds. Mail-packets touch at almost all the ports on the vast sea-board of the Ottoman Empire; they make obligatory voyages on fixed dates and at fixed hours; they consequently perform a heavy task, which is not imposed upon free navigation, whether sailing-vessels or steamers. But the reason which fully justifies the difference, in the matter of taxation, between the two classes of vessels in question, is that the mail-packets will pay the duty of 4 paras at every port of call, while other vessels will have to pay the tax of 26 paras only once during the course of a voyage; and this difference will be still better understood by the definition we proceed to give of the clause ruling that the survey duty shall be paid only once during the course of the one voyage.

The object of this clause is to relieve ships which may touch at several ports from paying the duty afresh, after having paid it at the first port of call. In this manner, to site a practical instance, a ship starting from Marseilles or Trieste, and going to Salonica, would pay the tax at this latter port on first arrival. If this same ship, after having landed a portion of her cargo at Salonica, were to touch successively at Constantinople and Varna, landing the rest of her cargo without shipping anything, she would be understood to have made but one and the same transaction, and, in this case, she is exempt from any further taxation. But if, on the contrary, she ships either cargo or passengers, either at Salonica or Constantinople, bound to Varna, she commences a fresh commercial transaction, which is subject to the tax. In other words, the singleness of the transaction consists in the landing, either at one port, or at several in succession, of the merchandise shipped at the first port of departure, and a fresh transaction is not supposed to have been entered upon unless the portion landed at an intermediate port is replaced by a fresh merchandise. It is under this latter condition that a ship is subject to the payment over again of the tax at the subsequent port of arrival. Consequently, the clause regarding the singleness of the operation, which is favorable to navigation in general, is not so with regard to mail-steamers, which ship passengers or goods at every port of call, and this is what completely justifies the difference between the tax of 26 and that of 4 paras.

The document which shows the sanitary condition of the place of departure is the bill of health. Obligatory on all ships, with the exception of fishing-smacks and, in certain cases, of men-of-war, the bill of health will prove the payment in full of the dues, as well as the renewal of operations, if they should be renewed, by memoranda which the sanitary authorities of the ports of call will take care to

enter upon it. From the beginning to the end of a voyage, therefore a ship should have but the one bill of health, which is in no case to be changed for another until the return-voyage.

After having drawn up the plan of the tariff, the Committee has still another task to accomplish in entering upon the conditions necessary to its success. It invites your attention therefore, gentlemen, to the supplementary proposals about to follow.

The receipts may cover the anticipated amount of 4,250,000 piastres, and in that case the receipts and expenditure will balance each other; but also they may exceed this sum, or not come up to it. In the latter case, the Imperial Government will very naturally be looked to, to make up the deficit, and the Committee need say nothing more on this head. If, on the other hand, there is a surplus, after all the demands of the service have been provided for, it will be placed in reserve to meet any possible subsequent deficit, and so on for three successive years. At the end of that time, the Committee proposes to you to proceed to the revision of the tariff and its modification in accordance with the experience acquired during those three years. It is thoroughly understood, moreover, that the cost of new buildings, and the extraordinary expenditure necessitated by the outbreak of an epidemic in any part whatever of the Ottoman Empire, are to be met by the Government. Lastly, to ensure the final result of the new tariff, which consists in paying the department out of its own resources, it is important that the sum-total of the funds, kept specially apart from all others, should remain entirely at the disposal of the sanitary administration. With this object in view, the Committee proposes the management of the funds should devolve exclusively upon the Council of Health, which moreover, in its constitution, represents the interests of all the contributors. The Council should by its agents collect the sanitary dues, defray the cost of the department, and submit its accounts to the Government at stated periods. In other words, the Council should have the administration of the funds under the control of Government, and this department of the service would be worked in the same way as the nomination of employés, and the regulation of expenditure which devolve upon the Council, subject to the approval of Government. Thus the sanitary administration, separated as it is from every other department, and quite independent in its action under Government control, will be so too, with regard to the receipt of the dues, and the expenditure of the department.

Gentlemen, the Committee has been obliged, in the Report it presents to you, to study every interest, and to satisfy every exigency which has appeared to it to be legitimate. It has proposed a sanitary tax which harmonises with the tariffs of other countries,—a tax to which Ottoman coasting-vessels will have to contribute very largely. It proposes guarantees of a judicious administration of the funds, and a term of three years for the acquisition of experience in their management. If, in carrying out the directions given it, it has attained the

object required, and if the annexed draft tariff is adopted, it will remain for you to regulate some other administrative questions which will form the corollary and complement of the work of the Committee.

*Tariff of Sanitary Dues in the Ottoman Empire.*

ARTICLE I.

The tariff of sanitary dues comprises—

1st.—The survey duty payable by every vessel entering a Turkish port.

2nd.—The expenses of quarantine, if it is necessary to make a ship go into quarantine.

ARTICLE II.

Survey duty on arrival :—

(A).—Every ship, whatever may have been the port of departure, entering a Turkish port, shall pay (except as hereinafter provided) a survey duty of 26 paras. per ton, up to 800 tons only.

Ships registering 801 tons and upwards shall be subject to duty upon 800 tons only.

(B).—Mail-steamers shall pay the same duty at the rate of 4 paras per ton, a deduction being made of 40 per cent. for the engines and coal, and of 5 per cent. on the duty to be levied. This deduction is also applicable to all steamers.

ARTICLE III.

(A).—Ships which, during the course of a single operation, shall enter several Turkish ports in succession, shall pay the survey duty once only, viz., at the port of first arrival.

(B).—Mail-steamers shall pay the survey duty of 4 paras per ton at every port of call where they ship goods or passengers.

ARTICLE IV.

*Quarantine duties—*

	Paras.
(A).—Duty on account of guards of health, and porter-guards, per day and per guard ... ..	20
(B).—Duty on stay at the lazaretto, per diem and per individual ... ..	5
(C).—Duty on merchandise to be disinfected in the lazaretto :	
Baled goods, per 100 okes ... ..	2½
Hides, per cent. ... ..	5
Small skins, not baled, per 100 skins ... ..	2½
(D).—Cost of disinfection of ships according to amount expended.	

## ARTICLE V.

Children under the age of 7, and poor people, are exempt from payment of the duty on stay at the lazaretto.

## ARTICLE VI.

1st.—Vessels of war; 2nd, vessels compelled by stress of weather or other reason to put into a port; provided they enter upon no commercial operations in the said port; 3rd, fishing-smacks; are exempted from payment of all the sanitary dues laid down in the preceding articles, except the salary of the guards.

## ARTICLE VII.

The dues on bills of health and visas, as well as all the other duties formerly in force, and not mentioned in the present tariff, are abolished.

BARTOLETTI,

*Reporter of the Committee.*

CONSTANTINOPLE: }

February 18th, 1865. }

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NOTE.—The present Report and the draft tariff accompanying it have been adopted by the majority of the members of the Committee. Messrs. Dickson and le Bidart, whose opinion in various points differed from that of the majority, reserved to themselves the right of bringing them forward ultimately.

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**STATISTICAL TABLE of the movements of Ships in the Turkish Ports, and of the receipts and expenditure of the Sanitary Administration, from the 1st March 1859 to the 28th February 1862.**

SERVICES.	No. OF SHIPS.		TONNAGE.		RECEIPTS FROM DUTIES.			EXPENDITURE.		
	1859.	1860.	1859.	1861.	1859.	1860.	1861.	1859.	1860.	1861.
(CONSTANTINOPLE (each of Marmora, Rodosta, and Gallipoli) ...	30,815	26,509	3,046,305.3	1,256,811.5	316,059	305,063	391,675	1,692,925.1	685,637.1	1,084,068
HABDANLIES and DEPENDENCIES ...	10,750	8,945	1,176,687.1	1,163,155.1	134,616	143,333	135,813	337,264	336,016	335,363
BLACK SEA (Batoum, Trablsand, Bamsous, Sinops, Herakles, Bourgas, and Varna) ...	18,873	18,938	971,850	638,044	165,001	101,335	88,479	314,719	307,893	304,339
DAKIA (Sulina, Tulitchea, Silistria, Roustchouk, and Widin) ...	9,873	7,330	1,132,382	1,014,773	6,754	119,813	91,418	355,347	264,729	258,349
THE ISARS (Lomnosa, Chio, Rhodou, Stancho, Orens, and Orpura) ...	17,864	20,867	639,631	613,844	135,563	87,308	88,331	363,684	369,031	349,616
WESTERN SEA (European Coast (Ismak, Karagatch, Cavala, Salomon, and Volos) ...	13,304	12,979	320,110	313,764	60,345	60,383	64,461	163,137	169,770	173,015
GREEK FRONTIERS (Larissa and Dependences) ...	.....	.....	.....	.....	.....	.....	.....	167,391	153,017	194,656
ASIATIC SEA (Trebis, Velona, Buranos, Dindirog, Alenico, Kich, and Anotchna) ...	6,610	6,928	117,031	103,848	36,679	23,153	37,730	235,451	245,469	299,720
WHITE SEA, Arctic Coast (Atralt, Snyrusk, New Furk, Boudroum, Alya, Adalia, Murcia, and Alexandrovia) ...	34,106	18,889	676,643	537,635	86,683	86,871	91,611	413,146	397,605	398,169
AFRICA (Triboul and Dependences, Pannassus and Aleppo) ...	6,469	8,265	300,071	243,998	26,748	46,883	44,175	406,464	401,071	404,163
ASIATIC FRONTIERS (Kisrovum, Beldjean, Kars, Ertinglian, Bayasid, Kotour, Bagdad, and Toheran) ...	489	589	19,056	36,463	3,498	6,394	6,348	400,071	609,675	566,382
.....	.....	.....	.....	.....	.....	.....	.....	381,045	735,406	731,640
TOTAL ...	156,968	133,673	7,654,653	7,684,610	1,027,959	961,040	947,355	4,996,327	5,039,368	4,971,515
Average ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

From the average total amount of tonnage, viz., 7,733,665, 1,766,665 tons have been deducted for double calls at the Dardanelles, Salina, &c., Parus, leaving 5,966,999 tons, which, taxed at the rate of 26 paras per ton, give ... 2,300,000  
 The amount of mail steamers not included in the Statistical Table, has been approximately valued at 3,500,000 paying tons, which, at the rate of 6 paras per ton, give a sum of ... 3,370,000  
 Total Receipts calculated according to the new tariff ... 4,360,000  
 Although the average expenditure shown in the Table amounts to 4,002,970 paras, we have adopted, as the basis of the tariff, the expenditure of 1853-54, which, on account of the diminution in the extraordinary expenses of the service during that year, principally in the Benghal service, amounted to 4,344,327 paras only.  
 \* The amount of the paying tonnage of the mail steamers is so high only on account of the great number of compulsory calls they have to make.

Dated Pera, 31st May 1866.

*Proposition made by the Delegates of the French Government at the  
10th Meeting.*

[See pages 209 and 245.]

INTERNATIONAL SANITARY CONFERENCE. MEETING  
No. 11, OF THE 2ND JUNE 1866.

H. E. SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its eleventh Meeting on the 2nd June 1866, in the ordinary place of meeting, at Galata-Serai.

PRESENT:

*For Austria.*

M. Vetsera, Councillor to the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

Dr. Polak, formerly Chief Physician to His Majesty the Shah of Persia.

*For Belgium.*

Count De Noidans, Secretary to the Legation of His Majesty the King of the Belgians.

*For Spain.*

Don Antonio Maria Segovia, Consul-General, Chargé d'Affairs.

Dr. Monlau, Member of the Superior Council of Health of Spain.

*For the Papal States.*

Dr. Ignace Spadaro.

*For France.*

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician of France.

*For Great Britain.*

The Hon. M. W. Stuart, Secretary to Her Britannic Majesty's Embassy.

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

*For Greece.*

Dr. G. A. Maccas, 1st Physician to the King, Professor of Clinical Medicine in the University of Athens.



*For Italy.*

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

*For the Netherlands.*

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Professor J. Van Geuna.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

*For Persia.*

Mirza Malkom Khan, Aide-de-Camp General to His Majesty the Shah, Councillor to His Majesty's Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

*For Portugal.*

Chevalier Edward Pinto de Soveral, Chargé d'Affairs.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

*For Prussia.*

M. H. de Krause, Physician to the Legation; Chief Physician to the Ottoman Marine Hospital.

*For Russia.*

Dr. Pelikan, Councillor of State, Director of Russian Civil Medical Department.

Dr. Lenz, Councillor of College, attached to the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State; Co-Medical-Military Inspector of the Arrondissement of Wilna.

*For Sweden and Norway.*

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway; Secretary to His Majesty's Legation.

Dr. Baron Hübsch.

*For Turkey.*

H. E. Salih Effendi, Director of the Imperial School of Medicine at Constantinople; Chief of the Civil Medical Service.

Dr. Bartoletti, Inspector General of the Ottoman Sanitary Department; Member of the Superior Council of Health at Constantinople.

*For Egypt.*

Dr. Salem Bey, Professor of Clinical and Pathological Medicine in the School of Medicine at Cairo; Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

The meeting commenced at noon.

Dr. Naranzi, one of the Secretaries, read the minutes of the 10th meeting.

Dr. Sotto complained that the proposition introduced by him at the said meeting, in regard to the incompetence of the Conference to occupy itself with the question of the tariff of sanitary duties in the Ottoman ports, had not been read when the votes were about to be taken. That proposition, it was true, was reproduced in the minutes; but, notwithstanding his protests, it had not been read, and in consequence no division was taken on it. Dr. Sotto desired that the fact should be recorded.

Several members put forward demands for rectifications in the minutes; these demands were immediately complied with by the Secretary, and the minutes of the 10th meeting were finally adopted.

Dr. Fauvel showed that the discussion which had taken place in the last two meetings, on the labors of the Committee appointed to make the preparatory examination of the questions of the third group, had been rendered useless by the persistence of the members of the committee in rejecting all the proposed amendments, even those which did not attack the general economy of their project. Under these circumstances, he had, in concert with some other members, *viz.*, Count de Lallemand, M. de Krause, Dr. Muhlly, M. Oluf Stenersen, Dr. Baron Hubsch, H. E. Salih Effendi, and Dr. Bartoletti, prepared a sort of proposition or counter-project, the insertion of which in the minutes he asked for in the name of its subscribers. This would enable them to take it into consideration, obviating the necessity for a further prolongation of the discussion of the modifications which a part of the assembly thought it would be useful to import into the classification of the matters of the third group, as the group was understood by the committee. Dr. Fauvel then handed in the following proposition, after having previously read it:—

## PROPHYLACTIC MEASURES APPLICABLE TO CHOLERA.

### I.—HYGIENIC MEASURES.

1st.—Measures of disinfection. Means of disinfection: ventilation; calorification; immersion in water; chemical processes.

Application of these means to *ships*, either for the prevention of contamination, or its destruction; to *luggage and effects*, to *linen and to merchandise* supposed to be contaminated; to *choleraic excreta*, to *latrines*, to *sewers*, in a word, to everything susceptible of propagating the disease.

2nd.—Hygienic measures applicable to *towns*, *ports*, and, generally, to all inhabited localities, comprising the removal of the causes of insalubrity which might favor the development of cholera.

3rd.—Measures especially applicable to assemblages of men, to armies, fairs, pilgrimages, and great migrations.

4th.—Measures in regard to dispersion in seasons of epidemics. How should it be effected?

5th.—Sanitary police of ships in times of cholera. Measures relative to passengers, to their effects, to merchandise, to the sanitation of ships.

## II.—MEASURES OF QUARANTINE.

6th.—What are the lessons taught by experience, regarding the systems of quarantine in force up to the present moment against cholera? Can we hope for greater success from quarantines established on other bases? What are the fundamental principles deduced from experience, which should serve as guides in this question?

7th.—*Temporary interruption* of communications with infected places. In what cases is this measure applicable?

8th.—*Temporary restriction* of communications. Is it not advantageous in every respect to restrict emigration from infected localities? By what means may we do so?

9th.—*Quarantine applicable to persons coming from an infected locality*.—What should be its duration? From what moment should the commencement of the quarantine be reckoned? In regard to maritime arrivals, should not the duration of the voyage be comprised, under certain specified circumstances, in the time fixed for the quarantine? If so, determine these circumstances? Should two kinds of quarantine be admitted under the names of quarantine of observation, and strict quarantine? In what should the difference consist?

10th.—*Lazarettos*.—What are the conditions shown to be necessary by experience, in order that these establishments should answer in every respect to the intention in view in their establishment? Questions regarding the choice of site, the distance from inhabited localities, the facility regarding the landing and supply of provisions, the health of the locality, the kind of building, the interior distribution, and the classification of the persons in quarantine, &c. Lazarettos of observation? Floating lazarettos? Temporary lazarettos?

11th.—On the arrival of a ship, can the quarantine be effected on board of her? In what cases, to what extent, and how?

12th.—*Sanitary cordons*.—What is the degree of utility of these cordons? Under what conditions are they applicable, and how are they to be applied?

13th.—*Isolation and disinfection* of the original foci of cholera. What are the lessons taught by experience on this subject?

14th.—*Quarantine applicable to objects supposed to be contaminated, luggage, effects, clothes, goods, live-stock*.—What should be its duration according to the mode of disinfection? Is it always necessary that it should be effected in the lazaretto? Are there any objects which should be exempted from disinfection? What are they?

15th.—*Quarantine applicable to ships* supposed to be infected.—Should not a distinction be made between those in which cholera has, and those in which it has not, shown itself? What should be the measures applicable in each case? Should the disinfection always be rigorous?

16th.—In the case of a serious epidemic of cholera breaking out on board a crowded ship, should she not be made subject to exceptional precautions? What should these precautions be?

17th.—*Bill of Health*.—Should three sorts of bills be admitted; *foul, suspected, and clean*? When should Asiatic cholera be mentioned on the bill, and when should mention of it cease? Is it not absolutely necessary, as a guarantee for the public health, that a ship should have but the one bill of health delivered by the sanitary authorities of the port of departure; and is it not equally necessary that this bill should not be changed until the arrival of the ship at her definitive destination?

18th.—*Of survey and search* in times of cholera.

### III.—MEASURES TO BE ADOPTED IN THE EAST FOR THE PREVENTION OF THE FURTHER INVASION OF EUROPE BY CHOLERA.

19th.—If we weigh, on the one hand, the inconveniences resulting to commerce and to international relations from restrictive measures, and on the other, the disturbance occasioned to industry and commercial transactions by an invasion of cholera, on which side is it thought should the balance incline?

20th.—Should we not start with the fundamental principle that the closer to the primitive focus we supply measures of quarantine and other prophylactic means, the more we may reckon upon their efficacy?

#### 1ST.—MEASURES TO BE ADOPTED IN INDIA.

21st.—Is there reason to hope that we may succeed in extinguishing cholera in India, or, at least, in restraining its epidemic development? Is it not necessary in the first place to make fresh studies of the *endemicity* of the disease, studies to be made on the spot which will take up much time, and which the English Government alone is in a position to undertake? Show to what special peculiarities these studies should be directed?

22nd.—Judging from what we know of the cardinal part performed by *pilgrimages* in the epidemic development of cholera, is it not demonstrated that henceforth all the efforts of the English authorities ought to be brought to bear to restrain the influence of this cause as much as possible, and to continue, on a larger scale, the employment of the measures already in use with some success? Indicate these measures.

23rd.—Is it not necessary, moreover, that we should occupy ourselves with the means adapted to the prevention of the *exportation* of cholera from India? Amongst these means, should not a prominent place be given to the establishment of a sanitary police at the place of departure, specially applicable to pilgrims; and in epidemic seasons, to that of the bill of health, &c.? Specify these measures.

#### 2ND.—MEASURES TO BE ADOPTED IN THE COUNTRIES SITUATED INTERMEDIATELY BETWEEN INDIA AND EUROPE.

(A.)—*Measures against the importation of cholera by sea.*

24th.—Would it not be proper to institute near the entrance to the Red Sea, and in an island, if possible, a sanitary establishment where all

ships entering the Red Sea would be subjected to search, and if necessary, to measures of quarantine? What should be the character of this establishment. In what cases, by whom, and how should these measures be applied?

25th.—*Question of the pilgrimage to Mecca.*—Organisation of a sanitary system on the coast of the Red Sea on the one side, in the Arabian ports, and notably, at Jeddah, Yambo, and El Ouesch; on the other at Massowah, Souakim, Cosseir, and at Suez. Sanitary physicians to be stationed at these places. Is there occasion to establish an international organisation? Hygienic measures to be adopted at the places of pilgrimage. Measures to be taken in the Hedjaz in view of the possible importation of cholera overland. Measures to be adopted against arrivals from the Hedjaz if cholera breaks out during the pilgrimage.

3RD.—MEASURES TO BE ADOPTED IF CHOLERA MAKES ITS APPEARANCE IN EGYPT.

(B).—*Measures against the importation of cholera by land.*

27th.—Measures to be adopted on the *Turco-Persian* frontier.

*Question of the Persian pilgrimage.*

28th.—Measures to be adopted in Russia against importation *via* Bokhara, or, at any rate, by way of the European frontier of the Russian Empire. Measures on the *Russo-Persian* frontier.

*Signed by* H. E. SALIH EFFENDI.  
 „ COUNT DE LALLEMAND.  
 „ DE KRAUSE.  
 „ OLUF STENERSEN.  
 „ DR. BARTOLETTI.  
 „ DR. HUBSCH.  
 „ DR. FAUVEL.  
 „ DR. MUHLIG.

M. Segovia, speaking as President of the Committee, expressed his surprise that it could have been reproached with having purposely and deliberately rejected all proposed amendments, when as yet only two paragraphs of the Report, which comprised no less than twenty, had been discussed; and when it had even consented to a modification in the title of the only section yet under discussion. Whatever might be thought of the remainder, the work of the Committee had been approved as a whole, and even in some of its parts, and the counter-project was, therefore, nothing but an attempt of the minority endeavoring to attack the decisions arrived at by the majority: it was an irregular mode of procedure, and one opposed to the usages of all assemblies. After having declared that he did not, however, oppose the insertion of the counter-project, M. Segovia demanded that they should proceed immediately to the nomination of the committee.

Chevalier Pinto de Seval demand the continuation of the discussion of the articles in the plan of the committee. The members of the minority might bring forward their observations as the discussion, which could not be regularly interrupted, proceeded.

Dr. Mühlig asked the Conference to recollect that it had not been requested that the counter-project should be discussed. Its authors had perceived the impossibility of getting the Committee to allow any of the modifications, or transpositions, which were necessitated by the classification it had adopted, and they were compelled, therefore, to have recourse to this method of indicating their views.

According to Dr. Gomez, if the reproach of obstinacy was deserved by any body, it was not by the members of the committee, but rather by the authors of the counter-project, *i. e.*, by the minority, which ought to show a little more respect for the decisions of the majority. The counter-project, far from occasioning a gain in time, would have, as its first result, the indefinite extension of an already too-prolonged discussion. Good in itself, it did not contain at the most a single fundamental idea which was not to be found in the project to which it was opposed, and which was in sum, and nearly so, as far as classification was concerned, only the reproduction of the general programme adopted by the Conference. And, after all, would the proposed new classification be freer from objection than that of the committee, and every other classification of the kind?

Dr. Monlau consented to the insertion of the counter-project, even though he considered its presentation irregular, but he insisted that they should proceed to the order of the day.

Dr. Polak concurred.

Dr. Fauvel observed that the discussion became objectless, as soon as they contented themselves with the insertion of the counter-project, and not its discussion. The members who had signed it had, it was true, voted for the general division of the project of the committee, but they did so only because they thought they might usefully bring forward their objections on its discussion article by article. Now, the adoption of the 1st paragraph of the 1st section had, by destroying the entire economy of their system of classification, rendered it impossible for them to do so. The reproach which had been urged against them, of not respecting the decisions of the majority, was not well founded; they admitted they were defeated, and retired from the struggle; but every member of the Conference ought to be responsible for his own opinions; and what could not be refused to the minority was the right of properly stating its views.

Dr. Dickson did not see that the two projects neutralised each other; he proposed that that of Dr. Fauvel should be printed and distributed, in order that it might be utilised as an index or table of contents of the report of the committee.

Dr. Mühlig, who had been Secretary-Reporter to the committee appointed to prepare a draft programme, explained how he had been able to sign the counter-plan without contradicting himself. The general programme was not, and could not be, anything but a table of contents, and it was altogether impossible that they could, when it was elaborated, specify with precision the order in which those contents ought to be studied. Dr. Mühlig persisted in his opinion that the classification adopted by the committee was bad.

Dr. Bartoletti mentioned, in his own name, and in that of His Excellency Salih Effendi, the reasons for which he and his colleague believed that they should adhere to the counter-project. The Delegates of the Sublime Porte, however, reserved their opinion in regard to paragraph 25 of that counter-project, having reference to the pilgrimage to Mecca.

Dr. Sawas saw in the plan of Dr. Fauvel only a lengthy reproduction of that of the Committee, but its presentation appeared to him not the less irregular.

The Persian Delegate demanding, with a great portion of the assembly, that they should proceed to the order of the day, it was decided that the counter-project presented by Dr. Fauvel, and to which three new delegates, Drs. Dickson, Millingen, and Salem Bey, gave in their adhesion, should be inserted in the minutes. The discussion on the articles of the draft of the committee was then renewed.

Dr. Monlau read paragraph 3.

Drs. Bykow and Salem Bey demanded that the part of this paragraph, relating to the *temporary interruption of communications with infected places*, should be transposed to the 2nd section; it was a measure of quarantine, and not a measure of hygiene.

Dr. Monlau replied that what constituted quarantines was the isolation of suspected persons in a special locality where they were kept in confinement. Quarantines, moreover, were obligatory; in fact, the measure was objective, not subjective. There was nothing of the kind in the interruption of communications, which was simply a precautionary measure, leaving perfect liberty to those against whom it was adopted.

Dr. Gomez concurred in this view.

Dr. Bykow would not insist, though he still maintained his observation. Paragraph 3 was then put to the vote, and adopted by a majority of 11 against 8. Paragraph 4 was also adopted, 15 votes being recorded in its favor, its adoption not giving rise to any observations.

Dr. Monlau preceded the reading of the 2nd section with some preliminary observations. The committee started with the principle that it ought to comprise all the questions laid down in the general programme; their order only was changed, and some new ones finally added. After the paragraphs treating of measures of quarantine in general, came the place where they ought to be applied, *viz.*, lazarettos. The Committee only indicated the question of international lazarettos; it did not pretend that it was, or could be, solved. It merely asked itself, on the one hand, whether all, or at least some, lazarettos, should not be declared international, neutralised in fact; and, on the other, whether there was not occasion to determine for all States a certain line which might be called in some sort *Lazarétaires*, and within which a common surveillance, in a sanitary point of view, should be exercised. The committee proceeded then to the length of stay at the lazarettos, and finally to the measures of disinfection, purification, &c., to be prescribed during the stay. If the question of sanitary cordons was reserved for the 2nd section, though this measure might *prima facie* appear to be

confounded with that of the interdiction of communications, which was included in the first section, it was because the consequence, up to a certain point, of sanitary cordons, was the transformation of the infected country into a local lazaretto.

These explanations given, Dr. Monlau proceeded to read the articles—

Paragraphs 5 and 6 were adopted, the first by 15, the second by 16 votes ; none voting against them.

Dr. Lenz demanded the suppression of paragraph 7. The reply to this question, it appeared to him, necessitated studies which nobody in the Conference had made, or was in a position to make.

M. Segovia, on the contrary, believed that it was desirable that this question, which had been laid down by the Sanitary Conference of Paris of 1851, and which had not, it was true, as yet received a proper solution, should be inserted in the programme. Perhaps it might be given to the Conference of Constantinople to arrive at a happier result than had yet been obtained, and to discover a satisfactory reply to it.

Dr. Monlau, declaring at the same time that, to a medical man, the reply could not be doubtful, repeated that the Committee had limited itself to laying down the question without judging it.

M. de Krause pronounced in favor of maintaining the paragraph, which was finally adopted by 19 votes, none against it.

Dr. Bykow expressed his opinion with regard to paragraph 8, that the question of international lazarettos was not in its proper place there. Every thing connected with these lazarettos should be together ; the international lazarettos, in fact, would not be established on the same bases as the others.

Dr. Monlau explained that the question was not of the regulation of international lazarettos, but of their very existence itself. Should they or should they not be established ?

Dr. Sotto could not exactly understand what these international lazarettos were to be, nor the connection existing between the first and second part of paragraph 8.

Dr. Monlau replied that the committee found the first part of the paragraph in the general programme, and it did not think it could cut it out though it answered itself. The only connection existing between this question and that of international lazarettos was that, the utility of their establishment once admitted, it would be necessary, first of all, to think of the place to be given them. The international lazarettos were an idea, and it remained with the Conference to see what they could evolve from it.

Dr. Pelikan spoke in the same sense.

H. E. Salih Effendi and Dr. Bartoletti declared that Turkey would not consent to the establishment of international lazarettos on her territory ; and that, therefore, they could not adopt paragraph 8.

M. Segovia believed that the Committee could not dispense with framing certain questions with which science had long been occupied, and



that it was befitting the dignity of the Conference to pronounce an opinion on them. The admission of a question in the programme did not imply that they ought to vote sooner or later in such and such a sense.

Dr. Dickson desired the excision of the part of the paragraph relating to international lazarettos. It was useless to enter upon the discussion of an impracticable question.

Professor Van Geuns said that he saw, in the very opposition to this question, an argument in favor of its maintenance in the programme.

In the opinion of Chevalier Pinto de Soveral there was nothing impracticable in this idea of international lazarettos. It was a question worthy of study; science could counsel their creation, while it was left to Governments to decide how far they would defer to the advice.

The 8th paragraph was then put to the vote and adopted by 15 against 4; the 9th paragraph was also adopted by 19; the 10th by 19 too; the 11th by 17; the 12th by 18; the 13th and 14th by 17; the 15th by 18; and finally, the 16th by 17. The adoption of these 8 paragraphs met with no opposition.

Dr. Monlau, before reading the 3rd section, explained the reasons which, in the views of the Committee, necessitated the addition of paragraph 20, regarding the despatch of commissions to study cholera in the countries believed to be the birth-places of the disease. It was a wish the Committee thought it might and ought to express, the exclusively scientific character of the researches to be made being given. This character, it should be distinctly understood, was expressly specified in the preamble to the plan, in which the mode of organisation of the commissions which would have to be appointed to carry them was not included. An identical wish had previously been expressed by the Sanitary Conference of 1851: in fact, the following resolution, which was carried unanimously, would be found in the proceedings of that Conference, in which Great Britain was represented by two delegates:—  
“The Conference expresses the wish that the Powers subscribing to the sanitary convention, should arrange with each other for the exploration of the localities considered to be the foci of exotic transmissible diseases, and study uninterruptedly the conditions of the generation and development of these scourges.” The researches in question, the utility of which had been urged by all epidemiologists, were in fine one of the objects specially recommended to the study of the Conference by the circular of His Excellency M. Drouyn de Lhuys. After reminding the Conference, on the other hand, that the general report presented by Dr. Fauvel showed that, in regard to almost every thing connected with the origin and endemicity of cholera, the committee had been obliged, for want of sufficient information, to limit itself to framing the questions without solving them, Dr. Monlau concluded that the dignity of the Conference—its duty even—demanded that it should pronounce an opinion on the means to be employed for filling up a hiatus so much to be regretted. The committee, Dr. Monlau added, had not wished in any way to pre-judge the question; but it could not permit any doubt to rest upon the anxiety of Great Britain and the

other Powers having possessions in India to associate themselves with studies interesting to all mankind.

The discussion of the 3rd section having been postponed, in consideration of the lateness of the hour, to the next meeting, the Conference adjourned to Monday, the 4th June, at noon, after having decided, by a majority of 17 against 2, that in future it would assemble three times a week, on Monday, Thursday, and Saturday.

The meeting then dispersed at 4-45 P. M.

SALIH,

*President of the Sanitary Conference.*

BARON DE COLLONGUE, }  
DR. NARANZI. } *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE. MEETING  
No. 12, OF THE 4TH JUNE 1866.

H. E. SALIH EFFENDI,—*Presiding.*

The International Sanitary Conference held its 12th meeting, at Galata-Serai at noon of the 4th June 1866.

PRESENT :

*For Austria :*

M. Vetsera, Councillor to the Internonciature of His Imperial and Royal Majesty the Emperor of Austria.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

Dr. Polak, formerly Chief Physician to the Shah of Persia.

*For Belgium :*

Count de Noidans, Secretary to the Legation of His Majesty the King of the Belgians.

*For Spain :*

Don Antonio Maria Segovia, Consul-General, Chargé d'Affaires.

Dr. Monlau, Member of the Superior Council of Health of Spain.

*For the Papal States :*

Dr. Ignace Spadaro.

*For France :*

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician of France.

*For Great Britain :*

The Hon. M. W. Stuart, Secretary to Her Britannic Majesty's Embassy.

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

*For Greece :*

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

*For Italy :*

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

*For the Netherlands :*

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Professor J. Van Geuns.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

*For Persia :*

Mirza Malkom Khan, Aide-de-Camp General to His Majesty the Shah, Councillor to his Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

*For Portugal :*

Chevalier Edward Pinto de Soveral, Chargé d'Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His most Faithful Majesty.

*For Prussia :*

M. H. de Krause, Secretary of Legation to His Majesty the King of Prussia.

Dr. Mühlig, Physician to the Legation, Chief Physician of the Hospital of the Ottoman Marine.

*For Russia :*

Dr. Pelikan, Councillor of State, Director of the Russian Civil Medical Department.

Dr. Lenz, Councillor of College, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, Co-Military-Medical Inspector of the Arrondissement of Wilna.

*For Sweden and Norway.*

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to his Legation.

Dr. Baron Hübsch.

*For Turkey :*

H. E. Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Service.

Dr. Bartoletti, Inspector General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

*(For Egypt) :*

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

M. de Krause received permission from the President to speak in order to communicate a most important telegram received by him from Alexandria, which ran as follows :—

*(Telegram)*

Alexandria, May 31st, 1866, 3-40.

TO THE PRUSSIAN LEGATION,

*Constantinople.*

“On the thirtieth and to-day, two ships arrived at Suez from Damedas with pilgrims: bills of health state that an epidemic (of what disease not stated) was raging at Jeddah. They are in quarantine. 106 deaths from the 26th to the 29th. At Suez, two cases of virulent fever, choleraic symptoms, one of them fatal: yesterday a death here from sporadic cholera. Intendancy gives clean bills.”

(Signed) THEREMIN.

*(True Copy.)*

ROMANO.

Pera Office, despatched at 4-10, 31st May 1866.

After reading this telegram, M. de Krause begged that the Turkish Delegates would be good enough to let them know whether they possessed any documents containing information on the subject. He also invited any other Delegate in a position to give information to be good enough to do so.

Dr. Bartoletti read a report, dated the 28th May last, addressed by Colucci Bey to the Sanitary Intendancy of the capital. In this report it was stated :—

“Since the beginning of the current month an increase has been remarked in the number of daily deaths at Suez. On the 24th May

the deaths, from the first of the month, had already amounted to 33 (the population of Suez is about 4,500.)”

This increase in the deaths was mainly attributed to the quality of the water furnished by the fresh-water canal, the current of which was very weak at this season, and the water, becoming almost stagnant, corrupts easily. The authorities were about to take steps to provide Suez with better water.

“On the 26th May,” the report went on, “a very serious fatal case was reported attributed to a virulent fever, which carried off the patient after an illness of seven hours only.”

M. Bartoletti communicated another despatch (in Arabic), sent by the Sanitary Council at Alexandria, and received that morning.

The translation made of it was far from conveying its exact meaning, but it would appear, however, that on the 18th Mohurrum (*i. e.*, the 2nd June) some attacks, believed to be beyond doubt cases of cholera, had occurred at Jeddah.

M. Bartoletti extracted from another report addressed to the Superior Council of Health, the following information regarding some parts of Syria.

*Beyrout, June 2.*

“The medical officer sent from Acre to Tiberiad reports the existence of cholera there: 12 cases and 3 deaths from the 24th to the 31st May. In concert with the Governor-General, we have this morning sent Dr. Koutoufa to Tiberiad, and taken proper measures.”

*Beyrout, June 3.*

“Amend as follows my telegram of yesterday:—At Tiberiad, from the 24th to the 31st May, 24 attacks of cholera and 10 deaths. Such is the report of our doctor at Aden and our employé at Caifa, who has this morning returned from Tiberiad to Acre.”

Following on these communications, a long discussion ensued between Messrs. Fauvel, Bosi, Van Geuns, Polak, Mühlig, and Segovia, with the object of arriving at a mutual understanding:

*1st.*—As to the authenticity of the serious news communicated by M. de Krause.

*2nd.*—As to the necessity of confirming the information and having precise and truthful reports.

*3rd.*—As to the necessity, considering the gravity and urgency of the facts, of acting with energy and promptitude to prevent any invasion of the capital by cholera from Egypt.

Constantinople was, it was said, so much the more exposed to another invasion by cholera because fresh Egyptian troops were shortly expected there.

Several speakers, after having demonstrated the imminence of the danger and the necessity of acting in opposition to the assurances furnished

by the Egyptian Sanitary Intendancy, which gave clean bills notwithstanding the probable existence of cholera in Egypt, spoke of the greater or less confidence it deserved.

According to M. Polak, no such confidence existed—according to others, though it might exist, nobody, in this grave crisis, could rely either upon its reports, or its appreciation of the danger, or the measures adopted by it.

Other speakers took up the defence of the Sanitary Council of Alexandria. Anyhow, said M. Bartoletti, the International Sanitary Conference was not called upon to criticise and still less to draw up an indictment of the Egyptian Sanitary Intendancy. It had quite another mission.

Several Delegates brought forward propositions adapted to the gravity of the circumstances. They were as follow in the order of their presentation.

First proposition by M. de Krause :—

1st.—The Conference expresses the wish that the Turkish Delegates should telegraph at once to Alexandria for more ample details regarding the sanitary condition of Egypt and especially of Suez.

2nd.—That the sanitary condition of the Egyptian troops arrived at Constantinople should be strictly watched.

3rd.—That the Egyptian troops expected at Constantinople should be subjected to strict inspection before passing the Dardanelles.

4th.—That if the telegraphic advices from Egypt are not entirely reassuring, arrivals from Egypt should be regarded as coming under foul bills of health.

First proposition by M. Monlau :—

That the Conference should, until further orders, subject arrivals from Egypt to a quarantine of observation, and declare them to be under foul bills, notwithstanding the *clean* bills of health given by the Egyptian sanitary authorities, and that this should continue until the serious news just communicated to the Conference were either confirmed or proved to be unfounded.

M. Monlau said that this apparently very severe measure was suggested by the expected arrival of fresh Egyptian troops at Constantinople. It would be very sad were cholera, for want of efficacious measures at Constantinople, to penetrate to that city, while the Conference was sitting there.

M. Fauvel pointed out to M. Monlau that his proposition went too far. The Conference, he said, had not the right of ordering—it could only give expression to wishes and advice—and to this it should confine itself in this matter.

M. Bartoletti spoke to the same effect, and demonstrated moreover that what remained to be done was the concern of the Council of

Health, on which it was incumbent to order measures and carry them out. It was necessary, M. Bartoletti added, to have entire confidence in the sanitary administration of the capital—it watched unremittingly over the sanitary condition of Egypt, as was fully shown by the reports it had furnished to the honorable Conference, which were at the same time a guarantee of its desire and its efforts to prevent the invasion of the capital by another epidemic.

The Superior Council of Health, he said, had already adopted measures of a nature to reassure the Conference. These measures were more complete than those of last year: they consisted of a much more serious quarantine (one of 15 days, not reckoning the days occupied by the voyage) and the establishment of several lazarettos.

M. Monlau declared he had not made use of the word *order*, and had at once protested against its being attributed to him. What he thought he said was:—That the Conference should *express* the desire, if the serious information is confirmed, &c., &c.

M. Mühlig strongly insisted on the necessity of adopting efficacious measures if they did not want a repetition of the deplorable state of things of last year, which, he thought, was inevitable if they did not oppose the transport of Egyptian troops to Constantinople and he proposed:—

1st.—To forbid the arrival in Constantinople of fresh Egyptian troops.

2nd.—To prohibit, or at least restrict, free communication between Egypt and Constantinople.

M. Segovia supported MM. Monlau and Mühlig. The Conference, he said, possessed the right, considering the urgency of the matter, of expressing a wish of the kind.

M. Sawas presented this proposition in a form which, he thought, quite carried out the wishes of all. It was this:—That the Conference, while waiting for further advices from Egypt, should express the wish that arrivals from Egypt should be considered as under *foul bills of health*.

M. Monlau accepted this form, as also MM. de Krause, Mühlig, Stenersen, Count de Lallemand, Fauvel, and de Soveral.

M. de Krause, on his side, withdrew the 1st and 4th points of his proposition in favor of the form adopted, on the amendment of M. Sawas, by M. Monlau himself.

M. Bartoletti admitted that the Conference had the right of expressing desires and of giving advice—advice, he said, which the Sanitary Intendancy of the Empire would receive and treat with all the deference it deserved; but he insisted on the necessity and propriety of leaving to the Sanitary Intendancy full and entire liberty of action. M. Bykow supported him.

M. Sawas said that in the previous meeting he had opposed the taking up of the question of Egypt by the Conference, and he had stated

the reason why he considered that question beyond its competence. The Conference, he added, having decided differently, it was necessary that it should express an efficacious desire and one of real practical utility.

M. Bosi reminded the Conference that it had only lately proclaimed its incompetence to enter upon the affairs which, it had been desired, it should take up, and which he believed to be within the province of the Council of Health. M. Bosi also pointed out to M. Bartoletti that, when sitting in the Conference, he should forget that he belonged to the Council of Health, for he thought that his words had no more value than was given them by his being a Delegate of the Ottoman Government.

M. Bartoletti replied that he had always spoken as such and never otherwise, and that it was so with H. E. Salih Effendi.

M. Bykow's proposition :—

1st.—To invite the Council of Health to telegraph to Alexandria and to the Tiberiad for precise and official information regarding the sanitary state of Egypt and Syria.

2nd.—To leave the Council of Health to act as it might think proper upon such information.

M. de Krause, after having pointed out the authenticity of the despatch he had first communicated, considering that it was sent by the Consul-General at Alexandria, added that he would himself be very glad to see it confirmed, because its rather obscure wording made some points unintelligible.

M. Bosi's proposition :—

"That the Sanitary Intendancy should appoint a committee on the Egyptian troops with a view to reporting on their sanitary condition."

M. Vernoni's proposition :—

"That the troops expected from Egypt should be inspected before their arrival in the capital, at the Dardanelles for instance."

M. Keun's proposition :—

"That arrivals from Egypt and Beyrout should be subjected to a quarantine of observation until the confirmation of the news given by M. de Krause."

M. Maccas said that notwithstanding the strong impression at first made on him by M. Monlau's proposition, *viz.*, to consider arrivals from Egypt under *clean bills* as being under *soil bills* of health, yet he supported this proposition in its entirety. That which, at the first glance, appeared repulsive and irregular, observed M. Maccas, in the proposition of M. Monlau, altogether disappeared if it were observed that it only referred to bills from Alexandria delivered after the date of the news just communicated and also, it should be distinctly understood, if they were to reflect that that proposition was not to be carried into



effect except *conditionally* on the news being confirmed. In that case, said M. Maccas, we would not be wrong if we were to look upon clean bills as being foul bills, for, under such circumstances, stricter measures could not be adopted for the protection of the capital and, by it, of several countries, from another invasion.

M. Bartoletti was of opinion that they must not confound facts appertaining to Egypt with facts relating to Syria. The latter were within the scope of the Sanitary Council of Constantinople, and consequently it was for it to act, whilst Egypt had a special sanitary administration.

As for the Committee on the Egyptian troops at Constantinople proposed by M. Bosi, M. Bartoletti would only remind them that, according to all appearances, the troops had left Egypt before the manifestation of cholera at Suez.

Acting on the opinion of Count de Lallemand, supported by several Delegates, His Excellency the President put to the vote the proposition of M. Monlau, amended by MM. Sawas and Müblig, and then the two propositions of M. de Krause.

M. Monlau's proposition was in the following form :—

The Conference expresses the desire :—

“That the Council of Health will be good enough *immediately* to ascertain the correctness of the information communicated to the Conference regarding the sanitary condition of Egypt, and, meanwhile, in the estimation of the Conference, arrivals from Egypt should be subjected *at once*, by the proper authorities, to the conditions of foul bills of health.”

This proposition was adopted by a majority of 22 votes against 3 ; M. Vetsera declining to vote.

His Excellency the President immediately afterwards put to the vote the proposition of M. de Krause, comprising two distinct points, as follow :—

1st.—That the Egyptian troops who had already arrived should be attentively watched.

2nd.—That the Egyptian troops expected at Constantinople should, in addition, be subjected to a strict inspection before passing the Dardanelles.

The proposition was accepted by a majority of 22 : 4 declined to vote.

The Conference decided on passing over the other propositions without dividing.

M. Vernoni proposed that His Excellency the President would be good enough to communicate *without delay* to His Highness the Grand Vizier and His Highness Aali Pacha, the resolutions just adopted by the Conference.

M. Pinto de Soveral modified M. Vernoni's proposition as follows :—

“That His Excellency the President would be good enough to adjourn the meeting in order that he might be able to proceed immediately to their Highnesses, and inform them of the decisions of the Conference.”

M. Segovia observed that the proposition of M. Pinto de Soveral, comprising two points not absolutely dependent on each other, should be divided in two, and each part separately voted for.

Following the advice given by Count de Lallemand, who supported M. Segovia's remark, His Excellency the President put to the vote the second part of M. de Soveral's proposition, which consisted in begging His Excellency Salih Effendi to be good enough to proceed immediately to the Grand Vizier and His Highness Aali Pacha in order to communicate the deliberations of the Conference to them. (M. Vernoni's proposition.)

It was accepted by a majority of 22 : 4 declining to vote.

The first part was rejected, having only two votes in its favor. The meeting in consequence was continued after His Excellency Salih Effendi's departure.

The Hon. Mr. Stuart observed that he, as well as both his colleagues, had abstained from taking part in the discussion, and from voting on the subject of the different propositions, and the resolutions the Conference had just taken.

M. de Vetsera also spoke about his having refrained from voting.

On His Excellency leaving the hall, the Conference appointed Count de Lallemand to replace him.

After an interval of a quarter of an hour, the meeting was resumed under the presidency of Count de Lallemand.

The order of the day, said Count de Lallemand, was the continuation of the discussion on the Report of the Committee appointed to examine the 3rd group of the programme. The discussion had been interrupted at the last meeting, at the commencement of the 3rd section of the report.

M. Monlau begged M. Segovia to be good enough to take his place, as he was prevented by indisposition from resuming the reading.

M. Polak begged that he might be allowed the favor of speaking having, he said, some important considerations to bring forward regarding the 3rd group of the report in question, a group which, he thought, demanded special and preliminary researches.

Having obtained the permission he sought, M. Polak read the following propositions :—The Conference, he said, should rate them at their proper value and judge of the importance of the researches he was about to propose :—

1st.—What are the principal localities for pilgrimages and fairs in Asia? What are the routes leading to them? By what nations and

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1st.—What are the principal localities for pilgrimages and fairs in Asia? What are the routes leading to them? By what nations and

peoples are they frequented? What is the average number of pilgrims? What are the points of assemblage and separation? What are their means of transport and communication? What shelter have they during the journey? What is their supply of provisions? What time do they require for their journey to and fro? Do they follow the same route in going and returning? Is the pilgrimage confined to a certain epoch or season of the year?

2nd.—What pilgrims touch upon continental Europe?

3rd.—To what diseases are they most exposed at ordinary times? What is their average mortality?

4th.—In cholera seasons is it better for them to travel overland or in steamers, or in sailing ships?

5th.—Is it possible, and how, to avoid overcrowding during the journey across India or through the Red Sea?

6th.—Is it possible to maintain a surveillance over Arab sailing vessels in the Persian Gulf, especially at Muscat, Bunder-Abbas, and Bassora, and in the Red Sea?

7th.—Is it possible to maintain a surveillance over communications overland from India to Persia and Russia?

8th.—Is it possible to do away with the inconveniences of the transport of corpses to Kerbelah, and how?

9th.—Indicate the most important points by which cholera has passed from India into Persia and Russia?

10th.—Show why cholera has never been transmitted to Egypt or Europe by mail steamers from India, and ships doubling the Cape, while it has been transmitted by coasting vessels proceeding to Arabia or Zanguebar?

11th.—In what time after the commencement of an epidemic in India does cholera pass on elsewhere?

12th.—What is the maximum number of pilgrims carried by a steamer?

M. Polak said, in conclusion, that these were, properly speaking, only details of which it was necessary to be in possession in order to enter, with a knowledge of the causes, upon the questions indicated in the 3rd section of the report.

M. Segovia admitted the importance of many of the details enumerated by M. Polak, but he thought that the knowledge and study of these details would find their place as the questions with which they were connected were brought forward in the discussion. To try to study them by themselves, he observed, would only serve to complicate the discussion, for, as M. Polak himself felt, his propositions only comprised questions of detail which it was necessary to take into consideration.

The Conference, and M. Polak also agreed with M. Segovia.

M. Segovia commenced reading the 3rd section.

M. Bykow proposed to expunge the word *special* from the title of this section, because, he said, there were no special sanitary measures, it not being possible for these measures to be other than hygienic or measures of quarantine.

The Committee, replied M. Segovia, did not tie itself down in the least to words, unless they were *necessary*: the word *special*, he said, had a certain importance for the Committee, for it served, accessory as it was, to make it understood that the same measures, applicable equally to the West as to the East, ought to be applied to the East *in quite a special manner*.

M. Sawas supported M. Segovia, and proposed that they should proceed to vote.

The title was adopted as it stood.

M. Sawas made some observations in regard to paragraph 17.

He thought that the leading idea would be more distinct if, after the first part of the paragraph, the phrase "based on the study of the routes followed by cholera" were intercalated.

The paragraph was adopted, with the addition proposed by M. Sawas, by a majority of 17 against 10 who declined to vote.

Paragraphs 18 and 19 were adopted as they stood by a majority of 15 against 12 who declined to vote.

The Hon. Mr. Stuart asked leave to make some observations on paragraph 20.

This paragraph, he said, as conceived and framed by the Committee, could not be accepted by the British Delegates. They could not, in any case, support the creation of an International Commission.

A Commission, he said, having a character of this kind, would almost be an attack upon the independence of Governments having possessions in India.

The task of undertaking in their own domains the enquiries and studies demonstrated by science to be necessary was incumbent on each Government itself.

Influenced by these considerations, and by many others which might be added, Mr. Stuart proposed the substitution of the following paragraph for the 20th:—

"To invite the attention of the respective Governments of the countries believed to be the birth-places of cholera to the utility of undertaking or continuing strict local enquiries upon the generation and propagation of the disease."

To enumerate the questions the solution or better knowledge of which has been shown by science to be necessary.

M. Segovia, in his own name and in the name of the majority of the Committee, refuted the considerations urged by the Hon. Mr.

Stuart. In M. Segovia's opinion, the divergence of view between the British Delegates and the members of the Committee who had accepted the 20th paragraph, arose more from a misunderstanding than anything else. The fear also of attacking the independence of Governments had prejudiced them against the Committee's proposition. But, said M. Segovia, who had ever dreamt of attacking or lessening the independence of Great Britain, or of other States? When, where, and how had the Committee ever made use of such an expression? The Committee, which had no other object but that of advising the creation of a special scientific Commission for the study of the generation and development of cholera, did not refuse to accept the form proposed by the Hon. Mr. Stuart. What it required was that the motives which had actuated the Committee in framing the paragraph brought into question should be properly understood. M. Segovia said he would not repeat these motives, for M. Monlau had already made them known when he demonstrated that what the Committee had in view was a purely scientific Commission. The advice to nominate scientific Commissions had long been followed, and they had been sent everywhere. The Committee, in framing the 20th paragraph of its report, had believed it was complying with a pressing necessity. The generation and development of cholera had been enveloped in obscurity—enquiries had, it was true, been made for a long time past, but they were very incomplete—indeed, so far from being complete, they had as yet only arrived at the enunciation of the problem. These enquiries, and a profound study of the question, were demanded by science. With this object, the Committee proposed the nomination of a special scientific Commission. In doing so it had not only not intended to wound any body, but it had thought it was acting in the interests of the British Government itself, at the same time showing its own independence.

In fact, continued M. Segovia, the creation of a special scientific Commission would greatly facilitate the duty of English medical men. Its authority would be all the greater for the double reason that it would not be national, and that it would preserve entire liberty of action. Not being under the pressure and influence of the Government, this Commission, chosen by some scientific academies, would make a local study of cholera, would place its foot upon its cradle, and would have full liberty of word and action, even if it proceeded to combat the preconceived views of the Indian Governments,—not only the Government of Great Britain, but also the Governments of French, Spanish, Portuguese, Dutch, and other India.

Such were the reasons, said M. Segovia in conclusion, which had influenced the greater part of the Committee in adopting the 20th paragraph.

Mr. Stuart replied to M. Segovia that the British Delegates had not the least intention of placing an obstacle in the way of scientific Commissions being sent to India for the purpose of making enquiries and studies upon cholera. They simply opposed the project of despatching an International Commission.

Dr. Goodeve put forward the following considerations in support of the observations of his colleague the Hon. Mr. Stuart:—

“I wish to persuade the Conference that we have not the least intention of rejecting the project of making scientific studies of cholera in India. We admit the utility of such studies: but we dispute the idea of instituting an *International Commission*, an idea arising from what has been said by Messrs. Monlau and Segovia.

“I am of opinion,” continued Dr. Goodeve, “that my Government would not accept an International Commission to make enquiries into cholera amongst us, and, on this subject, I am entirely with Mr. Stuart, for I too think that we deal here with a proposition which is *injurious* to Governments, at the same time that it displays a want of confidence in the intelligence of the country in which it is desired to undertake these studies.

“The opinion has been expressed also that the utility of this International Commission is demonstrated by the small knowledge we have in Europe of cholera as it exists in India. Nevertheless, I believe that knowledge of the generation and development of cholera is not only not wanting, but that it is as abundant and considerable as is the knowledge we possess of many other epidemic diseases. What do we know, for instance, of the generation and development of variola and scarlatina? Fifty years only have passed since the scientific world has found itself face to face with cholera, and it may be said without fear of contradiction that our knowledge of it is as extensive as that which we possess of other diseases with which we have been acquainted for ages past.

“Though the argument is valid,” continued Dr. Goodeve, “so far as the necessity of undertaking enquiries is concerned, it is not specially applicable to cholera to the point of despatching an International Commission for the purpose.

“A friend of mine has remarked to me, and I cannot but agree with him, that the despatch of an International Commission to our territories for this purpose means either that we are wanting in willingness to institute scientific researches into this disease, or in the capacity of conducting them to a termination. In regard to the capacity, I believe I may say, without being charged with excessive partiality for my own country, that the English have not been left behind by other nations in regard to the original study of cholera either in India or elsewhere, and that our literature affords proofs of the fact. I believe that the goodwill is not wanting either. I believe, therefore, without going further, that the English are capable of undertaking the researches indicated, and that nothing would be lost by confiding in their intelligence and goodwill.

“Whatever may be the result of the studies, which, I hope, will soon be entered upon, I submit my opinion to the Conference, *viz.*, that they should not be undertaken, as Mr. Stuart has very justly remarked, except by the respective Governments of the countries where cholera prevails.”



M. Sawas summed up M. Segovia's remarks in a few words:—His desire was to demonstrate, *1st*, the utility of studies of cholera carried out by a special scientific Commission; *2nd*, that this Commission was a practical idea; *3rd*, that there was nothing hurtful in it—no want of confidence, no attack upon the independence of the British Government, in the proposal of the Committee. M. Sawas confessed that he shared the opinion of M. Segovia in regard to the utility of such a Commission, only he believed that it would be found impracticable. In fact, how could a foreign Commission undertake enquiries in such a vast and distant country as British India? The British Government alone, in his opinion, was competent to do so. He proposed, in consequence, that Mr. Stuart's proposition should be put to the vote, and that they should proceed to the order of the day.

M. Fauvel and several other Delegates observed that the question was so important that it was necessary to listen to every member who might choose to speak for or against it.

M. Gomez said he wished to state that all the members of the Committee were not agreed as to the manner of considering the continuation of the study of the generation and development of cholera in India, as well as the continued investigation of modes of sanitation. They were only agreed as to the propriety of entering the question in the programme in terms so vague as to leave the mode of executing the measure quite unbiassed. The amendment proposed by the Hon. Delegate of Great Britain, Mr. Stuart, fixed this mode of execution in very fitting terms and in the most practical manner. He (M. Gomez) concurred in and approved of Mr. Stuart's views, and he did so all the more willingly that, independently of the inconveniences, and even the very easily appreciable unfitness which would result from the plan of introducing in India *official investigations* ordered by other than the respective Governments, no Government was so interested as that of Great Britain in every thing relating to the sanitation of India, and none more than it possessed for its accomplishment, within the limits of the possible, such means of execution as could be furnished by science or otherwise. And a proof of this might be given, added M. Gomez, taken from authentic documents, in the sufficiently remarkable results already obtained, thanks to the measures adopted in the different provinces of British India, especially of late years. In conclusion, M. Gomez said he would vote for Mr. Stuart's amendment.

M. Monlau, after having spoken to the same purport as M. Segovia, the greater part of whose ideas developed by new considerations, read the 3rd page of the report under discussion. In this page, he said, was to be found, not only the confirmation of the ideas of himself and his honorable colleague, in regard to the necessity of creating a scientific Commission, but also the original thought of the Committee, which had not the least idea of imparting an international character to the Commission proposed by it. In fact, said M. Monlau, what was mentioned there was a *scientific Commission*, whose mode of organisation and the plan of whose labors might be settled and even ordered beforehand

by the respective Governments of the countries which were to be the theatre of its purely scientific studies. Fifteen years ago, added M. Monlau, the Paris Conference had expressed a similar desire, and at that time it had been supported by the British Delegates; at present they would not agree to it, and the reason of all this might be found in the intervention of the diplomatic element.

M. Polak declared that he entered fully into Mr. Stuart's views. An International Commission, he said, could not complete the work proposed to be assigned to it in less than two years, but this work might be perfectly carried out by the English Government. English physicians, he thought, were more competent than any others to undertake with success the researches demanded by science, which had been enriched by them more than by any others with valuable documents and studies of the highest importance. As an instance, he quoted the memoir of Mr. Jameson, which, in his opinion, was superior to any other that had yet been published on cholera.

M. Segovia begged that the Secretary would accurately report M. Polak's declaration.

M. Van Geuns agreed with Mr. Stuart in every point, and accepted his amendment.

M. Fauvel was of opinion that the project of a Commission, as it had been conceived, that is, possessing an international character, could not be of any use. M. Fauvel understood and shared the scruples of the British Delegates. Such a Commission, he said, ought of necessity to be invested with a political character, unless it was wished to make it a collection of tourists. To do anything serious and useful in India, an International Commission would have to struggle with almost insurmountable difficulties, difficulties inherent to the nature of the studies which it would be necessary to undertake. In any case it could not finish its studies and researches until many years had passed.

M. Fauvel was also of opinion that the English Government could of itself alone undertake these studies with advantage. It afforded every guarantee that such a task should be confided to it. M. Fauvel summed up his observations in these terms:—

It is neither useful nor convenient to propose an International Commission. Not only the British Government, but also all the other Governments having possessions in India, would not agree to accept a Commission of this sort. Let the Conference then limit itself to counsel things that are practicable, fitting, and useful.

M. Bykow altogether rejected the project regarding India, so far as the Commission mentioned in the programme was concerned. He fully supported the proposition put forward by Messrs. Stuart and Goodeve.

M. Bartoletti declared that he concurred in every thing that M. Fauvel had said.

M. Pinto de Soveral said that, speaking as a Delegate of a Power having possessions in India, he concurred in the proposition of the Hon. Mr. Stuart, which he supported, and he would vote accordingly.

Count de Lallemand, at the request of the Conference, which declared that it had heard quite enough of the subject, put paragraph 20 of the 3rd section to the vote.

It was rejected by a great majority. Next was put to the vote the proposition put forward by Mr. Stuart in substitution of the above mentioned paragraph. It was adopted by a majority of 18 against 8 who declined to vote.

Votes in favor :—

MM. Vetsera, de Noidans, Sotto, Fauvel, Stuart, Goodeve, Keun, Van Geuns, Malkom Khan, Sawas, de Soveral, de Crause, Mühlrig, Bykow, Stenersen, Hübsch, Bartoletti, Count de Lallemand.

The other Delegates refrained from voting, including MM. Segovia and Monlau, who wished their abstention to be placed on record.

Count de Lallemand invited the honorable Conference to be good enough to state the manner in which it intended to proceed in the consideration of the numerous and various questions comprised in the three groups of the report which had just been discussed.

M. Sawas observed that the Committee had already proposed the formation of three Committees.

Count de Lallemand, on the motion of M. Segovia, put to the vote the last paragraph of the report regarding the three Committees.

It was accepted by a majority of 17 against 2—seven abstentions.

Count de Lallemand, supported by M. Fauvel and other Delegates, made the following proposition :—

“ That the entire Conference divide itself into three Committees, and that their procedure be the same as that of the Committee appointed to consider the two first groups of the programme. That is to say, that the members to compose each of the three Committees be drawn by lot, with this difference that each Committee shall comprise an equal number of diplomatic Delegates.”

In consideration of the late hour, Count de Lallemand, at the request of several Delegates, postponed the definitive arrangement of the three Committees to the next meeting.

The meeting closed at 5 p. M.

Order of the day for the next meeting :—

1st.—Nomination of the three Committees and everything regarding their constitution and organisation.

2nd.—Discussion of the general Report.

COUNT DE LALLEMAND,

*President.*

DR. NARANZI,  
BARON DE COLLONGUE, } *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE. MEETING  
No. 13, OF THE 7TH JUNE 1866.

H. E. SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its thirteenth meeting on the 7th June 1866, at Galata-Serai.

PRESENT :

*For Austria :*

M. Vetsera, Councillor of the Imperial and Royal Internonciature.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

Dr. Polak, formerly Chief Physician to the Shah of Persia.

*For Belgium :*

Count de Noidans, Secretary to the Legation of H. M. the King of the Belgians.

*For Spain :*

Don Antonio Maria Segovia, Consul-General, Charge d'Affaires.

Dr. Monlau, Member of the Superior Council of Health of Spain.

*For the Papal States :*

Dr. Ignace Spadaro.

*For France :*

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician of France.

*For Great Britain :*

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

*For Greece :*

M. Kalergi, Secretary to the Legation of His Hellenic Majesty.

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

*For Italy :*

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

*For the Netherlands :*

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Professor J. Van Geuns.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

*For Persia :*

Mirza Malkom Khan, Aide-de-Camp-General to H. M. the Shah, and Councillor to His Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

*For Portugal :*

Chevalier Edward Pinto de Soveral, Charge d'Affaires.

Councillor Dr. Bernardino Antonio Gomez, Physician to His Most Faithful Majesty.

*For Prussia :*

M. H. de Krause, Secretary to the Legation of H. M. the King of Prussia.

Dr. Mühlig, Physician to the Legation, Chief Physician to the Ottoman Marine Hospital.

*For Russia :*

Dr. Pelikan, Councillor of State, Director of the Civil Medical Department in Russia.

Dr. Lenz, College Councillor, attached to the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, Co-Medical-Military Inspector of the Arrondissement of Wilna.

*For Sweden and Norway :*

M. Oluf Stenerson, Chamberlain to H. M. the King of Sweden and Norway, Secretary to His Legation.

Dr. Baron Hübsch.

*For Turkey :*

H. E. Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Service.

Dr. Bartoletti, Inspector-General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

*For Egypt :*

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of H. H. the Viceroy of Egypt.

The sitting commenced at noon.

Baron de Collongue, one of the Secretaries, read the minutes of the 11th meeting.

The minutes being adopted, H. E. Salih Effendi gave an account of the communication he had made to their Highnesses the Grand

Vizier and the Minister for Foreign Affairs of the desires expressed by the Conference relative to the precautionary measures to be adopted in regard to arrivals from Egypt. His Excellency left it to his colleague, Dr. Bartoletti, to inform the Conference of the resolutions adopted by the Superior Council of Health and the Sanitary Intendancy.

Dr. Bartoletti stated that the Superior Council of Health, while it took the wishes of the Conference into its serious consideration, did not think it necessary to take a decisive measure, that is to say, to subject clean bills to the same regulations as foul bills of health, before the receipt of the information immediately telegraphed for to the Sanitary Intendancy at Alexandria regarding the state of the public health in Egypt, confirmatory of the grave news supplied by M. de Krause. It had, therefore, only been decided that ships arriving from Egypt with clean bills of health should, until further orders, be subjected to a quarantine of observation, the Council leaving it to the Sanitary Intendancy to prescribe, if necessary, severer measures in the Dardanelles as well as in all the other ports of the empire. These measures were adopted on the 5th. On the 6th the reply of the Egyptian Sanitary Intendancy, thus conceived, was received:—"Public health perfect, some cases of virulent fever at Suez. Cholera exists at Jeddah and Yambo." This news not appearing to necessitate the maintenance of the quarantine of observation, Dr. Bartoletti announced that the Sanitary Intendancy had in consequence countermanded the orders sent the day previous to the Dardanelles. Dr. Bartoletti added that the Superior Council of Health had received other despatches, of older date it was true, but which contained better information on the state of health in Egypt. According to one of these despatches, on the 14th May, at Jeddah, there were not more than 2,000 pilgrims bound for Yemen, the coast of Africa, the Persian Gulf, and India: 5,000 had left for Suez on board eight steamers. The authorities, who looked after their embarkation with the greatest care, were to exercise the same strict control at Yambo, where measures were being taken in view to the embarkation of the pilgrims who had left Mecca for Medina.

Dr. Salem Bey, who had not been able to be present at the previous meeting, expressed his regret that he had not been there so that he might have been able to reassure the Conference. The following despatch, addressed by the Minister of the Interior in Egypt to Riaz Pacha, Secretary to His Highness the Viceroy, enabled him to do so most completely.

*Translation of a despatch in cypher from H. E. Scherif Pacha, Minister of the Interior, dated the 20th Mohurrum 1283 (4th June 1866.)*

"We have received a telegraph message from the Governor of Suez, informing us that the steamer *Dosok* from Jeddah, had been subjected to a medical inspection, and that all the passengers, amount-

“ing to 150 in number, had been found in a state of perfect health. “Nevertheless, the vessel was placed in quarantine, because it was “stated on its bill of health that an epidemic disease existed at Jeddah, “From the same message we learn also that the steamers *Ibrahimia* “and *Sidna* had left Massowah for Jeddah; that the *Ibrahimia* arrived “at Suez from Jeddah, and was placed in quarantine there, its bill of “health being also suspicious.

“But, on the other hand, we have learnt from the telegraphic “message sent by H. E. Ismael Sadik Pacha, and which arrived in “the abovementioned vessel, as well as from her chief officer, Ali “Capitan, that since her departure from the port of Massowah there “had been no trace of the disease on board: only the consular agent “at Massowah had sent a letter to the French consul resident at “Jeddah, in which it was said that cholera existed at Massowah; also “that letters had been received by merchants and physicians at Jeddah, “announcing that cholera had developed itself at Medina, Mecca, and “Yambo, and that it was for this reason that a suspected bill of health “had been furnished to vessels on their departure. For this reason “the Captain of the *Ibrahimia* went on board the *Sidna* and returned “to Massowah to ascertain if cholera really existed there, and the “Captain of the *Sidna* came to Suez in the *Ibrahimia*.

“In that vessel there were 409 passengers composed of soldiers, “officers, women, and servants. All arrived in good health, and there “were no deaths among the passengers on board both these ships. “Now, since, on the other hand, it is proved, from authentic informa- “tion, that there was no sickness either at Medina or Mecca during “the pilgrimage, and that none took place either amongst the crews “of these two vessels which traversed these localities, or amongst the “passengers, or amongst those who arrived by the *Dosok*, the current “rumor is entirely contradicted.

“On the return of the *Sidna* from Massowah the truth will be “known.

“Copies of the telegrams mentioned were sent for information to “the Sanitary Intendancy. Thank heaven, there was no trace of the “disease in those localities or among the pilgrims.

“The President of the Sanitary Intendancy, however, came here “to-day, and stated that though the report had been spread that cho- “lera had manifested itself on the departure of the Medina caravan, “the report was without any foundation, and no reliance should be “placed in it, considering that no information on the subject had been “received from Husan Effini Hackim.

“The reason why clean bills of health were not given is, as an- “nounced by new arrivals from Jeddah, because there had been nine “deaths at Jeddah in one day, and the doctors declared that two of these “nine had died of an epidemic disease; but epidemic diseases are of many “kinds, and what has been said should not cause us any alarm.

“ Nevertheless the Sanitary Intendancy has deemed it advisable to give orders to the governors of Jeddah and Massowah to interrupt the voyage of the pilgrims towards Egypt, and to the directors of the Azizieh Company not to receive them on board their vessels, these being precautionary measures on account of the doubt existing on the subject, conformably to the decisions adopted by the International Sanitary Conference at Constantinople. The necessary orders for their execution were given in consequence. The agent of the English Company has also received orders from the British consulate not to receive the pilgrims on board English vessels. We hope these rumours will be speedily contradicted, so that we may be able to report accordingly immediately.”

Dr. Salem Bey then communicated to the Conference a despatch from Dr. Colucci Bey, announcing that, in consequence of the occurrence at Suez of some cases of algid virulent fever attributed to the bad quality of the water of the canal resulting from the lowness of the Nile, the Egyptian Government had at once taken the necessary measure for providing the town with better water. The same despatch noted the good state of health of the population as well as the pilgrims.

M. de Krause pointed out the contradictions existing between the various despatches communicated to the assembly. All these despatches represented the state of the public health as completely satisfactory and yet they were unanimous in stating the existence of cholera in certain places, and, in other localities, the increase of mortality from diseases of suspicious nature. M. de Krause submitted the following proposition to the Conference :—

*1st.*—The Conference expresses the wish that, in the event of the news received from Alexandria proving to be of a nature to raise apprehensions of the spread to Egypt of the epidemic actually existing at Jeddah, it should be enjoined on captains of steamers leaving Egyptian ports not to receive on board more than one half of the number of passengers usually admitted.

*2nd.*—The Conference again invites the attention of the sanitary administration to the selection of localities for quarantines. It would be important to fix these localities as remote as possible from the ordinary ways of communication.

*3rd.*—Finally, the Conference expresses the desire that, in the above supposed case, the despatch of Egyptian troops will be interrupted.

Professor Bosi, and some other members, said that certain portions of the despatch read by Dr. Salem Bey were not sufficiently clear, and they did not hesitate to attribute the deaths reported at Suez to cholera.

Dr. Fauvel shared this view, and believed that in any case the news received from Egypt did not justify the determination of the Sanitary Intendancy to suppress the quarantine of observation. Dr. Fauvel proposed that the Conference should express the desire that



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this quarantine should be re-established and maintained until further orders.

Dr. Maccas also thought that the telegram from the Sanitary Intendancy of Alexandria was not such as to justify the suspension of the measures decreed by the Superior Council of Health in accordance with the wishes of the Conference. The Greek Delegate concluded, like Dr. Fauvel, by wishing that the Conference would once again express the desire for the re-establishment of the quarantine of observation upon arrivals from Egypt, and its maintenance until the arrival of information of a perfectly re-assuring nature.

Count de Lallemand, Stenersen, and Professor Bosi also supported this proposition.

Dr. Bartoletti, on the other hand, thought that to look upon clean bills in the light of foul bills of health would establish a bad precedent, and would be in opposition to all principles. Such severity might be understood if epidemic cholera really existed in Egypt, but there was nothing to prove that it did, considering that the telegram of the 31st May only mentioned one sporadic case, and that the extraordinary mortality at Suez, which dated from the 15th May, was anterior to the return of the pilgrims, and therefore had no connexion whatever with the rumour which had been spread of the reappearance of cholera at Jeddah. Unless they wished to impose a quarantine of 15 days upon Egypt because cholera existed perhaps in the Hedjaz, Dr. Bartoletti was of opinion that they should wait for more precise information. If necessity should arise, the Ottoman administration would not fail to take the necessary measures for the protection of the public health.

Dr. Salem Bey quite concurred in these observations. The Sanitary Intendancy ought not to, and could not, act otherwise than it had done; it was necessary, moreover, to avoid with the greatest care the adoption of premature measures which would needlessly alarm the people.

Dr. Monlau was of opinion that the Conference should not again give expression to its wishes. The Superior Council of Health not having thought proper to defer to that which it had already given utterance to, *viz.*, that arrivals from Egypt should be subjected to quarantine, it would be more dignified if it abstained from a repetition of its wish.

Dr. Fauvel resented the reproach cast at the Superior Council of Health by Dr. Monlau: the Conference had certainly the right of giving expression to its wishes, but it was for the Council of Health to see and judge how far they should be taken into consideration.

Chevalier Pinto de Soveral brought forward the following proposition:—

“The Conference, hoping that the Superior Council of Health will adopt all the measures it has indicated, cannot refrain from recommending these measures to it again, leaving it to bear the responsibility of the consequences which may result from their non-adoption.”

A great number of members demanding the termination of the discussion, His Excellency the President put to the vote Dr. Fauvel's proposition, which was adopted by a majority of 18 against 2, *viz.*, Drs. Monlau and Salem Bey, M. Segovia and the Austrian, British, and Turkish Delegates desired that it should be placed on record that they had abstained from voting.

M. de Krause declared that he was ready to withdraw his proposition for the time, it being only the complement of that brought forward by Dr. Fauvel, if the Conference deemed that that would be best. In that case he would ask that they should pass at once to the order of the day.

Chevalier Pinto de Soveral insisted that his proposition should first be put to the vote.

The President consulted the Conference, which pronounced by a majority of 18 against 2 in favor of the order of the day, *viz.*, the continuation of the discussion on the mode of composition and the nomination of Committees for the examination of the 3rd group of the programme.

Dr. Salem Bey and Chevalier Pinto de Soveral protested against this vote. The latter maintained his right to demand that his proposition should be put to the vote.

After a discussion between Dr. Fauvel, Dr. Sawas, H. E. Salih Effendi, Dr. Dickson, M. Segovia, M. Kalergi, Professor Van Geuns, Professor Bosi, Dr. Bartoletti, and Dr. Monlau, it was decided that the entire Conference should divide itself into three Committees corresponding to the three sections of the 3rd group of the programme; that lots should successively be drawn for the medical and diplomatic Delegates who would have to comprise part of each of these three Committees, and finally that they (the Committees) would have to give an account of their labors and the results thereof to the Conference immediately on their termination.

To form part of the first Committee the following Delegates were nominated:—MM. Vetsera, Segovia, Keun, Mirza Malkom Khan, and Drs. Monlau, Spadaro, Goodeve, Millingen, Gomez, Mühlig, and Lenz.

For the second:—MM. Count de Noidans, Chevalier Pinto de Soveral, Oluf Stenersen, H. E. Salih Effendi, and Drs. Dickson, Maccas, Salvatori, Sawas, Pelikan, Baron Hübsch, and Bartoletti.

For the third:—MM. Count de Lallemand, Kalergi, Vernoni, de Krause, and Drs. Polak, Sotto, Fauvel, Bosi, Van Geuns, Bykow, and Salem Bey.

Drs. Mühlig and Millingen declared that, not admitting the classification of the 3rd group as adopted, they accepted it only conditionally. Dr. Mühlig thought, moreover, that the Committees should have, like the Committee appointed to examine the 1st and 2nd group of the programme, the power of departing from the strict letter of the programme.

M. Stenersen moved that the Committees should not assemble until after the termination of the discussion of M. Fauvel's report, which ought to be the base of their labors. This motion, which was opposed by various members, gave rise to a discussion in which Drs. Polak, Bykow, Count de Lallemand, Dr. Gomez, M. Stenersen, Dr. Goodeve, and Dr. Monlau, successively took part. The Conference then adjourned to Saturday, the 9th instant, for the commencement of the discussion on Dr. Fauvel's report, it being left to the Committees to decide whether they thought they could or could not enter upon their deliberations before the definitive adoption of that report.

It was also decided that the proposed classification of the questions in the third group, as read by Dr. Fauvel at the eleventh meeting, should be printed for distribution to the members of the Conference.

The meeting concluded at 4-45 P. M.

SALIH,

*President of the Sanitary Conference.*

DR. NABANZI,  
BARON DE COLLONGUE, } *Secretaries.*

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INTERNATIONAL SANITARY CONFERENCE. MEETING  
No. 14, OF THE 9TH JUNE 1866.

H. E. SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its fourteenth meeting at noon of the 9th June 1866, at Galata-Serai.

PRESENT :

*For Austria :*

M. Vetsera, Councillor of the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

Dr. Polak, formerly Chief Physician to the Shah of Persia.

*For Belgium :*

Count de Noidans, Secretary to the Legation of H. M. the King of the Belgians.

*For Spain :*

Don Antonio Maria Segovia, Consul-General, Charge d'Affaires.

Dr. Monlau, Member of the Superior Council of Health of Spain.

*For the Papal States :*

Dr. Ignace Spadaro.

*For France :*

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician of France.

*For Great Britain:*

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to H. B. M.'s Embassy, British Delegate to the Superior Council of Health at Constantinople.

*For Greece :*

M. Kalergi, Secretary to the Legation of H. M. the King of the Hellenes.

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

*For Italy :*

M. A. Vernoni, Chief Interpreter to the Legation of H. M. the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

*For the Netherlands :*

Professor J. Van Geuna.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

*For Persia :*

Mirza Malkom Khan, Aide-de-Camp-General to H. M. the Shah, Councillor to His Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

*For Portugal :*

Chevalier Edward Pinto de Soveral, Charge d' Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

*For Prussia :*

M. H. de Krause, Secretary to the Legation of H. M. the King of Prussia,

Dr. Mühlig, Physician to the Legation, Principal Physician to the Ottoman Marine Hospital.

*For Russia :*

Dr. Pelikan, Councillor of State, Director of the Civil Medical Department in Russia.

Dr. Lenz, Councillor of College, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, Co-Military-Medical Inspector of the Arrondissement of Wilna.

*For Sweden and Norway :*

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to His Legation.

Dr. Baron Hübsch.

*For Turkey :*

H. E. Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Service.

Dr. Bartoletti, Inspector-General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

*(For Egypt :)*

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

Dr. Naranzi, one of the secretaries, read the minutes of the 12th meeting : they were approved.

Acting on the advice of several Delegates, the Conference decided—

1st.—To abridge as much as possible the minutes of the meetings, in order that they might be got ready regularly at the conclusion of each meeting.

2nd.—To postpone to the end of each meeting the communication of telegrams and other subjects not set down in the order of the day.

His Excellency the President gave permission to M. Fauvel to proceed with the reading of the general report on which the discussion was opened.

After a conversation between several members, the Conference decided on reading the title of each chapter of the general report. The discussion, if there were observations to be made, would thus bear in detail upon each chapter and each paragraph.

M. Fauvel stopped at the introduction to the general report (1st and half of the 3rd page)—adopted unanimously. He then proceeded to the first group of questions : the 1st chapter (up to the commencement of the 6th page) was adopted unanimously.

M. Fauvel stopped at the 2nd chapter :

Several Delegates asked permission to speak in the following order :—

MM. Lenz, Bykow, Polak, Malkom Khan, Sawas, Van Geuns, Bartoletti, Segovia, Pelikan, and Gomez.

M. Fauvel said he would not speak in support of the general report until after all the speakers had made their observations.

M. Lenz spoke to the same effect :—

His name, he said, and that of his colleague, Dr. Bykow, had been omitted, by a misunderstanding, from amongst the number of those who had voted against the paragraph regarding Persia, which had not been voted upon by himself and his colleague until after the General Committee had taken up the examination of the report of the 1st Sub-Committee. When the general report was being read, they believed that the vote was to be taken only upon the verification of the correctness of the text.

M. Lenz declared that he had never regarded Persia as a doubtful country with regard to the *endemicity* of cholera, because the constant and multiplied relations between that country and Russia would without doubt have revealed the endemic state of cholera in Persia, and moreover the disease would have been transmitted much oftener than it had been to Russia, which, in the space of 43 years, had received cholera from Persia only three times and always simultaneously with the great epidemics which have ravaged the world.

M. Gomez demanded that his signature should be added to the declaration made by M. Lenz.

M. Bykow put forward some considerations on the same subject. He commenced by confirming the observations made by M. Lenz in regard to the vote on the paragraph regarding Persia, and he added that it was unknown that a single choleraic epidemic had originated in any part whatever of Persia. The vicinity of Persia, he said, to the Russian frontier, and the great commercial relations between the two countries, abundantly proved the non-endemicity of cholera in Persia. That country, he thought, had played the same part in regard to cholera as the Hedjaz. In his opinion, the Committee, which had taken into consideration Burckhardt's assertion, exonerating the Hedjaz, should also have taken into consideration the affirmation of several trustworthy travellers who had visited Persia, and who stated in the most formal manner that cholera was not endemic in that country : (Camper, Malcolm, Fraser, Goubinot, Bromchet, Polak).

He (M. Bykow) believed he was authorised to make a distinction between Persia, and the less known countries mentioned in the Report, such as Indo-China, China, &c. He concluded by saying that neither did he believe in the identity of the geographical climate of the south of Persia and that of Bengal, the special climatic conditions of which latter country appeared to him to be intimately connected with the existence in Bengal of the Ganges and its mouths.

M. Polak attacked the text and the conclusion of the 2nd chapter of the General Report, regarding Persia, and in doing so he made use of the following arguments :—

Having made a sojourn of nine years in Persia, he had, he said, studied the country well ; he had acquired all possible information from embassies and consulates and European physicians residing at Tabriz, Recht, Kirman, and Shiraz, and from all this information, these researches, and these studies, he had proved most conclusively that *the endemicity of cholera in Persia was an assertion which could in no way be justified*. Notwithstanding her geographical position, and the constant communication by land and by sea between her and India, which had frequently, and oftener than other countries, communicated cholera to her, the disease, he said, had never been spontaneously generated there, and had never remained there endemically : on the contrary it had, considering the sparseness of the population, exhausted itself quicker in that country than elsewhere.

Thus, said M. Polak, from 1855 to 1860 there was no trace whatever of the disease. In regard to the sea-board of the Persian Gulf, which was most suspected, besides the thousand evidences in favor of the non-endemicity of the disease, it was enough to remember that the disease made no appearance whatever during the English expedition to the Persian Gulf, although the troops came from India.

It appeared that it had been decided to place Persia in the category of doubtful countries with a view to compel the Persian Government to establish a sanitary intendency, and also to introduce proper regulations in the conveyance of corpses to Kerbellah—to which conveyance the transmission of the disease to Bagdad was attributed. But, without resting upon such a supposition, he (M. Polak) would ask whether there were not other and simpler means for the attainment of that object without doing wrong to Persia by a false assertion. He was the first to admit the necessity of a regular sanitary department in Persia, and he had devoted the best years of his life to that object, and he was able to assure them that H. M. the Shah of Persia himself would willingly accept such an institution. But it should be done by good-will and not effected by threats and intimidation by declaring cholera to be endemic in Persia—for in doing so, they would appear to desire the establishment of a constant quarantine and its maintenance by the influence of Russia and Turkey, which would ruin the somewhat considerable commerce of Persia—as had happened before, and previous to its abolition by the Sublime Porte.

M. Polak declared that, having no interest in flattering the Persian Government, what he had just said was the expression of his profound conviction, and of what he believed to be the pure truth.

In conclusion, he (M. Polak) framed the following proposition :—

“ The Conference believes itself to be sufficiently informed to admit that cholera is not endemic in Persia (and in the Soude islands).”



Mirza Malkom Khan refuted, in writing, the 2nd chapter of the 1st group of the General Report, regarding Persia.

Persia, he said, was unjustly classed amongst the least known countries. He thought it was perfectly known, and in support of his belief he alleged the following considerations :—

1st.—The great European Powers had fixed legations in Persia for the past sixty years, and during that time upwards of twenty Persian embassies had been sent to Europe, in addition to the diplomatic missions regularly maintained by her in the capitals of Europe.

2nd.—Since the beginning of the present century, Persia had been sending students to Europe to be instructed in the literature, science, and art of the West.

3rd.—Persia had been a hundred times visited by travellers of repute, and a hundred times explored by all sorts of missions despatched from Europe. By these missions, every thing had been searched, examined, studied, and discovered—religion, history, manners, ruins, agriculture, &c. Indeed, it had been found possible, thanks to women, to extend these researches even beyond the barriers of the *harems*.

4th.—The telegraph placed Europe in communication with the most outlying provinces of Persia, and, in addition, there was the regular and important service of diplomatic couriers.

Thus then, the authors of the General Report were in no way justified in regarding Persia as a suspected country on account of want of knowledge of her.

How could it be asserted, he continued, that so many different authors who had lived in Persia for years could have been ignorant of, or have passed by in silence, such a grave and momentous event as that of the generation and development of cholera in Persia? Would it be said that they were incompetent? Several of them were physicians, and very estimable physicians: It was necessary, to mention but one,—their colleague, Dr. Polak, who had been received by Persia from the Austrian Government. For the sake of brevity, he omitted the names of many others.

Independently of all that, the passage he objected to ought, said Mirza Malkom Khan, to be struck out of the Report in the interest even, and for the honor, of the Conference. A confession of ignorance on its part would compromise it in the eyes of Europe, which was perfectly well acquainted with Persia, better indeed than with many other countries.

Persia, he said in conclusion, had a Government which had always been anxious to take every measure and make every sacrifice which might be recommended to it in the interest of the public health. If, then, the Persian Delegates found themselves under the necessity of protesting against the accusation brought against Persia, it was chiefly because they did not wish that the avowal of such a great want of knowledge should be displayed in the labors of the Conference.

The Conference, on the contrary, ought to be decidedly aware that Asiatic cholera had never been observed in Persia in an endemic condition.

For a more ample demonstration of his views, Mirza Malkom Khan referred them to his honorable colleague, who would furnish them in detail with the proofs by which they were supported.

M. Sawas read a paper, the object of which was also to combat the idea which had placed Persia among the countries which the Conference had been prevented, from want of correct knowledge in regard to them, from formally declaring not to possess cholera in an endemic condition.

The demonstration given by M. Sawas was divided into three heads, *viz.* :—

1st.—The question of vicinity in a geographical point of view.

2nd.—Historical knowledge touching the existence of cholera in Persia before the year 1821.

3rd.—Historical knowledge of the choleraic invasions of Persia, from the year 1821 down to the last epidemic.

M. Sawas commenced by showing that four great deserts separated Persia from India; the distance, he said, was so great that any overland communication between the south of Persia and India was almost impossible. In support of this assertion, M. Sawas quoted Nadir Shah, General Gardane, and others.

M. Sawas remarked that the extreme north-east of Persia alone offered a passage through very vast intermediate countries, but whose populations were very sparse. By this passage alone could Persia be placed in communication by land with India.

M. Sawas then established that the direct communication by sea between Persia and India was subordinate to certain conditions of season. For instance, to proceed direct from Bombay to the Persian Gulf, the voyage could be made during five months of the year only. It might boldly be asserted, said M. Sawas, that the sea communications between Persia and India were only indirect.

M. Sawas then indicated the routes by which cholera had on several occasions invaded the Persian territory, for he did not pretend to deny that Persia had received and transmitted the disease. Down to the year 1821, M. Sawas assured the Conference, cholera was a disease altogether unknown to Persia. In support of this fact he quoted the works of many very respectable and trustworthy travellers, (for instance, Sir John Malcolm, Jukes, and others.) Even an equivalent term for cholera did not exist according to these authors.

In regard to the 2nd head of his argument, M. Sawas believed it necessary to make incidental mention of the medical body in Persia. In that country there were numerous and enlightened foreign physicians, there was a native medical body, there was a school of medicine.

All this tended to produce a very correct knowledge of the sanitary state of Persia, and that knowledge existed. It did not, however, he added, exclude the existence of great *lacunæ*.

M. Sawas proceeded to present a summarised table of the choleraic epidemics which had raged in Persia since 1821.

Persia, said M. Sawas, had been invaded from two different points:—The Persians became acquainted with cholera in Turkey in 1821, in which year the two countries were at war. To this effect, M. Sawas quoted the narration of the epidemic drawn up by Abbas Mirza, whose report was worthy of the greatest confidence, according to Sir John Malcolm himself. Of this same epidemic, which continued till 1823, and which made its first appearance at Bassorah in 1823, Graves also speaks in his 23rd clinical lecture.

*Second choleraic invasion of Persia in 1824.*—In 1824, said M. Sawas, cholera raged in India with unusual violence. In 1829 it broke out at Oremburg (in Russia), which maintained extensive commercial transactions with Bokhara. From Oremburg it passed to Kiakhta, a town on the frontier of the Russian Empire, and the seat of a great fair. From Kiakhta the disease was communicated to Cabul in 1829 after the fair, and thence it passed progressively to Herat and Meshed, and broke out the following year at Teheran. This epidemic raged in Persia for three years.

From that period, said M. Sawas, cholera completely disappeared from Persia until 1845.

*Third choleraic invasion.*—In 1845 cholera broke out afresh at Teheran, where the disease remained until 1846. From Persia it passed on to Russia and Turkey, by way of Bagdad. In Persia it was completely extinguished. In 1848 this epidemic came from India, *vid.* Afghanistan, Bokhara, and Samarkhand.

*Fourth choleraic invasion.*—In 1851 cholera having manifested itself at Bassorah it took two different directions, one towards the east, the other towards the west. It invaded Bagdad. In 1852 the disease crossed the frontier and passed into Persia, whence it invaded Russia by way of Astrakhan.

*Fifth epidemic.*—Towards the termination of the year 1860, cholera came into the country with the Persian troops returning from Turkistan, and in its rapid march it invaded Turkey.

Such was the history of the known epidemics. In 1865 Persia preserved herself from cholera by closing her chief ports against arrivals from the Arabian coast.

M. Sawas said in conclusion, in regard to the 2nd head of his argument, that, from 1821 to the last epidemic, Persia had been afflicted with cholera only five times. It had often been given to Persia and by her in turn communicated to Turkey and Russia.

The disease, he thought, had most often invaded the Persian territory from the north-east and the north—rarely from the

south, in which were situated the provinces on which the doubts rested.

On this subject M. Sawas put forward other proofs taken from the reports of the English consul at Bushire in the Persian Gulf and from other English authorities. To persist in the doubt after such information and after such proofs as he had just given, said M. Sawas, would be a proof of premeditated severity in regard to Persia, perhaps of an intention to maltreat her. Moreover, Persia showed her ardent desire to enter into the European sanitary union, and therefore such severity would be all the more out of place. Such was not, he thought, the intention of the Conference, which—far from wishing to maltreat and alienate the only purely Asiatic Power which had understood the importance and utility of Western knowledge, and which it was successfully struggling to introduce among her own people and amongst her neighbours—comprised the Delegates of civilised and well-informed Governments, which had in all times manifested a deep sympathy with Persia, and the reviving civilisation of that glorious and formerly celebrated country.

Having regard to all these considerations, M. Sawas, in his own name and on behalf of his colleague Mirza Malkom Khan, proposed the following amendment:—

“That Persia shall be struck out of the category of countries in regard to which it is thought proper to entertain doubts as to the endemicity of cholera.”

M. Van Geuns read a paper in which he explained the motives which had induced him to vote against the 2nd chapter (pp. 6 and 7 of the general Report). He made use of the following arguments in explanation of his negative vote:—

The Committee had, in his opinion, established, on unjust principles, the altogether arbitrary distinction of placing countries more or less closely bordering upon India in two categories.—countries in regard to which sufficient information did not exist for the adoption of conclusive opinions, and countries to which cholera had indisputably always come from without. That classification moreover, he thought, was of no utility whatever to the practical object of the labors of the Conference.

In regard to the islands of the Indian archipelago, which had been placed by the Committee in the category of doubtful countries, he hoped to prove that they ought to be placed decisively amongst those countries to which it was incontestable, cholera had always been brought from without.

The neighbourhood of India, said M. Van Geuns, had occasioned the doubt in the first instance. The first thing to be undertaken then was to see, to prove, how far the limits of that neighbourhood extended; quite as much indeed, said he, because the Committee had wished to fix it in a very vague manner, comprising in it almost the whole extent of Asia from the East to the West, as for any other reason.

In the second place, it was unjust, he thought, to class every little or badly known country in the category of doubtful countries. At that rate the Committee would have had to comprise in it many unknown countries which it did not mention, but every body could see to what such a doctrine would lead. Independently of all that, was it indeed true that the Conference was acquainted with the latest facts regarding cholera epidemics in the countries placed beyond doubt by the Committee? The Report itself could reply to that question, for it said that it had not always been possible to follow up the chain of facts. It was useless, therefore, to rest satisfied with the opinion of physicians who did not believe in contagion and in the historians of epidemics. At the same time, he (M. Van Geuns) did not deny that there might be countries out of India where cholera was spontaneously generated. For the time he contented himself with saying that they were not known.

To maintain that a country possessed cholera in an endemic condition, it was necessary, said M. Van Geuns, to be in possession of authentic facts, especially in a practical point of view, and direct proofs. Doubt on that head was not permissible, for they were not authorised to adopt measures simply upon a doubt—most severe measures consisting in the interruption of the relations between these countries, or at any rate in their strict surveillance. For these reasons, he (M. Van Geuns) had been obliged to reject the principle adopted by the Committee.

M. Van Geuns then proceeded to examine whether, even admitting the principle laid down by the Committee, the islands of the Indian archipelago might be assigned a place amongst the countries bordering upon, or in the neighbourhood of, India, with regard to which sufficient data did not exist for the formation of an opinion whether cholera was always introduced into them from without.

In the first place, observed M. Van Geuns, among these neighbouring countries there were some situated in the same continent and others at a greater or less distance, separated by sea. This circumstance was of great weight. For over this vast Indian archipelago was scattered a series of islands, covering 30. in extent, or the twelfth part of the circumference of the globe. This extent was comprised from the westernmost point of Sumatra (95°) to Menado (125°).

From the nearest point of Sumatra to Calcutta and the mouths of the Ganges, the distance was almost equal to that separating Alexandria from Naples. It was true that the peninsula of Malacca was much nearer to it, but it was separated from the Dutch possessions by the straits of Malacca.

M. Van Geuns was willing to refrain from urging the arguments he might draw in his favor from other geographical considerations, being anxious to enter upon the question itself. That question could not be better understood or solved than by an historical review of the different epidemics which had raged in the Dutch colonies of the Indian archipelago. Cholera showed itself there for the first time in 1821, and

then for the first time invaded Java. In 1825 it penetrated as far as the Moluccas. A fact of the greatest importance, which it was necessary to note, was that the islands having most commercial relations with India had been, since the first invasion of cholera, the chief theatre of the epidemics—it was from them that cholera had always commenced its march, which tended to prove the importation. Sometimes this march occupied four years before reaching the most remote islands, the Moluccas. M. Van Geuns referred the Conference to Hirsch's work for information as to what had passed in the Indian archipelago down to 1830. After that time cholera disappeared until 1851, when it showed itself afresh in Sumatra.

According to that author, cholera not only did not maintain itself in the towns, but it disappeared for twenty years.

M. Van Geuns affirmed that after 1851, no other epidemic broke out in the Indian archipelago until 1855. Three years later, *i. e.*, in 1858 and 1859, another invasion of cholera of small importance occurred. Not till 1864 did a serious epidemic show itself which was extinguished, according to received accounts, the following year. So that since 1851 only four epidemics had been noted, although during the intervening years there had been occasional cases of sporadic cholera which might with good reason be looked upon as cases of cholera nostras. The figures were as follow:—In 1853, 151 cases; in 1854, 282 cases; in 1857, 139 cases; in 1862, 8 cases. But during the years 1858 to 1860 and 1861 there were absolutely no cases whatever of cholera in the Dutch colonies. There could, therefore, be no doubt, said M. Van Geuns, in regard to the non-existence of cholera in an endemic condition in those islands.

Following up all this information, M. Van Geuns proceeded to details regarding the invasion and march of the disease in question. He showed that on every occasion cholera had been imported into the islands. These details in respect of the first epidemic were taken from the works of Bleeme, Riehl, Muller, Schilet, &c.

It was also necessary, continued M. Van Geuns, to solve an objection which had been raised in Committee in regard to the parts of the island not under the control of the Dutch Government. The objection would lose all its force if they were to take into consideration the minimum figure of the population free from official control, while that control was exercised, in the most satisfactory manner, on a population of 25,000,000 souls to whom the details mentioned above referred. He (M. Van Geuns) said that what was essential, was to be well acquainted with every thing connected with the islands of Sumatra and Borneo. Those islands, which were so remotely situated that they could not be comprised within the already very wide circle of neighbouring countries, could not be included in the question. Consequently, M. Van Geuns, after having spoken of the extent and geographical climate, population, and hygienic conditions, and the choleraic epidemics of the islands of Borneo and Sumatra, concluded that everything relating to these

matters justified him in rejecting the supposition of an original source of cholera in those islands. The importation of cholera into them had always been shown.

To develop this conclusion better, M. Van Geuns added:—A Government which had so actively interested itself in the pursuit of scientific researches in its colonies could not have lost sight of their sanitary condition, so that it could not be held that the question was impossible of solution for want of sufficient data. On the contrary scientific and medical data of every kind might be extracted from the works written by medical men of Java, amongst whom figured the well known names, for instance, of Blume-Junghu, Triedmann, Haskarl, Bleeker, Bosch, and many others. Not one of them spoke of endemic cholera in those countries. Could they have omitted it designedly? No, certainly, for they were all agreed in saying that cholera had always been imported from without. It was impossible therefore, said M. Van Geuns in conclusion, to remain in doubt—and he proposed the two following questions, to which he invited the best attention of the Conference:—

1st.—Is it necessary to maintain the category of doubtful countries?

2nd.—Would it be just to include the islands of the Indian archipelago amongst these doubtful countries?

M. Bartoletti thought that the true meaning of the article regarding Persia had not been properly appreciated. But it lay with the reporter, he said, to explain it. Having voted for this article, M. Bartoletti thought it was right that he should acquaint them with his motive for doing so. He was not going to utter a discourse; he would limit himself to putting forward some notes extracted from the archives of the intendency, thanks to which the information given by M. Sawas might be completed.

The notes, which he made it a duty to communicate to the assembly, comprised the facts relating to the epidemics which had succeeded each other in Persia from 1851 to 1861.

In 1851 the French consul at Bassorah announced that cholera had broken out in that town. By the 2nd of July the mortality had increased to 40 and 50 daily. The first who fell a victim to the disease was the director of the quarantine. On the 16th July the British consul wrote that cholera had shown itself, with great intensity, at Mohammerah. On the 24th it appeared at Samarat and Sinafieh, and on the 29th at Imam Ali, where, during the height of the epidemic, the daily mortality reached 20. On the 12th August the disease showed itself at Hilla. From the 12th August to the 7th September the number of deaths among the population amount to 1,080, and among the military to 48, the population amounting to 20,000. On the 11th September the epidemic declared itself at Bagdad, where, down to the 18th November, it carried off 1,587 victims from amidst a population of 600,000. On the 18th September the cholera showed itself at Imam

Mousa, an hour's journey from Bagdad; in one month there 433 deaths in a population ordinarily very limited, but which at that time comprised 12,000 Persian pilgrims among whom the epidemic raged. The disease took two routes—the one from Bassorah towards the west, reaching Souh-el-Chuk, Samavat, Sinafeh, Imam Ali, and Hilla; the other, towards the east, by Mohammerah, attacking many nomadic tribes, and Suleimanieh and Revandouz successively. According to Dr. Belleli, a sanitary physician, the Persian pilgrims contributed to spread and maintain the disease, owing to their overcrowding and their great numbers in the towns and villages at which they were in the habit of stopping. (See the Reports of M. M. Padouan and Belleli.)

In the first half of the year 1852 some sporadic cases were observed at Bagdad and other places in Mesopotamia,—the disease having previously raged in many districts and villages of Persia. On the 17th November the disease, according to a despatch from the British minister at Teheran, was at Tauris.

In 1853 the inspector of health at Bagdad reported, under date the 1st June, that cholera was raging at Teheran. According to the same authority, the disease had, on the 15th June, reached Astrabad on the Caspian Sea, and Bushire and Shiraz by the 29th of the same month. The inspector said that apprehensions existed of an invasion of the epidemic by the coasts of the Persian Gulf, as had occurred at Bassorah in 1851. By the 13th June cholera had already reached Hamadan and Kermanshah, on account of which it was thought proper to subject arrivals from Persia to a quarantine of observation, and to prohibit the entrance of corpses into Ottoman territory. On the 19th October the inspector announced that cholera had reached Bassorah, imported *via* Mohammerah. The troops of the Shah, ravaged by cholera, scattered themselves and disseminated the disease throughout Persia. On the 18th November it passed from Persia, *via* Bassorah, to Bagdad.

In 1855 the inspector announced, on the 17th October, that cholera had shown itself at Teheran. This information was confirmed by the British consulate. Later it reached Tabreez. In the month of October, 13,493 Persian pilgrims underwent quarantine at Khaneguin, and on the 13th November the disease showed itself at Hamadan. On the 28th November the Mecca caravan arrived at Imam Ali in good health, although it had been attacked by cholera *en route*.

In 1856 cholera ravaged Recht, the capital of the province of Ghilan, near the Caspian sea. On the 6th October it had reached Teheran (14 to 15 victims daily). On the 17th September it showed itself at Ispahan, Hamadan, and Kermanshah. On the 10th October, 3,600 pilgrims were in quarantine at Kanizitieh, and amongst them there were from eight to ten cases of cholera daily. They concealed their corpses, which they cast into the desert and in the Diala. They also concealed their sick among their baggage on the appearance of the health agents. They broke through the quarantine, many



hundreds flying through the Diala, who were brought back by the Bashibazouks. Cholera showed itself at Bagdad, it ravaged Kermanshah. The quarantine was broken through forcibly; 5,000 pilgrims, decimated by cholera, threw themselves upon Bagdad, followed by other caravans stricken with the scourge. They threatened to enter the town, and it was found necessary to repulse them *vi et armis*. The disease carried off 58 victims at Bagdad in the space of a month, and at Kerbelah there were from 25 to 30 deaths daily. The entire course of the Euphrates was infected; at Bassorah there were from 30 to 35 cases of cholera every day.

In 1857 cholera showed itself in the north-east of Persia and spread to Shiraz. The report (No. 20) said that cholera was imported every year by the caravan of pilgrims from Persia. A fresh invasion was apprehended at Bagdad, and the epidemic did, in fact, break out there on the 16th October. On the 22nd it was at Kerbelah and Imam Ali. There were 1,000 deaths at Kerbelah and 394 at Imam Ali; 91 at Bagdad.

In 1858 the disease existed at Teheran and at Koum, on the Teheran road: at Mohammerah it carried off 38 victims daily. On the 13th October the disease spread to Bassorah, where in a few days it carried off 30 victims.

In 1860 cholera invaded Persia in the beginning of November, and, on the 19th December it raged with violence at Kermanshah. On the 6th December it arrived at Bagdad, where 42 deaths took place between that date and the 19th.

In 1861 cholera raged at Kermanshah, and appeared at Teheran in the month of January. On the 31st July 80 cases daily were reported at Hamadan. On the 28th August it appeared at Kermanshah, where according to what is asserted (perhaps without any foundation for the assertion,) there were 300 deaths a day out of a population of 25,000 souls then greatly reduced by emigration. On the 19th September a mortality of 250 persons in 19 days was reported at Mandeli, twenty-five hours' journey from Bagdad; then at Bakouba, 9 hours' distance from Bagdad (10 cases a day in a population of 4,000 souls.) The report of the 19th October of the same year announced that cholera existed in Persia and at Bagdad, at Imam Ali and Kerbelah. On the 13th December it showed itself at Iman-Ali, where it lasted for a month, 30 persons dying daily during the height of the epidemic. At Kerbelah there were 427 deaths during the month of December.

M. Bartoletti said, in conclusion, that wishing to be positive, he had confined himself to quoting facts and figures without any sort of commentary, and without pretending to demonstrate that cholera was endemic in Persia. From 1861 to 1865, he added, there were no further epidemics in Persia.

M. Sawas thanked M. Bartoletti, and said that the information he had been good enough to afford was of great importance to what

he (M. Sawas) maintained, *viz.*, that cholera had always been imported into Persia. But a complete proof of his principle, said M. Sawas, was furnished by the facts communicated by M. Bartoletti. That principle was this:—It was beyond doubt that Persia very often communicated cholera to Turkey, and sometimes Turkey transmitted it to Persia. It was important to note, said M. Sawas, that the Persian Gulf must not be confounded with Persia, for that would lead to error on the part of M. Bartoletti, whose communication bore especially on the epidemics propagated by way of the Persian Gulf rather than by Persia herself.

M. Bartoletti replied that he had not so confused matters. His communication very exactly reported the facts appertaining to each locality; and the most distinctly proven fact drawn from them was that the pilgrimage which lasts for almost the entire year at Bagdad, is the chief cause, by reason of the great movement it maintains between Persia and Bagdad, of the dissemination of cholera.

M. Segovia wished to draw attention to a fact resulting from the discussion. In the General Committee they had been made to believe that Persia was an unknown country, that data in regard to it were not forthcoming, nor documents, nor works, from which her sanitary condition might be known. And, therefore, the General Committee, which Mirza Malkom Khan had just handled with such severity, had decided on classing Persia among the doubtful countries. But the question had now undergone a complete change: thanks to the amount of information which had just been communicated to the Conference, it was almost a matter of demonstration that Persia was one of the best known countries.

In the interest of the discussion, as well as with a view to shorten it, M. Segovia put forward four propositions, which he believed to be of capital importance. In doing so, however, he said, he did not wish to prejudice the explanations which the reporter-general had been good enough to afford.

These four propositions were:—

1st.—The geographical position of Persia with regard to India and her distance were not such as they had been represented to be by M. Sawas.

2nd.—The relations of the one country with the other were not maintained by the routes and in the manner explained by M. Sawas.

3rd.—It was not certain that there existed, or could exist, with regard to the sanitary condition of Persia such precise information and such complete and profound knowledge as was pretended by the Persian Delegates.

4th.—The want of positive data on this head being proven, and the absence of medical reports being demonstrated, as well as the existence of other analogous or contrary reasons, it was a matter of necessity to place Persia among the countries where the existence of endemic cholera was reputed to be possible.

If M. Fauvel or somebody else, said M. Segovia in conclusion, did not afford the most logical demonstrations of the four points above-mentioned, justice and equity would force them to comply with the demand of six or seven Delegates, *viz.*, to strike out Persia from the list of countries under suspicion, so to say, of choleraic endemicity.

M. Pelikan observed that the information afforded by M. Sawas was calculated to throw doubt upon what, up to that moment, had been believed. In his capacity as reporter to the Committee appointed to consider the 3rd group, M. Pelikan thought he was bound to say that the reasons which had obliged the members of the Committee to consider the information available in regard to cholera in Persia and the islands of the Indian archipelago to be of the same nature as that which existed with reference to choleraic epidemics in the Hedjaz, had ceased to be of any importance, considering the fresh facts which had now been communicated to them, and which had then been unknown. M. Pelikan was of opinion that, if the first formed convictions of the Conference were shaken, they must of necessity strike Persia and the islands of the Indian archipelago from the category of suspected countries.

As for M. Bartoletti's communication, it did not prove, in M. Pelikan's opinion, the existence of endemic cholera in Persia. At the most, it would prove the persistence of the disease in that country, but such persistence had been of much greater duration in Russia. And, moreover, M. Bartoletti's information stopped at the year 1861. But to prove the endemicity of cholera in a country in the neighbourhood of Turkey, the Conference, he thought, should place itself in possession of more recent data. The matter was of sufficient importance to deserve the fullest and deepest consideration.

M. Gomez begged the honorable Conference to accept his statement also in regard to the second article of the general Report. He had voted for it, he said, though he had abstained in other previous divisions of the Committee from classing Persia, the islands of the Indian archipelago, and the Arabian coast, as doubtful countries in respect of the endemicity of cholera.

M. de Krause observed to M. Sawas that the doubts he had expressed about the intentions of the Conference with regard to Persia could not but be rejected by the Conference, for nobody had ever entertained the notion of injuring or wounding Persia; and such an idea would be cherished by the Conference, which observed the strictest equity to all nations, less than by anybody.

M. Sawas replied that he had never entertained a doubt of that. It was so true that, if M. de Krause would attentively consider what he had said on the subject, he would find that he had only given expression to the same thought and confessed the same sympathies as the Conference for Persia.

Several other members having inscribed their names to speak, the rest of the discussion was postponed, in consideration of the late hour, to the next meeting.

H. E. the President asked if there were any communications to make.

Count de Lallemand said he had one, and he accordingly read the following telegram :—

*(Telegram.)*

TO HIS EXCELLENCY THE FRENCH AMBASSADOR,

*at Constantinople.*

*Alexandria, June 6, 4-13 P. M.*

“ Letter from Jeddah, dated 26th May, announces some cases of cholera. The caravan of pilgrims must, it is said, have been seriously attacked towards Medina. Arrivals from Jeddah subjected to quarantine at Suez, though no cases occurred either in the voyage or in lazaretto. Some sporadic cases reported at Suez even and at Alexandria. No epidemic.

“(Signed) M. OUTREY.”

M. Bartoletti would bring to their notice that, from the message just communicated to the Conference by Count de Lallemand, it would appear that the grave fact of 106 deaths at Jeddah communicated at the last meeting was not confirmed. In the message now communicated only a few cases were mentioned.

M. Salem Bey made the same observation, and then read a very reassuring message which had been received from Alexandria that morning.

In that message it was said that the sanitary condition of Egypt was good. Some cases of virulent fever, the symptoms of which were given, had occurred at Suez, and some cases of cholera at Jeddah, arrivals from which place were sent into quarantine at Suez. From the 1st to the 22nd May the mortality at Suez had amounted to a total of 32. Anyway, it was said, the case which had given the alarm might at most be considered as a case of sporadic cholera.

Salem Bey added that he had himself very carefully inspected the Egyptian troops already in the capital, and he was assured that their sanitary condition was very satisfactory, for, with the exception of some cases of dysentery, no disease existed amongst them.

M. Bosi said that the news given by Count de Lallemand were of a nature to cause the Conference to persist in the resolution it had adopted at the last meeting, viz., to subject arrivals from Egypt to a quarantine of observation, for in his opinion, the fact was confirmed that sporadic cholera existed at Suez and Alexandria.

The meeting broke up at 5-30 P. M.

Order of the day for the next meeting :

Continuation of the discussion of the general report.

The following members inscribed their names to speak :—

M. M. Sawas, Malkom Khan, Mühlig, Dickson, Goodeve  
Monlau, Fauvel.

SALIH,

*President of the Sanitary Conference.*

BARON DE COLLONGUE, }  
DR. NARANZI, } *Secretaries.*

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INTERNATIONAL SANITARY CONFERENCE. MEETING  
No. 15, OF THE 11TH JUNE 1866.

HIS EXCELLENCY SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its fifteenth meeting  
on the 11th June 1866, at Galata-Serai.

PRESENT :

*For Austria :*

M. Vetsera, Councillor of the Internonciature of His Imperial and  
Royal Majesty.

Dr. Sotto, Physician attached to the Imperial and Royal Inter-  
nonciature, Director of the Austrian Hospital.

Dr. Polak, formerly Chief Physician to His Majesty the Shah of  
Persia.

*For Belgium :*

Count de Noidans, Secretary to the Legation of His Majesty the  
King of the Belgians.

*For Spain ;*

Don Antonio Maria Segovia, Consul-General, Chargé d'Affaires.

Dr. Moulau, Member of the Superior Council of Health of Spain.

*For the Papal States :*

Dr. Ignace Spadaro.

*For France :*

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician of France.

*For Great Britain :*

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to  
the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

*For Greece :*

M. Kalergi, Secretary to the Legation of His Majesty the King of the Hellenes.

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

*For Italy :*

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

*For the Netherlands :*

Professor J. Van Geuna.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

*For Persia :*

Mirza Malkom Khan, Aide-de-Camp-General to His Majesty the Shah, Councillor to his Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

*For Portugal :*

Chevalier Edward Pinto de Soveral, Chargé d'Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

*For Prussia :*

M. H. de Krause, Secretary to the Legation of His Majesty the King of Prussia.

Dr. Müblig, Physician to the Legation, Chief Physician to the Ottoman Marine Hospital.

*For Russia :*

Dr. Pelikan, Councillor of State, Director of the Civil Medical Department in Russia.

Dr. Lenz, Councillor of College, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, co-Military-Medical Inspector of the Arrondissement of Wilna.

*For Sweden and Norway :*

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to his Legation.

Dr. Baron Hübsch.

*For Turkey :*

His Excellency Salih Effendi, Director of the Imperial School of Medicine at Constantinople.

Dr. Bartoletti, Inspector-General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

*(For Egypt :)*

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-mother of His Highness the Viceroy of Egypt.

The meeting commenced at noon.

The minutes of the 13th meeting were read by Baron de Collongue and adopted with some modifications.

Dr. Naranzi then read the minutes of the 14th meeting. As these minutes reproduced the entire text of each discourse read at that meeting, some members said that they were not in accordance with the decision of the Conference, according to which the minutes should record only a brief analysis of what was said at each meeting. A conversation ensued upon this head, after which the reading of the minutes of the 14th meeting was postponed to the next meeting, the Secretary being desired to modify them meanwhile.

The Committees appointed at the meeting of the 9th June acquainted the Conference, through their respective Presidents, with the selection of officers they had made.

*1st Committee*—President, M. Segovia ; Secretary, Dr. Lenz ; Reporter, Dr. Monlau.

*2nd Committee*—President, His Excellency Salih Effendi ; Vice-President, M. Oluf Stenersen ; Secretaries, Drs. Baron Hübsch and Dickson ; Reporter, Dr. Bartoletti.

*3rd Committee*—President, Count de Lallemand ; Secretary, M. de Krause ; Reporter, Dr. Fauvel.

The order of the day being the continuation of the discussion on the 2nd chapter of Dr. Fauvel's report, Mirza Malkom Khan proceeded to reply to Dr. Bartoletti. He said he did not deny the permanent existence, so to speak, of cholera on the Turco-Persian frontiers, nor the frequent invasions of Bagdad by it, but he did deny that it had been imported from Persia and by Persian pilgrims. His idea was that the disease was brought to Bassorah and Bagdad by the large number of Indian pilgrims, Mahomedan sheahs, who crowded every year into Kerbelah, more especially since the annexation of Oudh and the last great insurrection, so far from Persia being the introducer of

cholera into Turkey, he maintained that it was, on the contrary, most frequently imported to her by the latter country. The town of Bassorah, which was notoriously unhealthy, and which had always been the first stage in the progress of cholera, stood right in the passage of the Indian pilgrims coming up the Persian Gulf. Now the Persian pilgrims proceeded *via* Kermanshah and not by Bassorah. The pilgrimage to Kerbelah being in no way obligatory, and, moreover, not having to be accomplished at a fixed time of the year, like that to Mecca, Mirza Malkom Khan would ask whether it could be asserted that the Persian pilgrim caravans set out on their journey carrying cholera with them. These caravans always started free of the disease, and not till they joined the Indian pilgrims did cholera ever show itself amongst them. The epidemics which had been seen to recur so frequently in certain provinces of Persia were only the sequel to the epidemics which, after having first made their appearance at Bassorah in Ottoman territory, maintained themselves, for a longer or shorter period, on the frontiers of both countries.

Dr. Dickson said that though Persia had been included in the list of doubtful countries, it was not meant to be asserted that cholera was endemic in that country. Nevertheless, considering the impossibility of being exactly informed in regard to her sanitary condition, she could not be placed on the same footing as Europe.

Dr. Goodeve was not sure whether the frequent epidemics which had ravaged Persia came from India or the Persian Gulf, but he believed that Mirza Malkom Khan had exaggerated the influence of the Indian pilgrims. It was only in the absence of information that he (Dr. Goodeve) had voted, and even then under reserve, that Persia should be declared suspected.

Dr. Monlau was of opinion that the Conference could not only, considering the information furnished by Drs. Sawas and Van Geuns, strike out Persia and the islands of the Indian archipelago from the list of suspected countries, but that it could even advantageously suppress the distinction which the Committee had thought proper to establish among extra-Indian countries in the matter of endemicity. Such a distinction was of no use, unless it was made the starting point for a system of measures to be adopted in regard to the countries so declared to be suspected: and as the consideration of these measures would be taken up when the Conference had reached their proper place in the 3rd group of the programme, he (Dr. Monlau) thought that the distinction might, for the present, be done away with without in any way affecting the substance of the question. It would be sufficient, in that case, to substitute for the conclusion of chapter II. the first sentence of the same chapter, ending thus: "No facts have hitherto reached us to show that Asiatic cholera has ever had its point of departure elsewhere than in India, and it is probable that it does not exist endemically in any other country and capable of giving rise to invading epidemics."

Dr. Mühlig said that, though he did not believe that cholera was epidemic in Persia and the islands of the Indian archipelago, yet that



sufficient data did not exist in regard to its manifestations in the vast extent of those countries to admit of the possibility of affirming the fact positively. Cholera, as had been seen, had raged in Persia almost constantly from 1851 to 1862; it might have been, and it was probable that it had been, imported from India; but could it be maintained that it had not permanently fixed itself in Persia and become acclimatised there in consequence of repeated importations? M. Sawas had said that cholera had only twice been communicated to Europe by Persia, and then only after two great epidemics originating incontestably in India, but was not cholera endemic in India, without, however, being always invested with an invading character? Had not Persia, moreover, been seen to communicate cholera almost every year to Turkey in Asia? Dr. Sawas had also, in order to prove the non-endemicity of cholera in Persia, brought forward the great distance between that country and India and the difficulty of the communications, but could not that argument be turned to use against himself? How could he explain the almost constant presence of cholera in Persia, if its importation from India was so difficult? Dr. Mühlig was of opinion that, from the impossibility of giving a positive and definite reply to all these questions, the Committee could come to no other conclusion than that which it had adopted. Whether cholera was or was not endemic in Persia, he would ask what, in a practical point of view, could be the reason for which the Persian delegates had attacked the conclusion arrived at by the Committee? Was it in the hope of preventing the adoption of special precautionary measures on the Turco-Persian and Russo-Persian marches? Persia, which as yet had no sort of sanitary organisation, could not, for a long time to come, offer guarantees, in respect to this point, sufficient to justify such a pretension.

Dr. Bartoletti disputed the correctness of Mirza Malkom Khan's assertion that the majority of the pilgrims to Kerbelah consisted of natives of India. The great mass of the pilgrims entered the Turkish territory by Khaneguin, Mendeli, Suleimanieh, &c. Now, it could not be pretended that these various routes to the interior of Persia were those which could be taken by Indian pilgrims coming by the Persian Gulf. Dr. Bartoletti put forward a statement showing that, from the 1st December 1849 to the 1st December 1850, there passed through the single station of Khaneguin 52,053 pilgrims, with 64,138 beasts of burden, 4,504 muleteers, and 2,837 loads of corpses, which, giving two or three corpses to a load, would amount to about 8,000 corpses. Perhaps there were some natives of India among these pilgrims, but it was not so stated.

Mirza Malkom Khan, in reply to Dr. Bartoletti, said that a great number of Indian pilgrims annually went on the pilgrimage to Kerbelah. He had had occasion to assure himself of the fact with his own eyes.

A conversation ensued, after some observations made by Drs. Dickson, Maccas, and Goodeve, upon the question whether the Hedjaz, to which a chapter had been especially devoted, ought not also to be mentioned in either the one or the other of the categories in the second chapter: or, at any rate, whether a note should not be added to the chapter,

explaining that the question in regard to the Hedjaz had been reserved. The Conference, after having heard M. Fauvel, decided, by 16 against 3, that no change should be made on this head in the chapter under discussion.

Dr. Bykow did not agree with Dr. Mühlig in thinking that the Persian Delegates had asked that their country should be expunged from the list of suspected countries, because they wished to avert the measures which might be adopted in regard to her. These measures were necessary whether the disease, as it existed in Persia, was endemic or imported from India. Persia, moreover, had declared her readiness to join in those measures. It could not be asserted that cholera was endemic in Persia, but Dr. Mühlig had admitted at the same time that it was impossible to come to a definite conclusion on the point: it was this doubt which it was sought to dispel.

Dr. Fauvel asked permission to speak, not to recommence the discussion of a question which had long been debated in Committee, and of which everybody had by that time heard quite enough, but merely with the object of bringing forward some additional facts, and clearly defining the meaning of the report. After finishing with the question of the endemicity of cholera in India, the Committee had to see whether it existed or not elsewhere out of India in endemic foci. In regard to certain countries, those, for instance, situated in Europe, the Committee had no hesitation in deciding in the negative: in respect to others a decisive opinion could not be pronounced owing to the absence of information sufficient to establish certainty. These were the countries—countries most closely neighbouring upon India, and Persia among the number—which it had been found necessary to declare under suspicion. Persia, on account of her geographical position, was of the greatest importance in the point of view of the propagation of cholera. She was one of the chief links in the chain of communication between India and Europe, and next to India, the country in which cholera had showed itself most frequently, and in which it might be said the disease was permanent. Who could assert indeed that cholera was not endemic, at least in certain parts of Persia? It had been said, in order to prove the non-endemicity that, within a given time, Persia had communicated the disease to Russia not more than four times: but had she not been seen to communicate it eight times to Turkey in eleven years? The Committee had not dreamt of lessening the consideration enjoyed by Persia: commercial interests at most could be engaged in the question. Replying to Mirza Malkom Khan, who had pretended that Persia had received the disease from Turkey through Bassora, because that town was situated on the Persian Gulf route from India to Persia, Dr. Fauvel pointed out, in refutation of the assertion, the route followed by the epidemics from 1851, when a sanitary department was first organized at Bagdad, to 1861, both years inclusive. It appeared from the facts given by Dr. Fauvel that during that period cholera had been imported into Mesopotamia nine times: in 1851, 1852, 1853, 1855, 1856, 1857, 1858, 1860, and 1861; that on eight occasions, viz., in 1852, 1853, 1855, 1856, 1857, 1858, 1860, and 1861

the invasion of Mesopotamia had been preceded by the existence of cholera in Persia ; that it was true that on three occasions it had not been found possible to define the route followed by the disease, but that it had been sufficiently proved that the other epidemics had come from Persia, twice, in 1853, and 1858, *vid* Mohammerah and the Tigris, and three times, in 1856, 1857, and 1860, by the land frontier. Dr. Fauvel proceeded to remark that to the precise and positive facts furnished by the Ottoman Administration, the Persian delegates had been able to oppose only German authors, necessarily not so well informed. Dr. Sawas had also quoted Gardane, Jobert, and Chardin ; but cholera did not exist in Persia when those travellers visited the country, and moreover, could ordinary travellers decide such a question as that of the endemicity of a disease ? Was it not necessary to remember that one of these writers, General Gardane, had looked at the country only in a military point of view ? Dr. Fauvel said he did not believe in the endemicity of cholera in Persia, but he would ask what, after all, would be gained by taking Persia off the list of suspected countries ? If Persia did not retain cholera endemically, did she not almost always possess it epidemically ? Now, was not an invading epidemic more to be dreaded than a non-invading endemic disease ? The fact had been quoted that cholera had lasted at St. Petersburg for ten years in succession ; but this pseudo-endemic disease was not invading. Could as much be said of the Persian cholera ? Dr. Fauvel concluded by repeating that to declare Persia under suspicion was certainly the least they could do, unless indeed, which was inadmissible, they were to place her on the same footing as Europe.

Going on to reply to M. Van-Geuns, who had also desired that the islands of the Indian archipelago should be struck off the list of suspected countries, Dr. Fauvel said he left it to the Conference to estimate the fresh facts furnished by the Dutch delegate at their proper value. Was it possible, he would ask, nevertheless, to decide with complete certainty in regard to countries so vast and so little known, countries which, two hundred years ago, were spoken of by Bonsius as being then subject to cholera ?

Dr. Sawas proceeded to speak after Dr. Fauvel with a view to refute the arguments advanced by the opposers of the amendment introduced by him in concert with his honorable colleague, Mirza Malkom Khan. Dr. Sawas repeated that, without pretending that Persia should be placed on the same footing with European countries, he would not admit that she should be treated as a wild and unknown country. If as yet she possessed no organised sanitary department, was she not occupied in setting one up, and did she not, moreover, possess a body of medical men including several European physicians ? Could not a separate place be reserved for Persia, as had been done for the Hedjaz ? Everything that had been said of that province in regard to cholera applied equally as well to Persia. Could it not be said even that for thirty years the Hedjaz had been the theatre of epidemics of almost annual occurrence, while in Persia there had not been more than five epidemics

in the space of 44 years? Could it not be said that cholera existed at that very moment in the Hedjaz, while in Persia there had been no trace of it since the end of 1861, an incontestable proof that it was not endemic in that country. The Persian delegates had been accused of wishing to avert from their country the precautionary measures of which she might be made the object; but he did not know why they should be accused of entertaining hidden intentions when they had in view merely the care and protection of the dignity and interests of her commerce. In reply to Dr. Mühlrig and Dr. Fauvel, who had also employed the same argument, *viz.*, that if the distance between India and Persia was so great that it could not be traversed by cholera, it resulted that the disease was endemic in the latter country, Dr. Sawas explained that he had wished to demonstrate that the southern provinces of Persia, which were precisely those which were specially pointed to as being under suspicion, could not communicate with India by land; that in that direction there were immense deserts spreading out between the two countries; and that, in coming from India, Persia was entered by the North by Meshed and Yezd. If he had quoted Gardane, it was because his itinerary was precisely the same as that followed by cholera. It had been urged that the disease might have acclimatised itself in Persia, but who had proved it? It had been said also that cholera had existed for ten years in succession in St. Petersburg, but that these pseudo-endemics possessed the distinctive characteristic of not being invading, and that that was not the case in Persia. Had it then been forgotten that Persia had not given the disease to Russia more than four times, and that, on the Turkish side, the disease, when transmitted from Persia, had never passed Bagdad? In regard to the information given by M. Fauvel about the march of cholera from 1851 to 1861, Dr. Sawas partly disputed its correctness, and notably in a geographical point of view, and he advanced other contrary facts in opposition, taken from the very minutes of the Superior Council of Health. One of these minutes stated, for instance, that in 1851 cholera had entered Persia from Turkey, where it had broken out at Bassora. It was the same in 1852; and in regard to three of the epidemics quoted, the Turkish sanitary physicians had admitted their inability to follow the disease through its course. Nor did he (Dr. Sawas) believe it was possible that the Turkish sanitary authorities at Bagdad could have precise information of what was passing in the interior of Persia. One of the minutes of the Superior Council of Health showed even that for a number of years Bassora did not possess a sanitary physician. It could not be denied at the same time that Persia had sometimes communicated cholera to Turkey; but it was positive that on other occasions it had passed into Persia from Turkey; it was a reciprocal gift, alternately exchanged between the two countries. Dr. Fauvel had expressed his surprise at seeing him (Dr. Sawas) quote from works which were, no doubt, old; but was it not necessary to prove that cholera was unknown in Persia as well as in the Hedjaz previous to 1821? Lastly, Dr. Sawas asked that what had been done for the Hedjaz should be done for Persia, *viz.*, that the question should be considered separately and without

confounding the country with wild and unknown countries among which she now found herself classed in the report of the Committee. M. Sawas insisted that they should immediately divide upon his amendment.

Mirza Malkom Khan asked to be allowed to add a few words. It had been said that there was no sanitary department in Persia, but was it then absolutely necessary to possess an organised sanitary department to become acquainted with the march of epidemics? Cholera, leaving India, invaded Persia, by the north, when it proceeded by land in the direction of the Turko-Persian frontier, to which it was also brought from India; but by sea it could not always be known exactly if it first attacked Turkish or Persian territory.

M. Stenersen observed that the tenor of the discussion showed that nobody believed that cholera was endemic in Persia, while the report was so drawn up as to lead rather to the contrary supposition. There would be so many reasons the more for the modification of the report and the devotion to Persia of a special chapter, inasmuch as the frequent epidemics in that country were a source of serious danger to Europe.

Dr. Fauvel thought he was bound to express his praise of the good organisation of the Turkish sanitary department on the Persian side. Not only was there an inspector at Bagdad, but there were posts of observation on all the roads.

The numerous documents produced by Dr. Bartoletti showed that the department was well worked.

The President then put the proposition brought forward by Dr. Monlau to the vote. The proposition was thus conceived:—

“No fact whatever has hitherto demonstrated that Asiatic cholera has ever had its starting point elsewhere than in India.” It was rejected by 16 to 12.

The amendment of the Persian Delegates, *viz.*, the exclusion of Persia from the list of suspected countries, was also put to the vote and adopted by a majority of 13 against 12. Two members declined to vote.

It was next decided (by an unanimous vote of 18) that the Persian question should be treated of in a special chapter. Dr. Fauvel was appointed to draw up this additional paragraph.

Drs. Bartoletti and Salem Bey communicated satisfactory information in regard to the sanitary condition of the Egyptian troops then in Constantinople, and also in respect of the state of the public health in Egypt.

The meeting broke up at 5-15 P. M.

SALIH,

*President of the Sanitary Conference.*

BARON DE COLLONGUE, }  
DR. NABANZI, } *Secretaries.*

Dated 7th September, 1866.

*From*—E. C. EGERTON, ESQ.,

*To*—H. MERIVALE ESQ.

I am directed by Lord Stanley to transmit to you, to be laid before Lord Cranborne, a copy of a despatch which has been received from the British Cholera Commissioners at Constantinople, reporting the proceedings of the Commission.

No. 31.

It is requested that the report may be returned to this office for transmission to the Colonial Office.

No. 13, dated 8th August, 1866.

*From*—MESSRS. E. GOODEVE, AND E. D. DICKSON,

*To*—LORD STANLEY.

In continuation of our despatch No. 30, we have the honor to inform your Lordship that the Conference completed the discussion of the Report of the Committee of the 1st Section of the 3rd group of the programme at its meeting of the 25th instant. It was adopted with two or three slight modifications, which will appear in the protocols. The only modification of importance consists in the addition to the Chapter on Naval Hygiene of a series of recommendations having special reference to cholera, instead of letting it remain with the recommendation that each Government should cause a manual for the use of ship Captains to be written, embodying the requisite information. The Committee accepted the task and presented the "note additionals" which was adopted by the Conference with the recommendation of the fitting up in steamers of an apparatus for disinfecting in connection with the Engine.

Three Copies of the "Note additionelle" are forwarded to your Lordship herewith.

On the 23rd Count Lallemand gave notice that at the next meeting he would bring forward the consideration of the question of the Tariff for the support of the Ottoman Lazaretto and Sanitary Establishments, which had stood over since the meeting of the 31st of May, to enable the Delegates to consult their respective Governments.

The matter was brought forward on the 25th, and after the Delegates had declared their competence or otherwise to entertain

the question, Count Lallemand proposed the election of a Committee to report upon the subject.

The votes stood thus :—

<i>For :</i>				<i>Abstained :</i>			
Belgium	...	...	1	Austria	...	...	2
France	...	...	2	Spain	...	...	2
Papal States	...	...	1	Great Britain	...	...	2
Persia	...	...	2	Greece	...	...	1
Portugal	...	...	1	Holland	...	...	2
Prussia	...	...	2	Italy	...	...	2
Sweden	...	...	2	Russia	...	...	2
Turkey	...	...	2				
			—				—
			13				13
			—				—

all the States having large commercial transactions with the Turkish Empire, France and Sweden excepted, having declined to enter into the question.

The following Delegates were chosen members of the Committee :—

Count Lallemand	...	France.
Dr. Spadaro	...	Papal States.
Dr. Sawas	...	Persia.
Chevalier de Soveral	...	Portugal.
Baron Teesta	...	Prussia.
M. Stenersen	...	Sweden.
Dr. Bartoletti	...	Turkey.

On the 25th Count Lallemand presented the report of the Committee of the 3rd Section of the 3rd "group." It contains many provisions relating to India, and especially to the Indian traffic by the Red Sea, and to the Indian pilgrimages to the Hedjaz.

We regret that, owing to a deficiency of copies of the report, we are not able to forward more than one copy to your Lordship by this Mail.

The discussion of the report began yesterday and proceeded to the end of the 18th page.

We have shewn the document to Lord Lyons and shall be guided by his views on the important points relating to British interests, which will immediately come under consideration.

*P. S.*—We enclose protocols Nos. 16 and 17.

INTERNATIONAL SANITARY CONFERENCE. ANNEXURE  
TO THE MINUTES OF THE 28TH MEETING.

*Additional Note.*

*To the text of Chapter II. (Naval Hygiene) of the report on the hygienic measures to be adopted with a view to preservation against Asiatic Cholera.*

The Committee on hygienic measures, having indicated, in the chapter on naval hygiene, the chief points to which it would be desirable to call the attention of Governments, expressed a wish that every country should draw up a *Manual* for the use of the mercantile marine based on those chief points. But as the Conference thought it would be useful to lay down the bases of such a *Manual* more clearly, the Committee has undertaken the task, and in this additional note to the chapter on naval hygiene, indicates the considerations which ought to be generally adopted as the bases of the measures to be taken during the prevalence of cholera, and which might be inserted in the *Manual* for the mercantile marine, without, however, entering upon details which cannot be included in rules of a general nature.

The Committee has specially in view ships devoted to the transport of great assemblages of men—emigrants, for instance—as being most likely to spread the epidemic; the measures indicated for these ships will, *mutatis mutandis*, apply with equal facility to all other vessels.

We adopt the same system in this review as in the Report, dividing the proposed measures into hygienic measures to be adopted on the departure of a vessel and hygienic measures for the voyage; but we make no mention of hygienic measures on arrival, for, in regard to a ship entering a port infected by cholera, these latter depend on the department of quarantine, and will, in consequence, be dealt with by another Committee. We shall add, however, some considerations on

**SHIPS ANCHORED IN A CONTAMINATED PORT.**—We shall not repeat here the maxims of general hygiene touching measures for individual preservation, nor the general rules of naval hygiene concerning the neatness and proper order of a ship, its ventilation, &c., but we shall simply indicate some points which ought to be taken into consideration in a contaminated port.

In this case, we recommend as preservative measures:—

1. *Regarding anchorage.*—To avoid anchoring in proximity to a sewer discharging its contents into the port; to anchor the ship not close in-shore, but, on the contrary, as far from it as possible; and lastly, to avoid anchoring several ships too close to each other.

2. *To clean the hold most carefully*, and empty out the water it contains daily, after previous disinfection; the same measures of disinfection ought to be adopted in regard to the latrines on board during the whole period of the epidemic.



3. *Not to use, and especially not to drink, the water from the river in which ships are anchored, or, at any rate, of water drawn from the vicinity of, or below, the anchoring ground.* It would also be well altogether to avoid, during the continuance of an epidemic, taking in supplies of water from a river flowing by a large town.

4. *To look after the health of the crew by inspections twice a day made by a medical man or the captain, with a view to finding out whether any cases of diarrhoea exists.* Any person affected with diarrhoea and, still more, every case of confirmed cholera breaking out on board, ought to be removed to hospital; if any cause should arise, such as the physical exhaustion of the patient, to prevent his removal, he should at least be isolated on board from the rest of the crew, and his cot placed in a spot accessible to free ventilation. In regard to the disinfection of the vessels receiving the *dejecta* of the patient and also that of his effects and the cabin occupied by him, &c., it should be proceeded with according to the general rules laid down by us for the disinfection of ships. A ship attacked by cholera should be removed as far away as possible from all others, and in certain cases it would even be preferable to send her out to sea.

The Committee believes it is necessary to suspend the loading of a vessel, if cholera exists on board, until she has been cleared of the sick, and the needful disinfection completed.

**SANITARY POLICE REGULATIONS ON THE DEPARTURE OF A VESSEL.**—Every ship leaving an infected port presents a double danger: that of cholera breaking out on board, and that of the disease being carried by her to a yet uninfected port. The task of the authorities at the port of departure is to ward off both these dangers as far as possible, and for this purpose their attention should be directed to the following points:—

1. *The state of health and the capacity of the ship.*—We have nothing to add in regard to either point to what we have said in our report, except perhaps that, on the departure of a ship from a port where cholera prevails, it would be well to reduce the number of passengers to even below the limit laid down by law as the proportion to the tonnage of the vessel in ordinary times, so as to avoid crowding as far as possible, and to admit of the separation of the sick from the healthy in the event of cholera breaking out on board. With the object of preserving the passengers from the grievous accompaniments of overcrowding and other cause of unhealthiness, as much as with the object of restricting emigration *en masse* from a port already compromised, it would be well perhaps, during the prevalence of the epidemic, to prevent the transport of passengers by merchant vessels, *i. e.*, such as are exclusively devoted to carriage of merchandise. We leave each Government to decide for itself whether, for the attainment of this second object, a considerable limitation, in special cases, should not be ordered as to the number of deck-passengers in packet boats.

2. *The sanitary condition of the men to be embarked.*—We have already said in our report that the sanitary condition of the crew,

as well as of the passengers, should be strictly looked to by a physician. The embarkation of individuals presenting suspicious symptoms should be prohibited; a sharp attack of diarrhoea should be considered as suspicious. As for chronic cases of diarrhoea, as they occur specially in hot climates, (in India for instance), the only remedy for them being a change of air, an exception might be made in their favor, notwithstanding the endemicity of cholera, if their chronic nature is certified to by a medical man.

3. *The quality of the ship's provisions.*—Besides the sufficiency and unexceptionable quality of the water and provisions always required, it is necessary while the epidemic continues, and especially in ships having women and children on board, to avoid as far as possible having provisions known to be indigestible, which, by causing a derangement of the digestive organs, may favor the outbreak of cholera.

4. *The quality of articles of personal use.*—The shipment of foul linen and clothing should be prohibited, including the linen worn by persons embarking, and which may have been soiled by choleraic *dejecta*. It should be made obligatory and imposed as a condition of embarkation to have them washed, and if necessary disinfected previously.

5. *The quality of the merchandise.*—In addition to carrying out the general instructions in regard to the good sanitary condition of the merchandise as laid down in our report, the embarkation should be prohibited in a port affected by cholera of certain articles more susceptible than others of communicating transmissible diseases. To this class of dangerous objects belong skins, for instance, clothes, rags, and drills which may have been used by cholera patients. Even after the extinction of the epidemic, the last three articles ought not to be exported until after satisfactory disinfection. The shipment of living animals (as articles of commerce) on a vessel carrying passengers should be prohibited on account of the crowding and the sources of infection, which are so largely increased by such an additional freight and its emanations.

6. *The personal luggage and effects of the passengers and crew ought to be kept in a place altogether separate from that intended for merchandise, so as to avoid exposing the latter to contamination by the former.*

7. *Lastly, the presence of a physician on board of every ship carrying a certain number of persons (whether passengers or crew) to a certain distance ought to be made obligatory, especially in epidemic seasons. It would be desirable to observe the same rule in regard to pilgrim ships, provided however its execution be possible.*

**SANITARY POLICE OF THE VOYAGE.**—This should comprise:—1<sup>st</sup>, measures to prevent the invasion of cholera; and 2<sup>nd</sup>, measures to be adopted in the event of attacks of cholera on board.

In the first point of view we recommend :—

1. *A strict surveillance of the sanitary condition of the passengers and crew*, and, with this object in view, daily visits of inspection by the ship's surgeon or one of the ship's officers. To facilitate this surveillance, the crew and passengers should be informed by *instructions* posted up in the cabins, &c., of the importance of certain hygienic measures, and especially of the danger of neglected diarrhœa.

2. *A constant ventilation of the whole ship*, and especially of the cabins, the fore-castle, and the 'tween-decks occupied by the passengers.

3. *A frequent ventilation of the personal effects of the passengers and crew*, which is all the more necessary inasmuch as it is almost the only possible means on board a ship of warding off the danger arising from the emanations from soiled articles,—the washing of soiled linen being hardly practicable during the voyage on board a ship containing a great number of passengers. In order to avert any danger which might result from this ventilation, care should be taken to expose the articles to the action of the air to leeward.

4. *To maintain with the most particular care the neatness and cleanliness of the latrines*.—They should be washed frequently every day, disinfectants even being added to the water.

In the second point of view we insist upon:—

1st.—*The separation of the sick*.—It would be desirable to remove every sick man as far as possible from the healthy; but as, in the majority of cases, the limited space of ships will not permit of this being done, it is necessary at any rate to separate the sick showing symptoms of cholera. For them a sort of isolated infirmary should be set up, and, weather and space permitting, it should be situated on the deck itself, or in any other place accessible to free ventilation.

2nd.—*Immediate measures of disinfection*.—These measures should apply not only to the excreta of the sick, to their linen, personal effects, and bedding, but also to their cabins or any other places occupied by them, from which everything (furniture, &c.,) not absolutely necessary for the use of the sick should be removed immediately on the appearance of the attack. A cabin which has been occupied by a patient should not be put into use again until after it has been ventilated and disinfected for a week.

3rd.—*Certain precautionary measures in regard to persons suffering from diarrhœa*.—They should not be allowed to make use of the latrines common to all the passengers, but a place should be assigned to them which should be washed, with the addition of disinfectants, several times daily.

4th.—*The entry in the ship's log of every case of sickness occurring during the voyage*.—The ship's surgeon should keep up and be responsible for such a log, written by himself, and showing, in addition to the cases of sickness, all the hygienic conditions of the ship during the voyage, such as nourishment, neatness, ventilation, &c.

In conclusion, we think we ought to pronounce an opinion upon the question whether :—

*If cholera breaks out on board during the voyage, it would be better to continue the voyage or put in at a port ?*

The solution of this question depends upon various considerations, the chief of which only we can mention, without, however, attributing to them an absolute value: they may serve as a guide to captains in coming to a decision. The continuation of the voyage does not appear to us to increase the danger, and it would perhaps, in this point of view, be preferable to putting in at a port :—

1st.—If the crew and passengers have already been subjected to the influence of a choleraic atmosphere ;

2nd.—If the places to which the ship goes, or the season, admit of free and constant ventilation ;

3rd.—If the state of health of the ship is satisfactory, and especially if the crowding is not great, so as to admit of the separation of the sick.

Under contrary conditions it would be preferable to return to the port of departure, or to put in at another port, rather than to continue the voyage.

We conclude, therefore, that it is necessary to avert the inconveniences and dangers resulting from—*a bad anchoring ground, from badly chosen drinking water and provisions, from overcrowding, from the sanitary condition of the men embarked, from the condition of their personal luggage, from the quality of the merchandise, from the absence of separation of the sick, the want of ventilation of the ship and personal luggage, and especially from the absence of neatness and cleanliness in the lutrines.*

GALATA-SERAI ;        }  
August 20, 1866.        }

### INTERNATIONAL SANITARY CONFERENCE. MEETING

NO. 16, OF THE 14TH JUNE 1866.

H. E. SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its sixteenth meeting at Galata-Serai, at noon of the 14th June 1866.

PRESENT :

*For Austria:*

M Vetsera, Councillor of the Internonciature of His Imperial and Royal Majesty the Emperor of Austria.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

Dr. Polak, formerly Chief Physician to H. M. the Shah of Persia.

*For Belgium :*

Count de Noidans, Secretary to the Legation of H. M. the King of the Belgians.

*For Spain :*

Don Antonio Maria Segovia, Consul General Chargé d'Affaires.

Dr. Monlau, Member of the Superior Council of Health of Spain.

*For the Papal States :*

Dr. Ignace Spadaro.

*For France :*

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician of France.

*For Great Britain :*

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

*For Greece :*

M. Kalergi, Secretary to the Legation of H. M. the King of the Hellenes.

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

*For Italy :*

M. A. Vernoni, Chief Interpreter to the Legation of H. M. the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

*For the Netherlands :*

Professor J. Van Geuns.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

*For Persia :*

Mirza Malkom Khan, Aide-de-Camp-General to His Majesty the Shah, Councillor to His Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

*For Portugal :*

Chevalier Edward Pinto de Soveral, Chargé d'Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

*For Prussia :*

M. H. de Krause, Secretary to the Legation of H. M. the King of Prussia.

Dr. Mühlig, Physician to the Legation, Chief Physician to the Ottoman Marine Hospital.

*For Russia :*

Dr. Pelikan, Councillor of State, Director of the Civil Medical Department in Russia.

Dr. Lenz, Councillor of College, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, co-Military-Medical Inspector of the Arrondissement of Wilna.

*For Sweden and Norway :*

M. Oluf Stenersen, Chamberlain to H. M. the King of Sweden and Norway, Secretary to His Legation.

Dr. Baron Hübsch.

*For Turkey :*

H. E. Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Service.

Dr. Bartoletti, Inspector-General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

*(For Egypt :)*

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

Dr. Naranzi, one of the Secretaries, read the minutes of the 14th meeting, that of the 9th June. They were approved.

H. E. the President proceeded to the order of the day, viz., the continuation of the discussion on the general report, and invited M. Fauvel to speak.

M. Fauvel said that, agreeably to the decision of the honorable Conference, he had written out the new paragraph relating to Persia. The way in which it was drawn up would, he hoped, satisfy every body, for he had kept in view all the interests—the true interests—both of Persia and the Conference, whose only object was the discovery of scientific truth.

The paragraph, he said, might be intercalated between the 2nd and 3rd paragraphs of the 2nd chapter of the general report. It was as follows:—

“The Conference does not wish to include Persia among the countries just enumerated: it thinks that this country deserves special mention on account of her geographical position, the importance of her relations, and the numerous epidemics of cholera of which she has been the theatre.

“In point of fact, it is proved by authentic documents supplied by the Ottoman Sanitary Administration, that, without taking into account those anterior periods of which we have no accurate notion, Persia has, in the space of 11 years, (from 1851 to 1862,) been nine times visited by choleraic epidemics, *viz.*, in 1851, 1852, 1853, 1855, 1856, 1857, 1858, 1860, and 1861. It is proved from these same documents that, of these nine epidemics, that of 1851 seems to have been imported into Persia by way of Bassora, where it had raged in the first instance, and then by various other points in the province of Bagdad. It is also proved, in regard to the other eight epidemics, that the disease existed in Persia before it invaded the Turkish territory, following in the wake of the pilgrims either *viâ* Mohammerah, or by many other points of the frontier, and notably Khaneguine and Mendeli. It must be added, however, that, in three out of these eight invasions, it was not found possible to follow up the chain of facts demonstrating the importation from Persia into Turkey.

“In the opinion of the Conference, this frequency of epidemics of cholera in Persia does not prove that the disease is endemic in that country, since an interval of three years and a half (from 1862 to 1865) occurred during which no choleraic manifestation whatever was noticed; but the matter deserves careful attention.”

Having read the paragraph, Dr. Fauvel handed in a chart, drawn up by himself in 1851, of the Ottoman Sanitary Service in its entire length along the extent of the Turco-Persian and Turco-Russian frontier, from the Persian Gulf to the Black Sea. In this chart, which he said he had endeavored to render as accurate as possible, and which might advantageously be consulted in order to comprehend certain details relative to the question under discussion, Mohammerah, which he thought was rather below Bagdad, and which some Delegates placed above Bagdad, was shown on the east of that town, on another branch of the delta flowing into the Persian Gulf. He admitted, nevertheless, that this branch was rather above Bassorah (as Mirza Malkom Khan had maintained at the last meeting).

M. Sawas asked that certain facts, which he thought were very important, should be mentioned in the paragraph just read by M. Fauvel. They were:—

1st.—That it had been shown that many travellers and physicians of repute, by whom Persia had been visited before the invasion of 1821,

made no mention whatever of endemic cholera, although they spoke very explicitly and in detail of other existing diseases.

*2nd.*—That, before the said invasion, no denomination applicable to epidemic cholera existed in Persia.

*3rd.*—That, in the space of forty-three years, Persia transmitted cholera to Russia only four times ; and that, from the year 1861 down to the moment of speaking, cholera had no existence in Persia.

That, on the other hand, it was proved from the reports of the Turkish sanitary physicians on the Turco-Persian frontier that, during the years 1851, 1852, 1853, 1855, 1856, 1857, 1858, 1860, and 1861, the same frontier had been the theatre of successive epidemics of cholera, which did not pass beyond the limits of Mesopotamia.

According to the view taken by Dr. Sawas, the following conclusion might be come to :—

“ The Conference is of opinion that cholera is not endemic in Persia ; but it believes that Persia, being, by reason of her geographical situation, right in the passage of cholera, is liable to receive and to transmit the disease to her neighbours frequently.”

M. Fauvel saw no harm in adding the facts mentioned by the last speaker to the new paragraph ; but he thought it would be sufficient to embody them in the minutes, which would necessarily have to be done, and every body might learn them there.

M. Millingen believed that Persia had transmitted cholera to Russia five times in the space of forty-three years.

At the request of several Delegates, H. E. the President put to the vote M. Fauvel's new paragraph, comprising the three points noted by M. Sawas, viz. :—

*1st.*—That before 1821 cholera had no existence in Persia.

*2nd.*—That until that time the disease was not known by any special designation.

*3rd.*—That, during the space of 43 years, Persia transmitted the disease to Russia only four times.

The paragraph, thus completed, was adopted by a majority of 22 votes against one, M. Polak, who abstained from voting.

M. Sawas made the following declaration :—

“ The Persian Delegates dispute the existence of cholera in Persia from the year 1856 to the end of the year 1858, reserving the right of producing official proof of what they maintain.”

H. E. the President reminded the Conference that, after the Persian question, they had to vote on the question of the islands of the Indian archipelago, in regard to which M. Van Geuns had furnished ample information at the last meeting.

M. Van Geuns said he wished to afford some further explanations of the matter.



The denomination of Indian archipelago, he said, was very vague, and to a certain extent incorrect, for, broadly speaking, it might comprise Oceania or the fifth part of the globe. But if the Conference thought it did not possess sufficient data to exclude this from the list of doubtful countries, it might, and it was authorised to do so with regard to Malasia. M. Van Geuns believed that, in place of saying "Indian archipelago," it would be much better to say "Malasia," which denomination, he remarked, was adopted in the modern system of geography, which admitted the distinction, and which considered Malasia as a part of Oceania.

M. Fauvel said he wanted to know in what category the islands of the Indian archipelago should be placed if they were struck off the list of doubtful countries. M. Fauvel had thought that M. Van Geuns only meant to exclude from this category the Dutch possessions in regard to which he might possess accurate and sufficient information. But it had just been seen that such was not the intention of M. Van Geuns. M. Fauvel would ask whether the island of Borneo could be classed among the Dutch possessions, and could it be said that the existing and available knowledge of that island was satisfactory? Everybody knew that the island of Borneo, the greater portion of which was independent, and which was peopled by wild and barbarous tribes, was almost entirely free from Dutch domination. An Englishman—Rajah Brooke—had occupied a portion of the country, and erected it, so to say, into a kingdom.

M. Van Geuns replied briefly to M. Fauvel, having, he said, spoken sufficiently about the island of Borneo at the last meeting. In his memorandum he had shown the importance of the fact that the researches and enquiries undertaken by the Dutch Government extended throughout an immense population, while the number of the population in regard to whom data were wanting was relatively small. Brooke himself, added M. Van Geuns, had personally undertaken researches and enquiries, which he had also caused to be pursued by others. There was a remarkable work in two volumes on the island of Borneo, written by a relative of M. Van Geuns. The mortality caused by cholera in the population was said to be small, which would not be the case if the disease was endemic. The possessions of other Governments were also almost as well known as the Dutch possessions proper.

M. Segovia said that the Spanish Delegates did not think it necessary on that occasion to speak of the Spanish possessions in Oceania, *viz.* the Marianne and Philippine islands, including the Sooloo group, over which Spain exercised a sort of protectorate. The Spanish Delegates believed that they would not only be excluded from the rather vague and inexact denomination of the Indian archipelago, but also that nobody would ever dream of suspecting the endemic existence of cholera in those parts.

M. Segovia thought it would be useful to give a list of the Spanish possessions in Oceania :

The Philippine islands, including the Bisayan group.

The Marianne islands, to the north-east of the Philippines.

The Sooloo group, under the Protectorate of Spain by virtue of lately ratified capitulations.

M. Gomez confirmed, with reference to the Portuguese possessions in the Indian archipelago, all that had been said by M. Van Geuns with regard to Netherlands India.

M. Bartoletti observed that a question of such great importance, and so interesting to science and humanity, should not be lightly discussed. There should be no question of favors or concessions, of individual or national interests, when the public weal was concerned. It was known that the majority of the pilgrims arriving at Jeddah consisted of Javanese, and that cholera was very often brought to that port by them. It had been said that last year there were ten thousand of these Javanese pilgrims in the Hedjaz. It was a known and recorded fact that ten English ships had left Singapore laden with pilgrims, each ship carrying five or six hundred Javanese. In addition to these, six Mussulman vessels, also laden with Javanese pilgrims, sailed to the Hedjaz. It was impossible, said M. Bartoletti, to form an idea of their miserable and filthy condition, and of the manner in which they were crowded and huddled together on board these vessels. It was the most deplorable and frightful picture that could be conceived. Foreign vessels weighed anchor on their approach. Without pretending that cholera was endemic in Malasia, said M. Bartoletti in conclusion, it was necessary to be most guarded and cautious in regard to the matter, especially with reference to Singapore, which might be considered an Indian country.

M. Van Geuns observed that even if cholera were brought to the Hedjaz by the Javanese pilgrims, that fact would not prove the endemicity of cholera in the islands of the Indian archipelago, as the pilgrims might have caught the infection during the voyage.

Dr. Goodeve pointed out the necessity of not stopping at the erasure from the list of doubtful countries of the Dutch, Portuguese, and Spanish possessions, but also to eliminate the British possessions. The category had been established because, being in proximity to continental India, the possessions in the Indian archipelago, which were believed to be insufficiently known, might, by their similarity of climate, cause the existence of the doubt that cholera might exist in them endemically. But M. Van Geuns had demonstrated that cholera did not exist endemically in any country in the Indian archipelago belonging to Holland, and he had simply maintained some reserve in regard to Malacca, which might be considered a doubtful country on account of its proximity by land to Bengal. Consequently, said Dr. Goodeve in conclusion, as analogous reasons militated in favor of the other possessions, equity demanded that they should be struck out of the list of doubtful countries.

On the proposition of M. Mühlig, who showed that the question had been reduced to an almost personal one, the Delegates of each

Power, taking up the defence of the interests of their own country, and that consequently the Conference would do well to proceed to the order of the day, H. E. the President declared that the discussion on the chapter on the islands of the Indian archipelago was closed, and he put to the vote the proposition made by M. Van Geuns, *viz.* :—

“The Dutch possessions in the Indian archipelago are excluded from the category of doubtful countries, because no suspicion exists of the endemicity of cholera in them.”

The proposition was adopted by a majority of fifteen against nine, and two who declined to vote.

*For* :—MM. Polak, Noidans, Segovia, Monlau, Goodeve, Dickson, Vernoni, Van Geuns, Millingen, Mirza Malkom Khan, Sawas, Gomez, Lenz, Bykow, Stenersen.

*Against* :—MM. Sotto, Spadaro, Lallemand, Fauvel, de Krause, Mühlig, Hübsch, Bartoletti, H. E. Salih Effendi.

*Declined to vote* :—MM. Maccas and Bosi.

M. Stenersen said he had voted in favor of the proposition of M. Van Geuns, because the greater part of those who had attentively considered the question were agreed in admitting the non-endemicity of cholera in the Dutch possessions. But as these countries must become very dangerous to Europe by reason of the frequency of the epidemics raging in them, M. Stenersen was of opinion that it was necessary to insert a special paragraph about them in the general report, as had been done by the Conference in regard to Persia.

M. Stenersen expressed a wish to be informed of M. Fauvel's opinion upon the question, and begged he would be good enough to state it.

M. Moulau asked for explanations in regard to what was meant when the insertion of new paragraphs in the report was mentioned. In his opinion nothing could be added to the Committee's report; it should rest intact as it had been presented to the Conference—otherwise it would cease to be the work of the Committee. It ought also to be inserted as it stood as an annexure to the minutes of the meeting at which it had been presented. All the modifications, amendments, and additions adopted by the Conference during the discussion should, he thought, find their place in the minutes. To reprint the general report with the text differing from what had been drawn up and distributed by the Committee, would be nonsense—it would convert it into a report drawn up by the Conference itself. That, he said, was opposed to all the customs prevalent in assemblies in regard to reports composed by special Committees and discussed before such assemblies.

M. Monlau's remarks gave rise to a conversation in which MM. Lallemand, Fauvel, Goodeve, Dickson, Bosi, Maccas, Mühlig, and Bartoletti, took part, on the one hand, in support of M. Monlau's proposal; and MM. Chevalier Pinto de Soveral and Sawas on the other, against it. M. de Soveral thought that only such reports as had been

adopted by the Conference were definitive, so as to impart to their conclusions the force of law. Consequently, he said, it was necessary to reprint the general report with the modifications accepted by the Conference, if it was desired that it should be regarded as the work of the Conference, and as an act and document emanating from itself.

M. Maccas and Mühlig proposed that the Conference should proceed to the order of the day, reserving the right of acting later, and after the termination of the discussion on the general report, as it might deem best and most fitting.

The Conference having decided in this sense, His Excellency the President asked M. Fauvel to continue the reading of the general report.

M. Fauvel was of opinion that it was necessary, in the first instance, to put the text of the 2nd chapter to the vote and then the conclusions.

M. Salem Bey begged to invite the attention of the honorable Conference to the eastern and southern coasts of Arabia also, which might, in his opinion, be struck out of the list of doubtful countries, as had been done with Persia and the islands of the Indian archipelago. The considerations which had been urged in behalf of the latter, militated also, he thought, in favor of the Arabian peninsula. Many Arabic authors who had written upon the province made no mention of cholera as an endemic disease.

M. Bartoletti added that if it were true that cholera was not endemic in Persia, it was also true that neither was it so at Muscat.

M. Sawas said that, with the exception of Muscat, the other provinces of the Eastern coast were altogether unknown, for no traveler spoke of them, and, in respect to Muscat, everybody was agreed in regarding it as an extremely unhealthy country, where cholera almost always existed.

His Excellency the President put to the vote the text of the 2nd chapter of the report, with the amendments adopted by the Conference.

It was agreed to by a majority of 20.

M. Maccas requested that the word *invading* in the conclusion should be eliminated. The word, he thought, which in the text was necessary or at any rate unobjectionable, was altogether superfluous in the conclusion, which spoke of Asiatic cholera. It was worse than useless, he thought, and it might give rise to misunderstandings by tending to occasion the idea that there was any other but an invading kind of Asiatic cholera.

Dr. Dickson seconded the motion made by M. Maccas, but it was opposed by M. Sawas and Fauvel, who said that, in their opinion, the term served to give greater force and effect to the leading idea of the conclusion, and that therefore not only was it not superfluous, but that it might even be considered to be necessary.

His Excellency the President put the conclusion to the vote as it stood.

It was adopted by a majority of 19 against 2.

The 3rd chapter was agreed to unanimously.

The discussion then proceeded to the 4th chapter.

Dr. Dickson remarked that it had not been recorded that he had voted against the chapter. He was of opinion that the disease existed in the Hedjaz, and especially in Yemen before the time of the pilgrimage.

M. Mühlig said he had voted for the chapter, but after the explanations given by Dr. Goodeve, and particularly after the occurrences of the present year, which had greatly staggered his belief, he wished, that the chapter should be modified thus:—

“ Asiatic cholera does not appear to have an original source in the Hedjaz, but it frequently rages there, imported *probably* from without.”

M. Mühlig wanted to know whether the Persians did not ask for the elimination of Persia from the list of doubtful countries merely because they wanted to avert from their frontiers the institution of sanitary measures.

H. E. Salih Effendi said he was inclined to believe that the southern pilgrims had, the year previous, imported and spread cholera in the Hedjaz.

Dr. Goodeve opposed any such supposition.

Dr. Bartoletti, on the other hand, affirmed that it was not proved by any sort of documentary evidence, that cholera had existed the year before in the Hedjaz previous to the arrival of the pilgrims, while it had been demonstrated that in 1864 it existed at Singapore, from which port sixteen ships laden with pilgrims had arrived in the Hedjaz, after a voyage of fifty days. It should not be forgotten, he said, that in Persia as well as in the Hedjaz, it was always the pilgrimage which rendered cholera almost endemic. In regard to the present epidemic, Dr. Bartoletti was inclined to attribute it to the communication which had taken place with Abyssinia where cholera had already been raging.

M. Van Geuns was of opinion that the Hedjaz might be exonerated if they could be put in possession of all the facts, duly recorded in reports, referring to the various epidemics and especially to that of 1865. That, in his opinion, was all the more necessary inasmuch as every fact admitted of different interpretations.

Dr. Salem Bey believed that the Hedjaz was a country which should be suspected less than any other. The importation of cholera into it from without had always been distinctly shown, and it had always been effected by the pilgrims. A glance over the table of choleraic epidemics (arranged in order of date) which had successively

prevailed in Egypt, would suffice to demonstrate the importation of cholera into the holy places. The dates were :—

July 13, 1831 ; June 24, 1848 ; July 25, 1850 ; June 4, 1855 ; June 11, 1865 :—five epidemics in all.

A somewhat important fact deduced from the history of these five epidemics, was as follows :—

“ Egypt has only twice been invaded by cholera on the return of the pilgrims from Mecca, *viz.*, in the first epidemic of 1831, and in that of 1865.”

It was necessary, added Salem Bey, to remark that the pilgrimage which took place every year was always watched by physicians who accompanied the caravan across the breadth of the Hedjaz, which showed that the importation of the disease into Egypt was clearly proved.

The other three epidemics having occurred some months before the pilgrimage, the Hedjaz, he concluded, could not be suspected of maintaining cholera endemically, especially if it were considered that cholera had only attacked the pilgrims when the religious observances coincided with the hottest months of the year, and, what was more, it was a most distinctly known fact that, in the last epidemic, cholera had been spread by the Indian pilgrims.

To exclude, added Salem Bey, all idea of an original focus of cholera in the Hedjaz, it was necessary also to take largely into account the geographical and social conditions of that country, which was traversed by immense deserts.

M. Bosi wanted to know whether precise information existed in regard to the present epidemic. Where had it originated, and how had it been imported into the Hedjaz ?

M. Bartoletti replied that, judging from all appearances, the disease, as he had observed at the previous meeting, had broken out at Bader, and had manifested itself along the road leading to Medina : some cases had also shown themselves among the pilgrims remaining at Mecca. It appeared certain, added M. Bartoletti, that there had been no cholera during the pilgrimage. It existed at Gondar and in some other parts of Abyssinia, and it was probable, he thought, that the present manifestation of cholera originated in Abyssinia.

Dr. Dickson referred to the epidemic of 1865, and said he could not understand the motives which had induced M. Bartoletti to derive it from Singapore. Dr. Dickson did not mean to deny any of the facts put in evidence before the Conference, but he held that the 4th chapter of the general report should be modified in conformity with the facts, where it said :—“ It has been asserted that, in effect, persons from India, infected with cholera, had arrived in the Hedjaz before the disease had as yet shown itself there”—as also the conclusion of the same chapter.

Dr. Dickson proceeded to mention the facts as they had existed.

Letters from Ahmed Pacha, Governør of Yemen in 1865, addressed to his family, proved that cholera had been raging in Yemen *before the period of the pilgrimage to Mecca*. The reports of the British consul at Jeddah showed that, during the six years of his residence in the country, cholera, he had observed, always appeared there after the return of the pilgrims from Mecca.

Official information from the English agents in the Persian Gulf gave credit to the supposition that cholera existed *permanently* on the Arabian coast of the gulf. Other reports mentioned its existence on the coast of Hadramaut and notably at Mokalla. These, together with the actual existence of the disease in the Hedjaz at the present moment, while it could not be shown to have originated out of the country, caused him to deem it *very probable* that cholera had acclimatized itself there.

Dr. Dickson would admit indeed that in 1865 cholera existed at Singapore, that two ships laden with pilgrims had quitted that port, and that, after a very long voyage, during which no accident had occurred on board, they touched at Mokalla; that, after their departure from that town, a choleraic epidemic had broken out amongst them, which had ceased before their arrival at Jeddah; and that, finally, the disease was heard of no more until after the accomplishment of the sacrifices at Mecca, when a violent outbreak of the disease took place.

But what connexion, he would ask, existed between the cholera of Singapore and the epidemic at Mecca? Admitting even for an instant that cholera was not endemic in the Hedjaz, was it not greatly more probable that it had been imported from Mokalla? and especially from Mocha, a port in the Red Sea, situated on the route of the pilgrims when porceeding to the holy places.

Moreover, added Dr. Dickson, it would appear, according to Dr. Bartoletti, that the manifestation of cholera during the present year in the Hedjaz had had its origin in Abyssinia. But the documents on which Dr. Bartoletti had founded his assertion, showed, on the contrary, in his (Dr. Dickson's) opinion that the Egyptian frigate *Ibrahimia* quitted Massowah under a *clean bill of health*, and arrived at Jeddah on the 23rd May, with letters from Massowah intimating that two or three cases of cholera had occurred every day for a week previous to the departure of the vessel. But *before the vessel could enter into pratique and communicate with Jedlah*, cholera showed itself in the town in the person of an individual *who had been under watch* in the military hospital for ten days; and the Soudan pilgrims, who were on their return from Mecca, affirmed that the disease had broken out among their compatriots on the 19th May. Further, Dr. Bisemstain said that cholera had made its appearance simultaneously at Medina, Beder, and Yambo, and—to which fact Dr. Dickson would draw particular attention—not after the assemblage of the pilgrims, not during the sacrifices, but twenty days after the termination of the ceremonies, and notably after the departure of the caravans, and even after the arrival of a portion of the pilgrims at Jeddah and Suez.

He hoped that the Conference would estimate the facts brought forward by him at their proper value, and modify the conclusions of the report in accordance with them.

He was of opinion, in regard to the present epidemic, that it was not conclusively proved that it had originated in Abyssinia, as Gondar and the other places in which the existence of the disease had been announced, were quite in the interior of the country. It would, therefore, be a very much over-strained explanation, in comparison with the evident proofs in favor of the other version, to suppose that the germ of cholera had been carried to the coast and thence to the Hedjaz.

M. Bartoletti said, in reply to Dr. Dickson, that facts could not be distorted. Cholera, in spite of whatever might be said, had come from Singapore, as resulted from the evidence of the reports he had communicated to the Conference at the last meeting. He persisted in his belief that the explanations he had given carried much more probability with them than those put forward by Dr. Dickson.

M. Millingen showed the necessity of being acquainted with all the documents bearing on this important question. These documents might be procured by H. E. the President. He meant letters from Ahmed Pacha, the sheriff of Mecca, and other similar documents.

On the motion of M. Vernoni, supported by M. Bartoletti and other Delegates, who insisted on the necessity of being put in possession of the documents just spoken of by M. Millingen, and in the absence of which no decision could, from a want of knowledge of causes, be arrived at, H. E. the President adjourned the discussion to the next meeting. In the meantime, he said, he would endeavor to obtain the required documents.

M. Bartoletti made a communication of present importance. After the receipt of the last advices from Egypt, and with a view to compliance with the wishes expressed by the Conference, the Superior Council of Health had subjected arrivals from Egypt, under every denomination of bill of health, to fifteen full days of quarantine, which was to continue until further orders.

M. Bartoletti read the last telegram despatched by Colucci Bey to the Sanitary Intendancy at Constantinople under date the 13th June.

It was as follows :—

*Alexandria, 4-15.*

“ Dra. Bisemstein and Castaldi arrived at Suez on the 11th June, and have announced, that about 3,000 pilgrims have decided to leave for Suez by sea, and that their intervention, as well as that of the local authorities, was of no avail in preventing their departure.

“ The Egyptian Intendancy acts up to the rules laid down by the Conference, and when these pilgrims show themselves off Suez,



"they will be driven away and compelled to go into quarantine at Jeddah, Tor, and Mohal.

"Dr. Ferro leaves to-morrow in a special steamer for Yambo, with two professors of the Cairo School of Medicine, carrying with them medicines and provisions.

"To-day Drs. Bisemstein and Castaldi go on board the steamer intended for Dr. Ferro, which will land them at Jeddah.

"Health perfect in Egypt. Not a single case of sickness of any kind among the persons in quarantine at the Wells of Moses. Practice will be given the day after to-morrow. Commission despatched to Suez reports no sickness there."

Salem Bey said that, after the communication just made by M. Bartoletti, it was evident that the Council of Health had adopted, for the sake of precaution merely, very severe measures of quarantine with regard to Egypt, the health of which country was, and continued to be, perfectly satisfactory, as was shown by the despatches read by him at the last meeting. This day again there was very reassuring news. The sanitary condition of Egypt was perfect: at Alexandria there was only one case of sporadic cholera. Even in the Hedjaz there was a diminution of the disease. Nothing, therefore, in his opinion, justified the very rigorous measure inflicted on Egypt, by regarding her as under foul bills, notwithstanding the clean bills of health delivered by the authorities. He thought that such measures could not but be fraught with evil by reason of the alarm they occasioned.

M. Fauvel completed the information just afforded to the Conference. He explained the measure adopted by the Superior Council of Health. It was not, he said, on one single despatch received from Egypt, but on a mass of despatches, reports, and telegrams forwarded by the consular agents and by the Sanitary Intendancy of Alexandria, that the Council of Health at Constantinople had decreed the measure of quarantine of which they had been informed by M. Bartoletti. The British consul spoke of some sporadic cases of cholera at Suez. A despatch from the Egyptian Sanitary Intendancy mentioned some cases of virulent fever at Suez, and added, (care being taken to underline the word,) "with *cramps*." It was right to say, added M. Fauvel, that the reports of the Egyptian Sanitary Intendancy left some doubts. From all sides the news had been received that in Egypt, at Alexandria, and at Suez, sporadic cases of cholera, or of choleraic virulent fevers, had been observed, which really proved that sporadic cholera existed. With Asiatic cholera prevailing at Jeddah, Yambo, and elsewhere, was there not reason to ask whether these cases were not the prelude of an epidemic, and did not prudence demand of them to act accordingly?

It was this consideration, said M. Fauvel, which had determined the decision of the Council of Health.

Many Delegates concurred in M. Fauvel's opinion.

M. Bartoletti read another despatch received from Alexandria on the 12th June at 10-45 A. M. :—

“Public health in Egypt perfect : some cases of virulent fever at Suez, with a tendency to decrease. Nevertheless, a Medical Commission despatched to Suez to report distinctly upon the nature of the disease.

“Nothing new since the isolated case of sporadic cholera of 7th June in the person of an individual come from without to the Alexandria hospital. Cholera at Jeddah, Mecca, Yambo, and Beder. At Jeddah, on the decline, and nearly disappeared. At Yambo intensity greater—55 cases altogether to the 11th Mohurrum; 102 cases to the 15th Mohurrum. At Mecca number of deaths not known. At Beder, said to be causing great ravages amongst the pilgrims. Health of the persons in quarantine at the Wells of Moses perfect. Strict maintenance of interdiction of sea-route. Pilgrims supported at the cost of the Egyptian Government, which Government demands from the Governor of the Hedjaz the means of land transport to be furnished to them. As for the 106 deaths on sea from Jeddah to Suez, the report is a complete fiction.”

(Signed) COLUCCI BEY.

The meeting terminated at 6 P. M.

Order of the day for the next meeting :—

- 1st.—Continuation of the discussion on the choleraic epidemic of 1865.
- 2nd.—Continuation of the discussion on the general report.
- 3rd.—Miscellaneous communications.

SALIH,

*President of the Sanitary Conference.*

DR. NARANZI,  
BARON DE COLLONGUE,

} *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE MEETING  
NO. 17 OF THE 16TH JUNE 1866.

H. E. SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its seventeenth meeting on the 16th June 1866, at Galata-Serai.

PRESENT :

*For Austria :*

M. Vetsera, Councillor of the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Physician attached to the Imperial and Royal Inter-nunciature, Director of the Austrian Hospital.

Dr. Polak, formerly Chief Physician to the Shah of Persia.

*For Belgium :*

Count de Noidans, Secretary to the Legation of H. M. the King of the Belgians.

*For Spain :*

Don Antonio Maria Segovia, Consul-General, Chargé d'Affaires.

Dr. Monlau, Member of the Superior Council of Health of Spain.

*For the Papal States :*

Dr. Ignace Spadaro.

*For France :*

Count de Lallemand, Minister Plenipotentiary.

Dr. Fauvel, Sanitary Physician of France.

*For Great Britain :*

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to H. B. M.'s Embassy, British Delegate to the Superior Council of Health at Constantinople.

*For Greece :*

M. Kalergi, Secretary to the Legation of H. M. the King of the Hellenes.

Dr. G. A. Maseas, Chief Physician to the King, Clinical Professor in the University of Athens.

*For Italy :*

M. A. Vernoni, Chief Interpreter to the Legation of H. M. the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

*For the Netherlands :*

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Professor J. Van Geuns.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

*For Persia :*

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

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*For Persia :*

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

*For Portugal :*

Chevalier Edward Pinto de Soveral, Chargé d'Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

*For Prussia :*

M. H. de Krause, Secretary to the Legation of H. M. the King of Prussia.

Dr. Mühlig, Physician to the Legation, Principal Physician to the Ottoman Marine Hospital.

*For Russia :*

Dr. Pelikan, Councillor of State, Director of the Civil Medical Department in Russia.

Dr. Lenz, Councillor of College, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, Co-Military-Medical Inspector of the Arrondissement of Wilna.

*For Sweden and Norway :*

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to His Legation.

Dr. Baron Hübsch.

*For Turkey :*

H. E. Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Service.

Dr. Bartoletti, Inspector-General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

*(For Egypt :)*

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

The meeting commenced at noon.

Baron de Collongue read the minutes of the 15th meeting, and Dr. Naranzi those of the 16th. The Conference adopted both, with a few amendments, and then proceeded to the discussion of the 4th chapter, of Dr. Fauvel's report, regarding the Hedjaz.

Dr. Fauvel thought it right to state distinctly that the conclusion of the chapter, *viz.*, that "Asiatic cholera does not appear to have an original source in the Hedjaz, but that it seems to have always been imported into that province from without," was in no way positive: it confined itself to stating a probability and not affirming a certainty.

M. Bartoletti spoke in support of the conclusion arrived at by the Committee, which was founded, 1st, on the fact that cholera was unknown in the Hedjaz before 1831, and that a name for the disease

even did not exist in the country ; 2<sup>nd</sup>, on the fact that the epidemics of 1835, 1846, 1847, 1848, 1859, and the following years, down to the great epidemic of 1865, always coincided with the period of the pilgrimage ; 3<sup>rd</sup>, on the fact that it is averred that, in effect, persons from India attacked by cholera have arrived in the Hedjaz before the manifestation of the disease there. Dr. Bartoletti, thinking it unnecessary to dwell upon the two first points, confined himself to producing some new facts relative to the importation of cholera into the Hedjaz in 1865. The chief authorities consisted of the declarations recorded in the report of the Ottoman Sanitary Commission for the Hedjaz, of the masters of three British ships which had brought pilgrims to Jeddah. The first of these vessels, the *Miss Marchant*, had on board 350 pilgrims from Bengal, 25 of whom died of diarrhœa during the voyage. The second, the *Boy-Neyr*, left Bengal during the prevalence of cholera with 100 pilgrims on board, 20 of whom died, 4 of them presenting all the symptoms of cholera. The third, the *Ruby*, had taken 500 pilgrims on board at Singapore, where cholera was also prevailing epidemically. Cholera broke out on board, carrying off 90 victims, the mortality commencing at Mokalla and not ceasing until two days before the ship's arrival at Jeddah. Three other ships, one from Bengal, the two others from Java, had also, according to the statements made by their masters, had cases of sickness on board. Dr. Bartoletti then proceeded to quote a report by the Dutch Consul at Singapore, which said in plain terms that the appearance of cholera in Arabia was to be attributed to the Indian pilgrims from Malacca, Timor, Sarawak, Johore, Pahang, and other independent states of the Malayan Peninsula ; that, in 1864, cholera prevailed in Java and at Singapore, and that it was proved that persons ill with the disease, and others recovering from attacks of it, had embarked for Mecca. Passing on to the cases of cholera which had just shown themselves at Beder, Medina, Yambo, Mecca, and Jeddah, Dr. Bartoletti said he did not admit that they could be regarded as proofs of the endemicity of cholera in the Hedjaz. Moreover, they were only sporadic cases, the complete disappearance of which at Jeddah had been announced by the latest advices. Was it not, therefore, probable that they were only the last remains of the great epidemic of last year, and was it not still more probable that it was a fresh importation ? The report of the Ottoman Commission showed that, at Mecca, cholera raged chiefly among the African pilgrims from Soudan, who arrived later than the others at Jeddah. The same report, speaking of the pilgrims who remained at Mecca after the departure of the Damascus caravan, said that these pilgrims had made every preparation to start for Medina, that one caravan had indeed already reached Yambo, when the epidemic made its appearance at Beder. The pilgrims returning *vid* Yambo were, for the most part, natives of India and Africans, whom the Government was compelled to support, on account of their destitute condition, and the duty of sending whom to their homes was assumed by the British Consulate. It was amongst these that cholera made its appearance at Beder, in the midst of the desert. Was that then a proof

of the endemicity of cholera at Mecca? and if such endemicity really existed, would not the epidemic have broken out during the ceremonies, when the pilgrims were still assembled together? It had been said, on the other hand, that cholera could not have been imported, because all the ports by which the pilgrims could have entered the Hedjaz were strictly guarded by the medical officers of the Ottoman Commission: but was that guard a strict quarantine, and could it, besides, be exercised everywhere? The report of the Commission mentioned notably, two ports which it was not possible to provide with medical officers, Rais and Rabel, which were closer than Yambo to Medina, and where, consequently, a large number of pilgrims landed, chiefly late arrivals from Africa. It was known that the first cases of cholera were noted as having occurred among these pilgrims, and was there not ground, therefore, for asserting it to be probable that cholera must have been imported into the Hedjaz from Africa, where it was raging? An extract from a report by M. Menzinger, French consular agent at Mas-sowah, which was here read by Dr. Bartoletti, appeared to him to render the fact of the importation more probable. In that report, which was dated the 3rd May, it was shown that cholera raged at Adora and Gondar; that it had directed its march to the interior of Abyssinia through the tribes of the Bogas, Mensa, Ilamacca, Hababs, and Beni-Amer; and that, as these tribes were in communication with Souakim, there was reason to fear that the disease would thus transmit itself along the coast of the Red Sea. He (Dr. Bartoletti) would vote against any modification of the conclusion of the report.

Dr. Dickson did not think that there was any sufficient reason in what had just been said for throwing off the doubt he had expressed. The fact of numerous ships from Bengal, Java, and Singapore having had cases of cholera on board before their arrival in the Hedjaz was not supported by any positive document. An official report by Mr. Raby, British Consul at Jeddah, stated, moreover, that cholera existed at Sana and at many places in the interior of Yemen, towards the end of the year 1864. Neither could it be denied that the pilgrims had that year been subjected to a strict surveillance from the moment of their embarkation, and that their sanitary condition was found to be satisfactory. Nor was there any well-founded connexion shown between the cases of cholera reported in the Hedjaz and the epidemic which prevailed in Abyssinia. Lastly, it was affirmed that of the five great and well-known epidemics at Mecca, two only had coincided with the season of the pilgrimage.

Dr. Mühlig asked the Conference to recollect that he had limited himself to proposing a slight modification in the conclusion of the chapter under discussion. He only desired that the second sentence of the conclusion should be changed thus:—"*but cholera prevails there frequently, probably always imported from without.*" He did not maintain that there was an endemic focus in the Hedjaz, but it was a question which yet needed study.

Dr. Goodeve thought, like Dr. Dickson, that the facts brought forward by Dr. Bartoletti did not suffice to establish a certainty. A



sailing vessel occupied upwards of two months in the voyage from India to the Hedjaz ; and it was hardly probable that cholera could remain so long on board a vessel without extinction. Admitting that the three English vessels spoken of had shipped more passengers than the rules allowed, and that they lost very many during the voyage, it would still remain to be proved that they had cholera on board on their arrival at Jeddah. Would the debarkation of pilgrims, and especially of Indian pilgrims, have been permitted if they were sick ? Was it known besides whether the ships in question had or had not made the voyage from point to point : did they put in at any port, at Mokalla for instance ; did they not contract the disease there ? Dr. Bartoletti, who had not even mentioned from what port of Bengal the three vessels in question had started, should have stated exactly when cholera broke out on board and when it ceased. To sum up :—If it were admitted that cholera was imported into the Hedjaz, in 1865, by Indian or Javanese pilgrims, it was anyhow hardly probable that the importation was effected by pilgrims coming direct from India. These pilgrims must, more probably, have received the disease at some of the Arabian ports at which they touched before their arrival at Jeddah.

Dr. Salem Bey read, in support of the conclusion arrived at by the Committee, a passage from Carl Ritter's work on Arabia, in which reference was made to the diseases prevailing in the Hedjaz, and where cholera was mentioned as an imported disease. He would not believe, until proof was given to the contrary, that the sporadic cases which had just shown themselves could be regarded as an epidemic : the disease having appeared, in the first instance, in the localities frequented by the pilgrims, its importation was almost evident. Dr. Salem Bey wished that the expression of doubt in the conclusion should be eliminated by the expurgation of the word "*appears*."

Dr. Monlau remarked that the conclusion answered only a part of the fourth question. If it was probable that cholera was not endemic in the Hedjaz, in short, if there was no permanent original focus in that country, was it known that periodical and temporary original foci were not produced there ? that was a question which demanded profound consideration, and with regard to which, as was proved by the present discussion, there were no data. Dr. Monlau proposed that the conclusion of chapter IV. should be modified as follows :—*Asiatic cholera does not appear to have a permanent original focus in the Hedjaz. As for the creation of periodical original foci, coincident with the season of the pilgrimage, the Conference, in the absence of sufficient data, does not deem itself justified to come to any formal conclusion upon the subject.*

Dr. Fauvel replied that the 4th question was evidently defectively drawn up, but it was not the business of the Committee to modify it. The two words *periodical* and *original* nullified each other. A periodical focus was not an original focus. The Committee had decided in regard to permanent foci ; nothing was known in regard to the existence of temporary foci.

Dr. Millingen, while admitting that the repeated importation of cholera into the Hedjaz was always due to Indian arrivals, disputed the fact that this importation was always and exclusively effected by the pilgrims, and, consequently, that the various epidemics had always coincided with the time of the pilgrimage. It was not so, for instance, with the epidemic of 1846, which broke out at Jeddah and Yambo in the month of May, or six months before the Courban-Bairam, which that year fell in November. Dr. Millingen noticed the great fair held every year at Jeddah, at which were assembled merchants from the East Indies, the islands of the Indian Archipelago, and Malasia, bringing their commodities to be exchanged for those of the Hedjaz, Egypt, Abyssinia, the Persian Gulf, and the coast of Mozambique, as being a mode of importation to which the Committee had not paid attention. It was at the time of this fair, which had been known sometimes to attract to Jeddah as many as 216 vessels, great and small, that the invasion of cholera took place in 1846. Occasionally, as in 1831 and 1865, the fair was held at the same time as the pilgrimage, and it was precisely in 1831 and 1865 that the two great epidemics which had prevailed in the Hedjaz broke out. Dr. Millingen recommended these facts to the serious attention of the Committee which was to be appointed to consider the measures of quarantine to be applied to arrivals from India before their admission into the ports on the Arabian coast.

M. Stenersen said that Drs. Goodeve and Dickson had furnished no proof of the endemicity of cholera in the Hedjaz.

Some members expressing a wish to divide, Dr. Fauvel asked permission to speak in order to state the question distinctly: it was not whether cholera was imported into the Hedjaz from some country or other, but whether it was or was not endemic there. Drs. Goodeve and Dickson had brought forward no fact during the discussion to invalidate the conclusion of the Committee. Dr. Millingen again had only indicated a new mode of importation. From all that had been said, it resulted simply *1st*, that cholera very often prevailed in the Hedjaz; *2nd*, that, in all probability, it was imported. The conclusion, which said nothing more, should not therefore be modified. As for eliminating the expression of doubt in it, as was demanded by Dr. Salem Bey, that was not possible, considering the insufficient data of which they were in possession.

Dr. Sawas proposed the suppression of that part of chapter IV., commencing with the words "*and that lastly on several occasions,*" and ending with "*and again manifested itself there.*" Cholera was evidently imported into the Hedjaz, but it could not be affirmed that it was imported from India. The words "*does not appear*" should also, as demanded by Dr. Salem Bey, be struck out of the conclusion, and an affirmation substituted.

Dr. Fauvel observed that the Committee did not assert that cholera was imported from India into the Hedjaz: it limited itself, on this head, to regarding the generally received opinion in the country.

Nor did it say that on several occasions, and notably in 1865, arrivals from India, infected with the disease, had imported it into the Hedjaz; it simply stated that these arrivals had preceded the outbreak of the disease. It was necessary, moreover, not to confound the substance of the chapter with the conclusion, and in the conclusion even the name of India was not mentioned.

A great number of members insisting again upon the termination of the discussion, the President put to the vote, 1st, the text of chapter IV., 2nd, the conclusion.

The text was adopted by 18 against 4, viz., Drs. Goodeve, Dickson, Millingen, and Sawas. Dr. Monlau declined to vote.

The conclusion was also adopted by a majority of 19, none voting against it. Three members, Drs. Monlau, Goodeve, and Dickson, declined to vote.

Dr. Fauvel then read the question and the conclusion of chapter V.

Count de Lallemand reproduced an observation he had made in Committee, by which it had been deemed proper and well-founded, as the Conference might see by reference to the minutes. He asked that the word *privilege* which figured in the question and in the conclusion, and which was not used there in its true sense, should be replaced by the word *property*.

Dr. Fauvel did not dispute the justice of the observation in a grammatical point of view. The word *privilege* conveyed more than the word *property*, for which reason he had thought it his duty to use it, even adding the word *exclusive* to give it still greater force.

A conversation ensued upon the subject, and Count de Lallemand not insisting, the text and the conclusion of chapter V. were then put to the vote and adopted (pro 18, contra 0.)

The text and conclusion of the first part of chapter VI. were similarly agreed to, their adoption giving rise only to a single remark made by Drs. Goodeve and Dickson. It was said in the conclusion that "the special conditions under the influence of which cholera is generated in India are not known:" the British Delegates objected to the word *generated*. They did not believe that cholera was generated *de novo* in the soil: it only maintained itself by successive transmissions, and (added Dr. Dickson) in the same way as the plague formerly in the East, so that its germ was not destroyed.

Dr. Goodeve then demanded the substitution in the conclusion of the 2nd part of chapter VI. of the words "*one of the most powerful*" for the words "*the most powerful*."

M. de Krause brought to notice an apparent contradiction in the following sentence:—"that in Bengal cholera assumes an epidemic form more particularly during the *hot weather*, from April to August, while it is different in the North-Western Provinces, where the great epidemics have prevailed during the months of July and August." Perhaps the months of July and August were not included in the hot weather

of the latter provinces on account of certain climatic conditions, but at any rate it was necessary to explain the matter.

Dr. Fauvel replied that the difference was that in Bengal the maximum intensity of cholera commenced in April with the hot weather, and terminated with it in August, while in the North-Western Provinces the greatest epidemics had commenced with the termination of the hot weather and had continued till the commencement of winter.

Dr. Gomez said he had declared in Committee, and he declared again, that he did not, in respect of the influence of the seasons in the development of choleraic epidemics in India, altogether share the opinion expressed by the Committee. He would, however, vote for the conclusion of the chapter, but under reservation in regard to the part of the text in question.

Dr. Millingen believed that the extraordinary density of the population, rather than the pilgrimages, was, in India, the chief of the causes concurring to develop and propagate epidemics of cholera.

The text and conclusion of the second part of chapter VI were adopted by a unanimous majority of 21. The Conference postponed to the next meeting the commencement of the discussion on the questions in the second group of the programme.

Dr. Bartoletti read a despatch which he had just received from Alexandria, and which contained most satisfactory news of the sanitary condition of Egypt, where there had not been a single further case of cholera.

Dr. Salem Bey proposed that, on the strength of this despatch, the Conference should express the wish to the Superior Council of Health that it (the Council) should again consider the question of the precautionary measures to be adopted against arrivals from Egypt.

Some members having observed that there was no occasion to express that wish, inasmuch as the Superior Council of Health would not fail to take up such an important question at its next meeting, the Conference rejected the proposition, which was voted for by Drs. Salem Bey and Sawas alone. The British Delegates requested that it should be recorded in the minutes that they had declined to vote upon the motion.

The meeting terminated at 5 P. M.

SALIH,

*President of the Sanitary Conference.*

BARON DE COLLONGUE,  
DR. NARANZI,

} *Secretaries.*

Dated 22nd September 1866.

*From*—J. MURRAY, ESQ.,

*To*—*The Under-Secretary of State for India.*

I am directed by Lord Stanley to transmit to you, for such observations as Viscount Cranborne may have to offer thereupon, the accompanying copy of a Despatch\* from the British Delegates, reporting the proceedings of the Cholera Conference at Constantinople, together with a copy of a Despatch† from Lord Lyons, pointing out the unfavorable results likely to ensue should the direction of sanitary measures in the Red Sea be entrusted to an International Commission.

\* No. 32, September 10th.

† No. 336, September 12th.

No. 32, dated 10th September 1866.

*From*—MESSRS. E. GOODEVE and E. D. DICKSON.

*To*—LORD STANLEY, M. P.

We beg to report to your Lordship the proceedings of the Conference since our Despatch No. 31 of the 28th.

We then had the honor to inform your Lordship that the Conference had commenced the discussion on the report of the 3rd Committee on the 3rd group of the programme. This document, styled "Mesures a prendre en Orient," occupied six sittings, and was finally disposed of on the 8th instant.

The recommendations proposed were adopted in most instances unanimously, and in the remainder by a large majority.

The parts of the report which most concern England are—

Those regarding the extinction of cholera in India,

Those for preventing its exportation from India, and

Those for arresting its passage from India to Europe.

The last of these offers special interest, as it largely refers to the communications between India and the western world by the Red Sea route; to the measures applied to Indian Mahomedan pilgrims, and to communications with the Persian Gulf. On this

account we beg, in the first instance, to report the course we have pursued on the most important points of this section, *viz* :—

- 1.—The control of sanitary matters in the Red Sea by an international commission, sitting probably at Suez.
- 2.—The establishment of an intercepting station at Perim, for the purpose of interrogating and examining vessels when they enter the Red Sea, in order either to give them pratique or to assign them a quarantine station if necessary.
- 3.—The establishment of a lazaretto in the immediate neighbourhood of Perim chiefly for pilgrims; and another at Tor, at the foot of Mount Sinai, for ships bound to Suez.
- 4.—The course to be adopted towards the pilgrims in the event of cholera occurring in the Hedjaz.
- 5.—The plan affecting the freedom of passage through Egypt.
- 6.—The measures taken in the Persian Gulf.

We opposed the scheme of an international commission, thinking the present Egyptian administration fully competent to carry out the Committee's proposals, and believing, as suggested by the Dutch Delegate, M. Keun, that quarantine or restrictive measures directed against Mahomedan pilgrims by their own co-religionists would be more readily obeyed by them than if enforced directly by Christians.

In the matter of Perim, we merely stated that we could not say what might be the views of Her Majesty's Government on the subject, and Mr. Dickson suggested that Mocha might be equally suitable. We objected to the intercepting of vessels at Perim as not likely to be so efficacious as supposed by the Committee, owing to the facility with which small craft would elude the vigilance of the cruisers, and the possibility of cholera getting into the Hedjaz by land from other parts of Arabia.

With reference to the lazaretto at Bab-el-mandeb, we pointed out that, in addition to the doubts as to the safety of anchorage, there would be the danger of hostility from the natives in the neighbourhood, and the probability that a lazaretto could not be maintained there except under the protection of a fortress and of a strong garrison. On the whole, we preferred the island of Camaram for the interrogatory and quarantine when necessary of pilgrim ships. Several other localities for a lazaretto were suggested, and among them, Count Lallemand mentioned Obokh, the new French possession on the African coast near Tadjoorra at the outside of the entrance of the Red Sea.

We objected to the intercepting of Suez-bound ships at Perim as a useless detention, and suggested that enquiry should be made as to the practicability and safety of establishing for them a less distant and inconvenient quarantine station than Tor.

We beg to solicit your Lordship's attention to the measures proposed for the Mecca pilgrims (section 7, pages 47,48) in the event of cholera breaking out in the Hedjaz during the pilgrimage. In this chapter, part of the phraseology of the "Mesures d'urgence" is adopted, but the measures are different from those proposed at the opening of the Conference. The western pilgrims will now be permitted to perform quarantine at El-Wesch, where ample supplies and accommodation are to be provided, and the Indian pilgrims will be allowed to depart freely. We agreed in the unanimous vote of the Conference which adopted this recommendation and also with the modification of a 15 days' detention instead of 10 days after the cessation of cholera among the pilgrims at El-Wesch.

The Committee suggested (section 8, pages 49-51) that, in the event of cholera invading Egypt from the Red Sea, all maritime communication between that country and the Mediterranean port should be temporarily interrupted, *i. e.*, during the whole duration of the epidemic, for at least three or four months. We opposed this measure: and, from the discussion which took place, we learned that the interruption was not to apply to mails, but only to passengers and merchandise—an exception which is not apparent in the report itself.

With exception of ourselves, the Conference declared itself most emphatically in favor of this measure. Dr. Monlau even went so far as to suggest *putting Egypt into quarantine every year* during the duration of the pilgrimage to Mecca; and this, *whether cholera was prevalent in either country or not*. This suggestion was not responded to. Two votes were taken on the question of interrupting the communication with Egypt,—one to accept the views of the Committee, which are drawn up interrogatively in the report; and the other to declare the answer of the Conference to those views,—a course which the Conference had not hitherto adopted, but which was proposed by the Spanish Delegates in order to give greater force to the opinions expressed; 16 voted for the first conclusion, and three against it, *viz.*, Salem Bey, Dr. Dickson, and Dr. Goodeve. Thirteen voted for the second conclusion; three against it, Salem Bey, Dr. Dickson, and Dr. Goodeve; and four abstained from voting, Salih Effendi, M. Keun, Dr. Millingen, and Dr. Gomez.

In the section on cholera travelling to Europe through Persia, the Committee contented itself with recommending that its course through the channel of the Persian Gulf should be met with application at its ports of ordinary restrictive measures (section 9, page 54). But on account of its frequent passage into Persia through the sea route, Dr. Millingen, supported by Dr. Gomez, proposed as an amendment that special measures should be applied similar to those proposed for the entrance of the Red Sea. In short, that all vessels arriving from India should be stopped at the mouth of the Persian Gulf, where a quarantine station would be established upon some island, such as Kishm or Ormus. The amendment gave rise to much discussion during two sittings, but it was not carried. We voted with the majority against the amendment.

With regard to the exportation of cholera from India, the Conference adopted the Committee's recommendation (section 5, pages 22-25) that vessels leaving India should be furnished with a bill of health delivered by competent medical authority, and of the invariable application of the modified rules of the British Indian Native Passenger Act of 1858 (annex B, page 73) not to pilgrim ships under British colors only, as at present, but to pilgrim vessels of all flags sailing from British and other Indian ports.

The Dutch Consul at Singapore has given an account, which will appear in the protocols, of the wretched condition of the pilgrims as to crowding and filth on board of Ottoman vessels leaving the port of Singapore,—a state of things with which it appears our regulations do not interfere. We joined in this vote.

The Conference also adopted the recommendation that pilgrims should in all cases be provided with a passport, deliverable only when the applicant gives proof that he has the means of defraying the expense of his journey to and from the Hedjaz, agreeably to the practice established by *law* in the Dutch Indian possessions (annex C, page 20).

Dr. Goodeve reserved his assent to this proposition, as he thought, that difficulties might arise in its application to British India, and because, from the showing of the Dutch Delegates themselves, it does not secure any real advantage to the pilgrims, owing to the exactional pillage to which they are exposed on their arrival in the Hedjaz, and which generally leaves them destitute, and compels them to go into debt for the return passage.

We refrain from troubling your Lordship with a statement of the objection we raised to several minor points in the report, as these will appear in due course in the protocols. The report of the 2nd Committee on the 3rd group of the programme is not yet finished. It is hoped, however, that a portion of it may be ready for discussion on the 15th instant.

We have the honor to forward copies of protocols Nos. 18, 19 and 20, and copies of the report on "Mesures a prendre en Orient," which we were unable to send with our Despatch of the 28th ultimo.

Having received notice, through Mr. K. Malet, of the request of the India Office for six additional copies of the report sent with our Despatch No. 30, we think that probably copies of the report "sur les mesures a prendre en Orient" will also be required, and therefore enclose six extra copies of it addressed to the India Office.

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INTERNATIONAL SANITARY CONFERENCE. MEETING  
 No. 18 OF THE 18TH JUNE 1866.  
 H. E. SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its eighteenth meeting at Galata-Serai, on the 18th June 1866.

PRESENT:

*For Austria:*

M. Vetsera, Councillor of the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

Dr. Polak, formerly Chief Physician to His Majesty the Shah of Persia.

*For Belgium:*

Count de Noidans, Secretary to the Legation of His Majesty the King of the Belgians.

*For Spain:*

Don Antonio Maria Segovia, Consul-General, Chargé d'Affaires.

Dr. Monlau, Member of the Superior Council of Health of Spain.

*For the Papal States:*

Dr. Ignace Spadaro.

*For France:*

Count de Lallemand, Minister Plenipotentiary.

Dr. Fanvel, Sanitary Physician of France.

*For Great Britain:*

The Hon. W. Stuart, Secretary to Her Britannic Majesty's Embassy.

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

*For Greece:*

M. Kalergi, Secretary to the Legation of His Majesty the King of the Hellenes.

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

*For Italy:*

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

*For the Netherlands :*

Professor J. Van Geuns.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

*For Persia :*

Mirza Malkom Khan, Aide-de-Camp-General to His Majesty the Shah, Councillor to His Legation.

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

*For Portugal :*

Chevalier Edward Pinto de Soveral, Chargé d' Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

*For Prussia :*

M. H. de Krause, Secretary to the Legation of His Majesty the King of Prussia.

Dr. Mühlig, Physician to the Legation, Chief Physician to the Ottoman Marine Hospital.

*For Russia :*

Dr. Pelikan, Councillor of State, Director of the Russian Civil Medical Department.

Dr. Lenz, Councillor of College, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, Co-Military Medical Inspector of the Arrondissement of Wilna.

*For Sweden and Norway :*

M. Oluf Sterersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to His Legation.

Dr. Baron Hübsch.

*For Turkey :*

His Excellency Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Department.

Dr. Bartoletti, Inspector-General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

*(For Egypt:)*

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

Count de Noidans read a minute of the General Committee, showing that, on a proposition made by Count de Lallemand, the Committee had agreed to substitute for the words "*exclusive privilege*" (see the title of the 5th chapter of the 1st group of questions) the words "*exclusive property*."

M. Stenersen proposed to the honorable Conference that in future they should meet four times a week, *viz.*, on Mondays, Tuesdays, Thursdays, and Saturdays. His object was to hasten the progress of the numerous labors imposed on the Conference by the programme, which could not be brought to a termination unless the number of meetings was increased so as to gain time.

MM. Bartoletti and Fauvel remarked that the Council of Health in which many of the Delegates sat, met on Tuesdays.

M. Mühlig opposed M. Stenersen's proposition, because, in his opinion, they would rather lose than gain time, inasmuch as they would impede the labors of the Committees. The Conference, he said, instead of adding to the number of its meetings, ought to reduce them to two so as to afford time to the Committees to finish their work.

He proposed that the Saturday meetings should be dispensed with.

M. Fauvel, Professor Bosi, and other Delegates supported M. Mühlig's proposition, and set forth in greater detail the causes which made it necessary and opportune, by making the labors of the Committees and of the Conference harmonise.

M. Monlau also supported M. Mühlig's proposition, but only conditionally that the day of meeting for the Conference, which was proposed to be done away with, should be made an obligatory Committee day.

M. Segovia supported M. Stenersen's proposition: in his opinion it was the only one fitting for the Conference which had met with the object of working.

Dr. Goodeve would prefer the three meetings a week then held.

M. Bosi and Chevalier Pinto de Several asked that the word *obligatory* should be withdrawn: the Committees were at liberty to meet on Saturdays and all other days, and they would without doubt hold as many meetings as were necessary, but he thought the Conference had not the right to prescribe any obligatory meeting for them.

M. Segovia replied that it had the right to do so for the same reasons that it had fixed the number of days and meetings for itself.

Several Delegates protested against the word *obligatory*, though at the same time they agreed in the spirit of M. Monlau's proposition. On a declaration made by M. Stenersen that he withdrew his proposition, and on the opinion of several Delegates, H. E. the President put to the vote M. Mühlig's proposition fixing, until further orders, the number of meetings of the Conference at two (Mondays and Thursdays).

It was adopted by 18 against 4.

H. E. the President put to the vote M. Monlau's proposition, that it should be obligatory on the Committees to meet on Saturdays. The votes were equal—13 against 13.

H. E. the President having voted against the proposition, his casting vote caused the rejection of the proposition.

Those who voted against the proposition said they would have voted for it without the word *obligatory*. But all agreed that Saturday was to be left at the disposal of the Committees.

M. Fauvel then continued the reading of the general report. The discussion stopped at the end of the 1st group.

The 2nd group of questions, said M. Fauvel, commenced with the title *Transmissibility and propagation of cholera*.

M. Monlau made the following remarks on the subject :—

This chapter comprises two subjects, which it is very important should not be confounded. *Transmissibility*, which is only a property, should not be treated of at the same time as *propagation*, which is a fact. They are two very different things, in regard to which separate conclusions must be come to, methodised regularly. This is all the more necessary that in the report (it may be said parenthetically) the question is more of propagation, which has been deeply studied and well known for a long time, rather than of transmissibility, a fact which is, as it were, new, which it is necessary to study attentively, and to demonstrate by conclusive proofs. This is so true that Asiatic cholera had received the denomination of epidemic even when its transmissibility was not believed in. But at the present day it is not sufficient to call it epidemic; it is necessary also to make it understood that it is transmissible, this transmissibility not being essential to every epidemic, it being well known that it is the property of epidemics to propagate themselves. But there are some which transmit themselves; and amongst these latter has been classed at the present time epidemic cholera. To prove this, I adduce the choleraic epidemics which have occurred in Spain.

To proceed orderly and methodically, it would have been necessary to have commenced this chapter with transmissibility, to have properly considered it, and to have come to a special conclusion; after which the same thing should have been done with regard to propagation. In this chapter also there are, in my opinion, such formal assertions, that some sort of deduction must necessarily be drawn from them.

M. Fauvel replied that if the Conference adopted M. Monlau's views, instead of the order and method which it pretended to introduce into the 2nd group, it would admit that the greatest confusion should prevail. M. Fauvel confessed he did not understand M. Monlau's observations, and still less his attacks upon the group in question. That group, he said, had been discussed in full Committee, and adopted unanimously. M. Monlau had been present during the discussion, and

had voted for the adoption of both text and conclusion. What then could his opposition refer to? M. Fauvel believed there was a good and proper connexion between the chapters, and that they were orderly and logical. He would ask them to remark that in the report the first thing spoken of was transmissibility, and then its proofs were detailed and considered. Every thing, according to M. Fauvel, existed in logical order, and to every impartial person the facts set forth in the report showed a strict methodical connexion one with the other.

M. Monlau remarked to M. Fauvel that, in entering upon the revision of a general report, after one had had time to consider it, it was natural that there should be a change of opinion on several chapters and facts which one had not previously sufficiently looked into. And this day in opposing ideas which he had admitted before, he did no more than exercise the right of a Delegate called upon to take part in the discussion.

M. Stenersen thought that tolerance should be allowed to opinions that nobody should be placed under constraint, that everybody should be at liberty to give expression to his views, whatever they might be; and that in acting differently they would cause annoyance to those who had observations to put forward in regard to the report. He said that he also had objections to make, and he intended to act according to his convictions, and make free use of his right to speak.

M. Sawas supported M. Stenersen's observations. M. Bartoletti, \* as President, and M. Mühlig as Reporter of the Sub-Committee appointed to consider this question, spoke in support of the general report, which had resulted, they said, from frank and profound discussions, as well as from the special reports on the questions considered and discussed by the Committee.

M. Fauvel declared that he in no way disputed the right of speaking and making objections, but he said it was necessary, nevertheless, to be consistent, and to respect the opinions which had been expressed upon a subject which had been examined and discussed.

On M. Bosi's proposition, H. E. the President put to the vote the text of the 8th chapter as it stood.

Drs. Goodeve and Dickson entered a reservation in regard to the epidemic of 1865. They did not maintain the opinion laid down in the report, *viz.*, that it had been proved that the epidemic of 1865 was imported by pilgrims coming from India.

The text, as it stood, was adopted by a majority of 20 against one M. Monlau, who declined to vote.

*Voted for the text:*—MM. Polak, Sotto, de Noidnas, Spadaro, Count de Lallemand, Fauvel, Kalergi, Maccas, Vernoni, Bosi, Van Geus Millingen, Sawas, de Krause, Lens, Bykow, Stenersen, Baron Hübsch Bartoletti, His Excellency Salih Effendi (20).

H. E. the President then put the conclusion of the same chapter to the vote.

It was adopted by a majority of 22 votes, none voting against it, and one abstaining, M. Monlau.

All those just named voted, in addition to MM. Segovia and Malkom Khan.

M. Fauvel proceeded to the 2nd article of the 8th chapter, entitled "Proofs from facts establishing the propagation of cholera by importation."

M. Maccas desired that among the importations mentioned in that paragraph, those of Greece should also be included, because Greece had been able to afford, as he had taken care to point out in Committee, signal proofs in favor of the importability of cholera.

They were proofs, continued M. Maccas, which had encouraged Greece in the last epidemic to vigorously maintain its quarantine system; and as everybody knew, with the greatest success. The same system in the two previous epidemics had saved Greece from the ravages of the scourge. In the great epidemics of 1830 and 1837 she escaped the danger to which all Europe was exposed, as also in the epidemic of 1848. In the first of these epidemics the disease did not show itself in any part of Greece, and in the second (1848) the disease declared itself only in the island of Sciathos, and then only on account of a violation of quarantine, as was proved afterwards. The disease, however, died away in the island, without spreading to any other part of Greece.

In 1854, continued M. Maccas, cholera was imported into Greece, by the French mail-steamers from Marseilles (July 14.) It had been found possible to follow up the successive importation of the disease in that epidemic in the most conclusive manner.

Lastly, in 1865, the disease was imported into the lazarettos of Delos and Sciathos by ships from Smyrna, Alexandria, and other places where cholera existed.

M. Mühlig, taking into consideration the request made by M. Maccas, stated that all the importations briefly mentioned in the general report had been extracted from the report of the Sub-Committee, where they were inserted *in extenso*. M. Mühlig considered that the importations mentioned by M. Maccas were so important, that they should be added to the general report in detail.

M. Fauvel observed that the general report made mention in several places of the importations of cholera into Greece. The epidemic of 1865 only was not reported, because it ought to be included in M. Bartoletti's report upon the last epidemic.

Acting on the opinion of several Delegates, H. E. the President asked the Conference to divide upon the text of the 2nd group, 8th chapter.

The text was adopted as it stood by a majority of 21, none voting contra, and 5 declining to vote.

*Voted for*:—MM. Polak, Sotto, de Noidans, Spadaro, de Lallemand, Fauvel, Goodeve, Dickson, Maccas, Vernoni, Bos, Van Geuna, Müllingen,

de Krause, Mühlrig, Lenz, Bykow, Hübsch, Stenersen, Bartoletti, and H. E. Salih Effendi.

*Declined to vote*:—M.M. Segovia, Monlau, Malkom Khan, Sawas, Gomez.

H. E. the President put the conclusion of chapter 8 to the vote. It was adopted unanimously, (as above).

The paragraph commencing with the words "*Are there conclusive facts?*" &c., was then put to the vote.

It was adopted unanimously, (as above.)

The paragraph bearing the heading "*How is importation effected?*" &c. was similarly adopted.

Chapter 11, entitled "*Under what conditions does man import cholera?*" was also adopted unanimously; the votes in favor of it being those mentioned above, except M.M. Monlau, Kalergi, and de Soveral, who were absent during the division.

Chapter 12 was also unanimously adopted, except by M. Millingen, who supported a fact mentioned by M. Michel Levy regarding the Varna epidemic of 1854 during the Crimean war. The very important fact mentioned by that author, said M. Millingen, contradicted the opinion expressed in the paragraph coming immediately after the conclusion in which it was said that there was nothing to prove to the Committee that individuals leaving a choleraic focus, and apparently enjoying on their arrival in an uninfected locality perfect health, could, *per se*, have imported the disease. He (M. Millingen) thought that the Varna matter mentioned by M. Levy, evidently proved it.

M. Fauvel believed that that fact proved the very opposite of what M. Millingen thought, because the disease was not imported into Varna, although, during the course of the voyage, which lasted for seventy days, between Marseilles and Varna, the ship had touched at several places where cholera was raging.

Chapter 12 and its conclusion were adopted as above, except by M. Millingen.

M.M. Monlau, Kalergi, and Chevalier de Soveral were absent during the division.

Chapter 13 was next discussed.

M. Mühlrig asked that the second part of its conclusion should be modified as follows:—"All the facts mentioned regarding a longer incubation refer to cases which are not conclusive, either because the premonitory diarrhoea was included in the period of incubation, or because the infection may have taken place after the departure of the individual from an infected locality."

It was an error in the wording, said M. Mühlrig, but it was important, for it served to explain the first part of the conclusion, where it was said that premonitory diarrhoea or confirmed cholera always appeared within a few days after the departure.

Dr. Goodeve asked for the rectification of the phrase in the beginning of page 36 (line 6):—*“Extracted from an official document written by Dr. Goodeve,”* which should be *“written by Mr. Rutherford, Inspector-General of the Army at Gibraltar.”*

M. Sawas remarked that the expression made use of in the conclusion *“does not exceed a few days”* was too vague and not sufficiently scientific. M. Sawas would wish it to be said candidly that the time was not known, and that there were no data by which it could be fixed; *“some days,”* he thought, might mean two, or eight, or ten or more. Now a scientific report should be more precise than that.

M. de Lallemand said that the ordinary estimation of that familiar expression was equivalent to a lapse of two or three days, never more than ten.

M. Fauvel said that that evidently appeared from the text.

M. Monlan said that the text, as it stood, might be accepted, for further on, in treating of the question of quarantines, occasion would be taken to specify the period.

H. E. the President, on the motion of M. Fauvel, who said he supported M. Mühlig's proposed amendment, and after listening to some remarks by MM. Millingen, Salem Bey, and Count de Lallemand, for and against the amendment, put the text of chapter 13 to the vote. It was adopted by a majority of 21 votes, none against, and 3 who declined to vote, MM. Millingen, Malkom Khan, and Sawas.

*Votes for*:—MM. Polak, Sotto, Count de Noidans, Spadaro, Count de Lallemand, Fauvel, Goodeve, Dickson Kalergi, Maccas, Vernoni, Bosi, Van Geuns, de Krause, Mühlig, Lenz, Bykow, Baron Hübsch, Stenersen, Bartoletti, and H. E. Salih Effendi (21).

The President then put the conclusion to the vote, together with M. Mühlig's amendment.

It was adopted by a majority of 20 against 1, and 3 who declined to vote, *viz.*, MM. Millingen, Malkom Khan, and Sawas.

All those above mentioned were included in the majority, except M. Bartoletti, who gave up his vote to Salem Bey, who voted against the amendment and conclusion proposed by M. Mühlig.

M. Fauvel passed on to chapter 14, headed *“Can cholera be imported and transmitted by living animals?”*

M. Lenz explained his reason for voting against this chapter. His reason was contained, he said, in the very conclusion of the chapter, which said *“There is no known fact to prove that cholera has been imported by living animals.”* This negative experience given by the three great epidemics should, in his opinion, have outweighed all theoretical reasoning.

M. Bykow said he had voted against the text and conclusion of Chapter 14, because the absence of facts demonstrating the transmission of cholera by living animals proved, in his opinion, that the outer



covering of a living animal could not be impregnated with the choleraic germ and retain it for a certain time, and that consequently animals should not be regarded as susceptible.

Dr. Goodeve desired the suppression of the last part of the conclusion from the words "but it is reasonable, nevertheless," &c.

Dr. Dickson and Salem Bey concurred with Dr. Goodeve.

MM. Van Geuns and Steversen, after endeavoring to show the existence of a contradiction between the first and the last part of the conclusion, said they concurred in the request made by Dr. Goodeve.

Count de Lallemand remarked that the Committee did not mean all animals without distinction, but rather some, and, in certain cases, it did not consider that they were covered with certain matter capable of impregnation with, and the transmission of, the choleraic principle. If the Committee had not drawn up the last part of his conclusion, it would have allowed it to be believed that animals could never become the agents of transmission.

M. Segovia remarked that, judging from what was the practice in many lazarettos, and he mentioned as an instance that of Malta where he had been an eye-witness, it was proved that animals were there considered to be capable of transmitting cholera.

Dr. Dickson brought to notice a contradiction between the text and the conclusion. In the text, he said, living animals were spoken of while in the conclusion they were, so to speak, catalogued and included amongst merchandise or articles said to be susceptible.

M. Fauvel gave some explanations regarding this chapter. These explanations, he thought, were necessary for those who had not attended the meetings of the Committee and who consequently were ignorant of the view taken by the Committee in the draft of the chapter under discussion.

The Committee, said M. Fauvel, had looked at animals from two different points of view:—In the *first* place, it took them into consideration in view to ascertain whether they could contract cholera; *secondly*, to ascertain whether they could transmit it. The Committee had stated distinctly that animals could not contract cholera, but at the same time it stated that, by means of their covering, they might become the receptacles of the choleraic principle, and consequently capable of transmitting it.

If a flock of sheep, said M. Fauvel, came into contact with persons affected with cholera, it was evident that their wool, impregnated with the disease, might communicate it to man. In such a case, he would ask whether these sheep could be regarded as susceptible, and whether it would be prudent to adopt no sort of sanitary measure in regard to them.

Dr. Dickson said he was satisfied.

M. Sawas said that much stress should not be laid on the absence of facts. In his opinion, facts were not wanting, only they had

not been carefully considered and recorded, because, until within a short time past, the transmissibility of cholera was not believed in but the contrary. At the present day, however, thanks to the labors of German physicians, science had awakened and was actively pursuing researches of that nature, and she would soon be rich in facts.

M. Bykow refuted the opinion of M. Sawas. He said that in Russia, since the epidemic of 1830 and 1831, physicians had commenced to believe that cholera, *par excellence*, was transmissible. And at the same period the Government had commenced to put very severe measures of quarantine into execution.

M. Sawas said he was aware of the fact mentioned by M. Bykow, as well as of other similar facts. They did not, however, invalidate, in his opinion, what he had just said about the absence of facts. Until within a short period, the great majority of physicians consisted of "anti-contagionists," and then, of course, measures of quarantine were optional with Governments. At the present day the opinion of the minority was tending to become that of all, and science consequently followed up her researches in the same sense.

M. Maccas said that this question having been raised by him in Committee with the object of drawing the attention of the Conference to a point which, in his opinion, was intimately connected with the prophylactic measures which it was called upon to adopt, he believed himself in duty bound, now that the question was under discussion by the full Conference, to say a few words in order to make his views more clearly understood.

It was necessary to come to a decision upon two points, *niz* :—

1st.—Whether animals were liable to contract cholera during an epidemic, and whether they could transmit it in the same way as men ?

2nd.—Whether these same animals, conveyed to an uninfected locality, could sometimes import the disease into and spread it through that locality ?

He (M. Maccas) had been the first to declare that the disease which animals might by experiments be made to contract, or those which might attack them during an epidemic of cholera, were far from being identical with the cholera of man, and that, in order categorically to solve the question whether animals were liable to contract cholera, science stood in need of more detailed and more precise studies, and of numerous and conclusive experiments. His (M. Maccas's) opinion had been unanimously adopted by the Committee.

But the doubt, continued M. Maccas, was very much greater still in connexion with the hypothesis that animals, even supposing them to possess a species of cholera peculiar to themselves, were able to transmit the true cholera to man. So much for the first part of the question.

As for the second head, which for a moment it was thought should be included in the question of merchandise, but which it had preferred to treat separately, because the transport of one or several animals

was not always a matter of trade, the Committee deemed it its duty to prove that animals might become the carriers of the choleraic germ for a time, probably a short time, as was now admitted in respect of other objects. Well, these proofs, so far as the Committee was concerned, had no existence, he confessed ; but he added that that did not exclude the possibility that facts of that nature might sometimes have occurred. The Committee could express itself only in a *dubious* way in regard to the fact of the choleraic impregnation of animals, and admit the possibility of their becoming in certain cases so-called susceptible objects. If it were properly considered that even quite recently, and perhaps at the present day even, some persons considered that men in whom cholera had not become clearly confirmed, were not dangerous ; if it were also considered that the facts relative to the importation of cholera by personal effects were very few in number ; then only could the reasons be understood which had determined the Committee in classing living animals among so-called susceptible agents, notwithstanding the insufficiency of facts relating to the subject. Reserve on this head, added M. Maccas, was necessary until the day when experience should demonstrate the contrary, and this was why he altogether approved of the decree of the International Sanitary Conference of Paris of 1857, which, in Article 30, expressed itself in the following terms :—

“ In all cases of foul bills of health, merchandise of the third class shall be exempted from all measures of quarantine, and immediate delivery of such merchandise may always be given under the supervision of the sanitary authorities ; except living animals, which shall be subjected to the quarantines and purifications in use in every country respectively.”

M. Millingen was of opinion that the conclusion of chapter 14 was not logical, for it could not be said “ We know nothing about the question, and yet we draw conclusions.” He proposed the elision of the word *rational*, and the substitution for it of the word *prudent*. Then, he thought, it would be necessary to frame several classes of animals, so that a bullock, a horse, and a flock of sheep might not be placed in the same class. This matter, he thought, was of essential importance to the question.

Salem Bey remarked that wearing apparel had been regarded as susceptible because it was kept shut up, whereas living animals existed in the open air. He thought it was necessary to strike out the second part of the conclusion.

In compliance with the request of several Delegates, H. E. the President put the text of chapter 14 to the vote.

It was adopted by 19 to 4.

*For* :—MM. Sotto, Count de Noidans, Segovia, Monlau, Spadaro, Count de Lallemand, Fauvel, Kalergi, Goodeve, Dickson, Maccas, Vernoni, Bosi, Sawas, Gomez, de Krause, Mühlrig, Baron Hübsch, Stenersen (19).

*Against* :—MM. Van Geuns, Lenz, Bykow, Salem Bey.

In compliance with the proposal of several Delegates, who requested that the conclusion should be divided into two parts, H. E. the President put the first part to the vote, as far as the words "by living animals" (inclusive).

It was adopted unanimously.

*For*:—M.M. Sotto, Polak, de Noidans, Segovia, Monlau, Spadaro, de Lallemand, Fauvel, Kalergi, Maccas, Bosi, Vernoni, Goodeve, Dickson, Malkom Khan, Sawas, Millingen, Van Geuns, Gomez, de Krause, Mühlig, Lenz, Bykow, Baron Hübsch, Stenersen, Salem Bey, H. E. Salih Effendi.

His Excellency then put to the vote the 2nd part of the conclusion, commencing with the words "but it is rational," &c.

It was adopted by a majority of 16 to 8. Three Delegates declined to vote.

*For*:—M.M. Sotto, Count de Noidans, Segovia, Monlau, Spadaro, Count de Lallemand, Fauvel, Kalergi, Maccas, Bosi, Vernoni, Sawas, Gomez, de Krause, Mühlig, Bartoletti (16).

*Against*:—M.M. Goodeve, Dickson, Van Geuns, Millingen, Lenz, Bykow, Stenersen, Salem Bey (8).

*Declined to vote*:—M.M. Polak, Mirza Malkom Khan, Baron Hübsch (3).

The conference appointed Wednesday next, 1 P. M., for its next meeting, Thursday being the anniversary of His Majesty the Shah of Persia, which would prevent the attendance of several Delegates at the meeting, if it were to be held on Thursday as usual.

The meeting terminated at 5-30 P. M.

Order of the day for the next meeting:—

1st.—Continuation of the discussion on the general report.

2nd.—Miscellaneous communications.

SALIH,

*President of the Sanitary Conference.*

DR. NARANZI,  
BARON DE COLLONGUE, } *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE MEETING  
No. 19, OF THE 20TH JUNE 1866.

H. E. SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its nineteenth meeting on the 20th June 1866, at Galata-Serai.

PRESENT:

*For Austria:*

M. Vetsera, Councillor of the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Physician attached to the Imperial and Royal Internon-  
ciature, Director of the Austrian Hospital.

Dr. Polak, formerly Chief Physician to the Shah of Persia.

*For Belgium :*

Count de Noidans, Secretary to the Legation of His Majesty the  
King of the Belgians.

*For Spain :*

Don Antonio Maria Segovia, Consul-General, Chargé d' Affaires.

Dr. Monlau, Member of the Superior Council of Health of Spain.

*For France :*

Dr. Fauvel, Sanitary Physician of France.

*For Great Britain :*

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician  
to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy,  
British Delegate to the Superior Council of Health at Constanti-  
nople.

*For Greece :*

M. Kalergi, Secretary to the Legation of His Majesty the King of  
the Hellenes.

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor  
in the University of Athens.

*For Italy :*

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty  
the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of  
Health at Constantinople.

*For the Netherlands :*

M. Keun, Councillor to the Legation of His Majesty the King of  
the Netherlands.

Professor J. Van Geuna.

Dr. Millingen, Dutch Delegate to the Superior Council of Health  
at Constantinople.

*For Persia :*

Mirza Malkom Khan, Aide-de-Camp-General to His Majesty the  
Shah, Councillor to His Legation.

Dr. Sawa s Effendi, Inspector of Hygiene and Health at Constan-  
tinople, Persian Delegate to the Superior Council of Health.

*For Portugal :*

Chevalier Edward Pinto de Soveral, Chargé d'Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

*For Prussia :*

M. H. de Krause, Secretary to the Legation of His Majesty the King of Prussia.

Dr. Mühlig, Physician to the Legation, Principal Physician to the Ottoman Marine Hospital.

*For Russia :*

Dr. Pelikan, Councillor of State, Director of the Civil Medical Department in Russia.

Dr. Lenz, Councillor of College, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, Co-Military-Medical Inspector of the Arrondissement of Wilna.

*For Sweden and Norway :*

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to His Legation.

Dr. Baron Hübsch.

*For Turkey :*

H. E. Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Service.

Dr. Bartoletti, Inspector-General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

*(For Egypt :)*

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

The meeting commenced at 1 P. M.

Baron de Collongue read the minutes of the 17th meeting.

Dr. Millingen asked leave to speak, after the minutes had been adopted, in order to read the two following passages, extracted from the work of Rigler (vol. ii., pp., 441-443), confirming the correctness of the details he had given at the last meeting but one, in regard to the importation of cholera into the Hedjaz in May and again in November 1846 :—  
 “ In the month of May 1846, cholera showed itself at Aden, Mocha, and Jeddah, and invaded almost the whole of the seaboard of the Arabian peninsula : it even penetrated into the interior of Yemen. However it spared the opposite coasts of the Red Sea and did not even touch Mecca, which is not far from Jeddah. Towards the end

of June the disease had almost entirely ceased in those countries. Later, towards the end of November, cholera showed itself at Medina as well as at Mecca. In the latter town, 15,000 victims were reckoned in a population estimated, at that period, on account of the pilgrimage, at 100,000 souls. Those who suffered most were the pilgrims from Syria, Egypt, Tunis, and Morocco; the Constantinople caravan lost notably several personages of high distinction."

Dr. Naranzi read the minutes of the 18th meeting.

The Conference adopted the minutes, and then, on its being remarked by H. E. Salih Effendi that it would be impossible to meet on Monday the 25th, by reason of that day being the anniversary of the accession to the throne of H. I. M. the Sultan, the next meeting was fixed for Wednesday, the 27th June, at 1 P. M.

The discussion on the report of the General Committee being resumed, Dr. Fauvel read the question and the conclusion of chapter XV.

M. Stenersen expressed in the first instance his regret that in treating of the great question of the transmission of cholera by choleraic arrivals generally, the Committee should have limited itself to speaking of transmission by living animals, by articles of domestic and personal use, and by merchandise, without at the same time throwing any light upon the grave questions of transmission by means of provisions and ships. The Committees appointed to consider preservative measures ought nevertheless to have their position in this respect properly defined, and if medical science was not in a position to form any clear, well-defined, and final opinion upon the point, the report should at any rate say so. In regard to matters especially touching upon the chapter under discussion, M. Stenersen said he thought that the manner in which the conclusion was deduced from the facts upon which it was based was defective. The Committee brought forward eight facts. Now it was evident that the first seven only related to cases where the disease had been communicated by articles which had come into direct contact with choleraic patients or their *excreta*. In regard to the eighth, it might also very well be considered as an instance of prolonged incubation rather than as a proof of the transmissibility of the disease by means of infected articles. Supposing, however, that it were to be so interpreted, would it not then become reasonably necessary to admit that articles contained in the trunks of emigrants had been in direct contact with persons affected with cholera? Otherwise, and if this contact had not existed, how was it to be explained that the clothes worn by emigrants, clothes which had remained in the same choleraic focus as the articles contained in the trunks, had not become at the same time impregnated with the morbid germ, and that they had not, therefore, communicated the disease? If this fact, as well as the seven others, only proved the possibility of transmission by means of articles which had been in contact with choleraic patients, how was it that the Committee could decide as to the possibility of that transmission in general?

M. Stenersen also noticed some obscurity and even a contradiction in the paragraph commencing thus :—“ *But in regard to the well-proven possibility,*” &c. The Committee commenced by establishing the theory of transmissibility by articles in general, and then immediately afterwards it discovered a limitation to the theory, applying to the generality of cases, a limitation which gave rise in the next succeeding paragraph to an examination of the conditions, “ *happily rare,*” which were necessary in order to endue articles of common use with a susceptibility for the importation and transmission of cholera. The result of this examination was indicated further on :—“ *It follows from all this that articles of common use owe the property of transmitting cholera to their capacity for impregnation with matter proceeding from choleraic patients.*” The Committee was correct there : it advanced nothing which it had not proved. Nevertheless, some lines further on, and this time, in the conclusion, it was seen to declare *de novo* that the theory of transmission by articles in general was proven.

M. Stenersen said he did not contest the theory in itself : but he simply opposed the mode of argument of the Committee, which appeared to him to be illogical. If the Committee believed in transmission by means of articles generally, it should prove it by facts. If it had no conclusive facts to adduce, it should abandon the theory, or, at any rate, place it among those obscure questions which science was not as yet in a position to solve. M. Stenersen finally proposed :—1st, that in the paragraph commencing “ *But in regard to,*” &c., the words “ *and especially by those*” should be struck out ; and similarly, in the conclusion, he proposed the elimination of the words “ *especially by those.*” 2nd, that the following sentence should be added to the conclusion :—“ *With respect to articles coming from an infected locality without having been in contact with choleraic patients, the Committee believes it is prudent to regard them as dangerous.*”

Dr. Monlau mentioned two facts which supported the conclusion at which the Committee had arrived :—1st, cholera was imported into Galazzita, near Salonica, by two persons who had picked up a cloak which had been thrown away, the property of one who had died of cholera at the lazaretto ; 2nd, at Avila, in Spain, the importation of cholera was attributed to a soldier who had purchased clothing when passing through Madrid where cholera prevailed. The disease broke out in a house where, on arriving at Avila, the soldier put out the clothes to dry, as they had been wet with rain during the journey.

Dr. Monlau added that it was a matter of fact that the transmission of cholera by means of articles of common use soon ceased, and that it had rarely been seen to give rise to a real epidemic. This observation appeared to him to impart a certain amount of value to the distinction which had formerly been established between the *contagium vivum*, or that resulting directly from the sick person, and the *contagium mortuum*, or that resulting from articles belonging to the sick person. Dr. Monlau would ask whether there were not certain modifications to be effected in the terms of the passage which treated of the results of the dispersion to a



great number of points of travellers starting with their baggage from a choleraic focus. If it had to be admitted that, in the immense majority of cases, this baggage had not transmitted the disease, might not the same be said also of the travellers to whom the baggage belonged: and, in that case, might not a sort of argument against transmissibility by man be found in the passage as it had been drawn up?

Dr. Sawas, in reply to M. Stenersen, remarked that if transmission by means of articles of use could not be proved by facts except when there had been direct contact, it was none the less evident that it ought to be logically admitted that such articles, by reason simply of their having come from a choleraic focus, might transmit the disease. Why, for instance, should not clothes which had remained in the room of a cholera patient, not become impregnated with that choleraic germ, the nature of which was as yet unknown, simply by the fact of their being there and without any necessity for direct contact with the patient himself? Dr. Sawas, who was a member of the Sub-Committee appointed to consider this portion of the programme, explained that he was giving expression to his own personal ideas only, not the opinions of the Committee.

Dr. Mühlig remarked that when cholera had been transmitted by articles of personal use, in the majority of instances it was impossible to discover whether they had or had not been made use of by cholera patients. It was for this reason that the Committee had thought it right to frame a general conclusion.

Dr. Maccas thought that Dr. Sawas had gone a little too far in suspecting articles which had merely been kept in a choleraic focus. Did the germ of the disease then exist in the air? It would be better, he thought, to remain in doubt with regard to this class of articles. Nevertheless the distinction between articles of common use accordingly as they had or had not been in contact with choleraic patients was impossible in theory, and the Committee could not conclude otherwise than as it had done. It limited itself to admitting the possibility in the first case ("*may be imported,*") so as not to pronounce more affirmatively in the second: "*and especially.*"

Dr. Sawas believed that the extent and bearing of the conclusion could not be restricted without danger. Could it be guaranteed that articles proceeding from a choleraic focus could not communicate the disease merely because they had not come into direct contact with persons affected with cholera?

M. Stenersen admitted the justice of these remarks, and repeated that he did not ask for the modification of the conclusion, for that might really be attended with danger. It was merely necessary to justify the conclusion by logical argument. What he opposed was the mode of arguing adopted by the Committee, not the conclusion itself.

Dr. Lenz concurred in the remarks made by M. Stenersen. The facts quoted in the report in no way proved that cholera was transmissible by any other articles than those which had been made use of

by cholera patients. As the matter in hand related, not to measures to be adopted against such articles, but only to the setting up of a scientific theory, it would be well, in order to impart precision to the theory, to modify the conclusion of the chapter under discussion, namely, to enunciate only what was proved in the substance of the chapter. It would be necessary to eliminate the words "*and especially by those*" in the conclusion.

Dr. Sawas objected to this, saying that in the report all the facts and conclusions dovetailed into each other. For instance, the conclusion of chapter XXX, viz.—"*The atmosphere is the chief vehicle of the generating principle of cholera,*" to which they would come further on, to a certain extent supported that of chapter XV, as also what he had said himself of the possibility of contamination by articles which had merely remained in a choleraic focus. The argument of chapter XV might be modified, but its conclusion could not be touched.

Professor Van Genus believed that M. Stenersen had not made sufficient account of the difference existing between the consequences drawn from *facts* and the *logical conclusions* deduced from general principles. It was very difficult to find conclusive facts admitting of no objection, and yet the great mass of known facts led the Committee to the conclusion that cholera had in many instances been transmitted by articles used by cholera patients. With this *quasi* certainty, it was necessary to consider what was logically possible, and it was for this reason that the Committee had been obliged to admit that it was possible even that articles in general coming from a choleraic focus might become agents of transmission.

Dr. Fauvel, as the reporter, asked to be allowed to remark that it was always difficult in every case, and even with regard to questions on which all were agreed, to come across facts which admitted of but one mode of interpretation. With respect to the question of transmission by articles of common use, there were not, it was true, any conclusive facts except as applicable to articles used by individuals affected with cholera. But besides these conclusive and demonstrated facts, there were probable facts, such as that of the importation of cholera into the family at Lurtheim, near Munich, as also that about the emigrants. In these two cases, it was impossible to prove that the things which had transmitted the disease had been used by cholera patients; it was only probable. Now what did the Committee say? and could it be accused of going beyond facts? It did not pretend that every article of common use coming from an infected locality transmitted the disease: it contented itself with saying:—"Cholera may be transmitted by these articles," and if it added "*and especially by those which have been made use of,*" &c., it was precisely because in the latter case conclusive facts existed. If, on the other hand, it could not be proved that cholera could be transmitted by articles which had not come into direct contact with choleraic sufferers, could it be proved either that only articles made use of by cholera patients could transmit the disease? In reply to the remarks made by Dr. Monlau, Dr. Fauvel explained that what the report said in regard to

articles of common use which, on the majority of cases and though proceeding from choleraic focus, nevertheless did not import the disease, applied also to man. It was evident that man was one of the chief agents of the transmission of the disease, and yet its transmission by him was only exceptional. If it were otherwise, would they not see masses of emigrants, scattered and put to flight by cholera, propagate the disease far and wide? What was true of man, was also true of articles of common use. If the one and the other, when they proceeded from a choleraic focus, did not necessarily and perforce communicate the disease they were not the less always dangerous. Certain conditions, moreover were necessary for the existence of this danger in regard to articles. These conditions were indicated by the Committee. They were, in regard to transport to a small distance, that the articles should have recently been in direct or indirect contact with cholera patients, and especially that they should have been soiled by their *excreta*; and, in regard to transport to a great distance, that they should have been shut up and confined.

Dr. Fauvel, in conclusion, expressed his opinion that the conclusion of the report was a logical deduction from facts; and that the Committee without forming any theory, had deduced from facts all that could be deduced from them when it framed a general conclusion based upon probabilities.

The President called for a division, 1st, upon the text of chapter XV, 2nd, upon the conclusion.

The text was adopted by a majority of 19 against one, and five who declined to vote. *For*:—Dr. Polak, Dr. Sotto, Count de Noidans, Dr. Fauvel, Dr. Goodeve, Dr. Dickson, M. Kalergi, Dr. Maccas, M. Vernoni, Professor Bosi, Professor Van Geuns, Dr. Gomez, M. de Krause, Dr. Mühlig, Dr. Lenz, Dr. Bykow, Dr. Baron Hübsch, H. E. Salih Effendi, Dr. Bartoletti. *Against*:—M. Stenersen. *Declined to vote*:—M. M. Segovia, Dr. Monlau, M. Keun, Mirza Malkom Khan, Dr. Sawas. The conclusion was also adopted by 21 against two, and two who declined to vote. *For*:—Dr. Polak, Dr. Sotto, Count de Noidans, M. Segovia, Dr. Monlau, Dr. Fauvel, Dr. Goodeve, M. Kalergi, Dr. Maccas, M. Vernoni, Professor Bosi, Professor Van Geuns, Mirza Malkom Khan, Dr. Sawas, Dr. Gomez, M. de Krause, Dr. Mühlig, Dr. Bykow, Dr. Baron Hübsch, H. E. Salih Effendi, Dr. Bartoletti. *Against*:—Dr. Dickson, M. Stenersen. *Declined to vote*:—M. Keun and Dr. Lenz.

After the voting had concluded, Dr. Fauvel read the question and the double conclusion of chapter XVI.

M. Stenersen expressed his surprise at the report passing so rapidly over such a very important question as that of the transmission of cholera by merchandise. Not a proof, not an argument was adduced in support of the conclusion, which was preceded by only a few introductory sentences, in which the Committee confined itself to noting the entire absence of facts demonstrating the possibility of the transmission. This mode of procedure, it appeared to him, was all the

more to be regretted that a question was treated of in regard to which public opinion had long been occupied in every country, and that the Conference especially ought, therefore, to make it a point to throw light upon it and consider it thoroughly. It might be that the facts with which science was acquainted were not conclusive either one way or the other, but the report, for all that, should at any rate record all or a part of these facts, so that the Conference might examine them for itself and so convince itself of the impossibility, in the existing state of knowledge, of giving expression to the opinion which might reasonably be expected from it. There was a pretty unanimous admission that certain merchandise was not susceptible of transmitting cholera, and that amongst that which ought to be regarded as dangerous all kinds were not so to the same extent. If the Committee could do no more, it ought at least to have regarded the question in this point of view and to have shown what was substantial and well-founded in the distinction which had been generally established, between merchandise of different sorts. It should have noted, for instance, what should be thought of provisions in general, or at any rate of those which formed a somewhat considerable export trade, in so far as they were agents in the transmission of cholera.

Dr. Polak explained that he had voted against the first part of the conclusion because no fact whatever appeared to him to demonstrate the transmissibility of cholera by merchandise. He did not even believe in the possibility of such transmission, because choleraic patients being incapacitated for work, it was only altogether exceptionally and for a very short time that any traces of them could remain and that merchandise could come into direct contact with them. If the Committee, in coming to the conclusion it had adopted, had facts in view, it should then have classified merchandise in the first instance before adopting any conclusion.

Dr. Lenz also said he did not believe in the possibility of transmission by merchandise. In his opinion, the choleraic principle existed only in choleraic *excreta*, and it could not, therefore, enter into merchandise which was preserved by its mode of packing. The absence of facts to be adduced in support of this transmission only confirmed Dr. Lenz in the views he held.

Dr. Bykow said he would vote on the same side as Dr. Lenz and for the same reasons, and then added that a special Commission had been appointed at St. Petersburg in 1830 to consider this question. The enquiry which it held had afforded only negative results.

Professor Bosi objected that if there were no facts proving the transmissibility of cholera by merchandise, there were also none proving the contrary. Good sense indicated that, until proof to the contrary, certain merchandise should be regarded as dangerous.

M. Segovia, while he said he would vote for the chapter, also said he believed that it would have been well to have treated the question in greater detail, and that, at any rate, merchandise should never be

spoken of without specifying it according to its different sorts, the manner in which the different sorts were packed and conveyed, and all the circumstances which rendered some of them so different from others. Every article, whatever its nature might be, might become an object of traffic or commerce, become merchandise in fact, and it would be rash therefore to lay it down as a general and absolute rule that merchandise, as such, could or could not propagate cholera.

Dr. Pelikan explained the reasons which had led him to vote against the 1st part of the conclusion of the chapter under discussion, and to refrain from voting in regard to the second. It appeared to him desirable that so grave a question should be examined more in detail and with greater precision, not only in regard to the mode of contamination, but also with respect to the sanitary regulations at present in force in various countries. The draft Convention prepared by the Paris Sanitary Conference of 1859 separated merchandise into three classes, according to susceptibility, and he thought it would have been well to have considered the question in the same way.

Professor Van Geuns had also voted against the first part of the conclusion. Since there were no facts in proof of transmission by merchandise, the Committee could not decide on the possibility of such transmission without placing itself in contradiction with experience. He believed that if such a course were adopted, results would be reached which would render all commerce impossible.

Dr. Monlau thought that the conclusion, which appeared to him to be as restricted as possible, should be adopted. The present discussion, viz., the consideration of the adoption of a classification of merchandise according to nature, condition, and mode of packing, would be more appropriate when preservative measures would be discussed.

Dr. Mühlig observed that the report affirmed nothing. Could it be denied that the transmission of cholera was possible by means of merchandise proceeding from a choleraic focus, when the same possibility had been admitted *quoad* articles of common use? Should not that which was true of one also be true of the other?

Dr. Millingen spoke to the same effect.

Dr. Fauvel, in reply to the various objections which had been urged against the chapter under discussion, remarked, in the first place, that the absence of facts to adduce was the best reason that could be given for its brevity. What could usefully be added to it, when there was nothing more to say? And because the Committee decided on the transmissibility of cholera notwithstanding the absence of proof, did it follow that it contradicted itself? Was not every one unanimous in admitting that certain merchandise was capable of propagating the disease? To adduce only one instance, were not rags considered as redoubtable agents of transmission, and had not the sanitary authorities of Marseilles prescribed special measures of precaution to guard against the danger arising from the enormous quantities of rags exported from Constantinople after the last epidemic? Regret also had been expressed

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that chapter XVI did not contain a classified list of the various kinds of merchandise, according as they were more or less dangerous, but, as had been said, occasion would be taken later to consider the question.

A great number of members insisting on a division, Dr. Maccas, who had asked leave to speak, withdrew his request, saying that he gave up his right to speak if the Conference thought it had heard enough of the subject.

The text and the conclusion of the first part of chapter XVI were then put to the vote and adopted by 16 against five and three abstentions. *For* :—MM. Dr. Sotto, Segovia, Dr. Monlau, Dr. Fauvel, Dr. Dickson, Kalergi, Dr. Maccas, Professor Bosi, Dr. Salvatori, Keun, Dr. Sawas, Dr. Gomez, de Krause, Dr. Mühlig, H. E. Salih Effendi, and Dr. Bartoletti. *Against* :—MM. Dr. Polak, Dr. Goodeve, Dr. Lenz, Dr. Bykow, and Stenersen. *Declined to vote* :—MM. Professor Van Geuns, Mirza Malkom Khan, Dr. Baron Hübsch.

The text and conclusion of the 2nd part were also adopted by 14 votes. M. Stenersen, who had desired that the discussion on this part of the chapter should be continued, protested against the vote. Some other members declined to vote for the same reason. *For* :—MM. Dr. Sotto, Segovia, Dr. Monlau, Dr. Fauvel, Dr. Dickson, Kalergi, Dr. Maccas, Professor Bosi, Dr. Salvatori, de Krause, Dr. Mühlig, Dr. Baron Hübsch, H. E. Salih Effendi, and Dr. Bartoletti. *Declined to vote* :—MM. Dr. Polak, Dr. Goodeve, Keun, Professor Van Geuns, Mirza Malkom Khan, Dr. Sawas, Dr. Gomez, Dr. Lenz, Dr. Bykow.

The meeting terminated at 5 P. M.

SALIH,

*President of the Sanitary Conference.*

DR. NABANZI,

BARON DE COLLONGUE,

} *Secretaries.*

INTERNATIONAL SANITARY CONFERENCE. MEETING  
No. 20 OF THE 27TH JUNE 1866.

H. E. SALIH EFFENDI, *Presiding.*

The International Sanitary Conference held its twentieth meeting at 1 P. M. of the 27th June 1866, at Galata-Serai.

PRESENT :

*For Austria :*

M. Vetsera, Councillor of the Internonciature of His Imperial and Royal Majesty.

Dr. Sotto, Physician attached to the Imperial and Royal Internonciature, Director of the Austrian Hospital.

Dr. Polak, formerly Chief Physician to the Shah of Persia.



*For Spain :*

Don Antonio Maria Segovia, Consul-General, Chargé d'Affaires.  
Dr. Monlau, Member of the Superior Council of Health of Spain.

*For the Papal States :*

Dr. Ignace Spadaro.

*For France :*

Count de Lallemand, Minister Plenipotentiary.  
Dr. Fauvel, Sanitary Physician of France.

*For Great Britain :*

Dr. Goodeve, Surgeon-Major, Indian Army, Honorary Physician to the Queen.

Dr. E. D. Dickson, Physician to Her Britannic Majesty's Embassy, British Delegate to the Superior Council of Health at Constantinople.

*For Greece :*

M. Kalergi, Secretary to the Legation of His Majesty the King of the Hellenes.

Dr. G. A. Maccas, Chief Physician to the King, Clinical Professor in the University of Athens.

*For Italy :*

M. A. Vernoni, Chief Interpreter to the Legation of His Majesty the King of Italy.

Professor Frederic Bosi.

Dr. G. Salvatori, Italian Delegate to the Superior Council of Health at Constantinople.

*For the Netherlands :*

M. Keun, Councillor to the Legation of His Majesty the King of the Netherlands.

Dr. Millingen, Dutch Delegate to the Superior Council of Health at Constantinople.

*For Persia :*

Dr. Sawas Effendi, Inspector of Hygiene and Health at Constantinople, Persian Delegate to the Superior Council of Health.

*For Portugal :*

Chevalier Edward Pinto de Soveral, Chargé d'Affaires.

Councillor Dr. Bernardino Antonio Gomez, Chief Physician to His Most Faithful Majesty.

*For Prussia :*

Baron Testa, Prussian Delegate to the Superior Council of Health.

Dr. Mühlig, Physician to the Legation, Principal Physician to the Ottoman Marine Hospital.

*For Russia :*

Dr. Pelikan, Councillor of State, Director of the Civil Medical Department in Russia.

Dr. Lenz, Councillor of College, Attaché in the Russian Ministry of the Interior.

Dr. Bykow, Councillor of State, co-Military-Medical Inspector of the Arrondissement of Wilna.

*For Sweden and Norway :*

M. Oluf Stenersen, Chamberlain to His Majesty the King of Sweden and Norway, Secretary to His Legation.

Dr. Baron Hübsch.

*For Turkey :*

His Excellency Salih Effendi, Director of the Imperial School of Medicine at Constantinople, Chief of the Civil Medical Service.

Dr. Bartoletti, Inspector-General of the Ottoman Sanitary Department, Member of the Superior Council of Health at Constantinople.

*(For Egypt :)*

Dr. Salem Bey, Clinical and Pathological Professor in the School of Medicine at Cairo, Special Physician to the Princess-Mother of His Highness the Viceroy of Egypt.

Baron de Collongue, one of the secretaries, read the minutes of the 20th June (No. 19). They were approved with some modifications.

M. Mühlig asked for the correction of the 10th printed paragraph, in which he had erroneously been made to say that the question of disinfection ought to be placed at the head of the 3rd section (minute No. 10, page 22). M. Mühlig said that he had proposed that it should be placed in the first section of the third group.

His Excellency the President communicated a letter from M. de Krause, stating that, as he had been appointed to other duties, he would be replaced, as a Delegate in the International Sanitary Conference, by Baron Testa, a Delegate from the Prussian Government to the Superior Board of Health.

M. de Krause begged His Excellency to be good enough to express, in his name, to the honorable Conference the regret he felt at the termination of their official connexion. He intimated at the same time that the Sublime Porte had been informed that he had been replaced by Baron Testa.

His Excellency the President also informed the honorable Conference that one of the Dutch Delegates, Professor Van Geuns, was about to vacate his seat, having been granted leave of absence by his Government.

His Excellency then called upon M. Fauvel to continue the reading of the general report under discussion, and which had been interrupted, at the last meeting, at chapter XVII.

M. Millingen, with reference to this chapter, drew the attention of the Conference to a fact mentioned by Michel Lévy who noted it as a very significant and very singular one. It was with regard to the dissecting-room attendant who died in six hours of cholera after the opening of the corpse of an individual who had fallen a victim to the disease in the Crimea, and who had been conveyed to Constantinople. The occurrence had taken place in the French Marine Hospital at Therapia, where cholera did not prevail. (Vide Michel Lévy's *Traité d'Hygiène*, vol. ii., page 437.) This fact, recorded by a physician of such authority as M. Lévy, who was an eye-witness, would, in the opinion of M. Millingen, go to prove that the autopsy of a cholera patient, made several days after death, might communicate the disease to a healthy man and in a place where the disease did not prevail.

Baron Hübsch disputed the importance of the fact brought forward. He did not think it was conclusive, for during the Crimean war, he had frequently operated at post-mortem examinations in the Gulbané hospital, where, amongst others, he examined the bodies of infirmarians working in the hospital, who looked after the corpses of those who had died of cholera. Nobody had concluded from that that cholera had been transmitted to them by the corpses, it being much more natural to believe that they had contracted it from the same sources as the cholera patients themselves.

M. Fauvel, after having demonstrated that the fact recorded by M. Lévy, an author worthy of all respect, could not receive the interpretation M. Millingen had wished to give it, said that when the occurrence took place at Therapia, M. Lévy was at Varna. He also furnished additional arguments in development of the opinion of Baron Hübsch, and showed to M. Millingen that the fact he had quoted admitted of various interpretations, the most logical of which would be opposed to the idea he had attached to it.

His Excellency the President then put the text and conclusion of Chapter XVII to the vote.

They were adopted, the first by 23 votes, no votes *contra*, one member, M. Sawas, declining to vote; and the second by 22, no votes *contra*, and M. Sawas again declining to vote.

Votes for the *text*:—MM. Polak, Sotto, Segovia, Monlau, Spadaro, de Lallemand, Fauvel, Goodeve, Dickson, Kalergi, Maccas, Bosi, Vernoni, Millingen, Gomez, Testa, Mühlig, Bykow, Lenz, Sten-eisen, Hübsch, Salem Bey, and Bartoletti (23).

*For the conclusion*:—All the preceding except M. Millingen, who was not present during the division.

M. Fauvel read the title and conclusion of Chapter XVIII. Text and conclusion were both adopted unanimously. All the members just mentioned voted, with the addition of MM. Sawas and Millingen (24).

The discussion next proceeded to Chapter XIX, several Delegates expressing their desire to speak.

M. Polak said that he had refrained in Committee from voting upon the chapter, because the conclusion did not appear to him to be so demonstratively proved by experience as had been said. Moreover, he added, it was said in the report that, in 1831, cholera had *probably been imported by sea*, while here a very categorical conclusion had been drawn. Be that as it might, he thought that the vast extent of the desert should have been mentioned, for it had been seen this year that the journey from Mecca to Yambo, which occupied ten days, had not acted as a preservative against cholera.

It was certain that the removal of an encampment, for a sufficiently long time, preserved people from cholera, even in very fertile countries, as had been seen by the movement of troops in India, but it was not demonstrated that that was the effect of the desert. M. Polak said in conclusion that he had simply abstained from voting, but that he had not voted against it, not being in possession of sufficiently decisive proofs.

M. Monlau explained the motives by which he had been influenced in refraining from voting for the chapter. The question had been badly framed. To ask what was the influence of deserts was, in his opinion, like asking, in regard to maritime communications, what was the influence of the sea.

The desert, he believed, was not a *means of communication*, but a *way of communication*. Everything then depended on the manner in which this way was traversed. If caravans were made to cross the desert by railway, they would be seen to propagate cholera: yet the desert remained the same. Thus then, said M. Monlau, it was evident that the desert was not the element which exercised the principal influence.

This influence moreover had nothing to do with propagation. The *desert* had no influence on propagation, because, in the first place, being a desert, it contained no population among which the disease could spread itself, and because, when the end of the desert had been reached and population commenced, there was nothing to propagate, since, according to the report itself, the disease had disappeared.

Lastly, to him (M. Monlau) the question was altogether one of transmission: it was simply required to know how cholera prevailing among the pilgrims of a caravan transmitted itself, and what was the influence of the mode of travelling by caravan. That influence, he thought, was evidently favorable: caravans were incessantly on the move, leaving behind them *excreta*, corpses, and perhaps even the sick. It was not surprising then that they got rid of cholera in a few weeks. The same might be said in regard to armies on the march and also all assemblages which were constantly changing their quarters. It was simply an application of the law of transmissibility. Moreover, in his opinion, a lapse of some weeks was no very short space of time, considering that in many localities the invasions of cholera did not last longer.

M. Monlau believed that there was no reason even to employ the figurative expression *barrier*. The desert was not a real anti-choleraic barrier for the pilgrims, for even in the desert the disease raged amongst them. Neither did the desert act as a barrier with regard to the localities at which the pilgrims arrived, because it was held to be a fact, the truth of which had been evinced, that they always arrived safe and sound and quite clear of cholera.

M. Gomez was of opinion that the conclusion drawn in this chapter did not harmonise with other parts of the same report. The contradiction was manifest, and resulted from the different interpretations which had been given of the same facts and the manner in which they were made use of. He would refer to one fact, *viz.*, that if, in May 1846, cholera was at Jeddah, it was not imported by the pilgrims. It was then not quite accurate to say, as had been said in another place in the report, that cholera had always manifested itself in the Hedjaz at the time of the pilgrimage. Verrollot admitted these appearances of cholera in the Arabian ports and towards the Red Sea to be frequent, but independent of the pilgrimage, and he went so far as to infer a certain *choleraic endemicity* in those ports, which were moreover very unhealthy.

M. Pelikan said he had refrained from voting because there were *savans* who asserted that the transport of cholera across the deserts was not only possible, but that it had sometimes been effected. Moreover, the conclusion of the chapter, in a theoretical point of view, could not stand severe criticism.

As for the instances quoted in the report to prove that cholera had never been imported into Egypt and Syria across the desert, he considered they were not more conclusive, for sea communication (as in Egypt in 1831) or river communication (as in Syria in 1823 and 1847) being naturally much more rapid than land routes, it was evident that in the above-mentioned cases, where cholera had already been imported by navigation, the later importations might have remained unperceived by reason of the small influence they exercised in general on the progress of an already existing epidemic.

M. Bartoletti next spoke. He said in the first place that he did not pretend to explain how the facts occurred, but that he would confine himself to giving some information capable of throwing light upon the question, by demonstrating that cholera had always been arrested in Mesopotamia in every epidemic, numbering ten in all, from 1851 to 1860, mentioned by him at a previous meeting, in connexion with Persia. In these epidemics, said M. Bartoletti, the caravans which left Bagdad for Aleppo and Damascus had never carried cholera into Syria.

In the following précis, which commenced with 1847 and came down to last year, M. Bartoletti showed how the seven epidemics on record for the years 1847-48-50-55-58-59 and 65 proceeded from Mecca to Damascus.

1st.—In 1847 cholera existed at Mecca and diminished in proportion to the distance the caravan, leaving the coast of the Red Sea, buried itself in the desert. It had completely ceased by the time the pilgrims arrived at Damascus.

2nd.—In 1848 there was another epidemic at Mecca.

3rd.—In 1850 the caravan was attacked by cholera during the journey, but the sanitary physician stated in his report that by the 18th December it no longer existed. That year the cold was so excessive that many pilgrims and animals succumbed to it.

4th.—In 1855 the caravans, which arrived on the 28th October, had cholera. On its arrival, there were many cases of diarrhœa amongst the pilgrims, but without any fatal results. At that time the disease had existed since the 14th October at Beyrout as well as at St. Jean d'Acre and Tiberiad, but Damascus enjoyed perfect health.

5th.—In 1858, cholera existed at Mecca, and alarming news was spread with reference to the caravan. But it arrived at Damascus on the 24th December without any trace of cholera, and the health of the pilgrims had been satisfactory for thirty days previous to its arrival.

6th.—In 1859 the most melancholy news was circulated in regard to the sanitary condition of the caravan, in which, it was said, great mortality had occurred since the 1st August from cholera. On the 18th September, the caravan, comprising 1,600 pilgrims, arrived at Damascus in perfect health.

7th.—In 1865, the caravan arrived at Késuze on the 2nd July after the regulated visit of the sanitary Officer, who reported that only the ordinary diseases of the season, diarrhœa and dysentery, existed amongst the pilgrims. The caravan entered Damascus on the 3rd July. Cholera had ceased to rage amongst the pilgrims since their departure from Medina.

The sanitary physician of Damascus, said M. Bartoletti, stated in his reports that cholera, which that year had raged in the city, had not been imported by the pilgrims across the desert, but rather by the emigrants from Beyrout, who had sought refuge there before the arrival of the caravan. But the pilgrims who arrived *vid* Egypt and *vid* Beyrout had infected the city of Damascus, and the first case occurred in the Egueba quarter, where they were in the habit of stopping whence the disease spread through the city.

M. Bartoletti would ask, in conclusion, whether so many instances did not evidently prove that the desert was the most powerful existing barrier against cholera. To attempt an explanation of the fact he said would be altogether idle. Its importance ought to suffice, and it was universally admitted. He believed, therefore, that the conclusion of Chapter XIX was based upon incontestable facts.

M. Bosi confirmed in every point the information given by M. Bartoletti. He was in a position, he said, to produce facts in connexion

with this subject of which he had been an eye-witness in the years 1850-51-52 and 53. According to his experience, which was acquired on the spot itself, he could affirm that the caravan from the Hedjaz to Damascus had never imported the disease into that city.

M. Bartoletti thought it necessary to add, as a piece of information, that the sanitary inspector always subjected the caravan to a quarantine of observation; after the expiration of which only was it allowed to enter Damascus.

M. Polak, taking Rigler's work for his authority, disputed M. Bartoletti's assertions, and pointed out to him that no caravan went direct from Bagdad to Syria.

To which M. Bartoletti replied that there were routes of communication regularly traversed by certain trading caravans between Bagdad and Syria and also between Bagdad and Aleppo.

M. Fauvel first summarised and then refuted the principal objections urged by various speakers against the conclusion of chapter XIX.

In the first place he proved to M. Polak, in opposition to what he believed, that the conclusion was not unsafe in regard to Egypt and Syria. It did not say that it was impossible for cholera to have been imported into Egypt or Syria across the desert, but merely that no instance of it had yet been seen. If a fact—a single instance—existed opposed to the assertion, let it be brought forward, but until then the conclusion, which merely stated a fact, would remain unattackable.

With regard to the objections of M. Monlau, who had considered the question badly drawn up and the conclusion badly framed, and who considered the desert as absolutely nothing, M. Fauvel, on the contrary, maintained that the desert was everything and the caravan nothing. In fact, he said, for the caravans which propagated cholera wherever they went, to be able to communicate the disease, it was necessary in the first place that they should come across inhabited places, places where men live. The desert, which was scarcely peopled at all, and that was why it was called a desert, not presenting this essential condition, the disease arrested and wore itself out there; it constituted therefore a powerful barrier. The army mentioned by M. Fauvel, in passing across a desert, would place itself in absolutely the same conditions as caravans. Instead of propagating the disease, as it would do in all inhabited localities, it would have time, during its journey across the desert, to get rid of it. It was not, therefore, the army or the caravan which constituted a barrier against the disease, but rather the desert and only the desert, for the army and the caravan would always and everywhere else suffer from the disease.

M. Fauvel thought it necessary to insist upon the terms of the conclusion, for it was important to have a proper understanding regarding the value of a point on which appeared to rest a part of M. Monlau's argument, as well as that of M. Polak. The conclusion was far from setting up a doctrine; it only stated a fact; from this fact the conclusion regarding Egypt and Syria was deduced by the strictest logic: this conclusion

could not be demolished except by force of facts and instances in an opposite sense. These facts as yet did not exist, or at any rate they were not known : consequently all *à priori* arguments that might be adduced would be merely gratuitous hypotheses. To M. Gomez, who had asked for explanations and who had supposed that, according to the report, the desert was always a preservative against cholera, M. Fauvel observed that that had never been said : what had been said was simply that the desert was an efficacious barrier. M. Bartoletti had demonstrated that by facts. The objection, which M. Gomez thought very serious, relative to the importation of cholera into the Hedjaz in the month of May, had been triumphantly refuted by M. Millingen when speaking of the arrivals from India. And it was not correct to say that the fact of the importation of cholera into Jeddah was in contradiction to what had been advanced with regard to the desert. Finally, the instance of M. Verrolot, mentioned by M. Gomez, was of no value in connexion with the question treated of, for it proved nothing. The fact was noted in the report and even with the addition of the necessary critical remarks. But even if that fact were doubtful, would that show a contradiction between the conclusion and the rest of the report ? No ; for facts demonstrated that the desert was the best of barriers, and one single doubtful fact could not invalidate or weaken many well-known facts.

To the objections urged by M. Pelikan, who mentioned that he had refrained from voting, supporting himself with the opinions of *savans*, M. Fauvel replied that the Sanitary Administration of Constantinople was the source of the facts and information relative to the Hedjaz : it was the possessor of all the known facts, and *savans* would do well to seek for them there. Let them prove that the facts put forward by it were not correct, and then only would they be permitted to attack the conclusion : for hypotheses were not enough.

M. Monlau replied that it was quite true that there was no instance of the importation of cholera into Egypt or Syria across the desert, but he did not dispute, he said, the substance of the conclusion : he only attacked its form. It should be better formulated, in order to show that its authors were capable of properly interpreting facts, and care should especially be taken to guard against saying that the desert was an anti-choleraic barrier ; it should be recognised rather that it was only a simple auxiliary.

M. Gomez remarked that M. Fauvel had not understood him. He had never thought of attacking the desert theory, on the contrary, he upheld it, but he did not wish it to be enunciated in such a formal and dogmatic manner.

He was of opinion that if, in the paragraph treating of the epidemics in the Hedjaz (chapter IV of the Report), instead of saying that the manifestation of cholera in the Hedjaz had *always* coincided with the time of the pilgrimage, it was said that it had *almost always* done so, the contradiction which he thought he saw between this paragraph and the conclusion of chapter XIX, would, to a certain extent, cease to exist.



M. Bykow mentioned a fact which proved that cholera might be imported across the desert, and even across a great desert like that separating Bucharia from the town of Orenburg, which was about 300 German leagues distant from it, and which was traversed by the caravans in 65 days and more, never in less than 45.

This fact occurred in 1829. Cholera existed at Bokhara on the departure of the caravan, which on its return communicated it to the town of Orenburg (July 1829).

M. Fauvel said he did not mean to dispute the correctness of this fact, but it was still very necessary to have a correct knowledge of what the desert of Bokhara consisted of. Was it similar to the Arabian deserts, or was it not rather a great expanse of steppes, more or less peopled?

M. Bykow admitted that the desert between Bokhara and Orenburg was only a great extent of steppes, inhabited by nomadic hordes of Kirghiz Tartars, who were in frequent intercommunication. These steppes, he said, differed from the Arabian deserts, and that was why, in the fact just mentioned, it was necessary to consider this peculiarity, *viz.*, that cholera did not exist at the time among the Kirghiz hordes, and that it existed only among the persons comprising the caravan. This caravan occupied almost two months in the journey between Bokhara and Orenburg. Salem Bey assured the Conference that there were no instances of cholera having been imported by a caravan after having crossed the desert. The conclusion of the Committee was, he said, strictly deduced from recorded facts. At the same time, he thought it would be useful to pronounce the decision with more reserve, for the result of this reserve would be a surveillance exercised over caravans, which (as was done in Egypt and Syria) would not be at liberty to enter towns until after having satisfactorily shown their sanitary condition.

M. Salem Bey drew the attention of the honorable Conference to the very important fact that the arrival of caravans, in the various countries in which they were in the habit of stopping after their long and painful journey, ordinarily coincided with the more or less complete cessation of the choleraic epidemic in these same localities.

M. Sawas, though he had not the least intention of casting any suspicion on the facts mentioned by M. Bartoletti, which he also considered to be clearly shown, was nevertheless of opinion that the assertion in the conclusion where it was said: *there is no instance*, was too absolute, and was open to discussion. He (M. Sawas) believed that if there were no facts positively opposed to that assertion, there were at any rate doubtful facts, and as such he regarded the epidemic of 1831.

He entertained doubts in regard to the introduction of cholera into Egypt from the Hedjaz across the desert. Those doubts were not removed notwithstanding the assurance given by Clot Bey in his pamphlet, for in the *pièces justificatives* annexed to that pamphlet were con-

tained the reports of the physicians who were stationed at Suez on the arrival of the caravan, as well as those of other Government servants who, about that time, had been to the Hedjaz, from which reports some facts could be taken tending to weaken the assertion. These facts were as follow :—

*1st.*—When the caravan came in from the desert some deaths occurred, which were attributed to unsatisfied thirst ; but the physicians were not agreed as to the causes of death.

*2nd.*—The inhabitants of the village, who had gone out to the encampment of the caravan for the purpose of selling provisions, contracted cholera, and carried it to their village, which it ravaged.

Besides these facts, continued M. Sawas, there was also that of the appearance of cholera in Egypt two months and a half after the sacrificial ceremonies. Now, this lapse of time was much too long for a sea voyage. The voyage between the Hedjaz and Egypt could not, even at that season, last so long as two months and a half. But the doubt with regard to this point would not prevent the recognition of the other facts mentioned in the report in regard to the same epidemic.

M. Fauvel furnished the following information in connection with this subject. This information had been before given by him in Committee, where the question had been lengthily argued. The epidemic, said M. Fauvel, had broken out at Suez some time before the arrival of the caravan there. It was wrongly believed, therefore, that the pilgrims had imported the disease into Egypt. Clot Bey himself had established the fact that the epidemic prevailed at Suez before the arrival of the caravan, and the fact had, indeed, been sufficiently demonstrated, and it was besides admitted by all the members of the Committee. It was clear then, added M. Fauvel, that the disease was imported by the pilgrims who had taken the sea route, and even the Suez route. At that period the pilgrims did not make the voyage on steamboats but in barques, and the voyage lasted for a month and six weeks and even longer.

In compliance with a request made by several Delegates, His Excellency the President put the text of chapter XIX to the vote. It was adopted by a majority of 20, none voting against it, and 5 declining to vote.

*For* :—MM. Sotto, Segovia, Spadaro, de Lallemand, Fauvel, Goodeve, Dickson, Kalergi, Bosi, Vernoni, Millingen, Sawas, Testa, Mühlig, Lenz, Bykow, Hübsch, Stenersen, Salem Bey, Bartoletti (20).

*Declined to vote* :—MM. Polak, Monlau, Maccas, Gomez, Keun (5).

His Excellency the President then put the conclusion of chapter XIX to the vote.

It was adopted by a majority of 22, none being against, and three declining to vote.

*For* :—MM. Sotto, Segovia, Spadaro, de Lallemand, Fauvel, Goodeve, Dickson, Kalergi, Bosi, Vernoni, Keun, Millingen, de Soveral,

Sawas, Gomez, Testa, Mühlig, Lenz, Bykow, Hübsch, Salem Bey, Bartoletti (22).

*Declined to vote* :—MM. Polak, Monlau, Maccas (3).

M. Stenersen was not present at the division.

M. Fauvel read the heading and conclusion of chapter XX.

M. Monlau was of opinion that it was necessary to postpone the division upon the conclusion of chapter XX. It was necessary, he said, in the first instance, to study particular assemblages in order to be able to come with a knowledge of causes to this general conclusion, which was based upon facts not yet entered upon. Any other mode of procedure would be faulty, for it would rest on no basis.

M. Mühlig maintained a contrary opinion. The general report had been for a long time in the hands of the Delegates; they had had consequently abundant leisure to study it and become acquainted with every part of it, in detail as well as a whole. Even if the conclusion was based upon facts which were brought forward further on, those facts ought to be known beforehand, so that there was no inconvenience in entering upon the discussion of the conclusion there and then.

M. Bykow thought that M. Monlau's motion would only tend needlessly to prolong the discussion; he (M. Bykow) concurred in the views expressed by M. Mühlig.

M. Segovia did not think that M. Monlau's proposition would upset the arrangement of the general report: he thought it resulted from the tendency of the report itself. If the Conference adopted the views expressed by M. Mühlig, *i. e.*, if it adopted a general conclusion before accepting the facts from which it emanated, it would be altogether useless to discuss those facts further on, for they would have already been accepted. He (M. Segovia) thought that the reporter had only anticipated the conclusion with a view to facilitate work. But if the Conference thought it could proceed in that manner, he (M. Segovia) would not offer any opposition.

M. Mühlig did not believe that the general conclusion was a corollary to particular facts. It was a conclusion quite by itself, almost independent of the facts relative to particular assemblages regarded in the point of view of the influence exercised by them on cholera. Consequently the conclusion was logically placed where it stood.

Dr. Goodeve observed that M. Monlau's motion had been agreed to by the Committee, by which it had been admitted to be quite logical, as well as by M. Fauvel himself who had confessed it was more methodical. He recommended, therefore, that it should have the preference.

In compliance with the request of several members, His Excellency the President put to the vote, first M. Monlau's proposition, and then the text and conclusion of chapter XX.

Six members only voted in favor of M. Monlau's proposition, and ten against it.

The text and conclusion of chapter XX were adopted by a majority of 20, none voting against, and 2 declining to vote.

*For*:—MM. Vetsera, Polak, Spadaro, de Lallemand, Fauvel, Goodeve, Dickson, Kalergi, Maccas, Bosi, Vernoni, Millingen, Gomez, Testa. Mühlrig, Bykow, Lenz, Hübsch, Bartoletti, H. E. Salih Effendi (20.)

*Declined to vote*:—MM. Segovia and Monlau.

MM. Keun, Sawas, and Stenersen were not present during the division.

M. Fauvel read the heading and conclusion of chapter XXI.

M. Monlau believed that this conclusion had been already voted upon and accepted. He had abstained from voting in Committee upon either the text or the conclusion, because a show had been made of explaining transmissibility by endemicity, a thing which was in no way scientific. If a case—a single isolated case—broke out on board a ship, that, in his opinion, was far from constituting an epidemic. It was a matter of necessity to treat of transmissibility by itself, and it was then that the best demonstration could be found on board a ship. Why he asked, always speak of "choleraic source," "focus of infection," "invading epidemic," when the question was only of transmissibility? It was evident that the predominating idea, the constant tendency of the report, was in favor of epidemicity—transmissibility was only treated of parenthetically, and it was, so to say, subordinate to the epidemic theory. M. Monlau proceeded to refute several passages in the text of chapter XXI. He attacked the passage in which it was stated that it was a general fact that ships coming from an infected locality were not often the theatre of any choleraic manifestation. It was, he believed, a gratuitous assertion, which might even be disproved by the facts relating to the choleraic epidemic at Salonica, recorded in the pamphlet on that epidemic published by Dr. Alatini.

He rather believed that the general fact consisted in extenuating circumstances as well as in the dissimulation of masters of vessels who concealed the truth from fear of measures of quarantine. He also brought to notice a peculiarity in the passage commencing with the words "*It is also shown.*" In that chapter it was stated that two vessels, the *Friedland* and the *Jean Bart*, had each had a case of cholera on board previous to any communication with land or with the squadron, and it was added: "this fact may be interpreted as people can." But it was also recorded in another place with the remark that too many details were wanting to impart much value to it. In that case, he would ask, why record it if it proved nothing, or if it were susceptible of many and different interpretations?

But when attention was arrested at the paragraph of that chapter, where, after having affirmed, that the great majority of the ships leaving Alexandria had had no cholera on board during the voyage, it was said that it was certain that they had propagated the disease for the

*decisive reason* that cholera had manifested itself only at those places at which they had touched, it was proper, in his opinion, to require that instead of the fine irony which had dictated that chapter, the reporter should have admitted that the sanitary authorities were exposed to be deceived by all sorts of false declarations, and to be led into error by the exaggerations or dissimulation of masters of vessels, who very often, to use the happy expression of the report, represented their ships as "maiden" when they were contaminated.

There were no means, said M. Fauvel in reply, to follow M. Monlau in his argument. His reasonings were deduced from a theory peculiar to himself, and the Committee had no theory. In its report, it had, as had already been said, only brought forward facts, and from these facts it drew conclusions as strict as could possibly be drawn, and as logical corollaries. Two points were worthy of notice in M. Monlau's remarks:—In the first place he attributed to the Committee ideas which it had never entertained: he attributed to it matter and language not to be found in the report. Thus, for instance he attributed to it the idea of considering an insulated case of cholera on board a ship as an epidemic. He made it speak of maiden ships! Where was all that to be found? Could there be some other report besides the one drawn up by the Committee?

In the second place, he did not wish that the Committee should mention or make use of facts which were capable of different interpretations; and he forbade it to explain them as it thought proper. That appeared to annoy him as much as if the Committee had infringed the rules of logic. Yet it was easy to show him that the explanation of the Committee was the most natural and the most probable. Was it not, in fact, authorised to assert that the arrival of several ships in a healthy locality from an infected place ought to be considered the cause and origin of the epidemic manifesting itself after their arrival? Now, that coincidence having been only recorded, the Committee had attributed the importation of the disease to the ships, although it did not exist on board during the voyage. According to M. Monlau on the contrary, all ships coming from an infected port ought to have the disease on board, and, if the assertion was made that that did not always happen, it was, he had said, because, all captains without distinction dissimulated and deceived the sanitary authorities. That was M. Monlau's opinion, and he was at liberty to give expression to it. But it was right to remind him that experience was opposed to his opinion: it spoke in favor of the relative immunity of ships as much as it did in favor of the relative immunity of lazarettos.

He (M. Fauvel) thought it would be useless to say anything more in support of the report. The Committee had had but one anxious care: that of the discovery of truth by conscientious enquiry: it had applied itself solely to that.

M. de Lallemand thought that it would perhaps be necessary to add, as a sort of reservation, two words to the paragraph at page 51,

where the ships *Friedland* and *Jean Bart* were mentioned, which had each a case of cholera on board. He would suggest the addition of the words "*perhaps sporadic.*"

Having taken the opinion of several Delegates, His Excellency the President put the text and conclusion of chapter XXI to the vote.

The text was adopted by a majority of 20, none *against*, four Members declining to vote. *For*:—MM. Vetsera, Polak, Spadaro, de Lallemand, Fauvel, Dickson, Maccas, Bosi, Vernoni, Keun, Millingen, Gomez, Testa, Mühlrig, Bykow, Lenz, Hübsch, Stenersen, Bartoletti, His Excellency Salih Effendi (20).

*Declined to vote*:—MM. Segovia, Monlau, Goodeve, Sawas.

MM. Kalergi and Sawas were absent during the decision.

The conclusion was put to the vote, and adopted by a majority of 19, none *against*, and one abstention, that of M. Maccas.

All the Delegates who voted for the text also voted for the conclusion with the exception of M. Maccas.

In addition to the two beforementioned Delegates who were absent during the division, during the present division there were absent also MM. Segovia, Monlau, and Goodeve.

M. Fauvel then read the heading and conclusion of chapter XXII.

Here, said M. Monlau, as in regard to the question of deserts, it would be said that the question had been framed with a view merely to produce a table: but unhappily this table did not prove much: indeed, in his opinion, it proved nothing at all.

The question of overcrowding in a lazaretto was, according to the report, one of the most interesting to consider; it gave a reply to a fear frequently expressed, &c. No, said M. Monlau, the important question with which to become acquainted was, whether a person could contract a disease in a lazaretto which he had not previously had; whether, being exposed to a pestilential disease, another of a different nature could be contracted, as happened in hospitals, where, while a man was being treated for a cold, he sometimes contracted ophthalmia, &c. That question, however, he observed, was not solved in the report. In connexion with this subject the account of the epidemic in Marseilles in 1821 might be consulted. The report went on to say that the same thing happened in lazarettos as in ships, and the occasion was taken to proclaim anew the great dogma of immunity, but the report made no account of local receptivity and individual susceptibility. One would say, taking the report for a guide, that one might stay in a crowded lazaretto without any inconvenient result.

The report, continued M. Monlau, showed a neat table indicating the number of persons admitted in 1865 into the principal lazarettos of Turkey, with the number of cases of cholera and the number of deaths recorded. But what was the object of such a table? The report itself said strict precision was not to be demanded of it. But

that was not the question. Everybody knew that in the Ottoman Empire quarantine was almost everywhere performed under tents or in the open air—how then could the assertion of the report be taken in a serious light that in many lazarettos the crowding had been carried to a very high degree, especially at Salonica? He would again urge reference to Dr. Alatin's pamphlet on the epidemic at Salonica, which stated the reverse. No conclusion could be drawn from the last epidemic which had raged in Turkey. The quarantine established on that occasion was set up almost entirely in islets, under tents and in the open air; of real lazarettos there were very few or none. Consequently the deduction made in the report, which said "all that we pretend to deduce from this is that cholera has been only very feebly developed amongst the persons in quarantine in the Turkish lazaretto"—that deduction was not strictly drawn from facts, it was hazarded, and it must even be said to have been preconceived.

In conclusion, said M. Monlau, it was necessary to point out in a few words the ground of opposition that existed with regard to the conclusion of chapter XXII:—

1st.—The first part of the conclusion was inexact and unsupported by facts; it rested on weak arguments.

2nd.—The second part contained a commonplace, expressed in a familiar manner, which showed badly in a scientific report, *viz.*, "lazarettos were bad neighbours." Such they must of necessity be, and everybody knew it, as much as hospitals and other similar establishments. But, if they were properly isolated, and properly watched, and if sanitary smuggling was rendered impossible, then the injurious influence which they exercised on all around them, and which caused an apprehension of the propagation of the disease from the lazaretto to its neighbourhood, might be lessened.

Influenced by all these considerations, and also by the reasons he had urged with regard to the text, he (M. Monlau) had refrained from voting in Committee when chapter XXII was being discussed and adopted, and he would also abstain from voting in the Conference.

M. Fauvel expressed his surprise to hear M. Monlau say that the Committee had not felt that their stay in a crowded lazaretto was hazardous to persons under quarantine. So far from that, the Committee, which had established a distinction between assemblage, accumulation, and crowding, had not omitted to give warning that, in the event of crowding, the epidemic would rage with greater force. It did even more than that: it expressed the fear that the simple fact of meeting together during the prevalence of an epidemic might create choleraic foci. The report went no further than to say that lazarettos might be qualified in various ways; they might enjoy a sort of relative immunity, and they might become centres of emission. In the idea of the Committee, the same thing happened in lazarettos that occurred on board ships. All that was advanced on this head was in no way conjectural: everything was based upon facts and examples.

It was true that those facts were not always conclusive, but as they were numerous, the best and most clearly recorded among them might be chosen to serve as instances. M. Monlau had disputed, relying on M. Alatiqi, the facts relative to the epidemic at Salonica, but M. Monlau, it appeared to him, had been wrong not to take into account the rivalries and the theories of physicians. Notwithstanding that, and notwithstanding assertions to the contrary, every body, said M. Fauvel, was agreed on one point, *viz.*, that notwithstanding the very large assemblage in the Salonica lazaretto, which contained 1,300 persons, the epidemic was neither serious nor very deadly.

M. Fauvel, in conclusion, declared that the Committee had never had the tendencies M. Monlau had wished to attribute to it.

M. Polak produced a table of arrivals in the port of Trieste during the year 1865. It might, he thought, be of use as a document in the historical précis which was proposed to be drawn up on the last epidemic of cholera, and it might also demonstrate that crowding in a lazaretto was not so dangerous as some, arguing *à priori*, would make out.

Several Delegates calling for a division, the text and conclusion of chapter XXII were put to the vote.

They were adopted by a majority of 15 votes, none *against*, and one member, M. Monlau, declining to vote.

*For* :—MM. Polak, Spadaro, Fauvel, Goodeve, Dickson, Maccas, Salvatori, Vernoni, Keun, Gomez, Bykow, Lenz, Hübsch, Bartoletti, His Excellency Salih Effendi. (All those members who had voted in the previous divisions were absent.)

The meeting terminated at 5-30 P. M.

SALIH,

*President of the Sanitary Conference.*

BARON DE COLLONGUE,  
DR. NARANZI,

} *Secretaries.*

## INTERNATIONAL SANITARY CONFERENCE

### ANNEXURE TO THE MINUTES OF THE 29<sup>th</sup> MEETING.

*Report on the measures to be adopted in the East in order to prevent a renewed invasion of Europe by Cholera.*

Drawn up by a Committee consisting of Count de Lallemand, *President*; M. Kalergi, *Secretary*; MM. de Krause and Vernoni, *Diplomatists*; and Drs. Bosi, Bykow, Fauvel, Polak, Salem, Sotto, and Van Geuns, *Physicians*. \*

(DR. FAUVEL, *Reporter.*)

GENTLEMEN,—The questions referred to the 3rd Committee comprise the consideration of the most important of the problems

\* MM. de Krause, Van Geuns, and Polak were obliged to leave Constantinople before the termination of the labors of the Committee. The two first named gentlemen took part only in the discussion of the two first questions. M. Polak left during the progress of the discussion on the Mecca pilgrimage.



submitted to the Conference. The problem is, to see how far it is possible to prevent the renewed invasion of Europe by Indian cholera, and to indicate such practicable measures as are best suited to attain the desired result. To solve this problem, the Committee thought it was right to study it in the first instance in India, the original centre of the disease, and then in the intermediate countries traversed by cholera before its arrival in Europe, in which countries it would be desirable to set up efficacious barriers against its further progress.

The Committee has, therefore, divided its work into two principal heads:—the one treating of the measures to be adopted in India, and the other of those to be adopted in the intermediate countries lying between India and Europe. It then classed methodically in these two chapters all the questions which appeared to it to relate to the problem to be solved. At the same time, however, the Committee thought it useful to precede the consideration of the questions comprised in these two chapters by that of two others, the preliminary solution of which seemed to it to be indispensable to the object of its labors.

#### CHAPTER I.—PRELIMINARY QUESTIONS.

##### I

The first of these preliminary questions is as follows:—

*If, on the one hand, we weigh the inconveniences resulting to commerce and international relations from restrictive measures, and, on the other, the disturbance and shock occasioned to industry and commercial transactions by an invasion of cholera, on which side is it thought would the balance incline?*

This question supposes the solution in the affirmative of that of the efficacy of measures of quarantine against the importation of cholera; otherwise it is clear it would have no reason to exist. Now this affirmative reply having already been given by another Committee, we need not, for the present, dwell upon it. At the same time we reserve to ourselves to place in evidence the various conditions which cause it to happen that measures of quarantine have not always by any means the same efficacy, and consequently the same degree of utility.

The efficacy of properly applied quarantine measures being admitted in a general way, the first thing to be done is to reply to the question put, and to enumerate the disadvantages attaching to these measures.

Regarded as a whole, these disadvantages are proportionate to the greater or less extent of the disease and the importance and acti-

vity of the relations with other countries of the countries subjected to restrictive measures.

Thus, it is evident that if cholera occupies a restricted centre, the damage resulting from even very rigorous restrictive measures would be, in point of fact, as regarded in connexion with the rest of the world, only damage limited to the reciprocal relations of this confined centre with other countries, while, if the disease becomes general, if, for instance, it invades the basin of the Mediterranean, where the relations are so numerous, so active, and so imperiously necessary, the damage would attain considerable proportions, which would go on multiplying, and all the more because then the efficacy of preventive measures would become less certain, by reason of the impossibility of applying them usefully on all the points by which the disease could penetrate. All this is so manifest, that the Committee thinks it unnecessary to lay further stress upon the point.

Let us now proceed to the enumeration of the inconveniences considered in themselves. And in the first place let us look at them in the localities subjected to restrictive measures.

When a country is placed in quarantine, its relations are at once disturbed, and its export trade is hampered and interrupted by the obstacles it meets in every country where restrictive measures are in force. The injury is greater in proportion to the suddenness and severity of the measures. To the damage caused by loss of time is to be added that caused by the quarantine dues, which raise the prices of merchandise. The effect of the formalities of quarantine is the diminution of emigration from countries tainted with cholera; but is their consequence also to aggravate the prejudice caused by the epidemic itself? It could not be supposed to be so except under the supposition that they increase misery and distress in the countries upon which they are imposed. Such a consequence may be conceived if the measures were to become permanent, because in the long run they would impoverish the country; but epidemics of cholera in a given spot are ordinarily not long, and they are transitory by reason of the restrictions they entail: so that it is evident that when cholera prevails in a locality, it is the disease which increases the distress and poverty, and not the quarantine imposed upon the products of that locality.

The fact is that the damage caused in such cases is reduced to a temporary disturbance, to a pecuniary loss proportionate to the importance of the relations of the country attacked by the disease, and to the severity as well as the unforeseen suddenness of the restrictive measures. And it is also well to remark here that honorable merchants have remarked to the Committee that, directly the quarantine is raised, commerce recommences with an activity which may compensate for the loss sustained during its imposition.

The inconveniences of restrictive measures are chiefly felt in the countries imposing them. In fact, these countries, with a view to preserve themselves from an evil they dread, voluntarily so hamper and impede their own transactions, that the result is the temporary diminution of those transactions, and indeed a substantial tax upon their commerce. If the restriction applies to only a limited extent, the prejudice perhaps would not be very great, but if, as we have already said, the restriction applies to a great number of places, and if the country subsists chiefly by commercial relations, the damage may attain serious proportions, and all the more so that under such circumstances, it is no longer a question of a single circumscribed epidemic, the duration of which may be calculated, but of a series of epidemics which succeed each other, and which may considerably prolong the injury. It is necessary then that in this case the benefit of the measure should be proportionate to the injury occasioned by it.

In truth, the great damage here does not attach so much to the measure itself, reduced to its useful application, as to the vices of the application and the want of a mutual understanding between the various States. And in the opinion of competent and interested parties, it is incontestable that in compromised countries, the temporary disturbance to relations which accompanies restrictive measures is compensated for by the redoubled activity which follows their cessation.

Let us see now what are the consequences of an epidemic of cholera. When a country is a prey to an epidemic of cholera, we have in the first place to consider the desolation caused by the ravages of the disease; and next the disorder it imports into social relations and business of every kind. In this latter point of view, a serious epidemic of cholera is a great calamity. Under its influence, commerce and industrial operations are immediately suspended; the single idea of escaping death takes possession of the minds of the bulk of the public; the only transactions are in articles of absolute necessity; frequently scarcity ensues; misery and distress always rapidly increase amongst the people; and if this state of things were to be prolonged, or to be of frequent recurrence, a commercial or industrial city would have ruin staring it in the face. It has been owed to us by merchants whom we have consulted that the damage occasioned to commerce by restrictive measures is as nothing compared to the incalculable evils caused by the disturbance and shock of an epidemic, like that which prevailed last year at Constantinople, the disastrous effects of which are far from having been repaired yet. A country attacked by cholera suffers doubly, whether quarantine measures have been adopted against it or not. It suffers from the disease and in its commercial interests. It is to be remarked that merchants do not complain most of restrictive measures; because a shrewd, calculating merchant perceives in them the means of avoiding greater damage to

his business : but rather persons of leisure, tourists, whose excursions are impeded by these measures.

The disastrous influence of an epidemic of cholera in Europe is not limited to the countries affected ; it has its natural repetition not only in those who try to secure themselves by measures of quarantine, but also in those who think proper to oppose no barrier to the scourge. These last in reality, independently of the ravages of the disease, suffer from two causes,—the forced diminution of their commercial relations with the tainted countries where transactions are paralysed, and from the measures taken by the neighbouring countries with which they of necessity have relations. Ask England, whether, last year, though she instituted no restrictive measures herself, her commerce did not suffer from the effects of the epidemic prevailing on the Mediterranean coasts, and the restrictions in force in those parts ? Thus, cholera in itself is a cause of great obstruction to commerce, and it does not suffice to admit choleraic arrivals to pratique to escape the inconveniences of quarantine measures. To do this it would be necessary to have no relations with the countries where they are in force, or rather that they should never be put into force anywhere.

If then, by the adoption of suitable measures, the invading progress of cholera can be arrested, every interest exists in their adoption, since they will not increase the disturbance in business transactions with the countries affected, and they will tend to remove the damage caused by the ravages of the disease ; and as it can never be expected that the countries the most exposed to cholera, and which believe it is their dominating interest to secure themselves against it, will abstain from such measures, it follows that there is a common interest in coming to an international understanding on the subject.

What it is necessary to avoid is the employment of arbitrary and unexpected measures, and especially of inefficacious measures, which will only complicate the situation without proving of practical utility. It is necessary to apply the remedy where the evil is open to attack, that is to say where, with as little prejudice as possible, there is a chance of arresting its invading progress.

#### *Conclusion :*

The Committee is of opinion that *restrictive measures, made known generally beforehand and properly applied, are much less prejudicial to commerce and international relations than the disturbance occasioned to industry and commercial transactions by an invasion of cholera.*

This conclusion was adopted by all the members of the Committee, except M. Van Geuns.

## II.

The second of the preliminary questions of which the Committee has thought it well to treat, as being of a nature to facilitate the solution of the problem confided to it, is this :—

*Is it not necessary to start with the fundamental principle that the closer to the primary focus we apply measures of quarantine and other prophylactic means, the more we may reckon upon their efficacy?*

It is not enough, in fact, to declare that cholera is transmissible, and to say, generally, that measures of quarantine properly applied are efficacious against the importation of the disease. It is necessary, in order to meet the object of the Conference, to find out first of all if it would not be possible, if not to stifle, at any rate to circumscribe, the evil in its origin ; and, in any case, it is important to indicate the most favorable conditions for the application of the most appropriate measures for the hindrance of its further progress. The Committee was influenced by these considerations in determining on the plan adopted by it for its labors.

In regard to the first part of the task, it will be seen further on what the Committee proposes with a view to restrain the development of cholera and to circumscribe it in India ; but as it is not probable that the desired result will be attained for a long while yet, we have thought it necessary to attach great importance to the question of restrictive measures outside the limits of the original source.

Now, if it be true, as we have said above, that the inconveniences of measures of quarantine augment with the diffusion of cholera in civilised countries at the same time that their efficacy diminishes, it follows naturally that the closer these measures are applied to the original focus in countries less peopled than those of Europe, and where relations are less numerous and natural obstacles exist to the progress of the scourge, the more will the chances of arresting it increase, and the less onerous will be the necessary restrictive measures, severe as they may be. So that, rationally, the question framed finds itself already solved in principle in the affirmative.

But it is necessary now to see to what extent, in the intermediate countries between India and Europe the measures of which we speak are practicable with any hope of success. A rapid glance over the course followed by cholera down to the present time in penetrating into Europe will throw some light upon the subject.

*By the land route, cholera leaves India from the north-western provinces, thence it invades Afghanistan, and afterwards Persia by way of Herat and Meshed. This latter town, very important on account of its relations and its being the rendezvous of a great pilgrimage, becomes, by these causes alone, a considerable focus of emission, whence the disease radiates on all sides. From Meshed, on various occasions, cholera has spread in Bucharia, and thence, traversing the steppes of*

Tartary to the east of the Caspian Sea and Lake Aral, in 1829, it went as far as Orenburg. From Meshed the principal radiation is, by reason of the numerous communications towards the east, and the disease makes no delay in gaining by way of Astrabad, the seaboard of the Caspian and Teheran. What we know of the epidemics of cholera in Persia shows us that the capital of the country becomes in its turn a centre whence the disease, marching in various directions, tends to become general; to the south it directs itself towards Ispahán; to the south-east, by way of Hamadan and Kermanshah, it reaches Mesopotamia; to the north-east it follows the Tauris route, and threatens the Ottoman territory by way of Bayazid and the Russian Trans-Caucasian provinces by way of Nakhtshivan; but the route it takes by preference in penetrating into Russia is more to the north, along the seaboard of the Caspian, by Reht, Lenkeran, and Baku. It seems to result from communications made to us by Dr. Bykow, based on official documents, that cholera was imported by sea from these ports into Astrakhan, in the three epidemics of which that town has been the theatre. Be this as it may, it was *viâ* Astrakhan that cholera penetrated into Europe in 1830, and it was again by this town, and at the same time from the Trans-Caucasian provinces, by way of the shores of the Black Sea, that the second invasion took place in 1847.

*By the sea route*, cholera is exported from India towards the west and north-west, particularly from the ports on the Malabar coast and notably from Bombay, where it is endemic. On account of their proximity and the number of their maritime relations, the eastern coast of the Arabian peninsulá and the entire coast of the Persian Gulf, are more exposed than any other places to importation, and, next to India, cholera rages in these localities with the greatest frequency, so much so indeed that there has been some sort of ground for enquiring whether the disease is not endemic on the whole of this seaboard.

Persia then is exposed to the maritime importation of cholera, and it is in fact, by this route that it has on several occasions penetrated into the country, and that it has also been seen, *viâ* the Shatt-el-Arab, to reach Bassora and invade the province of Bagdad.

On the Arabian coast, Muscat, by its position, is one of those places most compromised by cholera. Ascertained facts also tend to establish that all the seaboard of Hadramaut, as far as the entrance to the Red Sea, is somewhat frequently visited by the disease; but, on this coast, particular mention should be made of Mokalla, where ships coming from India frequently put in for supplies before entering the Red Sea, and which is thus, as was seen last year, exposed to the attacks of cholera, and made capable of becoming a centre of propagation.

The other ports of India, besides those on the Malabar coast, similarly contribute to the exportation of cholera; but, considering the

distance, it is not directly towards the west, *i. e.* towards Arabia and the Red Sea, that men and things proceeding from Bengal propagate the disease; it is rather, on account of the proximity, towards the south-east, towards the Malayan peninsula and the Dutch archipelago, that the chief current of choleraic exportation in this direction fixes itself. Singapore, at the extremity of the Malayan peninsula, deserves special attention in the point of view we occupy. Not only is Singapore a great commercial entrepôt, but it appears, by its constant connexion with the continent of India, to be also an entrepôt of cholera. It is, moreover, the rendezvous of a considerable number of Mussulman pilgrims (averaging from eight to ten thousand annually) who come from Malasia and the whole Indian archipelago to embark at Singapore for Mecca. In this way it becomes one of the great centres for the maritime exportation of cholera to the Red Sea. Last year, those ships which suffered most from the disease during the voyage started from this place; and if we add that the embarkation of the pilgrims at Singapore is carried out in the worst manner possible,—as is proved from information afforded on the subject by our colleagues, the Dutch Delegates,—it will be understood that arrivals from Singapore should be reckoned as amongst the most compromising to the Hedjaz.

We come now to the Red Sea, the destination of all these arrivals by reason of the *pilgrimage*, at the same time that it is the shortest way for the maritime importation of cholera into Europe. The study of facts shows that the importation of cholera on the coast of the Red Sea may be effected, either by ships coming direct from India—though it would seem that, in that case, the importation takes place perhaps exclusively by means of pilgrim ships—or in an indirect way by emissions from secondary centres existing on the Arabian coast. Thus, it is certain that last year cholera raged at Mokalla before penetrating into the Red Sea; so that it cannot be asserted that it was imported into the Hedjaz more directly from India than from Mokalla. Be this as it may, it is not doubtful that cholera can be imported direct from India into the Red Sea; but, granting its possibility, it is essential to admit that leaving aside the conditions of crowding and wretchedness to be met with on board pilgrim vessels, experience has proved that the fact can only be exceptional.

We have seen that out of India Proper, the maritime countries where cholera has most frequently prevailed are towards the west, the province of Oman (Muscat) and the shores of the Persian Gulf, *via.*, the countries in closest proximity to India, and those which have most relations with Indian ports: whence we are led to infer that the chances of the importation of cholera by sea diminish with the increase of distance, without however, being altogether removed. In regard to the Red Sea, what was seen last year points out, in effect, that if direct importation into it has not been strictly demonstrated, it ought at least to be considered probable. It shows also that another danger besides this exists—and one still more to be dreaded being more diffi-

cult to avoid: we mean indirect importation by means of the secondary centres of the coast of Hadramaut.

Lastly, if cholera is imported into the Red Sea, if, following the pilgrims, it penetrates into the Hedjaz, and if, from not being stopped in its progress, it invades Egypt, the danger is at the door of Europe, and importation into it will infallibly result if serious measures are not opposed to it.

After this short review, let us proceed to the question again, in connexion with the existing probabilities of arresting cholera after its departure from India in its progress either by sea or by land.

*By land*, we have said that cholera leaves India by the North-Western provinces and reaches Persia through Affghanistan. It is so because on this side alone do we find the only frequented routes uniting these countries, while more to the south, in the country known under the name of Beloochistan, vast deserts exist forming a natural obstacle to the invading progress of cholera. As a matter of fact, no invasion of Persia by cholera from this side has ever been known.

Although the routes leading from the Punjab across Affghanistan are not the easiest to travel, and though they help greatly in the matter of restrictive precautions, there is no use in thinking seriously of the institution, in these barbarous countries, of measures adapted to aid the natural existing obstacles for the purpose of arresting the extension of cholera. We believe that it is better to wait for the establishment, by the British Government, of a system of organised precautions in the Punjab itself.

Let us come to Persia. This country plays a great part in the propagation of cholera by land. Chief victim of the emissions of cholera from India by land as well as by sea, Persia becomes in her turn, by reason of her numerous relations, as has been seen above, a secondary centre whence the disease radiates far and wide. It is a matter of great interest then to preserve Persia against the importation of cholera. Is it permitted to us to hope that we may succeed? Considering only the natural obstacles in the north-east of this country, limiting the routes followed by the scourge; considering the position of Herat, which, placed in a short of defile between high mountains and the desert, is, in a strategic point of view in respect of cholera, the principal, perhaps the only, passage by which the disease has penetrated into Persia on this side; it would appear that here we find the most favorable conditions for opposing a barrier to the invasion of the disease and for preventing the invasion of such an important town as Meshed which, once attacked, becomes, for the reasons before mentioned, a most active focus of dissemination. But is what appears here to be theoretically very possible, really so in practice? Is the Persian Government in possession of the means adapted to make the proper measures work usefully? It is very doubtful. And, on the other hand, is it possible for the Persian Government to institute, on its maritime frontiers



in the gulf, a sanitary system capable of preventing the importation of cholera in this direction? On this side the difficulties, it is true, would not be so great; but still it would be necessary to obtain the consent and co-operation in the measures to be adopted of the Imam of Muscat, who holds possession of the important port of Bender-Abbas and almost the entire navigation of the surrounding coasts.

Whether these measures are capable of realisation or not, it is the duty of the Committee to point out the capital importance of preserving Persia from invasion by cholera and to indicate the means of doing so, for, in the point of view of the generalisation of the disease, there, so far as the land route is concerned, lies the whole pith of the question.

In fact, Persia once invaded, the difficulties increase with the dissemination of the disease. To the north of Herat and Meshed, the way is open to Bokhara, and thence, by the commercial roads across the steppes of Tartary, to the confines of the Russian Empire. To the north-west and west we find the line of defence carried along the Russian and Ottoman frontiers, that is to say, over an immense extent, where the imagination can hardly conceive the establishment of an efficacious barrier against the invading march of the scourge. At the same time, however, considering the question closely and taking advantage of the lessons of experience, one does not fail soon to see that the question is not so difficult of solution as it seemed in the first instance. In reality, the routes followed by cholera in penetrating into Russia and the Ottoman territory are somewhat limited; they consist of the few commercial roads connecting Persia with Russia and Turkey. There is, in the first place, the sea route from Astrabad to Astrakhan, across the Caspian Sea, which, though it has not yet contributed, with certainty, to the importation of cholera into Russia, ought, nevertheless, to be watched attentively. Then there is the road, proved to us by experience to be much more dangerous, which follows the length of the southern coast of the Caspian and ascends towards the north to Baku. Then again there is the commercial road leading from Tauris into the trans-Caucasian Provinces *via* Nakhtshivan, though it must be noted that as yet cholera has never penetrated into these provinces by this route, but that it followed it in 1847 in order to re-pass from Erivan into Persia. In addition to these principal roads, there are others, no doubt, but difficult of access, and, therefore, much less to be feared. The fact is that in these countries cholera has always followed the great ways of communication.

There may, of course, be difficulties to be overcome in organising an efficacious barrier along the whole frontier extending from Astrabad on the Caspian Sea to the neighbourhood of Bayazid: but difficulties not insurmountable by the Russian Government. However, the institution of a system of defence on this frontier would be no novelty: the system has already long been organised: what is wanted is to bring it to perfection.

On the Turkish side, the line to be defended starts from Bayazid to the north, to the point of junction of the Russian, Persian, and Turkish territories—that is, supposing the trans-Caucasian provinces not to be invaded, for otherwise it would start from Batoun on the Black Sea, and proceed to the bottom of the Persian Gulf. This line is guarded by sanitary posts defending the principal entrances. The southern section of this line, from Khaneguïn, has been, as has been said elsewhere, often crossed by cholera coming from Persia in the wake of the pilgrims, so that, if the system cannot be made to work better than it has yet done, the barrier would be illusory. There would then be great reason to fear the invasion of the Ottoman provinces and Europe in succession by cholera, but that happily the march of the disease, in this direction, is impeded by natural obstacles, viz., by the desert separating Bagdad from Syria and the difficulty of communication in ascending the Tigris and Euphrates. These obstacles (except on two occasions, in 1823 and 1847 when the disease proceeded up the valley of the Tigris as far as Diarbekir, whence it gained Orfa and Aleppo) have always caused the extinction of the choleraic epidemics imported from Persia in the province of Bagdad. Still it is evident that serious measures must be adopted in this direction.

The northern section of the line, comprised between Kotur and Bayazid, would seem at first sight to be very dangerous as the door of entrance into Turkey. It is, however, to be remarked that it is not thence, but more to the north, by way of Kars and the coast of the Black Sea, that cholera, coming from the Russian provinces, has penetrated into the Ottoman territory, and has spread itself, as was seen in 1847. However, as this part of the line gives passage, near Bayazid, to the important commercial road which leads from Tauris to Trebizond, it is a point not to be neglected. It is for this that we find here the principal lazaretto on the entire frontier, at Kizzil-Diza, through which this road passes. It is necessary that here, in accordance with the requirements of the case, the means of action should be proportionate to the movements of commerce.

As for the intermediate portion from Kotur to Khaneguïn, it corresponds with a mountainous region of Kurdistan, occupied chiefly by nomadic tribes, and not traversed by any very frequented route. On this side then natural obstacles are found, not insurmountable however,—we have had proof recently that they are not so,—but which might become so with the aid of a careful watch over the principal defiles.

We shall not carry our remarks with regard to the land route any further; for directly cholera invades the basin of the Black Sea, the natural obstacles diminish, at the same time that the chances of general diffusion and the inconveniences of restrictive measures increase.

Let us return to the maritime question. It has been seen that the coasts in closest proximity to India, and which have most relations

with that country, are most exposed to the importation of cholera; that, consequently, the danger of importation, by this route, is in proportion to the distance, *i. e.*, the time necessary to go from an infected to a healthy place. At the same time, if it is true that a long passage diminishes the chances of importation, it does not remove them entirely, and facts bear witness that crowded ships where cholera develops itself, may retain the disease and propagate it directly to countries very far distant from the point of departure. If the sea, as a great extent of space, is an obstacle insurmountable by cholera without the agency of a ship, on the other hand, by this intermediate agency, it assists the most rapid and compromising communications. But as these communications are amongst those which are the least difficult of watch and of subjection to restrictive measures, it follows that, defectively, the sea constitutes an excellent obstacle which it is possible to render insurmountable by cholera. It is important to see then, in the question with which we are occupied, how we may profit by this obstacle.

Cholera, we have said, may be imported from India to the bottom of the Persian Gulf, and, independently of Persia, thence directly invade the Ottoman dominions. It has been seen what were then its results, and how it was that the greatest danger to Europe did not exist in this direction. There is, nevertheless, ground for insisting on the measures to be adopted for the preservation of the seaboard.

From Muscat, from El-Katif, or from any other point on the eastern coast of Arabia, is it to be feared that cholera may traverse the peninsula and attain the coast of the Red Sea? It is doubtful whether, considering the deserts to be cleared, the thing has ever occurred; at the most, we can only conceive its possibility by the north of the peninsula, across the cultivated region of Nedjd. But what is greatly more to be feared is the propagation of the disease along the coast of Hadramaut, from port to port, as appears to have occurred on many occasions. Nevertheless, as long as the disease has not penetrated to the Red Sea, the danger is not yet very menacing, and it appears to us to be still possible to avert it.

The great interest of the question of preservation commences here: for here the first serious obstacle presents itself to the maritime importation of cholera in the direction of Europe. The Straits of Bab-el-Mandeb offer themselves, in fact, as a natural barrier which it would be possible to oppose to the introduction of the disease into the Red Sea. The situation of the straits could not be more favorably adapted for strict and careful watch; and if it were possible to organise suitable means of action on this point, it is evident that we should have almost completely solved the problem of preventing the importation of cholera by this route. It is there then that we must set up the first obstacle; and the Committee has not neglected to consider how it is possible to succeed in doing so.

Let us suppose now that, on account of insurmountable difficulties, or for any other reason, this obstacle has been neglected, or even

that it has not proved effectual, and that cholera has invaded the Red Sea and the Hedjaz, as usual, in the wake of the pilgrims. The danger would, without a shadow of doubt, as experience has proved, become very menacing. The question then would be to preserve Egypt from the invasion of the disease, and for the attainment of this object it will be agreed that severe measures would not be inopportune. These measures would constitute the second obstacle to importation.

Now, let us suppose that Egypt herself has been invaded: the only resource of which Europe could avail herself with a view to preservation would be to guard herself against arrivals from Egypt. Now, under this state of things, we do not believe that it would be possible to do this. It must not be forgotten that Egypt, towards the east and the west, is confined by deserts, and that, by reason of this fact, maritime arrivals from that country are by a great deal the most to be feared. We do not say that there would be no occasion to guard against arrivals by land, especially in the direction of Suez, where communication by land with Syria has lately become greatly extended: but it is in the direction of the sea that we have most specially to be forewarned and on our guard. Well, if, in order to succeed in obtaining efficacious protection, it is necessary to apply severe measures to Egypt during the prevalence of an ordinarily short epidemic, we would ask whether it would not be better, in every point of view, in the interests of Europe, to resign ourselves to the temporary inconveniences of these measures, rather than to put inefficacious formalities into practice, which would neither guarantee Europe, against the invasion of the scourge, nor against the innumerable disturbances which would result from it. For ourselves, with these alternatives before us, we would not hesitate to elect for efficacious measures, even though, they should be very severe.

Thus then, against the maritime importation of cholera into Europe, we conceive three series of obstacles ranged in the track of the scourge: first, measures at the entrance of the Red Sea to prevent the penetration of cholera into it; second measures for the preservation of Egypt should the coasts of the Red Sea be invaded; third and last, measures against Egypt to guarantee the safety of Europe.

In this exposition we think we have replied, within the limits of the possible, to the question framed in commencing. It is, we say, rational to admit that the closer the application of prophylactic measures is made to the primitive focus of cholera, the more their efficacy can be reckoned upon. Not only does reason tell us that the more limited the focus is the less difficult it is to circumscribe it; but the study of facts also shows that the routes followed by cholera in coming to Europe are much more limited and more easy of watch and ward than one would be inclined at first to believe: that thus, in the neighbourhood of India, by the *land route*, natural obstacles exist to the invading march of the disease, which confine its field of expansion and retard its progress, circumstances by which it would not be impossible to profit by the adoption of appropriate measures; while, in

proportion as the disease spreads and approaches Europe, the more the natural obstacles diminish and the more feeble the means of action become they at the same time become more onerous and burdensome; and that, on the other hand, the *sea route* offers a natural barrier which may most undoubtedly be rendered insurmountable. Consequently, the consideration of the question in a practical point of view tends to confirm what common sense indicates, *viz.*, that we must not wait for the arrival of cholera in Europe before we combat it, but that it is rather at a distance, on the roads generally followed by it, that it is necessary to endeavor to bar its passage.

This being the view of the Committee, as to the principal direction to be given to the employment of prophylactic measures, is it to be inferred that it lies under any misapprehension in regard to the practical difficulties, the impossibilities even, of application, which, in the existing state of things, the system for which it argues must encounter? No, the Committee is under no illusion on this score. It knows, particularly so far as concerns the means of preventing cholera from propagating itself by land from Persia, and spreading further, what little hope of success exists. And yet it could not but see that that was the strategic point of general preservation. It is, therefore, in this portion of the problem, rather a plan, a subject for study, which it proposes than a system capable of immediate realisation. Moreover, the Committee will, when it enters further on into the details of the measures, take care to indicate what it thinks ought to be of immediate application.

#### Conclusion :

The Committee, influenced by the preceding considerations, replies that the closer to the original centre of cholera measures of quarantine and other prophylactic means are applied, the less onerous will these measures be, and the more may their efficacy be depended upon. (granting their proper application) in the point of view of the preservation of Europe. (M. Polak declined to vote.)

The Committee having now replied to the two preliminary questions, and developed its plan, it only remains to it to enter into the details of the measures considered in themselves.

### CHAPTER II.—MEASURES TO BE ADOPTED IN INDIA.

#### III.

*Is there ground to hope for success in the extinction of cholera in India, or, at any rate, in the restriction of its epidemic development? With this object in view, would it not be well, while continuing the hygienic improvements already undertaken, to make fresh studies of the endemicity of the disease, studies to be made on the spot, which would necessitate much time, and which the British Government alone is in a position to undertake? Indicate the special points to which these studies should apply.*

The idea that it would be possible to extinguish cholera in India has occurred to the minds of many medical men; and on the occasion

of the last epidemic, it was so generally accredited, that it might be said to have become popular. The idea in itself is quite rational. The *invading* cholera which we observe at the present day being necessarily the result of new conditions which were produced in India towards 1817, it is allowable to conceive that these new conditions are not indelible, and that if we could succeed in determining the circumstances which maintain the disease in certain localities of India, we should succeed in causing them to disappear and as a consequence extinguish the disease. Analogies are not wanting in support of this hope. The plague, for instance, which was considered as endemic in a part of the East, has been extinguished. There is nothing unreasonable, therefore, in the hope that success may attend the endeavor to extinguish cholera. In the actual state of knowledge this is all we can say. But some have gone further. Maintaining certain theoretical views, some have believed that they have found the generating cause of cholera in the emanations of an alluvial soil impregnated with animal and vegetable detritus, attributing, in order to justify this hypothesis, an important rôle to the corpses cast into the Ganges; and as to the recent appearance of *invading* cholera, these persons have not hesitated to explain it by the unhealthiness resulting from the recent destruction of canals which formerly furnished water for the fertilisation of the country and the use of the people. In the *General Report*, we have seen what ought to be thought of these suppositions, which make the great mistake of not being in harmony with facts. We shall say nothing more about them.

The truth is that the particular circumstances which make cholera permanent in some parts of India are as yet unknown, or, in other words, the truth is that we are not acquainted with the essential cause of choleraic endemicity. We do not even know exactly what all the localities are where cholera really exists endemically; nor what are the limits of a given place, nor what is the existing connexion between the endemicity of the disease and its epidemic development.

It would be of great interest then to undertake continued researches into this grave question, and it is incontestable that the British Government alone possesses the means of causing such a work, which would occupy years of study, to be brought to a successful termination.

The Committee has certainly no pretension to dictate to the distinguished physicians who are already occupying themselves with these questions, the best course to follow in such an enterprise; but it cannot refrain from expressing an opinion upon those special parts of the problem which appear to it to be most worthy of attention.

What do we know of the endemicity of cholera in India? We know cholera is endemic, chiefly in certain localities of the valley of the Ganges, and notably in Calcutta, Cawnpore, and Allahabad, and in other parts of India, at Arcot, near Madras, and at Bombay. But is it quite certain that cholera is endemic only in these localities? Not at all; a great deal of uncertainty exists upon the subject.

It is necessary then to state with greater precision than has hitherto been done, the places in India where cholera exists endemically. It is a question of statistics.

In the solution of the etiological problem of the endemicity of the disease, the Committee estimates that the most important perhaps of the questions to be considered would be that of the particular conditions of the soil in those localities where the endemicity is very manifest; do we *always* meet with these under the conditions which Pettenkofer regards as indispensable to the development of cholera?

Moreover, do the localities where the disease is endemic distinguish themselves by any *exclusive* peculiarity, in the situation of certain places and dwellings, either in connection with certain newly contracted habits—in regard to the cremation of corpses for instance—or in relation to food, conditions of poverty, &c.? It is clear that the greater part of these questions cannot be answered except after a comparative study made on a large scale, and this is not the work of a day.

Definitively, the object of all these studies would be to ascertain whether, in a place where the disease is endemic, the principle of cholera regenerates itself spontaneously independent of the human system,—if, for instance, being the product of some peculiar organic decomposition, it generates and evolves itself with more or less activity from the soil like marshy miasma? Or whether, as is more probable, the morbid principle, being once produced, regenerates itself entirely by means of man: the soil and every thing existing on its surface being only more or less favorable receptacles where the germ proceeding from choleraic patients may preserve itself, and whence it may evolve itself with an activity varying according to the auxiliary circumstances?

Another question of great interest to be solved would be that of the connexion existing between the endemicity of the disease and the development of epidemics in India. Has every epidemic its root and origin in an endemic centre? For instance, are the epidemics which develop themselves every year on the occasion of certain pilgrimages, the result of the importation of cholera among the pilgrims by individuals coming from endemic foci? Is there not reason to believe on the contrary that in those places of pilgrimage where cholera breaks out every year, the principle of the disease permanently exists in those localities, but that it manifests its presence only under the favorable conditions produced by the pilgrimage?

Lastly, since 1817, has an epidemic of cholera been observed to break out spontaneously in any locality in India previously exempt from the endemic presence of the disease? And, if this is so, has it been remarked that such a manifestation has been the starting point of an *invading* epidemic?

Such, according to the Committee are the chief problems, the solution of which should be the object of the studies already undertaken, or yet to be undertaken.

But, independently of these studies, the Committee thinks it would be important to pursue with the greatest energy the hygienic improvements already commenced by permanent Commissions *ad hoc* especially in localities where the disease is manifestly endemic, and to impart the benefit of these improvements as much as possible to the native population.

The Committee would also ask whether it would not be possible to institute, in connexion with endemic foci, some precautions calculated to restrict the exportation of the disease? The question is one which it simply puts forward.

But what the Committee thinks its duty to say before concluding this part of the subject, is, that it is convinced that, with a view to attain the desired object, *viz.*, the restriction of the ravages of cholera in India, hygienic measures should be adapted to all classes of the population; otherwise what has hitherto been the case will still occur, *viz.*, that all the solicitude, all the admirable precautions by which the British troops in India are surrounded, will not prevent the occurrence of considerable losses among them, as has been shown by statistical information, and that this will probably be the case as long as the source of the disease amongst the natives is not restricted. This, moreover, appears to have been perfectly understood by the British Government, if we may judge by the immense works of sanitation which were commenced in the chief cities of India some years ago, and the important rôle attributed to the *three permanent Sanitary Commissions*. (See with regard to this subject *Annexure A.*, extracted from a note communicated by Dr. Goodeve).

*To sum up: the Committee does not consider it impossible to succeed in the endeavor to extinguish invading cholera in India; and at any rate, it believes that the epidemic development of the disease in that country may be restrained. For the attainment of this double object, it asserts the necessity of continued studies, having for their object the determination of the special conditions which produce and maintain endemic cholera, and likewise of the connexion existing between the endemic disease and epidemic outbreaks, while at the same time the hygienic improvements already set on foot should be continued. As for the special points to which these studies should particularly apply, the Committee refers to what has before been said upon the subject.*

#### IV.

*Judging from what we know of the capital rôle performed by pilgrimages in the development of cholera in India, is it not desirable that efforts should be made to restrict the influence of this cause as much as possible and to continue on a larger scale the employment of the measures already put into practice for the last two years with some success? Indicate these measures.*

It is incontestably a matter of the greatest interest to endeavor ●  
to restrain the influence exercised by Hindoo pilgrimages upon the



development and propagation of cholera; for, as has been shown in the *General Report*, these pilgrimages are incomparably the most powerful of all the causes of epidemics in India. This point cannot be too greatly insisted upon. It is necessary to be firmly convinced that what has been said in the *General Report*, of the importance of these pilgrimages, or fairs, far from being exaggerated, is, on the contrary, within the truth. When we consider the great number of holy places, the prodigious crowds which periodically assemble at some of them, the conditions in which these pilgrimages are effected, the perpetual movement to and fro, of concentration and dissemination, which result, we are penetrated more and more with the conviction that this is, in fact, one of the most energetic causes of the development and propagation of cholera; and we are surprised that it should have been, if not unknown, at least neglected, until within a short time past.

To the Government of Madras, and especially to Dr. Montgomery, is due the honor of having understood the necessity of restraining the disastrous influence of these agglomerations, and of having, in 1864, with this object in view, made the first essays at Conjeveram of measures of hygiene applied to pilgrimages. These measures consisted especially in the establishment of temporary latrines, whence excrementitious matters were removed twice a day and buried at a great distance; the organisation of a service for sweeping and watering the town, and removing filth and ordure by means of carts; the removal of cattle during the ceremonies; and the supply of good drinking water accessible to all. The fact is that that year the pilgrimage was accomplished without any manifestation of cholera, and that the same measures had the same result again in 1865.

The experiment tried at Conjeveram was repeated in 1865 in the Presidency of Bombay with certain modifications and on a larger scale. The following measures were prescribed for all places of pilgrimage:—"The establishment of latrines, which, in the absence of better, might consist simply of deep trenches excavated in the earth to leeward of the dwellings or encampments, an obligation being imposed upon those making use of them to cover their excrementitious matter with earth; the disinfection of choleraic matter either by a solution of the permanganate of potash, chloride of zinc, carbolic acid, or simply by quicklime."

With regard to the *return* of the pilgrims:—"Encampment; prohibition against entering a town or military station unless on production of proof of exemption from choleraic infection. They had to prove that no diarrhoea, or other indication of cholera, existed among them, and that 48 hours at least had elapsed since they last had communication with a person affected with diarrhoea or cholera. In the absence of these proofs, the pilgrims were kept under observation for 48 hours, at the end of which time, if they showed no sign of the disease, or of its premonitory symptoms, they were at liberty to enter the town."

“Individuals presenting indications of cholera were separated from the others, and these last recommenced a quarantine of two days.

“In view to the application of these rules, measures were taken for the supply to the pilgrims of provisions, water, shelter, medical assistance for the prevention or treatment of the disease on its outbreak: also the isolation of the sick under tents.”

In consequence of the application of these measures in the Presidency of Bombay, it was stated that, in 1865, out of 94 places of pilgrimage, in which from 2 to 50,000 pilgrims had been gathered together, cholera showed itself in two only—without, however, causing serious ravages—at Jeypoorie, where 5,000, and at Sungum where 50,000, pilgrims were assembled. (*Report of Dr. Leith, President of the Sanitary Commission of Bombay, March 10, 1866.*)

Thus the first attempts to restrain the disastrous effects of pilgrimages by means of hygienic measures were followed by very encouraging results, the value of which, however, must not be exaggerated, considering that they only relate to experiments made for two years.

Taking these attempts into consideration, the Committee asked itself whether it would not be possible to add certain precautions to the measures already taken; and after consideration, it thought that if we could succeed in diminishing the influence bearing upon places of pilgrimage, by previously imposing certain conditions upon those desiring to proceed to them, we should proportionally diminish the danger of these agglomerations. Would it not be possible to require that, previous to his *departure*, each pilgrim should be furnished with special permission from the local authority of his jurisdiction, which permission should not be given him except he afforded proof that he had the means to provide for his necessities during the journey? Such a condition would tend to remove from the pilgrimage the mass of mendicants who swarm thither, and who form the principal aliment of choleraic epidemics.

The Committee can only recommend without solving this important question, because it is to be feared that the measure it has in view may rouse dangerous opposition amongst the natives. In this and similar matters, the English Government is the best judge whether the measures are judicious and opportune or otherwise.

As for the sanitary police of the places of pilgrimage, which comprises the employment of the hygienic measures above mentioned, the Committee can only praise the measures already put in force with success, and express a wish that they may be generalised and completed according to the indications of acquired experience.

There remains a third order of precautions applicable to cases where, in spite of every thing, cholera breaks out among the assembled pilgrims. It is then, at the time of the *return* in fact, that the greatest danger of the pilgrimages commences, when the infected mass separates

and disperses, carrying the disease with it, and spreading it far and wide in every direction.

Against this danger of propagation the Government of Bombay has already, as has been seen, adopted certain measures, principal among which is that of prohibiting the entrance into towns of pilgrims having cholera amongst them. But is that a sufficient precaution, and is the 48 hours' quarantine of observation, connected with it, a substantial guarantee? The Committee does not think so. It believes that the true way of preventing the diffusion of the disease would be not to permit the departure of the contaminated mass until after the complete cessation of the epidemic, and after a general disinfection. Such a measure presupposes a suitable space where the mass could be separated and maintained without any want of shelter, provisions, and drinking water. Now, if we conceive the possibility of making so many conditions for some thousands of individuals, it must be admitted that the difficulties of application would rapidly increase with a greater number, and that if it were required to apply the measure to the immense assemblages to be met with in certain Indian pilgrimages, it would become altogether impracticable.

Nevertheless, the principle of opposing an obstacle to the dissemination of cholera is none the less good in itself, and the Committee estimates that on every occasion on which it would be possible to apply the measure it would be well to do so.

*To sum up : the Committee is of opinion that to oppose the influence of Indian pilgrimages on the development of cholera, it would be necessary, first, to endeavor to effect a diminution in the numbers of pilgrims by obliging them, if it be possible to do so, to provide themselves before their departure with permission, which should be given only when an individual furnishes proof that he possesses the means of providing for his necessities during his journey ; 2nd, to establish at all places of pilgrimage a sanitary police understanding the application of the hygienic measures already put into practice and completed in accordance with the teachings of acquired experience ; 3rd, in the event of cholera breaking out amongst the pilgrims to prohibit the return of the contaminated mass, whenever such a measure would be practicable, until after the cessation of the epidemic amongst them and a general disinfection.*

## V.

*Is it not necessary to put into practice means adapted to prevent the exportation of cholera from India ? Amongst these means is there not reason to note the institution of a sanitary police at the point of departure specially applicable to the pilgrims, and, in seasons of epidemics, that of bills of health, &c. ?*

The necessity of according great importance to the means capable of preventing, or at least of diminishing, the maritime exportation of

cholera from India is all the more shown, that the employment of these means is solely within the province of the British authorities, and is not of a nature to remove all the practical difficulties which may prove obstacles to the measures adapted to extinguish the disease. The rule promulgated in 1858 by the Government of India regarding *ships employed in the conveyance of native passengers leaving the British possessions* was the first important Act passed in this sense, although it did not have cholera in view, and even at the present day, it may be considered as the basis of all the measures to be adopted against the exportation of the disease.

The principal sections of this Act, which we publish as an annexure to this report (*see Annexure B*) relate to the number of passengers, the supply of stores and provisions, the hygienic condition and sea-worthiness of the ships engaged in the trade, and they contain the most judicious prescriptions on this head. The Act, however, at the same time, shows some imperfections and omissions which practical experience since its promulgation has made evident. For instance, it is wrong in being applicable only to vessels under the British flag, and of being, in consequence, easily eluded by speculators who engage in the business of the transport of Mussulman pilgrims by means of foreign vessels, and notably under the Turkish flag. This is demonstrated by the statement of ships which carried Indian pilgrims to Jeddah last year and this year.

Could not the Act in question be applied without distinction in all the British-Indian ports—nay more, in the ports of every Power having Indian possessions, to all ships of the class of which we speak, whatever their flag? This would be an essential condition to be fulfilled.

Another circumstance to be noted is, that certain masters of vessels under the English flag find means of evading the prescriptions of the Regulation when they go to Jeddah. In support of this assertion we may call to mind the instances of the two sailing vessels already mentioned, the *North Wind* and *Persia*, which probably had on board a number of passengers in excess of the regulated number—the one 632, and the other 530, and which suffered so greatly from cholera. These ships started from Singapore: they put in at Mokalla, where English authority does not exist, and finally reached Jeddah, avoiding touching at Aden. The port of Singapore is subject to the Regulation: but is control avoided by touching at Mokalla instead of at Aden? Can the infringement of the Regulation be noted and followed up at Jeddah? We cannot say; but still it appears to us very evident that in these cases the Regulation was infringed, that is to say, the ships carried in proportion to their tonnage a greater number of passengers than is allowed by the Act. We do not say that the infraction did certainly occur, because we have not been able to find out what was the tonnage of the vessels.

Another omission in the Act is that British vessels leaving a foreign port are not subject to its provisions: thus, for instance,

the *Sydney*, which, in proportion to its tonnage, would not perhaps be allowed to carry more than 500 or 600 passengers, was able with impunity to carry as many as 2,000 from Jeddah to Suez. It would be desirable then to extend the provisions of the Act to every place.

In the details of the Act, it is to be remarked that it says nothing relative to the sanitary state of the persons embarking, and that consequently there is nothing to prevent the embarkation of sick people affected with the premonitory accidents of cholera; and similarly in none of the sections is any mention made of the measures which may be rendered necessary by the sanitary condition of the ship on its arrival. These are important omissions.

However this may be, the Regulation is an excellent Act, which, with certain extensions and additions, would answer completely the object to be attained in connection with the conditions of the embarkation of the pilgrims.

• But this is not all. The Act applies only to the hygienic and seaworthy condition of the ships, and, even when completed, it should not exempt any ship leaving India, as well as any other country, from being provided with a *bill of health* showing the sanitary condition of the port of departure and the number of persons embarked; which bill should be *visé* in all ports of call conformably to the rules adopted in Europe. This is an addition which the Committee considers indispensable. Such a document, to have its full value, ought to be delivered by some constituted sanitary authority at the port of departure; consequently it would be necessary that a medical service *ad hoc* should be especially organized in ports where the embarkation of pilgrims takes place. Among the ports which in this point of view, deserve special attention, the Committee points to Singapore in the first rank, for the reasons given above.

The Committee, then, asserts the necessity of a sanitary department in India, which would deliver bills of health, and which, in regard to pilgrim ships, would see, not only that the provisions of the Act relating to them were carried out, but also that no suspected sick person was embarked.

The Committee put the question to itself whether, in the event of an epidemic of cholera occurring at the port of departure, it would not be possible to stop the embarkation of pilgrims at that port, or to postpone it till the cessation of the epidemic, or to render the conditions of embarkation greatly more strict than ordinarily? But these are delicate questions, the solution of which should be left to competent authority. A question of the same class is that of ascertaining whether it would not be possible to require from every Indian Mussulman pilgrim, before his departure, the proof of his being in possession of means to meet the necessities of his journey.

In connexion with this subject, the Committee will mention an interesting communication made to it by M. Van Geuns regarding a

measure of this sort put into execution since 1859 by the Dutch Government in its Indian possessions. The Dutch Government, wishing to reduce the annually increasing number of pilgrims going from its possessions to Mecca to the great prejudice of the country, imposed on each pilgrim the obligation of providing himself with a passport, the cost of which was fixed at 110 florins. The High Court of Justice having declared this measure illegal, the passport system was suppressed in 1852. The number of pilgrims then increased to such proportions, that the Government deemed it necessary to re-establish the obligation of a passport to be delivered to each pilgrim on certain fixed conditions, the chief of which was that applicants for passports were to prove that they were in possession of the necessary expenses of the voyage, to and fro, and that they had taken proper measures for the maintenance of their families during their absence (*see Annexure C*, containing the principal provisions of this Regulation). It will be seen from this that such a measure is already in force, and that it would not perhaps be impossible to extend it to British India.

The Committee sums up its opinion as follows:—*It is of the highest importance to endeavor to prevent the maritime exportation of cholera from India.*

*The Regulation promulgated in 1858, and intituled THE NATIVE PASSENGERS' ACT, would be one of the chief means of attaining this object if it were applied without distinction to all flags and in every country, and if it were completed in the point of view of sanitary precautions.*

*Moreover, it would be necessary that every ship leaving an Indian port should be provided with a bill of health delivered by a sanitary authority constituted ad hoc, who would at the same time be charged with the duty of seeing to the proper execution of the rules regarding the embarkation of pilgrims.*

*In addition, the Committee believes that there is occasion to look into the questions of ascertaining whether, in the event of the occurrence of an epidemic in any part of India, it would be possible either to suppress, or defer, or to restrict the embarkation of pilgrims at that place; and, lastly, whether, following the example of the Dutch Government in its Indian possessions, it would not be possible for the authorities in British India to exact from every Mussulman pilgrim the proof that he possesses the means of defraying the expenses of his journey, and of providing for the maintenance of his family during his absence.*

### CHAPTER III.

*Measures to be adopted in the countries situated intermediately between India and Europe.*

The object of these measures ought to be the prevention of the importation of cholera into Europe by the maritime route, viz., by the Red Sea; or by the land route, viz., by Persia and the adjacent coun-

tries. We shall treat first of the measures to be opposed to its importation by sea.

A.—MEASURES AGAINST THE IMPORTATION OF CHOLERA FROM  
INDIA BY SEA.

VI.

Following the plan adopted by the Committee, the first question to be solved is the following:—

*Would it not be advisable to institute at the entrance to the Red Sea, in an island if possible, a sanitary establishment, where all ships entering the sea should be subjected to search, and, if necessary, to measures of quarantine? Supposing the question to be answered in the affirmative, what ought to be the character of this establishment? In what cases, by whom, and how should these measures be applied?*

*First.—Advisability of a sanitary establishment at the entrance to the Red Sea.*—The utility of such an establishment is not doubtful; it has been demonstrated, theoretically at least, by the considerations we have urged in the development of our plan. The question at present then is to know whether, in a practical point of view, such an establishment would be capable of realisation; if, at the entrance to the Red Sea, the conditions indispensable to its working exist: a convenient site, security, salubrity, safe anchorage, drinking water in sufficient quantity, and a facility for the supply of provisions. It is clear that if these conditions are not to be met with, in reasonable proportion, on any point of these shores, the establishment would not be capable of realisation. It is, moreover, certain that even should all these conditions be united, the question would still not be solved since it would not be impossible that considerations of another kind might prove an obstacle to an establishment of this sort.

Leaving aside every other consideration, we have applied ourselves to see if the conditions requisite for a large quarantine establishment really exist at the entrance to the Red Sea. We have not lost sight of the fact that the establishment in question, its object being the prevention of the importation of cholera into the Red Sea, must be a post of observation as well as a lazaretto: that consequently it should be so situated as to be enabled to exercise an efficacious surveillance over all ships entering the sea, and moreover possess the means of properly subjecting contaminated ships to the prescribed measures; conditions which imply, specially that relative to surveillance, the closest possible proximity to the Straits of Bab-el-Mandeb.

In this situation we find the island of *Perim*, in the narrowest part of the straits, which it divides into two channels of unequal width. The great channel, between the island and the African coast, is 14 miles wide, the smaller, between *Perim* and Cape Bab-el-Mandeb, or rather between *Perim* and a small islet (Pilot island) separated from

the cape by a narrow channel, is only  $4\frac{1}{2}$  miles wide. Ships can enter or leave the Red Sea by both these channels. The island of Perim is  $4\frac{1}{2}$  miles long and 2 broad, and 230 English feet above the level of the sea. It is a naked rock, possessing absolutely no fresh water. In the south-western portion of the island, on the coast looking to the larger channel, is a good port, but of small capacity. This disadvantage, however, is compensated for by a good anchorage at a small distance from the island, near Cape Bab-el-Mandeb. The English garrison in Perim receives all its supplies, including water, from without.

In regard to position, *Perim* then leaves nothing to be desired ; it commands the straits, and it would be easy to organise a strict surveillance there ; but as for making it a locality for a quarantine establishment, as for setting up a lazaretto capable of sheltering and feeding a large number of people, the Committee, independent of all other considerations, does not believe it would be possible. Nevertheless *Perim* remains the point, *par excellence*, where the necessary department could be organised for the search of ships, that is to say, the members of that department and the maritime force for the surveillance of the straits should be stationed there. We are supposing, let it be distinctly understood, that political convenience in this matter is in accord with sanitary convenience.

It would remain to discover the proper place for a quarantine establishment. The point which naturally presents itself is at a small distance from *Perim*, outside the straits, a little to the south-east of Cape Bab-el-Mandeb. There, on *terra firma*, we find a place easy of access, where date-trees flourish, and where very good water is known to exist. We may add that on these coasts, sheltered by the cape and the islands, there are suitable anchoring grounds for vessels. Could the necessary supplies for the individuals in quarantine, who would amount perhaps to several thousands, be procured with facility in this place ? The Committee has no data on which to base a reply. As for the quarantine establishment in itself, the Committee understands that it ought to consist of a large guarded space, in which would be spread about, in a suitable manner, encampments suited to the habits of the pilgrims. It might be objected that, under such conditions and in such a climate, the pilgrims would suffer greatly ; but the Committee would reply in anticipation of this objection, that the pilgrims in question are Malays and Indians, who consequently are habituated to all the heat of the torrid zone ; and that the inconveniences would be most felt by the Europeans employed to see to the execution of the prescribed measures, inconveniences, however, which it would be possible to remedy by frequent changes in the staff.

Judging from these incomplete data, it is thought possible to institute at the entrance of the Red Sea a surveillance, the principal station of which would be the island of *Perim*, and also a lazaretto to which all contaminated arrivals should be sent, after search. At the



same time the Committee hastens to add that what is said here is simply an indication of the question, and that the matter must be taken into serious consideration on the spot.

The Committee thinks that it has been so far from solving the problem put before it, that it has asked itself whether, in the absence of the places it has just mentioned, there is not, beyond the straits, but in proximity to them, some other convenient locality for the lazaretto in question; for, in regard to search, it is of the greatest necessity that it should be effected off the entrance of the straits themselves, lest it might be eluded. Now, beyond the straits information is wanting. On the one hand, we have seen, on the Arabian coast, only Aden which is very distant; and on the other, on the African coast, only the French possession of Obokh, of which we do not possess sufficient information.

The Committee then endeavored to discover whether, in the absence of better localities, there was not in the Red Sea, as near as possible to the straits, an island containing the requisite conditions for the establishment in question. It considered in succession, in this point of view, the principal islands, which, after leaving the straits, appeared to be the best of among a considerable number of islets. After seeing that the large isle of Harnish, which was the first to present itself, possessed no resources; that the next, Jibel Toogur, although less barren, having a little water, some vegetation, and some good anchoring grounds, did not possess the required conditions, the Committee stopped at the island of *Kamaran*.

This island is situated quite close to the Arabian coast between Hodeidah and Loheia. In regard to water, provisions, and safety of anchorage, it unites all the desirable conditions. Its proximity to Yemer, by which it is assured of an easy supply of provisions, is a great advantage; but it is also a danger, in this sense, that it would be very difficult to avoid dangerous communications with the most peopled and best cultivated part of Arabia. Another disadvantage in *Kamaran*, as in every other island in the interior of the Red Sea, is that it would be very difficult to compel ships under suspicion to proceed there and prevent any infringement of rules in this respect.

The adoption of an islet in the Red Sea as a quarantine station always presupposes that obligatory search would be put into force at the mouth of the straits, and it would necessitate an escort, or at least health officers, on board infected ships to accompany them as far as the quarantine station; this, as may easily be seen, would prove a very complicated matter.

These various disadvantages have led the Committee to believe that it would be preferable, if the thing were possible, to place the quarantine establishment either at Bab-el-Mandeb, or at some place outside the straits.

2nd.—*What should be the character of this establishment?—Assuming it to be capable of realisation, on whom should devolve the*

duty of setting it up, of making it work, of maintaining it? Who should have its direction? It must be remembered that we are speaking of an institution which interests all Europe; which would necessitate great expenditure in setting it up and maintaining it; and which would require a large staff of officers, and the concurrence of a considerable military and naval force to ensure the execution of the prescribed measures. Where is the territorial Power capable of taking all these duties upon itself? It can certainly not be found upon the Arabian coast amongst the independent and hostile chiefs occupying it. Should the charge devolve, as proposed in Committee, on the Ottoman Government or the Egyptian Administration? But admitting the nominal authority of the Porte in these parts, is it thought that it, or Egypt by delegation, possesses suitable means of execution? How could the Porte impose upon all flags the obligation of submitting to the sanitary regulations? And what State, without a sufficient guarantee, would consent to subject its flag to such an obligation? And besides would it be just to allow such a heavy charge to be borne exclusively by the Ottoman Government? There is England indeed; but would England consent? And then would it not be very inconvenient to confide the key of the Red Sea to one Power alone?

All these disadvantages were discussed in Committee, which after serious and careful examination, arrived at the conclusion that the projected institution at the entrance of the Red Sea, in order to attain its object properly, ought to be of an international character; that it should be founded and maintained at the common charge of the Powers interested, and placed under the surveillance of a mixed Board in which a Delegate of each of these Powers should sit.

In connexion with this Board, one of the members of the Committee, Dr. Bykow, has expressed his opinion that the duty of the direction should devolve either upon the Board of Health at Constantinople, or that of Alexandria, which are in point of fact mixed Boards; but this opinion was not accepted, because it appeared to the Committee, that the surveillance of either of these Boards would be exercised at too great a distance to be of any effect.

The Committee therefore thinks that *the establishment in question should, as a sine quâ non condition, possess an international character.* It would remain for the Governments interested to come to a mutual understanding as to the form and extent of the intervention to be exercised by each. For instance, we can easily conceive that the Porte or the Egyptian Government might have its direction, but under the control and with the assistance of Europe.

This conclusion was adopted by all the members of the Committee then present except M. Bykow who voted against it, and M. Polak, who did not vote.

3rd.—*In what cases, how, and by whom should these measures be applied?*—It is natural to admit, always supposing the project in question to be capable of realisation, that the working of the institu-

tion should be determined by a special regulation, adapted to circumstances. The Committee, however, thinks it is able, in the meantime, to declare that, in its opinion, every ship entering the Red Sea ought to be subjected to search with the object of ascertaining the sanitary condition of the port of departure, or at any rate (for that would not always be possible) the sanitary condition of the vessel. According to the result of this search, the ship would be authorised by a *visa* to continue her voyage, or would be detained in quarantine, if the nature of the accidents on board, the crowding, the place of destination, or any other circumstance, made it appear that the free entrance of the vessel into the Red Sea was dangerous. As, in the idea of the Committee, this measure ought specially to have in view ships carrying pilgrims or such like other passengers, that is to say, really dangerous ships, it is of opinion that the regular mail packets, and, generally, ships offering certain specified guarantees, though they should however be compelled to submit to search, might be permitted to continue their voyage even in the event of the occurrence of choleraic accidents on condition of performing quarantine in a locality to be assigned for the purpose. Now, in order that such measures may be impartially executed, intelligence and firmness are desirable; it will strike everybody that their execution should not be confided to a single Power alone.

The Committee for this reason concludes that *the measures should be applied by virtue of an international regulation which should specify the cases, and be carried out under the control of the Governments interested.*

Definitively, as may have been seen, the very great importance of a sanitary establishment at the entrance of the Red Sea is incontestable; the physical possibility of making it work usefully is scarcely doubtful; but the practical solution of the problem implies the satisfaction of so many various interests, that it is to be feared it will never be afforded.

## VII.

### QUESTION OF THE PILGRIMAGE TO MECCA.

If the question of the institution of a sanitary service at the entrance of the Red Sea, with the object of preventing the introduction of cholera into the Hedjaz, is calculated to raise many difficulties, it is a reason the more for the Conference to insist upon measures adapted to diminish the chances of the outbreak of a choleraic epidemic amongst the assembled pilgrims, and specially to oppose obstacles to the importation of the disease into Egypt.

With this double object, we have to determine:—*1st*, the organisation of the sanitary service on the coast of the Red Sea; *2nd*, the conditions to be exacted on departure and the precautions relative to the embarkation of the pilgrims; *3rd*, the hygienic measures to be put into practice in the Hedjaz; *4th*, what should be done in order to prevent the importation of cholera into that province; *5th*, the

measures to be adopted against arrivals from the Hedjaz if cholera should manifest itself during the pilgrimage.

The Committee will express its opinion on each of these points in succession.

*1st.—Organisation of the sanitary service on the coast of the Red Sea.*—This organisation should comprise stations for physicians whose duty it should be to afford precise information on the sanitary condition of the country, to deliver and to *viser* bills of health, and to watch over the execution of the hygienic or other measures which may be prescribed; and moreover certain lazaretto stations specially devoted to the application of measures of quarantine.

The stations in the first class should include the principal ports and roadsteads of both coasts of the Red Sea. On the African side, besides Suez, of which we shall have to speak more at length, there are three principal ports where surveillance is indispensable, *viz.*, from north to south, Kosseir, Souakim, and Massowah.

The port of *Kosseir* is the roadstead of Kenneh; it is not accessible to large vessels, but it carries on a trade in cereals with the Arabian coast; and it is moreover very much frequented by the pilgrims, especially on their return. It has been calculated that in 1860 more than 5,000 of them returned from the holy places by this route. Its population amounts to about 3 or 4,000 souls. Water of good quality is not to be had except at a distance of more than a day's journey. An Egyptian sanitary physician is stationed at Kosseir; but it is admitted that, for want of resources, and on account of its proximity to the Nile, this locality is not adapted for a quarantine establishment. Here then we can only have a post of observation.

*Souakim*, much more to the south, opposite Gonsfoudah, is the principal port of the Nubian provinces of Egypt; it communicates with Shendy and Khartum. The town of Souakim possesses from 6 to 8,000 inhabitants, and is built on an isle in the interior of a bay, receiving its supplies from El-Geyf, a neighbouring town on the mainland. Most of the pilgrims from the interior of Africa embark here. They are generally known under the designation of Takrouis. They are poor negroes, subsisting on what they can derive during the pilgrimage from the most painful and laborious work; their annual number has been estimated as ranging between 2 and 3,000. From Souakim, by means of barques, they attain the opposite coast, descending most often upon Hodeidah, whence they proceed by land, joining the caravans, to the places of pilgrimage. A sanitary service has existed at Souakim since its occupation by the Egyptian Government; but our colleague, Salem Bey, to whom we are indebted for these details, does not believe that the necessary conditions for a quarantine establishment can be found there.

Lastly comes, not far from the entrance of the Red Sea, the port of *Massowah*, the importance of which increases every day. Massowah, a port of Abyssinia and of a part of the interior of Africa, is in con-

nexion with India, and especially with the Arabian coast. The African pilgrims however generally prefer to return *via* Souakim. Be this as it may, Massowah ought to be the seat of a post of observation, against which nothing exists in opposition, since this locality is under the control of the Egyptian Government.

On the Arabian coast, where the points to be watched are much more numerous and where it would be so necessary to have a strongly organised service, the difficulties are much greater. In the first place, a part of this coast, inhabited by fierce and barbarous tribes, is entirely independent of the Ottoman Government; and then, in the Hedjaz itself, the centre of Islamism, the Porte is obliged to manage skilfully and cautiously in the face of a fanaticism hostile to all European interference. However, if there are difficulties to be overcome and if good management has to be carefully attended to in the Hedjaz, what passed in that province last year shows that it is not absolutely impossible to adopt measures for the improvement of the condition of the pilgrims, and even to organise on this coast a sanitary service answering to the object to be attained.

Jeddah, the principal port of the pilgrimage, presents itself as the important point where a sanitary service ought to be strongly organised. We need not revert to all that has already been said regarding the town of Jeddah, its population, its commerce, its resources, and its disadvantages; we will simply say that, in the opinion of the Committee, Jeddah does not possess the conditions requisite for a great quarantine station. Besides the impossibility of subjecting the pilgrims, impatient to proceed to the holy places, to serious measures of isolation, if Jeddah were closed against compromising arrivals, the debarkation of these latter might be effected without any obstacle in the other small ports on the coast, thus rendering useless the quarantine precautions that might have been taken. Moreover it must not be forgotten that all the pilgrims do not land at Jeddah, and those who come sometimes from a great distance in barques or small ships proceed along the coast, putting in at each port for supplies. It follows that, in closing Jeddah against choleraic arrivals, the introduction of the disease into the holy places by other routes would in no way be prevented, while at the same time very great difficulties of application would have to be struggled with. At the most, only a small lazaretto for exceptional cases could be established there.

But Jeddah ought to be the seat of a sanitary office, having the direction of all the measures to be adopted in the Hedjaz. This office, under the authority of the Porte, and assisted by a Board composed of the chief authorities of the town, would see to the execution of everything regarding the sanitary police of the pilgrimage, at the same time that it would collect and transmit precise information on the state of health of the Hedjaz and the neighbouring countries. The Jeddah office would necessarily keep up a constant communication with the functionaries charged with the duties of the sanitary police of the holy places.

Another station, under the immediate control of that of Jeddah, but having power to correspond directly, when asking for information, with Egypt, should be instituted at Yambo, a town containing 4 to 5,000 inhabitants, and an important roadstead, at which a certain number of pilgrims ordinarily embark on their return from Medina. This also would be a post of observation, for it would not be possible to establish a quarantine station there; and indeed, there is every reason to think, having regard to the hostile feelings of the populace, that the service at Yambo could not be worked except by Mussulmans, assisted by a considerable force.

The Committee thinks it would be very useful to establish a third post of observation on the coast of the Hedjaz, to the south of Jeddah, either at *Leeth* or *Gonfoudah* if it could be recognised that the presence of such a post was compatible with the conditions of security offered by these localities. But not possessing any sufficiently precise information upon the point, the Committee leaves the solution of the question to further consideration. Similarly in regard to the possibility of organising means of sufficient information respecting the sanitary condition of the more southerly localities, notably *Hodeidah* and *Moka*, where the pilgrims land, as has been seen above. We confine ourselves then to proposing, for the moment, the creation, on the coast of the Hedjaz, of two sanitary offices,—the principal one of which, assisted by a local Board, should be stationed at *Jeddah* and the other at *Yambo*.

We have now to occupy ourselves with *lazaretto* posts or offices.

With regard to this subject, the Committee deemed it advisable to establish what it thought an indispensable distinction. It does not admit that the place to which pilgrims infected with cholera may be admitted to perform quarantine should be the same as that where ordinary arrivals are to be, if deemed necessary, subjected to preventive measures. The danger in these two cases is not the same, and besides, the means of isolation which suffice for a small number of travellers are not applicable to such a multitude as that composing the pilgrimage.

Starting with this distinction, our idea, in the first place, after considering the localities, was to reserve to the pilgrims returning by sea three places where, in the event of cholera breaking out amongst them, they might be admitted to perform quarantine. These localities were, proceeding from south to north, *El-Wesch*, *Moilah*, and *Tor*. We supposed that the pilgrims embarked in the ports of the Hedjaz might be put down at these three points, where suitable accommodation and supplies would have been prepared for them. We thus maintained the principle—which we consider essential—of interrupting all maritime communication between Egypt and the Hedjaz, in the event of cholera prevailing amongst the pilgrims. But our colleague, Dr. Salem Bey, has stated to us that the Egyptian Government would not permit the pilgrims to perform quarantine in any place

closer to Egypt than El-Wesch; he has demonstrated to us, in fact, that beyond that place, at Moilah and Tor, for instance, secret communications of a nature very compromising to Egypt would occur, by reason of their proximity and the facilities of navigation by means of barques, while there would be no reason to apprehend the same danger on the other side of El-Wesch. The Committee, accepting these reasons, has abandoned Moilah, a locality provided with a port, and which could easily be supplied with provisions; and, as will be seen further on, it has reserved Tor for the ordinary lazaretto for choleraic arrivals.

There remains *El-Wesch*, which unites all the desirable conditions for a quarantine station: a large and safe port accessible to large ships, fresh water of excellent quality in abundance on the sea shore as well as in the neighbouring valleys, fresh provisions easily to be procured on the spot, without taking into account the resource of re-victualling by sea. *El-Wesch* is situated five days' march to the north of Yambo, and is under the authority of the Egyptian Government, which maintains a garrison there in a fort placed at some distance from the sea, on the road followed by the great Egyptian caravan, which usually halts at *El-Wesch* for several days to take in supplies, when the Arabs of the neighbourhood flock in with provisions of all sorts. Besides this resource, the fort is provided with stores of provisions for the use of the caravan. Thus we find *El-Wesch* offering the best conditions for the organisation of a lazaretto capable of holding several thousand people. This lazaretto should consist of a sort of encampment, the limits of which should be watched, and which should consist of tents and huts. *El-Wesch* should be adapted accordingly, that is to say, independently of the fort, which is too far in the interior: it would be necessary to construct, by the sea, dwellings for the sanitary officers and for a respectable armed force, and also depôts for a supply of tents and provisions for the use of the persons performing quarantine. The administration of the establishment should be confided to a Director assisted by several medical officers, and a number of agents sufficient for the working of such a service. At the season of the pilgrimage the whole of this staff should proceed to *El-Wesch*, where, in the interval, only the guard necessary for the protection of the stores should be retained, and would hold itself in readiness for the contingency of a quarantine to which to subject the pilgrims. On the accomplishment of the pilgrimage, the greater part of the staff would return to Egypt. The Committee does not think it necessary to enter into further details upon this subject: further on it will explain what, in its views, should be the true rôle of *El-Wesch* in regard to pilgrims infected with cholera.

The lazaretto assigned to ordinary choleraic arrivals, *viz.*, to ships not carrying pilgrims and similar passengers, would, the Committee thinks, be conveniently situated at Tor, a straggling village at the foot of Mount Sinai, provided with a good anchorage and an abundant supply of fresh water. Tor might easily be supplied with provisions

from Suez. This locality moreover possesses the advantage of being in the track of ships bound to Suez, which consequently would not be obliged to make any *détour* to reach it. The Committee thinks that every ship in which cholera manifests itself should be compelled to perform quarantine at Tor. The lazaretto to be established there ought to have, in the portion reserved for European travellers, a permanent organisation, and be provided with every thing necessary for the passengers frequenting the Indian mail steamers, though it is very probable, judging from past experience, that these travellers will very rarely have to perform quarantine. The Committee does not admit that, in any case, ships on board of which cholera manifests itself could be allowed to perform quarantine in the neighbourhood of Suez, at the *Wells of Moses* for instance. It believes that, even at the cost of certain disadvantages, we must not establish a lazaretto in the neighbourhood of Suez: in this neighbourhood, even at the *Wells of Moses*, it thinks there is an almost inevitable danger of compromising Egypt; for it must not be forgotten that the persons performing quarantine have generally very few scruples on this score; and that, on the other hand, in the East the sentiment of duty in subordinate employés cannot withstand certain temptations: so that, if it be desired to avoid the danger resulting from an infringement of the measures prescribed, it is not sufficient to give strict directions, it will be safest to have the quarantine performed in a place naturally isolated and situated at a respectable distance. This is the chief motive which has induced the Committee to select Tor in preference to any other places closer to Suez. And it follows that, in our opinion, Suez is the gate of Egypt which must be guarded with the greatest care, and that, so far from acting so as to attract cholera to that place by means of the great quarantine station which it has been proposed to establish there, we should endeavor, on the contrary, even at a sacrifice, to thrust the disease back and keep it as far away as possible; for we must not lose sight of the fact that, if the town of Suez is compromised, Egypt will inevitably be invaded.

Suez then is especially, in our eyes, a post of observation whence surveillance should be extended far and wide; and, for this reason, we think it would be well to make it the seat of the direction of the entire sanitary service of the Red Sea, inclusive of that of the straits.

In connection with this question, the Committee argued at length the question of the authority under which this department should be placed. In regard to that of Bab-el-Mandeb, we have laid it down that an international character was a *conditio sine quâ non*; for that of the coasts of the Red Sea, the necessity for such a condition does not at the first glance make itself apparent. We find ourselves here in the presence of territorial Powers: on the one hand, the Egyptian Government; on the other, for the Hejaz, the Ottoman Porte. It would seem then very natural that the Porte and Egypt by the agency of the Boards of Health sitting at Constantinople and Alexandria, should each assume charge of that portion of the service properly belonging to each.



But what would result from this? Egypt, we may conceive, would accomplish her task easily enough. Urged on by the danger of which she has had experience, and working in proximity to her own territory, she would be quite capable of defending herself. This, however, is only one side of the question.

And the Hedjaz? No doubt the Ottoman Porte possesses an incontestable right to exercise supreme authority there, and clearly the measures to be adopted should be executed in the name of the Turkish Government. But is the Board of Health sitting at Constantinople in a favorable situation for watching over the execution of measures applicable in the Red Sea? Is it not too distant from the theatre of events to act as seasonably and promptly as would be necessary? What happened this year, when cholera broke out amongst the pilgrims, has caused us to perceive all the disadvantages of distance and difficulty of communications. Facts have shown us, moreover, the danger resulting from the application, by two authorities not on good terms with each other, of preventive measures whose efficacy depends on a complete understanding on all points. Thus, for instance, while the Egyptian administration, guided by past experience, had decided, in accordance with the wishes of the Conference, that contaminated arrivals from the Hedjaz should not be admitted to perform quarantine in Egypt, the Turkish authorities at Jeddah, acting in an opposite spirit, and more anxious to get rid of the pilgrims than for the preservation of Egypt, hastened their embarkation for that country in spite of the protests and remonstrances of the Egyptian Delegate.

How are the disastrous consequences of such want of accord to be prevented? It might be done by confiding the direction of the entire sanitary service of the coast of the Red Sea to the Egyptian Government. But would the Porte consent to give up its direct authority in favor of Egypt? And besides, the Egyptian direction could not, in any case, be admitted except with the concurrence of a mixed Commission, where all interests should be represented.

We have thought therefore, in the interest of that unity of action which is indispensable to success, that it would be convenient to confide the direction of the sanitary service of the whole coast of the Red Sea, including the Straits of Bab-el-Mandeb, to a *special* mixed Commission, in which each Power interested should be represented; which Commission would decide on all the measures to be taken on the coast, leaving at the same time, it should be understood, the executive power to the proper authorities.

Thus, in the idea of the Committee, the sanitary service to be organized on the coast of the Red Sea would comprise, in addition to the project of an international lazaretto with compulsory search at the Straits of Bab-el-Mandeb :—

1st.—*Stations for sanitary physicians, viz., three on the African coast, at Kousscir, Souakim, and Massowah; and two, temporarily, on*

the Arabian coast, the chief one being at Jeddah, and the other at Yambo ;

2nd.—Two lazarettos, one of which, that at El-Wesch, should be reserved exclusively for the pilgrims ; and the other, at Tor, should be the place of quarantine for ordinary choleraic arrivals ;

3rd.—A direction, sitting at Suez, assisted by an international Commission, which should decide all questions regarding the sanitary service of the Red Sea.

(Adopted unanimously, except by Salem Bey, who did not agree on some points).

2nd.—Conditions of departure, and precautions regarding the embarkation of the pilgrims.

The Mahomedan law, among other very wise prescriptions, requires that whoever undertakes the pilgrimage must have sufficient means for the journey, and to provide for the maintenance of his family during his absence. It is the practice of this precept which the Dutch Government has required of its Indian subjects, which we would wish to see equally in force in the British possessions, and everywhere. We are assured that arrangements have been made already in regard to the pilgrims in conformity with the law in Morocco, Tunis, and in Algeria, without doubt. The pilgrims, before being permitted to proceed on their journey, have to furnish proof that they are provided with a sufficient sum for it. The object of this measure, as we have said before, is to restrain mendicants from going on the pilgrimage, of which they are the sores, and who furnish the chief element for epidemics. Generally speaking, the Turks act up to the direction of the law, and they rarely undertake the journey to Mecca unprovided with the necessary funds. We are assured that this is the case in Egypt also, where the Government exacts guarantees from those who desire to proceed on the pilgrimage. Still we think it would be useful, in order to ensure a more general execution of the religious law, that the Turkish Government should fix, by rule, the obligation on each pilgrim to be provided with a *teskereh*, or passport, which should state that the intending hajji has complied with the prescriptions of the law, and without which he should not be permitted to start. But how apply such a measure to the unhappy Takrouis who come from the interior of Africa to embark at Souakim or Massowah, and who, if they generally suffer from misery, nevertheless earn their subsistence in the service of the other pilgrims ? This is a question which we recommend to the solicitude of the Egyptian Government.

We have nothing to say in regard to the caravan journey of the pilgrims ; its conditions are so well defined that we need do nothing more than recommend a strict application of the ancient customs.

As for the transport of the pilgrims by sea, it has down to the present day remained abandoned in all the Turkish and Egyptian ports to the greed of the most sordid and grasping speculation, and nothing

can give an idea of the frightful crowding by which for the most part this transport is attended. It is a matter of urgent necessity then to interfere here, in order that the embarkation of the pilgrims, on their departure as well as on their return, may be conducted under suitable conditions in every respect. With this object in view, we cannot do better than recommend the application of the English regulation (*see Annexure B*), with the few modifications we have noted, and to assign the duty to the sanitary office of the port of embarkation.

*3rd.—Measures of hygiene to be put in practice in the places of pilgrimage.*

The Sanitary Commission sent to the Hedjaz this year by the Ottoman Government has already—in conformity with the instructions received by it from the Superior Council of Health—hastened to take, in the localities devoted to the pilgrimage, certain immediate hygienic precautions, whose good effects have been felt. These precautions have chiefly consisted in causing the removal in advance of the filth which littered the streets of Mecca and other places of pilgrimage; the establishment of a slaughter-house outside the town; the removal to a distance from it of the trenches for the maceration of the hides; the establishment of a hospital containing 60 beds; the assigning of places of refuge to the mendicants who ordinarily swarmed in the great mosques and streets to the town; the removal of the filth from, and cleaning out of, the reservoirs of Arafat, whence the water for the drink and ablutions of the pilgrims was taken; the cleaning out of the conduits which bring drinking water to Mecca; the digging of 500 latrines scattered over various points of the valley of Mina, and spacious pits for the reception of the blood of the sacrificial beasts; and moreover the preparation, at a sufficiently great distance, of other pits for the burial of all refuse.

All these measures have been accomplished not only without resistance, but even with the concurrence of the authorities of Mecca. The results, we have said, have been satisfactory; and it has been stated that the mortality was very low this year during the pilgrimage. It was not till three weeks after the ceremonies and after the departure of the bulk of the pilgrims, that cholera showed itself among those who had lagged behind; and, in the Medina caravan, the circumstances occasioning its appearance are not properly known yet. However this may be, it is not doubtful that it is easy greatly to improve the sanitary condition of the pilgrimage, and consequently the fate of the pilgrims, without encountering any serious opposition from the latter.

It would be necessary then to methodise and perfect the measures adopted last year, and, with this object, to appoint a special department for the sanitary police of the holy places. The duty of organising this department should devolve upon the Ottoman Government.

The task of the Committee charged with the sanitary police would be to propose and cause to be executed all appropriate measures for lessening all the bad conditions attached to the pilgrimage.

Amongst these measures, already enumerated above, we believe that, considering the peculiar circumstances of the pilgrimage, it would be greatly necessary to take into consideration the means of assuring an abundant supply of drinking water to the pilgrims by means of a thorough repair and careful maintenance of the existing canals and reservoirs. We would also invite attention to the establishment of temporary latrines, by means of trenches, which should be filled in daily and disinfected, if possible, with quicklime; also to the care to be taken in immediately burying and disinfecting all the refuse of the sacrificial beasts; and to the position of the encampments outside the towns, so as to avoid crowding and its consequences. The Committee, moreover, would have to occupy itself with the succour to be afforded to the sick; and, in the event of the outbreak of an epidemic of cholera, the establishment of ambulances under tents, where cholera patients should be treated separately.

As in certain cases—and especially so in the event of an epidemic—a scarcity of provisions might arise, we are of opinion that it should be one of the duties of the Committee to see that a certain supply of cereals for urgent necessities should always be at hand in Mecca.

We shall not dilate further on the functions of the Sanitary Commission of the Hedjaz, which naturally would consist altogether of Mussulmans; these functions should be determined by special instructions, a specimen of which exists.

All these hygienic measures, assuming them to be properly applied, would no doubt result in the diminution of causes of sickness amongst the pilgrims; and, in the event of the outbreak of cholera, the diminution amongst them of the ravages of the epidemic. But we do not in any way pretend that their consequence would be altogether to protect the pilgrims from the attacks of the disease if imported amongst them, or the removal of the disastrous consequences which would result therefrom to Europe. They should not therefore in any way cause the prophylactic measures to be opposed to this danger to be lost sight of.

4th.—*Are there any measures which should be adopted in the Hedjaz against the importation of cholera by land or sea?*

In our opinion, on every occasion of the prevalence of cholera on the coast of the Red Sea at the time of the pilgrimage, it must be expected that, in spite of everything that may be done, it will almost infallibly invade the Hedjaz in the wake of the pilgrims. We have shown the reasons why before. Mecca being the point of concentration, the place to be attained, if its gates by way of Jeddah were closed by a quarantine, the contaminated pilgrims nevertheless would not fail to reach it by some other door. It is necessary then to bar the way by land against all arrivals from the coast of Yemen. Now, this does not seem to us to be practicable. Would it be less difficult to guarantee Mecca against the same arrivals coming *viâ* Taif? Or again, under another hypothesis which has not yet been verified by

experience, against a caravan tainted with cholera coming from the Persian Gulf across the more or less cultivated region of Nedjd, occupied by the Wahabees? We do not know: the consideration of the question must devolve upon the Sanitary Commission of the Hedjaz.

In the actual state of knowledge, the only thing we admit to be practicable is that the Hedjaz being uninfected, every contaminated ship showing herself off Jeddah should be subjected to measures of quarantine. No great result however must be expected. It would be well to select a convenient site in anticipation at Jeddah with this object in view. But an attempt to subject the mass of pilgrims suspected of cholera to measures of quarantine, to prevent them thereby from arriving at Mecca in time for the ceremonies when they are so close to their destination, would, in our opinion, only give rise to serious disturbances without resulting in any substantial advantage.

It will be seen that the Committee therefore places no dependence whatever on the measures which may be taken in the Hedjaz against the importation of cholera amongst the pilgrims.

*5th.—Measures to be taken against arrivals from the Hedjaz, if cholera should manifest itself during the pilgrimage.*

Our task, in regard to this serious question, has been greatly facilitated by the long discussions to which it gave rise. We have had to consider whether the provisional solution of it then given by the Conference still remained the best which could be afforded of the difficult problem of preventing the importation of cholera into Egypt by the pilgrims returning from the Hedjaz, or if a profound consideration of the question and the experience acquired during the year would not require some modifications in the measures adopted in haste for the time being.

This examination led us to the full conviction that, to attain the object, it was essential to maintain in its integrity the fundamental principle laid down by the Conference, *viz.*, the temporary interruption of all maritime communication between the Arabian ports and the Egyptian coast, admitting at the same time an important modification in the practical execution of the measure.

But, first of all, let us state the terms of the problem to be solved. The question is to guarantee Egypt, and consequently Europe, against the importation of cholera. Nobody can dispute the importance of the object to be attained, who considers the disastrous results to human life as well as to commerce which we have now been witnessing for a year and the term of which cannot be assigned: results which are solely the consequence of the importation of cholera last year across Egypt. It will be agreed that, to attain such an important object, no possible precaution must be neglected, even though it should entail certain sacrifices. But, as will be seen, the necessary sacrifices are not very great.

In the event of an outbreak of cholera during the pilgrimage, the danger, it is known, is in the irruption into Egypt of the contaminated masses on whom it is vainly desired to impose measures of quarantine on Egyptian soil; for, in such cases, the isolation, which can be guaranteed only by cordons and strict orders, would be completely illusory against such masses and in such conditions. The only thing that can be regarded as a serious guarantee is isolation at a great distance from the place desired to be preserved, the guarantee resulting from the mere fact alone of the space to be got over.

The Egyptian Government which, with reference to this subject, knows what is to be depended upon, is entirely in accord with us on this point, as is seen by the statements made to the Committee by Dr. Salem Bey.

Thus, then, there must be no quarantine applicable to the pilgrims returning from the Hedjaz on the entire Egyptian coast, including Massowah, unless under the penalty of seeing cholera invade Egypt with them. The consequence is that, if it is desired to preserve Egypt and Europe from another invasion from this direction, it is absolutely necessary to maintain the principle of the temporary interruption of maritime communications, as has been said above.

Let us now consider what would be the consequence of this interruption, and see what, in this case, should be the conduct to be maintained in regard to the pilgrims.

Let us remark, in the first place, that the measure would apply only to pilgrims returning by sea to Egypt, the great mass of whom would ordinarily land at Suez. The number of pilgrims thus returning varies in different years, but it may be estimated, as ranging between 10 and 20 thousand, say 25,000 at the outside, including the negroes who return *via* Souakim and Massowah. We may add that in ordinary seasons all the pilgrims do not embark, on their return, at the same time; that immediately after the ceremonies a first batch proceeds to Jeddah and embarks on steamers bound to Suez. This batch consists of two or three thousand persons who all start at the same time. After having left their human cargo at Suez, the vessels return at once to Jeddah for another supply. In the meantime the pilgrims continue arriving from Mecca, those proceeding to Egypt, as well as those for India and the Persian Gulf; and they accumulate at Jeddah waiting for an opportunity to embark. Generally the first clearing-out of the bulk of the pilgrims who proceed to Suez takes from fifteen days to three weeks. But all is not over. There yet remains part of the pilgrims who, after having assisted at the ceremonies of Aarafat, proceed to visit Medina. The majority of these are Indians and Javanese, with Takrouri negroes, and they also contain a certain number of pilgrims who propose to return to Egypt by sea. All these pilgrims for Medina leave Mecca in caravans some days after the ceremonies; and, after a journey which lasts for about 25 days, those amongst them who have to take the sea route arrive at

Yambo for the purpose of embarking. This year the pilgrims who went in this way to Medina amounted to between 15 and 18,000, of whom about 6,000 returned to Yambo: of these last, 3,000 were bound to Suez. It was chiefly in this fraction of the pilgrimage that cholera raged towards the end of May on the return to Medina.

These details have their importance: they show us that the return of the bulk of the pilgrims by sea to Egypt is effected at two different times—the one separated from the other by an interval of nearly a month; that the most pressed for time, those who dispense with the journey to Medina, return quickest to embark at Jeddah; that this first evacuation, which is effected in two or three weeks,—those consequently who are of greatest interest in our point of view; that the second occasion of the return by sea is at Yambo, and comprises a smaller number of persons bound to Suez than the former. These circumstances ought to be taken into consideration.

Let us now see what happened this year when cholera appeared among the pilgrims. It is known that the religious ceremonies terminated without the manifestation of any indication of cholera, and that even the return of the first batch from Jeddah was accomplished without the occurrence of anything suspicious: so much so indeed that the pilgrims in this first batch were admitted to pratique at Suez. The starting point of the epidemic which afterwards broke out has not yet been determined; it would even seem, judging from information received, that the disease broke out almost simultaneously at Jeddah, Mecca, and in the Medina caravan. But it is certain that the latter was the greatest sufferer. The pilgrims were few in number at Jeddah and Mecca, and the number of cases therefore was inconsiderable.

Cholera broke out on the 23rd May amongst the pilgrims who were proceeding to Yambo, on their return from Medina, with the object of embarking. These pilgrims, joined to those who were already at Yambo, formed a total of about 6,000, half of whom at least were destined for Suez. The development of the epidemic amongst them was very rapid, and the town also was soon invaded by cholera. A period of confusion then ensued. The famished pilgrims demanded food and tried to embark by force. The town, on the other hand, had neither provisions nor garrison; and when the Egyptian medical officer, faithful to his instructions, attempted to oppose their embarkation, he found himself without the necessary support, and his personal safety even was endangered. On the arrival at Yambo, on the 6th June, of the medical officers despatched with provisions, they found the town in an indescribable state of crowding, filth, and destitution. The pilgrims were still threatening, and much trouble was experienced in delaying their embarkation till the 9th, in order to give time to advise the Egyptian authorities of their arrival. The most important fact to note is that, notwithstanding the most horrible condition in which these pilgrims and the population

of Yambo were situated, the cholera, after a rapid development, died out altogether in the assemblage by the 5th June. The epidemic had raged altogether for twelve days, carrying off in that time 335 victims, out of a mass of 10 or 12,000 souls. This result should tranquillize those who imagine that under such conditions the ravages of cholera are unlimited, and it also confirms the theory announced by the Conference. The rest is known: the pilgrims in question were not admitted into Suez; they were sent to perform quarantine at Tor.

Thus, from the facts observed this year, we can easily calculate the consequences of the interruption of maritime communication with Egypt, if cholera should manifest itself in the mass of the pilgrims, instead of breaking out only in a fraction of the pilgrimage. What happened at Yambo would happen then at Jeddah on a large scale. The pilgrims would flock into the town; they would try to embark at any cost; and if there were ships in the port and no military force present to hold the pilgrims in respect, there can be no doubt they would take the ships by assault and abandon themselves to violence against the inhabitants. This would happen especially if we should suppose—and the hypothesis is quite admissible—that a scarcity of food ensued.

To avert these dangers then, it is absolutely necessary to maintain at Jeddah and Yambo a land force capable of maintaining order, and a naval force to oppose attempts at embarkation by force; it would, moreover, be necessary to maintain a supply of provisions in anticipation, to provide against the possibility of scarcity. This done, we believe it would be to the advantage of the pilgrims to wait for the termination of the epidemic on the spot, that is to say, in appropriate encampments or to proceed with the caravan returning by land, rather than that they should be embarked and perform quarantine in some other place; we think consequently that it would be well to use persuasion in acting thus with them.

But the Committee thoroughly understands that what is best is not always the most easy of realisation. It knows that an ignorant and terror-stricken crowd is not easily persuaded; it knows also, by the experience of this year, that the concurrence of the local authorities in retaining the pilgrims must not be greatly depended upon; and that, on the contrary, they would be glad to hasten their departure as much as possible.

Taking these things into consideration, and also considering the repugnance of the Ottoman Government to retain the pilgrims in the Hedjaz against their own wishes, the Committee thinks that the way to reconcile all exigencies would be to assign the port of El-Weesch as a place of quarantine for those who might wish to embark. We have mentioned above how they would find in that place an establishment for their reception; and they should not definitively leave it for Egypt, until after the extinction of cholera amongst them.



In this way, we should avoid the peril of great crowding at Jeddah in the first place, for the first section of the returning pilgrims, and later at Yambo. By this system, El-Wesch would, therefore, be a real *diverticulum*, where, without any danger of compromising Egypt, the pilgrims would wait for convenient circumstances.

It should not be lost sight of that the number of pilgrims thus transported from Jeddah to El-Wesch, in several successive voyages—as is done in going to Suez—would not exceed 8 or 10,000 at the outside, and that, after the arrival of those from Yambo, the first would probably have accomplished their disinfection and would have already left.

We may add that the caravan for Egypt would also come to El-Wesch, but would stop at a certain distance in the interior, and that, in the event of its still showing any indications of cholera, it would be detained there for the time necessary to accomplish its purification.

We have foreseen the exceptional case where, by reason of an unusual gathering, there would be ground to fear overcrowding or a scarcity of means of quarantine at El-Wesch. The Committee believes that, in this case, it would be convenient to delay the march of the caravan and to station it at Yambo-el-Nakhel, a fertile and well watered valley, at a distance of six hours' journey from the town, where it would be easy to supply the caravan with provisions, assuming, as we have said above, that a supply was kept in anticipation at Yambo.

What would happen to the other pilgrims those returning to their homes by land as well as by sea? The first would not be in any way inconvenienced by the measure in question, which would at the most augment the contingent of the caravans in proportion to the available means of transport, and it may be supposed that, the sea route remaining open, very few of those pilgrims who had the intention of proceeding that way would join those following the land route. Be this as it may, the caravans would be in no way disturbed in their itinerary. Only by way of precaution, that of Egypt, which ordinarily contains from 6 to 12,000 persons, would remain at El-Wesch for the time required for its purification, if cholera should not have died out in it, and, if overcrowding or a scarcity of provisions were to be feared at El-Wesch, it might even, altogether or in part, be stopped for some time at Yambo-el-Nakhel. The Damascus caravan would continue its route as far as the place where it is ordinarily subjected to a medical visit to take note of its sanitary condition. The other caravans which return to the south of the Peninsula, or proceed to the east and north-east, would be exempt from all surveillance.

As for the Indian, Malay, Japanese, Persian, and other pilgrims who have to return to their homes by sea, if they are permitted to embark, provided their destination be not the Egyptian coast, it is clear they must be allowed to re-embark, in any state of things,

either at Jeddah or Yambo, at their own risk and peril, and at the mercy of the speculators who victimise them. Only, we ask, in the name of humanity, that the authorities, from whose territories these pilgrims come, should exact that their embarkation should not take place except under the conditions prescribed by the *English Regulation* (The Native Passengers' Act).

The necessary consequence of the system we propose is that, during the whole period of prohibition, no arrivals from the Arabian coast would be permitted to perform quarantine on the Egyptian coast, either at Suez, Kosseir, Souakim, or Massowah, and that any body infringing the rules would be repulsed with every proper and humane precaution, but with the greatest strictness.

It is possible that the measures of which we speak may somewhat disturb the calculations of the ship-owners and charterers who derive such large profit from the pilgrimage to Mecca; that, for instance, they will protest against the prejudice to their trade occasioned by the measure prohibiting them from conveying pilgrims direct from Jeddah to Suez, or any other Egyptian port; that they will pretend that this interdiction is an attack upon free trade;—perhaps they will even have the audacity to protest in the name of humanity and the interests of the pilgrims! We know to what extent the tenderness of speculation can reach! But we can assure the charitable souls who may employ this language, that we care a great deal more than they do for the true interests of the pilgrims, though we do not forget at the same time that our mission is to save Europe. As for mercantile pretensions, as for the right to freely import cholera wherever interest and speculation may require,—besides that such pretensions are odious, we maintain that they are founded upon a false appreciation of the true interests of commerce, which, when considered as a whole, and not from a limited point of view, are quite in harmony with those of the public health; so that altogether, if these objections are urged, we think that it would be easy to give a fitting reply to them in every point of view.

To sum up, the Committee is of opinion that, *in the event of cholera showing itself in the Hedjaz at the time of the pilgrimage, it would be proper to interrupt temporarily, viz., during the existence of the epidemic, all maritime communication between the Arabian ports and the Egyptian seaboard.*

The suitable application of this measure supposes the existence of a sanitary service organised on the coast of the Red Sea, as has been shown before, and also the presence of a sufficient military force, as well to maintain order among the pilgrims as for the maritime police. In this latter point of view it would be desirable if the Governments interested were to come to a mutual understanding in order to ensure the execution of the prescribed measures.

This being so, the Committee thinks that the execution of the measures might be proceeded with as follows, with such modifications,

as, *without affecting the fundamental principle of the measure*, might be deemed, by the International Commission sitting at Suez, adapted to facilitate its application :—

1st.—In the event of cholera breaking out amongst the pilgrims, the sanitary physicians in the Hedjaz should report the fact to the local authorities, as well as to the men of war stationed off Jeddah and Yambo. Moreover, while noting the fact on the bills of health, they should send advice of it to Egypt and El-Wesch.

2nd.—On the receipt of the declaration from the abovementioned physicians, the authorities should inform the pilgrims that those amongst them who might wish to embark for Egypt would have to perform quarantine at El-Wesch before being allowed to land in that country, and they should warn them at the same time that they were at liberty to take the land route.

3rd.—The embarkation should be effected under the direction of the sanitary authorities under the conditions determined and in the port assigned by them.

4th.—The men of war should assist in ensuring the execution of the prescribed measures; they should act as sea-police, and should keep as strict watch as possible in order to prevent clandestine departures.

5th.—On the receipt of advice of the presence of cholera amongst the pilgrims, the Egyptian sanitary authorities should bar entrance into all the Egyptian ports of all arrivals from the Arabian coast, and should send back all delinquent ships, after having furnished them, if necessary, with supplies, to a place on the Arabian coast, El-Wesch or elsewhere, to perform quarantine conformably to the rules adopted.

6th.—The pilgrims conveyed to El-Wesch should be kept there in quarantine, and should not be allowed to start again for Egypt until after ten full days subsequent to the disappearance of cholera amongst them, and the disinfection of their clothes and baggage. On leaving El-Wesch the ships carrying them—that is, those bound to Suez—should be obliged to touch at Tor, where they should be subjected to observation for 24 hours, and to a medical visit with a view to ascertain their sanitary condition. A clean bill of health and permission to continue their journey should not be given unless the sanitary condition of a vessel is admitted to be free from danger.

7th.—The caravan for Egypt should *halt at its usual station*, near El-Wesch; there it should be subjected to a medical visit, and it should not be permitted to continue its route until after having been free from cholera for 10 days.

8th.—As for the pilgrims bound to India and other countries on the further side of the Red Sea, they should be at liberty to embark for their homes, but they should be made, in doing so, to submit to the rules prescribed by the sanitary authorities of the port of embarkation.

9th.—Maritime communications between the Hedjaz and Egypt should not be re-established until ten days at least after the cessation

of every indication of cholera in the Hedjaz, officially declared by the sanitary authorities of Jeddah. But then, and indeed always, ships carrying pilgrims bound to Suez should be obliged to touch at Tor, and stay there for 24 hours, and be subjected to a medical visit, as said above. The sanitary authorities of Suez, would be at liberty to send back to Tor every ship not complying with this formality.

10th.—The penalties incurred for all infractions of the prescribed measures should be prescribed and regulated by the International Commission. The English Regulation (the Native Passengers' Act) would be an excellent model to follow on this head.

(Adopted unanimously, with the exception of Dr. Salem Bey, who differed in some points).

### VIII.

#### *Measures to be adopted in the event of cholera breaking out in Egypt.*

Supposing that, in spite of all the precautions taken, or on account of the want of suitable precautions, cholera should manifest itself in Egypt, we ask:—What in this case is to be done in order to preserve Europe? It may be answered that then the measures generally put in force against cholera would be applied to Egyptian arrivals. But this reply, rational as it is, only partially satisfies us. We believe that, in depending upon the working of the said measures, Europe would run great risk of being invaded by cholera from one point or another, and it is known that then, whatever might be done, it would be difficult to arrest the generalisation of the disease. Egypt is, so far as concerns cholera coming from the Red Sea, a real defile, through which the disease must necessarily pass in order to penetrate into Europe; but it is a defile on leaving which an immense radiation takes place by the considerable maritime relations with the basin of the Mediterranean. As a defile, as a gate to be passed through, Egypt presents a natural obstacle which may be put to profit by concentrating the means of action there, while, if we content ourselves with opposing here and there the morbid radiation which proceeds from that country, it is sufficient to have one weak point in our defence against such a subtle enemy as cholera to make Europe lose all the benefit of the measures generally adopted. Let any one point on the Asiatic or European coast be carelessly watched, let an unfaithful or negligent agent permit any infringement of rules, and the entire economy of your defensive system is destroyed. Some countries, in an exceptional position, may still be able to defend themselves, but the greater portion of the Continent will not escape invasion by the disease.

All Europe then is as one with regard to this question, whether in a commercial or sanitary point of view. The negligence or improvidence of one country will fall upon all.

Now, if it is easier to defend ourselves against an invading enemy by closing the narrow door through which he must necessarily pass

than by meeting him in the open field, each separately on his own account, it is clear that it is most desirable and that it is a matter of common interest that the door of exit of Egypt should be closed against cholera. In a sanitary point of view there is no doubt upon this head.

Let us assume that, instructed by the experience of last year, and impressed, as we are, with the certainty almost of preserving Europe by placing obstacles in the way of cholera leaving Egypt, the European Governments decide on interrupting, during the existence of the choleraic epidemic, all maritime communications with that country by means of a blockade, and let us see what would happen.

In Egypt the epidemic would follow its course, and would carry off no more and no fewer victims than if the door leading to Europe had been left open to emigration. Experience has shown how unfounded are the apprehensions that, in such a case, a prolongation of the ravages of the epidemic may ensue. And, moreover, the obstacle to maritime emigration would in no way prevent the inhabitants from spreading themselves about in Egypt herself: desert spaces and means of encampment are not wanting. In all probability, the epidemic would have passed through all its phases, and become extinct in two months; for, in these hot climates, choleraic epidemics march much more rapidly than in Europe. We should have to reckon then about two months of interruption of maritime communication between Egypt and the basin of the Mediterranean. It need not be said that this interruption would not apply to certain urgent communications, which might be effected without danger with the indispensable precautions.

Thus, it is clearly evident that if, by such an interruption, we should succeed in preserving Europe from invasion by cholera,—even though Egypt might have to suffer a little more, which we do not believe,—we should have rendered a great service to humanity.

“But,” it will be said, “consider the immense interests of commerce, the transit to India through Egypt, the Suez Canal? Do you think that so many interests of the highest order will be reconciled to such an interruption, and allow it to be realised?” We admit freely that these great interests will look at the measure with an evil eye, and we have not the least doubt in the world that they are powerful enough to prove obstacles to it. But the question for us is not that: we are simply bound to show that the interests of all the trade of Europe, rightly understood, even those of the communications with India, would not be opposed to the temporary interruption of communications between Europe and Egypt if the result of that interruption were to be to guarantee Europe against invasion by cholera.

And in the first place, let it be seriously considered that, in admitting the practical execution of the various measures we have pro-

posed for the Red Sea, it is to be believed that the contingency supposed by us will never arise and that, if it does, there will only be a choice between two evils, either the damage limited to the temporary interruption of communications with Egypt, or the immense damage caused by an almost certain invasion of Europe by cholera. Now, putting aside the question of humanity for the moment, let commerce take the trouble of reckoning up, of putting into figures the one and the other damage, and see to which side the balance would incline. We ask whether, everything being taken into account, commerce in general, even the powerful companies possessing the privilege of rapid communications with India, would not perceive, as we do, that the damage which has been inflicted upon them for more than a year past in consequence of the importation of cholera through Egypt,—damage which does not appear to have terminated yet—is not greatly in excess of all that might result from the interruption under mention?

This, in our eyes, is the position of the question in the commercial point of view.

Though, to our thinking, the reply is not uncertain, especially if it be given also in the humanitarian point of view, we content ourselves with laying down the question, inviting to it the solicitude of the Governments we represent.

The question to be solved should be framed thus:—*In the event of an epidemic of cholera, coming from the Red Sea, breaking out in Egypt,—Europe and Turkey being otherwise unaffected,—would it not be proper to put a temporary stop to maritime communications between Egypt and the entire basin of the Mediterranean?*

(Adopted unanimously, with the exception of Dr. Salem Bey.)

#### B.—MEASURES AGAINST THE IMPORTATION OF CHOLERA FROM INDIA INTO EUROPE BY SEA.

We have here in the first place to consider Persia in connection with the means, the application of which is conceived, of guaranteeing that country against cholera coming from India, and with regard to the measures which might there restrain the development of choleraic epidemics. Then we shall have to examine the precautions which will have to be taken by Turkey and Russia in order to preserve themselves from invasion by the cholera prevailing in Persia or the neighbouring countries.

### IX.

*Measures to be taken in Persia; organisation of a sanitary system; precautions in regard to pilgrimage; the conveyance of corpses, &c.*

It has been seen by what routes cholera penetrated into Persia, how, to the north-east, Herat was in some sort of necessity the door through which cholera leaving India, and coming through Afghanistan by Candahar or Cabul, reached Meshed and thence

spread itself over the entire face of the country. We have shown that if the strategic importance of the position of Herat were no less great in the point of view of cholera than in a military point of view, it would unhappily have to be taken into account that Persia, which moreover does not hold possession of Herat, had not sufficient means of action to protect the town of Meshed on this side. We can, therefore, only bring to notice the importance of this strategic point without dilating further upon it.

Once cholera reaches Meshed, the important pilgrimage of which that town is the theatre, becomes, as in India, the chief sustenance and principal cause of the propagation of the disease. To this must be added the numerous commercial relations of which the town is the centre. But the pilgrimage which is most interesting to the question with which we are occupied, as well on account of the number of individuals composing it, and the peculiar circumstances it presents, as because it is a frequent cause of the importation of cholera into Turkey, is that which takes place at Kerbelah and other places in the vicinity of Bagdad, which are held in peculiar veneration by the Sheahs. This pilgrimage is performed during the whole year; but the great assemblage takes place especially during the month of Mohurrum. At that period the number of Persian pilgrims who assemble in the environs of Bagdad sometimes exceeds sixty thousand. They congregate from all the provinces of Persia in caravans which, for the most part, converge at Kermanshah, a town situated at a little distance from the Ottoman frontier, so that the bulk of the pilgrims arrive from that direction. The greatest number pass the frontier at Khaneguin, others in the vicinity of Mendeli, others again near Suleimanieh. A smaller number from the southern provinces come in by Mohammerah; and lastly, the smallest number, composed specially of Indian pilgrims, take the sea route and land at Bassora.

This pilgrimage then produces in Persia every year, towards the month of Mohurrum, a great converging movement of caravans towards Mesopotamia, and later a contrary movement; so that, in one way or another, these caravans are, in Persia as well as in Mesopotamia, the propagating agents, *par excellence*, of cholera.

A particular circumstance, which adds to the disadvantages of this pilgrimage, is that the Persians have the custom of carrying with them the remains of their relatives and friends, in order to afford them sepulture near the tombs of the great Imams held in veneration by the Sheahs. These human remains, exhumed in various stages of decomposition, are enveloped in felt, placed in sacks, in panniers, and sometimes in chests and slung across the backs of horses or camels. All these exhale an infected odour. But the worst is that the corpses of those who die on the road are added to the others, so that the nearer a caravan approaches its destination the richer it becomes in putrefying corpses; and if the mortality is at all considerable, which is not rare, these caravans resemble moving charnel-houses, spreading fetid exhalations to a great distance around. It has been said in the

*General Report* that, when the Persian pilgrims arrived at Kerbelah free from cholera, it was not observed that the corpses they carried with them had originated cholera amongst them, so that it could not be said that it was seen that they were a generating cause of the disease; but, on the other hand, it seems to be clearly established that the putrid miasma exhaled from the corpses is an aggravating circumstance when cholera prevails during the pilgrimage.

From these details, added to those afforded relative to the frequency of epidemics of cholera in Persia, we think it is evident that, in Persia, quite as well as in India, pilgrimages are a principal cause of the development and propagation of cholera; and we conclude from this that if, in the actual state of things, it be not in the power of the Persian Government to secure itself against the importation of cholera from India, by sea or by land, it is at any rate permitted to it to make some efforts to diminish extension of the disease on its own territory.

We estimate that, with this object in view, it is absolutely necessary, in the first place, to institute in Persia a sanitary system organised on the model of that working in the Turkish Empire, *viz.*, composed of a central administration supported by a Board of Health, half of it consisting of Europeans, and having under its direction sanitary offices scattered over all the important points of the country.

Amongst the localities in which it appears to us that it would be of great importance to have a sanitary office provided with a special medical officer, we place in the first rank Meshed, Kermanshah, and Tauris. The town of Meshed, as a centre of commerce and pilgrimage, and by its position, is peculiarly exposed to the invasion of cholera from Afghanistan.

If Persia could with safety maintain a sanitary physician at Herat, we would recommend her to do so on account of the extreme importance of that locality, which is the door for cholera. This should be a post of observation.

We point out Kermanshah as the rendezvous to which converge the greater number of the pilgrim caravans bound to Kerbelah, and Tauris as the commercial centre for all Persian produce, and whence two great roads diverge, one leading to the Russian trans-Caucasian provinces, and the other to the Ottoman territory.

The functions of these principal offices, which might have a number of secondary posts subordinate to them, should in the first place be to collect precise information on the sanitary state of the country; but their special object should be the sanitary police of the pilgrims and generally of all the caravans.

If the Persian Government thought it could organize a system capable of defending the country against the importation of cholera by sea, it is needless to say that we should applaud the establishment of a suitable sanitary service on the coast of the Gulf, notably at Bender-Abbas, in concurrence with the Imam of Muscat, at Bender-Bushire, and at Mohammerah.



As for the Persian pilgrimages, it seems to us that all the hygienic and other measures we have approved for India would be equally applicable in Persia; we even believe that the application of the most important of those we have recommended would be greatly more easy. Thus, for instance, the suspension or suppression of all pilgrimage in time of cholera would without doubt be the most efficacious of all these measures. In India there might perhaps be insuperable obstacles to this; but in Persia it would not be so, according to our colleague, Dr. Polak, who has informed us that the Shah of Persia has twice already forbidden pilgrimage under similar circumstances. We believe, therefore, that such a prohibition ought to be the rule in times of epidemics of cholera. We believe also that the system of *teskerehs* or pilgrim passports, delivered only to those possessing the means of performing the journey, ought to be put in force in Persia.

Regarding the exhumation and transport of corpses, it does not seem to the minds of the Committee that such a custom, bound up as it is with accepted and respected traditions, can be imperiously suppressed, in spite of the fatal results attaching to it; but we are persuaded that it would be possible to the Persian Government to render the custom inoffensive by certain simple precautions, *viz.*, 1st, not by permitting the exhumation and transport of corpses except during the three winter months, a rule which exists but has fallen into desuetude; 2nd, by requiring that the corpses, fresh or putrefied, should be embalmed by means of disinfecting substances, amongst which we would note the bituminous matter to be found in abundance in the country through which the caravans pass on their way to Kerbelah; 3rd, by requiring also that these corpses, thus embalmed, should be enclosed hermetically in metallic cases, in tin for instance, which can be had at a moderate price in Persia. We should wish the authorities to oppose the transport of the corpse of any recently deceased persons unless these precautions have been used.

Thus, in our opinion, Persia would not have to undertake any great works of sanitation, for except to the south on the borders of the Gulf, and to the north, on the shores of the Caspian Sea, the country is generally healthy; but it has great need of a sanitary organisation, the object of which should specially be measures of hygiene and police applied to pilgrimages and arrivals by sea. In doing this, Persia would be the first to reap the chief advantages, inasmuch as she would most undoubtedly be less ravaged by cholera; and then she would be justly entitled to the gratitude of her neighbours and of all Europe, which, in consequence of these measures, would run much less risk of being invaded by the scourge.

#### X.

##### *Measures to be adopted on the Turco-Persian Frontier.*

The object of these measures should be to guarantee the Ottoman territory against cholera coming from Persia by land, or by the Persian Gulf. It has been seen that, with this object in view, a line

of defence, more or less well organised already exists, from Bassorah and even from Faô, at the mouth of the Shatt-el-Arab, to Bayazid to the north, the line being prolonged, marching with the Russian frontier, as far as Batoum on the Black Sea, in case the trans-Caucasian provinces should be invaded.

Sanitary posts exist along the whole of this line, which we shall enumerate, proceeding from north to south.

First, *Batoum*, of which we have just spoken and which watches arrivals by sea as well as by land from the trans-Caucasian provinces, next *Ardahan* and *Karvs*, which command the principal roads leading from the same provinces. Each of these posts is the residence of a sanitary medical officer, and may, at need, without much difficulty—considering the small number of practicable roads—intercept the greater part of the communications between the one country and the other.

The Turco-Persian line commences at Bayazid, at the foot of Mount Ararat, in that bastion-like prolongation of the Ottoman territory on the Persian side. There, as we have already said, passes the great road leading from Tauris to Trebizond. At the same time, however, this road does not pass through Bayazid, but leaves it at four hours' march to the right, and leads through a passage near the frontier, at *Kizzil-Diza*, where there is a great lazaretto, where travellers and caravans coming from Persia perform quarantine, when necessary. This lazaretto should be completed in more than one respect for the security of the country and the accommodation of the persons in quarantine. To this post is attached a physician and a complete staff for the work.

More to the south, and on a road which also leads to Tauris, passing by *Khoi*, is the sanitary office of *Kotur*, the residence of a medical officer. This office is placed at the extreme limit of the Ottoman territory, 18 hours' march to the East of Van, and, considering the absence of a lazaretto, is rather a post of observation, and, at need of repulsion, than a quarantine station. In case of need, however, it would be possible to make some provisional arrangement there. In the space lying between *Kizzil-Diza* and *Kotur* offices are stationed to watch the frontier which, on occasion, are assisted by mounted patrols.

All these offices or sanitary posts, which have just been enumerated, are under the control of a central office at *Erzeroum*, where a medical inspector of the whole department resides.

On this part of the frontier, as is evident, the elements exist of an organisation, still imperfect no doubt, but which may be brought to perfection and rendered really efficacious by means of a small but judicious expenditure.

To the south of *Kotur*, descending as far as *Revendouz* and *Khoi*, *Sanjak*, we find the worst guarded part of the line, a part where, at certain points, there is even no watch at all. But it must be said that this part of the frontier corresponds to a very mountainous region in-

habited by Kurd shepherds who are almost entirely independent and pay very little respect to territorial limits, passing from one country into the other without scruple according to the requirements of their flocks. It can be easily conceived that under such conditions, sanitary surveillance cannot easily be organised. By way of compensation, on account of the difficulty of access and the little communication of this group of mountains with the neighbouring provinces, cholera has no tendency to traverse this region. It is in the southern part from Suleimanieh and Revendouz, that we have seen it this year for the first time reach Persia by Saouk Boulak.

The first sanitary post of the southern portion of the line is at Revendouz, or rather at some hours' march to the east of the town, in a defile of the road, which leads across the mountains from Mosul to Persia. This passage was evidently very badly guarded this year, since cholera cleared it.

Advancing towards the south, we meet with the most important posts of this frontier, *Suleimanieh*, *Khaneguin*, and *Mendeli*: the two last especially situated on the roads followed by the great majority of the Persian pilgrims. These three posts are occupied by sanitary physicians, who, as well as the whole department of the provinces, comprising that of Bassorah, are under the control of the central office at Bagdad, where an inspector-general resides.

After all that has been said regarding the importation of cholera into Bagdad by this part of the frontier, it must be admitted that if this department can give good information regarding the invasions prevailing in this direction, it has hitherto been powerless to protect the Ottoman territory from invasion by cholera. This powerlessness is owing to various causes; the extreme difficulty of guarding such an extended frontier, the insufficiency of the means adopted with this object in view, the hesitating and weak support and sometimes the bad faith of the governors of the province,—all these circumstances have rendered the zeal of the sanitary officials useless. We believe that it is necessary that the Ottoman Administration should bring this department to perfection.

The portion assigned to the defence of the province against maritime arrivals from the Gulf is still more insufficient. A sanitary post established at Bassorah is the only one on this side to protect the Ottoman territory against choleraic importations; and this post again has such a reputation for unhealthiness that, for a long time past, it has not been found possible to get a Medical Officer to occupy it. Lately another post has been added to this, nearer the sea, at Faô, towards the mouth of the Shatt-el-Arab, but even if this latter post were occupied by a Medical Officer, as decided by the Council of Health, it would not suffice to guarantee the province against pilgrims arriving *via* Mohammera and avoiding Bassorah.

In the direction of the Persian Gulf then we find an insufficiency of means, and consequently a dangerous way opened for the importa-

tion of cholera. The Ottoman Administration ought to look to this matter seriously. As for ourselves, taking into account the difficulties of every kind presented by a complete organisation in this direction, it seems to us that it would, perhaps, be the wisest course to revert to an old plan of defence which protected Bagdad, towards the south, by sanitary posts supported by the barrier formed by the Tigris and Euphrates before their confluence at Korna. Without going into further detail, we invite the attention of the Ottoman Administration to this point.

We come now to the question of the measures to be adopted in the event of cholera breaking out in Persia.

With regard to the northern part of the line, the principal passage through which is at Kizzil-Diza, as the gathering on this side is never so great as to cause injurious crowding, and as only a small number of pilgrims bound to Mecca come here, we believe that the ordinary measures of quarantine would suffice, more particularly as cholera has never penetrated by this way. We admit, however, that extraordinary circumstances might arise requiring exceptional precautions, which might be carried as far as the temporary interruption of communication, such a circumstance, for instance, as the occurrence of a serious epidemic on the frontier simultaneously with an assemblage of troops in the vicinity.

The southern portion of the line, from Revendouz to the Persian Gulf, ought to be, we think, the object of greater precautions on account of the pilgrimage. Whatever may be the vigilance and the energy of the co-operation of the authorities on this frontier, we cannot admit that, if cholera were to prevail in Persia among the pilgrims on their way to the Ottoman frontier, it would be possible to impose an efficacious quarantine on such a large number of persons travelling together. Experience has shown that in such cases the quarantine has always been broken through or eluded, and that cholera has invaded the province of Bagdad.

With a view to avoid such a misfortune, we are of opinion that, on the receipt of news of the appearance of cholera in Persia—and such news ordinarily spreads with great rapidity—if the period of the ordinary gathering of the pilgrims is at hand, the governor of the province of Bagdad should come to an understanding with the Persian authorities either entirely to suspend the pilgrimage, or to allow only a limited number of pilgrims to proceed in small groups to the frontier, whence, after performing quarantine, they might be allowed to continue their journey to the holy places. It is unnecessary to say that such a measure presupposes a previous agreement upon the matter between the two Governments.

When cholera does not exist, communication between the two countries might be freely allowed without disadvantage, provided that sufficiently correct information exists of the sanitary state of Persia.

As for corpses, in consequence of what we have said before, they should not be admitted at any time into Ottoman territory, except when embalmed under the specified conditions.

Maritime arrivals from the Gulf ought constantly to be the object of attentive watch at Faô and Bassorah, in such a way as to subject all suspected arrivals to a suitable quarantine. For further security, it would be very desirable if all ships navigating in these waters should be made to provide themselves with bills of health. In order to attain this object, it would be necessary that the Porte should come to a friendly understanding with Persia and especially with the Imam of Muscat, whose flag waves over almost the entire navigation of the Gulf. As for ships coming from British possessions, there is no doubt that they will at once submit to this formality.

It will be seen that what we require for the security of the province of Bagdad requires abundant good-will on the part of the Persian Government, and energetic co-operation on the part of the Ottoman authorities.

## XI.

### *Measures against the importation of cholera through Bukharia and the steppes of Tartary.*

The Conference should, for a time, transport itself with the Committee to the banks of the Oxus and as far as the Jaxartes, in ancient Bactriana, in scarcely known countries, inhabited by a fierce people, hostile to foreigners, especially to Europeans, and in which a few intrepid travellers only have been able to set foot at the peril of their lives. We speak of all that country situated to the south-east of the Caspian Sea, and which, bounded to the south by Persia and Cabul, to the north by the Jaxartes, now the *Ser-Daria*, extends to the frontiers of the Chinese Empire. This vast region comprises, from the west to the east, the country of the Turcomans, Khiva, not far from the Oxus (the *Amou-Daria*), and the deserts surrounding it, then the country known under the name of Great Bukharia, comprising to the south the territories of Balkh and Koondooz, and to the north Khokhan, separated from Bukharia Proper by the *Ser-Daria*. Of all this immense extent of country,—which, if the hopes we cherish be realised, will soon be brought under the influence of European civilisation,—the latter portion, that is, Bukharia, is of particular interest to our subject. There we find fertile and populous districts, important towns, notably Bokhara, centres of considerable trade: there, in short, an Asiatic civilisation flourishes, barbarous no doubt, but very superior to that of the adjoining nomadic hordes.

Bukharia has often been visited by cholera. From data collected on this point by Dr. Polak, we find that most frequently the disease reaches the country from *Meshed* with the caravans which keep up important commercial relations between that town and Bokhara. This,

however, is not the only route; for it seems proved that in 1828 and in 1845 cholera was imported there from Afghanistan *vid* Cabul.

Be this as it may, we know—and this is what interests us here—that in 1829 cholera, leaving Bukharia, was able to make its way across the steppes of Tartary and reach Orenburg, at the doors of Europe, where, on that occasion, it died out.

How was this invasion effected? and why is it we can be almost certain that it will never recur? This is what the Committee proposes to explain by the aid of the valuable information furnished to it by one of its members, Dr. Bykow.

We have a word to say first, regarding the steppes traversed by the caravans in proceeding from Bukharia to Orenburg and other parts of the Russian territory. From the river Ural to the Sari-Sou and the Ser-Daria, they comprise a superficial extent of about seventeen thousand square leagues. They are almost desert plains, covered in spring with brushwood and immense grass, and cut up into arid, sandy expanses, impregnated with salt towards the borders of Lake Aral. The general absence of forests and trees, as well as the scarcity of running water, form the chief characteristics of these steppes. An insignificant space only is occupied by cultivated fields, and these are scarcely seen except on the banks of the Ser-Daria and its affluents. The most considerable sandy deserts to be found in the path of the caravans from Bokhara are the Kizzil-Kouhm, between that town and the Ser-Daria, then the Kara-Kouhm, which extends to the north of Lake Aral. The caravans journey a distance of 180 versts, 160 of which are entirely unprovided with water, through the Kizzil-Kouhm, and 400 versts through the Kara-Kouhm. Beyond this desert, between Lake Aral and the Caspian Sea, we find a chain of mountains, known under the name of Monkoh-Char, which, on their further slopes, lose themselves in the arid and sandy plateau of Oust-Ourt, which ends, to the west, in a steep incline.

The greater number of the Kirghiz tribes, those especially of the great Horde, are still migratory; but there are others, whose numbers have been increasing for some years past, who encamp in the same spot every winter.

The distance between Bokhara and Orenburg is about 2,000 kilometres, which are traversed by the caravans in two months or more, according to circumstances. The caravans from Bokhara proceed to Orenburg, Orsk, and Troitzk; those from Tashkend, near Khokhan, on the further bank of the Ser-Daria, proceed to Troitzk and Petropaulovsky, and those from Khiva go to Orenburg and Astrakhan, touching at Saraitchyk, near the mouth of the Ural.

The annual number of caravans from each of these towns varies from two to four. They reach their destination ordinarily during the months of April, June, and July.

The most difficult part of the journey for the caravans from Bokhara, on account of the extent of the desert spaces, is that before

reaching the Ser-Daria and the places where it can be passed. After the passage of the river, inhabited places, are less rare on the right bank which is skirted by the caravans for some time, while approaching Lake Aral. Their route is always the same, because they meet with fewer natural obstacles there, and provisions and water are more easily procurable than anywhere else.

The immense extent of the steppes, where the only population met with is dispersed in small nomadic groups, the deserts to be got over, the length of the journey from Bukharia as far as Orenburg, added to the custom of the Tartars to abandon to the mercy of Providence in the steppes those of their sick whom they suppose to be suffering from contagious diseases, are incontestably serious obstacles to the propagation of cholera. Under such circumstances, it may easily be conceived that the disease has only once succeeded in forcing a passage.

There remains but to show that what occurred in 1829 will probably never again recur.

It has not yet been found possible to decide exactly whether cholera was imported into Orenburg by the caravans from Bokhara, or by the Kirghiz tribes in the vicinity of the town. When the disease suddenly made its appearance in the month of August, amongst the military of the garrison and afterwards amongst the inhabitants, a report had already been in existence for some time that cholera was present among the Bokhara Tartars who had come with the caravan, and amongst the nomadic Kirghiz of the adjacent steppes. Be this as it may, it is certain that the disease did not break out in the town until after the arrival of the caravan from Bokhara and after the sale of the goods it had brought.

Now, at that period, the boundaries of the Russian Empire, in this direction, were not nearly what they are now. The River Emba, which loses itself in the north-east of the Caspian Sea, and an almost straight line, traced from its source to the fort of Orenburg, then formed the frontier. No watch could be exercised over the Kirghiz hordes dispersed beyond this limit; and the river Ser-Daria offered an easy mode of free communication to the nomadic tribes encamped on both its banks. With the aid of boats and rafts, they took over the produce of Khiva and Bokhara, which the Kirghiz of the right bank afterwards came to exchange for Russian goods. Though this intercourse, indeed, was not very great, it constituted a danger by reason of the absence of all sanitary supervision, and it can easily be understood that, proceeding from place to place, cholera may have thus been able to reach Orenburg unexpectedly.

At present the situation is altogether different. The river Ser-Daria has become the frontier of the Russian Empire; military posts have been established there to guard the principal passages. It is the duty of the medical officers stationed in the forts built on the banks of the river to inspect the sanitary condition of the Kirghiz

hordes, and the passing caravans. At present, therefore, an important barrier has been erected under the best circumstances, in addition to the natural obstacles afforded by the country ; and this is what makes us say that, when the Russian Government, resting upon this already well organised base, shall have decided on putting measures against cholera into force, there will be but little probability of cholera reaching us from this side.

As for an importation of the disease across the steppes extending between Lake Aral and the Caspian Sea, the thing seems impossible, considering that these steppes are almost desert.

Thus, thanks to the measures already adopted by the Russian Government in the direction of Bukharia, and to the complement which no doubt, it will deem proper to add to them, it seems to us that Europe need not henceforth apprehend an invasion of cholera across the steppes of Tartary.

## XII.

### *Measures to be adopted on the Russo-Persian Frontier.*

The question which now remains to be treated of here is, without a doubt, one of the most important to the object to be attained, since it consists of nothing less than opposing an obstacle to the march of cholera by the land route it has generally followed in penetrating into Europe. You will permit us then to enter into certain details on this subject, by which we shall be enabled to show, with some precision, where the danger exists on this side, and where, consequently, preventive measures are especially necessary. We must say, in the first place, that all the details into which we have to enter have been communicated to us by our colleague, Dr. Bykow.

Cholera has thrice been imported with certainty from Persia into Russia, viz., in 1823, in 1830, and in 1847. We leave aside the importation of 1829 into Orenburg, which came from Bukharia, and which, as is known, died out without effect.

The importation of 1823 also resulted in nothing disastrous to Europe; the disease died out in Astrakhan. But its march is curious to follow. In 1822, cholera, which prevailed in Persia, invaded the provinces of Mazanderan and Ghilan, situated on the southern and south-western shores of the Caspian Sea. After having languished there during the winter months, the epidemic reappeared in April 1823 at Bekht, and, skirting the coast, it passed the Russian frontier at Astara in June, showing itself in the Khanat of Talych, now the district of Lenkoran. This town was attacked on the 29th June, but its appearance was short. On the 13th July, it declared itself at Kourgalak, a village five kilomètres distant from Lenkoran. On the 16th it appeared in the islands of Salian or Sari, near the mouth of the Kour, and soon spread to the town of Salian, situated on the river. From Salian, the disease, proceeding up the river, spread in various directions; it attacked several villages in the lower valley of the



Shirvan; then, through the defiles and low lands, it proceeded towards the Kouba, appearing there on the 25th August. Not till the 11th September did cholera make its appearance at Baku on the Caspian Sea to the south-east of Kouba. Finally, on the 22nd September, the disease broke out suddenly at Astrakhan, where the first cases recorded in the marine hospital, were those of two sailors belonging to the same crew. This was the first appearance of cholera in Europe.

The importation of 1830 followed precisely the same route, with this difference that, on this occasion, the disease did not die out on the road, but took the invading march we are acquainted with. Thus, during the autumn of 1829, cholera raged in the northern provinces of Persia; it seemed to die out in the winter; but, in the spring of 1830, it reappeared in the province of Ghilan, at Recht, and at En-selli on the Caspian Sea. Towards the middle of June the disease declared itself in the province of Shirvan and at Salian, whence it spread in the districts of Baku, Kouba, and Derbend, in the Khanat of Talyeh, the province of Sherka, and the district of Elisabethpol. From this latter town, the disease, proceeding up the Kour, attacked Tiflis at the end of July.

At the same time the disease proceeded up to the west of the valley of the Kour, and, on the 4th July, manifested itself at Sedlistow, a quarantine station at the mouth of the Volga, on a brig of war, named the *Bakou*, which had arrived from the island of Sari. On the 20th July, the disease broke out at Astrakhan, without its being found possible to decide exactly how it had come from Sedlistow, which was 90 versts away. On the 4th August, proceeding up the Volga, the disease reached Saratow.

The third importation from Persia into Russia—that of 1846-47—reproduced almost the same circumstances as the former. It was again from the province of Ghilan that cholera spread, in October 1846, to the districts of Lenkoran and Salian, soon reaching Shemakha (8th November,) Baku (14th November), and Derbend in December. After an apparent extinction in the winter months, the disease reappeared in April 1847, in the districts of Samour, Kouba, and Derbend, and then spread to Temir-Khan-Showry. From this latter town it was transmitted to Kisliar in June by a detachment of invalid soldiers sent to the mineral waters. From Kisliar the disease spread among the Kalmucks scattered about the steppes as far as the Volga. The epidemic broke out at Astrakhan on the 16th July, and again it was not found possible to determine exactly how it was imported. Some maintained that the Kalmucks had brought it in, others put the blame on the arrivals by sea. The fact is that the first cases were observed on the 15th July in a quarantine establishment in an islet named Birutchaja-Kossa, whence the disease appeared to spread to the town.

In the same way as in the preceding epidemic, while the disease was skirting the shores of the Caspian, starting from Salian it pro-

ceeded up the valley of the Kour, and, while radiating in various directions, it reached the town of Tiflis on the 29th May. It is to be noted that, before reaching Tiflis, the great road to that town from Baku diverges into two great branches, one to the south, passing by Erivan, Nakhshivan, Joulfu, Ordoubaz, and going on towards Tauris. It is the great way of communication with this part of Persia. The other branch leads to Alexandropol to the west, and joins the road to Kars. Now, the cholera, at the same time that it advanced upon Tiflis, entered both these branches, by one of which it re-entered Persia, while by the other it reached Kars and invaded Turkish Armenia.

From Tiflis, following the road leading to the coast, the disease spread in the districts of Gori and Koutais, and reached Redout-Kaleh on the Black Sea, whence it was imported into Trebizond.

To the north of Tiflis the epidemic followed the great military road traversing the Caucasian chain at a height of 7,000 feet, and made its appearance at the end of July at Stavropol on the further slopes.

As for the epidemic which prevailed in 1852 in the district of Erivan, and which must have been the remains of a fourth importation from Persia, we have no details of it. It appears only from official documents that the disease crossed the frontier (at what point?) towards the end of August, and that, in the district of Erivan, there were, down to the 8th January 1853, sixty-four deaths among the military.

From this rapid but very interesting review, it appears most clearly evident, that, in the three first invasions of Russia by cholera from Persia, the disease always came from the Persian provinces bordering on the southern and south-eastern coasts of the Caspian Sea (Mazanderan and Ghilan), and that it always followed the same route in its march, except, perhaps, in the epidemic of 1852, spreading from Recht to Lenkoran and Salian, probably by sea; that, once arrived at Salian, *i. e.*, in the marshy delta of the river Kour, the disease marched in two different directions. On the one hand, spreading in the lower valley of the Shirvan, it took a northerly direction, skirting the coast, and attacked in turn the towns of Baku, Kouba, Derbend, Temir-Khan-Showry, &c., then it showed itself at Astrakhan, making use in all probability of means of maritime transport in order to arrive at that town. On the other hand, we see it proceed up the valley of the Kour, reach Tiflis, and, by the roads of communication, spread in the trans-Caucasian provinces, return to Persia by the south, reach the coast of the Black Sea and the Ottoman territory by the west, and even pass over the Caucasus to the north by the military road traversing the chain.

On this side then we see a road for which cholera has a predilection, the stages of which are so to say, marked from Recht; and it is clearly evident that, on these marshy and unhealthy coasts, the con-

ditions favorable to the development and propagation of the disease exist in the highest degree.

But if we consider these things closely, it is easy to see that this very dangerous route is rather narrow at its point of departure, and that the great probability of propagation does not commence till after the invasion of the delta of the Kour by the disease, because then only does it commence to radiate in every direction, to the north along the coast, as well as to the west by the valley of the Kour and the roads traversing it. When cholera prevails at Recht or at any point on the coast, in proximity to the Russian frontier, no doubt the danger is menacing; but defence is not altogether impossible, since the chief thing to be done is to be on guard against maritime arrivals, as the land route on this side is little frequented, and is confined somewhat close to the mountains, which are easy of defence. But after the arrival of the disease at Lenkoran and especially at Salian the question changes, and it may already be predicted that, unless very energetic efforts are made, perhaps in spite of everything, cholera will spread and threaten Europe in two directions by Russia Proper and the Black Sea.

The experience of the past, in harmony with good sense, shows us, therefore, that the most important position to be defended against the invasion of cholera is the delta of the Kour. Is this defence practicable? Can this entrance for cholera be closed, either on the land side at Astara on the frontier, or in the direction of the sea at Lenkoran and Salian, or rather at the islands of Sari, which are close to it? We cannot say; but we are firmly convinced that the Russian Government, which is so interested in the question, will not neglect the necessary means to effect the object. This, of course, of itself assumes an effective supervision on the whole Russian coast of the Caspian, and means of quarantine organised on new bases in the principal ports having relations with Persia, notably at Baku and Astrakhan, where, moreover, lazarettos already exist.

In regard to the line of defence on the land side, it already comprises a certain number of sanitary posts, the principal of which are at Astara, Belasouwar, Jebraeel, Sharowrah, and *Joolfa*, on the road leading from Tauris to Nakhshivan, and where a quarantine station exists.

We do not the least pretend to give advice in regard to what is to be done to perfect the organisation of this line, or with respect to the question of quarantines in the Caspian Sea. In this matter the Russian Government is a much better judge than we can be; and as there is no want of competent men or means of action, it is certain that every thing that can possibly be done will be done. Our only wish has been to point out distinctly the extreme importance attaching to the organisation of the defence of this coast, in the point of view of renewed invasions of Europe by cholera.

#### RECAPITULATION.

The Committee having arrived at the conclusion of its task and of its travels in various parts of the world, thinks it would not be

useless to recapitulate in a few words the principal results of its labors.

After having established that measures of quarantine, suitably applied, are definitively less onerous to commerce than the injuries caused by cholera itself, it endeavored to demonstrate by a rough sketch the routes followed by the disease in coming to Europe, and, considering the natural obstacles to its passage that it meets with, that the closer to the original source of the disease we work, the greater are the chances of arresting it in its invading march, at the same time that the obstruction and damage caused by preventive measures are lessened.

Taking these preliminary considerations for the base and plan of its labors, the Committee occupied itself in the first place with everything concerning India, the original source of the disease, in the threefold point of view of the endemicity, the epidemic development, and the propagation of cholera.

To combat its endemic nature, the extinction of which does not seem impossible, the Committee depends greatly upon the hygienic measures already in force, and the works of sanitation in course of execution, but it also attaches great importance to the commencement of continued researches, their object being the discovery of the special conditions which maintain endemic cholera.

To restrict its epidemic development—in proportion to the great part taken in it by Hindoo pilgrimages—the Committee has approved of the wise precautions already taken, and it has submitted to the judgment of the competent English authorities a sketch of certain complementary measures the advantage of which cannot be denied, supplementing them to be practicable.

Lastly, with a view to prevent, as far as possible, the maritime exportation of cholera, the Committee has proposed a series of precautions, the principal being the *generalised* application of the Act passed by the Government of India, intitled *the Native Passengers' Act*, a regulation which may advantageously be modified in the point of view of certain sanitary precautions.

Passing on to the important question of the measures to be adopted in the intermediate countries between India and Europe, the Committee occupied itself in the first place with the means to prevent the importation of cholera by sea. With this object it considered in the first place the convenience of a sanitary establishment at the entrance of the Red Sea, and it gave its opinion very clearly on the utility of such an institution and the conditions indispensable to its proper working, without misconceiving the difficulties which might prove an obstacle to its realisation.

The Committee next considered the question of the pilgrimage to Mecca in connexion with all the sanitary peculiarities attaching to it, *viz.*, the organisation of a sanitary service on the coast of the Red Sea; precautions relating to the departure and embarkation of

the pilgrims ; hygienic measures at the places of pilgrimage ; measures against the importation of cholera into the Hedjaz ; and lastly, measures to be taken against arrivals from the Hedjaz, in the event of the occurrence of cholera during the pilgrimage.

After deep study, the Committee framed conclusions on all these points, which conclusions, it thinks, solve satisfactorily and conformably to all interests, the difficult problem of preserving Egypt and Europe from the importation of cholera by the pilgrims.

This done, and foreseeing that cholera might well again penetrate into Egypt, the Committee framed the question whether, considering the extreme peril with which Europe might be threatened, it would not be wise and conformable to all European interests to apply exceptional measures temporarily to Egypt. But, at the same time that it made its opinion known, it refrained from replying.

Having come to the consideration of the means adapted to prevent a fresh invasion of cholera by land, the Committee found itself in presence of a much more complex problem, and one much more difficult of solution, than the former. However, it did not recede before the difficulties of its task, and if it has not been able to afford satisfactory solutions on all points, it thinks it has thrown some light upon the subject, and afforded useful indications.

With regard to Persia, while we understand how extravagant the pretension to prevent the introduction of cholera into this country is, we have nevertheless indicated what is to be done with this object, and shown the points of territory to be secured ; but we have specially insisted upon the precautions to be taken in the interior of the country to restrict the development of epidemics of cholera ; and, taking into consideration the part performed by the pilgrimages, we have indicated the means of diminishing the unhappy results of the transport of corpses. This is the limit of our advice to Persia.

Then we occupied ourselves with the means of preserving Turkey against the importation of cholera from Persia by land or by the Persian Gulf. We have not deceived ourselves as to the difficulty of obtaining success, nor the number of weak points in the line of defence, especially its southern section. Nevertheless we have not despaired of diminishing the causes of importation and of epidemics on this side ; and we have enumerated the means of doing so. Definitively, we have pointed out that if the importation of cholera into Mesopotamia is of frequent occurrence, it is reassuring to know that as yet no invasion of Europe has occurred by means of these repeated importations.

Regarding the importation into Russia, we have had the pleasure of pointing out that, thanks to the extension of the frontiers of that great empire and the sanitary precautions already taken on the boundaries of Bukharia, there is but little probability henceforth of an invasion of Europe by cholera across the steppes of the Kirghiz, as in 1829.

On the other hand, we have shown that the most dangerous way, that by which the two great invasions of Europe were effected, is in a very circumscribed Zone on the south-west coast of the Caspian Sea; and that the disease, after reaching the delta of the Kour, has a tendency—a regular tendency it may be said—to extend itself to the north and the west, reaching Europe simultaneously by the mouths of the Volga and the Black Sea. We are obliged to call attention to this hitherto almost unnoticed fact, insisting at the same time upon the importance of concentrating on this side means of action capable of preventing the importation of the disease into Russian territory.

The Committee, as may be seen, does not pretend to have furnished the complete solution of the grave problem submitted to its consideration; but if it has only succeeded in specifying its elements with greater distinctness, if it has only been able to show the possibility of closing henceforth, if not the two doors for the entrance of cholera into Europe, at least the entrance by sea across the Black Sea, it thinks it has not achieved a useless task. It will especially entertain this conviction, if the Conference, sharing its views, will, by its approbation, cause our respective Governments to come to a mutual understanding and combine their efforts to attain this humane object.

*Members of the Committee.*

COUNT DE LALLEMAND, <i>President.</i>	SALEM BEY.
F. BOSI.	A. SOTTO.
A. BYKOW.	VERNONI.
KALERGI, <i>Secretary.</i>	A. FAUVEL, <i>Reporter.</i>

CONSTANTINOPLE:  
The 29th August 1866. }

## . APPENDICES.

### APPENDIX A.

NOTE ON THE WORKS OF SANITATION UNDERTAKEN IN THE GREAT CITIES OF INDIA, THE MEASURES OF HYGIENE PUT IN FORCE IN CALCUTTA, AND THE FUNCTIONS OF THE THREE PERMANENT SANITARY COMMISSIONS.

*(Extracted from a communication made by Dr. Goodeve).*

The sanitation of the cities of Calcutta and Bombay has been undertaken on a large scale.

At Calcutta for some years past a vast system of drainage has been in progress, which runs through the whole city, and does not allow of any infiltration from the river. Moreover, the Government of Bengal has sanctioned the construction of an aqueduct and pipes for the

supply of water to the city, the water being brought from a distance of 25 kilomètres. Corpses in Calcutta are no longer thrown into the Hooghly, this custom having been altogether prohibited in the city. The corpses of the Hindoos are burnt, the wood for the cremation of paupers being furnished at the cost of the municipality. The old sewers of the city, which were choked up with filth, have been cleaned out. The public latrines have been greatly improved by being placed under proper regulations. The excrementitious matter is removed from them every day, and carried to the distance of a league from the city, where it is buried in a piece of waste land. It was hoped last year that in a short time no more of this ordure would be thrown into the river, considering that a railroad was in construction for the purpose of carrying it, as well as all filth, in well-closed vessels, to a distance from the city. The municipality has undertaken the construction of a great public slaughter-house in the environs of Calcutta on the best models of Europe. When it is completed, all slaughter-houses within the town will be suppressed. All organic detritus, all dead animals, are carried away out of town every day, and burnt in a furnace specially constructed for the purpose so as to give out no bad odour. All occupations or trades prejudicial to health have been prohibited within the city. Other important reforms have also been commenced; but we have said enough to show that real sanitation is in progress in Calcutta.

For some years past the city of Bombay has been improving, but more progress has been made recently. The municipality has just been reorganised. A more complete system of cleanliness is in course of execution; the streets have been widened and freer ventilation obtained, as well as an improvement in appearance, by the levelling of the walls of the old fort and the construction of new quarters. A system of drainage is in course of construction. Recently the Government drew up an Act to regulate the width of the streets and the height of the houses, the minimum of openings for the ventilations of rooms, and the diminution of crowding in the dwellings of the poorer classes.

Less has been done in the way of new buildings in the city of Madras; but plans have been prepared of aqueducts to bring water to the city from a considerable distance, and for a system of drainage.

In addition to the Presidency towns, the sanitation of many other towns and villages has been commenced, especially of towns having military cantonments attached to them. As for the military stations themselves, the greatest changes have been effected or are in progress. The barracks have been enlarged, and, in many instances, altogether rebuilt, on a model plan providing for space, ventilation, means of ablution, latrines, water-supply, &c., in accordance with the most advanced system of hygiene. The latrines are cleaned out daily, and the greatest care is taken to keep the whole of every station clean.

In the commencement of the year 1864, the Government made a great step towards the sanitary improvement of India by the nomination

of three boards of health, or permanent sanitary commissions, one for each Presidency, having their offices respectively at Calcutta, Madras, and Bombay. These Commissions are composed of civilians and military officers, engineers, and medical men. The rules constituting them instruct them that their duty "is to give advice and assistance in everything concerning the public health." Thus the selection of new stations, the improvement of the already existing stations and bazars, the improvement of the native towns, the means of preventing or lessening epidemic diseases, and, generally, the constant supervision of the sanitary condition of the European and native population, as well as the indication of the causes and means of preventing diseases, are within the scope of the duties of these three Commissions.

The Commissions also received orders to organize general sanitary systems for each Presidency and local boards of health to carry on the duties of the service in the towns, the appointment of health officers, the registration of deaths, &c.

The plans of organisation have been submitted to the various Governments, and have been taken into consideration. They contain very useful provisions, among others that of local executive sanitary Commissions which cannot fail to exercise great influence upon the public health, and notably so with regard to the development and propagation of cholera.

## APPENDIX B.

ACT No. XXI. OF 1858.

PASSED BY THE LEGISLATIVE COUNCIL OF INDIA.

*(Received the assent of the Governor-General on the 25th May 1858.)*

AN ACT for the Regulation of Native Passenger Ships, and of Steam Vessels intended to convey Passengers on coasting voyages.

WHEREAS abuses have occurred in the over-crowding of ships conveying Native Passengers between ports and places within the territories in the possession and under the Government of the East India Company, and ports and places in the Red Sea or Persian Gulf; and whereas it is expedient to prevent such abuses, and to provide for the regulation of all ships carrying Native Passengers as aforesaid which shall depart from or arrive at any of the ports or places within the said territories, and also for the regulation of steam vessels intended to carry passengers on coasting voyages; It is enacted as follows:—

L Every vessel carrying more than thirty passengers being natives of Asia or Africa, which may depart or proceed on any voyage from a port or place within the said territories to any port or place in the Red Sea or Persian Gulf, or which may arrive at any port or place within the said territories from

What shall be deemed a "Native Passenger Ship" within the meaning of this Act.



any port or place in the Red Sea or Persian Gulf, having on board more than thirty such passengers, shall be deemed a Native Passenger Ship within the meaning of this Act.

II. No Native Passenger Ship shall depart or proceed upon any voyage to which this Act extends from any port or place within the said territories other than such ports and places as the Local Government may from time to time appoint; \* and after any Native Passenger Ship has departed or proceeded upon any such voyage from a Port or place so to be appointed, no person whatsoever shall be received on board as a passenger, except at some other duly appointed port or place.

III. No Native Passenger Ship shall depart or proceed upon any such voyage from any Port or place appointed under this Act, until the Master shall have obtained a certificate from an Officer authorized to grant the same.

IV. If any Native Passenger Ship departs or proceeds upon a voyage from any port or place within the said territories, or if any person is received as a passenger on board a Native Passenger Ship in contravention of the provisions of the last two preceding Sections, the Owner or Master shall be liable to a penalty not exceeding one hundred Rupees for every passenger conveyed on a ship unlawfully departing or proceeding on such voyage, or for every passenger unlawfully received on board; and the ship, if found within two years in any place within the said territories, may be seized and detained by any Chief Officer of Customs until the penalties incurred under this Act have been adjudicated, and the payment thereof, with all costs, have been enforced under the provisions of Section 29.

V. The Local Government shall appoint such persons as it may deem proper to exercise or perform the powers and duties conferred or imposed by this Act.

VI. The Master of any Native Passenger Ship sailing from any port or place appointed under this Act, shall give notice to the proper Officer that the ship is to carry Native Passengers, and of her destination, and of the proposed day of sailing; such notice shall be given not less than three days before the proposed day of sailing.

VII. After receiving such notice, the Officer aforesaid, or any person authorized by him, shall be at liberty at all times to enter and inspect the ship and the fittings, provisions, and stores therein; and any person impeding or refusing to allow such inspection, shall be

\* NOTE.—The ports appointed for the Bombay Presidency by Notification, dated 15th April 1859, are Bombay, Surat, Kurrachee and Aden.

liable, on conviction, to a penalty not exceeding five hundred Rupees for each offence.

VIII. The Officer aforesaid may, if he think fit, cause the ship to be surveyed at the expense of the Master by a competent Surveyor, who shall report whether the ship is, in his opinion, sea-worthy and fit for her intended voyage.

Ship may be surveyed  
whether the ship is, in his opinion, sea-worthy and fit for her intended voyage.

IX. The Officer aforesaid shall not give his certificate, unless he shall be satisfied—

1. That the Ship is sea-worthy and properly manned, equipped, fitted, and ventilated; and has not on board any cargo likely, from its quality, quantity, or mode of stowage, to prejudice the health or safety of the passengers.

2. That the space appropriated to the passengers in the between-decks contains at the least nine superficial and fifty-four cubical feet of space for every adult passenger on board, that is to say, for every passenger above twelve years of age, and for every two passengers between the ages of one year and twelve years.

That the space between-decks for passengers is sufficient.

That the space on the upper deck is sufficient.

3. That a space of four superficial feet per adult is left clear on the upper deck for the use of the passengers.

4. That provisions, fuel, and water have been placed on board, of good quality, properly packed, and sufficient to supply the passengers on board during the declared duration of the intended voyage, according to the scale hereinafter contained.

That there is a due supply of provisions.

X. No such ship shall carry any greater number of passengers than, together with the Master and crew, shall amount to the proportion of two persons for every three tons of the registered or estimated tonnage of the ship.

Number of passengers.

XI. The Master of any such ship, before departing or proceeding on any such voyage from any port or place within the said territories, shall sign two lists, specifying (as accurately as may be) the names of all the passengers, and stating the number of the crew, and shall deliver them to the Officer aforesaid, who shall thereupon (after having first mustered the passengers and compared the number and names of such passengers with the lists) countersign and return to the Master one of such lists. The Master shall note in writing on such last mentioned list, and on any additional list to be made under this Act, the date and supposed cause of death of any passenger who may die on the voyage, and shall forthwith, on the arrival of the ship at her destination or at any port in the said territories at which it may be proposed to land passengers

List of passengers.

and before any passengers are landed, produce the list, with any additions thereto made, to any person lawfully exercising Consular authority on behalf of Her Majesty at the port of arrival if it be a foreign port, or to the Chief Officer of Customs, or the Officer (if any) appointed under this Act, at any port or place within the said territories at which it shall be intended to land the passengers or any of them. In case of non-compliance with any of the requirements of this Section on the part of the Master, or if any false entry be wilfully made in any such list, the Master shall be liable to a penalty not exceeding five hundred Rupees for each offence.

**XII.** If, after the ship shall have departed or proceeded on any such voyage, any additional passengers are taken on board at a port or place, within the said territories appointed under this Act for the embarkation of passengers, or if such ship shall, upon her voyage, touch or arrive at any such port having previously received on board additional passengers, at any place out of the said territories, the Master shall obtain a fresh certificate from the Officer at such port, and lists of all such additional passengers shall be made; and all the provisions hereinbefore contained in that behalf shall be applicable to any certificate to be granted or any list to be made under this Section.

**XIII.** If any Master of a ship, after having obtained a certificate under Section 3 or Section 12 of this Act, shall fraudulently do or suffer to be done any act or thing whereby such certificate shall become inapplicable to the altered state of the ship, its passengers, or other matters to which such certificate relates, he shall be liable to a penalty not exceeding two thousand Rupees.

**XIV.** The Chief Officer of Customs, or the Officer (if any) appointed under this Act, at any port or place within the said territories at which the ship shall touch or arrive, shall, with advertence to the requirements of this Act, transmit any particulars which he may deem important respecting the ship and the passengers conveyed therein, to the Officer at the port from which the ship commenced her voyage, and also to the Officer at any other port within the said territories where the passengers or any of them embarked.

**XV.** In any proceeding for the adjudication of any penalty incurred under this Act, any document purporting to be a report of such particulars as are referred to in the last preceding Section, or a copy of the proceedings of any Court of Justice duly authenticated, and also any like document purporting to be made and signed by any person lawfully exercising Consular authority on behalf of Her Majesty in any foreign port, shall be received in evidence, if the same appears to have been officially transmitted to any Officer at or near the place where the proceeding under this Act is had.

**XVI.** It shall be lawful for the Local Government, by any proclamation to be from time to time issued for that purpose and published in the *Government Gazette* (if any), or in one of the public newspapers, to declare what shall be deemed, for the purposes of this Act, the duration of the voyage of any Native Passenger Ship from any port or place to any other port or place.

**XVII.** Every Native Passenger Ship, at the time of departure from the port or place at which passengers shall be embarked under this Act, shall have on board good and wholesome provisions for the use and consumption of the passengers, over and above the victualling of the crew, to the amount or in the proportion following, that is to say, a supply of water to the amount of five gallons to every week of the computed voyage for every passenger on board, such water being carried in tanks or sweet casks, and a supply of rice, flour, oatmeal, or bread stuffs to the amount of seven pounds weight to every week of the computed voyage for every such passenger; provided always that, when any such ship shall be destined to call at a port or place in the course of her voyage for the purpose of filling up her water-casks, a supply of water at the rate before mentioned for every week of an average voyage to such port or place of calling, shall be deemed to be a compliance with this Act. The provision of this Section regarding food shall be deemed to have been complied with in any case where it shall appear that, by the special authority of the Local Government, any other articles of food were substituted for the articles above enumerated as being equivalent thereto.

**XVIII.** The requirements of this Act respecting the supply of provisions for passengers shall not, except as to the supply of water, be applicable to any passenger who may have contracted to furnish his own provisions.

**XIX.** If any ship, bringing passengers from any port or place in the Red Sea or Persian Gulf to any port or place within the said territories, shall have on board a greater number of passengers or persons than in the proportion prescribed by this Act, the Master of such ship shall, in addition to any other penalty which he may have incurred under the provisions of this Act, be liable, on conviction, to a penalty not exceeding Rupees 50 for each person in excess of such proportion.

**XX.** Nothing in the foregoing provisions of this Act contained shall apply to any Ship-of-War or Transport belonging to or in the service of Her Majesty or of the East India Company, or to any Ship-of-War belonging to the foreign Prince or State, or to any ship under contract with the Government of any European State, or to any sea-going steam vessel regularly employed in the conveyance of the public Mails under a contract.

**XXI.** Steam vessels which may be intended to carry passengers on coasting voyages from or to any port or place whatsoever within the said territories, shall, before proceeding on such voyages, be furnished with certificates to be granted in the manner hereinafter provided.

**XXII.** Every such certificate shall be granted at the discretion of an Officer authorized to grant the same by the Local Government, and shall remain in force for the period therein specified, unless sooner revoked. The Officer so authorized shall not grant such certificate, or suffer the same to remain in force, unless he is satisfied, by inspection or survey (to be made at least twice in each year at the expense of the Master or Owner, and upon payment of a fee not exceeding twenty Rupees), that such steam vessel is sea-worthy and properly equipped with boats and otherwise, and that the engines and machinery are in a fit state to enable her to proceed on her voyage. The certificate shall state the limits (if any) within which the vessel is to ply, and the number of Native Passengers which the vessel is permitted to carry; such number to be subject to such conditions and variations according to the time of year, the nature of the voyage, and the cargo carried, as the case requires.

**XXIII.** The Owner or Master of any such steam vessel shall put up in a conspicuous part of the ship, so as to be visible to persons on board the same a copy of the said certificate, and shall cause it to be continued in such position so long as the certificate remains in force; and in default, such Owner or Master shall for each offence be liable to a fine not exceeding two hundred Rupees.

**XXIV.** If such Steam Vessel has on board thereof any number of passengers which, having regard to the time of the year and other circumstances, is greater than the number allowed by the certificate, the Owner or Master shall be liable to a fine not exceeding twenty Rupees for every passenger over and above the number allowed by the certificate.

**XXV.** If any such steam vessel shall proceed on any such voyage without such certificate as aforesaid, the Owner or Master shall be liable to a fine not exceeding five hundred Rupees.

**XXVI.** In the grant or revocation of any certificate whatsoever under this Act, the Officer granting the same shall be subject to the control of the Local Government or of any intermediate authority which that Government may appoint.

**XXVII.** If any Native Passenger in any ship shall be landed at any port or place other than the port or place at which he may have contracted to land, unless with his previous consent, or unless such landing is made necessary by perils of the sea or other

unavoidable accident, the Master shall for each offence be liable to a penalty not exceeding two hundred Rupees.

**XXVIII.** Nothing in this Act contained shall take away or abridge any right of action which may accrue to any Passenger's right of action preserved. Native Passenger, or to any other person, in respect of the breach or non-performance of any contract made with the Master or Owner of the ship or his Agent.

**XXIX.** All offences against this Act shall be punishable in a summary manner by a Magistrate. If the person directed to pay any penalty is the Master or Owner of a ship, and the same is not paid at the time and in the manner prescribed by the order of payment, the Magistrate may, in addition to the means prescribed by law for enforcing payment, direct by warrant the amount remaining unpaid to be levied by distress and sale of the said ship, her tackle, furniture, and apparel.

**XXX.** For the purpose of the adjudication of penalties under this Act, any offence shall be deemed to have been committed within the limits of the jurisdiction of the Magistrate of the place where the offender is found.

**XXXI.** The penalties to which Masters and Owners of ships are liable by this Act, shall be enforced only by information laid at the instance of the Officers appointed to grant certificates under this Act; or at any port or place where there is no such Officer, by the Chief Officer of Customs.

**XXXII.** Any Magistrate imposing any penalties under this Act may, if he thinks fit, direct the whole or any part thereof to be applied in compensating any person for any wrong or damage which he may have sustained by the act or default in respect of which such penalty is imposed, or in or towards payment of the expenses of the proceedings.

**XXXIII.** The word "Magistrate" in this Act shall include a Magistrate of Police appointed under Act XIII of 1856, a Joint Magistrate, and any person lawfully exercising the powers of a Magistrate, and at the port of Aden the Political Resident and his Assistant.

The words "Local Government" shall mean the person or persons for the time being immediately administering the Executive Government of that portion of the said territories where the port or place in question is situate.

The word "Master" shall include every person having command or charge of a ship or steam vessel.

**XXXIV.** This Act shall commence and take effect from and after the 1st day of August 1858.