

The Revival of Industry in India

GENTLEMEN, — IF I hesitated to accept your invitation to preside at the opening of this Exhibition, the importance of the occasion must be my excuse. You called me to step into the breach, to face publicly the most tremendous question of our times and to give you my solution of a problem on which no two people agree, except that it is urgent.

But I do not think that we realise how urgent it is. Famine, increasing poverty, widespread disease, all these bring home to us the fact that there is some radical weakness in our system and that something must be done to remedy it. But there is another and a larger aspect of the matter and that is that this economic problem is our last ordeal as a people. It is our last chance. Fail there and what can the future bring us? We can only grow poorer and weaker, more dependent on foreign help; we must watch our industrial freedom fall into extinction and drag out a miserable existence as the hewers of wood and drawers of water to any foreign power which happens to be our master. Solve that problem and you have a great future before you, the future of a great people, worthy of your ancestors and of your old position among the nations.

Two years ago I stood looking at the wonders of that great Exhibition at Paris which summed up in so striking a manner the progress of a century in civilisation, industry and commerce. If I were asked what struck me most in that noble and artistic effort of a great nation, I should answer: the magnificent proportions and excellent management of the undertaking, so vast in conception and admirable in execution; the efficiency of the orderly and illuminating arrangement and careful accuracy of detail; and after that, the extraordinary ingenuity displayed in the educational section in methods and appliances; and not only the ingenuity but the thoroughness of these methods, especially

in the exhibits of Germany and America. But besides these two special exhibits, that which struck me most profoundly was the enormous difference between India and Europe to-day. Those vast halls crowded with shining steel work, the fruits of the combined industry and genius of a dozen nations; the amazing richness of texture and delicacy of design in the products of those machines; the vigorous life and aspiration which glowed in the Art, as well as the clear precision of the knowledge reflected in the Science; all this impressed me more than I can say.

But beyond all this triumph of Man over Nature and her powers, one fact struck me with a curious emphasis — the enormous gulf which separates the European and the native of India in their ideas of comfort. There rose up before me the interior of a typical Indian home, and as I contrasted it with the truly surprising inventions around me, all devoted to that one object, refinement, our much-boasted simplicity seemed bare and meagre beyond description. I contrasted those empty rooms — without even a chair or a table — with the luxury, the conveniences, which are the necessaries of a European cottage. My mind went back to the bazaar in my own city of Baroda, the craftsmen working at their old isolated trades with the methods which have sufficed them for centuries without a change, the low irregular houses, the dreamy life drifting between them, and then contrasted it all with this keen and merciless tide which was sweeping and eddying around me, drawing its needs from a thousand machines like these and gathering its comforts from the four quarters of the globe. And with the contrast I had a vivid sense of the enormous gulf which we have to bridge over before India can be said to be on the same plane as the European nations.

And yet, I thought, there is a change coming over India. The appearance of our houses is being altered by the revolution which is being made in their furniture. It is slow, for there are many who deplore it and speak of it in tones of regret as a process of denationalisation and a fall from simplicity to a burdensome and costly luxury. But the change is rather in the direction in which the money is spent. Our fathers made up by opulence

of material for the poverty of convenience. The futility of such regrets is shown by the fact that most of these eulogists of the past show in their own houses, even if only in a slight degree, the effects of the tendency which they deplore. I do not mean that we should dispense with simplicity; but let it be a wise moderation in the midst of plenty, not the fatalistic acceptance of poverty as a virtue in itself. And there can be no doubt that this tendency, which is now in its initial stage, will grow in strength with the course of years, until with the necessary differences due to climate and other environments it brings us approximately near to the Western mode of living.

But this mode is a rich and costly mode; to maintain it requires easy circumstances and a large diffusion of wealth. A poor country cannot meet its demands. A country without flourishing manufactures must always be a poor country. The future, therefore, imperatively claims this from us, that we shall cease to be a purely agricultural country and vindicate for ourselves some place at least among commercial and manufacturing nations. Otherwise we shall only establish for ourselves the unhappiness of unsatisfied cravings and the benumbing effects of an ideal to which we can make no approach. The cravings must be there, they are inevitable and essential to progress. To attempt to discourage them for political reasons or from social or religious conservatism is unjust and unwise and must eventually prove futile. The true policy is to provide that the cravings shall find means of encouragement. In other words we have to encourage and assist the commercial development of the country and so put it on the only possible road to progress, opulence, and prosperity.

There is a theory which affects to regard the races inhabiting the tropical and subtropical regions of the earth as disinherited by some mysterious law of Nature from all hope of originality, enterprise and leadership. These things belong to the temperate regions; the tropics are to be for ever no more than the field for the energies of the superior races, to whom alone belong empire, civilisation, trade and manufacture. We are to be restricted to a humble subordination, a servile imitation, and to the production of raw materials for their markets. At first sight there seems to

be some justification for this theory in existing facts. Our trade is in European hands, our industries are for the most part not our own, our railways are built, owned and managed, by European energy and capital. The Government is European and it is from Europe that we imitate all that we call civilisation. Our immobile and disorganised society compares ill with the enlightened energy and cohesion of Europe; even at our best we seem to be only the hands that execute, not the head that originates.

Yet even if we accept this picture of ourselves without the necessary modifications, we need not accept this interpretation of inherent inferiority. For my part I demur to any such hasty generalisation: yet however much of it be true be sure that there is no law of Nature which can prevent you from changing it. To suppose that any nation can be shut out from the operation of the law of Evolution is utterly unscientific, and, in the light of history, absurd.

Granted that originality among us is low, that enterprise is deficient, and that leadership has passed out of our hands; is there in the first place no qualification to the entire truth of the assertion? And in the second, is this state of things due to immutable causes and therefore of old existence, or is it the result of recent and removable tendencies? It is true that such originality and power as we still possess has hitherto busied itself mostly in other paths than those of industry and the sciences which help industry. It has worked chiefly on the lines of Religion and Philosophy which have always been the characteristic bent of the national mind, continuing through Rammohan Ray, Dayanand Saraswati and Keshavchandra Sen, the long and unbroken line of great religious teachers from Gautama to Chaitanya and Kabir. It is true that teachings of fatalism and inactive detachment have depressed the vitality of the people. Yet there is no reason to believe that this depression and this limitation are not removable and are constitutional.

But it is not only in Religion that we were great. We had amongst us brave soldiers like Shivaji, Hyderali, Mahadji Scindia and Ranjitsingh. Can we not again claim to have had an important share in the establishment of that mighty structure — the

Indian Empire — erected indeed by the clear-sighted energy and practical genius of England, but on the foundations of Indian patience, Indian blood and Indian capital?

It is not an insignificant symptom that, considering how recent and meagre is scientific education in India, we should be able to show at least some names that are familiar to European scientists, not to speak of others enjoying a deserved reputation among ourselves. Small as these things may seem, they are yet enough to overthrow the theory of constitutional incapacity. And if we consider classes rather than individuals, can it be denied that the Parsis are an enterprising and industrially capable race? Or can it be doubted that the community which could produce a leader in industry and philanthropy like Mr Tata, will, as circumstances improve, take a leading place in the commercial world? Or can enterprise and commercial capacity be denied to classes like the Bhatias, Khojas and the merchants of Sindh? When we have individuals and classes like these in our midst we may well enquire why it is that we stand so poorly in industry and commerce, without fearing that the answer, however ungratifying to our feelings, will lead us to despair.

But if this theory of the inferiority of the tropical races be untrue; if we find that in the past we had great men whose influence is with us even to-day; we must look for some other cause for the difference, and ask what it is that India has not to-day but which she had in that older stage of her history and which Europe has at the present day. We have not far to seek. It is obvious that it is the clear and practical examination of Life and Nature which men call Science, and its application to the needs of Life which men call Industry, in which we are deficient and in which Europe excels. And if we question the past we learn that this is exactly what has not come down to us through the ages along with our Religion and Philosophy.

Our early history is scanty and, in many respects, uncertain, but no uncertainty, no scantiness can do away with the fact that this was once a great commercial people. We see a very wealthy nation with organised guilds of artisans, a flourishing inland commerce, a large export and import trade. We hear of busy

and flourishing ports through which the manufactures of India flowed out to Europe, to Arabia and Persia, and from which, in those early times, we sent out our delicate cotton textures, our chintz and muslin, our silk cloth and silk thread, a fine quality of steel; indigo, sugar, spices and drugs; diamonds, ivory and gold. In return we received brass, tin and lead, coral, glass, antimony; woollen cloth and wines from Italy, and also specie and bullion.

All through the Middle Ages, our manufactures and industries were at a very high level. Every traveller attests the existence of large and flourishing towns (a sure index of industrial prosperity), and praises the skill and ingenuity of our workmen. It was on the Eastern trade that Venice built her greatness, for then we were indeed the "Gorgeous East". Notice, that it is especially in the manufactures which required delicate work, originality of design, or instinctive taste that our products were famous; our carving, our inlaid work and our gossamer cloth.

Coming now to the earlier part of the last century, what do we find? The carrying trade had passed from the Arabs to the East India Company and with it, too, the control of nearly all our exports, especially those in indigo, iron and steel, and the newly imported industries in tobacco, tea and coffee. But there was still a large body of trade in Indian hands; even then our manufactures held their own and were far superior to those of Europe; even then there were thousands of skilled artisans; and we supplied our own wants and exported enormous quantities of goods to other countries. Where, then, has all this trade gone and what has caused our decline?

The most obvious answer is, as I have said, the difference between Europe and India in industrial methods and appliances. But this is not quite sufficient to explain it. A deeper examination of the facts at our disposal shows that the life had almost left Indian industry before Europe had brought her machines to any remarkable development, and long before those wonderful changes which the application of chemistry and electricity have more recently wrought in industry. Nor can we ascribe it to a superiority which England possessed in industrial and technical education, for at that time there was no such training and

England has never relied on it for commercial capacity. If we go a little deeper into the matter we find that there is a further reason which does not depend on the natural working of economic laws but which is political in its nature, the result of the acquisition of political power by the East India Company and the absorption of India into the growing British Empire.

As Mr Dutt shows in his able *Economic History of British India*, this political change had the gravest effect on our economic life. In the first place we had the economic policy of the East India Company which, so far as its export trade was concerned, accepted manufactures indeed, but paid an equal, if not greater, attention to raw materials. Even our internal trade was taken from us by the policy of the East India Company; there were heavy transit duties on all inland commerce and there were commercial Residents in every part of the Company's possessions, who managed to control the work of the local artisans, and so thoroughly that outside their factories all manufacture came to an end.

On this came the protective policy of the British Government, which, despite the powerful interests of the East India Company, crushed Indian manufactures by prohibitive duties. Then came the application of steam to manufacture. It is scarcely to be wondered at, if with all this against us at home and abroad, our manufactures declined and with the great advance in the improvement in machinery and the initiation of a Free Trade policy, this decline was hastened into ruin.

Moreover, a country not exporting manufactures is necessarily stagnant, and commercial progress and self-adaptability cease. Once the manufacturing superiority of India had been transferred to England, it was impossible for the weaker country to recover its position without some measure of protection. Not only was the struggle in itself unequal but the spectacle of a mighty commerce, overshadowing and dominating ours, flooding our markets and taking away our produce for its own factories, induced a profound dejection, hopelessness and inertia among our people. Unable to react against that dominating force we came to believe that the inability was constitutional and

inherent in ourselves; there is a tendency in fact to hypnotise ourselves into apathy by continual repetition of the formula that Indians, as a race, are lacking in enterprise, deficient in business faculties, barren in organising power. If, therefore, I have dwelt upon our old manufactures and commerce and the way in which they were crushed, it is not with the unprofitable object of airing an old grievance, but in order to point out that there is no reason for this discouraging view of ourselves. We were a trading and manufacturing country from ancient times down to the present century, and if our manufactures have fallen into decay, our commerce languished, it was under a burden which would have crushed the most flourishing industry of the most energetic people.

Our weakness lies in this that we have for many years lain prostrate under a fictitious sense of our own helplessness and made no adequate attempt to react against our circumstances. We have succumbed where we should have exhausted every possibility of resistance and remedy. We have allowed the home-keeping propensities and the out-of-date semi-religious prejudices, which have gathered round the institution of caste, to prevent us from choosing the line of activity most consonant with our abilities, or from seeking in other lands for fresh markets and the knowledge of new industries.

The restriction against foreign travel is one of the most serious obstacles in the way of commercial success and must be utterly swept away, if we are not to go on stagnating. It is a pity that communities like the Bhatias should be restrained by an out-worn prejudice from going abroad and furthering that task of development for which they are so admirably fitted. The endeavours hitherto made have been, with few exceptions, sporadic, half-hearted and prematurely abandoned; and the support given to them by the public has been scanty, wanting in confidence and in personal and active interest. It is this state of things which must cease before we can hope to revive our own manufactures, to establish firmly and extend those which exist, and to set on foot any new industries which our needs demand, and for which the conditions offer sufficient opportunity. Then

India may again be what she was in the past and what she is so admirably fitted by nature to be, a self-sufficing country; famous for artistic and useful industries. To raise her again to this should be the ideal of every patriotic citizen. But in order that the ideal may be realised we need, first: knowledge of our possibilities, of the means and facilities necessary to success, and of the lines on which activity would be best repaid; and secondly: belief in ourselves and in each other so that our knowledge may not fail for want of co-operation.

If we get these, if we realise the progress of Science and mechanical invention and resolutely part with old and antiquated methods of work, if we liberate ourselves from hampering customs and superstitions, none of which are an essential part of our religion; if, instead of being dazed in imagination by the progress of Europe, we learn to examine it intelligently, and meet it with our own progress, there will be no reason for us to despair; but if we fail in this we must not hope to occupy a place in the civilised and progressive world.

To speak with any fullness on this subject is not possible within the short limit of time at my disposal. I shall, therefore, pass lightly over a few salient points; for, the lines of activity open to us and calling for our energies are unlimited in their extent, variety and promise. This country is not poor in its resources, but may rather be said to be blessed by Nature in many respects; its mineral wealth is anything but contemptible; its soil produces valuable and useful products in great variety and abundance; the provision of water power is also unstinted. We have an excess of cheap labour and we have hereditary artisans who are quick in hand and eye, and who only need to be properly trained to make them the equals, if not the superiors, of their rivals. If there are certain serious disadvantages and defects in its mineral wealth such as the inferiority of its coal supplies, and in its vegetable products, such as the greater coarseness of its cotton and the difficulty of growing the finest silk, yet so great is the advance Science has made that we need not despair of meeting some of these difficulties at least in part. Nor is there any imperative necessity that we should always vie with other countries in

producing the very best. If we utilise to the best advantage what Nature has given us and advance in such manufactures as the country is fitted for, we shall have done no inconsiderable task. What is required is greater knowledge, a more earnest endeavour of the Government towards improvement and the provision of facilities, and more serious activity on the part of the people to take advantage of such facilities as already exist. We need improvement in agriculture, and facilities in industries; for in a country like India, which produces or can produce the bulk of its own raw material, the agricultural question cannot be separated from the industrial.

Improvement in agriculture is necessary to secure an increased quantity and improved quality of the produce of our fields. What Science can do for agriculture, the development of the beet-sugar industry and the improvement of cotton clearly show; and as sugar and cotton are two of the most important of our products and especially of our export trade, I wish to call your attention to what has been done by our rivals.

Beet-sugar cultivation has been gradually developed by careful selection of the best roots and the application of agricultural chemistry, until the percentage of saccharine has been doubled and trebled. Here is the remedy for Indian sugar. We must not be ashamed to borrow our rivals' tactics, but strive hard to get for example for our cane sugar the very best canes and take care to use nothing but the very best methods of cultivation and manufacture.

The same is true of cotton. It is certain that the competition which Indian cotton has to meet will be much intensified in the near future; and our only hope of meeting it successfully is to improve our indigenous varieties up to a point at which they can hold their own. I believe that we can do this, but it demands the most patient researches and above all that, when the best variety has been discovered, the cultivator will really grow it.

Science is our great hope, but there is one great obstacle to be overcome before Science can help us, and that is the ignorance and apathy which is the general condition of the agricultural classes at present.

The failure of the old arts and crafts, and especially that of arms, has thrown vast numbers back on the soil, and these classes are neither intelligent nor progressive. Many old professions are dying out and while those, who should have followed them, go back to the land, many of these professions are not such as to provide any hereditary capacity for agriculture. It is not to be wondered at, therefore, if our Indian cultivators, despite their traditional skill, are neither enterprising nor capable of undertaking improvements which demand considerable energy and foresight. Their methods, despite Dr Voelcker's high encomiums, are backward, their resources are very limited, and their implements, though they may be those best suited to their narrow means and small holdings, are old and economically wasteful. But their most serious drawback is their helplessness. There is a general complaint that the soil is deteriorating, but that they can do nothing to remedy it; and in times of scarcity and famine they seem incapable of doing anything to help themselves. This is a most serious question and one which demands all our attention.

In the first place this deterioration of the soil is a very real danger. Do you know that the average product per acre has in some parts of the country diminished by 50 per cent. since the middle of the seventeenth century, when the *Ain-i-Akbari* was compiled? Is it any wonder that the peasant grows poorer, or that his resources diminish?

Our remedies must fall under two heads: (1) the improvement of methods, implements and general conditions; and (2) education.

In the first place attempts to introduce new implements have nearly all failed. Iron flails and threshing machines have been tried at one time or another, but the ryot will have none of them. At the same time this does not mean that the old implements are the best that the wit of man can devise, or that we are to suppose that past failure is conclusive.

Another matter to which Government has given some attention has been cattle-breeding. The results so far have not been encouraging, though there are Government farms at Hissar and

at Bhatgaum in Khandesh, and another called the Amrit Mahal, maintained by the Mysore Government, from which are derived certain superior breeds of cattle to be found in the Madras Presidency.

Until we can get the co-operation of the people the results must be disappointing. Nevertheless, I think that there is a great deal of good work to be done on these lines and I am of opinion that besides improving the breed of cattle much might be done in the way of encouraging the ryots to breed other stock, such as horses, mules, etc. It is a thousand pities that our Indian breeds of horses should be dying out and that there seems to be no sensible effort made to keep them alive. Perhaps the chief reason that Government breeding farms have failed is that they are too elaborate for the people in their present condition. I believe that much might be done by reviving the old custom of keeping sacred bulls in every village and taking care that the bulls supplied were the best that could be procured. Much might be done if the cultivator could be persuaded to breed only from the best animals.

Instead of helping ourselves we always depend upon Government; here is an instance where people can, with advantage, help themselves. To it I would add the planting of trees, which are of economic value, around the cultivators' fields and the encouragement of the fibrous plants which are now articles of commerce. There is further the question of good drainage to relieve the bad effects of irrigation. A serious endeavour should be made to help the ryot to sow only the best seed and to pay some attention to the best rotation of crops.

In a country like India, where the introduction of improved implements is so limited in its possibilities, and where everything depends upon the timeliness and sufficiency of the annual rains, it is irrigation that must necessarily take the largest place in all plans of agricultural improvement. This importance of irrigation has been recognised by the successive rulers of this country from the times of the ancient Hindu kings. From the days of Asoka, and before him, the digging of wells and tanks had been the subject of royal edicts and one of the first religious duties of

princes, zemindars and wealthy philanthropists. The number of small tanks in ruins that one finds in the districts, the multitude of old wells that still exist round about Muslim capitals; above all, the immense system of artificial reservoirs in the Madras Presidency, bear testimony to the steady persistence of this old tradition of administrative benevolence. In the Southern Presidency there are over 6000 tanks mainly of native origin, the magnitude of which will be best remembered when it is understood that the embankments measure over 30,000 miles with 300,000 separate masonry works, and that these tanks irrigate over 34 lakhs of acres, an area almost equal to that irrigated by the entire system of the major and minor works of the Madras Presidency. These works were getting out of repair in the troublous times of the eighteenth century, when general disorder and mal-administration, the usual concomitants of any violent change in the form of Government, prevailed in our country. When they occupied the country the British, with their characteristic administrative energy, not only put them in order but in many cases improved and enlarged them. They have brought, or kept under irrigation, an area of little less than 20,000,000 acres at the cost of forty-two crores of rupees; and the work has been done with so much judgment and success that the works yield a profit of nearly 7 per cent. and the produce raised equals 98 per cent. of the total capital outlay. Not content with this they are now undertaking to prepare and gradually execute a scheme of protective works which, when complete, should do much to insure the country against famine. The work in irrigation will always be one of the most splendid and irreproachable chapters in the history of British Rule.

The proposed extension of irrigation works would also offer to the capitalists of the country a very eligible field for the investment of their surplus savings. If the people only co-operate they would find irrigation projects a very profitable channel for investment; and if they fail to take advantage of the favourable opportunity, one need not be surprised if European capital is extensively employed in their development as has been done in the case of railways in India. I trust the Government on its part

will also offer more than usual inducements to attract private Indian capital in these profitable undertakings.

Besides great irrigation works there is another way in which much might be done to protect the country against the effects of drought, that is, by encouraging the digging of wells. This is a method well adapted for States which have no facilities for works on a grand scale. In my own territories I have found that the advance of *taccavi*, for this purpose, was a measure which the cultivator could understand, and, under the guidance of experienced officers, one which worked well. At the same time large irrigation works have been commenced in various parts of the territory, and a survey is being made for the repair of old tanks and the utilisation of favourable spots for the storage of water.

But it must not be forgotten that irrigation will not end all our troubles. Indeed, unless it is accompanied by a considerable measure of intelligence and foresight, it brings others in its train, such as the debilitation of the soil. The remedy for this is, of course, the use of artificial manures which will restore to the soil some of the qualities that are removed from it by over-irrigation. Here we are at once faced by our usual want of foresight and ignorance of which I have already spoken. In face of the deterioration of the soil, which I have mentioned as a widespread evil, widely acknowledged, it is inconceivable to me that we should seek to encourage the export of cotton-seeds on which so much of the efficiency of the simple manure, which we use here, in Gujarat, depends. Yet the value of this export has risen in one year from five to twenty lakhs of rupees, and it is certain that at this rate the cattle will have to go without it, and that their manure will become practically valueless. An artificial manure is, therefore, a crying necessity.

Another point is the growth of deep-rooted grasses which can resist drought and so prevent the terrible mortality of cattle which was so painfully marked in the late famine. We must follow the example of Australia in this matter and find indigenous deep-rooted grasses which we can plant systematically on waste land, and then, when we are cursed with another season

of drought, we shall have something to meet it with.

Before we can hope that the ryot will try to employ measures which demand a high level of intelligence and scientific knowledge, we must awaken his curiosity and enlist his sympathy, which can only be done by a good system of general education. Without it our best endeavours are bound to fail. Government has established Agricultural Colleges and model farms in different parts of the country, but agriculture has been but little improved in consequence. Partly, I think, this is due to the vastness of the area and to the great variety of local conditions, for each district has its own difficulties to meet and overcome. But the main reason for the failure is, I believe, the indifference and apathy of the people themselves. Another reason is the fact that these measures have come from outside and not from the people. However imperfect our education may be it is equally lamentable that it has so far affected no more than 5 per cent. of the population of the country. Before any noticeable change can take place, there must be a general feeling among the people that improvement must be made and a desire to take advantage of the efforts of Government to help them. At present, they are more inclined to laugh at our attempts to aid them than to help us by their advice and by showing us where their real difficulties lie. Their criticism, as a rule, is more destructive than educative.

I have found it possible to do something to improve the more backward classes of cultivators by sending more intelligent ryots to show them better methods of cultivation; and the school for the Dhankas at Songadh has been more or less successful. These measures only serve to raise the internal level of the lower agriculture up to the highest of our present system, while the problem is to raise the general level. Perhaps something might be done by agricultural associations which studied local requirements and popularised such improvements as admitted of practical application. But I believe the only change which would do much would be to induce a more intelligent and enterprising class to engage in agriculture.

Over and above all this it is very important that our agriculturists should have cottage industries or some work on which

they can usefully engage themselves and the members of their family during the slack season of agriculture. Such would be for the men, wood-carving and the making of toys; and for the women, needle work and embroidery.

I do not think we should stop short at improving our raw materials; I believe we might do much in the way of working them up. The annual review of the Trade of India published by the Statistical Department of the Government of India teaches us some wholesome lessons, which it would be always useful to remember. They show the large number of objects for which we are at present dependent on foreign factories, but for which we have plenty of raw material at hand, and which, if we only avail ourselves of the latest scientific methods, we can ourselves manufacture. Our endeavour should be to reduce this dependence upon foreign industries, and, where the necessary facilities do not exist for such manufactures at home, we should so improve the quality of our raw material as to enable it to hold its own in the foreign market to which it is sent. The wheat, for instance, which we export at present is used for the manufacture of bread in Europe, but it is scarcely fit to be turned to the many other uses to which it can be put unless it is much improved in quality. The same remarks apply to many of the most ordinary articles of daily use, such as paper, oils, leather, etc. The instance of leather is peculiarly noteworthy. We export the hides and the materials for tanning them, but that is not all. There is a cheaper and more efficient process of cleaning the hides in use in Europe, and the hides are exported to Europe to be cleaned there. Is it impossible for India to tan her own hides, in her own factories, with her own tanning materials? Another point which seems inconceivable when the need for artificial manure is remembered, and that is, that we export bones in large quantities to be turned into bone-manure for the beet-fields of our rivals, and so for their sugar, which we so largely import.

Glass again is an article of which we import a large quantity every year, but which we might manufacture for ourselves. Last year we imported glass of the value of over ninety lakhs of rupees. In 1887 I made some enquiries into the matter and found

that there were raw materials in plenty for the manufacture not only of rough glass, but of glass of the finest quality. I was advised that it would not pay to establish a factory, but the reasons against success were not insuperable. I also made some enquiries into the possibility of manufacturing paper in Gujarat and discovered that there were abundant raw materials of an excellent quality to be obtained here, and that this too was quite feasible.

We have already some glass-blowing factories at Kapadwanj and in the Panjab; paper mills in Bombay, Poona and Bengal; leather tanneries in Madras, Cawnpore and Bombay. It would be interesting to study the quantity and quality of these home products and to compare them with the articles imported from abroad. We may thereby learn the difference and know how to remove their short-comings and extend their sale. Experience is the only path to knowledge, comparison perfects it. Knowledge is the dominant factor in the spirit of the age and the basis of all reform. I would suggest that, of the many manufactures which might be successful in India, it would be advisable to begin with those in which there is a steady local demand, such as soap, candles, glass, furniture, pen-nibs, carpets, etc., and afterwards extend the field of our operations so as to include other and more elaborate articles.

To enable us to take up these manufactures we need a system of industrial education, and for this we have to rely very largely on the assistance of Government. But we must remember that our position is not quite that of any European country in this respect, and that our best model would probably be Japan. Now, Japan, when she aimed at general, and particularly at industrial, progress, adopted three main lines on which her education was to run. These were, first to send a number of her young men abroad, and especially to Germany, for education; secondly to establish great colleges in Japan itself, the staff of which was at first composed of Europeans; and thirdly to employ the services of Europeans, in the initial stages of her manufactures, under whom her people were gradually trained in efficiency.

Now I should like first to call attention to the last of these,

because I think that here we have the solution of a difficulty which has been met with in the case of some industries which have recently been started. I have heard complaints that the quality of the goods turned out was not satisfactory, and from what I heard, it seemed to me that perhaps the failure was due to the incompetence of the directors, or to some culpable laxness in their management, or to our having commenced the enterprise on too impracticable or ambitious a scale, or to our having lost sight of some essential conditions of success at the outset. Some industries may require European skill and supervision to pilot them through their initial stages, and a hasty attempt to dispense with it may lead to disappointing results. But there is another aspect to this apparent incompetence; we have to learn trustworthiness, a capacity for obedience, the art of management, accuracy, punctuality, method and the sense of justice, and the only school which will teach us these is a position in which they are called out by use. To return to the first of the three points: it is obviously impossible to send any very large proportion of our Indian youths abroad, though I think more might be done in this direction. I would appeal to Government and to our philanthropists to see if they cannot help us.

That which will help us most is a largely extended system of technical and general education, such as that on which Germany has built her commercial greatness. It is of course impossible to imitate the German system exactly. But it is not impossible to provide ourselves with a system which will meet our requirements. Though private individuals may do something in the matter, a satisfactory solution of the whole question must depend upon the sympathy and generosity of the Government. I believe that Government could not give a greater boon than such an education, and I think I am voicing the feelings of the educated classes at large, when I say that we are confident that we have not long to wait to see our rulers grapple with this problem, with their usual energy and decision. Meanwhile we must start our factories as best we can, and do the best with our present circumstances. I do not overlook the fact that the odds against us are heavy and that our infant industries have to

struggle from the start in an open market with long-established competitors.

I am not afraid of being thought a heretic with regard to economics, if I say that I think we need Protection to enable our industries to reach their growth. The economic history of Germany and America shows that there is a stage in the growth of a nation when Protection is necessary. The laws of Political Economy are not inexorable and must bend to the exigencies of time and place. Theories and doctrines, however plausible, cannot take precedence of plain and practical truths. It is true that Free Trade enables a country to procure at cheaper rates those articles that can be manufactured more conveniently in foreign lands, but this cheapness is dearly bought by the loss of industrial status, and the reduction of a whole people to a helpless proletariat. National defence against alien industrial inroads is more important than the cheapness of a few articles.

Protection, therefore, if only for a short time, is what we need for our nascent manufactures; for some time must elapse before more perfect methods are naturalised in India and the standard of Indian workmanship attains the excellence of Europe. A high wall of tariffs has secured to American manufactures the home market as an undisputed field for their own development; and India, maimed, and helpless as she has been, may expect that relief from her beneficent Government. Government, like the climate and geographical conditions of a country, has a peculiar force of its own and must leave an indelible impress on the mould of the destinies of nations. It may as powerfully hamper, as promote, the moral and material development of the people entrusted to its care. If the Government were supported by a more informed and intelligent public opinion and if the people, awakened to a sense of national life, were allowed and induced to take a livelier interest in their own concerns and if they worked in unison, they would conduce to mutual strength. Government is a matter of common-sense and compromise, and its aim should be to secure the legitimate interests of the people governed.

But at the same time I would warn you against some false

methods of encouraging industry, such as the movement to use no cloth not produced in the country. The idea is quite unsound so far as any economic results go; and the true remedy for any old industry which needs support is to study the market, find out what is wanted and improve the finish of the work and the design until an increasing demand shows that the right direction has been found. This applies particularly to the artistic trades, such as wood-carving and metal-work for which the country has been so famous and which it would be a pity to allow to die altogether. Among other means of improvement, the education of women in decorative art would bring a fresh economic force into play; and as I ascertained by enquiries in London, made from a desire to find lucrative home industries for our women, and especially for widows, would prove extremely profitable, if the right steps were taken. Tapestry, for instance, is a great women's industry in Switzerland; lacework, cretonne and embroidered cushions could all very well be done by women. Needlework is even now done in Gujarat homes, and if the designs and colourings are improved it might be turned into an active industry, supplying our own wants, and possibly outside demands. Carpet-weaving also, which is now done in several of our jails, might be turned in the same way into a profitable home industry. The main thing is to study the market and not to pursue our own hobbies. It would be necessary to have agents in Europe, who would study European wants, consult professional men and get designs which could be executed in India. Something of the sort is, I believe, done in the School of Arts in Madras. My enquiries in Paris convinced me that in the hands of capable persons this method would be both practicable and profitable.

I would, however, direct your attention more to the establishment of the larger industries involving an extensive use of machinery, for it is upon this that our economic future and any increase of our wealth depends. Before we have a large demand at home for the arts we must produce the wealth to support them, and we shall never have that wealth until we have an economic system on a much broader basis than our present limited industry. With a little energy and the assistance of Government

we can broaden this basis, and then we may look forward to a new lease of life for Indian art and Indian literature and for those industries which depend on leisure and wealth.

I should like now to say a few words on the subject of the assistance which a Government can give in developing the resources of its territories. I have indicated a few ways in which I think Government can help economic development in the direction of education. To these I would add improvements in the means of communication and the establishment of banks and other co-operative institutions. It can also encourage merchants and manufacturers by advances of capital and by granting other facilities.

Native States in India, seriously handicapped as they are by their limited means and scope and the want of trained men, though they cannot emulate their great exemplar, the British Government, seem to limit themselves, as yet, too much to the routine of administration, and might do more for the material and commercial development of the country. Granted freedom of action, and with proper endeavour, I am inclined to think that many States in Central India, Rajputana and elsewhere would be able to get even more treasure out of the bowels of the earth than Mysore and Hyderabad at present obtain. But Government help has its limits.

My experience teaches me that it is very difficult for Government to provide industries for its people in the absence of a real business spirit amongst the people themselves. It is very difficult for so impersonal an entity as Government to get capable managers or to supervise its enterprises properly. I have tried various measures in my own State, but I am sorry to say that the results are disappointing. A sugar mill, a cotton mill and an ice factory were tried, but were not a success. A State fund for the advance of capital and other assistance to manufacturers also failed. I found that the managers were not sufficiently interested in the scheme and not impartial in the working of it. I am convinced, however, that the fault lay not with the industries themselves but in the fact that they were State enterprises.

I have also made an experiment in technical education.

I founded an institution called the Kala-Bhavan with departments in dyeing and weaving, carpentry and mechanical engineering, and with the object of diffusing technical education I had branches of it set up in various parts of the Raj. The response among the people was so faint that after a time the institution had to be contracted within narrower limits. Until the means of the people and the material wealth of the country expand, there can be but little demand for the work which such institutes turn out. So far, the Kala-Bhavan has done but little beyond providing skilled dyers for Bombay mills; and until the people co-operate more earnestly its utility will not be recognised. Once more it is the prevailing ignorance which hampers every movement to help the people. They are sunk in a fatalistic apathy and do not care to learn how to help themselves.

I have omitted to refer to the many endeavours made by other Indian States in the same direction, not because they are not worth mentioning. The wonderful Cauvery electric power scheme and the irrigation projects of the Mysore and Jaipur States, as well as the fine Technical School at Jaipur, are indisputably entitled to a high rank in the record of such laudable work. I have to pass them over for want of time and adequate information of all their details.

It is the general lack of education and intelligence which hampers us at every turn and has been our ruin. Once we can make education general we may hope for increased dexterity, an increased power of concentration, increased trustworthiness and quickness to discover new processes. We need these qualities in every class of Indian society. Education in England has diffused a spirit of self-reliance and a capacity for initiative; education in Germany aims at thorough knowledge, methodical application and exact learning; but education in India has hitherto aimed only at providing a certain amount of food for thought without ever touching the mental capacity or character.

I do not think that the plea that our industries are poor for want of capital is one that can be sustained. We have more capital than we imagine to develop our resources if we would only use it. But we lack the active foresight always seeking the

best investments. We prefer to hoard our savings in our women's ornaments, or to invest it in Government securities at low rates of interest, when we might be using it in ways which would be profitable to the country at large, as well as to ourselves, such as agricultural improvements, insurance of agricultural stock and the establishment of factories. And that is especially true of some Indian States which invest their surplus capital in Government securities, instead of using it in the development of the resources of their own territories.

This is not, however, our only fault. There is another fault which is nearly as fatal to any system of industry, and that is our lack of confidence in ourselves and in one another. Without self-confidence you can never do anything; you will never found an industry or build up a trade, for you have nothing to carry you through the first anxious years when the only dividend is hope, and the best assets are unfaltering courage and faith in oneself. And without confidence in one another you will never have a credit system, and without a credit system no modern commerce can exist. It is this want of co-operation, this mutual distrust which paralyses Indian industry, ruins the statesman, and discredits the individual even in his own household. I believe that this trait of our character, though in some cases arising from our obvious defects and instances of actual misconduct among ourselves, is mainly due to the fact that the nation has long been split up into incoherent units, but also to the ignorance and restricted vision which result from our own exclusiveness. We have denied ourselves the illuminating experience of foreign travel and are too prone to imagine that weaknesses are confined to India. Failures and defalcations are as common in Europe as among ourselves; and yet we allow ourselves to be too easily discouraged by such incidents. Hence arises the habit of censorious judgment, a disposition to put the worst construction on the conduct of our friends and relatives, without trying to find the truth, which destroys all trust and tolerance. Our view of the conduct of friends, of the policies of administrations, of the success and integrity of commercial undertakings, are all vitiated by a readiness to believe the worst. It is only when we learn to

suspend judgment and know the man and the motive before we criticise, that we shall be able to repose trust where trust is due. We must stiffen our character and educate ourselves up to a higher moral standard.

We despair too easily. Let us remember that we must expect failures at first; but that it is those who learn from failure that succeed. Moreover, as any one may learn from a survey of the present state of industry, there is evidence that some do succeed. We have not, of course, made the most of our opportunities, but it is worth while remembering that something has been done because it shows us what it is possible to do, and encourages us to do it. If any one wishes to know, in more detail, what has been done and what might be done, he could not do better than consult Mr Ranade's excellent book on the subject.

And now let me say a word about this Exhibition and its aims. I take it that an Exhibition is intended to draw together the scattered threads of industrial activity, so that the members of any trade may learn not only what is the latest development in their own trade, but also what other trades are doing, and what in the other trades is likely to help them. Then it is hoped that the spectacle of advance and improvement will arouse emulation and suggest new ideas and also draw industries together. But are the conditions in India such that we may hope for this? I fear not; I fear that the *ryot* will not yet come to learn from us and that there will be few craftsmen who will go away with new ideas and the memory of new processes. Nevertheless, we should not despair.

It should be remembered that a similar difficulty was experienced in England in connection with the Workmen's Institutes which sprang up all over the country in response to Dr George Birkbeck's suggestions. The object was to provide the mechanic with lectures on his own trade; but the attempt at first largely failed from the incapacity of the working man to learn anything from the lectures. Lectures and exhibitions bear fruit only when the people have received sufficient general education to make them mentally receptive and deft in adaptation and invention. When that goal is reached, such exhibitions may most usefully

be turned into local museums, and if possible a syllabus of instruction attached to the exhibits. On the other hand, there is yet another function which exhibitions perform and which is equally useful, and that is their influence as general education among the classes whose intelligence is already aroused, and who go away with a new sense of what there is to learn. Life is not yet all machinery which it takes an expert to understand, and there are many new ideas which the collection of the most recent efforts in Art and Science in one place can inspire, and especially is this true if there is the comparison of the old with the new.

But before any of these undertakings and enterprises, which I have mentioned, can succeed, India must be thoroughly awakened. Understand what this means. It means action. There is no reality in our social reform, our political progress, our industrial revival, because, as you know, there is scarcely one of us who dares to act even in his own household.

You complain of an over-centralised Government, of the evils of heavy custom charges, of inland excise duties on cotton, of the treatment given to your emigrants, and the want of a legitimate share by the people in their own Government. There may be much in your complaints, but until you realise that the ultimate remedy lies in your own hands and that you have to carry it out by yourselves, no external reform can help you.

That awakening, that realisation is your share of the work, you who know something of Western thought and Western methods, and who imitate much from the West. But to the bulk of the population it does not apply so simply. The masses of India are lost in a hopeless ignorance, and that is why they are so intensely conservative and lacking in confidence and initiative. We cling to old customs because we do not know that they are not essential to our religion, and we dare not adopt new ideas or establish new industries because we do not know how to set about it. But there is another side to this ignorance and that is that we let our old customs hamper us and blind us in the present, because we do not understand the past.

Remember two inevitable tendencies in history: one, that no system, however perfect, however glorious, however far-

reaching, can go on for 2000 years (or 200 for that matter) without enormous changes being made in it simply by time; the other, that the religious, the political and mental conditions of a nation are indissolubly connected and interwoven, so that you cannot alter a single feature in one of them without changing all three. Now apply these principles to the past.

From 500 A.D. we find a steady decline in the political and mental condition of the country down to the two centuries of darkness from which we emerged into the periods of the Rajputs and the Muslim conquest. Follow the fortunes of India down the next eight centuries and note the steady decline in Hindu power, both political and mental, till we come to the time when Europeans obtained a firm footing in India and conquered the country with very slender means, meeting and solving each problem as it arose. For 1400 years the record is one of steady decline in political and mental nationality. How then can religion have fared, and especially all those social institutions which depend on religion? Surely it is clear that just as our trade and our political power collapsed before the attacks made upon them because they were inefficient, the other features of our system cannot have escaped degradation and that in clinging to them blindly we are clinging to the very tendencies, the very forces that have dragged us down. The fact that we cling so tightly to them has ruined both them and us. Consider the effects of cumulative physical heredity on the capacity of any caste when the action, for which that caste and its institutions were designed, is taken out of its power.

Here then is the problem: to carry out a great change in this respect, to realise our ignorance and to make up our minds to face the question, how and what to change boldly and altogether. We have changed before when it has suited our convenience, adopting details from the Muslims when it fell in with our wishes, and many of us, even our conservatives, are European in their tastes at times. It is obvious that much of our religion and many of our social institutions of to-day have nothing in them except perhaps a faint shadow of their old vigour and glory on which our old greatness was founded.

India needs a great national movement in which each man will work for the nation and not for himself or for his caste, a movement carried out on common-sense lines. It does not mean that we are to adopt a brand-new system from Europe, but it does mean that we must borrow a little common-sense in our solutions of the problems of life.

We must resolutely see what we need, and if we find a plain and satisfactory solution adopt it whether we have traditional authority for it or not. Turn to the past and see what made India great, and if you find anything in our present customs which does not square with what you find there, make up your minds to get rid of it boldly, without thinking that it will ruin you to do so. Study the past till you know what knowledge you can get from it which you can use in the present and add to it what the West can teach us, especially in the application of Science to the needs of life.

You, Gentlemen, are the leaders of India, and if you fail, she fails. Let each of you make up his mind that he will live by what his reason tells him is right, no matter whether it be opposed or approved by any sage, custom or tradition. Think, and then act at once. Enough time has been wasted in waiting for time to solve our problems. Wait no longer but strike and strike home.

We have our "ancient régime" of custom and prejudice to overcome: let us meet them by a new Liberty, Equality and Fraternity; a Liberty of action, Equality of opportunity and the Fraternity of a great national ideal. Then you may hope to see India a nation again, with a national art and a national literature and a flourishing commerce, and then, but not till then, may you demand a national government.

I should like to pay a personal tribute to the organisers of this Exhibition, for the trouble and energy they have expended in making this collection of Indian arts and industry so fine and representative a collection; and to the local authorities and their able head, Mr Lely, the popular Commissioner, whose name will ever be a household word in Gujarat for his unflinching kindness in famine and plenty, who has taken so encouraging an interest in this Exhibition.

Surely it is a good omen for the success of our industrial revival that this Exhibition takes place in Ahmedabad, a town long famous for its enterprise and energy, which already possesses factories and industrial connections of importance with the industrial world. If only we had a few more Ahmedabads, India would not have long to wait for a real revival of her commerce.

And last of all, I have to pray for the long life, happiness and prosperity of His Gracious Majesty the King-Emperor, whose accession we are about to celebrate in so splendid a manner and whose reign will, we trust, inaugurate a new period of strong and prosperous national life for India, which will make her the brightest jewel in that Imperial Diadem.