

C O N T E N T S.

BULLETINS OF INDIAN INDUSTRIES & LABOUR.

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 - (2) Proceedings of the Second Conference of Directors of Industries 1920 (Pages 1-96)
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BULLETINS OF INDIAN INDUSTRIES & LABOUR

No. 1

PROCEEDINGS

OF THE

**FIRST CONFERENCE OF DIRECTORS OF
INDUSTRIES**

(Held in Simla on the 12th, 13th, and 14th April 1920)



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NOTE.

The prefatory notes which are printed in the Report are not to be understood as official expressions of opinion by the Board of Industries and Munitions.

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1921

[January.

**PROCEEDINGS OF THE CONFERENCE OF DIRECTORS OF
INDUSTRIES.**

Held in Simla on the 12th, 13th and 14th April 1920.

PRESENT :

1. **THE HON'BLE SIR THOMAS HOLLAND, K.C.S.I., K.C.I.E., F.R.S.,** President, Board of Industries and Munitions.
2. **MR. A. C. CHATTERJEE, C.I.E., I.C.S.,** Member, Board of Industries and Munitions.
3. **MR. T. RYAN, C.I.E.,** Member, Board of Industries and Munitions.
4. **MR. J. MCKERRA, C.S.I., I.C.S.,** Agricultural Adviser to the Government of India.
5. **THE HON'BLE MR. E. A. H. BLUNT, I.C.S.,** Financial Secretary to the Government of the United Provinces.
6. **MR. C. R. O'MALLEY,** Director of Industries, United Provinces.
7. **THE HON'BLE MR. A. Y. G. CAMPBELL, C.I.E., I.C.S.,** Director of Industries, Madras.
8. **MR. B. A. COLLINS, I.C.S.,** Director of Industries, Bihar and Orissa.
9. **RAI KANAK LAL BARUA BAHADUR, B.L.,** Director of Industries, Assam.
10. **MR. D. B. MENK, M.A., B. SO., I.E.S.,** Director of Industries, Bengal.

11. MR. G. H. THESELTON-DYER, A.M.I.C.E., Director of Industries, Bombay.
 12. MR. E. A. SCOTT, Director of Industries, Punjab.
 13. MR. H. B. HOLME, I.C.S., Secretary to Financial Commissioner, Rangoon.
 14. MR. A. L. HOYLE, I.C.S., Director of Industries, Central Provinces, Nagpur.
 15. MR. H. P. V. TOWNEND, I.C.S., Director-General of Commercial Intelligence, Calcutta.
- SIR ALFRED CHATTERTON, Kt., C.I.E., Industrial Adviser to the Tata Industrial Bank.—(Visitor).
- MR. F. R. R. BUDMAN, I.C.S., (Secretary, Board of Industries and Munitions), Secretary to the Conference.

PRESIDENT'S OPENING SPEECH.

In opening the proceedings, the President, Sir Thomas Holland referred to the special reasons which rendered, the holding of the conference desirable. Under the Reforms scheme "industries" would be a transferred subject and the only practicable way in which the benefit of co-operation in the industrial activities of the different provinces could be secured was by informal discussions of the kind now proposed. By such discussions Provincial Directors could learn the lessons to be derived from the experience of others, and acquire new ideas for the fostering of industrial progress in their own provinces. Sir Thomas Holland mentioned as one of the functions of the new Department of Industries that it should be a kind of clearing house of information, through which the experiences of one province could be brought to the notice of Directors elsewhere to guide them in their own ventures.

As regards the proceedings of the conference, Sir Thomas Holland deprecated the passing of formal resolutions; in a conference of this kind resolutions had no binding force, and the desired purpose would be better served by the recording of the opinions of those present for the consideration of local Governments on whom rested the responsibility for action. Subject to the rules adopted under the new Government of India Act, the Central Government would have no power to interfere in a transferred subject, and would do no more than lend their resources and experts for advice, as and when required. Conferences like these would anticipate difficulties and facilitate the formulation of a uniform policy for the general industrial development of the country.

The conference then proceeded to consider the subjects on the agenda paper.

I.—ALL-INDIA INDUSTRIAL SERVICE.

(PREFATORY NOTE READ AT THE CONFERENCE.)

One of the recommendations of the Indian Industrial Commission, which has since been accepted in principle by the Government of India and the Secretary of State for India, is that an Imperial Industrial Service should be created to meet the requirements of the Industrial Departments throughout the country. The detailed reasons adduced by the Commission in favour of the constitution of such a service are contained in paragraphs 330-334 of its Report. The Commission indicated that such a service was necessary to enable Government to obtain suitable-controlling and junior officers for work under the following heads:—

The administration of the Mines Act,

Northern India Salt Revenue Department,

Inventions and Designs.

The collection and distribution of commercial and industrial intelligence.

Supply of stores.

The administration of the Indian Factories Act.

The general encouragement of industries.

Advice to local Governments regarding improvement of industries and control of technical and industrial education.

The administration of the Act relating to steam boilers.

Electricity.

The working of Government factories for research or administration.

2. It was indicated that a thorough training in engineering would be a necessary qualification of recruits in most instances; and it was urged that, by the establishment of an industrial service to comprise officers engaged on such duties as those indicated by the above headings, recruitment would be facilitated by the offer of definite prospects, and a continuous demand for men of a particular type, of whom a regular supply would be forthcoming. The service would afford an elastic and convenient system of filling the various-

posts throughout the country and its existence and traditions should inspire *esprit de corps* and give its members administrative experience and opportunities for specialisation. It was recognised that necessity would still arise for the recruitment on special terms of men for individual appointments or lines of work, whilst outside consultants of high reputation would be needed from time to time to advise on specific problems. One of the advantages urged by the Commission in favour of the service was that it would afford a means to Indians to fill higher posts.

3. With regard to the conditions of service, the commission expressed the opinion that the initial salary need not, on a pre-war basis, exceed Rs. 450* per mensem; recruits should be on two years' probation and should be eligible on confirmation for appointment as Industrial Engineers in provincial Departments of Industries, in Government research or pioneering factories, or even, in exceptional cases, as Deputy Directors. The pay of Industrial Engineers should be incremental starting at Rs. 500 on confirmation and rising by annual increments of Rs. 50 to Rs. 1,500, with an efficiency bar at Rs. 1,250. The more highly paid posts would be filled by selection and the ordinary conditions regarding the grant of pensions or provident funds for Government service should be applicable.

4. The Commission's proposals were accepted by all the local Governments except that of the United Provinces; the Government of Burma qualified their acceptance by the proviso that Indian members of such a service should not be posted to Burma.

5. The Government of India endorsed the Commission's recommendations except that though agreeing that a training in some form of mechanical engineering would, in most cases, be the best basis of recruitment, they considered that this should not be made an absolute rule.

6. They drew attention to the fact that the position in respect of this proposed service is somewhat different from that of the scientific (e.g., Chemical) services, mainly in that "there are few, if any, existing officers who correspond to the class of man whom it is proposed to recruit into the industrial service" and that the question relates to "a group of professions, among which that of mechanical engineering and its various specialised forms greatly

predominates". It was observed that the advantages claimed for the proposal are mainly administrative; and that the officers filling the higher posts "must possess administrative capacity and business qualifications built up on a basis of technical knowledge. These necessary qualifications can only be obtained by training and experience in the lower ranks of the service where the work will be mainly technical, but where there will be ample opportunities for the acquisition of business and administrative experience."

7. Attention was drawn to the disadvantages of the alternatives to a service as proposed, these alternatives being the engagement of men on short contracts, or in very small provincial departments, neither of which would afford the necessary continuity and prospects. It was considered that the institution of an industrial service afforded the best, if not the only, means of training Indians of the right type for the higher posts, and that the alternative system of employing temporary experts must perpetuate the employment of Europeans.

8. Finally the Government of India observed—

"We do not desire to formulate the conditions of the industrial service, until we have discussed the matter with local Governments and received their proposals for their provincial establishments. By that time we hope to be in possession of the recommendations of the committee on the chemical service, which will doubtless afford a useful analogy. We wish, however, meanwhile to be in a position to offer and to allow local Governments to offer the prospects of suitable posts in the future industrial service to recruits, most of whom will have, as recognised by the Commission, to be brought in at first on special terms; the engagement of such men will, it is presumed, be as a rule subject to some probationary period, by the expiry of which we hope to be in a position to include in the industrial service those of them who prove satisfactory."

9. The Government of India's despatch, from which the preceding extracts have been made, was answered by the Secretary of State for India in a despatch of September 1919 from which the following paragraph is quoted:—

"10. I accept the principle of an all-India industrial service, and agree that, although a training in some form of

mechanical engineering will in most cases be the best basis of recruitment, this qualification should not in all cases be required. I understand that it is your intention not to include in the service men of the foreman type or experts engaged for special purposes on short-term agreements, but to reserve it as a rule for men of good education, with technical qualifications or business training. From this reservoir, provincial Directors and Deputy Directors of Industries, Factory Managers and perhaps, also Factory and Mines inspectors might be drawn if suitable men are available."

10. It will be observed from the preceding quotations that the Government of India contemplated that it would be necessary to discuss the matter further with local Governments and receive their proposals for their provincial establishments and that it was expected that the recommendations of the Committee on the Chemical Services, which would meanwhile be received, would afford a useful analogy. The object of the preliminary discussion now proposed with Directors of Industries is to consider any preliminary suggestions which Directors may wish to make, and to arrive at a clearer idea of the best lines on which further action should now be taken. With a view of facilitating such a preliminary discussion statements are attached* showing the rates of pay already sanctioned, or for which sanction is now being sought, in respect of appointments in the Industrial Departments of local Governments, Factories Departments, Inspectors of Boilers and Inspectors of Mines.

T. BRYK.

Discussion.

The President explained that the object of an all-India Industrial Service was to bring together classes of *Object of an all-India Industrial Service.*

men who were technically related to one another and, by grouping them in one service in which definite prospects were offered, to facilitate recruitment and inspire those enrolled in it to greater endeavour. He quoted the analogy of the Indian Civil Service, recruitment for which was facilitated by the fact that boys looking for a profession knew that

* Not included in the proceedings.

there would be a certain number of vacancies in the service each year, and entered upon their school life with this end in view. The result was a stream of candidates, greater competition for the appointments and the securing of a better class of recruit than would otherwise be obtainable. *En passant*, Sir Thomas Holland expressed the view that, so far as the Mines Department was concerned it seemed unnecessary to include this service in the all-India service, as there was already an established large "market" from which recruits with standard qualifications could be obtained, and the chief reason for grouping them in an all-India service did not therefore exist.

The main question was then discussed, some attention being devoted to the possibility of a province with an Industrial Service vacancy to fill preferring to obtain a particular man for the purpose rather than one of the Industrial Service. Mr. Collins (Bihar and Orissa) thought that this difficulty, if it arose, might perhaps be overcome by the adoption of the system followed for the Indian Educational Service. The Government of India maintain a list of approved candidates, for this service, on which names are entered on the recommendation of local Governments, provided that the men are properly qualified. When a local Government requires a recruit it is sent the list for selection, and if it considers any one suitable, he is recommended by the Government of India to the Secretary of State for appointment. Opinions were, however, divided as to the feasibility of the difficulty contemplated, the general sense of the conference being that if (as must be assumed to be the case) efficient men were available in the all-India Service, local Governments would realise the advantage of obtaining their requirements from that Service. Mr. Campbell (Madras) stated that, at an Industrial Conference lately held in Madras, all approved the idea of an all-India Industrial Service; Mr. Blunt (United Provinces) remarked that the Advisory Board of the United Provinces was in favour of it. The question was then put to the conference and all were agreed as to the desirability of constituting an Indian Industrial Service on the lines suggested by the Industrial Commission and accepted by the Secretary of State for India.

The conference then considered the question of recruitment and terms of service. Sir Alfred Chatterton pointed out that commercial firms in this country entertained the hope of obtaining men, either permanently

or for defined periods, from the Industrial Service for their own concerns; if the officer was only borrowed temporarily, the firm would, of course, pay pensionary contribution or its equivalent. It was accepted by the conference that the possibility of losing men in this way must be faced and, in order to meet such demands as well as sudden calls for exports which might be made by Government departments, it was most desirable to arrange for a more than usual margin for reserve in the cadre of the service. The conference considered the objections that might be raised against the principle of the State employing a number of men in excess of its requirements, in order to meet possible demands of private firms, but were agreed that, as the men were required for the special development of the country's resources, the proposition, though unusual, was one which should be strongly supported. It was generally accepted that the staffs of the Provincial Industrial Departments were at present inadequate; and, in conformity with the views already expressed, early steps should be taken to begin recruitment, as soon as the size and terms of the Service could be settled.

The question of terms was then discussed. Mr. Thiselton-Dyer (Bombay), urged that, as the training of the Mechanical Engineer (from which class the Service would be largely recruited) required a longer period than that of the Civil Engineer, the initial grades of pay should not be lower than those to which a Public Works Department Engineer of corresponding age will be entitled, e.g., a Mechanical Engineer appointed say, at 28 years of age should not get less than his Public Works Department brother of the same age who was appointed at, say, 23 years. The Public Works Department have a graded pay and the Mechanical Engineer should start according to the grade pay for a man of his age—not at the bottom. This view was provisionally accepted; in presidency and other expensive towns it was recognised that a suitable local allowance would probably be necessary.

The following was also agreed to by the Directors:—

- (a) for immediate requirements and before the Industrial Service has grown up, special appointments of comparatively senior men would be necessary;
- (b) such men might be admitted to the Service on the pay of a grade which corresponded to their age;
- (c) in addition to Mechanical Engineers, men with some ten years' business training might be admitted; a number

- could be probably found who would be inclined to sacrifice the uncertainties of a business career for the greater stability of Government service;
- (d) schemes for Provincial Industrial Services should be worked out in the provinces;
- (e) the Provincial Service should, in time, form one of the main recruiting grounds for the Imperial Industrial Service;
- (f) the Imperial Service should, so far as possible, consist of Indians.

II.—ADVISORY BOARDS OF INDUSTRIES.

(PREFATORY NOTE READ AT THE CONFERENCE.)

In paragraphs 308 to 310 of its report the Industrial Commission has set out its recommendations for the constitution and work of Provincial Boards of Industries. The recommendations include the following :—

Recommendations of the Indian Industrial Commission.

- (a) *Director*.—The Director of Industries should work under the orders of the local Government, but should be assisted by an Advisory Board of which the Director would be the Chairman.
- (b) *Constitution of the Board*.—The members of the Provincial Board should be appointed by Government, in some cases on its own selection, in others on nomination by suitable public bodies. It should be a small body, not less than 6 or more than 12 in number, with power to co-opt members for temporary or special purposes and to appoint standing or temporary sub-committees to deal with special subjects. It should be mainly non-official being a link between merchants and manufacturers, and the executive authority of Government who deals with their interests. The Commission did not think that the Board should be used to co-ordinate the work of the various other Departments of the Government which will come into intimate contact with the Department of Industries, e.g., Agriculture, Co-operative Societies, Forests, Public Works.
- (c) *Payment of Members of Board*.—It might be desirable to offer fees to the members of the Board and of the sub-committees (as is commonly done in the case of Directors of limited companies, Members of Port Trusts, etc.).
- (d) *Duties*.—The Board should not merely be an advisory body liable to have its suggestions disregarded by the Director but should be consulted in all matters which are not specially excluded from its scope, particularly regarding the framing of budget, the expenditure of budgeted

funds and the appointment and promotion of the superior staff. The Commission held that discipline and ordinary office routine, as well as such matters as the local administration of the Factories, Mines and Boiler Acts, should be left to the Director of Industries.

2. It may be of interest to the conference to know the organisation of the Board of Industries in the United Provinces, Bombay and the Central Provinces.

3. In 1918, the constitution* of the Board of the United Provinces was revised partly because the size of the old Board made it difficult to arrange meetings as frequently as was necessary to dispose of urgent work, and partly because the same Board dealt with both industries proper and with industrial and technical education. The membership of the newly constituted Board was reduced to 14 and the tenure of office of each member limited to 2 years. The Board was divided into two sections, one of which dealt with industries and the other with technical and industrial education. Each section meets separately, but meetings of the full Board are convened whenever it is found necessary to do so. The Deputy Director of Industries is the Secretary of both sections. The Industrial section has the Director of Industries as Chairman and includes five non-officials, the Chief Conservator of Forests, the Director of Civil Supplies, the Registrar of Co-operative Societies and the Director of Agriculture. The Education section has the Director of Public Instruction as Chairman, and six other members—five of whom are non-officials and the other is the Deputy Director of Industries.

4. In Bombay, there is an Advisory Board under the chairmanship of the Director of Industries. In addition to this officer, there are ten members (leading merchants), seven of whom are nominated by Government, and three by the Chambers of Commerce, Bombay and Karachi, and the Indian Merchants' Chamber and Bureau, Bombay. Government nominees only hold office for three years. Nominees of the Chambers of Commerce are replaced from time to time at the discretion of the bodies which nominated them.

5. In the Central Provinces and Berar there is an Advisory Board consisting of the Director of Industries (Chairman) and seven members, of whom six are business men and the seventh is the

*Resolution No. 204-XVIII, dated Naini Tal, the 14th May 1918.

Director of Agriculture. The Board associates with the Director of Industries to assist him in industrial matters generally and in particular in the revival and development of cottage industries. It advises him in respect of—

- (a) the branches of industry to be examined and encouraged;
- (b) the types of implements and appliances to be introduced;
- (c) the recruitment of pupils to schools of handicrafts, the curriculum to be followed at such schools and the employment of passed pupils;
- (d) the locations to be selected for demonstration.

6. The points for consideration by the conference are as follows:—

- (a) The desirability of constituting a Board of Industries in every province.
- (b) The constitution of such Boards, whether to be nominated by Government, or by commercial bodies, or by both.
- (c) The desirability of dividing the Board into two or more sections to deal with particular heads of business.
- (d) The desirability, or otherwise, of appointing to the Board officers concerned with the administration of other departments, e.g., the Director of Public Instruction or the Director of Agriculture.

The Government of India have ruled that so far as concerns the Central Government in the case of technical and industrial education, the specialist department should work in close co-operation with the Education Department.

- (e) The relations between the Director of Industries as the Executive Officer and the Board of Industries; the procedure to be adopted in referring cases to the Board, or to sections of the Board, the class of cases to be so referred, and the action to be taken thereafter.

F. R. R. RUDMAN.

Discussion.

Sir Thomas Holland began by saying that the creation of Advisory Boards was entirely a provincial matter and the only reason why the subject was on the agenda of the conference was to enable the Directors of the different provinces to exchange views and give each other the benefit of their own experiences.

In the course of the general discussion that followed, Mr. Scott (Punjab) stated that he had proposed to his local Government the establishment not of a Provincial Advisory Board, but of local Boards in a few large centres, his intention being to construct a Central Board later by selecting representatives from the local Boards. Sir Alfred Chatterton, late Director of Industries, Madras, said that he had originally made the same proposal in Madras, but it came to nothing. Mr. Blunt (United Provinces) pointed out the advantage from an administrative point of view of the institution of Advisory Boards when a scheme was put before Government for sanction, particularly in cases referred to the Finance Committee of the Council; such scheme would be more readily accepted if backed by the considered opinion of the Advisory Board.

The question was then raised whether the Board should be not advisory, but controlling. Mr. Campbell (Madras) referred to a conference recently held in Madras at which certain members

Function of provin-
cial Boards.

suggested the institution of a small controlling Board of some four members. Mr. Chatterjee pointed out the objections to the proposal maintaining that the time was not yet ripe for such an institution. The President was of the same opinion, his view being that it was impossible at present to find the requisite number of sufficiently qualified men to spare the time to act on a controlling Board (it is of course, essential for a controlling Board to be regularly organised and to meet at regular intervals in full session), whereas in the case of an Advisory Board it was possible to secure sufficiently qualified men, who could advise by correspondence and attend meetings when necessary, but whose absence from time to time would not necessarily interfere with the work of the Board or of the Department as a whole. In any case, it was unlikely that a local Government would, without extraordinarily good reason, override the opinion of the Advisory Board, even when such opinion ran counter to that of the Director of Industries.

As a result of the discussion, the conference was generally of opinion that it was desirable to have Provincial Boards of Industries; and such should be advisory rather than controlling in character.

As regards the constitution of such Boards, the conference accepted generally the recommendations made by the Industrial Commission, but a difference of opinion arose as to the inclusion of

Constitution of Pro-
vincial Boards.

certain officials, e.g., heads of Departments or the Secretary to Government, to whom the Director of Industries is subordinate. Sir Alfred Chatterton held that heads of other Departments, as the Chief Conservator of Forests or the Director of Agriculture, should not be on the Board, as their inclusion in a body of which the function was to advise the Director of Industries was derogatory to the latter. Mr. Chatterjee, on the other hand, and Mr. Blunt (United Provinces) held the contrary opinion, pointing out that the presence of such officers on the Board promoted a spirit of co-operation between the official and the non-official, gave them frequent opportunities of associating, and never resulted in friction. Further the association of such officers undoubtedly speeded up business and their expert advice frequently exposed the inherent defects of a scheme at the outset, thereby saving much time that would otherwise be wasted. As regards the inclusion of the appropriate Secretary to Government on the Board, Mr. Chatterjee urged that this would not be a wise step: the duty of a Secretary is to criticise and co-ordinate; this he cannot do if he is associated with a scheme in its inception and shares the responsibility for it. As regards the inclusion of the Director of Public Instruction on the Board, the President pointed out that the question of the control of technical and industrial education would be considered later on by the conference; but if the control of such education was transferred from the Director of Public Instruction to appropriate technical departments, it would obviously be advisable to obtain the advice and co-operation of the Director of Public Instruction in the best way possible. The conference was in agreement with this view.

As regards the relation between the Director and his Advisory Board, the class of case to be referred to the Board, etc., the conference came to no specific conclusion, as the consideration of these questions must vary from province to province.

Relation between the Director and his Advisory Board.

Mr. Blunt (United Provinces) informed the conference that in the United Provinces there were no rules to guide the Director of Industries in such matters, but if he submitted a proposal to Government, which was not, but should have been, first referred to the Board, the local Government would certainly refer it back to the Board. An opinion was expressed that the Provincial Board should invariably be consulted about the creation of a new post, but not about the appointment of an individual to the post.

III.—MEANS OF SECURING CO-OPERATION BETWEEN PROVINCIAL DEPARTMENTS OF INDUSTRIES BOTH MUTUALLY AND WITH THE IMPERIAL DEPARTMENT.

(PREFATORY NOTE READ AT THE CONFERENCE.)

In order to achieve co-operation the first requisite is some means of circulating information. This can be effected by informal conferences, by touring officers, and by a bureau of information. The following note deals with the last-named.

2. The Imperial Department has an Industrial Intelligence Branch, and it is assumed that provincial Departments either have, or will have, intelligence sections of their offices.

3. The Industrial Intelligence Branch of the Imperial Department is both a collector and disseminator of information. Its main function will be to put enquirers in touch with the expert who is best able to advise them, e.g., with the Director of Geological Survey, the Controller General of Stores, the Director General of Commercial Intelligence, the Director General of the Chemical Research Institute, the Electrical Adviser, the Metallurgical Inspector, the Superintendent of the Test House, the Indian Institute of Science, Tanstuffs Expert, the Tinctorial Chemist of Madras and the Fibre Expert of Bengal. In exercising this function the Imperial Department will be what may be described as a *signpost* to enquirers, merely directing them to the proper source of information.

4. It must be borne in mind that the Industrial Intelligence Branch can only effectively fulfil its mission by being rigidly conscientious in referring enquirers to the appropriate departments. As these departments increase in number and variety, the work of the Industrial Intelligence Branch would become correspondingly reduced. It will, however, take up subjects as they arise, and so prepare the ground for new specialised departments.

5. Another function of the Industrial Intelligence Branch is to discover industrial needs and search for means of satisfying them ;

it will also assist researchers with the information which they require to carry on their work and to place their results. In exercising these functions the Imperial Department will be more of a source of information.

The conference now has to consider the best means of securing—

- (a) the collection and recording of industrial information.
- (b) the general distribution of industrial information.
- (c) the communication of particular items of information to individual enquirers (whether provincial directors or industrialists).

6. As regards (a) it is suggested for the consideration of the conference that Directors of Industries should furnish the Imperial Department with a brief report (say quarterly), outlining what is being done in the province in the direction of—

- (1) general development;
- (2) starting of new industries;
- (3) technical and industrial education;
- (4) demonstration factories, etc.;
- (5) financial or other forms of assistance, e.g., the use of the Land Acquisition Act.

7. The Imperial Department would be responsible for furnishing information on matters on which it had first knowledge, e.g., researches in progress at the Chemical Research Institute, information received from the Indian Trade Commissioner, reports by experts on special subjects or in answer to special enquiries, etc.

8. A periodical report in the form of a journal would then be compiled and distributed to Directors of Industries at intervals to be discussed.

9. In preparing the journal the question will arise whether information should be printed up, subject by subject, or province by province. The former method appears the better.

10. As regards (b), the general distribution of industrial information can be effected by means of the journal described above, by informal conferences of Directors with each other and with the Imperial Department, and to some extent with touring officers, e.g.,

officers of the Controller General of Stores, Technical School inspectors, etc.

11. A matter on which the opinion of the conference would be welcome is the manner in which information should be made public. Is it more desirable to issue a periodical dealing with the development of industries generally instead of, or in addition to, special monographs on well-defined subjects? It should be carefully borne in mind that, where a specialised department exists with a recognised medium for publication, e.g., the Geological Survey, any matter published by the Industrial Intelligence Branch, either of the Imperial Department of Industries or of Provincial Departments, should be in an abstract form only; or, in cases where in the interests of wider publicity, a full account is necessary, such account should be a frankly declared reprint of the articles in the publications of the specialised departments. It is exceedingly dangerous for a non-specialist to publish anything in detail which should more rightly appear in the publication of the specialised department, until such article has already been published by the specialised department.

12. As regards (c), it is suggested that all correspondence should be conducted demi-officially. There is no question of Government of India orders on these references: both the Imperial and Provincial Departments are co-operating for a common purpose, and there is no advantage, while there are considerable disadvantages, in observing the usual formalities of official correspondence.

13. Another point arises for consideration; while Provincial Departments must have their own intelligence sections, it is equally important that the Imperial Department should also be in possession of all the information obtained by Provincial Departments. It is suggested therefore, that when an enquirer is referred by the Imperial Department to the expert (as in paragraph 3 above), the expert should send his reply in *duplicate*, one copy direct to the enquirer (to obviate delay) and one to the Imperial Department for compilation in the journal.

[In references made direct to the Board by industrialists, copies of correspondence are usually sent to the Director of Industries concerned for information.]

F. R. R. RUDMAN.

Discussion.

The conference considered different methods of obtaining and distributing industrial information. Two proposals were put forward, one by Mr. Collins (Bihar and Orissa) who advocated the preparation of a journal which should be for private circulation only, the other by the President who suggested a quarterly journal for general publication. Sir Thomas Holland gave three reasons in favour of a published journal: *firstly*, the public was beginning to take a great interest in industrial matters, would watch the work of the industrial departments and would want to know what progress was actually being made; *secondly*, it was essential to have a good reference library and this could only be secured by the department publishing and distributing a journal, for which it would obtain the journals of other countries or institutions in exchange; *thirdly*, a published journal was more satisfactory than a series of communiqués or bulletins, since it could be bound in volumes, indexed and used for reference.

On the other hand, it was urged that Directors of Industries were anxious to know as much as possible of what was being done in other provinces; if the chief source of information was to be a journal written for general publication much of what they wanted to know, being of a confidential character, could not be included in the published journal and they would have no ready means of obtaining the information.

It was decided that two "journals" would be necessary: the first, in four parts annually which would be for general publication; the second, a monthly report for private circulation among Directors of Industries. Both would be prepared in the office of the Imperial Department of Industries. The monthly report should contain full details of any industrial enterprise, with notes as to the success and failure, in order that Directors might benefit by the experience of their colleagues elsewhere. It was pointed out that the failures are often more important as lessons than the successes and that the latter would be known to every one without special notice.

IV.—ORGANISATION OF THE OFFICE OF A DIRECTOR OF INDUSTRIES.

(PREAMBLE NOT READ AT THIS CONFERENCE.)

The recommendations * of the Industrial Commission with regard to the organisation of a Provincial Department of Industries may be summarised as follows :—

Vis-à-vis the local Government the Director should have the position of a Secretary. In the larger provinces he should be assisted by a Deputy. His staff will include industrial engineers, chemists, an officer to deal with "Intelligence" work, inspectors of factories and of boilers, electric inspectors, such experts as may be necessary for particular industries, e.g., glass, tanning or pottery and professors and other staff for technical education. The Commission recommended the creation of a number of territorial charges each under a circle officer (with engineering training) who would supervise and assist local enterprise and be the channel of communication between the people and the Provincial Department.

2. The organisation proposed in Madras is as follows :—
 Under the Director should be four branches, that of the Industrial Engineer, the Inspector of the Industrial Schools, the Weaving expert, and the Leather expert, all of whom should have their offices in the Director's building. The Director should have a personal assistant in charge of the commercial and industrial museums, the library and industrial bureau, and a secretary or manager, to relieve him of routine work. Work would ordinarily be submitted to the Director through the branch officers.

3. In Bombay the following organisation is proposed :—

Under the Director will be branches of Mechanical Engineering, Chemistry, Fabrics, Steam Boilers, Pesticides, Smokes, Nuisances and perhaps Pottery. Each branch would have its own staff of executive and other officers, e.g., the Mechanical Engineering branch will be under a chief branch officer with Deputy or Assistant Directors in four mofussil centres, who in turn will be assisted by a number of circle officers. The chief branch officer will work

* Industrial Commission's Report, paragraphs 313-318.

directly under the Director of Industries, but will have considerable independence in dealing with ordinary routine matters, etc. The Director will have a personal assistant to deal with people who wish to interview him, with the information bureau and such routine work as comes to the central office.

4. For the purpose of this discussion it may be assumed that the control of technical and industrial education and the administration of the Steam Boilers, Factories, Electricity and Smoke Nuisances Acts will be transferred to the Director of Industries. Provincial chemical research also must not be lost sight of. The conference may wish to discuss—

- (a) whether his functions are such as to necessitate giving to the Provincial Director of Industries the powers of a Secretary to Government;
- (b) the organisation of the central office; i.e., the desirability or otherwise of creating separate sections of the central office, each under the control of an administrative officer;
- (c) the relations of such officers or sections with the Director of Industries;
- (d) the relations of such officers with Advisory Boards, where such exist; and
- (e) in cases where other administrative departments are concerned, e.g., the Agricultural or Education Departments, the relations between section officers and those departments.

F. R. R. RUBMAN.

Discussion.

The questions raised in paragraph 4 of the prefatory note were discussed *seriatim*, with the following results:—

- (a) with one exception Directors were against the view that a Provincial Director should exercise the functions of a Secretary to Government. The reasons in brief were—
 - (i) the Director is a touring officer and his activities ought not to be curtailed by his presence being required at the headquarters of Government;
 - (ii) if the Director's views were opposed to those of his Minister, he would stultify himself if he was also

Secretary to the Government as represented by the Minister;

- (iii) the functions of a Director are to create and push forward schemes, those of a Secretary are to criticise and explain the general policy of Government, to which such schemes might be opposed;
- (iv) without being a Secretary to Government, the Director could still consult other departments by means of the unofficial reference system, and also could have direct access to the Minister.

(b) The principle was generally accepted of sub-dividing the Director's office into specialised branches, each under an expert.

Subdivision of Director's office.

In this connection Sir Thomas Fielden emphasised the importance of taking timely steps to expand the staff so as to be ready for the work when it came; it was in fact the duty of Directors to "make work" and if the Department was starved of staff at the outset, the work would, as heretofore, remain undone.

(c) The relations of branch officers with the Director must be a matter for domestic consideration. Mr. Thielton-Dyer (Bombay) was of opinion that in all routine matters branch officers should dispose of work direct, only referring matters of importance to the Director. No general decision was, however, arrived at, as much must depend on the particular conditions under which the office was organised.

Relations of Branch Officers with Director.

(d) The conference was of opinion that branch officers should not ordinarily be members of the Advisory Boards, though they might be co-opted as members for any particular purpose or as members of sub-committees.

Branch Officers and Advisory Boards.

(e) As regards the relations between branch officers and other Departments it was left to Directors to try the system that seemed to them most suitable and then report, for the information of each other, the merits and defects of each system adopted.

Relations of Branch Officers with other Departments.

V.—METHOD OF DEALING WITH APPLICATIONS FOR POSTS IN THE LOCAL OR IMPERIAL DEPARTMENT OF INDUSTRIES.

(PRELIMINARY NOTE READ AT THE CONFERENCE.)

The question of how to deal with applications for appointments in the Imperial and Provincial Departments of Industries is at present assuming some importance. It is for consideration whether some kind of bureau should be instituted, in which the names and qualifications of all candidates should be registered.

2. If, in the opinion of the conference, it is desirable to institute a bureau of the character outlined above, it is suggested that registration should be limited only to persons who are applying for other than purely clerical appointments. Each applicant would be sent a form, as in the sample below, with an envelope already addressed to the Director of Industries, within whose local jurisdiction the applicant resides. One side of the form should be filled in by the applicant, and the other by the Director of Industries (if possible, after personal interview with the applicant). The form would then be sent by the Director of Industries to the Imperial Department, where it would be recorded according to the technical qualifications of the applicant.

3. Any Director requiring a man of certain qualifications, would, on application to the Imperial Department, be put in touch with likely candidates.

4. It should be clearly understood that the institution of this bureau will not create a presumption that Directors of Industries should obtain their recruits through its medium. The bureau would be intended for the assistance of such Directors as might wish to make use of it.

F. R. R. RUDMAN.

Discussion.

The principle of a central bureau was accepted, and Directors agreed to the proposal that applications should be forwarded through them to the bureau. In order to obviate the difficulty of keeping

Central Bureau for registering applications.

applications up-to-date it was decided to have the application form in the first place filled up in duplicate by the applicant; every six months the duplicate form would be returned to the applicant with a request that he would—

(a) say if he still wanted his name to be kept on the register; and

(b) indicate on the form any changes which he wanted made.

The list of applicants would be registered in the bureau on the card-index system according to the nature of the applicant's technical qualifications.

Certain changes suggested at the conference were embodied in the form of application. These are reproduced in the form attached.

BOARD OF INDUSTRIES AND MUNITIONS.

Confidential.

Application for Appointment (to be filled up in duplicate).

(This side to be filled up by applicant.)

(This form when filled in to be returned to the Director of Industries, who will forward it under confidential cover to the Secretary, Board of Industries and Munitions, by name.)

Name of applicant (in full).....

Caste or Race.....

Postal Address.....

Age, last birthday.....

Married or single.....

Present occupation.....

Present salary.....

Present employer.....

Nature of work desired.....

Technical qualification, education.....

Nature of past experience.....

Whether applicant is willing to }
serve in any part of India ? }.....

Name and address of present or previous employer to whom a reference may be made. }.....

Name and address of second reference.....

Salary required.....

Date on which applicant will probably be free to undertake work, or length of notice required. }.....

Signature.....

Date.....

(This side to be filled up by the Director of Industries through whom the application is made.)

Is the information given by the applicant }
substantially correct?

Do you recommend the applicant on }
personal or general knowledge?

Is there any alternative form of }
Government employment for }
which you think the appli- }
cant would be suitable?

Do you consider that the salary }
demanded is suitable?

Supplementary remarks.....

Signature.....

Director of Industries.....

Date.....192 .

VI.—TECHNICAL AND INDUSTRIAL EDUCATION.

(PREFATORY NOTE READ AT THE CONFERENCE.)

The question of the control of technical and industrial education has been considered by the Government of India, and it has been decided that the Department which is concerned with the general administration of a particular subject should have the control of the education in that subject; but that the Department of Education should be consulted both as to the method of teaching and the consideration of courses. This decision involves an amendment of the Rules of Business.

2. Both "Industries" and "Education" are transferred subjects in the provinces, and local Governments will therefore be at liberty to decide for themselves whether they will place any or all branches of technical and industrial education under the provincial Director of Industries, or under the Director of Public Instruction.

Heads of technical education transferred to Board of Industries and Munitions.

3. It has been provisionally suggested by the Department of Education that the Board of Industries and Munitions should deal with the following heads of education:—

- (a) Mechanical and Electrical Engineering when taught in special institutions outside the Civil Engineering Colleges.
- (b) Technical and industrial education in all its forms, other than Medical, Legal, Forestry, Veterinary, Agricultural, Survey, Commercial, and Engineering for Upper and Lower Public Works Department subordinates.
- (c) Research.
- (d) Mining.

The Board has been asked to scrutinise this list and suggest any necessary amendments. The suggestions of the Directors of Industries are invited.

4. As has been said above, it will rest with the local Governments to decide under what administrative authority—the Director of Industries or the Director of Public Instruction—to place each particular head of education; but there are obvious advantages in all provinces following more or less the same policy.

5. The Industrial Commission* has called attention to the great diversity of practice which prevails in methods of imparting industrial and technical education in different parts of India, and has suggested that this could be obviated by the provision of a system of regular visits by special officers of the Imperial Department of Industries. The inspection notes of such officers would carry no authority, but would, it is thought, be of advantage to local Governments and provincial Departments of Industries. In order to make this scheme workable it is desirable that the schools to be inspected in different provinces should be under the same administrative authority, that is to say, the provincial Department of Industries.

6. Another point that will arise will be the measures to be adopted to ensure co-operation with the Directors of Public Instruction. It is suggested that the conference should consider the advisability of including the local Director of Public Instruction on the Advisory Board which has, or probably will, come into existence in each province to assist the Director of Industries. This plan has been adopted with signal success in the United Provinces.

F. R. R. RUDMAN.

Discussion.

In a previous discussion Sir Thomas Holland had referred to the decision of the Government of India that, so far as the Central Government was concerned, the control of education in a technical subject should rest in the hands of the technical department concerned: after a student had passed the preliminary stage, his education should be vocational, the method of instruction being subordinated to the object of it. This principle had, in fact, been long accepted in practice by the Government of India as is instanced by the Agricultural College and the Forest School at Dehra Dun, which are controlled by the Department of Agriculture and the Inspector General of Forests, respectively. In accordance with this principle, the Department of Industries should, in provinces, be the appropriate controlling and administrative authority for the technical and industrial education pertaining to that Department, and, though the transfer of any particular institution, e.g., the Bihar School of Engineering, the Central Provinces, Burma and

* Report, paragraph 179.

Dacca Engineering Schools, from the Director of Public Instruction to the provincial Industries Department, was a matter for the province concerned to decide, the Directors of Industries should on their return be in a position to make a definite recommendation on the subject. The conference unanimously agreed that it was desirable that the control of such education as pertained to the industrial department should be transferred from the Director of Public Instruction to the Industries Department, due attention being given to the necessity of consulting the Director of Public Instruction both as to the method of teaching and the consideration of courses.

The conference then considered the heads of education which should appropriately be dealt with by the industrial department. The list given in paragraph 3 of the prefatory note, was accepted with the modification, that the head, "Research," should be interpreted as "Research in subjects ordinarily dealt with by the Department of Industries."

In the case of technical and industrial schools maintained by local bodies, Mr. Barua (Assam) suggested, and the conference was prepared to agree, that the technical control of such, if aided by Government, should be transferred to the local Department of Industries.

The conference also considered the control of education in certain subjects which fell partly within the province of other Departments, e.g., sugar-making, rubber and silk manufacture, oilseed crushing, salt and "commercial" education. The matter for consideration was at what stage, if any, the Agricultural or other Department should hand control to the Industries Department. Mr. Chatterjee was of opinion that, so long as manufacture was subsidiary to agriculture, the control of education in such manufacture should remain with the Agricultural Department and should only be separated therefrom when manufacture was separate from the actual agriculture. Sir Alfred Chatterton pointed out with regard to sugar that what was wanted was to stop the agriculturist trying to manufacture his own sugar, as his methods were wasteful and economically unsound; education in sugar manufacture ought to be taken away entirely from the Agricultural Department and transferred to the Industries Department. Referring

to silk, he added that education in the silk industry should be administered by the Agricultural Department up to the cocoon stage, thenceforward by the Industries Department. *En passant* he recommended inquiries as to the desirability of importing Chinese silk-growers and weavers, to instruct in the methods adopted so successfully in China. Mr. McKenna, Agricultural Adviser to the Government of India, informed the conference that the question of instituting a sugar school was being taken up by the Sugar Committee, and it was therefore decided to postpone consideration of the question which Department should undertake the work of administering such a school until the report of that Committee had been published. Mr. McKenna undertook also to include in the agenda of the next Agricultural conference the line of demarcation between "industry" (in the sense in which the word was now being used) and "agriculture." Meanwhile, Directors of Industries agreed to work in co-operation with the Agricultural Department in dealing with these subjects.

As regards the heading "Salt," Sir Thomas Holland was of opinion that as there was a department already constituted to deal with this subject, it did not appear to be necessary for the Industries Department to take over the education problems appertaining to it, though he agreed that the Industries Department was concerned in the by-products.

No decision was arrived at on the subject of "commercial" education, it being considered desirable to postpone action until the future of the Imperial "Commerce Department" was settled.

The question of inspection of industrial schools, institutes, etc., was then raised. Sir Thomas Holland referring to the proposals contained in paragraph 179 of the Industrial Commission's Report emphasised the advantage of utilising Imperial Inspectors, or visitors as they are called by the Industrial Commission, by means of whom a province was better able to be kept *au fait* with the experience of other provinces and modern developments than by inter-provincial visits of its own staff. The reports of such visitors would be made to the local Government, which would, of course, be at perfect liberty to act upon their advice or not. If the idea was acceptable to local Governments, the Imperial Government would keep a staff of inspectors, say,

Inspection of Industrial Schools by Visitors of the Imperial Department.

one for engineering schools, one for weaving schools, one for leather schools, one for glass schools, etc., who would be made available on the invitation of the local Directors of Industries. The scheme would not, of course, preclude the local Government from also having its own inspectors, if it preferred this course or wished, because of the number of schools to be inspected, to supplement the inspectors by the Imperial Officer. The proposal was unanimously adopted by the conference, Mr. Collins (Bihar and Orissa) adding that not only were the inspectors necessary for inspection purposes but also actually to start the schools on the right basis, the crying need of his province in the first instance being for constructive advice.

Mr. Collins (Bihar and Orissa) also said that great help would be given to industrial education if the Imperial Department would obtain for provincial Directors as much information as possible regarding industrial education throughout the world.

VII.—THE BRITISH INSTITUTE OF INDUSTRIAL ART.

(PREFATORY NOTE READ AT THE CONFERENCE.)

The British Institute of Industrial Art has been founded by the Board of Trade and Board of Education, primarily for the purpose of improving the standard of design and workmanship in the industrial output of Great Britain.

2. To quote the words of the Indian Trade Commissioner, "the object of the Institute is the fostering of Industrial Art—both that of craftsmen and of machine-made goods, both as regards design and execution. This is to be done both by the collection and dissemination of information and by the holding of exhibitions, which may be general in their character or confined for a time to some particular branch, e.g., textiles or embroidery, or pottery and glass, etc." The intention is to hold three exhibitions annually, each of which would be open for 2 or 3 months.

3. The point for consideration is whether India should participate, and, if so, to what extent. From the information furnished by Mr. Chadwick, the Board is of opinion that the object of the Institute is the fostering of industrial art in *Great Britain*. It is true that facilities will be provided for the sale of exhibits from India or elsewhere or for negotiations between prospective purchasers and manufacturers of exhibits, but the primary intention seems to be to give the British manufacturer an opportunity of obtaining "tips" for the improvement of his own wares. This is borne out by a letter from the Director of the Institute to Mr. Kenshaw, which specifically says that from the replies received from His Majesty's Consuls abroad "much valuable information is being compiled and has already proved useful to the artists and manufacturers of this country (Great Britain)." It would appear that, unless arrangements are made for the deputation of the representatives of Indian manufacturers to pick up information regarding the art products of other places, India has practically nothing to gain, but a great deal to lose, by taking part in the Institute. For the improvement

and development of the trade in Indian art products it seems far more preferable to use exhibitions like the British Industries Fair or the British Empire Exhibition, agency firms (*e.g.*, Messrs. Harrisons) or concerns like Liberty's.

4. The Indian Trade Commissioner has been informed that the question whether India will take part in the Institute will be placed before the Directors of Industries. Meanwhile, as it is obviously desirable that Mr. N. Heard, Principal of the School of Arts and Crafts, Lucknow, and Mr. Hadaway of the Madras School of Arts, who are at present in England, should seize the opportunity of visiting the exhibition now being held and of picking up any information, which may be of use to Indian art industries, Mr. Chadwick has been asked to suggest the importance of this step to these officers.

F. R. R. RUDMAN.

Discussion.

The conference agreed generally with the prefatory note and came to the conclusion that it would be unwise to take part in the Institute of Industrial Art without further information from the Indian Trade Commissioner: it was decided to obtain further details and furnish Directors of Industries with it, to enable them to consider independently whether their province should participate.

In this connection, Sir Alfred Chatterton raised the question of establishing an emporium in London for the sale of high-class art products. He estimated the capital expenditure at £200,000; sales would be made from stocks kept at the emporium, but in order to make the venture a success it would first be necessary to import expert designers into India. The conference were not inclined to accept the proposal, the majority thinking it better to concentrate on the improvement of art products in India by better training in the art schools and rely on exhibitions such as the British Empire Exhibition or the British Industries Fair, to provide the necessary advertisement. Mr. Townend averred that there was never any difficulty in finding a market for high class work: the difficulty lay in keeping up the standard.

VIII.—BRITISH EMPIRE EXHIBITION.

THE MARKETING OF VILLAGE INDUSTRY PRODUCTS OUTSIDE INDIA.

(PRELIMINARY NOTE READ AT THE CONFERENCE.)

The attention of the Directors of Industries has been invited to the Press Communiqué No. I-547, dated the 3rd of January 1920. The communiqué reads as follows:—

“It is published for general information that it is proposed to hold a British Empire Exhibition in London in the summer of 1921. The primary object of the Exhibition is to promote the extension of Imperial trade by bringing before buyers from all parts of the world, exhibits of the industries, inventions, raw materials and products of the Empire. The British Board of Trade has expressed approval of the proposal; and, although the Government of India do not propose to participate officially in obtaining representative exhibits of all products, industries and raw materials of India, they desire to commend the Exhibition to the general public and manufacturing firms, and hope to arrange for a display of Indian timber. All requests for information should be addressed to the Director, British Empire Exhibition, 25, Ironmonger Lane, London, E. C.”

2. The Board has pointed out that the occasion of the British Empire Exhibition would be suitable for an exhibition of Indian art products and has suggested that local Governments should consider the advisability of making a representative provincial display of the products of Indian arts and crafts.

3. Since the issue of the communiqué reproduced above, Sir Thomas Holland has heard demi-officially from the Revenue Secretary at the India Office that the Exhibition is probably to be postponed until 1922, when it will be organised and run officially by the Department of Overseas Trade. The latter hope to obtain a guarantee of £100,000 from the Treasury and they will shortly

make a public appeal for a guarantee fund of £500,000, the intention being to organise the Exhibition on a very large scale, the biggest of its kind since 1851.

4. It will be seen from the communiqué that the Government of India did not propose to participate officially in the Exhibition. The situation, however, has now been altered owing to the Exhibition being taken up officially by the Department of Overseas Trade, and if, as is understood to be the case, the Dominions will take an important part in it, it would perhaps be unfortunate if India held aloof.

5. The opinion of the conference is required on the following:—

- (a) Should India join officially in the Exhibition?
- (b) If no, should the Government of India press for the appointment either at home or in India, or in both places, of a Commissioner to organise the Indian exhibits?
- (c) Should exhibits be arranged by provinces, or by subjects? If a Commissioner is appointed, the latter would appear to be the most suitable method.
- (d) How should the expenses be defrayed? It is suggested that the cost of the Commissioner should be defrayed by the Government of India, that of the construction and rent of the hall and the cost of the exhibits should be met by local Governments in the proportion to be decided later.

6. The marketing of the products of village industries outside India may be considered in this connection.

F. R. R. RUDMAN.

Note by Mr. C. G. Freke, I.C.S. (Assistant Director-General of Commercial Intelligence).

"I must first explain very briefly our general organisation for finding overseas markets for Indian products."

"2. In addition to our close relationship with the Indian Trade Commissioner in London, we are in communication with the British Trade Commissioners in the Dominions and Colonies and also with Consuls and Commercial Attachés in certain other countries. We

have sent these our "Directory of the principal exporters of Indian produce and manufactures" and the "Catalogue of samples of Indian manufacturers exhibited in the Commercial Museum." The latter also gives the names and addresses of the manufacturers of the exhibits (with the names of firms, goods for export, underlined), and the two together enable the recipient to give the enquirer in his country the names and addresses of suppliers of most of the goods which India is in a position to export. If a Trade Commissioner, Consul or Commercial Attaché receives an enquiry for Indian goods not mentioned in either the "Directory" or the "Catalogue of samples," he communicates with us and we give him the names of suppliers either from the lists we have in office or after making the necessary enquiries. The better organised lines of export all appear in the Directory, but those less well organised appear only in the Catalogue of samples."

"3. We have written to all these officers giving them information about the lines of Indian exports in which (from Customs statistics or other *data*) trade appears capable of development with their respective countries, and we are gradually obtaining from them information from their points of view regarding these lines, together with lists of importers. These officers have promised to do their best to let firms in their countries know that they represent Indian interests and the arrangements I have sketched above will, with steady development, probably be as much as we can do to develop markets in those countries for Indian goods which are sufficiently well organised for export."

"4. Industries which are not yet fully organised for export will need pushing on somewhat different lines and, to illustrate this, I state briefly what has been done to find overseas markets for Indian toys, chicon work, lace and embroidery."

"5. *Toys*.—In January 1917 the Government of India asked the Director General of Commercial Intelligence to collect samples of toys for exhibition at the British Industries Fair in the spring of that year. Unfortunately the time given was too short, but in August 1917 a collection of toys and lacquer ware, obtained from the Victoria Technical Institute, Madras, was sent to the Imperial Institute as a permanent exhibit. Mr. Hubert Bill's remarks on that consignment and on the general question of toys for the English market are very interesting. Extracts from this letter were sent to various Directors of Industries and other officers likely to be

interested, to manufacturers, and also to the Indian Trade Commissioner in London."

* * * * *

"10. *Chicon work, lace and embroidery*.—An overseas demand for these lines was indicated by letters from Canada, the United Kingdom, Australia, New Zealand and other countries and we therefore addressed Directors of Industries in March 1919 with a view to organising for export this industry in their respective provinces. The replies received from Madras and Bengal were promising, but those received from other provinces tend to show that, for the present at any rate, there are hardly any firms in those provinces good for overseas trade in these lines. We have, however, communicated to all the firms mentioned by Directors of Industries the names of overseas enquirers and *vice versa*; and in our letter of August last we communicated to all Directors of Industries the lists of names of exporters which we had obtained from Collectors of Customs. And as in all such cases we sent the lists of Indian firms to the Indian Trade Commissioner in London asking him, at the same time, if he could help us in the matter of a suggestion made by the Director of Industries, Bengal, that samples of laces, embroideries and chicon work should be obtained from overseas merchants, together with approximate estimates of the prices they would be prepared to pay and of their requirements. (In the course of this enquiry it appeared that hand-made tapes, newars, and braids, made in Bengal, might be also exported, and we are making enquiries about markets for these goods in Aden, Bahrain, Persia, Ceylon, South Africa, Straits Settlements, and West Indies.)"

"11. There are ordinarily three steps in establishing an export trade connection:—

1. Organising the industry in the provinces.
2. Connecting that organisation with exporting and shipping firms.
3. Connecting the shippers with overseas firms.

The first is purely a matter for Directors of Industries, the last is a matter for commercial intelligence, and the middle link is the one in which we need to co-operate most."

"12. In this case overseas enquirers are asking us for supplies and as soon as the sources of supply can be organised in such a

manner that they can be relied on to supply in large quantities and to deal promptly and satisfactorily with repeat orders there will be no difficulty in finding exporting firms who will take up this trade as a regular line."

"13. As soon as we have introduced foreign enquirers to Indian suppliers or have found foreign firms willing to take up the lines of goods offered by Indian firms we seldom hear anything further, and it is very difficult to know which introductions results in good business connections and which are mgatory. But I give below briefly details of a few of these miscellaneous enquiries as instances of how things are developing:—

- "(i) A Calcutta firm, whose representative saw the exhibits in the Commercial Museum, has recently asked us for the names of reliable suppliers of lacquered toys who are good for overseas trade. They propose to push them on the London market. The information is being collected."
- "(ii) A firm in Oxford has just written to us asking to be appointed as agents for the sale of Indian toys, printed cloths, rugs, embroideries, etc. We have written to likely suppliers asking them if they wish to avail themselves of this offer."
- "(iii) An Australian enquirer was in Calcutta this cold weather and came to see us. He saw the Commercial Museum and took away catalogues and lists of suppliers of fancy goods, carpets, toys, etc."
- "(iv) In response to an enquiry from Cape Town we sent lists of suppliers of ivory goods, silk piece-goods, chicon work, etc."
- "(v) In response to an enquiry (received through the Indian Trade Commissioner in London) from a firm in Tunis for turban cloth and watered silk, we introduced them to suppliers, but we do not know if business resulted."
- "(vi) In November last we received an enquiry from a New Zealand firm for suppliers of wool dijjuns, cotton printed bedspreads, cotton fabrics for furnishing purposes, dhurries, pholkaries, kelins, artware (brass, etc.), ornaments and embroideries. Lists of suppliers have been sent."

"(vi) In response to enquiries from firms in New Zealand, Australia, Canada, and South Africa, we have sent them the names of suppliers of Indian carpets."

"(vii) As a result of the Australian Trade Commissioners showing Messrs. Riley and Company, Melbourne, our catalogue of the samples exhibited in Commercial Museum, this firm asked for samples of the Kosa silk cloths woven in the Bilaspur district, Central Provinces. The Director of Industries, Central Provinces, obtained samples for us which we sent on. The Trade Commissioner has since informed us that these samples are not suitable for the Australian market and that the prices are too high. We are at the same time testing that market with Assam silks."

"(ix) An enquirer representing several Canadian firms is at the present time in India trying to establish connections for carpets and other minor exports, in addition to produce and the major exports. We have given him lists of the names of suppliers of the various commodities in which he is interested."

"(x) The representative of a Brussels lace firm has just arrived in India and intends to try and organise the supply of Indian lace for his firm. We have given him lists of firms and missions making lace, chicon work and embroidery."

Discussion.

The conference were unanimously of opinion that India ought to participate officially and on a worthy scale in the British Empire Exhibition. They agreed also to the necessity of appointing a Commissioner, who would get into touch with the organisers of the Exhibition at home, tour throughout India, make arrangements with local Governments, the Forest Department and firms for their exhibits and accompany the exhibits to England.

The general opinion was expressed that the exhibits should be arranged by provinces, as this method was likely to promote a spirit of rivalry and result in a better exhibition of Indian products. It

India's official participation.

Arrangement of exhibits.

was possible that Burma might have a separate building, in order to show an example of Burmese architecture.

As regards the expenses, it was thought that the Imperial Government should defray the cost of the Commission and of the building, while local Governments, firms and other exhibitors should pay not only the cost of the exhibits but also a rent for the portion of the building used by them together with a share of the maintenance charges.

IX.—LABOUR QUESTIONS AND THE DEVELOPMENT OF THE CENSUS OF 1921 ON THE INDUSTRIAL SIDE.

(For this discussion Mr. J. T. Marten, I.O.S., Census Commissioner with the Government of India, attended the Conference.)

(PREFATORY NOTE READ AT THE CONFERENCE.)

During the last few months there has been an abnormally large number of strikes and other disputes amongst the workers in the organized industries of the country. These strikes have not been confined to any particular part of India; in some cases they have involved practically all the labour force in one industry, *e.g.*, the strike among the cotton mill operatives in Bombay; in other cases they have extended to all workers in one centre, *e.g.*, the strike in December in Cawnpore. At the time of the drafting of this note a number of strikes are still pending, *e.g.*, at Jamshedpur, and among the hands of the Cawnpore Woollen mills. Some large centres of industry have apparently been free from trouble, *e.g.*, Ahmedabad, but there had been difficulties there early in the season last year, and from a recent article in the *Times of India*, it would appear that conditions are far from reassuring in Ahmedabad.

2. There are probably various causes for this unrest; very high prevailing prices for food grains and cloth have no doubt been the main factor everywhere, and naturally wages have not kept pace with prices. It is also probable that labour unrest in Europe and other parts of the world has reacted in India. The working classes in this country, although not literate to any appreciable extent, still get to know more world news than they did previously. In Japan it is understood that the labouring classes followed with the keenest interest the discussions regarding the treatment of labour problems that took place at Paris in the early part of 1919 before the signing of

the Treaty of Versailles. An unusually large number of Japanese attended the International Labour Conference at Washington on behalf of the employers as well as the employed, and there were as many as 25 Japanese press correspondents there.

* * * * *

4. The strikes have resulted in a considerable injury to the industries concerned, and probably to all industries and to the community in general. It is, therefore, desirable to consider to what extent Government action is necessary in the matter. An ancillary question is whether such action should be taken by the Central Government, or by the Provincial Governments. It is understood that all Provincial Governments have been anxiously considering the situation, and that in Madras a special machinery has been set up to deal with this matter.

5. Some of the demands that have been put forward in recent strikes are likely to be conceded by law in the near future, e.g., a 10-hour day and a regular weekly rest; for others no legal provision can be made at present. Thus it is impossible to fix wages beforehand, although it is believed that the International Labour Conference will probably at the next meeting discuss the question of a minimum wage. There is a reference to a minimum wage in the labour part of the covenant of the League of Nations.

6. In this connection a further question arises, whether it will not be advisable from the point of view of the employers as well as the employed, and also from the point of view of the State, that Trade Unions, or some similar machinery, should be organised in India. The President of the Upper India Chamber of Commerce recently expressed views favouring the organisation of Trade Unions in order that employers might have a recognised body with properly appointed officials and leaders to negotiate with. The advantages of this are obvious, but the questions to be discussed are:—

- (1) Whether the Unions should, as in England, be organised on the basis of a trade, or industry, or on the basis of people employed in a particular factory?

(2) Whether some agency should be set up to help the working classes to organise; if so, can the employers assist in the matter?

(3) To what extent, if at all, in the present state of education amongst the working classes, should outsiders be employed as either paid or honorary officials in the Unions?

7. According to the terms of the Peace Treaty, there will be annual meetings of the International Labour Conference, and possibly special meetings will be held apart from the annual meetings.

Thus, there will be a conference to discuss questions relating to employment at sea, at Genoa, in the middle of June. According to the Treaty, each country will send, besides two Government delegates, one delegate to represent the employers and another delegate to represent the working classes, and in both cases the Government of the country has to see that these two unofficial delegates really represent the largest number of the classes on whose behalf they will attend.

* * * * *

In view of the very serious questions which are likely to be discussed at future meetings of the International Labour Conference, and in view of the fact that the true interests of Indian labour are often in conflict with those of labour in other countries, it will be inconvenient if the Government of India are unable to send any labour delegates to the meetings.

8. The opinion of the conference is, therefore, sought on the following points:—

Points for discussion.

- (1) Should any machinery be set up in each province by the Government to deal with labour disputes?
- (2) Should the Government of India intervene in such disputes: If so, at what stage?
- (3) Should the Government participate, in any way, in the preliminary work of the organisation of Trade Unions: if so, what action should be taken?

- (4) What should be the actual lines on which such organisation should take place?
- (5) Until these organisations come into being, how should the Government of India select a delegate and advisors to represent the working classes at meetings of the International Labour Conference?

A. C. CHATTERJEE.

Discussion.

The President called attention to the close connection between the question of Labour and the Census. India was now a member of the League of Nations and had certain obligations to fill. At the Washington Conference a recommendation was made to the Government of India to include in the definition of a "factory" any institution employing power and minimum of 10 persons (or if the latter was unworkable, a minimum of 20 persons—in the latter case local Governments to have the authority to reduce the number to 10 persons). As a member of the League India was bound to consider and adopt, so far as local conditions would allow, the recommendations of the Washington Conference and Government was in fact, now dealing with the revision of the Factories Act. For this purpose and in order to hold her own in the League and establish her position as one of the greatest manufacturing countries,

India must have information regarding her industries and the numbers of persons employed therein. Further, in order to understand the labour situation thoroughly it was necessary to have information as to its condition in factories; and for this both the Imperial Government, which represents India in the League, and provincial Governments which are responsible for industrial development, must seek the assistance of the Census.

Mr. J. T. Marten, I.C.S., Census Commissioner, then read the following note:—

"As the question of the nature of the assistance which the Census Department can render in connection with industrial and

economic enquiries is to be discussed at the coming conference of heads of Industrial Departments in Delhi, it may be convenient if I give some preliminary notes on points that have occurred to me and have been suggested by those with whom I have discussed the matter on my tour.

"2. I take first the Occupation Tables of the Census Report. It is not proposed to make any modification in the questions asked in the Census Schedule regarding occupations, *vis.*

Column 9.—Principal occupation or means of subsistence of actual workers.

Column 10.—Subsidiary occupation or means of subsistence of actual workers.

Column 11.—For dependants, the occupation of the worker by whom supported.

It was represented to me strongly from Bengal that there was as little to be got out of column 10, as the distinction between principal and subsidiary occupation was often obscure and generally inaccurately given and the additional question confused the enumerator and led to incorrect returns in both columns. In view, however, of the great prevalence of dual occupations and their importance from an industrial point of view, I am of opinion, and most officers have agreed, that we should retain the column for subsidiary occupations and do our best to get over the difficulties which it entails.

"3. Dealing now with the presentation of the statistics, I refer to Imperial Table XV, Parts A, B, C and D, and Imperial Table XVI, Parts I and II. The scheme of classification introduced at the Census of 1911 reduced the number of groups from 520 to 169 and has been explained in detail in Sir Edward Gait's Report (pages 397 to 403). I need not reproduce here the reasons given there in favour of this reduction and of the new form of classification. The change involved a good deal of statistical manipulation so as to obtain, as far as possible, figures that would compare with those under the previous scheme and it would be most inadvisable to make any further radical change on the present occasion unless strong reasons can be adduced. What could, however, be attempted is a further sub-division of some of the groups (*e.g.*, the textile groups and groups of labourers) so as to give greater detail without destroying the comparative totals. At the same time I may say that this

was, in several cases tried at the last census (*s.g.*, in the Central Provinces and Berar) with no great success. Our imperfect machinery of enumeration does not admit of accurate statistical detail being obtained in so difficult a subject as the occupations of the people.

"4. A reference to the statistical tables of occupation will be found in paragraphs 518 and 519 of Sir Edward Gait's Report and a reference to the tables of the provincial reports will show the manner in which statistics have been presented in each province. Parts C, statistics of dual occupations, and D, functional distribution by religion, were optional tables and were not compiled in some provinces. I have carefully considered the forms of all these tables and, subject to any suggestions that may hereafter be made, do not propose to recommend to the Government of India any material alteration in the number and form of the tables.

"5. I turn now to the Special Industrial Schedule introduced by the Census Commissioner at the last census (*vide* paragraph 517 and paragraphs 556 to 558 of the India Report). This form was introduced so as to show the distribution of the working population in connection with the chief industries of the country, as distinguished from the personal occupations which are shown in the general occupation tables. I append a specimen of the form as used at the last census. One of the chief questions on the present occasion is to what extent this form can be expanded so as to obtain further useful information regarding the conditions of industries. At last census the enquiry was confined to establishments employing 20 or more persons. A complete list of establishments of this kind was drawn out and the form was served by specially selected enumerators on the owner, agent or manager of the establishment a few days before the census date with a letter conveying statutory injunction to him to fill it up and deliver it to the enumerator on the day after the census date. On the present occasion it is proposed to extend the enquiry to establishments employing ten or more employees. If the Schedule is complicated by questions involving considerable details, there is no reason why the period during which it is being filled up should not be extended; and it would be possible, though it might be costly, to employ, in certain cases, a trained staff of enumerators (as is done in the United States) to assist the Manager in filling in the Schedule:

"6. I append a revised form containing heads of information which it is suggested might be included in the special Schedule. Under Head I, I have added by-products as these are now important in most large factories. Under Head II, it will be well to distinguish the organization of the establishment. The introduction of a question regarding capital is a matter regarding which I should like opinion. In the case of registered companies we have already information and in the case of private-owned establishments the information might be useful, but a good many officers are of opinion that accurate information would be unobtainable. On the other hand, it was represented to me in Bombay that most private owners of industrial establishments could give a fair estimate of the approximate value of their plant, etc., and that on the average the statistics would be sufficiently correct to be useful. Head III would include the actual Manager and Head IV the Assistant Managers, heads of departments and technical experts, etc. It might be useful in the case of these groups to ask their educational or technical qualifications. In tabulation we should have to consider only definite categories such as graduate and non-graduate and technical diploma. It has also been suggested that we should divide them into categories by emoluments (i.e., salary and commission) so as to distinguish between the status of, for example, the General Manager of a large Jute Mill or Factory, and the Manager of a small Rice Mill who would for practical purposes hardly come under one common group. It is doubtful, however, whether this elaboration is worth making.

"Head VI.—*Operatives.*—If the Schedule is to contain any questions regarding particulars of individual operatives (other than sex of adults or children and the general categories of European, Indian and Anglo-Indian), e.g., birth-district and caste or race, the enquiry becomes a much more elaborate affair entailing the filling up of an entry for each individual employee. In a large jute mill, employing hundreds of workers this would possibly be objected to by the managers and in any case it would entail a special staff of enumerators. At the same time if the enquiry is extended over a reasonable period (e.g., a month) there is no inherent difficulty and the statistics of birth-district, and caste or race are of interest in connection with the nature and movements of industrial labour.

"Head VII.—There should be no difficulty in obtaining this information regarding power employed.

"Head VIII.—Seasonal and perennial employment is an important distinction in this country. I do not think that the information obtained under Head VIII of the Schedule of last census was of any value or that the question should be repeated.

"Other possible questions relate to (i) wages and (ii) hours of employment. Both these matters involve complicated considerations as both wages and hours of employment differ for different classes of workers. Unless it is decided to employ a special staff for this enquiry I doubt whether accurate and useful statistics could be obtained, but it has been suggested that special enquiries might be made in selected establishments representative of the different main industries.

"7. *General enquiries.*—The Superintendent of Census will have time to make general enquiries regarding matters other than those purely statistical. The idea is that he should co-operate with the Director of Industries and that they should settle the subjects which could be worked up; e.g., in the United Provinces it is proposed to make an Industrial Survey and the Director of Industries thinks that the Superintendent of Census could give material assistance in connection with the scrutiny and co-ordination of information already available and information which will be obtained regarding industrial conditions. The last chapter of the Madras report of last census contains an interesting review by Sir Alfred Chatterton of the existing conditions of the principal industries of the Presidency based partly on the census statistics and partly on general information.

'Other suggested subjects are:—

- (i) *The economic conditions and movements of labour.*
- (ii) *Density and overcrowding in industrial centres.*—Statistics will probably be available for certain industrial cities as a separate reference has been made on this subject to local Governments.
- (iii) *The conditions of rural trade.*—It might be useful to examine some typical rural markets. The object would be to see what class of article and commodity is sold and by whom, where it comes from, how far the bazaars

supply the wants of the people, how far they are inter-connected or complementary, how far prices are governed by custom or competition; what new commodities are being sold and bought and where they come from; what is the average turn-over of different classes of shopkeepers; how far credit advances and payment in kind are allowed; what are the relations between the small shopkeeper and the large wholesale dealer; to what extent trade agents are employed. How far custom and clientele is regular; what sort of stocks are kept; what sort of accounts are kept in petty shops.

- (iv) *The condition of female labour in industries.*—Type of women employed; kind of work done by women; arrangements regarding maternity, etc., birth-rate among women in industrial centres; comparative rates of wages among men and women; how far are women replacing men in different industrial occupations; social position and reputation of female workers.
- (v) *Influence of caste on industry.*—The information already existing about the industrial castes might be scrutinized and any useful information respecting trade guilds, industrial rules and customs might be examined and brought up to date by special enquiries. This enquiry might deal with the effect of the concentration into industrial centres on caste feeling, mode of life, character and employment of leisure, the extent to which industrial castes retain their traditional occupation and the social position of factory workers compared with home-workers (as shown by formation of sub-castes, inter-marriage, etc.)
- (vi) *Cottage industries.*—It may be possible to sub-divide some of the industrial groups in the occupation tables so as to show the progress of cottage industries in greater detail, but experience has shown that the statistics are not very accurate. It is doubtful whether the census staff can give much help in regard to the condition of the cottage industries unless something of the nature of regional survey were attempted and this would probably be better done by the Industries Department."

SPECIAL SCHEDULE OF 1911.

District Thana (Tahsil, etc.) or Town.

Special Census Schedule to be filled in by the Owners, Agents or Managers of Mines, Factories, Works, Mills, etc., in which at least 20 persons are employed—

1. Description of Mine, Factory, Works or Mill, etc. (Please state clearly what the nature of the Factory, etc., is, e.g., Jute Press, Jute Mill, Woollen, Carpet, or Weaving Establishment, etc.). 1.
2. Name and caste (or nationality, in the case of Europeans) of owner. If a Company, state the name under which it is registered. 2.
3. Name and caste (or nationality) of Manager. 3.
4. Number of persons engaged in direction, supervision and clerical work (i.e., Assistant Managers, supervising engineers, overseers, clerks, etc.) 4. (a) Europeans and Eurasians—
Males. Females.
(b) Indians—
Males. Females.
5. Number of skilled workmen (i.e., persons who require to be specially trained before they can do the work on which they are employed.) 5. (a) Europeans and Eurasians—
Males. Females.
(b) Indians—
Males. Females.
6. Number of unskilled labourers (i.e., ordinary coolies, chaukidars and menials employed in the mine, works, etc.) 6. (a) Over 14 years of age—
Males. Females.
(b) Under 14 years of age—
Males. Females.
7. Is any mechanical power employed? If so, state whether water, steam, oil, etc. 7.
8. Is the state of your trade on the 10th March 1911, brisker or slower than usual? 8.]

N.B.—In answering use one only of the following phrases, and no other :—

- (1) Much brisker than usual.
- (2) Brisker than usual.
- (3) Somewhat brisker than usual.
- (4) Normal.
- (5) Somewhat slower than usual.
- (6) Slower than usual.
- (7) Much slower than usual.

INDUSTRIAL SCHEDULE SUGGESTED FOR 1921.

I.—Nature of Industry (Coal Mine, Jute Mill, Cotton Gin, Oil Press, etc.) Articles produced—

- (a) Principal.
- (b) By-products.

II.—Organisation and Direction—

- (i) Government,
- (ii) Local Authority,
- (iii) Company,
 - (a) Number and race or caste of Directors.
 - (b) Capital.
- (iv) Private—
 - (a) Race or caste of owner.
 - (b) Approximate capital.

III.—Management.

Race or caste and educational qualifications of Manager.

IV.—Supervising and technical staff.

Number, race or caste and educational qualifications.

V.—Clerical staff.

Number, race or caste.

VI.—Operatives.

By sex and age (adult or child under 14 years).

- (a) Skilled. } Number, race or caste, and birth-district.
- (b) Unskilled. }

VII.—Power.

- (a) Number and nature of power engines (steam, oil, etc.).
- (b) Brake horse-power of each engine.

VIII.—Present state of industry—

- (a) Perennial,
- (b) Seasonal; what season?

“This schedule might be served on the Manager of any industrial establishment in which the number of employes is ten or more; to be filled up by him with reference to the conditions on a certain day or within a certain period.”

Discussion—contd.

Mr. Chatterjee opened the discussion by mentioning the various matters on which information was required to fulfil India's international obligations. The question of the minimum wage would be taken up at the next conference of the League, and for this purpose it was necessary to have figures of wages. This was necessary too to facilitate consideration of the general question of the revision of wages. The President had already alluded to the revision of the Factories Act, for which certain information was necessary; other points were the minimum age at which boys should be admitted to factories, the hours of work, the employment of women and the question of maternity benefits.

The President added that, as Government were now considering the question of raising the limit of age in the case of child labour to 12, it was necessary to know the numbers of boys employed in factories, of 9, 10, 11 and 12 years of age respectively. This would, as Mr. Marten pointed out, necessitate enquiries regarding individual operatives, but in view of the importance of the information the conference were agreed that, if it were possible, the information should be obtained. Mr. Marten said it would be possible. On the President emphasising the importance also of information regarding the movement of labour, Mr. Marten agreed to obtain this information, provided that the provincial staffs were assisted by special officers deputed for the purpose. As in order to obtain age statistics enquiries would have to be made for individual operatives, there was no longer any objection to obtaining birth-place statistics also; but the filling up of the forms would take time, possibly a month to complete.

The question of the factory census was then considered. Mr. Marten stated that there would be no objection to widening the basis so as to include all factories employing 10 or more, whether power was used or not, though he thought trained enumerators would be required to assist the Census staff.

Sir Alfred Chatterton then put in a plea for the hand-loom worker, urging the importance of obtaining statistics of the number of looms employed in this industry, which so far from being moribund

as so many supposed was actually growing more robust than ever. Mr. Marten thought that, if statistics of the hand-loom industry were required, a special schedule would be necessary. The case was however, complicated by the fact that there must be many factories employing 10 workers, all of whom were members of the same family and so, for the purposes of the Washington Conference, would not be included in the category of "factory" at all.

After further discussion Mr. Marten agreed to the issue of a separate schedule for hand-loom factories, in which more than 9 persons were employed.

Mr. Marten stated that the question of wages and hours of work did not come within the scope of the present census. Similarly, enquiries about the health of workmen, sanitation, etc., must be undertaken separately.

The conference then considered the draft form of Industrial Schedule, and Mr. Marten accepted it in the following shape:—

Industrial Schedule (suggested for 1921).

I.—*Nature of industry.*—(Coal mine, jute mill, cotton gin, oil press, etc.) Articles produced—

- (a) principal,
- (b) by-products.

II.—*Organisation and direction*—

- (i) Government,
- (ii) local authority,
- (iii) registered company,
 - (a) number of directors, by race and nationality,
- (iv) private-owned—
 - (a) race and nationality of owner,

III.—*Management.*—Race and nationality of manager.

IV.—*Supervising and technical staff.*—Number, by race and nationality.

V.—*Clerical staff.*—Number, by race and nationality.

VI.—*Operatives.*—by sex and age—

- (a) Skilled
 - (b) Unskilled
- } Number, by race, caste and birth-district,

VII.—Power.—

- (a) Number and nature of power engines (steam, oil, gas, water power, independent electric powers, supply electric power).
- (b) Brake horse-power of each engine.

VIII.—Present state of industry.—

- (a) Perennial;
- (b) Seasonal; what season?

This schedule is to be served on the manager of any industrial establishment in which the number of employees is ten or more; to be filled up by him with reference to the conditions on a certain day or within a certain period.

In order to facilitate the preparation of the industrial returns of the census Mr. Marten hoped that local Governments would select an officer in every district where it might be necessary to assist the local census staff. Directors of Industries promised to support the suggestion, adding that they would willingly do all they could personally to assist the Census Superintendent.

After reaching these conclusions the conference then considered the question of Labour and Trades Unions. The President pointed out that a Labour delegate has to be appointed for the next International Conference, and there must therefore be Labour organisations in existence, which can make the appointment. The Imperial Department, he added, was setting up a Labour Bureau under a Controller, whose functions in the first instance would be to gather statistics and information regarding labour questions generally and strikes or lock-outs in particular. Such an officer would have no executive powers because the settlement of labour disputes was a matter for local Governments to deal with, and the Imperial Department would not interfere except on invitation. He enquired what steps local Governments had taken to deal with such questions.

Mr. Campbell (Madras) stated that there was a Labour Commissioner in Madras, whose duty it was to keep in touch with the labour situation and assist the depressed classes; he was asked, and agreed, to furnish the Board of Industries and Munitions with an account of the origin of the appointment and the work done by the Commissioner. Mr. Holme (Barma) thought it inex-

pedient to have such an officer as *ex-officio* arbitrator in labour disputes as he might possibly be looked on with suspicion by one side or the other; it would be better to appoint a special arbitrator whenever necessity arose. Mr. Chatterjee explained that the object of organising a Labour office was not to settle disputes but to keep in touch with labour movements and keep the local and central Governments informed of them. One of the duties of such an organisation would be, as the President pointed out, to bring home to labour the vital importance of compulsory education, the absence of which was fatal to true labour movements and placed the Unions or individual workers in the hands of the professional agitator.

Sir Thomas Holland impressed upon the conference the great desirability of instituting a Labour branch in each provincial department (both for the consideration of local labour questions and to advise the Government of India which had to represent Indian labour and answer the questions put by the Secretary of State). A number of Directors undertook to raise the question on their return, Mr. Meek (Bengal) suggesting that it might be expedient to appoint a sub-committee of the Advisory Board to take over these duties.

In any case the Directors could see no objection to their furnishing the Imperial Department with information regarding strikes in a prescribed form, copies of which would be provided by the central department. The information would be merely a brief record of events and would express no opinions. It was decided that the Board of Industries and Munitions should address local Governments on the subject.

* As regards the settlement of disputes the Directors were informed that local Governments would shortly be addressed in a letter which would suggest for their consideration the question of setting up some local machinery on the lines of the British Industrial Courts Act, 1919.

X.—INDUSTRIAL POLICY OF LOCAL GOVERNMENTS AND THE METHOD BY WHICH THE IMPERIAL GOVERNMENT CAN BEST ASSIST THEM.

(PREFATORY NOTE READ AT THE CONFERENCE.)

Local Governments are primarily responsible for their own industrial policies, and except in the very rare instances when a certain policy might jeopardise Indian interests as a whole* (e.g., the export of zinc-sulphide ores) or when the interests of two local Governments are at variance, the Imperial Department has no right to interfere in the policies adopted.

The help of the Imperial Department will however, always be at the disposal of local Governments. This help could be given in many ways, e.g.,—

- †(a) The lending of experts to study local conditions, report on the feasibility of technical schemes, the best way to overcome local difficulties, etc.
- (b) The recommendation to local Governments to take up investigation of new industries.
- (c) The recommendation to local Governments to take over new industries which have been partially investigated by the central Government.
- (d) The giving of advice based on the experience of others, e.g., the evidence of the failure of certain hand-loom.
- ‡(e) The periodical inspection of technical schools, on the invitation of the local Government, the inspectors being asked to see if they are being run on the most up-to-date or the most successful lines.
- §(f) The tours of officers of the stores purchasing organisation, who would indicate the lines on which manufactures might be profitably developed and the ways in which the

*Development of industries is only a central subject where such development by a central authority is declared by order of the Governor-General in Council expedient in the public interest—Appendix F, No. 30-A, of list of Central subjects.

† Industrial Commission's Report, paragraphs 209-210.

‡ Industrial Commission's Report, paragraph 179.

§ Industrial Commission's Report, paragraph 198.

product might be improved in order to meet the indentor's requirements.

This question is one on which Directors are requested to give their opinions.

F. B. R. RUDMAN.

Discussion.

Mr. Holme (Burma), referring to the Calicut Soap Factory, to which pupils from Burma could not, on account of lack of accommodation, be admitted, enquired whether the Imperial Government would not give a grant to such institutions to enable them to be built large enough to accommodate a number of pupils from outside the province. His argument was that as more than one province would then be concerned in the undertaking it would become an Imperial concern and therefore a suitable object for Imperial financial support.

The conference was inclined to the view that it was generally better for the Imperial Government to subsidise local rather than build Imperial institutes, and favoured Mr. Collins' (Bihar and Orissa) suggestion that provinces should more or less specialize in different kinds of demonstration factories and such like, and reciprocate with each other in the matter of admitting pupils. The President stated that if a local Government came up to the Imperial Government with a request or assistance because they wished to increase an institute to a size which would enable it to meet the demands of other provinces for admittance, the Imperial Government would be prepared to consider such a request sympathetically. It was possible of course, that a local institution might eventually grow into an Imperial one.

The other points raised in the prefatory note were touched on, only briefly, Directors were asked to consider them and have proposals ready by the date of the next conference.

Subsidy by the Imperial Government to Provincial Institutions admitting pupils of other provinces.

XI.—FINANCIAL AND OTHER FORMS OF ASSISTANCE FOR NEW INDUSTRIES.

(PREAMATORY NOTE READ AT THE CONFERENCE.)

Financial assistance.

The specific recommendations made by the Indian Industrial Recommendations of Commission (Chapter XX) to provide financial facilities for industries are as follows:—

- (a) Appointment of an expert committee to formulate schemes for the establishment of Industrial banks. When properly developed these should do away, to a very great extent, with the necessity of other forms of direct financial assistance from Government. Pending the institution of Industrial banks, however, the following may be required:
- (b) For middle class industrialists cash credits for a definite period and amount, with a bank, subject to a guarantee by Government after examination by the Director of Industries and his expert staff of the financial standing of the applicant and the prospect of his business. In this scheme much will depend on the qualifications of the Director and of his staff for determining the suitability of applicant for help.
- (c) In cases which cannot be reached by banks, but where, in the public interest, assistance is necessary (e.g., to test the possibility of successful manufacture, to show the way to others, or to produce an article required for national safety) direct financial assistance may be given by Government as:—
- (d) guarantee of dividends, e.g., in the case of large industries likely to pay dividends after a long period;

Industrial Commission's Report, paragraph 292.

Industrial Commission's Report, paragraph 293.

Industrial Commission's Report, paragraph 294.

- (ii) loans of money, especially in the case of concerns with assets of a comparatively liquid nature;
- (iii) agreements to purchase output, e.g., in the case of articles not previously made in the country but required by Government for its own purposes;
- (iv) contributions to share capital, especially in the case of concerns which are important for national safety but which Government does not desire to undertake under its own agency.

In all the above cases there should be Government supervision including audit and inspection and agreements to fulfil the original objects, but Government Directors, if appointed, should not act so as to delay decisions. The capital of the concerns should be raised in India under conditions which will give opportunities to small investors and encourage Indians to participate in industrial ventures.

- (d) Loans to small or cottage industries and to co-operative societies or finance of the purchase of plant on the hire-purchase system as in Mysore and Madras.

In this case special legislation is necessary to provide suitable means for the recovery of outstandings.

2. In the great majority of cases, loans and other forms of financial assistance will be granted by local Governments. It is only in the few cases in which Imperial interests are at stake that the Imperial Government would probably be concerned. The present rules with regard to the making of loans or lump sum grants are shown in the Secretary of State's telegram, dated the 1st February 1916, which is to the following effect:—

Present rules. Imperial interests are at stake that the Imperial Government would probably be concerned. The present rules with regard to the making of loans or lump sum grants are shown in the Secretary of State's telegram, dated the 1st February 1916, which is to the following effect:—

"Pending the final orders on Committee's (i.e., the Industrial Commission's) recommendation, I am willing that you should instruct local Governments that in cases in which they desire to help particular industries, they may do so subject to your approval and to financial exigencies without being unduly restricted by my predecessor's

rulings. If doubt arises in any such cases, I shall be glad to consider recommendations."

3. Local Governments therefore can at present make loans or grants to industrial concerns with the previous sanction of the Government of India in each case. Under the Reform Scheme, local Governments will probably take over their own provincial loan accounts and, as they are also directly concerned in the development of their own industries, the time seems now to have come when they will be authorised to make loans and grants without previous reference to the Government of India. (The matter is under consideration in the Finance Department, in connection with the revision of the Provincial Audit Resolution). The points now for consideration are—

- Position under the Reform Scheme.*
- (a) The views of Directors, and an expression of their opinion, on the desirability of rendering assistance to industries by each of the methods suggested in paragraph 1 (a), (b), (c) and (d).
 - (b) The financial limits (if any) to be laid down in each case.

4. The Secretary of State has asked the Government of India for recommendations regarding (a) the forms which financial assistance to industries may legitimately take, and (b) the limits within which, and the conditions under which, such assistance may be given by the Government of India and local Governments. The considered opinion of this conference will be of value in framing the proposals to be forwarded to the Secretary of State, though the whole case may have to be reconsidered in the light of the new Audit Resolution.

Assistance other than financial.

In Chapter XIV of the Commission's Report there are recommendations with regard to the help to be given to cottage industries, to large organised industries, and to small organised industries. In this chapter technical and scientific assistance is mainly discussed and the subject is one which can be considered in more detail in connection with the report of the Chemical Services Committee.

Industrial Commission's Report, paragraph 203, et seq.

The following suggestions have been put forward:—

Cottage Industries.

Industrial Commission's Report, paragraph 207.

- (a) Peripatetic weaving parties.
- (b) Labour saving devices.
- (c) Auxiliary power factories.
- (d) Methods of marketing.

Large organised industries.

Industrial Commission's Report, paragraph 208.

- (a) Scientific research by Government.
- (b) Loan of experts.
- (c) Provision of accurate information.

Small organised industries.

Industrial Commission's Report, paragraph 209.

- (a) Competent technical assistance.
- (b) Assistance in maintenance of plant.

Directors are requested, if they have any suggestions to make, to put them forward at the conference. The question of pioneer and demonstration factories is being dealt with separately and may be excluded from this particular discussion.

F. R. R. RUDMAN.

Discussion.

The conference was in general agreement with paragraph 1, sub-paragraphs (c) and (d), of the prefatory note, Mr. Blunt (United Provinces) adding with the consent of all a sub-paragraph (e) outright grants in cash or land. As regards sub-paragraph (a) the President stated that the need for establishing industrial banks was not now so apparent as at the time when the Industrial Report was written. Banking facilities would be increased by the amalgamation of the Presidency Banks, one of the conditions of such amalgamation being, it is understood, that 100 new branches would be established within five years. In the meanwhile action to appoint a committee would be deferred. Mr. Chatterjee expressed a doubt whether the new branches of the Presidency Banks would meet the industrialist's requirements, and the conference began to discuss the possibility of using a concern

like the Tata Industrial Bank for the purpose, and the question of Government's responsibility to such a bank in "vetting" an industrial undertaking which sought the bank's assistance.

Sir Alfred Chatterton, the Industrial adviser of the Tata Bank, explained that there was at present comparatively little indigenous industrial banking business being done in India, the difficulty being that applicants for loans had few fluid assets and generally wanted to borrow below the market rate of interest. One object of his bank, he said, was not to bolster up moribund concerns, but to finance small undertakings which were likely to develop. The great problem which the Bankers had to face was the lack of accurate knowledge of the applicant's capacity to carry on the business which he had taken up. In the case of large undertakings the Bank could, and would, make its own enquiries about the promoter's credentials, but for middle-class industrialists, of whom the majority of applicants for loans consisted, the Bank had not sufficient staff or means to obtain the necessary information and consequently were unable to grant them loans. Sir Alfred asked whether Government would undertake the task of enquiring on behalf of the Bank into the solvency and standing of such applicants. He quoted the case of *tehsi* loans, in which Government always made a preliminary enquiry before advancing the money. If industrial loans were made by Government instead of by the Bank, a similar enquiry would be necessary, and therefore Government might as well make the enquiry on behalf of the Bank, who would then find the money. In reply to a query why in such cases Government should not itself grant the loan, Mr. Chatterjee referred to the present difficulties in the matter of procedure, though he admitted that these difficulties would largely disappear under the Reform Scheme. Sir Alfred Chatterton summed up the position as follows: for large undertakings the Bank would institute its own enquiries and carry through the transaction without necessarily referring to Government at all; for medium undertakings (say, over Rs. 5,000) the Bank required a preliminary enquiry and report by a competent Government officer before granting a loan, but on receipt of such report accepted full responsibility; for small transactions (say, less than a loan of Rs. 5,000) the Bank would require a Government guarantee. Sir Alfred Chatterton anticipated a large number of applications for small loans of this nature for the purchase of pump-

Government guarantee to banks giving loans to small industries.

ing plants, tube-wells, etc., it was in such cases that the Government guarantee was necessary. Mr. Chatterjee asked why, if Government made the enquiry and was satisfied as to the solvency of the borrower, it should not itself make the loan under the Agricultural Loans Act.

Sir Alfred Chatterton then stated that a proposal had been formulated to manufacture all the plant required for irrigation from tube-wells, and if a guarantee could be given that the requirements of certain provinces would be assigned to the promoters to execute, they would also undertake the manufacture in India of the pumps and engines, have them erected and supervise their maintenance. Two objections were raised to the proposal, firstly, that such a company would virtually be guaranteed a monopoly and therefore would, if the proposal was passed, have the agriculturist at its mercy; secondly, it would be very difficult to get a guarantee of this sort from one province for a firm of manufacturers in another province. These objections could, however, be surmounted by not giving the manufacturer a monopoly but by only guaranteeing a certain proportion of the demand on a certain scale, and secondly, by Directors of Industries or Agricultural Engineers making purchase from the Company a condition of their assistance to the purchaser. The discussion came to no conclusion, Directors being asked to consider this and kindred questions before the next conference, having special regard to the new financial powers which local Governments would receive under the Reform Scheme. Mr. Chatterjee said he understood that under that scheme local Governments would be practically independent of the central Government, subject to some large limit; e.g., Rs. 50,00,000 for each transaction. It was decided that if the Secretary of State asked for definite proposals regarding the manner and extent to which financial assistance should be given to industrialists he should be informed that a reply would be premature until the financial powers of local Governments under the Reform Scheme were decided; further, that the question would probably be answered by the rules framed under the Reforms Act.

Arising out of the discussion a number of subsidiary points were discussed, which may be summarised as under:—

- (a) Government should contend against the principle of granting loans to industrialists at less Rate of interest. than the market rate of interest

- (b) When Government gives assistance to large industrial undertakings, the terms of the contract should be carefully examined and Directors would be well advised to see what sort of condition was being imposed in such cases in other provinces. The President outlined the arrangements made with the Burma Corporation whereby the latter would receive a Government loan of £200,000 towards capital expenditure in the erection of a plant to recover zinc and sulphuric acid, securing the loan on its other properties as well as the plant, paying 5½ per cent. interest, and would, if Government wished, sell 50 per cent. of the sulphuric acid produced at a privileged rate to Government nominees, such nominees to be stated by Directors of Industries. Mr. Hoyle (Central Provinces) also mentioned the case of the Central Provinces Tannery. The conference considered a suitable means of recouping Government would be to insist that the company should share the profits with Government after a certain percentage, e.g., 10 per cent., had been passed. In such cases there must be a clear definition of the term "profits."
- (c) Use may in certain cases be made of the Land Acquisition Act, the revision of which was about to be undertaken. There seemed no doubt that the Act, as it stood at present, was being interpreted in different ways in the provinces. The Directors agreed to report all cases of acquisition for the information of the Board of Industries and Munitions.
- (d) On Sir Alfred Chatterton pointing out that industrial banks could not deal with small industrial enterprises in the absence of a Government guarantee, Mr. Blunt (United Provinces) stated that he would recommend to his local Government the favourable consideration of the proposal, provided he was satisfied of the advantage of developing the industry and that the bank was not profiteering.
- (e) The President referred to the danger of a large industrial bank financing a number of small concerns to enable them to "prosper" the industry of a certain area.
- Danger of a large industrial bank financing small concerns.

and, after being satisfied that the industry was a paying matter, forming a company to take it up and incidentally deliberately training the small pioneers whose efforts had proved it to be successful. Sir Alfred Chatterton agreed that this course of events was not impossible.

- (f) As regards assistance to industries other than financial Railway facilities. Mr. Scott (Punjab) urged that railway administrations might be asked to assist struggling industries in the way of providing waggons. Other Directors stated that they had always found the railways sympathetically inclined, but it was decided to inform the Railway Board that requests for such assistance were likely to arise in future and ask for favourable treatment.
- (g) All cases of interest in which assistance was given, or proposed to be given, by Directors should be reported in the monthly report in order that each province might profit by the experience of others.

XII.—PIONEER AND DEMONSTRATION FACTORIES.

(PREPARATORY NOTE READ AT THE CONFERENCE.)

As a "pioneer" factory as defined in paragraph 205 of the Industrial Commission's Report, is one established by Government on a small commercial scale in order to ascertain and overcome the initial difficulties and discover if the industry can be worked at a profit. Such are only undertaken when private enterprise is not forthcoming, and should be sold as soon as practicable. In certain cases, however, the pioneer factory, after it has passed through the pioneer stage, will often prove a useful training ground and may therefore be retained as a demonstration factory. Such can be utilized either to train men as operatives, etc., or to show how the adoption of certain improved processes makes for greater commercial success.

2. Both pioneer and demonstration factories will ordinarily be instituted, by provincial Governments; though there may be cases, e.g., a glass works, where the work should be undertaken by the Imperial Government. There is a proposal under consideration for the construction of a demonstration tannery in the neighbourhood of Calcutta, which will probably be wholly, or in part, an Imperial concern. Among provincial ventures may be mentioned the Demonstration Pottery Factory in Bombay; the Pencil Factory, Aluminium Factory, the Soap Works, a Jam and Pickle Factory in Madras and a tanning school at Nagpur.

3. The Board of Industries and Munitions would be glad to be informed of the directions in which provincial Directors propose to move with regard to the establishment of pioneer and demonstration factories. It would also be useful to all Directors of Industries to know what has been done in this direction in other provinces, as there is always the danger of an overlapping in work, which, though in some cases permissible or even desirable, ought in others to be avoided. It is suggested that before undertaking or developing a pioneer or demonstration factory the provincial Director should consult the Board of Industries informally. The latter would give such advice as lay in its power, and would refer

the Director to any other Director, Department, expert, or other person who had technical or other knowledge of similar schemes.

F. R. E. RUDMAN,

Discussion.

Mr. Collins (Bihar and Orissa) suggested that it would be of great value to all if every Director would write up a history of the pioneer and demonstration factories of his province and circulated it for the information of his colleagues in other provinces. He emphasized the importance of adopting a sound system of accounting, and instanced the case of the Pencil Factory in Madras for which a special system of accounts had been drawn up by chartered accountants. Mr. Holme (Burma) thought that the ordinary Government system of accounts would be unsuitable in a factory, and Mr. Campbell (Madras) stated that the Madras Government was about to appoint a Committee to devise, after enquiry, a system of accounts which while being commercial in principle would fit into the ordinary Government system. The President asked all Directors to give the matter their attention, and be ready with definite proposals before the next conference; he explained that the chief difficulty would consist in the application of main principles to each factory system.

On Sir Alfred Chatterton's criticism that Government was always anxious to hand over its pioneer factories to commercial firms too quickly, the President stated that the Director must be prepared to resist this desire on the part of his Advisory Board; he must also be ready frankly to publish a full account of his experiences, even though mistakes were brought to light, because it was only by such publication that information could be pooled and the best type of factory evolved. The Director ought not to regard immediately successful commercial results as his one aim, but should be prepared to face losses, in spite of the outside criticism which such a policy might invoke. If Directors tried a variety of methods, they would the sooner arrive at the ideal.

The President asked Directors to report in the monthly reports full details of their pioneer factories, such report to say specifically whether each factory had room to accommodate pupils from other provinces.

XIII.—A SUGAR SCHOOL FOR INDIA.

(PREFATORY NOTE READ AT THE CONFERENCE)

During recent years, the cultivation of sugarcane has occupied the attention of some of the Provincial Agricultural Departments and much useful work has been done by way of cane breeding and the introduction of new varieties. The manufacture of jaggery or *gur* has also received attention and a number of small power-driven plants for milling the cane have been set up. The tour of the Indian Sugar Committee round India at a time when the prices of sugar and *gur* are very high has awakened a good deal of interest in sugarcane cultivation which is likely to yield permanent results. Many projects are on foot for the establishment of sugar works and for the extension of sugarcane cultivation. Few Indians have any practical experience either in the cultivation of sugarcane on a large scale or in the production of anything from the cane except *gur* and molasses. At the present time, it is necessary to go abroad to get instruction and practical experience in modern developments of the sugar industry and it is important, in view of impending changes in Indian methods and cultivation, that an Imperial Sugar School should be established in this country as early as possible. Such a Sugar School should be in the neighbourhood of a large mill deriving its supplies of cane partly from areas worked on a plantation system and partly from areas in the occupation of ryots. It would also be of great advantage if in the neighbourhood there were opportunities for getting experience in the cultivation of cane under lift irrigation and of lands requiring a complete system of sub-soil drainage. A site for Sugar School possessing all these advantages exists near Kopergaon, a station on the Dhond-Manmad Railway. The water supply could be furnished by the Godavari Left Bank Canal. There is already about 1,500 acres of cane in the neighbourhood and there is an area of about 5,000 acres of dry land above the level of the canal which could be irrigated by pumping. In the vicinity, there is also water-logged land which could be restored to fertility by suitable drainage works. Here are almost ideal conditions for a Sugar School and there is little doubt that if

Government acquired both the dry lands to be irrigated by pumping and the water-logged land which require drainage, the necessary capital could be obtained to carry out the whole scheme. The site is excellently situated and it would probably be difficult to find any other which will possess in such an eminent degree all the elements necessary for a complete study of the various phases of cane growing and sugar manufacture in India. The discussion of details may well be left to experts; but it should be pointed out that there will probably be no difficulty in combining the various interests involved on an equitable basis, so that whilst India gains by becoming possessed of a centre of instruction in all branches of the sugar industry, the local people benefit by the establishment of a thoroughly efficient industrial undertaking to deal with their most valuable crop.

ALFRED CHATTERTON.

Discussion.

After the perusal of Sir Alfred Chatterton's note, Mr. McKenna, Agricultural Adviser with the Government of India, stated that the Sugar Committee intended to deal with this proposal in their report and asked for a copy of Sir Alfred Chatterton's note to be sent to him. In the circumstances it seemed premature to come to any decision, but one or two opinions on the project were expressed. Sir Alfred Chatterton explained that the institution which he had in mind would train men both for the agricultural and engineering sides of sugar production; the sort of person to be admitted to the school should be one who has either had a mechanical engineering training or passed from an agricultural school. The general opinion was in favour of a self-contained institute, where both the agricultural and engineering sides of the work would be taken up.

Mr. Blunt (United Provinces) was of opinion that one such school would be insufficient, but it was agreed that a beginning might at any rate be made with one: if it proved successful, others could follow.

XIV.—RELATIVE SPHERES OF THE IMPERIAL AND PROVINCIAL DEPARTMENTS IN THE MATTER OF RESEARCH.

(PREFATORY NOTE READ AT THE CONFERENCE.)

The considered views of the Government of India on this subject are given in paragraphs 4 to 6 and 17 of despatch No. 15, dated the 4th June 1919. In paragraph 17 the Government of India stated that they desired "to leave the fullest liberty to local Governments, who would be free to conduct any form of research or experiment, to initiate any industries on experimental lines * * * * * by any means that lies within the general financial and other powers that may be conferred on them from time to time." There were certain reservations made in paragraphs 18 and 19 of the despatch. These views were accepted by the Secretary of State in paragraph 7 of despatch No. 86, dated the 25th September 1919. It is now necessary to determine what action should be taken by the Central Government in the matter of research. Some guidance may be obtained from the recommendations of the Chemical Services Committee. But it will help the Board of Industries and Munitions if the representatives of the different provinces now present would indicate the lines that are likely to be taken in the respective provinces with regard to research. This will not only be of advantage to other provinces, but will be of help to the Board in determining the action that should be taken by the Central Government.

A. C. CHATTERJEE.

Discussion.

The President stated that the first essential was for all to know what forms of research work were going on in the provinces: this information could be disseminated in the monthly report. The general view was that in the ordinary way researches should be conducted "provincially," though there might be cases in which research at a central institute would be desirable. But, if one province was specialising in a certain kind of research, it was

uneconomical, in view of the shortage of staff, for another province to start similar research; it would be better for one province to utilise the existing institute of the other. For any particular task men should probably be provided from the Chemical Service.

It was suggested that, until research institutes were established, researches should be handed over to the local Colleges to undertake, and for this purpose all agreed that it was desirable to pay fixed allowance to the research workers in the Colleges. Sir Alfred Chatterton pressed for the reference of various researches by local Governments to the Bangalore Institute of Science, which was up to the present the only place where such researches could be undertaken, but opinion was more in favour of each province trying to grapple with its own work.

The general consensus of opinion was that men who were deputed to research work must also do teaching; they should not be allowed to become a race of dreamers apart.

non-recurring grants and be represented on the Board of Management. No decision was arrived at whether other local Governments should be asked to contribute to the expenses of the school: it seemed unnecessary to press this point. It was thought advisable that the principal should visit other institutions and weaving centres, including Wales, where there is a flourishing flannel-weaving industry.

Sir Alfred Chatterton suggested, and all agreed, to the necessity of attaching to the school a museum of designs: it was considered necessary for the School to keep in touch with fashions and teach new designs. The museum might in time develop into an institute.

XVI.—STANDARDISATION OF MACHINERY AND PLANT WITH A VIEW TO THEIR MANUFACTURE IN INDIA.

(PREFATORY NOTE READ AT THE CONFERENCE.)

The success of the Pumping and Boring Department in the Madras Presidency was largely due to the adoption of standard types of plant specially selected to suit local requirements. It then became worth while for the manufacturers of this plant to attend to our requirements and to make commercial arrangements which enabled us to meet in a comparatively simple manner the difficulties usually experienced in erecting, running and maintaining in working order the numerous installations which were set up. The ease with which a broken or worn-out part was replaced gave people confidence and helped not a little to make the work of the Department popular. There is now a comparatively large demand for machinery in what may be termed rural industries; but only to a very limited extent, is it made out here and ample evidence was furnished during war that this was a grave source of economic weakness. It is necessary that India should be placed in a position to undertake the manufacture of its own requirements in machinery and plant to a much larger extent than is usually considered possible. Protective tariffs might be used to support infant industries, but it is rather doubtful if they would meet with the success that has attended their employment in other countries. Evidence in favour of this opinion is furnished by the comparatively backward state of many industries which in this country, enjoy a very large measure of natural protection. When the Departments of Industries get to work, the starting of rural installations of machinery and plant will be largely in the hands of the Directors of Industries who will be in a position to assist users both financially and with technical advice. What is wanted is that intending manufacturers should be guaranteed a sufficient demand for their productions to justify them in embarking their capital and experience in the establishment of factories to turn out machinery and plant of standard

Standard type of plant for the Pumping and Boring Department in Madras.

Protective tariffs.

Manufacturers to be guaranteed a sufficient demand.

types. That is to say, we must agree to forego the endless variety of types and designs which can be imported and content ourselves with a rigid standardisation of requirements, so that their manufacture may be concentrated in a few well-equipped factories. A single example will serve as an illustration. We can now import from Europe or America internal combustion engines working either with some form of mineral oil or with suction gas in an almost endless variety of designs. In the future, there is likely to be a large demand for such prime movers and it will be easily possible to build them in this country if all intending purchasers are content to accept that type of engine which is selected as best suited to average requirements of users. There is not a sufficient market in India to justify the establishment of works to meet the current demand for any one of the many types of engines which may be found working out here; but it is certainly possible to select one or two types of engines which will serve practically all requirements and if the whole demand were concentrated on these selected types, it would be possible to manufacture them out here as cheaply or even more cheaply than they could be imported.

2. For a long time to come, Departments of Industries must necessarily exercise considerable influence in the selection of engines for all types of rural industrial work and it is almost equally certain that they will be able to greatly influence the design of machinery driven by such engines. Instead of leaving this somewhat heavy responsibility on the shoulders of Provincial Directors, it seems to me that expert committees should be appointed to, as far as possible, standardise the requirements and when the Provincial Directors will agree to accept the conclusions arrived at, it will be feasible to enter into arrangements for their manufacture in this country on terms which will assure to the purchasers a high standard of quality at a price somewhat less than that which will have to be paid for equivalent imports. It would, I think, be no small advantage to India if expert committees, acting on the buyer's interests, could influence the designs of manufacturers. Designs made in Europe and America are not sufficiently influenced by the peculiar conditions under which such machinery in India will in the future be worked. Simplicity of design and certainty of working are more important than an extremely high degree of efficiency and we have little use

here for the so-called minor improvements and novelties which competitive manufacturers in Europe and America are forced to adopt in their efforts to compete with their rivals.

ALFRED CHATTERTON.

Discussion.

Sir Alfred Chatterton suggested the appointment of a small permanent Committee, the functions of which would be to keep abreast of the times and introduce standard machines of an improved type, suitable for Indian conditions. The Committee should in the first instance specialise in gas engines, pumps, and sugar mills: the need for these was known all over India, and it was essential that all purchasers should obtain the standard type, both to facilitate replacements and to induce a firm to lay down plant in India for the manufacture of the machines. He suggested that each Director should obtain from his local Government preliminary approval to the scheme, after which the Committee would be appointed to decide what was the best type of engine or plant for standardisation.

Mr. Thielton-Dyer (Bombay) objected to the proposal. In the first instance he thought that it would never be cheaper to manufacture oil engines in India than in England: in the second place, one gains little by having access to spare parts unless there are also repair shops for fitting them in. He would prefer to develop the repair shop and trust to the ordinary agent to provide spare parts when such were necessary.

It was decided that Directors should get statistics of the demand in their provinces, consult their engineers and be in a position to discuss at the next conference whether standardisation should be introduced or "free trade" allowed to continue as heretofore.

Before the discussion closed Sir Alfred Chatterton explained that, given a standard type, Directors could make the purchase of that type a condition of financial assistance: in cases where the

purchaser did not require financial assistance, he would be advised to purchase the standard type. An inducement might be offered in the shape of periodical inspection by Government of the standard machine, and the right to telegraph for immediate Government aid when a breakdown occurred. The latter plan had, he said, been successfully adopted in Madras.

XVII.—UNIFICATION OF THE LAWS AND REGULATIONS RELATING TO BOILERS.

(PREFATORY NOTE READ AT THE CONFERENCE.)

In 1912, the Madras Government advocated the adoption of a uniform standard of steam boilers in the rules framed by provincial Government under their respective Boilers Acts.* There were considerable variations in these standards, resulting in considerable inconvenience, both to the importers of boilers and to the purchasers, more especially in the case of boilers imported in one province and sold to purchasers beyond its limits.

2. The opinions of local Governments were obtained on the proposal. All were in favour of the adoption of a uniform standard throughout India, but opinions differed as to the best method of attaining this end. It was decided that the only possible course would be to establish a travelling committee to investigate provincial rules and propose uniform rules, but the case was not deemed urgent enough to be taken up during the war. The desirability of having an all-India Boilers Act was considered in 1919. No action, however, was taken on this proposal, it being considered desirable to await the creation of the Board of Industries and Munitions and the decision on the report of the Subjects Committee with regard to the administration of the Boilers Act.

3. It is understood that the present position under the Reforms Scheme with regard to the Boilers Act, is that this is a subject of all-India legislation. The question now arises whether a travelling committee should now be appointed to take up the question of drafting a new Boilers Act and Rules in consultation with local Governments, to form a subject of all-India legislation.

F. B. R. RUDMAN.

* Industrial Commission's Report, paragraphs 221 and 222.

Discussion.

After discussion it was decided to appoint a small travelling committee (of three members) next cold weather, who should tour throughout the more important provinces of India and to Burma, consulting the Chief Boiler Inspector in each place, his staff, manufacturers and importers of boilers. Mr. Thielton-Dyer (Bombay) suggested that the users of boilers should also be consulted.

It was thought that three months would suffice for the tour and preparation of the report. One of the Committee members should be a man able to interpret rules and translate the views of the engineers consulted into proper legal form.

**XVIII.—THE ABOLITION OF THE LAW IN CERTAIN PROVINCES
COMPELLING PERSONS IN CHARGE OF BOILERS TO
POSSESS CERTIFICATES.**

(PRELIMINARY NOTE READ AT THE CONFERENCE.)

This is at present a provincial subject and it rests with local Governments to abolish the necessity of such a certificate. The Industrial Commission recommended* that the law compelling persons in charge of boilers to possess certificates should be abolished. The Commissioners found that, in provinces where certificates were required, engineers were not better qualified, or accidents less frequent, than in those where certification was not required, whereas the possession of a certificate gave a fictitious value to its holder and made it more expensive to employ him on small installations.

2. In Bengal and Madras, it is understood, certificated engineers are not compulsory. This question has been specifically raised by the Director of Industries, Bombay, where certificates are compulsory: he has recommended to the Bombay Government the abolition of the certificate.

3. If it is decided to proceed with the appointment of a Committee to examine the possibility of having a uniform Act for boilers throughout India, one of the terms of reference to that Committee should be the necessity of the employment of certificated engineers; if the certificate is deemed necessary, should it not be valid throughout India.

F. B. R. RUDMAN.

Discussion.

After some little discussion the conference were agreed that the law compelling persons in charge of boilers to be certificated ought to be abolished, but thought that action should be deferred until after receipt of the report of the Committee proposed to be appointed to consider the question of the unification of the Boilers Acts. The question might be made one of the terms of reference to that Committee.

* Report, paragraph 222.

XIX.—APPRENTICESHIP SCHEMES.

(PREFATORY NOTE READ AT THE CONFERENCE.)

Recommendations of the Indian Industrial Commission. A reference is invited to paragraphs 148 to 158 of the Industrial Commission's Report. We have to consider the questions—

- (a) The training of artisans.
- (b) The training of foremen.
- (c) The training of mechanical engineers.

3. The remarks of the Commission on the training of artisans will be found at paragraph 149, on the training and apprenticeship of foremen at paragraph 152, and on the training of mechanical engineers at paragraph 158. It is understood that the following schemes are at present in progress:—

- (1) The Jamalpur scheme, which is described at Appendix N of the Industrial Commission's Report.
- (2) The Kanchnrapara scheme under consideration by the Bengal Government.
- (3) A Punjab scheme for the opening of mechanical engineering classes at Mogaipura in the neighbourhood of the North-Western Railway workshops.
- (4) A scheme in connection with the Ordnance Factories at Ishapore. There are other schemes connected with Cordite Factory in the Ordnance Department.
- (5) The United Provinces scheme in connection with the Great Indian Peninsula Railway at Jhanai.

3. It is also understood that certain apprenticeship schemes are in vogue in the Government Technical Schools at Lucknow and Gorakhpur. The United Provinces, I believe, has also a scheme for a mechanical engineering college, away from Rurki. It will be useful to know how this scheme stands.

- (6) I understand that there is a scheme in connection with the Tata Iron and Steel Works at Jamshedpur.

4. The Board of Industries and Munitions has no information regarding the exact present position of the different schemes enumerated.

ted above. It will be useful if during this conference the representatives of the different provinces could discuss the features of their respective schemes, and give us some information as to how soon the schemes are likely to be put into effect.

5. It is true that the schemes should be carefully considered before they are given effect to, but unnecessary delay is to be deprecated. Practical experience would probably disclose defects in every scheme which would require to be remedied later. It is important that the training of the different classes under consideration should not be deferred longer than can be helped.

A. C. CHATTERJEE.

Discussion.

The Directors explained in brief the present position with regard to the schemes started in their provinces. Discussion centred chiefly on two points, the best way of retaining the apprentice until he had completed his course and the best method of combining technological and workshop training.

It is to prevent an apprentice from throwing up his training before it was completed, it was suggested that the scholarships should be so graded that the apprentice would receive more in his second than in his first year and so on. Another suggestion, made by Mr. Campbell (Madras), was the system of deferred pay: an apprentice would be given a bonus after completion of his training. The best method of all, of course, was to make the pay of the completely trained men so attractive that he would not think it worth his while to give up his training in the middle.

As regards the combination of technological and workshop training there appeared to be four possible methods—

- (a) Two or three years workshops followed by three or two years classes.
- (b) Two or three years classes followed by three or two years workshops.
- (c) One or two days a week in the class, the rest in the workshop.
- (d) Six months per annum in the class, six months in the workshop.

The disadvantage of (a) and (b) lay in the fact that after the first two or three years' training the apprentice was behind those of his age in either class work or workshop experience. For (c) it was necessary to have the class rooms in close proximity to the workshops. The conference were inclined to vote for (c) and (d), but Directors would consider the matter and report in their monthly reports for the information of others what methods they had adopted and what success had attended them or difficulties had been encountered.

Mr. Blunt (United Provinces) stated that when his local Government gave assistance to a firm they made it a condition that the firm should take in apprentices.

XX.—CO-OPERATION WITH THE MINISTRY OF LABOUR IN FINDING EMPLOYMENT FOR BRITISH LABOUR.

(PRELIMINARY NOTE READ AT THE CONFERENCE.)

This question has only recently taken shape and its consideration has been transferred to the Board of Industries and Munitions from the Central Employment and Labour Board which is now being abolished.

2. The subject was raised in a letter of the 13th December 1919, from the Ministry of Labour, to the India Office, from which the following extracts are made:—

"(2) I am to explain that the general practice hitherto followed in connection with the notification of

Notification of vacancies for employment overseas.

vacancies for employment overseas has been for the departments of the Ministry to communicate direct with

individuals or firms notifying vacant positions in their businesses, and to ask them to fill up a form with particulars of the employment offered. Provided that the terms were satisfactory, the departments circulated the vacancies through the machinery of the local offices of the Ministry with a view to the engagement of suitable applicants.

(3) Whilst this course has served as a temporary expedient in the past, the Committee are anxious, if possible, to introduce more satisfactory arrangements in future.

"(4) A procedure is accordingly suggested to the following effect:—

"(a) That a printed form (of which a specimen copy is attached) should be made available through such a body as the Central Employment and Labour Board at Simla, upon which local prospective employers should fill up particulars of the conditions of employment which they offer.

"(b) That the form should then be returned to the Board, and that upon being satisfied as to the *bona fides* and apparent ability of approved employers to fulfil the

terms offered, the Secretary of the Board should sign an endorsement to that effect upon a slip to accompany the form (copy enclosed).

- " (e) That a duplicate copy of the forms so completed should be transmitted direct to the Executive Officer of the Oversea Employment Committee, Ministry of Labour, 59, Victoria Street, London, S. W.-1, in order that endeavours may be made to fill the vacancies.
- " (5) It is thought that this procedure would obviate delay, and at the same time ensure that no applications are taken into consideration before the appropriate authority in India has had an opportunity of deciding whether prevailing conditions are such as to warrant the introduction of the required labour.
- " (6) Whilst it is realized that firms will generally rely upon their agents in this country to engage employes on their behalf, it seems nevertheless desirable that the Oversea Employment Branch of the Ministry of Labour should be notified of such vacancies in the manner proposed in order that they may be able to introduce to such agents any suitable applicants on their books.
- " (7) It is suggested that particular care may be taken when dealing with the endorsement of women's vacancies (in consultation, if possible, with an accredited Women's Organization), especially as to the suitability of the employer to employ British women in the class of labour required.

* * * * *

- " (9) I am to add that it would be very helpful if the Central Employment and Labour Board could be authorized to undertake the distribution, through their agents in India, of any such literature as may be supplied to the Board by the Appointments, Employment and Training Departments of the Ministry."

3. The Secretary of State (who has been promised further details later) has been informed that the Government of India accept the scheme which will be worked by the Central Employment and Labour Board until the end of March 1920, and thereafter by the Board of Industries and Munitions either directly or through Provincial Directors of Industries.

4. Specially with regard to the employment of women attention is drawn to paragraph (7) quoted above from the Ministry of Labour's letter. The importance of the precaution indicated needs no proof. The Board understands that this matter was alluded to at a recent meeting of the Central Employment and Labour Board when it was stated on behalf of the Young Women's Christian Association that the co-operation of the officials of that body might be relied upon.

5. It is understood that the various Provincial organizations which during the past two years have been co-operating with the Central Employment and Labour Board have collected a great deal of information regarding local conditions of service, etc., that would probably be of use in dealing with applications for appointments. Records are believed to have been called for by the Central Employment and Labour Board with a view to their transmission to the Board of Industries and Munitions. It would seem that such records would probably be of more value to the appropriate Provincial Directors of Industries to whom the Board thinks they should be transferred.

6. The Board understands that the Adjutant General who is taking over the work of the Central Employment and Labour Board hopes to have classified lists, shewing the qualifications of those British ranks at present serving in this country who are desirous of being employed in India on the termination of their army engagements, and also of those who have been demobilised in India and have not been successful in obtaining employment. It would only be reasonable to endeavour to fill vacancies occurring in India with men of the categories mentioned before resorting to the Ministry of Labour.

7. We now have to decide definitely how the scheme is to be worked; and after settling this it will be necessary to advise the Secretary of State further as promised.

8. The Board suggests, as a basis for discussion, that it might be agreed—

- (1) as regards general routine correspondence on the subject with the Ministry of Labour that (subject to the approval of the Government of India and the Secretary of State) the Board should correspond direct with the Ministry of

Labour; and should undertake the receipt from the Ministry of Labour, and the distribution to appropriate officers in India (usually the Directors of Industries) of literature and forms;

- (2) as regards particular appointments and applications, that the Director of Industries in each province should correspond direct with the Ministry of Labour; subject to the proviso (a) that it should first be ascertained by reference to the Adjutant General in India whether the post can be filled from the source indicated in paragraph 6 above; and (b) that in cases of proposed employment of British women, the Director of Industries should invariably act in consultation with an appropriate Women's Organisation (it being noted that the local officials of the Young Women's Christian Association will usually be found willing to co-operate); and
- (3) as regards the Provincial records referred to in paragraph 5 of this note that arrangements be made for the transfer of these to the Directors of Industries of the provinces concerned.

T. RYAN.

FORM.

[Form referred to in paragraph 2 (4) of note.]

Appointments and employment—vacancies for men and women.

This form is designed for the notification of all classes of vacancies in various parts of the world outside the British Isles. Certain questions will therefore on occasion be irrelevant, but replies should be given in the fullest detail to all the questions below whenever possible:

Questions.

1. Employer's name, address and business.
2. Can you nominate a representative in the United Kingdom to select and actually engage applicants submitted for employment through the official machinery? If so, give name and address.
3. Nature of posts vacant. Number of persons required.
4. Duration and place of employment.

5. Qualifications (state whether desirable or essential) :—

Education—training—experience—languages.

6. (a) Age-limit (if any).

(c) Are married men eligible ?

(d) Are married women eligible (with or without children) ?

7. Salary or wages offered, and time from which payment is to be made.

8. Conditions as to medical attendance and as to payment of salary or wage during sickness.

9. Will fares and passage money be paid by the employer and, if so, what class ? In what circumstances, if any, would return fares and passages be paid ?

10. Will fares be paid to enable a candidate to attend for interview by representatives in the United Kingdom ?

11. Are quarters provided, if so, are they free ? If not, can suitable lodging be obtained and at what cost ?

12. Hours of work per week, any local or special conditions.

13. Are the conditions of employment such as are recognized as standard or current for British subjects of similar standing in the district ?

14. Is there any strike, lock-out, or trade dispute in connection with the employment for which the people now asked for are required, or in the same district in connection with the same trade ?

15. Is the engagement in conformity with the Immigration or Employment Acts or other relevant statutes in force in the country in question ?

16. General remarks as to climate and cost of living.

17. General remarks as to leave prospects, social amenities and pension or provident fund.

Additional questions to be answered in the case of women only.

18. Have British women been previously employed in the situation now vacant ?

19. If and where candidate is to be met on arrival overseas ? Any details as to journey.

20. Arrangements in event of termination of engagement (length of notice or wages in lieu).

Signature of person or firm notifying the vacancy.

Dated.....19.....

Form O. E. B.-2—Endorsement.

To the best of my knowledge and belief.....
.....^{is} in a position to fulfil the terms of employ-
ment as stated in this form and the answers to paragraphs 12—16
may be accepted as satisfactory.

Signature.....

Office or designation.....

Place.....

Dated.....

**SEVANTS OF INDIA SOCIETY'S
BRANCH LIBRARY
BOMBAY**

THE OVERSEAS SETTLEMENT COMMITTEE'S SCHEME.

This provides three-fourths of the cost of a second-class fare from the United Kingdom for wives and dependents coming to this country to their male relatives who have secured employment. It also provides the same benefit to approved settlers. The conditions are that the male relatives must have served in His Majesty's Forces and for 'settlers' (male and female) the same conditions hold good.

Owing to the peculiar conditions prevailing in India in order to discourage a large influx of women and children to this country, the Government of India have stipulated that the benefits of the scheme should not be extended to those whose male relatives are unable to produce a certificate to the effect—

- (a) that the salary being earned is sufficient to allow of the man and his family living in European style.
- (b) that the employer has agreed to the man's family coming out to him;
- (c) that there are married quarters available.

The Central Employment and Labour Board investigated cases through their Provincial Organisations and the necessary certificate was then signed and forwarded to the man for submission to the Overseas Settlement Committee with his application forms. The Provincial organisations* have ceased to exist and it would be exceedingly difficult for the Adjutant General in India to make the necessary enquiries and it is moreover doubtful whether he will accept the responsibility. Directors of Industries could act for the Board and it has been suggested that the whole question involved by the Overseas Settlement Committee be dealt with by the Board of Industries and Munitions.

T. RYAN.

Discussion.

For this discussion Captain Scott of the Central Employment and Labour Board attended the conference. Three distinct subjects

* These were located in all the main provinces in India.

were dealt with, firstly, co-operation with the Ministry of Labour for the employment of persons from England, secondly, co-operation with the Adjutant General for employment of persons demobilised in India, thirdly, an overseas settlement scheme whereby the families of persons working in India could be assisted in joining them.

After the prefatory note regarding the first proposal had been read, Mr. Campbell (Madras) expressed the possibility of the Madras Government objecting to this class of work being taken over by the Director of Industries when there already was a Labour Commissioner. The President pointed out that labour disputes and employment of labour were different problems—and it was the Director of Industries who was more in touch with the employing firms. Directors then agreed to co-operate in the scheme. It was suggested that they correspond direct with the Ministry of Labour after the preliminary negotiations had been settled.

As regards the second subject, co-operation with the Adjutant General in finding employment for men demobilised in India, it was agreed that the Board of Industries and Munitions should address local Governments in a letter with which would be enclosed a note by the Adjutant General explaining the scheme (with sample forms) and should ask local Governments if the Director of Industries would be allowed to undertake the work. If they agreed, the Director would be asked to correspond direct with the Adjutant General in India regarding the details of it.

As regards the Overseas Settlement Scheme the general opinion was that each case, as it arose, would better be dealt with by the appropriate Secretary to the local Government than by the Director of Industries, and it was decided not to recommend to local Governments that their Directors should undertake the work.

XXI.—SCHEME FOR THE ERECTION OF "ECONOMISER" INSTALLATIONS FOR THE DISPOSAL OF WORN-OUT ANIMALS AND CARCASSES OF HORSES, ETC.

(PREFATORY NOTE READ AT THE CONFERENCE.)

At the instance of the Quartermaster General enquiries were instituted in 1918 regarding the utilisation and disposal of by-products of slaughtered animals in the event of mobilisation in India. The enquiries generally suggest that in normal times there is a good demand for these by-products and that at the larger slaughterhouses, these are collected and sold to dealers who are willing and ready to co-operate in securing larger supplies.

2. The Board has now been asked to consider the question of the economy to be effected in the disposal of Army animals, dead or destroyed, that is to say, whether by a properly organised system of disposal and by the adoption of special machinery, an increased profit to the State in the resultant by-products of hides, fat, bones, hoofs (glue), desiccated flesh (animal flour) and hair could not be derived, as was the case with the British Expeditionary Force in France, and as is usually practised under municipal arrangements in England and in European countries generally. It is recognised, however, that in normal or peace times the adoption of economiser arrangements for Army animals alone would not be a commercial proposition in view of the small wastage of animals and the fact that the units comprising the army are scattered over a vast country; but with a combination of civil and military interests, the scheme could perhaps be turned to profit, either to the State or to the individual owner.

3. The opinion of the conference is invited on the question whether under State or Municipal laws, installations could be erected at all large towns and in the chief centres of animal husbandry and activity, to which installations the Army could have access for the disposal of worn-out animals and carcasses at a reasonable credit. The Board is of opinion that any scheme for the disposal of

Horse carcass economiser.

dead or destroyed animal should be framed with due account of slaughtered animals, and that the larger slaughterhouses would appear to be the appropriate places for the installation of economisers. The following shows the constitution of a "Horse carcass economiser" installation erected in France for the conversion of carcasses into by-products :-

- (1) Skinning platform (cemented).
- (2) Boiling tanks—Galvanised iron, 500—1,000 gallons for bones, entrails, etc.
- (3) Boiler for steam.
- (4) Small petrol engine for driving machinery.
- (5) "I well" dryer, steam pressure, for desiccating flesh.
- (6) Turbine fat extractor (750 revolutions per minute).
- (7) Revolving meat-cutter.
- (8) Bone crusher.
- (9) Skin curing room (cemented floors).
- (10) Store room for desiccated flesh, oil drums, etc., etc., cemented.
- (11) Office.
- (12) Extras, &c., drainage decarville line to manure dump, etc.

The total cost of installations amounted to approximately £1,000—£1,200 each.

F. R. R. RYDMAN.

Discussion.

Mr. Townend (Director General of Commercial Intelligence) stated that Germany had carried on trade in these by-products and he felt that there was money in it; on the other hand, Calcutta firms were fighting shy of it probably from lack of accurate statistics regarding the quantities involved.

Mr. Chatterjee said that the various by-products of dead or slaughtered animals were collected in the larger cities of the United Provinces and rules for such collection could be made under the Municipal Acts; but they had to move warily as in such cases Government had to deal with butchers, a truculent set of people. Mr. Townend thought that in present circumstances much valuable matter was being wasted.

It was decided that the first step should be for the Directors to address their local Governments, asking that information regarding the amount of such by-products and the present methods of disposal might be obtained for them from local bodies, etc. This the Directors agreed to do, without waiting for a formal letter from the Imperial department on the subject

OTHER MATTERS OF GENERAL INTEREST.

The following items of general interest were considered, and the conclusions as shown below, arrived at—

Status of Director.—The conference were unanimously of opinion that in order to facilitate the work of the Department, the Director of Industries should be given the powers of a head of a department. Directors would address their local Governments on the subject.

Warrant of Precedence.—The conference were of opinion that the Director of Industries should rank with the Director of Public Instruction and Inspector General of Police in the Warrant. The Board of Industries and Munitions, it was agreed, would first consult the Home Department.