

No.6624.

1. Report of the 8th Indian Industrial conference, Bankipore, 1912. (1913).
pp.432.

2. Report of the 9th Indian Industrial Conference, Karachi, 1913. (1914).
pp.382.

says Mr. Kogekar, "of properly worked Agricultural Associations is no longer a subject of dispute." There is thus a necessity of an organization, which will serve as a link between Government Agricultural Departments on the one side and the cultivating classes on the other, it being essential that individual members of these Associations should work with some zeal. In the Marathi speaking tracts of the Bombay Presidency there are according to this writer 29 Agricultural Associations, of which 17 are located in 5 Districts of the Central Division, *viz.* Poona, Satara, Sholapur, Nasik and Ahmednagar. It appears that the majority of these Associations are doing yeomen service by introducing among the farmers some very useful and practical improvements, *e. g.* (1) the proper method of preservation of cattle manure, (2) selection of seed, (3) use of insecticides against diseases of crops, (4) cultivation of new and profitable varieties of groundnuts, cotton, wheat and other crops, (5) experiments in green manuring with san for paddy.

Intimately Associated with agricultural improvements is the work of Co-operative Societies, which are increasing with rapid strides since the passing of the Co-operative Credit Societies' Act of 1904. The paper of Mr. Mohi-Uddin-Ahmed, of Behar, throws much light on this subject (P. 421). Mr. Ahmed defines a Co-operative Society as an Association or Combination of persons having mutual regard for and knowledge of one another, who jointly pledge their credit in order to raise sufficient fund on cheaper terms for the purpose of lending out amongst themselves than each could obtain by pledging his individual credit. The author then proceeds to give instructions as to how to form these Societies, describes privileges they enjoy, their duties after registration, methods of conducting the business and the difference between borrowing from these Societies and from a Marwari or Mahajan and the benefits moral and economical which they confer on their members.

We now proceed to the two papers received this year on cotton industry. The first is by Mr. H. R. Pitke, Prices Current Inspector on cotton manufactures in Berar (P. 321). Mr. Pitke describes the three principal varieties of cotton in C. P.

and Berar, with the spinning capacity of each. Some of the varieties ripen in five months, whereas there are others which take nearly 8 months. The writer has tried to demonstrate with the aid of figures the rapid growth of cotton cultivation in these Provinces as contrasted with Bombay, the castes engaged in the weaving industry the kinds of articles they manufacture at some of the important centres with the aid of improved as well as old fashioned hand looms, and also the work done by the three spinning and weaving mills and suggests some remedies for the removal of the depression of the cotton manufacturing industry in these Provinces.

The second paper is by Babu Mukhtar Singh, Pleader of Meerat, on "Cotton growing in India" (P. 300). Mr. Mukhtar Singh makes therein some very useful suggestions for sowing of cotton seed after pointing out the present defects not only in the method of growing cotton, but also in its picking ginning and other processes. The paper deserves to be carefully read by those engaged in this industry.

Sugar manufacture occupies an important place after cotton industry and has been ably dealt with by Mr. G. N. Sahasrabudde, the Sugar Expert of Poona, (Vide page 271) who was specially deputed by the Bombay Government to investigate this subject. After giving a historical sketch of the Indian industry with causes of its decline, he passes in review the conditions obtaining in Java, Mauritius and nine other countries. He also examines the four systems of Sugar and Gul making now in vogue in the different parts of our country and points out the points the defects of each.

From the foregoing we have seen that, provided there is sufficient sugarcane supply at a reasonable rate available for a modern type Sugar Factory there is difficulty in producing, in India at a sufficiently low cost to compete with any foreign sugar. But a modern type sugar factory is not an easy affair to organise. The economical size of modern type sugar factory requires 300 to 1500 tons of cane per day. To start a medium size factory of say 600 tons of cane per day we require at least 50,000 tons of cane in a season. In a Province like the United Provinces where the outturn of cane per acre is necessarily very low (on account of climatic and other conditions) this much cane represents an area of about 3,300 acres. In order to avoid excessive transport charges this

much area must be within 35 square miles so that the mean distance of transport will not much exceed 5 miles. This thing is only possible on big irrigation canals as are to be found in the United Provinces. (p. 292.)

From the foregoing it will be seen that prospect of sugar industry in India are very hopeful provided we work earnestly on modern lines. But modern type sugar factories cannot be started in a day. It will probably be several years before we have a decent number of modern type factories. The demand for sugar in India is increasing every year by about 5,000 tons. Therefore for a good many years to come we shall have to import sugar from outside to the extent of more than half a million tons per year. Now the question is why should we import all the sugar in a refined form. Why should we not import raw sugar and refine it here as most other countries do? Anyhow we shall have to import sugar from outside for several years to come. But if we import this sugar in raw state and refine it here we shall derive at least some profit. Such a procedure will enable us to work at least 50 refineries which will be placed on the sea coast provinces like Bombay, Madras and Bengal. (p. 295.)

The next paper in this group is written by Babu Mukhtar Singh of Meerut on " Sugar Cultivation " (p. 250). In his last year's paper he dealt with different aspects of the subjects whereas in this year's paper he has restricted himself to a few practical suggestions which can be easily adopted by the agriculturists. After describing the structure of the sugarcane plant, in general, he proceeds to enumerate the specific varieties from which cuttings should be obtained. Preparation of the field for the Cane crop and the sowing of the canes and manuring Irrigation and living the breeding of canes are next dealt within detail together with the treatment of diseases of Cane crops.

We next pass on to the Paper of Mr. M. N. De on " Silk in India ". Silk like lac and other commercial products is not strictly an agricultural industry but occupies a place midway between agriculture on the one hand and manufacturing industries or processes on the other hand. After tracing the antiquity of this industry which has its origin in China, the writer points out that it was probably introduced in India at a later period has been alluded to in the Vedic as well as Puranic writings. Coming down to a later period 38 kinds of Silken stuffs are, according to this writer, mentioned in the Ain-i-akabari. Bengal was a great centre of this industry for a long

time and is still noted for its different varieties of Silk. Assam is the home of Eri and Mooga Silk, whereas Behar is the distributing centre of Tussar. Factories Mirzapur in the United Provinces is also a Tussar weaving centre. The Silk Industry in Madras Presidency Central India is gradually declining and that in Kashmir is in a flowing condition and promises a rapid expansion. Mr. De concludes his essay with these practical suggestions.

Some practical suggestions are now being made:—

1. Distribution of disease-free eggs to the rearers; only licensed rearers should be allowed to sell eggs after microscopical examination. The Government must have examination offices in all the big centres of rearing where the Government officers should examine eggs free of charge or they may go from house to house examining the eggs.

2. Encouraging the rearers to rear one-brooded race in October and February and Mysore or some well-established many-brooded hybrid races in other seasons. In order to induce the rearers the eggs must be distributed free at first.

3. In a new locality where there is no sericulture castor silkworm eggs should be first introduced as this race is more hardy.

4. The appointment of circuit lecturers who have expert knowledge of sericulture for advising the people.

5. The holding of competitive sericultural exhibitions important centres.

6. The sanction of subsidies for sericultural classes in village schools, mulberry trees, cocoons, reeled thread, etc.

7. Free distribution of pamphlets in the vernacular of the district for the guidance of rearers.

8. The starting of Silk Associations whose object should be:—(a) to safeguard the interests of silk manufacturers, (b) to reply to queries regarding silk industry in general, (c) to send members to various exhibitions, (d) to bring together spinners, weavers and traders, (e) to collect and disseminate useful information and statistics regarding silk, (f) to promote technical and commercial knowledge by starting schools for rearing, weaving and dyeing in important silk centres like Bhagalpore, Berhampore, Benares, Ahmedabad, Malda, Gurudaspur, Nagpur, Madras, Bangalore, etc., (g) to induce the manufacturers and retail traders to demonstrate to the people who are carried away by gaudy colours that Indian silk goods have got their own good points specially from the point of view of price and durability, (h) to secure just and equitable relations between the silk merchants and the rearers, (i) to expand the growth of industrial art, (j) to establish Libraries and museums on sericulture in silkcentres, (k) to induce Government to take up sericulture in Khas Mahala.

and Court Wards estates thus setting examples to others, (l) to impress on manufacturers the advantages of Indian as compared with other silks and to be particular about the quality of the silk exported until a silk conditioning house is established in Calcutta or Bombay by the Government, which would stop the exportation of bad silk, (m) to establish co-operative societies and guilds among silk-growers and manufacturers

9. The establishment of a central sericultural institute with branches in all the important places of silk rearing.

We now proceed to the paper of Mr. W. S. Hadaway on "the possibilities of revival of the hand printed and painted cottons of Southern Indian". The paper reveals an intimate knowledge on the part of Mr. Hadaway of the subject treated by him. The author regrets the decadence of this art and also that his own efforts "so well begun were allowed to fall into disuse owing probably to the mistaken attitude of some of the leading people towards the actual workmen. He has suggested a workable scheme which will revive this industry with even a very limited amount of capital, the market being ready. In Europe also this industry still holds its own in the face of fierce competition with machinery.

There are two papers connected more or less with the formation of Joint Stock concerns. The first is on "Banking in India" by Mr. C. Gopal Menon of Madras. "A country", says Mr. Menon, "derives from a wide-spread system of banking, facilities for the collection and distribution of capital according to the requirements of different localities." This is a very important service rendered by the Banking Companies to the economic development of their own country. Enormous commercial and industrial enterprises have become possible in America and Europe only on the strength of their banks. The best known method of exploiting capital is by the extension of the Joint Stock Banking systems, which is the only suitable system for the concentration and distribution of capital. After reviewing the various banking systems which were in vogue in the country before the establishment of the several chartered or Presidency banks, the author has given an idea of the methods of work of the Native Bankers, the English Exchange bank

and the Indian Joint Stock Banks and other much valuable information about Banking systems and their importance in the economical development of a country.

Along with Mr. Menon's paper may be read with benefit the contribution of Mr. H. R. Crosthwaite on "Unlimited Liability as a national asset." (P. 197) "India" says Mr. Crosthwaite "is a country of small units, a vast rural area of small villages, small holdings, small dealings, small incomes." These units, however, when put together make up a large aggregate. The commercial position of India, which absorbs without effort one-fifth of the whole world's output of gold is a factor to be counted with. The aim of social reform should be to elevate the moral character and improve the skilled capacity of a people. According to this writer, the state must be moulded by its citizens and not the citizen by the state as is held by some confused thinkers. This being the principle on which the co-operative movement in India is based, it has naturally achieved so much success within such a short time. With these prefatory remarks the writer proceeds to describe the part played by the unlimited liability system as applied to the Co-operative Credit movement and in conclusion exhorts the people to adopt Co-operation, if they wish to keep their place in the race for commerce.

"Law of Trade-marks in British India" is the theme selected by Mr. S. Krishnamachariar for his paper. (P. 298) After defining "Trade-mark" and "Property-mark" he has brought into prominence the fact there is no proper system of registration of a Trade-mark in India and no provision for a statutory title to it—a defect which interferes with the acquisition of an exclusive right to the manufacture of any particular goods or articles and it thus discourages any new inventions or enterprise. The author has cited several cases in support of his contention and has treated the subject in all its legal aspects, which owing to their technical character would be rather perplexing to a layman.

In the next paper, Dr. N. Kunjan Pillai, Director of Agriculture, Travancore, gives a very connected account of the

“Development of Industries” in that state (P. 1). It appears that although very little was done by the state up till now for the industrial advancement, still there are unmistakable indications that the state authorities are awakening to their responsibility in this matter. Weaving, Lace and Hosiery making, oil pressing, Coir making, sugar refining are the chief industries. Travancore is the home of the Coconut and there is a large of export trade of this product in its numerous forms. The paper is full of practical suggestions both to the people and the Government of the state for exploiting its natural resources.

Professor P. G. Shah of Lahore, who has already won two or three prizes from the Bombay University for his essays on economical subjects, placed this year at the disposal of the Conference his monograph (P. 19) on “Copper and Brass Industries of India.” It is a very carefully prepared essay revealing an amount of industry and perseverance on the part of its writer, whose efforts ought to stimulate other writers in the country, to follow his example. The paper traces the origin of the copper and brass vessels in India and the use of other metals, like, bronze tin, and tin alloys, describes how the religious notions both of Hindus and Mahomedans affected these industries, mentions the castes employed in this business in the different parts of India and the general tendencies of its organisation and methods of manufacture. These and various other questions too numerous to be noticed in detail in this place, have been fully discussed by Mr. Shah in his paper, which is a store-house of information on the subject, and is replete with suggestions for its improvement.

In his Paper on “Co-operative Village Libraries” (P. 77) Prof. J. N. Samaddar who writes almost every year for the Conference, puts in a plea for the establishment of libraries for benefit of the people of villages on Co-operative basis, which ought to aim not only at the production of wealth but what is more important still—the social and intellectual welfare and also to broaden the mental horizon of the masses. To secure this end,

Mr. Samaddar suggests that such Libraries should be started along with the other items on the programme of work of the Co-operative Societies. The nucleus of a small library should at the start be utilized for the benefit of the rayats, the Secretary of the Society or a few members of the Village Panchayat should undertake to read useful books, magazines or weekly papers aloud to the Village folk regularly at some convenient place.

Those who have devoted some attention to the Oil industry of India, must have fully realised its importance and the unlimited scope which exists at present almost in all Provinces for its expansion. In spite of these considerations the fact remains that this industry with the exception of one or two mills is almost under a blight and the few attempts that are now and then made, have proved abortive. This is also the opinion of Mr. Kapilram K. Vakil, who has in his paper tried to trace the "causes of the general failure of this industry in the Bombay Presidency." (*vide P. 83*) Mr. Vakil was specially deputed by some merchants of Bombay to investigate the subject and his report will be found useful by those who are interested in this business. Mr. Vakil possesses expert knowledge of the Oil-pressing industry and his views naturally deserve close attention and careful study.

The causes which in his opinion have contributed to the failure of several Oil pressing Mills, at important centres like Bombay and Baroda, Surat, Poona and also in mofussil places, may be summarised thus :—

- (1) Want of special knowledge or experience in the early promoters, who framed schemes with the aid of machinery agents, who were quite ignorant of the chemical and economic side of the business.
- (2) Uneven distribution of capital, *i. e.* investing too much in machinery and too little in building, and leaving no margin for the employment of chemical experts and for other working capital.
- (3) In seven cases out of ten, as a consequence of this unequal distribution and ignorance the mills had to be mortgaged from the very beginning.

- (4) Short sighted policy, in some cases, of the mill owners, the faulty economic basis on which some of the mills were managed and the regrettable want of honesty.
- (5) Wrong machinery with which some of the factories were equipped, *e. g.* machinery suited for castor seed was used for crushing Cotton Seed and so on.
- (6) Ignorance regarding proper principles and methods of treating and refining different kinds of Oil.
- (7) Defective arrangements for the storage of Cake, which soon gets spoiled, if not properly preserved.
- (8) Want of integrity in the agents of the foreign companies who purchase the cake.
- (9) High railway feight on oil and oil cake which make it non-paying when sent to Bombay which is the chief market.
- (10) Shortage of seed supply at some seasons of the year, when they had to be brought all the way from Bombay and reconsigned.
- (11) High prices of casks, loss by leakage in transit, gross adulterations practised by early shippers of oil to foreign countries.
- (12) Refusal of Indian farmers and cattle owners to use machine made cake.
- (13) Growing demand for mineral oils for lighting purposes, has also contributed to the decay of this industry.

Professor Russel of the Patna College contributes a very able and informing paper on the "Study of Economics in India" (P. 145). The main object is to prove that the charge that is generally levelled at the people of India, that they had never in the course of their history evinced an aptitude for the study of any other subject but metaphysics and abstract philosophy is utterly at variance with the facts disclosed by a close acquaintance with ancient Sanskrit literature which "best reflects the culture and civilization of ancient India." "It was",

says Mr. Russel "in the ancient city of Pataliputra (present Patna) that the study of Economics was recognised more than 20 centuries ago as one of the indispensable branches of a liberal education." According to Artha Shastra of Chanakya, the science known as Varta of which Agriculture, Cattle breeding and trade were the main divisions, took rank as one of the four principal sciences and students invested with the sacred thread were directed to study it under Government Superintendents who were specialists in Economics." In the opinion of Prof. Russel the growth of interest in economical problems, which is visible in India today, is not to be regarded as wholly a new or unheard of phenomenon alien to natural tendencies of the Indian people. The author, however, points out that within the last hundred years the subject of study and the scientific standpoint of its treatment have both been radically transformed. There are peculiar difficulties in the application of current theories on Economics to Indian conditions owing to the complexity of facts and the inclination of the human mind to bias as well as prepossessions. He then proceeds to explain lucidly the methods suitable to India that should be adopted for the study of this science.

Along with the above paper, should be read the account of the Patna College Chanakya Society (P. 173) written by its members for the benefit of the Industrial Conference. This Society which was formed in 1909 is working under the auspices of Professor Russel for the study of the works of Chanakya the great statesman, economist, political philosopher of ancient India, whose field of activity was Patna. The immediate object of this Society is to provide for its members an open field for original research and investigation and also to collect as much detailed, connected and trustworthy first hand account as possible of the Economic and social conditions of the people and villages around them in the hope that in course of time their investigations may be useful to the future economists of our country.

"The Importance of Manual Instruction" is recognised today in all the principal countries of the world and the need of its introduction (P. 91) in Indian schools is ably advocated

by Mr. H. G. Bhabha, retired Inspector General of Education in Mysore State. After entering into the technicalities of the functions of the brain and the structure of the muscles, he shows that the activity of the brain-cells depends on the exercise of the muscles and the complexity of their Co-ordination. It is from the age of about 4 to the age of 14 to 16 that the brain centres connected with the small muscles and the joints of the hand and fingers are developed. He thus puts forth the plea for manual instruction not only in Elementary Schools but also in High Schools. The muscular activities which the hands are likely to get at this period of life is not possible at a later age.

Drawing, clay modelling, brush work, stick laying, beadwork, brick building, paper cutting and folding, school gardening, cardboardwork are some of the activities suitable for boys and girls. This should be followed later on by metal work, such as lathe work, filing, drilling, chipping, soldering and students of a Manual Training High School of America, in token of completion of their course leave behind as a rule a complete machine built by themselves as a proof of their skill. This is the kind of education given in foreign countries to strengthen, improve and elevate the character of the masses.

Dr. R. V. Khedkar, State Surgeon, Kolhapur puts forth a plea for the "Preservation of National Art, handicrafts and character." (p. 214) Dr. Khedkar deplures that the old Indian Art is dying out and the people are imitating modern modes of life and tastes—conditions which are unfavorable to the development indigenous art. The repeated studies of labourers in Europe and America prove the fact that Iron machinery although it may turn out huge quantities for sale does not satisfy the wants of the poorer classes. To remedy this state of things, Dr. Khedkar invites the attention of his countrymen to the silent but useful work which is being carried on by Madam A. L. Pogosky, a Russian Lady who has proved that if the faculty of intelligence, reason, and intuition of the labourers has to be cultivated, it can be done only through the handicrafts instead of depending on machinery. This lady is an advocate of cottage

industries as opposed to the establishment of big factories with the aid of costly machinery. Development of spiritual character is also needed for improvement of national integrity.

We now pass on to the paper of Professor Radha Kamal Mukerjee of the Krisnath College, Berhampore on "The place of the domestic (*p. 99*) industry in Indian economic life." Prof. Mukerjee treats first of the economic transformation of the Indian village and the gradual extinction of the cottage industries and the rural exodus to cities and other centres of industries conducted on modern lines. In his opinion the self-sufficiency of the village yet remains and the village is yet the real economic unit of India. "Of India" says he "more than of any other country, it can be said that the nation lives in the cottage." There are only 2,150 Towns in the whole country whose population exceeds 5,000 persons and the rest are all villages. The writer next asks the question as to whether it is desirable for India to adopt wholesale the method of Western industrialism and says in reply that the Western methods are not suitable to our environments and socio-economic condition, quoting Dr. Coomaraswamy and a few other writers to support his contention. We may be pardoned for quoting the extracts here for the benefit of our readers :—

"The true end of material civilisation is not production but use, not labour but leisure,—not to destroy but to make possible culture. A nation which sees its goal rather in the production of *things* than in the lives of *men* must in the end deservedly perish." 1 "Already all over the Western world the problem which with ever increasing urgency demands a solution, if peace and progress are to be preserved is that of the persistence of undeserved poverty in the midst of abundant wealth, of unemployment in the midst of unsatisfied desires." 2 Again, "Never before in our history was the misery of the very poor more intense, or the conditions of their daily life more hopeless and degraded; the vast wealth which modern progress has created, has run into pockets of individuals and classes have grown rich beyond the reach of avarice, but the great majority of the toilers and spinners have derived no proportionate advantage from the prosperity which they have helped to create." 3

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1. Dr. A. K. Coomaraswamy's essays in National Idealism, p. 155.
 2. Max Hirsch: Democracy *vs.* Socialism, Introduction.
 3. Mr. Joseph Chamberlain.

The modern highly organised industrialism has resulted in an enormous disparity of wealth, which is at the root of the present wide and manifold social evils, as the real wellbeing of the masses is sacrificed in the interest of concentrated production. To counteract these evil effects, Mr. Mookerjee, proposes the expansion of small cottage industries as much as possible, with the aid of cheap mechanical or electrical contrivances to render the task of the artisan easier without impairing his individuality, his inventiveness or dexterity.

Rao Saheb Ganesh Nagesh Sahasrabuddhe of Ellichpur has arrived almost at identical conclusions and advocates the "importance of small industries and indicates the scope for their development in India." (vide p. 337) Mr. Sahasrabuddh regrets the decadence of the ancient Indian industries in course of keen and unequal foreign competition. In regard to present day industrial activity in the country with the aid of the factory system and joint stock concerns the views of the author may be thus quoted in his own words :—

' The conditions of Foreign countries and those of India are quite different in various respects. The people of England and other countries have been striving for the industrial development of their countries for the last 100 years. They have made great self-sacrifices and have now attained a position of great eminence in the industrial world, owing to the various facilities afforded to them, and the sound and practical education imparted in their Technical Schools and Colleges, Laboratories, Schools of Technology and other necessary institutions. They have become experts in every branch of industry and are systematic and honest workers on business lines. They have thus become armed with the most modern and scientific processes of manufacture, can command enormous capital to finance their concerns, and are fortified with high protective tariffs and are ever ready and able to take the least advantage that may offer itself. But the state of India is quite different. It is full of ignorance, conservatism and poverty. The country lacks skill, technical knowledge of the intricate processes of manufacture. Capital is abundant but shy. There is a lack of enterprise and business ability, and also of honest managers and systematic and earnest workers possessing self-reliance actuated by notions of self-sacrifice. Under these unfavourable circumstances, is it possible for India to work out industrial concerns with profit, and compete with the great competitors of the world abroad? Admittedly, the situation is very gloomy and one is tempted, through sheer despair to give up every thing for lost.'

The Annual Reports published by Provincial Governments on the working of Joint Stock Companies in India, disclose a

very dismal state of affairs and reveal the disadvantages of starting big undertakings, the failure of which brings in train the ruin of many capitalists and poor shareholders, the writer, therefore puts forward the plea in favor of small industries and quotes four or five authorities in support of his contention. The advocates of small industries argue that even in Western countries like England there is "now a reaction against city life so full of hurry and bustle, smoke and squalor and "back to land" is the present cry. Mr. Sahasrabudde defines small industries as those conducted with the help of steam or electricity employing less than 20 operatives each, and also such as are carried on by the hand, foot and animal power. He first takes the cotton industry and shows with the help of statistics the vast scope that still exists for the expansion of handloom-weaving even in the face of the powerloom. The writer has proved that in the non-textile industries also there is limitless scope for those who will seriously devote their attention to the subject. In England itself which is justly looked upon by our countrymen as the model of industrial activity there are:—

	No.
Textile factories each employing 97 operatives on an average.	} 11,000
Non-textile factories employing 35 workers.	} 79,000
Small workshops do. 8 men.] 80,000

The above figures speak for themselves, and are sufficient to dispel the popular illusion that there is no scope in these days for small capitalists.

The author proceeds next to give a list of nearly 44 industries which are successfully worked in England on a small scale to the mutual benefit of both the employer and the employes. The tenement Factories in Sheffield deserve a special study and may be described thus:—

The "Tenement Factory" is habitual. A small foundry in the middle of the yard, the four sides of which are occupied by hundreds of small workshops, supplied with motive power from a central steam engine and these workshops are rented and sub-rented by the small masters. In Sheffield there

are now about 170 such tenement factories. In some, there are as many as 70 to 80 separate rooms or grinding halls; in others many less. There are approximately 2,900 occupiers who are first tenants, many of these sub-letting part of the rooms. In such tenement factories, you see rows of small rooms, two yards square in each of which one man, standing between his fire and his anvil, makes knife-blades, further on you find rows of workshops of the capacity of a good sized parlour; in each of which a master works with his few aids, making all possible, continually varying sorts of tools; and on the ground floor you discover equally small damp rooms, in which saws and files are fabricated; or slightly larger rooms, in which tools are polished and ground. About 15,000 men are employed in these tenement factories, making these tools and knives, which make Sheffield one of the most widely known towns in the world. (p. 360.)

The thousand and one things of daily use are prepared in these busy agglomerations of small industries and the aggregate value of the products of these small concerns is nearly equal to the aggregate value of the products of large factories. Technical or specialised education, agricultural, industrial or commercial is necessary for the successful conduct of these industries.

The author gives a supplementary list of nearly 138 different suitable industries for men and 11 industries exclusively for women together with a list of the total number of Periodicals in foreign countries each devoted to some particular trade or industry. The total number of such Journals according to his estimate comes to about 2,400.

It is within the recollection of our readers that Lt. col. Atkinson and Mr. Tom S. Dawson were entrusted by the Government to institute an inquiry into the following questions:—

- (1) What openings exist, for the employment of technically trained Indians and what further openings are likely to be available?
- (2) What types of men and standard of Education and training do employers of labour demand in the various industries?
- (3) Have these demands been met by the existing technical institutions?

- (4) If not, how should these institutions be altered or added to in order that they should be in a position to meet these demands ?
- (5) What arrangements can be made for the systematic co-ordination between institutes and employers of labour, in order that they may work in with each other for their mutual benefit and for the good of the country ?

The Report submitted by the above named officer about the "prospects for technically trained Indians" forms the subject of the paper of Professor V. G. Kale of Poona. (p. 403). The objects of the inquiry are indeed not unimportant. If technical education as at present imparted at principal Technical Schools and other institutes in India is carried on in a haphazard manner without studying the actual needs of the employers, waste of energy and time and consequent disappointment will be the inevitable result. "If the existing state of things continues, we may" says Mr. Kale, "have the double evil employers clamouring for the right sort of men" and "technically trained men failing to find employment." As these two officers were not called upon to take up the larger questions regarding (1) organisation of new industries, (2) the revival of old ones, or (3) of the turning out of men of enterprise and business aptitude, (4) the framing of any schemes of large and small technological institutes throughout the country to prepare people for higher professional careers, the scope of their inquiry was thus limited. The recommendations of the committee within the sphere assigned to them though adequate for purpose in view do not give any encouragement to those Indians, who agitate for larger and well equipped, technical institutions for more thorough technical training.

With the other papers on small industries received for the Bankipore Conference may be read the paper of Mr. Trimbak Ramchandra Kotwal Subordinate Judge of Poona, who puts forth a "Plea for cottage industries" (p. 218) while describing his impressions about the industrial exhibition and sale of the work of the Salvation Army in Bombay. The principal

objects of interest were the Exhibits of the silk and weaving industries. All the different processes connected with silk making in all its stages from the tending of the silk worm, reeling of the silk, to the weaving of the silken fabrics were kept on view. To demonstrate the weaving of cotton fabrics, the looms designed by the Salvation Army were shown while in actual operations. Several other smaller industries at present carried on by the Salvation Army bear ample testimony to the useful and philanthropic work of that body which aids the social regeneration of the lower strata of the Society, viz. the depressed classes. Many of the industries deserve to be taken up in right earnest by the middle classes also.

Lala Panna Lall, Proprietor of the Upper India Glass Works, Amballa, gives very useful and practical information in his paper on "How to develop Glass making as a cottage industry, (p. 231) Mr. Panna Lall describes the process of constructing the smelting furnaces, crucibles required for these factories together with the kind of labour, ingredients, refining and colouring materials and plants and implements, moulds &c. The paper should be carefully studied by those already engaged in that industry and also by those who are thinking of starting a Glass Factory.

The Resolutions passed at this Session of the Conference will be found detailed in the body of the Report, and need not be repeated here to swell unnecessarily the volume of the book.

Summary of Proposals and Suggestions.



A.—The work of the Conference.

1. The Industrial Conference should have an annual allotment of Rs. 25,000 in place of Rs. 5,000 and should employ more numerous staff; one to every department of Agriculture, Commerce, Industries, Mining, Co-operation and the like; and these men should travel to organise, educate and if necessary, to agitate. (*Presidential address of Lala Harkishenlal*, p. xiii.)
2. Want of capital and employment of inexperienced staff, will also account for several cases of failure and I think a careful enquiry should be made into the causes not by the people in a haphazard way, but by an experienced man sent out by the Industrial Conference. (*Ibid*, p. xxii.)

B.—Agriculture.

3. We want leaders, that is people who will equip themselves with modern knowledge and up-to-date methods and put them into practical use, with a view of enriching themselves and bettering the lot of their fellow countrymen. Special colleges may do a great deal in this respect, but agricultural chairs in connection with Indian Universities may do a great deal more, they will attract the attention of the highest few, to the subject of Agricultural Economy, and may make them return to land to become master-cultivators. (*Presidential address of Lala Harkishenlal*, p. xix.)
4. We want a spirit of emulation. This can best be secured by organising annual fairs of agricultural produce, village art and industry, cattle shows and physical feats. They should be introduced at all Tehsil headquarters, and worked not by official agency but by a mixed agency, say, Tehsil Board. (*Ibid*, p. xix.)

5. We want co-operation in cultivation, harvesting, and marketing, as well as in credit. This should be attempted by starting Agriculturists' Associations, the educated agriculturists taking the lead, and the units of such Associations should not be larger than a Tehsil. (*Ibid*, p. xix.)
6. We must go a step forward in marketing agricultural produce, one degree removed from the shape in which it leaves the fields. By this I mean to say that flour and not wheat, oil and not oil-seeds, ginned cotton and not raw cotton, dried fruits and vegetables, where they can be dried, ought to leave the village. (*Ibid*, p. xix.)
7. We want transport facilities for grass, vegetables, fruit, ghee and cattle to near markets. (*Ibid*, p. xx.)
8. For the proper working of an agricultural association three things are essential (1) right sort of men, (2) funds, (3) desire to work. (*Mr. V. K. Kogekar*, p. 213.)

C.—Education.

9. For one generation at least the ambition of our educated young men should be to adopt a business career, in preference to an official, educational or professional and that parents should endeavour to give them an outfit qualifying them for this career and that the marriages of the young men, to be dedicated to business, should be postponed even beyond the Vedic limit of 25 years. (*Presidential address of Lala Harkishenlal*, p. xi.)
10. The Government, aristocrats, chiefs and the people should at once and without loss of time, provide the country with business and commercial Colleges, where a knowledge of business machinery, organisation, and efficiency and a knowledge of modern languages should be imparted. (*Ibid*, p. xi.)
11. Chairs of Indian Economics and Agriculture be founded in connection with all the existing and projected Universities. (*Ibid* p. xii.)

12. Economic Science should be studied by all our public men; and by the rising youths of the country with special reference to Indian problems. (*Ibid.*)
13. Boards for Technical education should be inaugurated, and they should endeavour to grapple, with the assistance of public and subscribed funds, to raise the standard of efficiency of labour and to secure greater economy in all handicrafts, and factory industries. (*Ibid.*, p. xiii.)
14. Assistant Directors of public Technical or Handicraft education, should be appointed in each province, with a similar system of State schools and Aided schools and Private schools open to Departmental inspection. Bodies like University Senates are required for looking after the Higher Technical Education of each Province or to start with each Presidency. The proposed new universities should be teaching institutions from the very start. (*Ibid.*, p. xiv.)

D.—Labour Supply.

15. Capitalists should employ proper agencies for recruitment of labour in their prospectuses. (*Presidential address of Lala Harkishenlal* p. ii.)

E.—Cotton Industry.

16. The cultivation of finer stapled cotton, or the invention of machinery to produce finer yarn from present varieties of cotton, should receive our earnest attention; and also everything possible should be done to improve the cotton staple. (*Presidential address of Lala Harkishenlal*, p. xxviii.)
17. I would suggest the formation of an Association with headquarters at Delhi, the membership of which should be open to all the Mills in Northern India; and I would further suggest the formation of one or more associations of the people interested in growing, in buying and in selling cotton. I would also suggest the formation of one or more Institutes of Mechanical Engineers, and carding and spinning masters, with

associations which should try to improve the industry from the special points of view. I may also venture to hope that one or more banks will be specially organised or one or more of the existing ones will specialise in financing cotton trade, cotton industry, export of cotton and import of cotton goods. (*Ibid.* p. xxxi.)

F.—Silk Industry.

The following suggestions have been made by Mr. M. N. De (*vide*, p. 143.)

18. Distribution of disease-free eggs to the rearers; only licensed rearers should be allowed to sell eggs after microscopical examination. The Government must have examination offices in all the big centres of rearing where the Government officers should examine eggs free of charge or they may go from house to house examining the eggs.
19. Encouraging the rearers to rear one-brooded race in October and February, and Mysore or some well-established manybrooded hybrid races in other seasons. In order to induce the rearers, the eggs must be distributed free first.
20. In a new locality where there is no sericulture, castor silk worm eggs should be first introduced, as this race is more hardy.
21. The appointment of circuit lecturers who have expert knowledge of sericulture for advising the people.
22. The holding of competitive sericultural exhibitions in important centres.
23. The sanction of subsidies for sericultural classes in village schools, mulberry trees, cocoons, reeled thread, etc.
24. Free distribution of pamphlets in the vernacular of the district for the guidance of rearers.
25. The starting of Silk Associations whose object should be:—

- (a) to safeguard the interests of silk manufacturers, (b) to reply to queries regarding silk industry in general, (c) to send members to various exhibitions, (d) to bring together spinners, weavers and traders. (e) to collect and disseminate useful information and statistics regarding silk, (f) to promote technical and commercial knowledge by starting schools for rearing, weaving and dyeing in important silk centres like Bhagalpore, Berhampore, Benares, Ahmedabad, Malda, Gurndaspur Nagpur, Madras, Bangalore, etc., (g) to induce the manufacturers and retail traders to demonstrate to the people, who are carried away by gaudy colours that Indian silkgoods have got their own good points specially from the point of view of price and durability, (h) to secure just and equitable relations between the silk merchants and the rearers, (i) to expand the growth of industrial art, (j) to establish Libraries and museums on sericulture in silk centres, (k) to induce Government to take up sericulture in Khas Mahals and in Court of Wards estates thus setting examples to others, (l) to impress on manufacturers the advantages of Indian as compared with other silks and to be particular about the quality of the silk exported until a silk conditioning house is established in Calcutta or Bombay by the Government, which would stop the exportation of bad silk, (m) to establish co-operative societies and guilds among silkgrowers and manufacturers.
26. The establishment of a central sericultural institute with branches in all the important places of silk rearing.

G.—Sugar Industry.

27. The canes from which the cuttings are obtained should be (1) juicy (containing as little begass as possible), (2)

sufficiently thick, (3) joints at a long distance; i. e., the length between the joints be as great as possible or should consist of as few joints as possible, (4) sweet, (5) drought resisting, (6) healthy never affected throughout the season by any disease, fungi or frost etc. (7) of healthy complete eyes, (8) of very thin joints, (9) long. (10) full of juice inside, (11) of a very thin bark, (12) should not crack on the joints and split up in twain. (*Babu Mukhtarsing*, p. 254).

H.—Capital and Co-operative movement.

28. We must save, invest and organise before we could have a capital Fund to back our industries. (*Presidential address of Lala Harkishenlal*, p. xxxv.)
29. The best way to attract foreign capital would be to introduce large and well-considered schemes with mixed boards. But schemes which are State-aided or aided by Native States or local bodies will have a better chance. (*Ibid*, p. xxxvi.)
30. We should establish a sound and solid banking system in the land. With the number of Banks already started, I would propose the formation of a Banking Association, without any loss of time; and would urge thereby the discussion from time to time of questions vital to the existence, continuance, permanence and prosperity of the Banks. (*Ibid*.)
31. A very useful system of Banks could be devised by the help of Native States somewhat on the lines of Presidency Banks and Discount Banks combined. (*Ibid*, p. xxxix.)
32. Railways should attract Indian Capital when their earnings amount to 6 per cent, and over. (*Ibid*.)

I.—Life assurance.

33. I would draw the attention of my countrymen to this branch of financing institutions, and would like them at once to combine into an Association, to develop Insurance

on healthy lines, covering all departments of risks.
(*Presidential address of Lala Harkishenlal*, p. xxxix.)

J.—Miscellaneous.

34. The country should be studded with Chambers of Commerce, walking in the footsteps of similar institutions now existing in European countries; whose function should be to find a business career for honest, capable, and willing educated Indian youths. (*Presidential address of Lala Harkishenlal*, p. xii.)
35. Special associations, such as of cotton spinners and weavers, cotton dealers, of Bankers and of Insurance Companies be started at central places, to look into the interests of their special concerns. (*Ibid*, p. xii.)
36. Government should throw open to Indians half the top appointments, in all its Technical departments, namely Railways, Telegraph and Post Offices, Forests, Surveys, Geological and Meteorological Departments, Irrigation, Electrical and Mechanical Workshops, Electric Supplies, and Civil Engineering. (*Ibid*, p. xii.)
37. Special and sufficient provision be made in all Local Councils and in the Imperial to have Commercial and Industrial representation. (*Ibid*, p. xii.)
38. The commercial departments of the Government of India should see to the needs of Indians as well to those of Europeans; and that they should back Indian efforts as often as of outsiders. (*Ibid*, p. xii.)
39. Native States should help the movement of economic regeneration, as they represent $\frac{1}{3}$ th of the whole of India; and means should be found to have their co-operation with the Government, and the people of British India, instead of their making isolated efforts. (*Ibid*, p. xii.)
40. European Manufacturers, Bankers, Insurers, Exporters, Importers and Transporters should advance Indians beyond the position of clerks, and entrust them with

duties requiring intelligence, responsibility and capacity.
(*Ibid*, p. xiii.)

41. Swadeshism should be taken at its word and be organised principally in the channel of capital. (*Ibid*, p. xiii.)
42. Public press should give more attention and space to economic questions rather than to general news, political discussions, racial bickerings and individual panegyrics. (*Ibid*, p. xiii.)
43. The Government, the native rulers, the public bodies, and the patriotically inclined gentlemen could do a lot of good by publishing in advance well-considered information on any new scheme put forward, and if the commercial department of the Government of India leave off its traditional shyness, and advise and seek advice and communicate the same to the new venturers it might do a real yeoman's service. (*Presidential address of Lala Harkishenlal*, p. xxxvii.)
44. The Government should produce stuffs so largely used by its departments by means of *pioneer* industries, which may after a while be transferred to the people on payment of a portion of the money in hard cash and the balance by way of deferred-payment debentures. (*Ibid*, p. x.)
45. Well-known methods of marketing of goods such as holding of Exhibitions and Fairs, and of advertising are badly needed to help the enterprising and the struggling manufacturer. (*Ibid*, p. ii.)
46. If Government will make Railways a National monopoly, great things may come out of it in India. Let Indians be gradually, posted to high places of its administration and Indian ideas and suggestions be invited to make it a National concern. It is the largest Industry no doubt but the people have paid the smallest attention to it so far. (*Ibid*, p. ix.)

RESOLUTIONS

PASSED AT THE

Eighth Indian Industrial Conference

HELD AT BANKIPORE

On Monday, the 30th December 1912.

RESOLUTION I.

The Delhi Outrage.

The Indian Industrial Conference expresses its indignation and abhorrence at the dastardly outrage committed upon the life of His Excellency the Viceroy and begs to offer its respectful sympathies to Their Excellencies Lord and Lady Hardinge and the Conference fervently prays that His Excellency will have a speedy recovery and restoration to health.

Moved from the Chair.

RESOLUTION II.

Agriculture and Commerce.

In view of the great importance of properly developing agriculture and Indian Commerce, this Conference urges upon Government and the people the urgent necessity of establishing Chairs of Agriculture and Commerce for spreading knowledge of the general principles of these subjects among persons who do not wish to specialise in them; and for the suitable advancement of Technical Education, the Conference strongly advocates the creation of Boards constituted on lines similar to the Senates of Universities for directing and regulating instruction therein.

Proposer—Hon'ble Rao Bahadur R. N. Mudholkar.

Secunder—Hon'ble Babu Krishna Sahay.

RESOLUTION III.

Indian Chambers of Commerce.

This Conference draws the attention of the commercial and other business classes

- (a) to the great necessity of establishing Indian Chambers of Commerce and Associations of the Industrial and Financial interests, wherever favourable circumstances exist and
- (b) to the importance to themselves and to the country of their engaging to a greater extent than hitherto, in the foreign trade of the country.

Proposer—Mr. L. V. Kaikini.

Seconder—Dr. S. V. Ketkar.

RESOLUTION IV.

The Atkinson—Dawson Inquiry.

This Conference expresses its disappointment at the recommendations made by Lieutenant-Colonel Atkinson and Mr. Dawson in regard to higher Technical Education and expresses its disagreement with the recommendation in regard to the State Technical Scholarships, as these recommendations are not calculated to secure that higher type of knowledge of principles and practice which is required for organisation, direction and management of industries.

Proposer—Mr. N. A. Dravid.

Seconder—Mr. M. B. Sant.

RESOLUTION V.

Polytechnic College.

While expressing its appreciation and thankfulness to the Government for the liberal action taken and contemplated, in regard to Technical education, this Conference once more records its firm conviction that for placing the cause of industrial progress on a firm basis, it is most necessary that the Government should

establish in the country at least one fully-equipped Polytechnic College for imparting the highest kind of instruction in the applied sciences and industrial arts.

Proposer—Honourable Babu Dwarkanath.

Seconder—Mr. Mithila Saran Sinha.

RESOLUTION VI.

Technical Education.

This Conference urges all Provincial Governments and administrations, Rulers of Indian States, as well as Principals and Superintendents of Private or Aided Schools and Colleges, to add Commercial, Technical and Industrial classes for instruction in commercial subjects as well as in weaving, dyeing, sheet-metal working, smithy, carpentry etc., to the existing courses of instruction, wherever practicable.

Proposer—Mr. Moulvi Mahamad Hussain.

Seconder—Mr. Chandrabhan Sahay.

Supporter—Mr. G. N. Kane.

„ Mr. G. K. Harkara.

RESOLUTION VII.

Failure of Industrial Enterprises.

This Conference notes with regret and concern the failure of several industrial enterprises started for carrying on new industries and the effect these failures have produced in damping the ardour of the people in the development of the resources of the country. The Conference calls upon the leaders of the people in the different Provinces and Districts to institute inquiries into the causes of these failures and to communicate to the General Secretary the results of their inquiries, and authorises the General Secretary to depute one or more persons for conducting this investigation, if the funds at his disposal permit.

Proposer—Professor Jadunath Sarcar.

Secunder—Rai Narayan Prasad Sahib.

Supporter—Mr. K. P. Sen Sinha.

” Rao Saheb Ganesh Nagesh.

RESOLUTION VIII.

Hand-loom Weaving.

This Conference specially invites the attention of the capitalists to the great and urgent necessity of improving the existing condition of the weaving industry by the introduction of labour-saving hand-loom and other devices of approved patterns, in important centres of the Hand-loom weaving industry, with the co-operation of the weaving classes.

Moved from the Chair.

RESOLUTION IX.

Railway Rates.

This Conference once more calls the attention of the Government to the prevailing complaints about the anomalous character of the existing Railway rates on goods and their prejudicial effect on interprovincial trade ; and urges the necessity of laying down, for interprovincial consignments, the same scales of rates as those for consignments to and from important ports.

Moved from the Chair.

RESOLUTION X.

Faculty of Commerce.

This Conference records its sense of gratitude to the Government of Bombay for having created a Faculty of Commerce and urges the other local Governments and Universities in India to follow the example of the Bombay University in establishing Faculties of Commerce for giving an impetus to Commercial Education.

Moved from the Chair.

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RESOLUTION XI.

Provincial Departments of Industry.

This Conference once more urges that :

- (a) There should be in every province of British India, a Department of Industry under a Director of Industries to deal with purely industrial questions and to be in charge of Technical, Commercial as well as Industrial Education in the Province; and that there should be an advisory board of qualified persons, not less than one half of whom should be non-official Indians, who should be consulted on economic questions of importance; that the functions of this department should include (1) the introduction of new or improved methods and processes, (2) the carrying out of investigations and experiments, (3) the development of selected industries, and (4) the organisation of industrial and commercial Exhibitions.
- (b) That there should be an Industrial Museum and bureau of information under the Department of Industry for supply of information and advice to the public on all Industrial and Commercial matters within the province.

Proposer—Honourable Mr. Gokuldas K. Parekh.

Secunder—Babu Ram Gopal Choudhary.

RESOLUTION XII.

Co-operative Banks.

This Conference once more welcomes the establishment in the Bombay Presidency of a Central Co-operative Bank and urges upon the Government and the people of other Provinces, the need of establishing similar Banks to help the existing Co-operative Credit Societies for advancing loans at reasonable rates and on easy terms to the agriculturists.

Proposer—Rai Purnendu Narayan Sinha Bahadur.

Secunder—Mr. L. V. Kaikini.

RESOLUTION XIII.

Miscellaneous.

This Conference confirms the resolutions passed in previous years :—

- (1) Calling upon the Government and the people (a) to encourage and help Indian manufactures and (b) to foster and encourage the use of such manufactures ;
- (2) Recommending to the people the desirability of starting Funds for the promotion of Technical and Industrial Education ;
- (3) Inviting the attention of capitalists in India to the urgent need of developing and fully utilising the mineral resources of the country and asking them to make organised efforts in that direction ;
- (4) Urging upon the attention of the Imperial Government the special claim to consideration of the Textile and Sugar Industries ; and praying for the repeal of the excise duty on Cotton goods ;
- (5) Urging upon Government the desirability of the standardisation and unification of Weights and Measures so as to remove the serious inconveniences caused to trade by their multiplicity.

Proposer—Mr. Mathura Nath Sinha.

Secunder—Mr. S. V. Lalit.

RESOLUTION XIV.

Co-operative Credit Societies.

This Conference expresses its great satisfaction at the progress which Co-operative Credit has made in this country since the passing of the Co-operative Credit Societies' Act of 1904, and earnestly hopes that with the wider application of the principle of Co-operation under the Co-operative Societies' Act of 1912, Government will give larger financial and administrative facilities which are needed to secure a surer growth of Co-operation and

exhorts the educated public to strenuously extend its operations to various branches of agriculture and small industries which are bound to prosper with the help of the Co-operative movement.

Proposer—Mr. G. K. Devadhar.

Seconder—Mr. R. V. Mahajani.

RESOLUTION XV.

Sir T. Palit's Gift.

This Conference places on record its sense of gratitude to Sir T. Palit of Calcutta for his munificent gift to the Calcutta University and expresses the hope that his example would be followed by others.

Moved from the Chair.

RESOLUTION XVI.

Office Bearers.

The Honourable Rao Bahadur R. N. Mudholkar be appointed General Secretary of the Indian Industrial Conference for the next year, Mr. N. A. Dravid, Honorary Assistant Secretary and Mr. M. B. Sant, Assistant Secretary and this Conference appeals to the public for a sum of Rs. 8000 to carry on the work of the Industrial Conference.

This Conference deems it desirable that there should be a Standing Committee appointed for each year to co-operate with the General Secretary in carrying on the work of the Conference during the year and to advise him on all such matters as he may submit to them and that the following gentlemen do constitute the Standing Committee for the year 1913 :—

Sir R. N. Mookerji.

Lala Harkishen Lal.

Mr. J. Chaudhari.

Sir Vithaldas D. Thackersey.

Mr. D. E. Wacha.

Hon'ble Mr. Lalubhai Samaldas.

Dewan Bahadur P. Rajaratnam Mudaliyar,
Dr. Satish Chandra Banerjee.
Mr. O. Y. Ohintamani.
Rai Purnendu Narayan Sinha Bahadur.
Hon'ble Mr. M. B. Dadabhoy.
Hon'ble Babu Krishna Sahay.
Hon'ble Rao Bahadur B. N. Mudholkar (*Ex-officio*).
Proposer—Hon'ble Mr. Krishna Sahay.
Secunder—Professor Jogindra Nath Samaddar.

HARKISHEN LAL,

President,

Eighth Indian Industrial Conference.

B. N. MUDHOLKAR,

General Secretary,

Indian Industrial Conference.

APPENDIX I.
INDIAN PATENTS.

APPLICATIONS FILED.

J. Khan for concrete floor construction.

Munshi Bansilal for the weaver's improved cottage beaming machine.

J. Ekambaraswamy and **P. Murugachari** for tube and disc water left with chain.

Jivanlal Kanji for churning machine for curdle milk.

J. Chiranjilal for hinged wooden sole boots and shoes.

K. R. Taraswami Naidu for a water lift.

Sheo Prasad Mehra for the two stand fly shuttle slay.

Shamchand Shet for an improved gold tester.

S. W. Das for a new baling press of toggled lever type worked by cranked pulley.

R. C. Bannerjee for an improved candle stand.

The Techno-Chemical Laboratories Ltd., for improvements in and relating to the carrying out of catalytic operations, &c.

C. Chitambarachari for manual labour water lift.

L. M. Mehta for utilising the movement of water.

C. K. Datta for a device for the suppression of smoke applicable to lamps without chimneys known as "Kupis."

H. Mandal for improvements in the toggle lever type jute press.

S. T. Krishnamacharya for a small and portable table which can be raised and lowered at will.

H. D. Adhikari for lever action husking and powdering machine of iron to be worked by hand or foot.

Amiruddin and Rahimuddin for the Faithful Padlock.

S. D. Canji for improvements in swinging chairs or sofas.

M. A. Rahimon Saheb for rolled silver lace.

K. K. Apte for piano wire grids.

J. S. Banajee for antiseptic paper.

N. B. Bhattacharjee for up to date Misquith flate.

C. R. Mudaliar for first aid snake bite outfit.

Gulam Hussain Nabi Baksh for improved cricket bat.

G. N. Sahasrabudhe for the folding Bharat Cooker.

K. R. Jasoomanina for improvements in Cotton Gins.

Md. Nizamuddin for combination detachable Railway sleeper.

Shah Din for sugarcane mill.

Lala Thakurdas and Malawa Ram for sugarcane press.

K. C. Das for universal pocket lamp.

Md. Isahak Badri for winding machine.

Sirdar Raja Babu for improvements in automatic chursahs.

A. B. Godrej for improvements in safes.

J. L. Dhar and G. C. Roy for improved and simplest form of gold tester.

S. K. Dey for automatic sawing machine fan.

Gulam Hoosain Saheb Mahomed for a cooker.

B. N. Banerjee for screw crane.

T. Kalianjee and A. B. Paranjpe for improvements in internal combustion engine.

B. Singh, K. Singh, S. Singh and L. Singh for improvement in the method of manufacturing chalk pencils.

Hamidulla for a lock.

Shri Krishna Joshi for a heated oil illuminator.

H. Gangadharachari for bangles.

K. C. Das for the easiest method of taking down a speech or a dictation verbatim in any language and at any speed.

S. S. Rao for the direct measure.

B. K. Bomanjee for the rapidly adjustable embroidery or needlework frame.

D. D. Pudumjee for improvements in cotton gins and cotton machinery.

E. T. D' Cunha for improvements in sleepers.

G. N. Barooah for improvements in and relating to tongueless buckles or the like.

Abdul Aziz and Mola Baksh for a lock.

J. Shanker, Kishanlal and Bankeylal for a lock.

J. F. Saldanha for system of raising water by air pressure.

M. A. Kawle for improvements in incandescent petroleum lamp.

S. N. Chaudry for Oil Engine Cooler.

N. Jagjiwandas for improvements in boots and shoes.

K. Baksh for machine for circumcision.

PATENTS SEALED.

524 Wadia ; 571 Jagannathan ; 104 Shuman ; 630 Bansilal ; 483 Swami Dyal ; 705 Ekambaraswamy and Murugachary ; 405 Subra ; 864 Adhikari ; 430 Techno Chemical laboratories Ltd. ; 841 Datta ; 806 Khan ; 949 Day ; 971 Jasomania.

APPLICATIONS ACCEPTED UNDER SECTION 6 OF THE NEW ACT.

N. P. Sen for mechanism for automatic supply of oil at a constant level in oil lamps.

J. Khan for concrete floor construction.

Imam-ud-din & sons and Fazul Ilahi for camp field bed furniture.

APPENDIX II.

LIST OF JOINT STOCK COMPANIES.

BANKING, LOAN AND INSURANCE.

(a) *Banking and Loan.*

Badarganji Loan Office, Rangpur Punjab and Kashmir,
Bank, Rawalpindi Sri Kadambadi Ammen Janasahaya Dhana-
sekara Saraswati Nedhi, Karukumbakam.

Khoksa Janipore Banking Corporation, Bengal.

Brahmanbaria Coranation Bank, „

Bharat Vyapar Bank, Gorakpur.

Agra Bank, Agra.

Cosmopolitan Bank, Bombay.

Sri Vibudha Virja Samvardan Bank, Morrispet.

Imperial Bank, Delhi.

(b) *Insurance.*

Jagajyoti Provident Fund Co., Bengal.

Bitagi Jivan, and Bibaba Sahajyu Bhandur, Bengal.

City of Calcutta Provident Co.,—Bengal.

People's Cooperative Insurance Society, Cattack.

Minerva Assurance Co., Calcutta.

Eagle Assurance Co., „

Atlas Assurance Co., Chandpur.

Eastern Provident Co., Chandpur.

Pioneer Assurance Co., Bombay.

Graduate Assurance Co., Calcutta.

City Insurance Society „

Punjab Provident Co., Amritsar.

Crown Insurance Co., Bombay.

Light of Asia Insurance Co., Calcutta.

II. TRADING.

(a) *Railways and Tramways.*

Upper Sind Light Railways (Jacobabad — Kushmore Feeder) Karachi.

Sara Sirajganj Railway Co., Calcutta.

(b) *Navigation.*

Eastern Maritime, Bombay.

Persian Gulf Steam Navigation Co., Bombay.

(c) *Others.*

Ahmedabad Electricity Co., Bombay.

Indian Forests Economic Products Co., Chitagong.

Bose Brothers (Cutlery) Mazaffarpur.

Ayurvedic Medical Co., Amritsar.

Bombay Scientific Steam and Electric Laundry.

Belgava Power Cultivation Association.

Bombay Brick and Belgaum Tile Manufacturing Co.,
Bombay.

Arcadian Tobacco Co., Calcutta.

Karachi Electric Supply Corporation, Karachi.

Bundi Hydraulic Lime and Cement Co., Bombay.

III. MILLS AND PRESSES.

(a) Cotton Mills.

Kasturchand Mills Co., Bombay.

Simplex Mills, Co., ,,

Rajpur Mills, Ahmedabad.

Tata Mills, Bombay.

Provident Cotton and flour Mills Co., Kasur (Punjab.

Marwari Spinning and Weaving Mills, Lahore.

People's Spinning and Weaving Mills, Bombay.

Sri Narasimha Cotton Press Co., Narasarowpet.

New Malabar Timber Yards and Saw Mills, Madras.

Assurva Cotton Mills Co., Bombay.

(b) Jute Mills.

Empire Jute Co., Calcutta.

Narcoldanga—do— ,,

Angus Jute Co., ,,

Hoogley Jute Mills Co., ,,

(c) Mills for Wool, Silk and hemp &c.,

United Silk and Cotton Mfg. Co., Bombay.

(d) Other Mills and Presses.

Cawnpore Ice Factory and General Mills Co., Cawnpore.

Argyll Oil Mills, Bombay.

Berar Oil Works, Akola.

Bombay Cotton Waste Cleaning, Bleaching and Manufacturing Co., Bombay.

Madras Premier Industries (for oil) Madras.

IV. TEA AND OTHER PLANTING COMPANIES.

Bengal Tea Co., Calcutta.

Friends Tea Co., Bengal.

Indian Tea Corporation „

Alipur Duar Tea Co., „

Gour Nitya Tea Co., „

Eastern Tea Co., Jalpaiguri.

Rampore Tea Estate Calcutta.

Bayley and Brack Kotagiri.

Gopalpur Tea Co., Bengal.

Kohincor Tea Co., „

Darjefeling Union Tea Co., Calcutta.

Indian National Trading and Planting Corporation, Bengal.

Sind Cotton Growing Syndicate. Bombay.

V. MINING AND QUARRYING.

Parscole Coal Co., Calcutta.

Benakuri Coal Co., Bengal.

Punjab Coal Co., Abbotabad.

Bombay Behar Stone Lime and Mining Co., Bombay.

Koderma Bissenpur Mica Syndicate, Sadarpet.

Singra Coal Co., Calcutta.

Eastern Minerals, Lahore.

Ambler's Slate and Stone Co., Bengal.

Dalbhoom Gold and Mineral Prospecting Co., Calcutta.

Karur Kurnool Diamond Mining and Prospecting Syndicate, Bombay.

VI. SUGAR MANUFACTURING COMPANY.

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