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# COMMERCE AND STATISTICS

BEING A REPRINT OF  
FOUR PAPERS READ AND WRITTEN  
AT VARIOUS TIMES

BY  
D. E. WACHA.

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PUBLISHERS  
MESSRS. D. B. TARAPOREWALLA, SONS & Co.

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PRINTED AT THE BOMBAY CHRONICLE PRESS,  
1915.

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*Price One Rupee.*

## PREFATORY NOTE.

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This brochure contains a reprint of three lectures on commerce and economics delivered by me before the Fergusson College, at Poona (1907); before the Bombay Graduates' Association (1909); and before the College of Commerce (1915). The last is in reality a brief survey of the evolution of Indian commerce from historic times to date; the one before the Graduates' Association was an appeal to the local University for the institution of a Faculty of Commerce; and that at the Fergusson College was in support of the importance of an accurate and scientific study of economic problems. The fourth was a contribution to the columns of the well-known Anglo-Vernacular journal "Gujarati" on the study of the science of Statistics in which Indians are still so backward. As it was the desire of many of those who attended recently my lecture at the College of Commerce, as well as of the Principal, that it would be useful to publish it, the lecture having been given orally, it occurred to me, therefore, that I would be helping our rising students if my other papers on the subject were published along with it. This is the genesis of the present brochure. I shall feel quite rewarded if some of my countrymen would, by a perusal of these papers, be stimulated to give their exclusive attention to the study of Statistics and Economics than which there is not a wider and more fascinating branch of human knowledge for all practical purposes.

D. E. WACHA.

*Bombay, 31st March 1915.*

PRINTED BY A. P. BREWIN AT THE BOMBAY CHRONICLE PRESS,  
MEDOWS STREET, FORT, FOR THE PUBLISHERS  
D. B. TARAPOREWALLA, SONS & CO.,  
MEDOWS STREET, FORT,  
BOMBAY.

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# EVOLUTION OF INDIAN TRADE.

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*Being a lecture delivered at the Bombay College of  
Commerce on 27th January 1915  
by Mr. D. E. Wacha.*

Mr. Wacha said :—

It is needless for me to state at the outset that I stand before you this afternoon in response to the earnest request made to me by Mr. Anstey, the enthusiastic Principal of the College of Commerce. He called on me some time ago, in my capacity as one of the members of the Advisory Committee of the College, to say that it would be well for this Institution, which is the first of its kind in all India, were it made widely known and popularised by a series of lectures. It is highly encouraging to the Advisory Committee and the College Authorities to see such a large audience taking a keen and lively interest in this lecture. I may also further say by way of preliminary remark that I do not claim any originality for my lecture. I am only giving you the result of my sustained studies in the Science of Commerce and of business experience extending over a period of half a century. I feel disappointed that till now there have not been forthcoming a large number of men, engaged in the commerce and industry of this country, to give to the public the benefit of their own studies in what Professor Ashley calls "Business Economics," though I am quite confident that there are to be found in each Province of the Empire a fair number of persons conversant with such study and of experience in divers directions. There are those who could give us an interesting and instructive account of the trend of our foreign and inland trade for at least a century past, of the Commercial geography of this country, of a history of navigation and freights, of the immeasurable utility of railways and other systems of transport and communication, of marine and fire insurance, of inland and foreign exchanges, of mercantile legislation, of



banking and currency, of commercial credit and co-operation and finally, of the duties of a civilised state in its relation to trade, manufactures and industries.

I will now proceed with the subject matter of my address, namely, the Evolution of Indian Trade, an evolution which dates not from to-day or yesterday but from times immemorial which we call prehistoric. Having regard to the geographical position of the Peninsula which is washed on its west by the Arabian Sea, on the south by the Indian Ocean and on its east by the Bay of Bengal and which has innumerable ports for purposes of trade along the whole of the Malabar and Coromandel Coasts, it is perfectly intelligible that a country so situated must have naturally carried on a maritime trade in years gone by which are wrapt in the mist of history. But it is not for me, standing here, to elaborate that hypothesis with facts and arguments which properly belong to the domain of those who exclusively carry on researches in that direction. Leaving then alone prehistoric times which I am quite sure future archaeology and other researches will clearly reveal to our immediate posterity, we may at once plunge into *media res* and take our stand on later records which are authentic. To give one quotation only from that excellent and well-digested "History of Commerce" by Mr. Clive Day, Professor of Economic History in Yale University, published just seven years ago. Says Mr. Day:—"The origins of Commerce are lost in obscurity. Before people are sufficiently civilised to have written records of their doings they engage in trade; we can observe this among savage tribes at the present day, and we know that it held true of the past from finding among the traces of primitive man, ornaments and weapons far from the places where they were made." In point of historic time the Egyptians, though mostly an agricultural race, were the first in civilisation as much as the Indians, and there are ample records to corroborate the correctness of the fact. Again, in that highly interesting and instructive "History of Indian Shipping and Maritime Activity from the Earliest Times," its author, no other than the learned and most assiduous scholar Mr. Radha-

kumud Mookerji, Professor of Indian History in the National Council of Education in Bengal, writes as late as 1912 as follows :—“I have already said that though ancient Indian literature furnishes rather meagre evidence directly bearing on Indian shipping and ship-building, it abounds with innumerable references to sea voyages and sea-borne trade and the constant use of the ocean as the great highway of international commerce, which, therefore, serve as indirect evidence pointing to the existence and development of a national shipping, feeding and supporting a national commerce . . . . .  
 . . . . . The oldest evidence on record is supplied by the *Rig Veda* which contains several references to sea voyages undertaken for commercial and other purposes.” But I need not make further references to the most recent researches of scholars, archaeologists and numismatists in this respect. It is sufficient for our purpose if we go back to 1600 B. C. To quote once more from Mr. Day’s book :—“With the period known as the New Empire (of Egypt), however, beginning about 1600 B. C. commerce at least became more important than it had been before. Regular communication was established with Asia and caravans brought to the country the products of Phœnicia, Syria, and the Red Sea districts.” As far as India is concerned it is needful to remember that the trade was both by land and sea. Judging from what is going on even now in the land trade from China to Thibet and from Thibet to the Caspian Sea in the north-west and from Karachi to to Baluchistan on to the coast of Persia, it is reasonable to infer that land trade must have existed at about 1600 B. C. Similarly, the maritime trade from Cambay and Broach as far as the Persian Gulf on the one side and from the Malabar Coast and Ceylon to Aden and Mokha on the other side. Considered also in the light which modern researches have thrown on those historic Empires which flourished in Asia Minor, Mesopotamia, Syria, Persia and also Arabia, the inference is almost forced on us that the trade of India with the people of these Empires was international in the sense trade was understood in those days. It was in reality an exchange

of Indian products with the great and renowned cities of ancient times situated in what we now geographically call Asiatic Turkey and Arabia. Of course, the contiguity of Persia to India and the interchange of both commerce and politics is well known. It is also recorded how India and China traded with each other by means of caravan routes 3,500 years ago.

It will thus be plain that Indian trade was co-eval with Indian civilization. Civilization sprang from the East, just as light springs from the East at sunrise. It is the outstanding feature of the East that civilization was there long before Western civilization saw the light. Similarly with that civilization all the great religions of the world must be unhesitatingly asserted to have their origin in the East, be it Hinduism or Zoroastrianism, Buddhism, or Confucianism, Christianity or Mahomedanism. And just as in modern days we find that as civilization progresses, art, commerce and industry progress so it was the case with Indian trade in those times.

Coming now to the subject proper, it may be observed that the evolution of Indian trade is best understood by marking the important epochs through which it has passed. Beginning with B. C. 1000 we may mark the progress, slow but sure, till we come to the reign of Darius Hystaspes in the Fifth Century B. C. when that monarch extended the bounds of his empire eastward as far as the Punjab and probably to the Ganges, if we bear in mind the most recent excavations at Pataliputra, where, according to the Imperial Archæologists, the remains of a large hall have been discovered which have a great resemblance architecturally to the palace of Persepolis. Be that as it may, there can be no question that Darius was master of the Punjab at the close of the Fifth Century B. C. and that he used to receive a tribute from the Indian King of many millions in silver and gold and in some of the finest products of the Indian loom besides a variety of other commodities including sandalwood from Malabar which was essential for the worship of fire as an emblem of the great lord Ahuramazd. The third epoch began when Alexander the

Great became master of the selfsame Punjab and navigated the Indus as far as Taxilla. The old Babylonian trade once more was revived and continued till the Asiatic Greek first and the Roman afterwards in the Second Century B. C. were keen on importing the rich spices, pearls and precious stones of India. The trade with Rome was at its zenith in the reign of Nero. Rich as the empire became under Augustus and his successors by its conquests of Asia Minor and Persia and Arabia Felix, there was no limit to the costly luxuries in which the patrician class, male and female, indulged by the enormous purchases of cinnamon and other well-known Indian commodities, including silks and indigenous calicoes. Trade thereafter declined. The most prolific source of information regarding Indian trade and trade routes during this flourishing period of the early Roman Empire was that universally renowned work which is known as the "Periplus of the Erythraean Sea" written by an anonymous Greek merchant. The book has been translated into English and copiously annotated by Mr. Wilfred H. Schoff, Secretary of the Commercial Museum, Philadelphia. It was published for the first time in the year 1912. It is a mine of information and gives us the best idea of the condition of the international trade, between the great Empires of Rome, Parthia, India and China, apart from what has been related by Greek and Roman travellers from Herodotus to Strabo and Pliny. The fifth epoch may be said to be co-eval with the rise of the Byzantine Empire till the conquest of Southern Europe by the Moors and Saracens. The sixth may be placed with the era of the Crusades till the middle ages. In this period the name of Marco Polo the great Italian traveller may be most familiar to students of Indian History. The seventh may be fairly said to have commenced with the discovery of the West and the East Indies at the close of the fifteenth century A. D. It marks the first beginning of the important advent of the European from the West of Europe. The Elizabethan age brought on the scene the merchants of England trading to the East which marks the eighth period of Indian commercial evolution. India was

made familiar by Drake who had voyaged round the world. From that time till 1833 when the East India Company ceased to be the monopolists of Indian trade may be deemed the ninth stage of the evolution. And the last or tenth epoch may be said to have commenced with 1858 when the territorial sovereignty of that great historical Company passed away and India became a direct dependency of the English Crown.

Having now marked out the different periods through which Indian trade had passed from the times most ancient upto the date of the Queen's Proclamation in 1858, I need not dilate upon the science of commerce itself. There are plenty of text books of commerce, and I am quite sure the Principal of this College will by and bye teach the students who join it the theoretical as well as the practical part of commerce. Neither am I going to weary you with masses of commercial statistics, although they are a very important element in understanding the evolution of Indian commerce. As far as I can I will give a cursory view of the whole Indian trade from 3000 B. C. up to date. It is a long vista, and I consider that he who would write a comprehensive and elaborate book on Indian trade and its evolution would have to spend a life-time on the task. I feel that, and I regret that I did not take to this study a little earlier. I wish I could live my life over again in order to do so, but that is not possible. Human life is short, and I am in the autumn of my days, but here I see before me the rising generation, particularly that portion of it which is going to educate itself under the aegis of this College, and I sincerely trust that some of these scholars will find both fortune and leisure in pursuing this study. It is a most instructive and fascinating study. Superficially you might say: "We know all about Indian trade. We know that piecegoods come from the United Kingdom, sugar from Java and Mauritius, motor cars from Paris and London; and we know what we export." Not so. When you begin to dive deep into statistics of Indian commerce you will find what a fascinating subject it is, particularly if you go back to most ancient times and to the trade with ancient

countries like Assyria, Babylonia, and so on. Historians have said they do not know anything about the course of Indian trade in prehistoric times. Leaving pre-historic times, we find that as far back as 3000 B. C. there are coins, monumental tablets, papyrus, and many other instruments of writing which tell us that Indian trade was going on then. Then there are vast tracts of years till we come to 1500 B. C. when we find that trade expanded because civilisation had advanced. And as civilisation advanced all sorts of commodities and particularly commodities of luxuries, were required, and it has happened that India has been one of those countries which has supplied those luxuries particularly to Western Asia and Rome.

Arabia may be said to have first come in contact with Indian traders. The ancient Arabians were a hardy race of traders, as hardy as the Phœnicians further north. Arabia was the nearest country to India and parallel to it was Africa. Between these countries was the Red Sea, and this Red Sea is really an historical sea. From times immemorial all trade that has gravitated from China westwards as far as Egypt and Rome has gone through the Red Sea. The straits of Bab-el-Mandeb was the rendezvous of the Arabians, because that was a convenient entrepôt at the mouth of the Red Sea for Indian goods which came from the Gulf of Cambay and from Broach. Broach, or Baryagaza as the ancient Greeks called it, is a very ancient Indian town and if Aden and the Straits of Bab-el-mandeb were the entrepot for Arabia and places west of the Red Sea, Broach and the Gulf of Cambay were the entrepôt for all trade on this side of India. The Red Sea is, therefore, an historical sea where all the traders from different parts assembled to exchange their products. Arabia exchanged frankincense and myrrh and other products for which that country is famous, while India gave spices, camphor, cinnamon, cloth, cotton, gold, calico and soft muslins from distant Dacca, muslins for which that town is still famous. As regards gold it has not been accurately known that there were any rich mines which had been briskly worked, though it stands to

reason that Mysore was no doubt the place where primitive gold mining had been evidenced for a long period during the earlier stages. But most of the gold was no doubt acquired by India from the gold-diggers of the desert of Gobi and the mountains of Tibet. In his learned book already referred to Mr. Mukerji states "Herodotus relates 'the famous and widespread fable of the gold-digging ants' which has been shown by Sir Henry Robinson and Dr. Sebiern to have originated in the peculiar customs of the Tibetan gold-miners and the name 'gold ant' was possibly just given to the fragments of gold dust brought from Tibet on account of their shape and size" and as to the tribute of gold which Darius is recorded to have exacted from the Sovereign of the Punjab, Mr. Mukerji further writes as follows :— "In the enumeration of the nations and tribes which paid tribute to the Persian Monarch Darius, the Indians alone, we are told, paid in gold, all the others paying in silver. The amount of this gold was 360 Euboic talents, equivalent to £1,290,000." The gold from Tibet was brought down to Peshawar and thence to Karachi and Broach. From Broach it was said to have been sent to Egypt and Assyria, for the ornamentation of the Temple of Solomon and other temples, and for the use of Assyrian and Babylonian Kings. It may, however, be mentioned at this stage that considerable controversy has gone on for years in reference to the gold from India. The allusion in the Bible to the gold from Ophir for the great temple of Solomon has been variously interpreted. Some years ago Ophir was identified with the present town of Sopara in Gujerat. But the philological argument was not convincing. Rather the explanation which Sir George Birdwood, than whom there is not a more learned interpreter of ancient Indian history and literature, gave is more rational and nearer the truth that Ophir is merely a corruption of, 'Afur', the ancient name of Africa. Having regard to the fact that ample evidence has been found of the Transvaal gold mines having been worked in days gone by and also to the other fact that maritime traders of Egypt and Phoenicia voyaged far south down from Cape-

Guardafui to the furthest extremity of South Africa it is quite probable that gold was obtained for Solomon's Temple from "Afur" or Africa rather than from India. Such then is the history of the trade of ancient India and such were the different products India exchanged with the peoples of the West at the entrance of the Red Sea. I must not forget to tell you at this stage that though the Suez Canal has been a living reality for the last forty-five years, there was an earlier time when the Isthmus of Suez was cut. It was first cut by the Egyptian King Sisostris in 2,000 B. C. and again by another Egyptian King in 1,500 B. C. Then came Darius Hystaspes who conquered Syria and went to fight Greece but was defeated at the battle of Marathon. He also is recorded to have cut the Isthmus for military and trading purposes. Then conqueror after conqueror invaded Asia Minor and the Isthmus silted up again and remained so until the genius of Ferdinand de Lesseps, the famous French Engineer, cut it for ever and a canal was built in 1869 that opened up the magnificent trade between the West and the East.

Let me now take you to Rome to the time of the Emperor Augustus. Few students of history are unaware that the time of Augustus was really the golden age of the Roman Empire. As Rome grew richer and richer, and particularly the patrician classes, they became so enamoured of Indian goods that they used to send every year through Egypt to the Red Sea ships to fetch Indian spices, drugs, feathers, ivory and gold. Cinnamon was a particular favourite, because of its peculiar fragrance, and it has been put upon record by the unknown author of "The Peryplus" that Nero, when his wife Poppaea died, burnt something like 100,000 lbs. worth of cinnamon at her funeral. Other spices such as ginger and pepper were in such demand in Rome that actually all these commodities sold at the value of their weight in gold—that is to say that one tola of cinnamon or pepper would cost one tola of gold. Just imagine this price for pepper which you can buy to-day in the bazar for one anna per seer of forty tolas. Indian



muslins of which the Roman matrons were very fond, also fetched heavy prices, and it was the complaint of the Romans of that day, according to the historians, that India was draining Rome of her gold and silver, even as it is said to-day that India is a sink of silver and latterly of gold. Pliny said that in those far-off days the balance of trade between India and Rome came to £800,000 but other more reliable records put it down at £250,000 which no doubt had a larger purchasing power in those days than to-day. India also was the medium through which silks and other products of China found their way to the West. The trade was all done by caravans in those days, and there were more than one caravan routes, from China to India and further westward as far as the Caspian Sea. That the routes still exists may be reasonably inferred from the great army which the famous Chinese General Tso Tsung led in the early eighties of the last century for the re-occupation of Kuldja which owing to internal troubles in China was for a time entrusted to the Russians. Tibet and China sent their silks and other wares to Peshawar and then they were sent to the Gulf of Cambay and Broach, whence they were sent in the same sort of prows and other Indian craft that are used to-day, to Asia Minor. The mariners too were the same then as now who ply to-day between Karachi and Basra or Muskat. The *sarangs* of Kathiawar are well known to us as a most courageous, hardworking and patient class of sailors and it is not difficult to imagine that their great forebears of 2,000 years ago and more ploughed the sea for purposes of commerce. Both these *sarangs* of Kathiawar and the Nakhodas of Arabian baglows, which still ply in the Arabian Sea and the Persian Gulf, were a race of born mariners. We all know, that the Arabs from times immemorial have been known as a maritime race and that they excel as the great highway pirates of the sea. Who is unaware of those dhows, the fast sailing vessels of their own country, which brought to Zanzibar hundreds of slaves every year for sale and of the fact that one of the principal functions of the old

distinguished Indian Navy was to pursue these slave trading dhows, bring them to bay and emancipate the slaves. It is one of the most magnificent, and benevolent service which the Indian Navy has rendered to the world under the æges of the British Government and abolished the slave trade from the East African Coast and the Persian Gulf. We can well understand why these maritime Arabs were considered first class navigators in olden days and later on when they discovered the compass which has made navigation in all parts of the world so easy for the last 1000 years.

As regards the land trade in ancient times the whole of it was carried on from the gates of the East to the gates of the West by caravans and the Assyrians and Babylonians in order to protect that trade and to give rest to the merchants and their beasts of burden had built large caravanserais at different points along the long route. Some of these caravanserais still exist and archæologists tell us what they were like from excavations made in Mesopotamia and elsewhere. In India, although railways are running now to and fro in all directions every day, these trunk roads which the caravans traversed are still in existence and if perchance the railways were destroyed Indian trade would still be carried on along these trunk roads as it was in the olden times. I need not now dwell longer upon the ancient trade of India, in which I include that of Ceylon which island we all know is mentioned by the old historians under the name of Taprobane which is nothing but a corruption of the Sanscrit "Tamra pani" which means copper (coloured) water, a name given by Vijaya, who led the first Indian Colony into the island and applied to the place where he first landed.

Reference has been made to Darius's connection with India and the exchange of valuable commodities during his temporary sovereignty in the Punjab. It is also related of his successor the great Xerxes who went with a large army to Greece to be defeated at Salamis that many of his soldiers were clad in Indian cotton

cloths. That is another evidence of the continued exchange of Indian products between Persia and India. We also know the conquest of the country of the Indus by Alexander the Great and it is related that while going from North to South he had to build a large number of boats in order to bring a division of his army to the mouth of the Indus while the other division was marching parallel by land. The Mauryans were great builders of fleet. Shipbuilding greatly flourished and gave profitable employment to a part of the population. Ptolemy speaks of Alexander having constructed a fleet of 2000 vessels on the shores of the Indus of entire Indian wood, while other chroniclers put it at 800. Thus it will be seen that during the days of Alexander, and after, maritime activity was largely evidenced in the waters of the Indus and the Ganges going as far as the Bay of Bengal for purposes of trade. But it is superfluous in a brief lecture to refer to any great details so far. I may refer to those who are greatly interested in Indian maritime trade 3000 years and more to the graphic description of the variety of ships of native craft given in the valuable work on that subject by Mr. Mookerji. You will learn therefrom how there are to be seen even to-day in the magnificent caves of Ajunta some beautiful paintings on the walls on which figures of Indian vessels of a variety of type are depicted which irresistibly point to the maritime activity of the Indian people from historic times.

Let us now turn to the connection of Rome with India. As far as Roman commerce is concerned students of commercial history need hardly be reminded that prior to B. C. 200 Rome was not regularly engaged in mercantile pursuits. No doubt Roman galleys navigated the Mediterranean and the Ægean seas for certain Asiatic products including those of Asia. Owing to the growth of the population in the Republic the scarcity of grain was now and again felt and Roman vessels went to Egyptian and some of the ports of Asia Minor to bring back a large quantity of cereals, but of Roman exports in merchandise there was very little. The

Roman Republic was fast becoming mistress of the world and Rome itself was the centre of the world's politics of the time. Rome began to grow into an Imperial city after Carthage was destroyed and her attention, energy and resources were all directed toward building up her military greatness. And as it grew more and more into military importance both west and east, the first necessity of having long military roads both for purposes of offence and defence was greatly felt. Roman public works by way of aqueducts also became a necessity and as the arms of Rome extended right and left her power was greatly consolidated albeit there was much of internecine quarrels or civil wars. Still the consolidation brought with it what is known as Pax Romana. Thus it came to pass that military roads and other means of communication and transport were greatly contributory to the development of international commerce. Accordingly we find that when Augustus ascended the throne of his own Empire as consolidated by him Roman peace vastly enhanced Roman commerce.

Synchronising with the last two centuries of the Roman Republic we find that the great Mauryan Kingdom had been well founded and flourishing. In the days of Asoka India was brought into systematic connexion with Syria, Egypt, Cyrene, Macedonia and Epyrus. We are all aware how the great Asoka embraced Buddhism, propagated it far and wide and erected monoliths in 20 and more localities in his Empire on which were inscribed his edicts. The spread of Buddhism east and west signified the dispatch of Buddhistic missionaries to convert diverse races to the creed of Gautama. If war leads to commerce it may also be said that during the Asokan period the propagation of a mild and beneficent religion also led to interchange of commodities between nations wide apart. Commerce led naturally to maritime activity. Fleets of boats to navigate the Indus and the Ganges were built and maintained and Asoka's maritime edicts are well known. There were the Andhras again reigning in the south same as the Mauryans in the north, say

from 200 B. C. to 50 A. D. It is related that the Roman influence in the age of the Kushans of the North was great. At the heel of Roman commerce came Roman arts to India. Asoka in consultation with Ptolemy Philadelphus founded Alexandria in order to make it a great emporium of Indo-Egyptian trade. Other overland routes of commerce were established about the same period between India and the West such as across Central Asia, along the Oxus to the Caspian and Black Seas or through Persia to Asia Minor or by way of Persian Gulf and the Euphrates through Damascus and Palmyra to the Levant. And here we may tarry to say a few words about the "Periplus of the Erythrean Sea" to which I have referred in the earlier part of the lecture. This Periplus, as is too well-known, is in reality a short account written by an unknown merchant, said to be an Egyptian Greek, during the first 50 years after the birth of Christ. He sailed from Suez to the Red Sea, thence to the Persian Gulf, thence to Cambay and Broach and then far down to the South of the Malabar Coast. He gave a very faithful and graphic account of the principal ports where the products of India were exchanged. The centre of exchange was the Persian Gulf. It is stated in the Periplus that "the people of that region, the various Arab tribes and more especially the ancestors of the Phœnicians, those mysterious red men, were the active carriers or intermediaries. The growth of civilization in India created an active merchant marine trading to the Euphrates and Africa and eastward. The Arabs tolerated Indian traders, but reserved for themselves within the Red Sea that lucrative commerce which supplied precious stones, spices and incense to the ever increasing service of God in Egypt. They jealously guarded this trade. The muslins and spices of India they fetched themselves or received from the Indian traders in their ports on either side of the Gulf of Aden carrying them in turn on the highlands of the Upper Nile or through the Red Sea and across the Desert of Thebes or Memphis. . . . Cloth, precious stones, timber and spices, particularly

cinnamon brought from India, were redistributed at Socotra and Guardafui on Indian vessels and carried to the Nile and the Mediterranean Sea." Hippalus, another merchant, who followed in the wake of the writer of the Periplus, verifies the routes and enlarges on what we now call the monsoon trade winds. He was a venturesome navigator and carefully marked the changes of the Indian monsoon. He returned to Egypt somewhere between 60 and 70 A. D. with gums, pearls, ebony and sandalwood, balms and spices, but especially pepper.

As Roman power weakened in the 2nd and 3rd Centuries A. D. the trade with India also declined, and Constantinople became an entrepot of Eastern Commerce but we need not further pursue this epoch of Indian trade evolution. Sufficient has been said to give you an idea of the state of Indian Commerce in times long since gone by.

In 1000 A. D. India's trade with Asia Minor was resuscitated. It was the Crusaders this time who found what a large trade India was doing, and they were particularly fond of ancient swords, made of iron ores and tempered by the most primitive methods in Kathiawar and Central India. A large number of them went to Damascus, which was a great centre for this particular trade. The Crusaders carried back the story of Indian trade to the West, as far as England, and it so happened that by 1,200 A. D. there was another revival and this time the revival occurred in connection with the great Khalifs. The Mahomedans, as you know, immediately after the propagation of the Mahomedan religion, conquered Persia and Asia Minor, and with the Saracens marched from there and went to Spain, where old Saracenic names still exist. The Crusaders made the name of India famous in the West, and then came the days of the Moguls, who marched from Persia and came with their hordes to India. We all know Mahomed of Ghazni went to Kathiawar to carry away the wealth of its great magnificent temple of Somnath and his many subsequent raids in Gujerat. By the time Akbar was on the throne, a vast amount of trade had been

established, such a trade, indeed, that it really excited the cupidity of European traders, particularly the Portuguese and the Spaniards, who were in search of gold, silver, spices and other commodities. Portuguese traders, particularly Albuquerque and VascodeGama, came to this side of India as far as Goa in the Fifteenth Century. Following the Portuguese came the Dutch, who went as far as Java, which had been colonised by Indians hundreds of years before Christ. Then the Greeks went there.

Between the 12th and the 15th centuries, India became better known to the Europeans in the West, and it is even recorded that as far back as 800 A. D. a Bishop was sent by King Alfred to Madras to found a Roman Catholic Church. The Bishop went there and founded a church on the Mount at Madras. That shows that even in Alfred's time India was known in England. Marco Polo, the great Italian traveller, having learnt much about India from the Crusaders, also travelled to India, and he has left us a long description of her trade in his time. French travellers also followed, so that by the 16th century India had become perfectly well known to the West. Queen Elizabeth and James I had sent Embassies to the Court of the Great Mogul, but prior to that there had also been many Embassies, especially from the Romans.

There was great rivalry in the fifteenth century between the Portuguese and the Dutch. The Portuguese established themselves at Goa, which they still hold, and the Dutch were eventually driven away. The wealth of the East Indies next attracted the attention of the English, and many ships came from England to India until in the 17th century every ten years there used to be between 86 and 200 British ships trading to India. Many were lost, but many went back with gold and other things, and this is the way that English trade was established in India. It was the East India Company however, that really brought England and India together in the 17th century. In 1765 when Clive came as Governor-General, there came to India a new epoch; an epoch partly of gratification and partly of great discontent. Clive reorganised the trade of the

country. He found that the East India Company's clerks traded on their own account and were corrupt, and he reported to that effect to the Government. He made many other reports and reforms, both administrative and political, but the East India Company was a monopolist of the first water. When it became the practical owner of almost the whole of Bengal it established monopolies in calicoes, the finest Dacca muslins, and the finest silks which came from the Malabar Coast, where to-day you will find clever weavers who turn out goods which are difficult to approach. The Company established all sorts of monopolies, and when Clive reorganised it, instead of making trade free, he made it more monopolist, while in England itself duties were put on silks and calicoes and other things so heavy that they would astonish you to-day. The duties on silks and calicoes were as high as 58 to 78 per cent. and as a consequence trade declined. This went on until 1830, when some of the European merchants who traded here petitioned Parliament that the duties were killing trade. The trade continued to decline, particularly in Dacca muslins, and as by that time Watt had invented the steam engine and the first spinning jenny had also been invented, Lancashire trade advanced and brought down the Indian cotton trade. These earlier traders, who had been granted licenses to trade, and who were called by the East India Company interlopers, petitioned Parliament against the duties, as I have said,—this is to be found in the journals of the House of Commons,—and complained most bitterly that owing to the duties Indian trade was declining. In ancient India trade had been entirely free, and there were no tariffs of any kind; it was the East India Company which made the trade protective, and I firmly believe that it was the influence of the East India Company which made England a protective country until 1845, when Free Trade was established, thanks to Bright and Cobden.

Indian trade continued to decline until in 1850 there came a turning point. The first beginning was made by the Free Traders, who were anxious that Indian trade should develop, particularly on the side of cotton,



for which there was great necessity, because the quantity of cotton which then came from America was very small. The Free Traders said it would be good for Lancashire as well as for India that the Indian cotton trade should be developed. They also said at the same time that Lancashire piece-goods should be introduced into India, and by the irony of fate India was crushed between two stools, and lost a great deal of her trade. Coming down to 1882, we find that Indian trade, thanks to our beloved Viceroy Lord Ripon, was made entirely free. Whatever duties that had been put on were entirely abolished, and from that year we have gone forward and forward as the trade statistics prove. You will understand how this has been so, when I tell you that in 1854-5, the annual average export trade of India was only 18.75 crores, while to-day it stands at over 244 crores and the import trade at nearly 200 crores against 14.05 crores. Of course the colossal expansion of the trade since the fifties is owing to more than one cause. Coal and iron, steam navigation, machinery which the applied sciences have so fruitfully brought into play, roads, railways, canals and other communications, financial institutions and the organisation of credit and last though not least the opening of the Suez Canal since 1869, each and all in their respective sphere contributed to the vast expansion which we witness to-day and which is destined to be surpassed as years roll on and India takes her proper place in the international trade of the world.

Although I do not want to enter upon controversial subjects, I must say that my own personal opinion is that India owes its prosperity to-day entirely to Free Trade, and nothing else. I say this conscientiously from my study of the subject. Through the whirligig of time which brings many changes, Indian trade which had been lost for almost a century is coming back to us by leaps and bounds, and I confidently hope that within the next few years we shall have a great deal of trade in our hands in the matter of the production of finer cloths which has for many years past been done by Lancashire. In the short space of sixty years, from

1855, when the first cotton spinning mill was started in Bombay by Mr. Cowasji Davar, and another but smaller factory started about the same time at Broach by an Englishman Mr. Landon, there have been established something like 230 mills in India, with an enormous aggregate capital. Indian trade has been developed on right lines. It is true that we are still very largely an agricultural country, but we also produce extensively a variety of raw materials for European trade. And these, gentlemen, do not in any way inconvenience Indian trade; they are the surplus of our products, which to the extent of nearly two-thirds of our total exports are going to England, the United States, Egypt and elsewhere. India is so self-contained that it can produce all it wants, and still export this immense quantity of materials. All this, I firmly believe, is the result of nothing but Free Trade.

Just imagine for a moment what you would have been to-day if there had been no spinning and weaving machinery in India. You could not have stimulated your industry to anything like the extent it has grown to. Even to-day India has not been able to produce a single piece of machinery, not even a single 10-horse-power boiler or engine. We have to get from England all the spinning and weaving machinery, and we have to go to the same country even for replacements of parts incidental to the machinery. There is, however, a better time in prospect, and if the Tata Iron and Steel Works are successful everything will be altered. If England had been a protective country, and had placed a protective duty on all exports of machinery what would have been the position of India?

I admit that these old industries in India require to be revived. These and other new industries would necessitate protection during their infancy, say for 10 or 15 years. I am one of the convinced advocates of Free Trade, but yet I consider that some protection is required for old industries to be revived and for new industries to be started. In my opinion Indian industries will most succeed and flourish and firmly maintain

their position when they stand in the open and keen competition of similar industries, without any artificial crutches, pursued by other nations in every part of the world. Although the East India Company by its duties did a good deal of injury to Indian trade, the nemesis of time is bringing forward its retribution in a benevolent sense and we are getting back our former trade inch by inch, so that no one can say what Indian trade may be a century hence.

Here you have seen Indian trade in evolution since 3000 B. C. to date, and to-day I am glad that there is established in our midst a Commercial College, the only institution of its kind in India. I take some credit to myself for this institution, although I do not forget how my friends Mr. Pestonji Nusservanji Wadia and Mr. Aiyar, the honorary principal for some time of this College, advocated it. But I do take this credit that I read before the Graduates' Association in 1908 a paper in which I earnestly appealed to the University Senate to establish a faculty of Commerce and a Commercial College which would teach the science of commerce, as distinguished from ordinary book-keeping. And even earlier in 1906 I had discoursed on the same subject "the study of economics" at the Fergusson College, Poona. Therefore, it is a satisfaction to me that owing to the generosity of the Government, the Indian Merchants Chamber and Bureau, the Bombay Chamber of Commerce, and private individuals we have been able to establish this College of Commerce. I feel sure that with such able and enthusiastic principal and professors the College will be raised stage by stage, so that it will flourish and send forth post-graduates, who will go here, there and everywhere, some devoting themselves to research and others to commerce and in that way help to develop the national trade. I now conclude this lecture with wishing every success and prosperity to the College and that it will flourish for ever more on a sure and solid foundation already raised by the State and the merchant princes of Bombay.

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## SCIENCE OF COMMERCE.

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*Being a Paper read by Mr. D. E. Wacha before  
the Bombay Graduates Association  
on 14th October 1908.*

MR. CHAIRMAN AND GENTLEMEN,

### INTRODUCTION.

It is well nigh half a century since Tennyson, with the inspiration of the true poet-seer, in one of his beautiful songs, which have left an imperishable name behind him in English literature, sang of the slow march of Science, "creeping on from point to point" and of the "glorious gains" it had achieved for the greater progress and happiness of mankind. But who is unaware of the further gigantic strides it has since taken from stage to stage, of the incalculable benefits it has conferred on our common humanity, and of the infinite potentialities and possibilities which still await it in the womb of Time. Indeed were the poet to revisit the glimpses of this planet, where he has left a name and a fame, he would be amazed at the progress which Science has made in all its multifold ramifications. Such is the situation. It seems from our knowledge of its history during the last fifty years and of our experience of it at the present day that each generation will hardly have any adequate conception of the miracles which Science may realise and reveal to its successor. Truly did that great philosopher, Herbert Spencer, say that "Science concerns all mankind for all time." Are we not having daily evidence of the perfect accuracy of that observation in every walk of life? Look wherever you may, the glorious work of Science meets us at every turn—in health and sickness, in the market and in the forum, in those great beehives of industry and com-

merce, in transportation by rail and sea, in States and Municipalities and in almost every walk of ordinary human life. Said Spencer, remarking on this universal phenomenon: "What knowledge is of most worth?—the uniform reply is Science. This is the verdict on all counts. For direct self-preservation, or the maintenance of life and health, the all important knowledge is—Science. For that indirect self-preservation which we call gaining a livelihood, the knowledge of the greatest value is—Science. For the due discharge of parental functions, the proper guidance is to be found only in—Science. For that interpretation of national life, past and present, without which the citizen cannot rightly regulate his conduct the indispensable key is—Science. Alike for the most perfect production and present enjoyment of art in all its forms, the needful preparation is still—Science, and for purposes of discipline—intellectual, moral, religious—the most efficient study is, once more Science." Such being Science in its broadest and most philosophic acceptation, it will be readily admitted that of its many numerous branches Commerce, on which depends the well being of great States and nations, is one, and that not the least. When we further bear in mind that Science is nothing if not organised knowledge, and that knowledge, before it can be acquired, must be possessed, it only stands to reason that the Science of Commerce is the study of one of the most important and far reaching of human activities. Of course, every study has a purely experimental introduction, and as Mr. Spencer has correctly observed, it is "only after an ample fund of observations has been accumulated, should reasoning begin." Thus so far as Commerce—commerce in its *practical* aspect—is concerned, we have in these days accumulated a vast fund of facts and observations on which to build up what may be called the Science of Commerce. It is to this Science that I wish to draw your attention to-day. I am sure you will feel interested in the theme I am now about to unfold before you. I also trust it may be the means of attracting through your organisation the local

University itself and enlisting the sympathy of its governing body. I shall consider myself amply rewarded if it is eventually productive of some good in the immediate future.

**Wanted a Faculty of the Science of Commerce in the University.**

My theme, shortly, then is this. That having regard to the expanding commerce of the world, of India included, the time has come when the University should *sui motu* bestir itself to institute a Faculty of the Science of Commerce just as the great Universities of London, Manchester, Leeds, Sheffield and Birmingham have established. It is superfluous for me at this time of the day to expatiate on the great utility and practical value of this all important and all embracing subject. Professor Ashley terms it "Business Economics." In his Presidential address on *The Present Position of Political Economy* at the British Association for the advancement of Science at Leicester, in 1907, in the Economics and Economic Section, Professor W. J. Ashley observed: "The revival of economic studies in Great Britain of late years has been due to the almost unconscious convergence of several influences. On one side has been the growing interest in what are called "social questions," and, combined with this, a perception of the need for more systematic training for that work of municipal and political administration which is every day embracing a larger part of the national activity. It is to motives like these that was due the foundation of the London School of Economics. Too much credit can scarcely be given to those who, whatever their own economic views, had the statesmanlike courage to found an institution distinguished from the first by the largest impartiality, or to the first Director, Mr. Hewin, who conducted it through the difficult years of its infancy. Coming from another side there has been a realisation of the need for systematic training for commercial careers—the conviction to which has been due to the new Faculties of Commerce at Birmingham and Manchester, and the new Economics Tripos of Cam-

bridge. I am convinced that the study of actual business organisation, methods and conditions is not only desirable for the preparation of our future leaders of trade and industry for their subsequent careers. It is desirable also for the enlargement and deepening of the purely scientific understanding of economic problems." Here then, it may be observed, one can realise in a nutshell the eminent utility of instituting a Faculty of Commerce.

**Some Cant and Fallacy in reference to Higher Education as  
advocated by Macaulay.**

But before I expatiate, however briefly, on this most interesting and practical topic, it is needful to clear the ground of some widespread cant which has for many a month past been dinned in our ears. It has been alleged in certain quarters, where greater enlightenment and more correct appreciation of the past history of Education in general was expected, that those liberal and broad-minded statesmen who were principally instrumental in formulating the course of Indian Education during the past half a century and upwards committed a fundamental error in making no provision whatsoever for technical education while laying down the programme of high literary education. It is superfluous to say that the statesman, above all others, who most strenuously and successfully advocated that high literary education was the brilliant Macaulay whose name is for ever enshrined in the hearts of the past two generations of Indians, and will be cherished equally warmly by generations of Indians yet unborn. He was one of that noble band of sterling English statesmen whose Liberalism gave India her great Charter of civic liberty and privileges—the Charter of 1833—and the other equally important and beneficent Charter of Education, known as the Educational Despatch of 1854. Our Anglo-Indian rulers of the present day should feel proud of him and his colleagues, one of whom was the distinguished Sir Charles Trevelyan, who were

so instrumental in lifting our countrymen from the depths of darkness, ignorance and superstition to the high level of enlightenment and civilisation. They valiantly endeavoured to hold before the then unilluminated India the bright lamp of Higher Learning. To allege that they committed the fundamental error, while providing for high literary education, of having omitted to take measures for fostering and developing technical education is to speak without the book. So far as the first kind of Education is concerned it is even acknowledged at this very hour by men still living and distinguished for their great scholastic reputation, that there can be no progress in high scientific technical instruction without the broad foundation of literary education. Let me for a moment refer to the learned speech which Lord Morley made only the other day on the occasion of his installation as the Chancellor of the University of Manchester. "Some other day you will let me come and talk to you upon some of those great topics of education. I would only like to say one thing, and that is to applaud you, if I may, and encourage you to be true to your mission. I mean by that don't allow technical teaching, valuable and essential as it is, to efface from your work or *even to throw into the second place the true objects and scope of a university*. It is a remarkable and most encouraging fact that there has been no leaning during the last twenty or twenty-five years of the many benefactors of those institutions to limit their benefactions to practical arts. This would seem to justify us in hoping that *merely and purely technical teaching will not drive out teaching of the university type*." Again, in January 1907, Mr. Haldane, speaking as the Lord Rector of Edinburgh University, expatiated on the same theme, namely, what should be the aim of university training. No doubt he emphasised the value of technical education but he put learning for its own sake on a higher level. Said he: "if universities existed in sufficient numbers



and strove genuinely to foster, as the outcome of their training, the moral and intellectual virtue, which was to be its own reward, the humanity which had the ethical significance that ought to be inseparable from high culture, then the State need not despair." At the same meeting Mr. Balfour, in giving thanks on behalf of the University, observed that "the University which was incapable of showing a genuine and disinterested love of learning, which could not produce leaders of men, but which merely enjoyed its endowments and did nothing for them, was not only no aid to national life but was a positive burden upon all the higher ideals of the nation." But let me for a moment take you back to those days when Huxley was Lord Rector of Aberdeen University. What he then said has lost not an iota of its value and relevance even to-day, though meanwhile science and technical education have been well recognised by all the great European universities. While he pleaded for the fuller recognition of Science in the university curriculum, he also stoutly advocated the maintenance of those literary and classical studies which have hitherto held a position of monopoly in British Universities. And it should be remembered that Huxley, though a scientist of worldwide fame, applied himself to mastering the Greek tongue and read Plato and Aristotle in the original. Further it is superfluous to remind you that it was on account of the revival of ancient classical learning that we owe the Reformation and the rising of those intellectual giants of the eighteenth century, including Rousseau, Voltaire and Diderot. There are also the sweet reflections of a great French poet, of the troublous days of 1789, no other than Andre Chenier, as to the imperishable value of the classics in that fine fragment of his called "Invention." Chenier tells us with loving reverence how much the world is indebted to the inspiration of the ancients :—

"Let us change to golden honey flowers whose  
fragrance, aye, will last,  
Paint the thoughts that throng the present with  
the colours of the past;

Let us light our modern torches at the old  
 poetic fires,  
 Sing us songs to rouse and awaken us to the  
 tunes of ancient lyres "

Thus it is fallacious to decry high literary education including the classics without which no university worthy of the name can be allowed to exist. And they are raising a hollow cry, those men of narrow learning and narrower political sagacity, who are at present depreciating the literary education imparted in our universities on the model, as far as practical, of the great English Universities. The broad foundation of that education has first to be firmly laid in order that the other branch of education may be better imparted. So far, then, I repeat that those who deny or depreciate the value of literary education in priority to scientific and technical are only indulging in a fallacy which requires no further demonstration. They are a bigotted and benighted fraternity crying in the wilderness.

But apart from this fallacy, it should be borne in mind that the authors of the policy of Higher Education in India were not at all blameable if no provision or forecast was made regarding technical education. England herself had hardly understood the value of that branch of education till 1875 or 1880. None of the older Universities of Great Britain devoted any attention to the subject. It never entered the heads of the governing bodies of those institutions till their eyes were opened by the great captains of industry. The latter pointed out the economic revolution which was to be witnessed in Germany and in the United States, revolution which brought into sharp conflict the commerce of Great Britain with that of those countries. It is a matter of common knowledge that it was Germany which first understood and realised the application of science to industries and trades in a most comprehensive spirit. They were German thinkers and German men of science who thirty years ago and upwards inaugurated that era of highest *scientific* technical education

which in a few years more led to the prosperity of German commerce and German manufactures which are today the theme of universal admiration. And so, too, was the case with the United States which closely followed Germany. England was far behind those two countries as English educationists and distinguished economists themselves have told us. The British became only recently alive to the utility of that education. The importance of the subject only dawned on them when Germany undermined England of some of her most lucrative industries prominent among which was dyeing. It was the German who was years ago the importer of what are known as coaltar dyes, the anilines and alizarines of commerce. England had a trade of over four millions sterling in this dye alone. But it was German chemistry and German application of practical chemistry to this branch of the trade that snatched away almost the whole export trade of Great Britain. One quotation, and that from a distinguished Englishman, who is an acknowledged expert on technical education, is enough to make you thoroughly understand the scientific basis of German prosperity. Just five years ago Sir Philip Magnus, who is still connected with the Technical Education Board of the London County Council, speaking as President of the Conference held in connection with the summer Meeting of Extension students at Oxford, on the subject of the relation of science to industry, observed that "they might confidently assert that the progress and development of a trade depended more largely upon the intelligent and constant application of science to every detail than upon any other cause. *The intimate connection between industrial progress and scientific activity did not admit of question.* But if positive proof was needed it would be found in the concurrent development of the trade of Germany and of the facilities provided in that country for the scientific training of the people . . . German people had recognised this dependence by providing at a cost vastly exceeding any like expenditure by this country the best possible opportunity for scientific training and research. No

expenditure had seemed too lavish for the equipment of her leaders of industry with the best available knowledge or for the endowment of institutions in which science was methodically pursued. *This fixed policy had changed Germany from an agricultural to a manufacturing nation.* Between 1870 and 1900 the number of students in German universities and at technical and other high schools had increased from 17,761 to 46,520, or from 8.39 students to 10,000 of the male population to 16.78—showing not only that the number of students had nearly trebled itself during that period, but that the proportion of highly trained scientific men had been doubled. The net cost of each student to the State was about £12 a year, and the total contribution of the German Government to higher education could not therefore be less than £500,000 a year. This expenditure included the annual cost of the maintenance of the Universities, but it should always be remembered that *most of the discoveries made in Germany which had proved of permanent value to German trade had been made in the laboratories of university professors.* When they considered that Germany had deliberately incurred this heavy expenditure with a view of strengthening her industrial position, and had pursued the same policy for nearly 50 years, and when, further, they noted the marked success of her efforts, they had very strong evidence of the commercial gain to a nation of closely associating the results of scientific investigation with industrial work." From this pretty long extract which I have advisedly quoted, it would be plainly understood how far the Germans were in advance of the English in this important branch of education. The United States were the next to Germany, as might be best learnt from the report of Mr. Mosley's Education Commission in 1903. England has only realised its value within the last 20 years, and even then she could not boast of any large expenditure approaching Germany and the United States. From the above statement of facts it will be obvious that when Macaulay and others laid down

the policy of Higher Education for India, England herself had not the slightest notion of the importance and value of technical education in her own universities. How may then Macaulay and the other Liberal statesmen, who were associated with him in the noble work of higher education for Indians, be reproached for what they had done? In my opinion it is utterly unfair for those who are now absurdly attempting to prescribe literary education to run them down. It is pure cant. Evidently, they do not seem to have any spirit of historic instinct, much less of justice. The policy formulated by Macaulay was the result of the environments of the English Universities of those days. It is no doubt an excellent pastime to criticise the past especially when the event has long since slid into the domain of history. But it may be fairly inquired whether the present day wise men who are so fallaciously criticising Macaulay would have laid down any other educational policy, assuming that they had been contemporaries of Macaulay and chosen for the purpose? There could be only one answer to the query, and that in the negative. It was an impossibility, I repeat, bearing in mind the environments of the English system of Higher Education in those days. Gentlemen, I have detained you at some length on this aspect of the question, but I felt that I would be wanting in my own sense of historic justice and fair play had I allowed this cant to remain unexploded at the present juncture. I am glad you have given me this opportunity to vindicate the policy of those noble-minded Englishmen who have given us the boon of that Higher Education of which educated Indians of the last fifty years are the product—a product of which every fair minded Englishman ought to feel proud. But for such men how might have the administration to-day, in all its multifarious branches, been carried out and how seriously their want might have been accentuated? If even so great a statesman as Mountstuart Elphinstone, long before Macaulay, was strongly in favour of such education why should Macaulay be denounced now?

### Indifference of the Indian Government to Technical Education.

But it is needful before I resume the subject proper of the paper, to recall another historical fact. It was in 1882, when the Education Commission, appointed by Lord Ripon—India's most beloved Viceroy, the like of whom we have had not the good fortune to boast since his departure—went round the country and took evidence that brought to the surface for the first time the popular view on the advantage of introducing technical education into the country. The voice then raised was hardly articulate. But within three years it became sufficiently emphatic. I need not remind you that one of the earliest Indians of note who paid serious attention to the practical aspect of that branch of education was Mr. Dadabhoy Naoroji. Having bestowed considerable thought on the subject, he prepared a paper thereon which was presented to Lord Reay for careful consideration. The demand for technical education *in reality emanated from the educated classes themselves who had received literary education.* The late Mr. K. T. Telang, who was a member of that Commission, was himself strongly in its favour. And so were Mr. (now Sir) Pherozeshah M. Mehta and the late Mr. B. Tyabji. So much so that it was resolved, at the public meeting of subscribers held to perpetuate the memory of Lord Ripon, that the fund raised, amounting to nearly two lakhs, should be utilised for the endowment of a technical school. Bombay owes it to the practical experience and abiding sympathy of so able an educationist and Governor as Lord Reay and to the enlightened philanthropy of so eminent a captain of industry as the late Sir Dinshaw M. Petit, that the persistent and unceasing joint efforts of Messrs. Dadabhoy Naoroji, Pherozeshah Mehta, Telang and Tyabji in this direction were happily brought to fruition. This was in 1888-89. Other provinces afterwards prayed for technical institutions. Their voice came later on to be well articulated times out of number on the platform of the Indian National Congress by wellknown experts in education and in the Viceregal

Council itself. But even after those appeals, it may be stated, in the interest of truth, that the Government of India was almost indifferent, if not neglectful, to stimulate this branch of public education. It expended practically *next to nothing*, and it is only since the last few years that a grant has been doled out which, however it may be deemed to be "liberal" from the point of view of the Government of India, is a mere *bagatelle* compared to the millions spent by the United States and the hundreds of thousands by Germany and Great Britain. Practically, therefore, it might be fairly said that *it was the people themselves* who had awakened to the importance of technical education, side by side with the literary, and that the Government was some years *behind Indian public opinion when it might have been years in advance of it*. At any rate, nothing could have prevented it from taking active steps in this direction after the report of the Education Commission. Dilatory and niggardly as the Government of India has been in matters of all branches of education, it was at least ten years after that event that it made an honest effort to meet popular wishes and popular aspirations in this respect. Those who in and out of the Press have *now* been urging the substitution of technical education to a large extent for purely literary one are, therefore, again wrong in their historic instinct and actual statement of facts. Moreover it should be remembered here that the technical education now so generally spoken of is the education in the *industrial* branch only and not in the *scientific*. But I am speaking in this paper at least through of purely scientific technical education of high order, and not merely the bread and butter branch of it.

#### Economics—Theoretical and Practical.

But leaving alone technical education, it might be further inquired what efforts have been hitherto made by the Government and the Universities to stimulate the study of practical economics so sternly demanded by the materialism of the age and the keen competition

going on all over the world in arts and industries, commerce and manufactures? Here, we have to reproach the governing authorities of the various Indian Universities. Their shortsightedness is to be greatly deplored. I do not mean to deprecate the efforts which are made by the Professors of our Art Colleges in this connection. To a large extent their hands are tied down owing to the hard and fast, nay, narrowminded, rules, and regulations imposed by the Universities. Those, I regret to have to state, have not risen to the importance of the teaching of Economics, theoretical and practical, in the way it is taught in the Universities of Germany and the United States. But, perhaps, I am doing an injustice to our Universities, when the English Universities themselves were within the past quarter of a century so far behind German and American. As in technical and scientific education of the higher character so in the matter of Economics, England was aroused only when she was hit hard by German and American trade competition. As back as October 1901, Mr. Haldane, speaking on Education and Commerce and the functions of a University in the commercial city of Liverpool, observed at the University College, that "the double aim of the German University system—pure culture and the application of the higher knowledge to commercial enterprise—was a proving feature of German life. Taking primary, secondary and tertiary education together, the expenditure of public money upon it in Germany amounted to 25 millions sterling annually. He would be a pedant who thought that education alone could determine the commercial position of a nation. Yet more than ever as science tended increasingly to reduce nature to subjection, education became important. In the United States a highly practical people were taking this view and it was noticeable that the rapid increase there of Universities and technical schools was largely due to the faith in their efficacy of practical men of business. The Anglo-Saxon race, here as in America, was probably in energy, in courage and in doggedness of purpose the superior of all his Euro-



pean rivals in commerce, *but organisation and instruction* had been carried to a far higher pitch in Germany and Switzerland than with us, and if we were to hold our position we must furnish ourselves with the discipline and the weapons with which the foreigner had himself prepared for the contest." Thus it is that English Universities are greatly wanting still in those weapons. They are yet inadequately equipped. And it is because Indian Universities slavishly follow these that there is even now such a lee-way to be made up in point of the study of practical economics in relation to commerce. Professor Ashley has observed that though the English Universities have been steadily shaking off the old orthodox economics, now so antiquated under the modern conditions of trades, manufactures and navigation, it will perhaps take another quarter of a century to have a new modern system firmly established in its place. "Though there has been a new growth of abstract speculation," chiefly owing to the teachings of the distinguished Professor Marshall, "since the first phase of orthodoxy passed away, there has not emerged a second orthodoxy so far . . . The criticisms of the historical school have not led, so far, to the creation of a new political economy on historical lines; even in Germany it is only within very recent years that some of the larger outlines of such an economics have begun to loom up before us in the great treatise of Gustav Schommoller. But what has, at any rate, been secured in this country is a most substantial increase in the knowledge of our own economic past . . . Accompanying the new zeal in this country for original research there has come a recognition equally new of the importance of economic history in the examination requirements of the Universities. A large part of it has been more or less closely connected either with Cambridge or with the London School of Economics, and it is notorious that the impulse has been due in the one place chiefly to Dr. Cunningham and in the other chiefly to Professor Hewins and Mr. Webb. Accordingly it is appropriate that economic history should have been given a respectable place alike in the

Cambridge History Tripos and in the examination for Science Degrees in Economics in the University of London. Even more significant is the room made for Economic history in the Economics paper of the First Class Civil Service Examination, both for home and Indian appointments." It is a matter of congratulation so far that England, awakened to her new environments, owing to trade rivalries, has now become keenly alive to this question of the study of new Economics. And it is also a matter of gratification that the future members of the Indian Civil Service of India will come better and more adequately equipped with new economic studies. Still Professor Ashley is sorry to observe that there should exist a certain tendency, an unfortunate one, towards sharp division for academic purposes between economic theory and economic history.

**"Economic Science is but the Working of Common Sense."**

In this connexion Professor Marshall has correctly observed that though the economist is greedy of facts, facts by themselves teach nothing. Says he: "History tells of sequences and coincidences; to interpret these and draw lessons from them requires the aid of reason. The work to be done is so various that much of it must be left to be dealt with by trained common sense, which is the ultimate arbiter in every practical problem. Economic science is but the working of common sense, organised and equipped with a machinery of general analyses and reasoning adapted for collecting, arranging, and drawing inferences from some particular class of facts. . . The study of theory must go hand in hand with facts; and for dealing with most modern problems *it is modern facts that are of the greatest use.*" It is just here that for purposes of imparting a sound and correct knowledge of theoretical and practical economics of the day, the old orthodox authorities must to a large extent be discarded. Aye, even some of the general axioms laid down a century ago, or half a century ago, must be considerably modified. International trade itself

has been the growth of the last fifty years, thanks, first to British Free Trade, still robust enough though vigorously assailed in the country of its birth, and, secondly, to the unlimited facilities of navigation afforded by steam vessels, themselves the products of physical science applied to the shipbuilding industry. The Suez Canal, a monumental piece of the highest engineering, which the civilised world owes to the genius of Lesseps, has, in this respect, wholly revolutionised the entire trade of the world. It was the greatest stimulating element in modern navigation, unique and unparalleled. The colossal tonnage which is carried to and fro, from West to East and East to West, bears unimpeachable testimony to this fact. A comparison of the statistics of that tonnage, and the trade represented by it, during the first decade of the history of the Canal with those ending with 1907, not only astonishes us but takes away our breath. Such have been the actual potentialities of the great international trade built up by the Canal. That such a gigantic trade should bring in its train a vast number of complicated international trade problems is, of course, easily intelligible. Their solution has taxed the most eminent jurists, millionaire capitalists and princely merchants. Orthodox economists had not the faintest conception of this trade. So that it will be readily admitted that if the economists of the day are to teach the modern Science of Commerce they must embrace in their treatise the gigantic influence exerted by the Canal itself, apart from a hundred other factors. Hence every impartial student of economic history must agree with the great Cambridge Professor in his further observation, that "the records of the distant past are slight and untrustworthy, and the economic conditions of early times are wholly unlike those of the modern age of free enterprise, of general education, of true democracy, of steam, of the cheap Press, and the telegraph." To this must be added electricity itself with its infinite potentialities and possibilities. What tremendous influence even at its present initial stage—for your men of Science will tell you that the world is still at the thres-

hold of the interpretations and uses of this great natural agent—it has in connexion with the production and distribution of wealth! Under the circumstances, it would be fatal to dogmatise even in respect of the new Economics and Economic History which is steadily superseding, if it has not already superseded, the orthodox teachings of the last half of the eighteenth and the first half of the nineteenth century. Great caution and intellectual modesty are highly essential when even modernised economists come to consider the present condition of the principal countries like India, China and Japan which were almost wholly without the purview of the older class of economic teachers. Here the exceedingly thoughtful reflections of the late Mr. Ranade, to be noticed in his introduction to *Indian Economics*, come very apposite. That learned scholar and practical statesman has warned us against too ready an acceptance of the dogmas of western economists of the old type. Modern economics, even in the sense so clearly understood by Professor Marshall himself, are at present in their empiric stage. It is inevitable that they should be so, seeing how daily before our eyes fresh modern social and trade problems, undreamt of before, are pressing themselves on our attention and demanding a scientific solution. Indeed the more one thinks about these problems the more the conviction grows on his mind that the Science of Economics must continue to remain for all practical purposes more or less in an empiric stage like the Science of Medicine. As new diseases and sanitary problems demand new treatment, so new phases of the world's production and distribution of wealth demand fresh treatment. The treatment of yesterday is felt to be inapplicable and obsolete to-day. Great thinkers are constantly at work reflecting on the new phenomena presented by these new elements. One set of commercial, industrial and other economic problems, the truth of which may be recognised to-day, are superseded by another the next day. So that the generalisations of to-day become almost obsolete to-morrow and futile for practical considera-

tions. No doubt there are a few fundamental formulas on which all are generally agreed. But it will be yet years before economic doctrines generally acceptable to modern conditions will be stereotyped for purposes of every practical test. So that none can dispute the wise observation of Professor Marshall that "the Science is still in its infancy."

#### **Defective system of imparting Economic Knowledge.**

It would, however, be idle to assert that because the Science and History of Economics of the opening Twentieth Century are in their infancy, nothing or next to nothing, therefore, should be done by our Indian Universities. I do not believe that there could be any sane person who would be so rash as to make such an assertion. If we are then all agreed that this all-absorbing study which embraces the entire domain of Humanity in its daily economy should be fostered and stimulated in our colleges and universities, then the next question which suggests itself is, how it should be practically and rationally taught? Mere lectures of the conventional character will be of little utility. It is to be feared the general system of teaching in this branch of knowledge is in many respects defective. It is essential in order to meet modern requirements that, firstly, there should be introduced the latest and most approved modernised text-books for teaching, and secondly that experts not only well grounded in modern Economics and Economic History but possessed of large practical experience of trade and commerce in all its multifarious allied branches should be engaged. Lecturers of such qualifications, it is to be feared, are a desiderata. But it is in these two directions that the serious attention of the Government and the governing authorities of our Indian Universities should be drawn.

#### **Swadeshism and Modern Economics.**

Thus the institution of a Faculty for the Science of Economics and Commerce becomes inevitable. Chairs

should be endowed for the purpose both by the State and by munificent patrons like those who have endowed chairs in Manchester, Birmingham, London, Harvard and elsewhere. It is highly essential at this juncture to bear in mind the important fact that the study of the laws and tendencies which govern masses of men in the universal struggle for a living is a valuable training. Such training has now been recognised all over the great commercial countries of the West, and it is impossible that it can any longer remain unrecognised in India. Indeed nowhere is there so much the pressing necessity for such a study as in this country where, it must be observed with profound regret, there prevails almost Egyptian darkness on the question of Economics. Here is the spirit of Swadeshism spreading far and wide—I mean that genuine desire for beneficent industrial revival on a sound and healthy footing, absolutely free from the militant cant and mischievous shibboleths now in evidence in some utterly misguided and misdirected quarters—but where is the study of Business Economics? To my mind, as to the mind of the vast majority of sober, thinking Indians, imbued with sterling patriotism, pure and unselfish, there is not the least doubt of this Swadeshi spirit having taken deep root in the soil which in the fullness of time will yield a rich harvest. It has animated, and is animating, all strata of Indian society. The broad fact has come to be firmly recognised that no community or nation, in these days of the keenest, I may say fiercest, competition, can ever expect to advance its material progress and prosper unless and until it strenuously strives, with all the ability and the resources at its command in the direction of commercial and industrial enterprise. Self-reliance, thrift, and capital are no doubt the first essentials; but these by themselves are insufficient *without the fundamental accompaniment of a broad liberal education, and, secondly, a sound training in the Science of Economics.* It should be also remembered that no State could flourish without a reasonable revenue. And the two most yielding sources of revenue open to it are those derivable

from agriculture and commerce. The soil must produce those things which are needed for maintaining life. The residue of the produce, after home consumption, must be exported abroad. It is at this stage that the aid of commerce is necessary.

#### Wider Indian Commerce and Economic Studies

Unless a country's surplus products, be they raw materials or manufactured and partly manufactured articles, are exported in order to get an equivalent by way of imports in other commodities which cannot be produced by itself or which can only be produced at enormous cost and needless sacrifice, there can be no commerce worth speaking of. It is the wealth which surplus products sent abroad bring to a country which enriches it. Thus, with Swadeshism steadily progressing in India, and with Indians growing more keenly alive to the importance of acquiring such wealth in a larger degree than at present by means of extended international commerce and vaster "home" trade, it is evident that nothing is so fundamentally essential towards achieving the object as economic education. The poverty of India is acknowledged on all hands. There may be differences of opinion on the point of actual income per head of the population. The pessimistic school put it down at Rs. 20 per annum and the optimistic at Rs. 30. But whether it is the one amount or the other matters little. There can be no two opinions on the poverty of the country itself. Compared to the annual income per head of even the poorest country in Europe and the United States, Indian income is so miserable indeed that unless herculean efforts are perseveringly and earnestly put forth to increase it, there can be no material regeneration. And it requires no words of mine to inform you, Gentlemen, that without material and well ordered prosperity our moral and intellectual condition must to a certain extent suffer. How to attain that object is the question which the rising generation, should put to themselves. Colleges teach self-discipline, self-restraint and self-reliance. These are the rich heri-

tage of every college student in every part of the world. But what about thrift? That comes either by heredity or by personal efforts. I am rejoiced to say that in India thrift is the rule rather than the exception. It is a virtue possessed by the Indian, be he rich or poor. It is both hereditary and acquired. There can be no mistake about it. I am one of those who feel that they are downright libellers who speak of the masses, specially the agricultural masses, as steeped in habitual improvidence and extravagance. It is pure official cant like many another cant which is time out of number dinned in our ears. But there is impartial official testimony itself in support of the thrifty character of the Indian masses. Not to travel beyond our Presidency itself, there is the report of the Deccan Ryots Commission of 1874 which he who runs may read. Among its members was the late Sir Auckland Colvin, a most distinguished official who was never unmindful of formulating generalisations on great Indian problems without care and investigation. You will find ungrudging testimony borne therein by the Commission to the habit of thrift among the Indian peasantry. Other impartial officials, from Munro and Elphinstone down to Mr. A. O. Hume and Sir William Wedderburn have equally testified to that virtue. Thus thrift every Indian has. Capital, too, in however limited a degree, he may possess or borrow. But self-discipline, self-restraint, self-reliance, thrift, and capital—all will be of partial avail only unless we are well equipped mentally—I mean well grounded and trained in the modern science of Commerce and Economics, on sound principles, if you are to make India every way richer than it is both materially and morally. You will thus understand why I lay so great an emphasis on the value of this study.

**Educated India should vigorously pursue Commerce and Industry.**

At this point of my address I wish to offer another observation which has been uppermost in my mind these many months past in connection with the steady progress of Śwadeshism. It is indeed time, in my opinion,



that the majority of graduates whom our Universities now turn out in their hundreds and thousands year after year should seriously consider the advisability and expediency of following some art or trade or industry when they put aside their college gown and don the toga of the citizen. Of what use prolonging the wail, now extending over thirty years and more, about the poverty of India? It is there. The official hierarchy has left no stone unturned to disprove it, but has egregiously failed. Even Lord Curzon failed. The public have over and over challenged the bureaucracy to demonstrate the non-existence of poverty. But they have studiously avoided accepting the challenge. That very fact is negative evidence. I am as staunch a believer in the theory of the politico-economic drain as Mr. Dadabhai Naoroji. But let us look to the practical. Of what use further engaging in this controversy? It is well-known that Mr. Dadabhai's school robustly affirms and reaffirms the "political drain" as the principal cause of the present poverty; while the official classes and those who glibly and airily echo their opinion with equal persistency deny it. But what is most essential to bear in mind at present is that India has awakened to the importance of industrial regeneration. And the question of questions is how may we diminish Indian poverty and induce prosperity in the land. We may therefore leave to time to bring about an end of the "politico-economic drain." Sooner or later the better mind and better conscience of the British Democracy will be able to remove that gigantic financial injustice which is the predominant cause of the drain. The better this Democracy is educated and the more accurately it is informed on this question it is certain to become fully alive to the economic evils which the drain has wrought on India during the last hundred years and more, say since the days of the far-sighted John Shore who openly warned his masters at home on the subject. That psychological hour will witness the cessation of the drain. But so far as the poverty, or if you please, comparative poverty, of the country arises from the insufficiency of arts, indus-

tries, manufactures, and diversity of occupation, it is essentially necessary that the present generation of educated Indians, and those coming after them, should strenuously strive to pursue commerce and industries. It is needless to bring to your mind the instance of German poverty as it prevailed prior to 1870. Was not Germany, like India, almost wholly an agricultural country? And yet survey its position to-day. What has wrought such prosperity there at present, And why is it that it is prosperous? The answer has been given *ad nauseam* by British merchants themselves. *It is German commerce based on scientific education.* Applied sciences, chemistry particularly, and the cultivation of Economics, theoretical and practical, in the sense conceived by Professor Marshall, have brought about the wonderful transformation which rejoices every true son of the Fatherland; and I wish the sons of the Motherland of India will strive to follow the magnificent example of Germany as well as of the United States. Remember that the liberal professions, followed by so many of the educated, are now overcrowded and these threaten in the future to be still more overcrowded. Situated as we are politically we are denied the privilege of serving in the army. There are, besides those of law, medicine and engineering no other professions to speak of. The avenues of career which brings wealth are so limited. Is it not plain that the pursuit of commerce and industry is the best as it will prove the most lucrative. Let me be frank. Even when Indians hold every State appointment now held by the members of the foreign bureaucracy, it will not be possible for the overwhelming majority of the educated to find government employment. Is it not obvious that educated Indians under the circumstance would do well to betake themselves largely to commercial and industrial pursuits? Enlightened self-interest as much as genuine patriotism should prompt them to follow those pursuits. It is the only royal road to diminish, if not entirely remove, the existing poverty of the land. It is the only road which

shall lead to comparative prosperity—moral and material.

#### Indian Commerce and the Ancients.

It may also be instructive to recall the fact that India traded with the nations of the West from times the most ancient. It is also on record that it had trade communications with the Far East. The rich spices of India its calicoes, its precious stones and pearls were greatly prized. The trade in these and other commodities fairly enriched the country. There are books extant in which you can read all regarding ancient Indian commerce. Your orthodox economists would teach you that it was only since the Middle Ages that the great States of the world have come to realise the enrichment of a country by trade. But this is incorrect. We may ask these what about the commerce of ancient Babylon three thousand years ago and upwards? What about the trade of Egypt? Of Persia? Of India and far distant China? Thanks to the archæological discoveries of the last quarter of a century historians and philologists have been immensely enriched by the glorious finds which the excavations of those great ancient countries have brought to the surface, and been able to revise the verdict most materially of the old type of their class who preceded them. These finds tell their unerring tale about ancient commerce and belie the dogmatic assertions of the antiquated school of economists. Of course, it may be at once admitted that the commerce of the ancients never entered into the busy domestic life of the mass of the people as modern commerce does. The art of navigation alone from the days of Columbus has enlarged the visions of States about foreign commerce. But in times ancient the sea was a great hindrance instead of help, albeit that we know how the enterprising Phœnicians scoured the Mediterranean and sailed as far as the Cassiterides (Cornwall.) Aye even before their time, according to the most recent testimony of a distinguished archæologist, one of the Pharaohs had caused a doubling of Africa from the Nile by way of the Medi-

terreanean and the Cape to the Red Sea, back to Thebes. Then we have the Carthagenians and the Romans. But these two were great sea powers from the point of view of political rather than commercial supremacy. And as to India there are the ancient geographers and travellers who have recorded their own experience to which it is superfluous to refer in this paper. But it may be generally said that the Egyptians, Babylonians, Phœnicians, Corinthians, the Greeks, the Carthagenians—all these were nations who had limited commercial enterprise in them. There were again such towns as Sidon, Tyre, Antioch, Memphis, Alexandria, Cadiz, Masillia, and Syracuse, and Colonies like those of Cyprus, Rhodes, Miletus, Corcyra and others. And who in India, it may be asked, is unacquainted with Baragya and Taprobane, the modern Broach and Ceylon which carried two thousand five hundred years ago and upward a lucrative trade in precious stones, pearls, spices and other Indian commodities.

#### The Crusades and the Dawn of Western Trade.

Of course, the epoch of the Crusades marks the dawn of western trade. Those semi-religious campaigns brought once more the West into contact with the East and opened the vista of profitable trade. The Venetians and the Florentines followed. Then came the Spanish and the Portuguese, with Pizzaro, Vasco de Gama and Columbus. Then finally look at the Dutch Colonies in the Eastern Archipelago and the East India Company which rose from a body of pure traders to be territorial magnates and rulers. You may read a most comprehensive account of the trade of India in the seventeenth and eighteenth centuries in the two bulky volumes by Mr. Milburn.

#### Science of Commerce.

Coming to commerce itself, let me detain you for a few minutes more in order to impress upon you what may be practically called the *Science of Commerce*.

Active commerce leads to theoretic formulas about markets, the laws of supply and demand and so forth. Supply means production, and production ultimately resolves itself into agriculture and manufacture. Manufactures suggest inventions. Inventions bring us to scientific research. And thus inventions become themselves a source of wealth. Demand brings us to distribution which necessarily leads to the problems of transportation by land and sea, ships, steam-boats, railways and, possibly, the aeroplanes. They in themselves are divers sources of wealth. Then wealth brings us back to the old economic problems about capital, labour and profits. These in their turn suggest problems of inter-provincial and international trade, international tariffs and international treaties, international ethics and theories of foreign and inland exchanges besides banking, insurance, trust and so forth. Again the protection of merchandise by sea brings us to the consideration of problems of mercantile cruisers, navy, contraband and maritime laws, including those of marine, insurance. Thus higher commercial education has come to signify a system which, as Mr. T. A. Stephens says, "stands in the same relation to life and calling of the manufacturer, the merchant and other men of business, as the medical schools of the Universities to that of the doctor—a system that is, which provides a scientific training in the structure and organisation of modern industry and commerce, and the general causes and criteria of prosperity. It will be noticed from the mere enumeration of the problems just mentioned and scores of others how comprehensive and exhaustive is the subject of the Science of Commerce. But so far I have spoken in general terms of supply and distribution. *Education* is the third and most vital. Says Mr. Gastrell in his book on the *Trade of the World*. "Education comprises the whole system of instruction, not only that part which forms the ordinary curriculum (elementary and secondary teaching) of every one before entering into profession or trade, but also the practical, technical and scientific education or facilities given to a man, after

passing this stage, when he joins the sacred rank of producers and distributors of a nation's wealth."

#### Germany, the Pioneer of Scientific Commercial Education.

Where then, it may be inquired did the Science of Commerce, or as Professor Ashley would put it "Business Economics," first take root and flourish with substantial classes, numerous teachers specialised, as well as general? Of course in Germany where, as that economist observes, "political economy was represented in a score of universities by a department in active, thriving operation, at a time *when no similar department could have been found anywhere in England.*" But even more than Germany it is the United States where Commercial Science on the most approved and modern principles is taught. It is much to be wished you and others would read, mark and inwardly digest the Report of the Mosley Commission to which I have already referred. Commercial Science is taught in America because every American, as soon as he is out of his college, thinks, in nine cases out of ten, to betake himself to commercial pursuits. Says Professor Ashley, after his experience at Harvard, that "the most powerful motive which led students to enter economic courses was a widespread belief that such courses would be practical benefits in their subsequent careers." Many a man said to him: "You see, I am going into business, and I think it will be a good thing to hear something about trade and industry and so on." That is the right intellectual attitude which I should very much like to see among all our Indian graduates. I repeat that the time is ripe for such a study when all throughout the country the spirit of Swadeshism is keenly awakened and when everybody at heart yearns to see the economic conditions of India vastly ameliorated.

#### "Business Economics."

Says Professor Ashley:—"The main chance for our study just now lies in the new disposition of the public to

believe that students can be given in our Universities a training definitely adopted to prepare them for a business life—a training in which economics in some form and to some extent must, it is generally allowed form a part.” “But for such a purpose,” continues the Professor, “is required a much more objective survey of the actual facts of commercial and industrial activity; and by the side of this widened political economy—a science which looks at the interest of the whole society as organised in the State—there must be created something that I may provisionally call *Business Economics* which frankly takes for its point of view the interest of the individual business man or business concern.” And it is this very point of view which I would impress on the governing authorities of our Indian Universities as greatly calculated to stimulate and support the spirit of industrialism which is now so much abroad. I am entirely in accord with the learned economist when he observes that what has to be increasingly borne in mind in connection with the Faculties of Commerce, established in some of the English Universities, is this. That if we are to give future business men a suitable training in our Universities there should be “a sustained and systematic treatment of economic questions as they present themselves to men engaged in business—a treatment which will frankly take business success as the immediate criterion for the matter in hand; though it will take care to explain again and again that considerations of business expediency no more determines the nature of the effect of certain actions *on society at large* than the rules of the art of strategy determine the benefit of military operations.”

#### Views of Professors Chapman and Ashley.

But, gentlemen, the subject is so comprehensive and at the same time of so vast importance to the future material welfare of the country at large that it requires quite a volume to dilate at length on it in all its rich details. What I have in the brief compass of this paper endeavoured to do is, firstly, to awaken the interest of our

countrymen in the study of practical economics and economic history as understood by the most scientific and distinguished economists of the West, specially of Germany and the United States, where the study is far in advance of what it is in England; and, secondly, to enlist the sympathy of the governing bodies of our Universities, to widen, in another most important and profitable direction, the scope of their teaching which in times to come is certain to revolutionise the economic condition of India in harmony with the new-spirit which is so actively rife in the country and which is taking such satisfactory strides forward. The Government itself has more than once declared of late that it is most anxious to see educated India direct its attention to channels which shall be productive of the greatest good to themselves individually and collectively, and to the country. It has already established a new department of the State which exclusively deals with almost everything appertaining to the commerce, arts and industries of India—a department which, it is to be hoped, will realise the sanguine expectations formed of it as it grows older in years and acquires that accurate knowledge and experience which are essential for its success. Apart from the institution of this Department, at the head of which we have now a most capable and open-minded Minister in the person of the Hon'ble Mr. W. L. Harvey, the Government could not do better than take another step forward in the same useful direction by endowing chairs of the Science of Commerce in our Universities and urging those seats of Higher Learning to institute Faculties of Commerce. We have now Faculties of Science and Faculties of Agriculture. Is it not time that Faculties of Commerce should be established—Faculties which are already instituted in all the great Universities founded by large commercial and manufacturing towns like Manchester, Liverpool, Leeds, Sheffield and Birmingham. Speaking at the Manchester University in November 1906, Professor Chapman, who is the Dean of the Faculty of Commerce there, remarked that ten years ago there were no



Faculties of Commerce in Great Britain, although such institutions under another name existed abroad. Of course, to-day there are many such, not mere experiments, but schools doing the utmost good to the country. "There was no more mistaken notion than to suppose that to broaden the conception of true education involved the weakening of the old fashioned literary and classical studies. All experience and all logic pointed the other way. The more modern education was widened, the more extensive became the study of the classics. The ideal of the new Faculty of Commerce as of all the other sides of the University was to encourage genuine thought about matters of public interest. There was no end to the possibility of extending University teaching—everything which created interest could be brought within the field of study." I have purposely quoted Professor Chapman in order to convince the orthodox section of the governing bodies of our Indian Universities, men who are still old fashioned and seem to think that University education is complete when the student has passed his final examination in what is called "Humanities." It cannot be that while the world of thought and science, as much of commerce and industry, is progressing that these seats of learning should stand fast by their old ideals and refuse to accept side by side newer ones which have revolutionised, and are still revolutionising the world. So to stand still is to confess their own inability to march with the march of times. Indeed that University is not worth its name which will stand fast by where it was a hundred or fifty years ago, while the world is progressing in all branches of human knowledge with the speed of the railway if not electricity. Well also has Professor Ashley said in his recent paper, that "business men complain that it is difficult to get men who can take responsibility or who can show originality, without stopping to reflect that as things are, the experience through which a young man commonly has to pass for years after he enters a business is such as to deaden any originality he may possess. It is

the part of Faculties of Commerce to contract the tendency by the vigour and suggestiveness of their intellectual discipline. I am becoming more and more convinced that a capital defect of our general economic literature is that we have not yet taken the trouble, paradoxical, as it may seem to say so, to enter into the business man's point of view. We content ourselves with a vague recognition of self-interest and competition and yet, with quite unnecessary shame-facedness, we will not look long enough and steadily enough at what these words mean in actual affairs. The consequence is that we have most elaborate treatises on the life and labour of a people which, with all their interest, often seem like clouds floating in mid air because the phenomena they describe are divorced from that which so largely creates and governs them—the policy of the *entrepreneur*. A scientific Business Economics will certainly be of the utmost service in social legislation and private philanthropy." It is impossible to deny the value of these highly thoughtful and weightily observations.

#### Government and Enlightened Private Munificence

Gentlemen, I hope I have made it quite plain to you from the foregoing remarks that this subject of the study of the Science of Commerce and Business Economics can no longer be excluded from our Universities. I have quoted the opinion of more than one eminent authority, greatly interested in and actually engaged in teaching the subject, to prove conclusively how important it is for the amelioration of the economic condition of the country that the State should become fully alive to its responsibility in this matter, and that our Universities should bestir themselves to establish the needed Faculty of Commerce. I cannot say that I have treated the subject exhaustively. Indeed that is not possible in the compass of a single paper. I have only cursorily endeavoured to present the briefest of brief outline of the subject with the object of stimulating discussion thereon, fully convinced that sooner or later the

subject must engage the attention of the University authorities. The time is ripe and the institution of the Faculty of Commerce in our different Universities can no longer be indefinitely delayed. I have advisedly refrained from entering into the practical details of organisation of the Faculty. Those could be formulated in due course when the Universities have taken the first broad step of recognising such a Faculty. Of course, situated as the Government of India is, financially, it is not possible to expect it to do much beyond establishing Professorships on a liberal scale in its various colleges. In this matter private philanthropy should substantially come to the aid of our Universities, and that in a spirit of enlightened munificence, for it need hardly be said that many lakhs will be necessary in order to place these several chairs in a state of the highest scientific efficiency. It has now been universally recognised that Higher Learning with all its branches, is best promoted by private enterprise of a most generous character. If each Indian University could find its own Owen, Rylands, Samson or Carnegie, there could be no two opinions on the beneficent effects which such munificent benefactions may produce all over the country. Meanwhile it is a matter of some satisfaction to notice the first elementary or tentative step which our Governor, Sir George Sydenham Clarke, has taken to institute a school of commerce where lectures of a scientific character on the subject might be delivered. It is a statesmanlike measure which our men of commerce and industry in the Presidency should hail with feelings of gratitude. It is a happy augury of what great good may be expected from one whose great mental grasp, administrative ability and deep sympathy with all that appertains to the better welfare of the people of this Presidency have been generally recognised.

#### Conclusion.

Gentlemen of the Graduates' Association, I have now come to the end of my parable. I began with the obser-

vation that I shall consider myself amply rewarded if this paper leads to fruitful discussion and eventually to the realisation of the proposal advocated therein, namely, the institution of a Faculty of the Science of Commerce by our University. But whether such a Faculty is or is not established, though I have a kind of presentiment that it will be established—it is to be devoutly hoped that Indians will strive to study and firmly grasp the first principles of the History of Economics and Economic Science as now understood and taught by the great Universities of Europe and the United States. I am sure that such a study will not go in vain. Indeed, in whatever sphere it may be their lot to work, when launched on the world of busy life, they will find it of the utmost practical value. In their daily life they will meet at every turn with questions which will become more or less intelligible to them in the degree that they have mastered this all embracing subject. Its utility will appeal to their mind more and more as they grow older in experience and wisdom and become better alive to their duties and responsibilities as citizens of this great country. Truly did the late Monsieur Laveley, the distinguished Belgian economist, observe that no advantage can be gained from the lessons which Geography and History offer without the aid of economic science. “At the present day it is allowed that the most important part of History is that which traces the progress of humanity in comfort and liberty. To understand this advance from prehistoric barbarism to the prodigious developments of wealth which makes our own epoch, a knowledge of economy is indispensable \* \* Need more be urged to prove the necessity of spreading economic knowledge? The greater part of the evils from which societies suffer spring from their ignorance of the subject. National rivalries, restrictions on trade, wars of tariffs, improvidence of the labouring classes, antagonism between workmen and employers, over-speculation, ill-directed charity, excessive and ill-assessed taxes, unproductive expendi-

ture on the part nations or towns are all so many causes of misery springing from economic errors." The value of these sage and practical observations it is to be earnestly hoped our countrymen will firmly bear in mind.

India has now awakened and become fully alive to her own higher destiny from all points of view, moral and material. Already important and useful organisations, which assemble during a year in every part of the country for the discussion, in a constitutional manner, of a variety of problems affecting the country's welfare, are increasing in number and force. Such orderly and well conducted organisations, are in themselves unerring signs and happy augury of that awakening. Much, of course, will depend on the efforts of these organisations, largely consisting of men of enlightenment and culture, to realise their respective aspirations. Patience, perseverance, earnestness and enthusiasm, coupled with sobriety of thought and practical wisdom are essential. But Education is the great fulcrum on which they must all rest in the first instance. As far as commerce and industry are concerned what is at present imperatively demanded is that students at our colleges should be thoroughly well grounded in that higher scientific education which is now so well recognised in the modern universities of the West. There is nothing to deter Indian Universities from following in their wake. It was Mr. Gladstone who observed that "*the work of the University as such cover the whole field of knowledge, human and divine, it must store up in its own treasure-house the spoils of every new venture in the domain of mental enterprise. It has to methodise, perpetuate and apply all existing knowledge to adopt and take up into itself every new branch.*" Remembering this perfectly sage observation as to what a University should be, remembering that India at this juncture is on the threshold of her new industrial evolution, and remembering also that her future greatness and prosperity will largely depend on the successful progress of this

new development, may we not appeal to our distinguished Vice-Chancellor, before he lays down his high and honourable office, to make the annals of our University memorable for many a generation to come by opening its portals wider and instituting such a Faculty as has been suggested to-day which in course of time shall achieve those beneficent results which have already so happily attended the great Universities of the West.

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## APPENDIX.

## NEW UNIVERSITIES. AND BUSINESS LIFE.

*From "Manchester Guardian."*

10th September 1908.

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## PROFESSOR ASHLEY.

The Economic Science Section was engaged for several hours in September last, in connection with the British Association with a discussion upon instruction in universities as a preparation for commerce and business life.

Professor W. J. Ashley, Dean of the Faculty of Commerce of the University of Birmingham, said that few things were more remarkable than the growth of new universities during the last two or three decades, and the association of these universities with great centres of commercial and industrial life. A university should aim at training men for all the activities of modern life. In these matters they were met with a strong feeling in academic quarters that distinctly utilitarian discipline and study were not suitable for a university, that the true idea of a university was not to fit a man so much for any particular avocation as to give a general mental culture. The fundamental weakness of that idea was that so long as universities retained that view the great bulk of the middle classes would keep away from universities altogether.—(Hear, hear.) He was greatly struck in America by the intimate relations between the great universities and the whole life of the community. That did not exist until recently in England. If the new universities were to succeed the university idea would have to be got into the mind of every strata of society. The only way in which that

could be done was by providing training which, on the face of it, might even seem to be obtrusively utilitarian. More attention would have to be paid by teachers and business men to the character of the study and discipline in the commercial department of the university.

Dealing with the policy adopted in Birmingham with regard to commercial training, Professor Ashley explained that the course of studies, including commercial law and other branches, aimed at developing powers of commercial judgment. What was wanted was more patience and more systematic study of actual industrial and commercial conditions. Further they wanted to feel their way towards something which he might call business phenomena. In some of the Continental universities there was a difficulty in getting teaching for a man going in, say, for engineering which would not take too much of his time and would not be too scientific, and that was the meaning of the movement in Germany for great technological schools. If he might with all modesty give a little advice as to what was to be done in Ireland, if they were going to establish commercial education and try to effect something, he would advise them not to begin too cheaply or too meanly. Let them put the thing on a footing of dignity parallel with other departments of the university, or let them not do it at all.

They could not, Professor Ashley continued, prescribe any university course which would guarantee to produce men of business ability. They could not begin by promising employment to their graduates, nor could they at first induce business men to employ men simply because they were university graduates. He held that the political economy of to-day was more human than in former years, taking a wider view of economic motives and placing them in a truer relation to the whole of human life. Economic studies properly conducted would not only help in training efficient men of business, but should also help in promoting social peace by means of mutual understanding between different classes.



## PROFESSOR CHAPMAN.

## THE MANCHESTER FACULTY OF COMMERCE.

Professor Chapman, Dean of the Faculty of Commerce in the Manchester University, described the work of Manchester Faculty. The new university teaching for commercial life was, he said, a "going" thing. It was bound to grow, and the only question was whether it would grow quickly or slowly. For years to come there would be naturally a great deal of doubt about the value of faculties of commerce. The movement had come about largely owing to the growth of the new universities. When new universities were established in large commercial centres like Birmingham or Manchester it was found that there was a strong outside demand for the universities to do a great deal for the district. The university on its side began to realise that it could extend its interest over a much wider sphere than had been open to it in its old environment. It was a mistake to suppose that this new teaching meant the substitution of narrow technical education for the wider literary education. The new universities were probably more alive to the dangers of a purely technical education than the old universities were, because they were more closely in contact with the danger. Generally speaking, they had avoided it. The new education must be regarded as an extension of the basis upon which a liberal education could be founded. They were bringing new activities within the ken of university men. It was possible now to study scientifically matters which it was not possible to study scientifically in the past. The Manchester Faculty of Commerce was founded five years ago. It was kept in close contact with the business life of the country by means of an advisory council of business men. The studies were divided into two classes—(1) the technique of business, (2) the scientific treatment of the facts of business life. The second was all important.

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# STRAY THOUGHTS

## ON THE

### STUDY OF ECONOMICS.

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*Lecture delivered by Mr. D. E. Wacha at Fergusson  
College, March 31, 1906.*

#### INTRODUCTION.

GENTLEMEN—,

Standing before you to-day I cannot help recalling to my mind that happy time when like you I was a student at College and equipping myself for the duties and responsibilities awaiting that active life which springs at the heel of the academic. It also reminds me of the debt of life-long gratitude which I owe to my professors for the training I received at their hands and for the bent they gave to my youthful mind. It is superfluous to state that that training has had its most beneficent influence on me through all these years of my busy life. If I momentarily refer to it in this place it is not without reason. It is the fashion of the day to denounce the teaching at our Indian Colleges as being unpractical and not qualifying those attending them for the daily business of life. But experience tells me that such a denunciation is almost wholly unfounded. I am of opinion that the broad and solid foundation which is laid for the student by all the great seats of Higher Learning, mediæval or modern, be they in Europe or India, in the so-called unchanging East or the ever-whirling West, is of the highest practical value in his daily life. It enables him to analyse the complex phenomena which he witnesses all around him—political and social, intellectual and moral, commercial and industrial,—better every way than he who has had not the benefit of University education. It enables him to reduce to first principles

those phenomena, and thoroughly comprehend their true significance. It may be that all have not equal opportunities in life. But, given those opportunities, it would be rash to deny that your practical man with his collegiate culture is every way better qualified to judge of the phenomena referred to than the one who unfortunately has not. Of course, as in every other human action so in this, there are exceptions to this general rule.

#### **Backwardness of Indian Universities in Economics.**

Taking, however, the phenomena as they present themselves to our view, it will be readily perceived that underlying them all is economics in the larger and broader sense of the term. The study of economics, therefore, is of paramount importance. It is, however, a matter of regret that Indian Universities and Colleges are extremely backward in the teaching of this great subject which dominates, if closely searched, all human action and pervades the whole domain of human ethics. Indeed economics and ethics go side by side. They are inseparable. As Monsieur Lavelye has properly observed: "the good, the end of ethics, and the useful, the end of political economy, without being confounded, are inseparable, for the pursuit of the good is always favourable to the production of the useful." But the object of this paper is not to inflict on you any abstract essay on political economy and ethics. On the contrary, my purpose is purely practical. So that without pretending to lay claim as a trained or scientific economist, I wish to draw your particular attention to the study of economic questions whether they be on agriculture and labour, on the distribution of products, on their market prices and the rise and fall in them, on exchange of commodities which go by the familiar terms of imports and exports, on currency, its appreciation and depreciation, on banking, insurance in all its branches, on freight, communication and navigation, and many other topics which enter into the daily life of a commercial, industrial or agricultural people. On all these

and cognate questions, Indians are far behind. Though thousands follow industrial and commercial pursuits, those who could comprehend their respective mechanism, analyse the component elements and resolve them into their fundamental parts, are few and far between. It is here that the greatest deficiency is to be noticed.

#### **Deficiency of Economics among Indian Publicists.**

Take up any leading magazine or newspaper edited by an Indian. How rarely you will see treated there the several economic questions which have been just referred to. From time to time public organisations, like the European Chambers of Commerce, or the Imperial Government issue papers treating on these subjects. But how many are there among our publicists who are trained in economics and, therefore, able to follow the facts or the reasoning or both which may be embodied therein and offer well-informed and intelligent criticism thereon? Indeed just now there is the Imperial Budget for the current official year. The introduction by the Finance Minister is as usual replete with interesting information about a dozen and more economic problems with which that official has to grapple. But the monographs oftener than not abound in economic fallacies also. How many of our Indian publicists intelligently follow the annual budget and endeavour to offer enlightened criticism thereon, and expose the fallacies underlying the Ministerial statements or his figures?

#### **Some striking Instances of absence of Economic Criticism.**

Twelve years ago the Government closed the mints against the coinage of private silver, and, later on, decreed that the Rupee shall be divorced from its bullion value, thereby depreciating it at a stroke, and inflicting the greatest injury on the possessors of silver, the producers and the manufacturers. But how many were the Indians, who, in the first place, clearly comprehended the significance of that currency revolution, and how many, having comprehended it, were able to

discuss the matter in a critical spirit in the public prints? The mischief was perpetrated; but for want of the necessary grasp of the first principles of currency, very few indeed, a handful alone, were able to enter an emphatic protest against or submit memorials on the ill-conceived and mischievous measure? Was there even a hundredth part of that persistent agitation which is prevailing in Bengal these many months past on the partition question? No doubt the agitation is perfectly justifiable and there is not a word to be said about it. But contrast the energy, the persistence, and the perseverance with which it is carried on with the almost total want of energy, persistence, and perseverance which was displayed on the question of the closure of the mints. Were the reasons urged by the Government of the day for its justification critically examined? Can it be averred even by the most ardent and patriotic gentlemen of Bengal that the incalculable injury which that measure entailed on the whole country is at all comparable to the hardship entailed by the ill advised partition? The partition affects only 7 out of 23 crores of the population of British India; but the closure of the mints and the economic revolution which disastrously followed in its train affected all the 23 crores. Now, if, at the time that this revolution took place, had there been amongst the Indians in each province a band of qualified persons, well versed in currency, is there the least doubt that a strong and most well founded agitation could have been legitimately carried on with, perhaps, a change in the policy of the Imperial Government? Low exchange was the ostensible reason assigned for the closure; and next, the redundancy of rupees. But the first reason was disproved, when the cotton duties came to be imposed in 1894, by only one public organisation in the country. It was demonstrated to the hilt that it was the extravagant military expenditure, and not exchange, which had been the fundamental cause of the financial embarrassments of the Government. It was also proved that even with exchange at thirteen pence, combined with the growing military expenditure, the Government

could have met in rupees its sterling obligations. It was also proved by statistics that the cry of the Services for exchange compensation, on the ground of the costliness of family remittances in sterling, was hollow; for gold had so far appreciated as to increase its purchasing power. This ability to buy a larger number of commodities with fewer counters was fully pointed out. It was demonstrated to conclusion how the families of Civil Servants, Military Officers, and others in Government employ, were able to buy in England all articles of domestic consumption, specially wheat, tea, sugar and so on, at a cheaper price which was computed to be 40 per cent. below that which prevailed before. It is notorious how oppressive at first was this burden of the exchange compensation on the tax-payer of this country. Though its weight is diminished at present by reason of the improvement in the value of silver, it still entails on the Indian finances a needless burden of 50 to 75 lakhs per annum which might be profitably employed on irrigation and education which are yet miserably starved.

Then, as to the other plea, namely, the redundancy of the Rupee coinage, it had had to be acknowledged by Sir Edward Law in his budget statement of 1902 that it was unproven. Under the so-called pretext of redundancy no fresh coinage of Rupees to any material extent was taken on hand by the Indian Government, for seven years, say, from 1893 to 1900; but in the last named year 13.27 crore of Rupees were coined, owing to the clamour, perfectly justifiable, raised by the banking and trading communities, European and Indian alike, against the exceedingly artificial stringency of the current coins wrought by the measure of 26th June 1893. Sir Edward was constrained to acknowledge the hollowness of the original plea of redundancy which was urged for the closing of the mints. And now in the budget for 1906-07, published last week, the Finance Minister frankly informs the public that 50.98 crore of Rupees have been coined since 1900-01. Not only the fact disproves the theory of redundancy but tells us that for

the growing wants of the population and the expanding commerce and industries of the country it is necessary to coin 7 to 8 crore of Rupees per annum. But, it may be observed in passing, that it is not only the Indian Government which tardily found its error in refraining from the coinage of Rupees in order to give greater effect, as it fondly imagined, to the circulation of gold in the country. The Government of Germany was similarly compelled to submit to the economic necessity, persistently ignored by it since 1873, when it demonetised silver, of coining millions of thalers in 1899, and continuing to do so from year to year to meet the larger wants of the country.

These two striking illustrations ought to suffice to demonstrate my point, namely, how grievously the Indian Government had erred in closing the mints against the private coinage of silver and how disastrous its effects had been on the producers and manufacturers. And though the greater appreciation of silver has considerably diminished the mischief, it would be inaccurate to say that it has completely disappeared. But notwithstanding the fact that the country has been slowly recovering from those effects, it cannot be denied that during the process of adjustment which necessarily followed the currency revolution, heavy losses had been suffered by thousands of private individuals. To my mind it is clear that had there been at the time in the Indian organs of public opinion a volume of well-informed and well-reasoned criticism on the fatal currency policy of the Indian Government, the mischief might have been greatly averted. The people suffered because of the want of that necessary knowledge which was required to bring sufficient influence on the deliberations of Government to abandon or modify its currency policy.

#### **Sugar Legislation.**

After the two illustrations just given it might be considered superfluous to place before you any more; but the recent Budget gives a fresh instance which

irresistibly impels me that I should animadvert on it. The Finance Minister has discoursed on the extremely disappointing results of the legislation on the sugar duties. Those duties, as some of you may be aware, were in their nature "countervailing," that is to say, they were imposed in order to counteract the supposed adverse influence of cheaper foreign sugar on prices of home-made sugar. Seven years' operation of those duties has now convinced the present Finance Minister that "the practical results have been of the most slender description." This is virtually an acknowledgment of the dismal failure of the sugar legislation originated by Lord Curzon. On this piece of legislation, too, I cannot help remarking there was to be noticed a sad want of accurate grasp of the economics of the sugar trade and of the knowledge of the condition of the indigenous industry. It was not surprising if it emboldened the Government of India to rush the Bill through the Viceregal Legislative Council, and at the same time make a brave show before the public that it was going to help the revival of a great native industry which was dying or decaying. Only one far-sighted non-official Indian member in that Council raised his strident voice against the plea urged for the imposition of the duties, but, of course, it was a voice in the wilderness. The voice was no other than that of the versatile Sir P. M. Mehta. But outside the Council Hall, so far as my knowledge extends, the Indians of light and leading who were able to expose thoroughly the hollowness of the pleas urged by Government, and the utter futility of the revival of the country industry or of the worthlessness of the protective legislation, could be counted on one's fingers. Worse still was that lamentable spectacle of gross ignorance of the subject displayed by almost all the leading organs of Indian public opinion. Wholly unaware of the facts in connexion with the steady decline of the country sugar industry and the trend of the Mauritius trade, which for years together was principally instrumental in killing it inch by inch during half a century, there was an exultation



that an economic saviour had come in the person of Lord Curzon to revive the industries of the land! So in their blind ignorance they shouted applause and fully supported the legislation, utterly unconscious that in so doing they were in no way helping the home industry but actually assisting the powerful and interested agitation of a small colony of Mauritius sugar monopolists, backed up by the might of the Colonial Minister, no other than Mr. Joseph Chamberlain. It was the Mauritius sugar planters who had been greatly alarmed at the giant strides made in the exports to India of beet sugar by Austria and Germany. These saw in that economic phenomenon the injury to their own trade. The Colonial Minister was, therefore, appealed to to exert his potential influence on the Secretary of State for India in order to kill the new competition and continue to secure to them the undivided monopoly of the Indian sugar trade. The Indian Government was then presided over by Lord Elgin as Viceroy and Governor-General. A solid Freetrader, he immediately set about inquiring into the facts and ascertaining how far the Austrian and German sugar was competing with the indigenous product. The investigation placed it beyond doubt that there was no competition whatever. On the contrary, there was a healthy demand for a larger consumption which there was no need whatever to interfere with. So the Despatch went home declining to arrest the imports of the Continental sugar. But Lord Elgin was soon succeeded by Lord Curzon who belonged to Mr. Chamberlain's party whose policy of late years, it is notorious, is to promote the interests of the classes at the expense of the masses. And lo! the very first important piece of fiscal legislation which was passed within four months of Lord Curzon's arrival in the country was this one on the countervailing sugar duties! Lord Curzon meekly obeyed the Chamberlain Mandate, and in the bargain threw dust in the public eyes by pretending to say he was supporting the indigenous sugar industry against the unhealthy competition of the Continentals when he was really

backing up the Mauritians. What his predecessor after mature investigation had stoutly resisted to do, was, under his own Viceroyalty, an accomplished fact. But the bitter truth began to dawn on the Indian mind some months later when at last the Indian publicists saw through the hollowness of the whole affair, notably after the publication of the Blue Book on the subject. Too late in the day they sat on the stool of repentance and covered themselves with ashes. The mischief was done.

#### Official Accusation as to Ignorant Criticism.

From the three illustrations—striking illustrations—given above, it will be plain to you all how vastly important is it for the educated classes of India to be thoroughly conversant with statistics and economics and to be fully competent to scent from afar the mischief, sometimes of an irreparable character, which might flow from fiscal legislation of the nature pointed out. It is also important to refute the official accusation now laid at the door of the educated classes and their trusted organs of opinion that they are incapable of offering sound and well-informed criticism on economic subjects, of vital interests to the country at large. It is not surprising that at present this great deficiency among our countrymen is taken advantage of by the governing authorities who pose in the country as so many intallible popes on matters fiscal. In no respect is the armoury of Indian agitation so feeble as in economics. The authorities consider Indian opinion thereon as negligible, and boldly go forward in placing such legislation as they please on the fiscal statute-book. If Indians are to be true to themselves, they ought to arrest betimes this growing tendency on the part of the Government by thoroughly educating themselves on all economic topics vitally affecting their interests and offering enlightened and well reasoned criticism on fiscal matters whenever brought on the legislative anvil or promulgated by executive edicts. There cannot be any

doubt that the logic of facts and reasoning must ultimately prevail and prevent mischievous fiscal legislation.

### Our Paramount Duty.

It will be asked at this stage what may be the proper means to bring about so desirable an object. The query is pertinent and brings me to the main object of the paper. After all, you, who are the students of to-day, will be the citizens of to-morrow. In your post-graduate career each one of you will, of course, betake yourself to such pursuit,—professional, industrial, mercantile, or any other—as may best suit your mental and social environments. More or less most of you, if not all, will remain absorbed in the career which you may choose for your life, soon after you have graduated at the University. But to whatever line you may betake yourself, you are to remember that you have duties and responsibilities to discharge. You doff your academic gown in order to don the *toga virilis* which reminds you that you are a citizen of the State first, and every thing else, afterwards. In a country situated as India, with an alien Government, it is your paramount duty to assist the administration so as to enable it to render greater good to its people. This is a duty which you should never forget. It is one which you owe to the land of your birth as much as to the State. To ignore it is to commit a dereliction of that duty.

### Need of "Intellectual Interest."

Under the circumstances it should be part of your post-graduate career to gain practical knowledge of the affairs of State. With the aid of the liberal education received at your College you ought to be able to take an "intellectual interest" not only in the particular avocation you may be engaged but in all acts of the State, so far as possible. This interest, however, I am sorry to say, is greatly neglected. Indifference to it becomes the parent of evil from which we suffer and

afterwards complain. This intellectual interest should, therefore, be sedulously cultivated. One may display that interest in his own line and another in his. But each ought to be able to enlist his sympathy in the special subject before him for the time. Unless there is laid that solid foundation at the college, for the exercise of such intellectual interest it may not be practicable to achieve that good in active life to which I have just referred.

#### **Universities should stimulate the Study of Economics.**

I am, therefore, strongly of conviction that the study of economics, which is paramount all over the civilised world, should be better fostered and stimulated at various centres of Higher Learning in India than has been the case hitherto. Those responsible for the training and culture of the scholars attending the colleges ought to deem it their duty to inspire students with enthusiasm on this subject and dispel those prejudices which still seem to prevail, even in civilised West about the "dismal science." For such instruction the most competent men are needed, men who could expound both the theory and practice of economics. The promoters of your self-supporting college, which has produced such distinguished men as Messrs. Gokhale and Paranjpye, besides many others, should aim at the acquisition of such a specialist. I admit that for the fulfilment of the object a large expenditure is essential; but the Board should strenuously strive to attain it if the youth of the Deccan are to be grounded in economics in order to be better able in the future to enter on the great industrial struggle which alone must prove the material salvation of the country.

#### **The Ideal to be Pursued.**

My own ideal is to secure the services of one who was well versed in economics and has had some practical experience besides of a merchant or a banker. He should be qualified enough to expound the mechanism of money and exchange, the intricacies of banking and

currency, the significance of imports and exports and of the balance of trade, the true meaning of debtor and creditor country, the puzzles of fire and marine insurance, the practical working of life insurance and endowments and old age pensions, of railway and sea freight, of canal irrigation and navigation, of trusts and monopolies, of harbours and docks, of tolls and octroi, of municipalisation of gas, water-works, tramways, and other great civic works, commercial value of science as applied to industries and manufactures, of mining, of patents and inventions, in short of all those matters which enter into the daily economy of every civilised and well-organised society. It is, of course, an ideal. But it is an ideal for which your college should strenuously strive, so as to be able eventually to secure an expert of the qualifications suggested. You could at least lay the foundation on which in after years might be reared the edifice which shall be a permanent memorial of your practical sagacity. You could then really take a deep and abiding interest in the study of economics than which, in my opinion, there is not a more fascinating and instructive science in the whole domain of human knowledge. Step by step alone it is needful to attain that end. But, I repeat, with all the emphasis which my own conviction prompts me, that it is this ideal which all Indian Colleges should persistently endeavour to hold before them. For it is through the practice of this ideal alone that we will be able to revolutionise side by side with capital, enterprise, and high technological instruction the industrial and commercial spirit of India on the lines of the strenuous West and reach the destined goal. Capital may come, enterprise and public spirit may be there; but unless you have men also who will grasp the true meaning of practical economics a great deal of energy and resources are certain to be wasted. To pursue highly scientific industries and manufactures you must first produce the material. But the material of the right sort will never be forthcoming till our Universities and Colleges rise equal to the occasion and realise the glori-

ous gains which generations yet unborn or now growing into manhood may garner. We can only sow the seed. But it was time the seed was sown and allowed to germinate as fully and freely as may be compatible with our existing conditions and circumstances.

#### Recent National Awakening.

Of late, a great deal has been said and written all over the Indian Continent on the importance of promoting Swadeshism. We have all awakened ourselves to discover that in point of industries and manufactures which are the essentials of the prosperity of a people in any part of the world, we are a century behind the more persevering, active and utilitarian nations of the West. We have read and noticed how even among the latter there were some who thirty years ago were far behind in the industrial race, but who have advanced to-day and gone ahead in some respects of their neighbours. Take the instance of Germany alone: Consider what its economic situation was in 1870, soon after the date of the Franco—Prussian war. Consider what its population then was and what it is to-day. What strides, again, have the Germans made in industries, aided by science and arts, and how in certain trades they have left even Great Britain behind. Take the industry of coal products alone—those products from which the practical man of science has been able to educe the alizarine and aniline dyes of the world's commerce. Ask yourself the reason why Germany has been able to cripple almost the old English trade in those artificial colours which were before exported of the value of over 4½ millions sterling. Ask why the British men of trades and industries are sore at German competition in India. Why is there such a prejudice to commodities stamped with the the words "made in Germany"? Or go to Belgium and enquire how is it that as far as steel is concerned it has outstripped Great Britain in production and shot ahead of its exports of that commodity to India? The answer to all these queries is plain. It is the practical application of

science which has advanced the industrial progress of a country like Germany which only a generation ago was known to be extremely poor. Take, again, the case of Italy whose economic conditions only a few short years since were in many respects identical with those of your own. What is it, ask again, which has wrought such a material improvement in the industrial condition of Italy? Study the industrial history, again, of the United States. Ask what is it that has led to the enormous exports of merchandise abroad, after retaining all that was necessary for home consumption, whereby each unit of the population there is credited to-day with 17.87 dollars per annum against 10.83 dollars a generation ago; why is it that the consumption at home of cotton alone has gone up from 14.10lbs. *per capita* in 1871 to 25.28 lbs. last year, not to say aught of wheat, corn and meat, and other articles? How is it that on cotton goods a capital of 457 million dollars was available against 219 millions a quarter of a century ago? Or to go a step still further, to impress on you the colossal progress of manufactures and industries in that country, inquire, why is it that in 1900 the total capital invested in these was 9,846 millions dollars against 2,790 millions in 1880! Look again at the growth in the number of wage earners alone in these manufactures, namely 53 millions against 27 millions. And what was the value of the materials used in their manufactures? 7,360 millions dollars against 3,396! Go to Japan and inquire again of the vast growth that country of the Farther East has displayed in industries and manufactures during a generation? There is, I venture to say, only one answer to these several queries. It is the application of science to the practical arts of life. Go deep into the root of the matter and you must irresistibly discover that nowhere has there been any royal road to the material prosperity of a country. Economic education, capital and science have worked wonders. Science, economics, and capital, have been in happy and active co-ordination in the Western world for a hundred years past. The invention of steam, of

course, led the way and the rest followed. Thus India must strive to attain the same harmonious co-ordination. The road which has led to such material success in the West, undreamt of in the philosophy of the centuries previous to the Nineteenth, must be its road also. There is no other. Swadeshism can only find its happy culmination when these three fundamental essentials are in active force side by side. But I need not further dwell on the importance of the subject. In this paper I deliberately confine myself to the study of economics which you could safely pursue in the leisure hours of your own home and try to be fairly conversant with it so as to be able to impart it to others, and thus in a way endeavour to discharge your duty as citizens. Your united labours in the field of economics ought to prove invaluable as times progresses. Do not think that the leisure, however small, bestowed on the study of it will be wasted or misspent. On the contrary, I am sure the more you delve deeper into the mine the richer will be your possession which by-and-bye will be of the highest value to your country. As I stated at the outset economics pervade the whole domain of human activity. It may sound a platitude to say so. It may be said that there is nothing new in this utterance. I fully admit it. I lay no claim to originality. All the same I feel that at this juncture in our onward progress in matters industrial a repetition of the common-place is indispensable. It is essential that this study ought to be emphasised and popularised. Without such study there is no hope of improving yourselves materially and educating that prosperity which is the happy lot of the Western people and even of Japan.

#### **Present Industrial Situation.**

I repeat India suffers at present from a variety of causes. Leaving the political reasons alone, I may say that it also suffers because of that want of advancement in practical arts and sciences which is the privilege of the most prominent industrial nations. In this respect



it is behind them by a century at least. We have to make up that time as best we may. To still further lag behind would be to render irreparable injury to ourselves. We can no longer delay it. At present there is not a single factory where you can make a decent boiler or engine, and yet without this prime mover it is hopeless that you can make any material progress in any important and remunerative branch of industry. The century is the century of steam and electricity. You have now in the country as many as two hundred factories for the manufacture of cotton goods; but will any one inform me that even one of these concerns can boast of a good boiler or an engine which has been completely made in India? Can any one aver that a single spinning frame or a power-loom has yet been constructed in the country which is at work! We are talking of the sugar industry. But have we been able to make ourselves any of those scientific appliances which are so needful for the refining of the raw product? Is there an up-to-date refining factory in the whole country—Swadeshi so to say from top to bottom—to which we can point with pride? Even Java, which is a Dutch colony and supposed to be inferior in many respects, therefore, to British civilisation, has outstripped us. It has been exporting to this country for the last two years and more a quantity of refined sugar at which even Mauritius has taken alarm and well it may, seeing that Java has poured in this saccharine product in two years which Mauritius has taken at least forty to do by constant nursing and by the indispensable assistance of Indian coolies. Take again the iron industry. But for the patriotic enterprise of the late Mr. Tata, so faithfully continued by his good sons, an enterprise which is still at the stage of initial activity, even here you might have still been without a beginning. So with scores of other industries demanding the aid of chemistry, electricity and steam. When you calmly survey the whole industrial field now existing, consider the many native raw products which are still exported abroad to return to a larger or smaller extent back to this country by way of manufactured commodi-

ties, oils and leather for example, and come finally to take a measure of your deficiencies, you are sure to discover at once the gaping chasm between you and the industrial West—a tremendous space which you will have to travel before you could be said to be in a line with it or able to enter on a most successful competitor, other things being equal. But it goes without saying that for such a survey you have to study economics. You may have by-and-bye many industries, many scientific appliances, many other things which contribute towards your industrial regeneration. But even when these are forthcoming you can never do without economics. I deem its study fundamental—a preliminary to all other progress. If you are really to discharge your duty as citizens and patriots you should make yourselves conversant with it for two purposes; firstly, to help those who with the aid of the specific knowledge you could impart may be pursuing commerce and industries; and, secondly you will assist the country generally in acquiring a sounder knowledge of its wants and requirements. Indirectly, you would by your sound criticism prevent the State from introducing into the country fiscal changes which may be highly prejudicial to its interests.

#### **Economics and Legislation.**

But in this matter, as in every other, division of labour is essential. Some of you, when you have left your *alma mater*, will be inclined to become practical farmers. In that case what could be better to acquire side by side with your farming experience, a knowledge of agricultural economics, the conditions of soil, how to improve it by manure, how to sow seeds, how to nurture them and cultivate; in short all those matters which taken together may eventually contribute to the production of two blades of corn or more where now grows one. You have to seek far and wide for this scientific knowledge of agriculture for all practical purposes. You may try to collect all information touching high farming.

from the West. For it is only by an application of such knowledge to the practical that you could ever hope to improve the soil. Improvement of soil in reality means increased products which in turn signify greater wealth. More, the very fact of your being engaged in agricultural pursuit ought to make you fairly acquainted with the land legislation of the country. A knowledge of it would enable you to discover how far such legislation is harmful or advantageous. If harmful, you will be further able to point out to the State with your acquired knowledge in agriculture how the injury could be removed. Here economics will eventually enter into the domain of legislation, that is politics. But the great experts in economic science teach you that politics have an important influence on economics. Good laws are beneficial to human economy, of which agriculture is the greatest, as bad laws are mischievous. It will be thus seen how much economics have to do with legislation. Hence it is that Mon. Lavelye has further observed in his great work that "almost all the economic questions that come under discussion are questions of legislation."

#### **Progress is the Law of Life.**

But I now return to my original point. Whether you wish to become a well-informed and practical agriculturist or farmer, intent on increasing the product of your soil, or whether you propose to pursue the avocation of the banker, the merchant, the manufacturer, the trader, or one of the professions, or even become a Mamlatdar, a Deputy Collector or a Subordinate Judge, in whatever walk of life you wish to be, it is necessary that you take an "intellectual interest" in your work as Lord Goschen has admirably said. It is superfluous for me to point out to you the vast difference that lies between doing our work in a routine or mechanical manner and in an intellectual way. It is only when that spirit of intellectual interest is kept alive that progress and prosperity are possible. Progress is the law of life, as

as much as stagnation is its negation. In this age of intense utilitarianism, supported by science, it is hopeless to expect that this country could progress satisfactorily in the way we are all so anxious to see till each educated unit of the land takes intellectual interest in his specific work. The policy of drift or *laissez faire* which unfortunately has hitherto been the great bane of our people will not do. Swadeshism ought not to tolerate it.

I have only given agriculture as an instance of what might be done in other walks of life, say, in banking, in currency, in cotton and woollen manufactures, in sugar refining, in mining industries, and in a hundred other avocations, which to-day demand incessant attention and ceaseless energy for final success. Here, too, now and again the legislature has to be appealed to. The justice of many a question will have to be solved by the study of equity and their utility by the study of statistical and historical facts.

#### Lord Goschen and Sir Robert Griffen.

In short you should each and all carry your study of economics at college into practical life and become thoroughly conversant with one branch of it or another, according to the bent of your mind, so as to become a useful citizen. One of you may become a banker. In that case you should add to your practice of banking the latest and most scientific theories on that complex but highly fascinating subject. To-morrow, the State may introduce some new ordinances on banking. It may legislate for currency and its circulation. If you are a practical banker and in your post-graduate life have kept yourself *au courant*, as I have just stated, with all the latest to be learned in banking and currency, you might be able to form an opinion on such State legislation and offer your sound criticism thereon. Suppose that a dozen men in each province thus offer criticism, how valuable it would be! How the country might be able to discern the real issue, what may be mischievous

and what advantageous, and set on foot if need be, its agitation thereon. The opinions thus elicited could not be considered ill-informed or ill-founded. On the contrary, they would command attention and respect. Even if the agitation fail, the country would be educated, and what a valuable aid such education would be in the armoury of the public. Indeed the potentialities of the course suggested, as I conceive, are so many and so numerous, that I cannot do better than impress on you all their importance with all the nerve and verve I have in me. Indeed I am the more emboldened to do so when I have as authority such a distinguished and eminent economist as Lord Goschen. I do not know whether any of you have read his collections of essays and addresses on Economic questions lately published. I have been a great admirer and follower of that peer and Ex-Chancellor of the Exchequer for many a year as I am of Sir Robert Giffen whose essays too, on trade and finance, I should strongly advise each and every one of you to study. Nowhere will you be able to derive a better practical knowledge of economics in all its ramifications than in the pages of these two classic publications. In this paper all that I have essayed is exhortation. I have exhorted you to take serious interest in the study of economics with which ethics is indissolubly bound up.

#### Concluding Remarks.

But I have refrained from even entering into their abstract principles as understood by the higher and complex civilisation of the day and as interpreted by living learned economists of the highest repute. I will, therefore, conclude this fragmentary paper, for it professes to be nothing more than a collection of stray thoughts strung together, by quoting the words of Lord Goschen himself: "It would be a national disaster if the sober, but surely not dismal science should be permanently discredited. If it has been banished, as has been said, to a distant planet, let it now be recalled, if not to take up its old position of unquestioned sovereign-

ty—the monopoly of authority—yet, at all events, let it be recalled to a wise counsellor of the ethical school.” In India, immeasurably backward as we all are in a full and fair knowledge of the science of the economy of human life, nothing is more imperatively needed at present than specialists of the qualifications suggested for each important College and University, and next, the institution of Economic Associations with able secretaries well versed in practical economic topics to be able to deliver lectures from time to time and gather round in each province of the empire by-and-bye a band of the most ardent, earnest, and enthusiastic young men who, when fully trained in and equipped with economic lore, should, in their turn, be the great missionaries for the dissemination of the science among their less instructed countrymen. Side by side with the lectures there should also be started journals, of modest pretensions, in which the best thoughts of the most distinguished practical economists of the world should be published and discussed, specially in reference to some of the most difficult and complicated problems of Indian economics. Thus, we might be able to awaken a keen interest in the rising graduates of our various Universities, and form the nucleus of a band of trained Indian economists. He will indeed be no mean benefactor of his Presidency or Province who can make a good beginning in this direction, when the national sense is aroused to the possibilities and potentialities of that great industrial revolution which awaits the country during the Twentieth century. A high duty will thus rest upon Associations of the character just suggested. It will be their task “to assert” (in the words of Lord Goschen) for economics their true position in this country, “to show that economics are not non-ethical but ethical, to curb the rush of the impatient and the gush of the emotionalist, to expose the quackeries of impostors,” and continue to be engaged in the most noble, scientific, economic work which may be possible. With these words I bring my stray thoughts to a close, in the earnest hope that in your own post-graduate life you will

continue your intellectual energies unabated in the practical manner suggested, and that you will toil onward and onward fast in the mine of economic knowledge so as to bring to the surface gems richer than those which shine in royal crowns for the benefit of your country and your countrymen.

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# STATISTICAL AND ECONOMIC STUDY AMONG INDIANS.

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BY MR. D. E. WACHA.

*(A reprint from the "Gujarati" of 30th October 1910.)*

The reproach has not infrequently been laid at the door of Indians of light and leading that they are sadly deficient in statistical and economic knowledge, and, therefore, hardly helpful to their less enlightened countrymen, in the first instance, and, secondly, to the State on all important matters relating to Indian fiscal and economic problems. It must be ruefully acknowledged that the reproach is as well-founded as it is just. Whenever such questions happen to be before the public for serious consideration, Indian criticism thereon, be it in the council chamber or in the press or on the public platform, is known to be more or less superficial and inadequately informed. Some of our open minded unbiassed, and far-sighted countrymen have themselves admitted this lamentable lack of economic and statistical knowledge. Of course, it would be unjust to say that there are not scattered over the country some, to be counted on one's fingers, who, being excellently conversant with it, are able to offer public criticism which is heard with respect and attention. But those are exceptions only who emphasise the general verdict. It was high time, however, that with the vast strides which Indians have made in many a direction, specially in the direction of broader and deeper spread of education, they would seriously strive to wipe off the reproach as to their lamentable lack of statistical and economic knowledge.



It is not the aim and object of this paper to dilate even briefly on the importance and value of statistics and economics. Indeed, at this time of the day, with all India awakened to the desirability of a thorough industrial regeneration on sound and sober lines, it would be a work of supererogation to expatiate on the obvious benefits arising from a careful study of those branches of knowledge which have been so well recognised all the world over and have so vastly stimulated its utilitarian spirit during the past half a century and more.

As far as statistics are concerned, it may be sufficient if at this stage we invite the attention of Indians to one crystallised observation of Professor Marshall, the greatest living British authority on statistical and economic subjects of almost every day interest. He observes that "statistics are the straw out of which economists have to make the bricks." The statistician is the great purveyor who supplies the economist with the facts on which to build sound and sure his economic postulates and economic arguments, apart from fresh hypotheses and corrected or new theories. The economist mainly treats of phenomena relating to groups of facts, each group being a watertight compartment by itself. But he has to go to the statistician for his fundamental materials. Well does Mr. Bowley, the well-known statistician, say, that the economist "is dealing with national economy with volume of trade, for instance, or the purchasing power of money. He is limited to pure theory till statistics as the science of great numbers has produced the facts." Or let us take a case nearer home. There is the important question of high prices of food and commodities. We are all aware of the variety of theses put forward to account for the rise, but hitherto hardly any Indian economist has at first hand collated those facts on which to found a sound and reliable deduction. A variety of facts, grouped together, are fundamentally essential for the purpose. So far as our knowledge extends only one individual, Mr. Atkinson, of the Indian Civil Service, accountant-general of the United Provinces has taken the

trouble, with an amount of industry and ability which elicit our admiration, to collect together group after group of facts and discourse on the causes of the prevailing high prices. We would refer the reader to his exceedingly interesting disquisition in the pages of the Journal of the Royal Statistical Society for October 1908. He will learn there how in the first instance facts should be collected, facts irrefragible and facts indubitable, and, next, how they should be scientifically sifted and analysed, eliminating exceptional factors; and how on the resulting investigation the theory of high prices should be built. Anyhow that valuable paper will inform Indians what may be the statistical method they should employ when investigating economic phenomena.

After the observations of the two eminent experts just referred to, it is hardly necessary to dwell any longer on the abstract side of statistics. Let us come to the practical which is the principal object of this contribution. It is often asked how statistics should be studied. Now the question, which is natural, may be very easily answered. There is no royal road to any kind of learning. The student thirsting for the acquisition of any branch of human knowledge must be prepared for a long journey to reach the ultimate goal. The path is chalked out for him. There is but one path, and he must follow it. The road may be long. It may be even difficult. But it is not one which by patience, perseverance, and endurance, could not be traversed. The student embarking on statistical studies must in the first instance possess the three qualities just referred to. Impatience and want of that necessary diligence and energy which are required for the purpose will never do. Next he must possess a strong will and a force of character to accomplish what he is keen on undertaking. Mere spasmodic or desultory study in such a matter is worse than useless. As in every other branch of learning, so in this, whatever has to be studied must be studied to perfection so as to gain a complete mastery over it. Mere smattering will be of no avail.

Unfortunately, we have found from experience that many a young student has a kind of instinctive aversion to the study of statistics. It is such a dry subject, at least he so conjures in his mind, that he almost wholly shrinks from it. Now that is an attitude which no student should try to adopt. Every study at its commencement is difficult. All subjects do not, of course, appeal to us with equal interest. Some would affect history and biography, and some mathematics. The former fancy the study of the latter as equivalent to the trouble of climbing the Alps or the Himalaya. It is nothing of the kind. Of course, there is a Rubicon in the path which has to be crossed. There is what the mathematicians call "*pons asinorum*." But he who has sufficient patience and perseverance, and sufficient zeal and intellectual interest, will, as he begins to travel the road, find out that it is not so insurmountable as first imagined. Similarly, in the study of statistics, however it may appear dry, if not appalling at first, it will be found to be easy enough as one becomes pretty familiar with it. However dry as dust it may at first sight and on a superficial glance, appear in reality it is the most fascinating of subjects. Not only is it fascinating but extremely instructive and full of the highest human interest. It is besides thoroughly utilitarian. There is not a single domain of our modern human activity which does not call for a study of statistics. Is it in relation to our own life, birth, marriage and death? Is it in reference to our infantile, adult and old age conditions? Is it in respect of our ordinary hygiene? Is it in reference to our education, our schools, and colleges? Is it in reference to our citizenship, our self-government, our ship of state? Is it in reference to our keen struggle for existence in a variety of ways, agriculture, arts, crafts, larger industries and manufactures? Is it in reference to those very complex modern institutions of banking, currency, foreign exchanges, marine insurance, freight, navigation and so on? Indeed in all these and numberless other matters which contribute to our daily existence, the value of

statistical study is absolutely indispensable. The capitalist has as much need of statistics as the wage-earner. The employer and the employed, the merchant and the banker, the trader and the manufacturer, the physician and the astronomer, the chemist and the electrician, the politician and the statesman, the man of letters and the metaphysician, the evolutionist and the sociologist, the embryologist and the psychologist, each and all and others besides, even the genus—"the man in the street"—all have need in these days of enlightenment and progress, to know something of statistics. They all have to rely on it to educate themselves and get others educated.

Thus it will be perceived how all embracing is the science of statistics and how far-reaching its influence on our every day human activity. There can be no question of its glorious gains to humanity. What treasures, richer than gold or diamonds, does it offer to those who would work its inexhaustible mine? What marvels it discloses, sometimes almost astonishing and beyond our wildest imagination! And yet, sad to say, its study has been almost wholly neglected. But it is of no use lamenting over our deficiency in this respect in the past. What is past is irrevocable. Let us calmly survey the present and the future. Let us take a new departure, and with seriousness and alacrity begin a new page. We ought no longer to neglect this all-fascinating, all-enduring, and exceedingly human study. To continue to neglect it will in reality be to sacrifice our own moral and material progress. It is not to be supposed that every one should possess a complete knowledge of statistics. It can not be that each person who annually passes out of the portals of our colleges and universities, with his hall-mark, should pursue the study in his post-graduate life. Like every other study of modern sciences, there should be a few persons who could specialise it. In other words if only a fraction of the most educated in each Presidency and Province were to betake themselves to it

as a special subject, we think, speaking modestly, we might witness in a few short years a great change for the better in the current of Indian thought, and feel the influence thereof in the press, in the council chamber, and on many a public platform. In this way we are sure we could wipe off the reproach which is presently laid, not unjustly, we repeat, at our door.

Now it may be observed that as far as the study of statistics from a practical point of view is concerned, there is to be found to-day quite a plethora of excellent literature, permanent and periodical, which has gone on accumulating with marvellous rapidity during the last fifty years. In Great Britain none has made the statistical study more popular and interesting than the late Sir Robert Giffen, that prince of statisticians. The Government itself has been vastly profited by the statistical department he inaugurated at the Board of Trade thirty years ago. His untiring interest and great ability and industry in this respect may also be noticed in those two admirable volumes called "Essays on Finance," edited by him which we should strongly commend to all Indian students. He was also a pillar of the Royal Statistical Society for many a year. Indeed that Society itself has laid not only Great Britain but the civilised world at large under a deep debt of gratitude by its continued efforts in accumulating a vast store of statistical knowledge on the most scientific basis. There is not the least doubt that it is the foremost institution of its kind in the world for the dissemination of statistics of an all-embracing character. It has a record of its own incessant labours, thanks to a long succession of the ablest experts of whom it is most proud. Numerous and weighty indeed have been the voluminous papers written and read before that Society by those distinguished statisticians whose names are familiar to Europe and the West. The quarterly journals of that most useful Society, published during the last fifty years, offer a rich mine of information to those who would care to quarry in it.

Similarly, societies having the same or kindred object, have long since been established on the European continent and in the United States. These, too, have rendered and are rendering excellent service and enriching the world by their statistical information and research. To us it is a matter of profound regret that here in India we have not a single society of this character. If there be any country where the need of such an institution may be really said to be a crying want, it is India. Even the Government itself was far behind the most backward Governments of the West till late. But in all fairness, it must be acknowledged that since the institution of a separate department of statistics and its recent reorganisation on a wider basis, the Indian Government has greatly made up for its past backwardness. Considerable progress has been made and improvements effected in the numerous statistical publications which are annually issued from the Government of India's Statistical Department. These publications are available to the public at a nominal price. Those are amply sufficient for a careful study by any student desirous of accumulating statistical knowledge and qualifying himself by and by as a fair expert, or at any rate a well-informed and accurate publicist.

Practically then, there is no lack of material or resources for the prosecution of this branch of knowledge, and it is much to be wished that *pari passu* with the awakening of India on all matters affecting her interests, the study of statistics will no longer be neglected. As we have said before, it was high time that the reproach hurled at us in this respect was soon wiped off.

Coming to economics we need not discourse on the importance and advantage of its comprehensive study. Neither at this time of the day is it at all necessary to lay any stress on the subject. Economics in many respects goes hand in hand with statistics. Speaking from the practical point of view it.

may be observed that from the days of Adam Smith to our own, the study of economic topics has been fully recognised and insisted upon. It forms the curriculum in every college and university throughout the world. There is quite an Ossa of economic literature of a varied and instructive character. Our modern economists have brought it upto date and vie with each other in propounding the newer problems which the Utilitarianism of our times has brought to the surface. International trade, international politics, international labour, and other leagues, newer methods of communication, especially railways, unknown to the generation of economists a hundred years ago and more, the telegraphs, the telephones, the Suez Canal itself, and a number of modern economic phenomena have led economists to ponder on them and expound their own respective theses. Those have undoubtedly broadened in a vast degree our economic vision, and since Lavelye, the great Belgian economist, has observed that economics enter minutely into the every day life of our common humanity, it should form the equipment of every educated and enlightened unit of our community. Unfortunately, in this respect, too, Indians are far behind, though our colleges and universities teach the science in its elementary phases. The reproach in this matter is even more pronounced, and well it may. For just look what kind of indifferent criticism is offered whenever large fiscal and economic questions come to the fore. Not to go too far, take the last Financial Statement which wrought some alterations in taxation. How many even in the Viceregal Legislative Council were able to discuss the changes, with accurate information and a firm grasp of economic principles? And how many outside the Council hall had any illuminating and educating criticism to offer? What was the sum and substance of the observations in the columns of our leading organs of Indian public opinion? Not that some well-informed and trenchant criticism did not appear. We

should be doing a great injustice to those who in and out of the Council endeavoured to offer some well-reasoned and sober criticism on the crude alterations made in the existing taxation. But those who thus criticised were quite a handful. How many were able, again, to criticise the policy of gigantic railway borrowings with the alarmingly large increase in the annual interest charge? How many probed to the bottom the details of gross railway earnings and working expenses and pointed out the flaws? Indeed how many were there to go minutely into the question of Indian railway finance as a whole to demonstrate that one principal reason of deficits in recent times was this depressing railway finance of the Government of India. To us it is a matter of the greatest disappointment, nay despair, that this devouring monster of railway finance which unseen commits the greatest ravages in our annual revenues, was hardly touched at all. Then take that octopus of military expenditure. True it is that some pertinent though superficial observations were offered, but there was hardly any serious attempt at tomahawking it in the right surgical way. Then take the enhanced silver duty. Even here no educated opinion, based on currency, was offered. Is it a wonder that the governing authorities had an easy time of it, and that they laughed in their sleeves at the incompetence of a large majority of Indians to deal with the question in the way it ought to have been dealt? Take again, the question of gold reserve? Who spoke with any deep knowledge of that economic phantasia of the Indian Government—a reserve built up at the expense of the tax-payers of India for the support of a selfish and shrieking microscopic minority of foreign traders? Letting alone these grave questions of public finance and currency as well their ethics, there is that burning question of the economic drain. Has there been noticed a single effectual criticism on this controversy on which so many, from the most exalted official to the latest imported greenhorn of yesterday, blissfully



ignorant of the very A B C of the problem, talk so glibly and airily? But how may it be controverted without a firm grasp of the economics involved in the controversy? Thus, it will be perceived in how many important directions the almost total lack of economic knowledge handicaps and disables the very best of us from answering the superficialists who talk fallaciously about the drain both here and in England. This then is the measure of the depth of our own neglect and ineptitude. What we mean to say here is that there is no lack of enlightened Indians who with sufficient economic grasp could prove to the hilt the reality of the economic drain. Only they have not studied the subject as it ought to be to enable them to clinch many a superficial and plausible fallacy in which officials, high and low, including the Secretary of State, indulge, and in the bargain unfairly reprobate our countrymen *as if the fact of the drain itself*, let alone its causes, *was not an absolute fact*. But it is of no use entering here on this controversy. We have only endeavoured to give an instance of that lack of economic knowledge which prevents Indians from treating economic phenomena in the only true and right way they should be treated, with a firm grasp of the first principles, and at the same time to hurl back the reprobation in the face of the reprobaters.

What is wanted for a careful study of economics is a school for the purpose in every prominent capital of the empire. It is something that Swadeshism has aroused a faint interest in this study. Now, we are glad that what our excellent Viceroy calls "honest Swadeshism" had been slowly making its head in the country. Stripped of all exaggerations by its advocates, at the best precious little yet has been done in a practical way, though we recognise the fact that our industrialism cannot be built up in a day. It requires nursing. It requires first a broad and solid foundation whereon to raise the needed superstructure. No doubt a good deal of water has flowed under the

Hooghly and the Ganges, the Indus and the Jamna, the Nerbudda and the Taptee, the Godavery and the Krishna, since India unfurled the standard of Swadeshism and held it aloft in the land, but it must be ruefully observed that very little or no progress has yet been made with the proper study of Economics which is essential to promote that Swadeshism for all practical purposes. Who will deny that for the future well-being of our national prosperity the study of economics is of priceless value? Is it not our paramount duty to wake up in this respect, if we are to succeed in the keen competitive race now going forward in the world in arts and industries, manufactures and commerce, in fact in all matters which contribute to the larger production of wealth? The universal recognition and keen prosecution of economic studies in all the civilised countries of the West is, we need not say, the most gratifying feature of our busy age and the most hopeful sign of the better welfare of the human race in the future. We earnestly put it to our countrymen whether they are to stand aside while the human race is progressing? Are they ever to be hewers of wood and drawers of water, or are they to take their proper place in the rank of the great nations of the world and work out their own better economic destiny? There can be only one answer to this question. Indians to a man are awake and eager for their own economic salvation. Are they, then, going in the right direction? If they are, is it not apparent that side by side with their practical energy, shrewdness, enterprise and resources, whatever they may be, they ought to shake off their lethargy and awake to the imperative necessity of becoming experts in economic knowledge. Here, too, as in the case of satistical studies, all that is wanted is that we should have from time to time among us a class of able experts who would devote their whole time and attention to the practical study of economics and enlighten their less educated brethren. Is it hopeless to get a dozen experts in each province? Is it

hopeless to form societies for the creation of such a class of desirable specialists? We think it is not a hopeless task. The first step is for the formation of an Economic school, on the model of the London School of Economics. Each such school should have a first rate specialist, not only a theorist, but a practical person, to ground and train our young men in this important study. As in other matters so in this, self-help is everything. Indians need not rely on the State to do all that could be achieved unaided by themselves. Of course, the State should reasonably come to their assistance. It could do a great deal by stimulating the spirit of economic studies in our colleges and universities. It can found chairs of Economics and endow professorships and prizes. So far we think the State can come to our aid. But beyond this aid, it is needful that we should do the rest, and, we repeat, the best and most practical way is to found one Economic school in each provincial capital of the empire. It should be a school for post-graduates who may have determined to get themselves well qualified as specialists in this branch of knowledge. Thus there would be established a nucleus of institutions which later on will spread their branches all over the country. It is the only way in which the subject in its practical aspects, can be accomplished. Each school ought to have a competent professor, one who specially understands the needs of India on all economic matters and can give a series of well-thought-out lectures which shall be at once interesting and instructive for business economics.

Thus by the establishment of schools for the prosecution of both statistical and economic studies, Indians will have taken the first essential step towards the realisation of all their hopes and aspirations for a regenerated industrial India. The subject has only been treated here in a skeleton form in order to stimulate public spirit and enable the discerning people to make a modest beginning. It should be discussed in all its broader and practical aspects by our Conferences and

Congresses so that some united action and active co-operation may follow. The rest may be left to time. Great projects of national welfare require great efforts and sacrifices at first ; but when those efforts have been successfully accomplished and the needed sacrifices are cheerfully undergone, the future task may well be left to posterity. We Indians of the present generation will have amply discharged our duty when we have laid down the bricks for a solid foundation which Time in its onward course will crown with a noble edifice beautiful to behold and admire. So let us be the humble pioneers in this great task of the economic regeneration of our country. The times are favourable, the spirit of true Swadeshism is in the air. Let us be up and doing, and leave foot-prints on the sands of Time which those coming after us may safely tread and lead on the nation to its ultimate economic goal.

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