Province.	Class of Board.	Total number of Members.	By Qualification.		By Employment.		By Race.	
			Nominated	Elected.	Officials.	Non-Officials.	Europeans, &c.	Natives.
Madras*	District	654	377	277	226	428	118	536
	Local	1,141	1,141	—	317	824	65	1,076
Bombay	District	503	277	226	139	374	78	425
	Local	2,984	1,642	1,342	661	2,323	122	2,862
Bengal	District	790	481	309	253	537	197	593
	Local	1,248	778	469	154	1,094	105	1,143
N.-W. Provinces	District	1,561	377	1,284	266	1,295	56	1,505
Punjab	District	1335.	863	472	245	1,090	89	1,246
	Local	1,584	595	989	89	1,496	11	1,573
Central Provinces	District	1,132	241	891	109	1,023	17	1,115
Assam†	District	371	224	147	61	310	130	241
Berar	District	128	32	96	16	112	5	123
	Local	306	105	201	24	282	—	306
India	District	6,474	2,772	3,702	1,305	5,169	690	5,784
	Local	7,263	4,262	3,001	1,245	6,018	303	6,960

* Excluding Unions † Figures for 1890-91.

Municipalities.

Forty years ago Municipal administration was confined to the three Presidency towns. The local affairs of every large town are now managed by its Municipality, the majority of the members of which are elected by the townspeople. The following table exhibits the growth of the elective system between 1882 and 1892:.*—

Province.	Total Members of Municipalities		Nominated.		Elected.		Official.		Non-Official.		European, &c.		Natives.	
	1881-82.	1891-92.	1881-82.	1891-92.	1881-82.	1891-92.	1881-82.	1891-92.	1881-82.	1891-92.	1881-82.	1891-91.	1881-82.	1891-92.
Madras . .	804	906	650	409	69	497	355	216	449	690	289	169	515	737
Bombay .	2,590	2,493	1,839	1,529	48	964	919	708	1,671	1,785	407	222	2,183	2,271
Bengal .	2,372	2,208	1,814	1,004	85	1,204	621	387	1,751	1,821	543	218	1,829	1,990
N.-W. Provinces & Oudh	1,460	1,555	328	319	694	1,236	477	287	983	1,268	347	156	1,113	1,399
Punjab . .	2,171	1,656	1,497	851	28	805	692	314	1,479	1,342	400	125	1,771	1,531
Central Provinces	640	634	8	193	397	441	239	157	401	477	139	51	501	583
Assam . .	100	126	70	75	—	51	47	50	53	76	37	25	63	101
Lower Burma	97	321	65	210	—	111	43	84	54	237	52	74	45	247
Berar . .	97	128	60	38	—	90	50	36	47	92	37	17	60	111
Coorg . .	49	53	32	45	—	8	17	17	32	36	7	6	42	47
TOTAL .	10,380	10,080	6,363	4,673	1,321	5,407	3,460	2,256	6,920	7,824	2,258	1,063	8,102	9,017

* "Statement exhibiting the Moral and Material Progress and Condition of India," 1891-92 p. 94.

There were in 1892 all over India 755 municipalities, with a population within municipal limits of 15,742,581 and a revenue of Rs. 33,955,940.

The Indian Councils.

The Indian Councils Act of 1892, though it did not come up to the expectations of the Indian National Congress was unquestionably an important step towards the growth of the elective system in India. It carried the principle of representation in Indian administration, though in a tentative and therefore imperfect form, from the local to the imperial stage. The Legislative Council of the Governor General has been "expanded by four additional members to be nominated under rules framed by him, with the approval of the Secretary of State, with a certain latitude of interpellation. To a considerable extent, the representative principle has been recognised in respect to the nominations both to the Council of the Governor General and to those of the Councils of Madras, Bombay, Bengal, and the North-West Provinces. The large municipalities, for instance, groups of Local Boards, Chambers of Commerce, Senates of the Universities, and wherever such classes exist, bodies of influential landholders, or others of undoubted rank, whose interests are fairly homogeneous and are bound up with those of a considerable portion of the rural population, all these can be called upon to elect the representative whom they respectively propose for nomination. In the case of the remaining seats, which, so far as the non-official members are concerned, are the minority, the rules provide for the nomination of such persons as the Local

Governments think will best represent the views of branches of the community not possessing sufficient power of combination to recommend a man of their own choice."*

The introduction of the elective principle into local as well as the imperial administration, in its present restricted and experimental form, is evidently a step towards an end. What that end is to be cannot even be guessed now. But, in this connection it would be interesting to read the following passage from the writings of one of the most thoughtful of Englishmen that India has ever seen :—

"This class [the English-educated] is at present[1838] a small minority, but it is continually receiving accretions from the youth who are brought up at the different English seminaries. It will in time become the majority ; and it will then be necessary to modify the political institutions to suit the increased intelligence of the people, and their capacity for self-government. The change will thus be peaceably and gradually effected : there will be no struggle, no mutual exasperation ; the natives will have independence, after first learning how to make a good use of it : we shall exchange profitable subjects for still more profitable allies. The present administrative connection benefits families, but a strict commercial union between the first manufacturing and the first producing country in the world, would be a solid foundation of strength and prosperity to our whole nation."

* "Statement exhibiting the Moral and Material Progress and Condition of India, 1891-92." p. 68.

"From being obstinate enemies, the Britons soon became attached and confiding friends; and they made more strenuous efforts to retain the Romans, than their ancestors had done to resist their invasion. It will be a shame to us if, with our greatly superior advantages, we also do not make our premature departure be dreaded as a calamity. It must not be said in after ages, that the "groans of the Britons" were elicited by the breaking up of the Roman empire; and the groans of the Indians by the continued existence of the British."*

Individuality as a developmental force in modern Hindu literature.

The underlying principle of the democratic movement of modern Europe is the sense of individuality, which, instilled into the Hindu mind under English influence, has greatly influenced Hindu literature. Among the Hindus, the individual has ever been more or less merged in the community. There has never been any restriction upon thought; and while civilization was progressive, the Hindus displayed considerable individuality in their literature and science. But, with the decay of civilization, Hindu thought practically restricted to the Bráhman caste, began to run in a narrow groove. Since the fourteenth century some of the great writers, like the great reformers, have shown much originality and independence of thought. The very fact that they wrote in the vernaculars which the learned steeped in

* Trevelyan "Education of the people of India," (1838) pp. 194-197.

Sanskrit lore heartily despised, shows that they could think for themselves. But scarcely any of them ever went beyond Hindu mythology either for their subjects or for their conceptions of character; and none of them ever attempted to be rid of the fetters of rhyme. Rámа, Krishna, Siva or his consort, Umá, with the legends which had gathered round their names in the course of centuries are the principal figures in their compositions. Between the thirteenth and eighteenth centuries Hindu thought scarcely ever ventured beyond the well-beaten tracks of religion and morality. There were numerous writers both in Sanskrit and vernaculars. But either commentary on some ancient philosophical or religious work, or poem on some mythological subject was the goal of their literary labour. The following list of works of a rather prolific writer who lived in Bengal about 1830 will convey some idea of the nature of their writings :*—

"1. A commentary on the *Chhandomanjari,* a treatise on prosody, so framed as to express the praises of Krishna.

2. A commentary on *Santi Sataka,* a work on abstraction from the world.

3. *Sadachara Nirnaya* a compilation from the laws on the Vaishnava ritual, containing 140 leaves or 280 pages in prose and verse.

4. *Dhatu Dipa,* a metrical explanation of Sanskrit roots in the order of the ten conjugations, containing 500 slokas.

5. *Annadika Kosha,* a metrical dictionary of works comprising the Unadi postfixes in two parts, of which one contains words having more meanings than one, and the other words of only one meaning, 300 slokas.

* Adam's "Reports on Vernacular Education" edited by J. Long Calcutta (1886) pp. 187-189.

6. *Rogarnava Tarini,* a compilation from various medical works on the treatment of disease, containing 174 leaves or 348 pages, part being in verse, extending to 6,000 slokas.

7. *Arishta Nirupana,* a description of the various signs or symptoms of approaching death, a compilation in verse of 400 slokas, contained in 14 leaves or 28 pages.

8. *Sarira Vivritti,* a treatise on the progress of gestation and on the seats in the human body of the various humours, &c., in prose and verse, comprised in 22 leaves or 44 pages.

9. *Lekha Darpana,* on letter writing, principally in prose, 15 leaves or 30 pages

10. *Dwaita Siddhanta Dipika,* a defence of the distinction between the human and divine spirits in opposition to pantheism, contained in 71 leaves or 142 pages.

11. *Hariharastotra,* the praises of Vishnu and Siva, in nine slokas, so composed that every sloka has two senses:—of which one is applicable to Vishnu and the other to Siva.

12. *Siva Sarmadastotra,* 8 slokas, containing a double sense, one expressing the praises of Siva and the other some different meaning.

13. A commentary on the preceding.

14. *Yamakavinoda,* 8 slokas, containing the praises of Krishna, written in a species of alliteration by repetition of the same sounds.

15. A commentary on the preceding.

16. *Bhavanuprasa,* eight slokas, containing the praises of Krishna, in a species of alliteration.

17. *Antaslapika,* four slokas, in question and answer so framed that the answer to one in question contains the answers to all the questions in the same sloka.

18. *Radha Krishnastotra,* eight slokas, containing the praises of Radha and Krishna, and so framed that they may read either backward or forward.

19. A commentary on the above, consisting of two leaves or four pages.

20. A specimen of *Alata Chakra Bandha,* two slokas, so framed that each sloka contains materials for sixty-four slokas by the transposition of each letter in succession from the beginning to the end,—first the

thirty-two syllables from left to right, and afterwards the thirty-two from right to left.

21. *Sansaya Satani,* a commentary on the Bhagavat Purana now in progress of composition.

22. A commentary on Yama Shatpadi, which contains the praises of Narayana by Yama.

23. *Stavakadamba,* seventy-six slokas, containing the praises of Saraswati, Ganga, Yamuna, Nityanand, Chaitanya, Vrindavana, Krishna, and Radhika.

24. *Govindarupamriti,* forty-one slokas, containing a description of the qualities of Krishna.

25. *Krishna Keli Suddhaka,* four hundred slokas, on the loves of Radha and Krishna, principally occupied with the period extending from the jealousy of Radha to her reconciliation with Krishna

26. A commentary on the above, of thirty-seven leaves or seventy-four pages.

27. *Govinda Mahodaya,* 800 slokas, containing the history of Radha's eight female friends or attendants.

28. *Govinda Charita,* 350 slokas, containing the lamentation of Radha on account of her separation from Krishna.

29. *Bhakta Mala,* 5,000 slokas, explanatory of the different forms in which Krishna has been propitious to his votaries, translated from Hindi into Sanskrit.

30. *Durjana Mihira Kalanala,* a defence of the doctrine of the Vaishnavas.

31. *Bhakta Lilamrita,* a compilation from the eighteen Puranas of every thing relating to Krishna.

32. *Parakiya Mata Khandana,* an attempt to establish that the milk-women of Vrindavana with whom Krishna disported were his own wives, and not those of the milkmen of that place.

33. A commentary on Kavi Chandra's praise of Hara and Gauri (Siva and Parvati), consisting of 10 leaves or 20 pages.

34. *Desika Nirnaya,* a compilation on the qualifications of a spiritual guide and on the tests by which one should be selected.

35. A commentary on Srutyadhyaya, one of the books of the Bhagavata Purana on the history of Radha and Krishna, consisting of 22 leaves or 44 pages.

36. *Krishnavilasa*, 109 slokas, on the amours of Krishna. The preceding works are written in Sanskrit; the following chiefly in Bengalee, viz,

37. *Rama Rasayana*, the history of Rama, written on 889 leaves or 1,778 pages, containing 30,000 slokas.

38. *Patra Prakasa*, 8 leaves or 16 pages, on letter writing, the example in Sanskrit and the explanation in Bengalee."

There is undoubtedly good deal of originality in the commentaries such as those of Sáyanácháryya or Raghunáth. Throughout the Mahomedan period there were at such places as Benares and Nadiyá great Sanskrit scholars with keen intellects. But the intellect was usually exercised, it might almost be said in many cases wasted, upon barren though subtle disputations about knotty points of law, logic or metaphysics.

The sense of individuality fostered by the English environment has been a fruitful source of important changes. In religion, it first created a somewhat chaotic confusion, but later on led to rationalistic Hinduism; in social polity, it has diminished the stringency of caste rules. But its effect upon literature has been far more remarkable than upon religion or society. The Hindu cannot break through his social bonds without exposing himself to penalties which cannot always be regarded lightly. But there are no such restrictions upon independence of thought in literature. Educated Hindus who hold aloof from reforms which would subject them to the penalties of excommunication, have no hesitation to exhibit their individuality in literature. Vernacular literature in all parts of India has made rapid strides towards progress within the last fifty years; and that

this progress is attributable to English influence is inferable from the fact, that the progress is greatest where English education has spread most, and least where it is most backward. Purely vernacular or purely Sanskrit education has done little for the improvement of vernacular literature. In the North-Western Province and in the Bombay Presidency, the educational policy of Government was for a long time to encourage vernacular education almost exclusively in the former, and mainly in the latter. In Bengal, on the other hand, the policy has been, at least from 1835, to encourage English education; and Bengali literature has grown to be much richer than either Hindi or Máráthi, though before the establishment of the British rule the Hindi literature was far superior to, and the Máráthi literature by no means inferior to the Bengali literature. The most eminent writers in vernacular literatures within the last fifty years have all been English-educated men.

CHAPTER III.

INFLUENCE OF ENGLISH INDUSTRIALISM.

Industrial condition of England and of India about the middle of the eighteenth century.

About the beginning of the last century, the civilisation of England cannot be said, on the whole, to have been superior at least decidedly, to that of India. This is true not only with regard to spiritual and intellectual development, but also with regard to the outer forms of civilisation, the comforts and conveniences of civilised life. Even in her manufactures, England had not yet exhibited any signs of that supremacy which she now enjoys. Her roads were no better than those of India. Traffic was generally impossible during the winter months as it was in India during the rains. The food of London had mostly to be carried on pack horses. In the country, the fields were not drained, and intermittent fevers caused sad havoc among the rural population of England as of India. Epidemics were frequent in both the countries. The cities of England were not

less full of filth, than those of India. Calicoes had long been exported from India before they could be manufactured in England. English cloth had to be sent to Holland to be bleached or dyed, while dyeing was a flourishing industry in India. The silk-trade of England had to be protected in 1765 by the exclusion of the French silk from English markets. The English were indebted for the finer varieties of linen to Germany and Belgium, while India manufactured muslins of such exquisite fineness, that a piece could be made, fifteen yards wide, weighing only 900 grains. England imported nearly two thirds of the iron and much of the salt, earthen ware &c. used by her. Until 1774, the weaving of a fabric composed entirely of cotton was considered penal in England. Cotton manufactures were largely imported from India; in the seventeen years ending 1808-1809, their annual average was £1,539,478.* It was only towards the close of the eighteenth century that the spinning wheel was introduced into England.

Industrial expansion of England in the beginning of this century.

But England made rapid strides towards Industrial progress while India remained stationary. In 1769, James Watt got his patent "for a method of lessening the consumption of steam and fuel in fire-engine," and in 1787, Mr. Cartwright invented the power-loom. The cotton manufacture of England grew with wonderful rapidity. About the middle of the eighteenth century her export of cotton manufactures

* See Vol. I. p. LXXV.

amounted only to £45,000. In 1833, the amount was no less than £46,000,000. In 1830, the first railway was constructed between Liverpool and Manchester; seven years later, the first line of telegraph was constructed; and the Atlantic was crossed by steamers about the same time.

Effect of the expansion upon Indian industries.

While England was being modernised—if we can so express ourselves—India remained in the old-world condition. She was too far from Europe to feel the quickening impulse of progress which transformed that continent; and centuries of slow evolution had given the social structure of the Hindus a rigidity which unfitted it for the ready reception of a sudden impulse. The caste system had long restricted industrial occupations to low illiterate castes. The higher classes looked down upon such occupations. In the Manu Samhitá, one of the most ancient and authoritative of the Hindu codes of Law, such respectable people as physicians, goldsmiths, carpenters, vocalists, tailors, blacksmiths and dyers are classed with regard to the purity of food prepared by them, with perjurers, thieves, and adulteresses.* In a community where industries were held in such low estimation, it was not to be expected that their improvement would all of a sudden engage the attention of the only classes which could effect it. And the marvellous quickness and suddenness of the

* Manu, IV. 84, 210-16.

Industrial Revolution did not give the Hindus any time to adapt themselves to the new order of things. English manufactures poured in, like an avalanche, and swept the indigenous industries before them. The day of manual skill, in which the Hindu artisans excelled, was over. Hand-made manufactures could no longer compete with machine-made manufactures. Hindu artisans had neither the time nor the education to assimilate the mechanical skill of modern Europe. It was not to be expected that illiterate weavers, or illiterate dyers, or illiterate miners would apply the scientific methods of modern industries to their occupations. If India had her own way, she would probably have protected her industries, as England had protected hers in the eighteenth century, and as most civilized countries protect theirs at the present day. But India could not have her own way; and a protective tariff was not to be thought of.

Thus the first effect of the industrial expansion of England in the beginning of the present century was the ruin of the artisan population of India. The introduction of the power loom caused great distress among the weavers of England. They invoked the help of Parliament. "They begged to be sent to Canada. They proposed that the terrible power-loom should be restrained by law; and when that was denied them, they rose in their despair and lawlessly overthrew the machines which were devouring the bread of their children."* But, the distress of the English weavers was

* "The 19th century" By R. Mackenzie (1892) p. 72.

only temporary. They soon had a share in the wealth created by the expansion of the cotton industry. It was not till the middle of the present century* that the mechanical skill of modern Europe was transported to India by enterprising Englishmen: and the mills and factories on modern methods started by them found employment for a portion of the artisans who were thrown out of work by the importation of the English manufactures. But, the number of such mills and factories, even after nearly half a century of growth, is comparatively very small; and the greater portion of the displaced artisans have been thrown upon agriculture for subsistence. Besides, the foreign proprietors of the mills and factories not being settled in the country their profits instead of benefiting the Indian community only swell the annual drain to Europe.

Recent growth of industrial enterprise and technical education.

Thus the immediate effect of the growth of English industrialism was to reduce the artisan class of India, to the condition of agricultural labourers, at least to a very great exent; and as the former have a more cultivated intellect than the latter, this was certainly a step backward in the intellectual movement of the Indian community. But, the mills and factories started by the English in India have served as models of what English enterprise and modern science can do: and modern industrialism has been penetrating, though very

* The first cotton mill in India is believed to be the Bowrea mill near Calcutta which was started in 1817. But it stood alone until 1851, when the first mill was started in western India at Broach.

slowly, into Hindu society. Within the last twenty years many new industries conducted entirely by Indian agency on modern methods have been started by the Hindus.* Technical education has also, as we shall presently see, made some progress within that period, though the progress is very small. The aversion of the upper classes for industrial occupations is gradually disappearing. Members of the highest caste are beginning to engage in industries such as tanning, oil-pressing, soap-making &c. which have hitherto been confined to the lowest castes. The Victoria Jubilee Technical Institute of Bombay was attended in 1893 by 119 students of whom no less than 70 were Bráhmans. Hindu society is adapting itself gradually to its new environment.

Difficulties of industrial progress.

The progress, however, is very slow. It is only this year that the first railway line† due to purely Indian enterprise has been opened. In their competetion with the British, the advantages which the Indians have of a low standard of living and of local knowledge are more than counterbalanced by the disadvantages of want of capital and want of mechanical and scientific knowledge. There is such a superfluity of capital in Great Britain that it seeks investment in enterprises offering no higher return than that of 4 or 5 per cent. In India, on the other hand, capital is so scarce, that double this rate

* See Book IV, chapters III and IV.

† Between Tárakesvar and Magrá in Bengal, a distance of 31 miles. The line is narrow-gauge.

of interest is hardly sufficient to attract its investment in enterprises of a risky nature. The competition of a community, the average income of whose members is not more than £ 2 with one the average income of whose members is not less than £ 33, in undertakings one of the essential conditions of the success of which is large capital is indeed very difficult. Besides, the physical environment of the Briton has favoured the development of industrial qualities, whereas the physical environment of the Hindu has favoured the development of quietism. The fact that the education which the Hindus have hitherto received is of a literary character also explains to a great extent their want of industrial enterprise. They can not very well develop the resources of their country before they know what those resources are, and how they can be developed. They have not had the necessary training.

Technical education.

The subject of technical education has however, during the last decade attracted some attention. There are some whose idea of technical education does not soar beyond such handicrafts as carpentry, tailoring, &c. Others there are who want art-work. A third class, more aspiring, wishes for the large manufacturing industries. Not a little confusion is frequently caused by jumbling all these up. It behoves us, therefore, to see what it is that the country more particularly requires. We are disposed to think there is not much room for expansion at present in the petty industries, such as carpentry, tailoring, shoemaking, &c. It is not the

making up of cloth or leather, but the manufacture of cloth or leather that is more particularly wanted in this country. Few people are in a position to use made up clothes at all, far less clothes of fine cut or nice fit, or boots and shoes of approved shape and fashionable make. Of furniture of any kind there is but little demand. Our wants in these directions are extremely limited; and they are, we think, well enough supplied at present. Besides, such technical training as is needed for the handicrafts could, we believe, be best obtained at the existing shops. Whatever field there is for enterprise in them is being occupied. It is necessary to bear this in mind in order to understand the relative importance of the different grades of technical education which we notice below.

Industrial schools.

The first school of Industry in India was established at Jabalpur in 1837 for the benefit of the Thugs and their children. In 1850, Dr. Hunter, a Surgeon in the East India Company's service at Madras, founded, at his own cost, a school of fine arts; and in the following year, be founded a school of industry for "improving the manufacture of various articles of domestic and daily use." Both of these schools were taken over by Government in 1855.

A number of industrial schools has, sprung up of late in different parts of the country, in which trades such as those of the carpenter and the blacksmith are taught. There were twentysix such schools in Bengal in 1894 divided into (*a*) three Government schools with 33 pupils; (*b*) nine Board schools with 283

pupils; (*c*) eight aided schools with 236 pupils; (*d*) six unaided schools with 213 pupils. Speaking generally, the object of them all is to teach such subjects as carpentry, blacksmith's work, mensuration, engineering, estimating, drawing, surveying by chain and compass, trigonometry, and the plane-table; together with engraving, electro-plating, tinsmithy, clock-making, embroidery or *bidri* work; not all in one school, but some in one and some in another.

In 1882, there were in the whole of India 44 industrial schools attended by 1,509 pupils. In 1892, the number of schools rose to 69, and that of pupils to 3,860.

Art schools.

There was, in 1884-85, an Art school at the capital town of each of the provinces, Madras, Bengal, Bombay and the Punjab. They were attended by 655 pupils. In 1891-92, the number of Art schools rose to 6, and that of pupils attending them to 1,048. The Art schools train general and engineering draughtsmen, architects, modellers, wood-engravers, lithographers &c. With regard to the Calcutta school of Art, "the general character of the work done in the school will compare favourably with that of any Art school in the United Kingdom; and outside evidence has testified to the high class character of the students' performances, in illustrations of zoology, in modelling, wood-engraving, lithography, and illustrations of the Annals of the Royal Botanic Garden."*

* Resolution of the Govt. of Bengal on the report of the Education Department for 1893-94.

The following extract from the Madras Education Report for 1883-84, will give an idea of the nature of the training given in the Madras School of Art:

"A pleasing and novel feature in the year's history is that the Institution is beginning to fulfil its chief object—the supply of skilled labour for various arts in districts—some students having obtained suitable employment. The engagement of one as a designer of textile fabrics is specially gratifying, for it is in relation to improved design that the school is calculated to benefit the industries of the country. Instruction in freehand was more successful than that in geometrical drawing, the failure in the latter subject being probably due to the low general educational standard of most of the students.

Useful instruction has been given and progress made in wood-carving, engraving, metal-work, and in the manufacture of stained glass windows, the students having been instructed in the process of execution as well as of design.

The Institution seems to have been very active in its manufacturing branch, turning out a quantity of high class work. Experiments too have been made in various directions as regards pottery, and valuable information collected. The discovery of superior kaolin, uncontaminated by iron, near Salem, will, it is hoped, prove an important one."

The following extracts from the annual report (for 1883-84) of Mr. Kipling, Principal of the Mayo School of Art at Lahore, will be found interesting:

"The most important work of the year and the most complete in point of accomplishment was the drawing done for the illustration of the Journal of Indian Art, including architecture, Mooltan pottery, ivory-carving, and other subjects. Drawings were also made for carpets, screens in carved wood, for choice examples of Koft work, Hoshiarpur inlay and wood-work, most of the latter being given out for execution to artizans in the districts for exhibition at the Indo-Colonial display in London. The most important piece of original design was the billiard-room for His Royal Highness the Duke of Connaught at Bagshot Park. This was begun by Ram Singh and myself during the last vaca-

tion: and we succeeded in satisfying our patrons with a project for lining the new billiard-room with an elaborate arrangement of carved wood in the style of the last century of Punjab wood decoration. These designs and drawings, though chiefly the work of myself and Ram Singh, Assistant Master, were worked upon by the younger students, who made full size experimental drawings, models, &c.—perhaps the most instructive practice that can be found. The actual work is too large and heavy to be undertaken in the school, and it is given out on contract to a carpenter at Amritsar who works under the direction of Ram Singh; while some of the choicer panels, &c., are reserved for the practice of the wood-carving class in the school. In addition to the lining of the billiard-room, all the furniture for the apartment was designed in the school, so as to be in keeping with the rest. In a similar way the design for a carved screen, the gift of the Punjab Government to the Indian Institute at Oxford, was elaborated in the school on lines suggested by Mr. Basil Champneys, the Architect of the Institute, and actually carried out at Amritsar."

Institutions for higher technical education.

But, the fate of Indian art is doomed. The demand for it is daily decreasing, and will continue to decrease as the price of labour rises. In these days of cheap imitation things, genuine art productions requiring a vast amount of labour are not likely to hold their own. It is the larger industries involving scientific methods and appliances, such as cotton manufactures, iron-smelting, paper-making, &c, which are most likely to develop the resources of the country and make it rich, and which are, therefore specially needed. There is also considerable scope for the application of the methods and results of modern science in agriculture. The skilled labour needed for the manufacturing and agricultural industries which are dependent more or less upon science is of various grades. The training

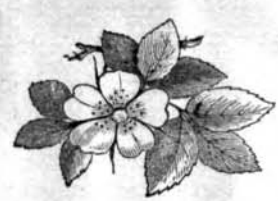
required for the operatives would manifestly be best given in primary schools. But for teachers of such schools, chemists and others under whose direction large industries, manufacturing and agricultural, are carried on, a superior degree of scientific training is required which may be called Higher Technical Education. Besides the Engineering Colleges in the different provinces, and the chemical and physical laboratories of the Medical Colleges and of such institutions as the Presidency College of Calcutta, and the Elphinstone College of Bombay, there are but few institutions where higher technical education is now imparted in India. There is a class of scientific agriculture at the Poona College of Science; and the Bombay University encourages its study by conferring a diploma in agriculture. There has been an Agricultural College at Madras for some years. The course of instruction comprises agriculture, practical farming, surveying, veterinary, geology, physical geography and physics. In 1892, the college was attended by 45 students. The Victoria Jubilee Technical Institute was founded in Bombay in 1888. In 1893 it was attended by 119 Hindu students. Instruction is given in Physics, Mechanics, Drawing, and Technological cotton manufacture and mechanical Engineering.

The following statement shows the condition of Technical Education in British India in 1884-85 :—

	University Education.		School Education.								Classes in High Schools in.			
	Engineering.		Schools of Art.		Engineering and Surveying Schools.		Industrial Schools.		Schools of Agriculture.		Art.		Agriculture.	
	Number.	Attendance.	Number.	Attendance.	Number.	Attendance.	Number.	Attendance.	Number.	Attendance.	Number.	Attendance.	Number.	Attendance.
Madras	1	19	1	162	1	106	6	249	1	96	..	...	...	...
Bombay	1	102	1	251	2	98	7	307	1	46	36	2,713	8	289
Bengal	1	42	1	157	5	278	5	172	...	...	...	...	...	...
Punjab	...	..	1	85	...	...	4	93	...	...	...	...	...	...
North-Western Provinces.	1	155	...	...	...	...	2	186	...	...	...	...	...	...
C. Provinces	...	...	...	...	..	...	19	316	...	...	...	...	...	...
Assam	...	..	...	...	7	163	1	18	...	...	...	...	...	...
Burma	...	...	...	...	5	110	1	38	...	...	...	...	...	...
Total	4	218	4	655	20	755	45	1,379	2	142	36	2,713	8	289

The following is a comparative statement showing the progress in some branches of technical education between 1882 and 1892:

Class of Institution,	1881-82.		1886-87.		1891-92.	
	No.	Pupils.	No.	Pupils.	No.	Pupils.
Schools of Art ...	5	439	4	763	6	1,048
Industrial Schools ...	44	1,509	68	3,030	69	3,860
Total ...	49	1,948	72	3,793	75	4,908



CHAPTER IV.

INFLUENCE OF MODERN NATURAL SCIENCE.

Education in India until recently literary.

From the brief survey which we have taken of the history of the Hindu intellect in ancient times it will be seen that its progress had chiefly been in the fields of literature and philology, and of the mathematical and mental sciences. They had made great progress in medicine and surgery; and works like those of Charaka and Susruta may still be read with interest, and even with profit. They had studied the properties of numerous plants and minerals, but only so far as was necessary for medical purposes. Natural science as such was not cultivated by the Hindus or any of the other great nations of antiquity. It is essentially of recent growth. It was only towards the latter half of the last century, that those discoveries were made in Europe, especially in France, which laid the foundation of modern science; and it is only within the last fifty years that it has made the greatest progress. When schools for English education were

established in this country (about 1820) natural science had scarcely been grafted upon the curriculum of education in England; and though one of the main objects of English education was to teach modern science, very little of it was actually taught until quite recently. The elements of optics, hydrostatics, and mechanics comprised the entire course of natural philosophy, and these subjects too were taught as branches rather of mixed mathematics than of experimental physical science.

Until lately, the Indian educational authorities were not at all favourable to the teaching of natural science. We shall give an instance by way of illustration. The Directors of the East India Company wished to institute a chair for Geology at the Presidency College of Calcutta soon after its establishment in 1855; and it seems that Dr. Oldham, Superintendent of the Geological Survey of India, offered to undertake the duties of the professorship in addition to his own work. The Directors, however, sent out Dr. Liebig as professor of natural history and geology in 1856.* But the services of Dr. Liebig were transferred temporarily to the mint before he had entered on the duties of his professorship, and an assistant of the Geological Survey was engaged to give a course of lectures on Geology and Mineralogy during the session 1856-57. The course was attended by a very small number of students; the authorities thought

* Selections from the Records of the Government of India, Home Department No. LXXVI. p. 61.

that a larger number was not to be expected in future, and the lecturership was abolished. The Directors, however, were not satisfied of the propriety of this decision:

"In any case" say the directors "provision must be made for affording instruction in practical geology to the students of the College of Civil Engineering at Calcutta, a knowledge of the subject being essential to an efficient course of instruction at that institution. The fact that candidates for the degree of B. A. are not required to undergo an examination in geology, is not, in our opinion, a sufficient reason why the opportunity of becoming acquainted with that science should not be afforded at an institution which professes to afford the means of a liberal education of the highest order. And as regards the assumed failure of the experiment, we cannot think that a fair trial would, under any circumstances, have been afforded by the delivery of a single course of lectures; and in the present case it may be presumed, without the risk of injustice to Mr. * *, that the attendance would have been much larger had the lectures been delivered by Dr. Liebig.

It is accordingly our desire that the professorship of geology should be re-established and that the services of Dr. Liebig should be made available for the office, an arrangement which we think may be carried out at once, without prejudice to the duties entrusted to Dr. Liebig at the Mint."*

Nothing further was heard about the Professorship of geology at the Presidency College for a long time, and it was established only three years ago.

Difficulties of scientific progress among the Hindus.

There are obstacles in the way of scientific education of the Hindus which are of a serious nature. Scientific education offers openings in Europe which may as yet be said to be almost absent in India, at least for the Indians. Scientific research is liberally

* Letter from the Court of Directors dated 28th April, 1858.

endowed in Europe, so that specialists may devote themselves to their favourite subjects with their animal wants fairly supplied ; and there are influential societies which watch over their interests. In India, there are under the Government a few small departments which are maintained chiefly for scientific research, and a few larger departments for which a scientific training is necessary. Both these classes of departments are almost exclusively officered by Europeans. With regard to the departments for scientific research, * it is sometimes argued as if as Orientals, the Hindus were incapable of it, whatever their education might be. It is true, the ancestors of the modern Hindus had made but little progress in Natural Science ; but, the ancestors of the modern Europeans had not made any better progress. Modern Natural Science does not date back earlier than the middle of the last century. The Hindus successfully cultivated Astronomy which requires observational powers of no mean order. They also made valuable observations on plants and minerals.† In their conceptions of the duration and mutability of our planet ; ‡ of the gradual evolution of the organic world ; of an ethereal substance, infinite and eternal ; of material substances as aggregates of atoms ; and of light and heat as different forms of the same substance,§

* Research is carried on by these departments in Botany, Geology, Zoology, Meteorology &c.

† See Book V. Ch. I.

‡ See Lyell's "Principles of Geology."

§ Colebrooke's " Philosophy of the Hindus—Vaisesika."

they had anticipated some of the fundamental principles of modern science. The facts, that they have done this in the past, that they have made some contributions* to science, however humble, in the present, that an Oriental nation like the Japanese has, within so short a space of time as a decade or two, risen to scientific eminence, show that the mere fact of his being an Oriental does not argue an inborn incapacity for scientific research in the Hindu. If it were so, if science had been the exclusive prerogative of the Western nations, the Government would scarcely be justified in maintaining scientific research, which benefits only a few members of the European community which can well enough bear the expense of such research, with the money of the poverty-stricken people of India. A civilized Government has certain well recognized responsibilities towards its subjects, one of which is to spend the revenue derived by taxing them upon objects which are calculated to conduce, at least principally, to their good. We see no reason why with an improved system of scientific education, and with just and sympathetic treatment of the young men trained in science, they will not be able to take that place in the modern scientific world which they may be expected to do under the rule of one of the foremost nations of that world. The reason of the recent success of the Japanese in the field of science is, that their young men, trained under Western scientists, instead of being thwarted,

* These will be noticed in a subsequent chapter.

discouraged, and set down as incapable, have been aided, encouraged, and stimulated by their Government to pursue science.

Government has within the last decade done much to improve the condition of scientific education. In the Presidency College of Calcutta, a lecturership of Geology has been instituted, and the physical and chemical laboratories have been greatly improved. A great deal still remains to be done to bring up the education to the Western level. But, what has been done already may be taken as an earnest of more to be done in the future. With regard, however, to the employment of Indians in departments requiring scientific training, whatever the intentions* of the Government may be, they are not likely to bear any fruit if they have to be carried out by heads of departments such as the Surveyor-General of India who in a memorandum submitted to the Public Service Commission said: "It is suicidal for the Europeans to admit that Natives can do any thing better than themselves. They should claim to be superior in *everything*, and only allow natives to take a secondary or subordinate part ..... In my old parties I never permitted a Native to touch a theodolite or an original computation, on the principle that the triangulation or scientific work was the prerogative of the highly-paid European; and this reservation of the

* For an instance of the manner in which the good intentions of the Government may be frustrated by departmental opposition, see "Proceedings of the Sub-Committee, Public Service Commission, Survey Department," pp. 6-7.

scientific work was the only way by which I could keep up a distinction, so as to justify the different figures of pay respectively drawn by the two classes, between the European in office time and the native who ran him so close in all the office duties. Yet I see that Natives commonly do the computations now-a days, and the Europeans some other inferior duties." *

It is but seldom, however, that we have such frank admission. The reason usually assigned for keeping the Hindu down at the low level of routine drudgery is his alleged incapacity for higher work. He is judged incompetent before he is allowed an opportunity to show that he is competent. †

The departments under the Government of India for which some amount of scientific training is required are the Survey, the Telegraph, the Forest, the Medical and the Public Works. In 1886 there were in the

* Memorandum by Col. De Pree, Proceedings of the Sub-Committee, Public Service Commission, Survey Department, p. 23.

† With regard to the recruitment in India of the Geological Survey of India, the Government of India says in a resolution dated March, 1893: "It has been found, however, owing to the difficulty which is experienced in obtaining Asiatics with pronounced talent for geological research, that the system of appointing natives as probationary Sub-Assistants is not likely to be successful." Considering that there was no lecturership of Geology in any institution in the Bengal Presidency until 1893, that there is even now no adequate provision for the teaching of geology in any part of India, and that there is scarcely any opening for geological knowledge is the absence of a "pronounced talent for geological research" to be wondered at? Scientific research under present conditions, which require previous assimilation of what has been done in the West, is quite different from what it was a century ago.

Survey of India Department, 146 Europeans, 34 Eurasians and only 2 Indians, and these in the very lowest grades of the junior division; in the Public Works Department, there were 810 Europeans, 119 Eurasians and Europeans domiciled in India, and only 86 Indians of whom not one was in the highest grades.

The heads of scientific, no less than the heads of political and other departments, not unoften appear to consider the suppression of the educated Indian essential for the maintenance of British prestige. "Both classes of Europeans [official and non-official]" observes a writer holding a high position under the Government of Bengal "are equally reluctant to admit the natives to equality, and the official class is especially aggrieved, because the natives are invading preserves which have hitherto been free from any intruder. ..... This is the result of education which has tended to equalise the races, and the nearer the equality the stronger the dislike. ..... They [the Englishmen] are more pleased with the backward Hindu than with his advanced compatriot, because the former has made no attempt to attain equality with themselves." *

* H. J. S. Cotton, "New India," pp. 40-41.

Radhanath Shikdar was for sometime chief computer in the Survey of India Department. The following mention is made of him in the preface to the first edition of the "Manual of Surveying" by Smyth and Thuillier's—

"In parts III. and IV. the compilers have been very largely assisted by Babu Radha Nath Shikdar, the distinguished head of the Computing Department of the Great Trigonometrical Survey of India, a gentleman, whose intimate acquaintance with the rigorous forms and

The extreme poverty of the people is a serious obstacle in the way of scientific education, or scientific research. In Bengal, there is only one college, the

mode of procedure adopted on the Great Trigonometrical Survey of India, and great acquirements and knowledge of scientific subjects generally, render his aid particularly valuable. The chapters 15 and 17 up to 21 inclusive, and 26 of part III, and the whole of part V. are entirely his own, and it would be difficult for the compilers to express with sufficient force the obligations they thus feel under to him, not only for the portion of the work which they desire thus publicly to acknowledge, but for the advice so generally afforded on all subjects connected with his own Department."

The acknowledgment of valuable scientific work done by a "native" was probably considered by the editors of a later issue of the work inconsistent with British prestige, and Radha Nath Shikdar's name was omitted. Col. Sherwill thus wrote in the "Friend of India" (1876):

"A friend has just sent me a copy of the *Friend of India* of the 24th June, all the way from Germany, in order that I might be made acquainted with the *sad fact* that, when bringing out a third edition of "Smyth and Thuillier's Manual of Surveying for India," the much respected name of the late Babu Radhanath Shikdar, the able and distinguished head of the computing department of the Great Trigonometrical Survey of India, who did so much to enrich the early editions of the "Manual," had been advertently, or inadvertently, removed from the preface of the last edition; while at the same time all the valuable matter written by the Babu had been retained, and that without any acknowledgment as to the authorship.

As an old Revenue Surveyor who used the "Manual" for a quarter of a century, and as an acquaintance of the late Radhanath Shikdar, I feel quite ashamed for those who have seen fit to exclude his name from the present edition, especially as the former Editors so fully acknowledged the deep obligations under which they found themselves for Radhanath's assistance, not only for the particular portion of the work "*which they desire thus publicly to acknowledge*—so runs the preface of the 1851 edition,—*but for the advice so generally afforded on all subjects connected with his own department.*"

("Reminiscences and Anecdotes" by Rámgopál Sányal, p. 25).

Government Presidency College of Calcutta, which has laboratories worth the name. Private colleges which have to charge very low fees * cannot afford expensive apparatus for the purposes of demonstration or experiment. The consequence is, that though scientific subjects have been introduced into the University Examinations, they are generally taught theoretically rather than practically.

Considering these difficulties in the way of scientific education the way in which it has spread within the last decade is rather hopeful. We do not place any exaggerated value upon natural science. As an educational agent we do not consider it in any way superior to general literature (including mental philosophy). There is as much of culture as of narrow-mindedness, as much of angelic as of the reverse disposition among scientists as among literary men. But natural science has of late come into prominence, as the intellectual basis of Western civilization. Without it, it is impossible for a nation at the present day to hold its own, let alone progress. The cultivation of natural science and the adoption of the means and appliances which it has given rise to is a question not of education but of existence. The fate of China in her recent war with Japan shows this plainly. Her discomfiture is due

Recent progress of scientific education.

* The monthly fee for all the courses of lectures usually charged by the private colleges in Bengal is three rupees (not four shillings at the present rate of exchange).

to her excessive conservatism. The Hindus have of late begun to perceive the necessity of scientific education for their very existence. They cannot engage in any industry, mining, manufacturing or agricultural, without it; and without such industries there is scarcely any hope for them in the future. An association for the cultivation of science in Calcutta has, for sometime past been trying to spread scientific education by popular lectures on physics, chemistry, geology and biology. All the Universities have now science-courses for their B. A. degrees which are yearly increasing in popularity; and the Bombay University grants degrees in science. The courses for the degree examinations of the different Universities comprise all the branches of natural science.*

* The B. course for the B. A. degree of the Calcutta University is:

Pass Subjects.	Honours Subjects. B. *
I.—English.	I.—In addition to the pass subjects, a further course in English and the history of the English language and literature, and an original English essay.
II.—Mathematics. Statics. Dynamics. Hydrostatics.	II.—In addition to the pass course, Analytical Plane Geometry and the Differential and Integral Calculus.
And one of the following:—	
III.—Physics and Chemistry.	III.—A fuller course in Physics and Chemistry together with the Doctrine of Scientific Method.
IV.—Physiology and either Botany or Zoology.	IV.—Physiology, Botany and Zoology, together with the Doctrine of Scientific Method.

Condition of general scientific education still unsatisfactory.

But though the training in natural science required by these degrees is of a fairly comprehensive character, the provisions made for the teaching of science in the colleges affiliated to them are generally of a very unsatisfactory character. There is only one Arts college, the Government Presidency College

V.—Geology and either Mineralogy or Physical Geography.	V.—Geology, Mineralogy and Physical Geography, together with the Doctrine of Scientific Method.

Candidates in Natural and Physical Science for the M. A. degree of the Calcutta University are allowed to select alternatively one out of the following subjects.

(A) Chemistry.

(B) Heat, Electricity and Magnetism, as principal subjects, with Light and Sound as subsidiary subjects.

(C) Light and Sound as principal subjects, with Heat, Electricity and Magnetism as subsidiary subjects.

(D) Botany.

(E) Physiology and Zoology.

(F) Geology and Mineralogy.

(A) The course in chemistry is both theoretical and practical. In the practical examination candidates ought to show a good knowledge of chemical manipulation and ought to be able to qualitatively analyse complex inorganic substances. They should also be acquainted with the principles of quantitative analysis.

(A) and (C) Candidates have to show a thorough knowledge of the principal subjects and a general acquaintance with the subsidiary subjects, treating the subjects, mathematically and experimentally.

(D) Botany includes the following :—

(*a*) General and Special Morphology and Physiology.

(*b*) Systematic Botany.

(*c*) Palæobotany.

of Calcutta, where there exist chemical and physical laboratories worth the name. This is also the only college in the Bengal Presidency where geology has been taught for the last three years, as yet, however, without that amount of practical work which is essential for a sound knowledge of the subject. Except the Medical College of Calcutta, there is no institution in the Bengal Presidency where Zoology or Botany is taught. And at the Medical College, these subjects are still taught very nearly on the methods adopted half a century ago. Comparative anatomy, histology and physiological botany which have advanced in Europe so rapidly within that time are scarcely touched. The Medical College is administered by men who have spent a good portion of their lives in the practice of medicine and surgery; and it is probable that they set but little value upon subjects which are of so little use to them in their practice. Anyhow, Botany and Zoology are taught in the only institution where those subjects are taught

(*d*) Practical knowledge of indigenous Indian plants, and identification of specimens of them by Roxburgh's *Flora Indica* (Clarke's edition).

(E) Zoology * shall include the subjects (*a*) Comparative Anatomy and Physiology, (*b*) Distribution, and (*c*) Evolution.

(F) Geology and Mineralogy includes the subjects of (*a*) Stratigraphical Geology, (*b*) Palæontology, (*c*) Mineralogy, (*d*) Crystallography (*e*) Elementary Inorganic Chemisty.

The Bombay University grants a degree in Science (B. Sc.) the course for which corresponds to the B. course for the B. A. degree of the Calcutta University, but the examination is of a more searching character.

in Bengal without any practical laboratory work worth the name. *

We are not aware that the teaching of general natural science has kept much better pace with modern progress in other parts of India, than in Bengal. In the Madras Presidency, besides the Medical College, there appears to be only one college, the Presidency College, where there is a chair for Biology, and their is no institution where geology is systematically taught. Science appears, however, to be in greater favour in the Western Presidency than in Bengal or Madras, there being chairs for Biology in addition to those of Chemistry and Physics in the Poona College of Science and in the Elphinstone, Wilson, Baroda & Fergusson colleges.

Medical education.

We have already noticed the remarkable progress which the ancient Hindus had made in Medical Science. But with the decay of their civilization, it, like the other sciences, attained a stereotyped form in which the British rule found it. Its surgery has been superseded by the more scientific

* Surgeon-Col. Harvey in his presidential address at the Indian Medical Congress held in Calcutta last year (December, 1894) said:—

"The Medical College of Calcutta the parent of all subsequent medical schools, is most miserably and inadequately housed. It has but two poor theatres in which lecture has to succeed lecture without intermission, so that the professors have neither the time nor the opportunity to prepare for their demonstrations, and the rooms are poisoned by the mephitic air of a succession of audiences. The laboratories, dissecting room, anatomical and other departments are all cramped for room, and so damp and dark and ill-arranged that effective teaching is very difficult."

The Medical College building, however, is now being improved.

surgery of the West; but as a system of medicine, it still enjoys a high reputation among all classes of the Hindus, and is widely studied.* Attempts are now being made to improve and systematise its instruction, but they have not yet taken shape worthy of record.

Under British Rule, medical education was imparted from 1822 to 1835 through the Indian classics in special classes attached to the Arabic and Sanskrit Colleges at Calcutta. There was also a separate institution which trained up assistants to the medical officers of the Government. The institution had only one lecturer who delivered his lectures in Hindusthani. The books which the students read were Hindi abridgments of English works, and dissection was practised upon inferior animals. In 1835, Lord William Bentinck proposed the establishment of a Medical College on European principles, and appointed a Committee to report upon the subject. The educationists of the time were ranged in two parties, of which one, called the Anglicist, favoured English education, and the other, known as the Orientalist, advocated Oriental education. The proposal of Lord William Bentinck led to a controversy between the two parties. But the weakness of the Orientalists rendered the contest a very unequal one; and the Anglicists won an easy victory. Dr. Tytler, Superintendent of the Medical

* In Bengal, in 1837, Mr. Adam found one medical school in Rajshahi containing 7 students taught by 2 professors; in Birbhum, one school attended by 6 students; and in Burdwan 4 medical schools with 45 students (Adam's "Reports on Vernacular education," p. 322).

institution and an orientalist of some distinction, denied "that a system of educating the natives through the medium of English would be in the least more comprehensive, or by any means so much so, as one carried on in the native languages," and considered it wholly "inexpedient as a general measure." The committee, however, came to the conclusion, "that it was perfectly feasible to educate native medical men on broad European principles," and that a knowledge of the English language was to be a *sine qua non* in the pupils. The Medical College fulfilled the most sanguine expectations which had been entertained of it. "The pupils" wrote Trevelyan two or three years after its establishment "are animated by the most lively professional zeal, and they evince a quickness and intelligence in the prosecution of their studies which has perhaps never been surpassed." James Prinsep, who examined the chemical class in 1837, reported officially as follows :

"In the first place, I may remark generally, that all the essays are extremely creditable. Indeed the extent and accuracy of the information on the single subject selected to test the abilities of the pupils has far surpassed my expectations ; and I do not think that in Europe any class of chemical pupils would be found capable of passing a better examination for the time they have attended lectures, nor indeed, that an equal number of boys would be found so nearly on a par in their acquirements."*

* Quoted by Trevelyan, "Education of the people of India," p. 32.

The progress of medical education in India since 1835 has been immense. Speaking of the "remarkable success achieved by Natives of India whose professions have a more or less scientific, exact, and practical basis," Sir John Strachey says, that "this is especially the case with those who have devoted themselves to the study and practice of European Surgery."* The courses of instruction at the Indian Medical Colleges are similar to those of the medical institutions in the West. †

* "India" p. 214.

† The following was the course at the Calcutta Medical College, in 1894:

1st year.	*2nd year.*	*3rd year.*
Descriptive and Surgical Anatomy. Chemistry. Botany. Dissection.	Comp. Anatomy, Comp. Physiology, and Zoology. Descriptive and Surgical Anatomy. General Anatomy and Physiology. Chemistry. Practical Chemistry. Materia Medica. Botany. *2nd year.* Dissections. Pharmacy—three months.	Materia Medica. Dissections. Physiology. Hospital practice—one year.

A medical school established in Madras in 1835 was raised to the status of a college in 1851, and affiliated to the Madras University in 1877. The Grant Medical College of Bombay was established in 1845 as a tribute to the memory of Sir Robert Grant, who was for some time Governor of Bombay. It was affiliated to the Bombay University in 1860. Quite recently medical colleges in which a complete education is given in English have been opened at Lahore, Allahabad, Tanjore, and Nellore. The course of studies pursued at these institutions is similar to that of the Medical College of Calcutta.

The attendance at the Medical Colleges of Calcutta, Madras and Bombay in 1885 was 132, 124, and 277 respectively. By 1893, the number of medical colleges had increased to four attended by 811 students.

4th year.	*5th year.*
Medicine.	Medicine and Clinical Medicine.
Surgery.	Surgery and Clinical Surgery.
Midwifery.	Midwifery and six labour cases.
Medical Jurisprudence with demonstrations.	Medical Jurisprudence with demonstrations.
Hospital practice—twelve months.	Pathology with demonstrations.
	Ophthalmic Medicine and Surgery.
	Hygiene.
	Dentistry.
	Post-mortem records.
	Hospital practice—six months.
	Out-door and Eye Infirmary practice—three months each.

During the five years between 1888 and 1892, 2288 candidates appeared at the medical examinations of the different Indian Universities, of whom 1,058 were successful. Medical education is greatly more valued in Bombay, than in Madras or Bengal. About 26 per cent of the candidates who passed the matriculation of the Bombay University between 1886 and 1890, went up for its medical examinations, the percentage in Bengal and Madras being 4·83 and 5·64 respectively.

Besides the medical colleges preparing for the University Examinations (L. M. S. and M. B.), of which the medium of instruction is English there were in 1884-85, 17 Government vernacular medical schools attended by 1,403 pupils. A school of medicine has recently been established in Calcutta which is independent of Government aid.

Engineering education.

Remains of temples, roads, bridges and reservoirs testify to the engineering skill of the Hindus in pre-British times.* But, though some Sanskrit books on engineering subjects † have come down to us, they had long before the establishment of British rule ceased to be taught in schools. Engineering instruction on modern methods commenced in India only about half a century ago.

* See "Ways and Works in India" by G. W. Mac. George, pp. 70-72, 108-120, &c.

† Such as measures for villages, and rules for laying out towns and villages, directions for laying out squares, octagons &c.; and architecture. Rájendralálá Mitra "Indo-Aryans," vol. I. pp. 37-40.

The Thomason College of Civil Engineering was opened at Rurki in 1849. Its success led the Court of Directors to recommend the establishment of similar institutions in other parts of India. "The success of the Thomason College of Civil Engineering at Rurki" say the Directors "has shown that for the purpose of training up persons capable of carrying out the great works which are in progress under Government throughout India, and to qualify the natives of India for the exercise of a profession which, now that the system of railways and public works is being rapidly extended, will afford an opening for a very large number of persons, it is expedient that similar places for practical instruction in civil engineering should be established in other parts of India."*

The Seebpore Engineering College near Calcutta was opened in 1880. The course of instruction at this institution is adapted to the requirements of civil engineers and of foreman mechanics. The course in the Engineering department, which is adapted to the requirements of the examinations for the Engineering degrees† of the Calcutta University is completed in five years of which the last is spent on works in progress.

The Madras Civil Engineering College consists of

* Despatch of 1854, para. 80.

† These degrees are Licentiate in Engineering, Bachelor in Engineering and Honours in Engineering. The subjects for the degree examination are, Civil Engineering, Mathematics, Natural Science, Engineering, Construction and Drawing.

two departments—the collegiate and the school departments. The course of instruction in the collegiate department (which was established in 1862) is adapted to the standard of the degree of B. C. E. in the Madras University. There is also a mechanical engineer class.

Engineering, like medicine, absorbs a much larger proportion of students in Bombay, than in Bengal or Madras. During the five years between 1888 and 1892, no less than 484 candidates presented themselves for the Engineering Examinations of the Bombay University, whereas the Engineering degrees of the Calcutta and Madras Universities attracted 137 and 59 candidates respectively.

Engineering instruction of a more elementary character than that given by the institutions mentioned above is given by a number of Engineering and Surveying Schools of which there were in 1884-85, seven in Assam with 163 pupils; 5 in Bengal with 278 students; 2 in Bombay attended by 98 boys; and 1 in Madras with 106 Students.

Forest School.

The Imperial Forest School at Dehra Dun intended for the technical training of officers in the Forest Department was established in 1878. The first theoretical course was held in 1881 when 30 students arranged in two classes attended lectures on forestry, botany, forest law, surveying, mathematics and natural science. Since then the arrangements have been greatly improved. There are now two courses, one in English, and the

other in the Hindusthani language. In the English course, students are prepared for the certificate in Forestry by the "Higher Standard"; in the Hindusthani course, for that by the "Lower Standard." In addition to the subjects mentioned above, they are now taught Zoology, Forest Engineering, Forest accounts &c. The Provincial Forest Service can only be entered through the Imperial Forest School. The Poona College of Science has a Forest branch to which appointments are guaranteed by the Bombay Forest Department.

The results of University Examinations in Medicine and Engineering for the five years from 1887-88 to 1891-92 were :

University.	Medicine.		Engineering.	
	Candidates.	Passed.	Candidates.	Passed.
Calcutta.	568	351	137	61
Allahabad. *	117	50	700	306
Punjab	131	78	11	3
Madras.	520	159	59	17
Bombay.	952	420	484	267
Total	2,288	1,058	1,391	654

Professional education in medicine and engineering has now been imparted for nearly two generations, and

* The results are for three years, only (1889-90 to 1891-92) in Medicine, & two years (1890-91 to 1891-92) in Civil Engineering.

Hindus are distinguishing themselves as doctors and engineers. General scientific education, however, has not been imparted long or thoroughly enough, nor are the conditions favourable enough to lead us to expect original contributions of any great value. What has been done in the West must be assimilated, before any thing strikingly original can be reasonably expected; and that would be a work of time. Hindu scientific works with any pretension to marked originality are comparatively rare. They are mostly school-books, and are chiefly translations or adaptations from English. Such contributions as have more than a fleeting interest will be noticed when we come to treat of modern Hindu Literature.

CHAPTER V.

INFLUENCE OF THE ADMINISTRATIVE POLICY OF BRITISH RULE.

Tranquillity maintained by British Rule favourable to intellectual progress.

British Rule has introduced conditions some of which are as clearly promotive of progress as others are antagonistic to it. The internal tranquillity maintained by British Rule is beyond question favourable to intellectual development. Its importance, however, as a factor of progress must not be exaggerated. There are well known cases of nations having risen to intellectual eminence notwithstanding political convulsions of a serious nature; there are countries, on the other hand, which notwithstanding long periods of internal tranquillity have scarcely kept pace with modern progress though in immediate contact with it. In pre-British India, owing chiefly to the military occupation being restricted to certain castes, the great majority of the people had generally not been much disturbed by

wars. However, even though war does not necessarily hinder progress, nor peace necessarily promote it, it is undeniable that the latter is far more favourable to it than the former.

Economic influence of British administration.

But the tranquillity under British rule is maintained by an administration which is essentially foreign. Economically, the effect of such an administration has been prejudicial to material progress, and we have the curious spectacle of the richest nation of Europe governing for a century a country with vast natural resources and with a people not very low in the scale of civilisation, without advancing its material condition to the standard of even the poorest and most backward in Europe. * The higher appointments in the military departments are exclusively, and in the civil departments almost exclusively filled up by Europeans. A large portion of the army is also composed of British soldiers. The standard of living of the European soldiers and officers (civil and military) being much higher than that of the Indians their scale of pay is proportionately higher. From a parliamentary return issued in 1891 it appears, that there were then 28,000 Europeans holding posts worth Rs. 1000 a year and upwards, directly or indirectly under Government, their emoluments amounting to no less than 15½ crores of rupees a year. On the other hand, the number of natives of India drawing a pay

*The average income per head of population in India in 1882 was ascertained to be not more than Rs. 27 ; in Turkey it was £4

of Rs. 1000 or upwards a year is given as 11,000, their total pay aggregating only 3 crores of rupees, that is, about one-fifth of the total pay received by the corresponding European element in the service of Government.*

"The cost of British officers," says Mr. H. J. S. Cotton "is too great; their salaries are too high; and the blessings of European civilisation that they introduce are luxuries beyond the means of the people. India can no more afford the privilege of being governed by foreigners, can no more pay for her gigantic system of railways, her palatial barracks and other public buildings, than English farmers can afford to plough with race horses, or the Indian ryot with elephants."† In active service, a good portion of the pay received by the European employès of Government is remitted to Europe, or is spent upon objects which benefit European industries. In retirement, large remittances have to be made to Europe from the Indian revenue for their pensions. Large remittances have also to be made to pay for interest on debt which India has been made to contract in England for objects many of which, under present conditions, conduce but little to her good. A portion of the administration (the India Office) is also permanently located in England for which India has to make heavy contributions annually.

* Proceedings of the House of Commons, 15th August 1894. Speech of Mr, S. Keay.

† "New India" p. 68.

The annual drain due to these and other causes is considerable, and may be said to be so much capital taken out of India, capital which, under normal conditions, would promote the material development of the country.

"It must be remembered" says Sir G. Campbell "that we give neither our services nor our capital for nothing. Much of this is paid for by remittances to Europe. The public remittances are now £16,000,000 per annum, and it is estimated that the private remittances would be almost as much more if the flow of British capital to India were stopped, and the transactions showed only sums received in England. As it is, the continual addition of fresh capital invested in India about balances. The private remittances, and the balance of trade show only about the same amount as the public drawings to be depleted from India—that is, about £16,900,000 per annum. This is what is sometimes called the "tribute" paid to England. Well, it is not tribute, but it is paid for civil and military services, loans, railways, industrial investments, and all the rest; and the result is that a large part of the increased production is not retained by the Indian peasant."*

Opinions about the impoverishment of India under British rule.

There are authorities who have held that the drain has actually been impoverishing the people. Mr. Montgomery Martin writing at a time when the drain was considerably less than what it is now says:

"The annual drain of £ 3,000,000 on British India has amounted in thirty years at 12 per cent (the usual Indian rate) compound interest to the enormous sum of £ 723,900,000 sterling! So constant and accumulat-

* "The British Empire." p. 70.

ing a drain, even in England, would soon impoverish her. How severe, then, must be its effects on India where the wage of a labourer is from two pence to three pence a day."*

Sir John Shore writing in 1787 says: "Whatever allowance we may make for the increased industry of the subjects of the state, owing to the enhanced demand for the produce of it (supposing the demand to be enhanced) there is reason to conclude, that the benefits are more than counterbalanced by evils inseparable from the system of a remote foreign dominion." Mr. Frederick John Shore of the Bengal Civil Service writing in 1837 says: "The English Government has effected the impoverishment of the country and people to an extent almost unparalleled." Mr. Saville Marriot, who was for sometime one of the Commissioners of Revenue in the Deccan, and afterwards a member of Council says speaking of the drain about 1845 when it was considerably less than it is now: "It will be difficult to satisfy the mind that any country could bear such a drain upon its resources without sustaining any serious injury. And the writer [Mr. Marriot] entertains the fullest conviction that investigation would effectually establish the truth of the proposition as applicable to India.

* "The History, Antiquities, Topograply and Statistics of Eastern India" by M. Martin (London, 1838) Vol. I. Introduction p. xi. Mr. H. J. S. Cotton, at present Chief Secretary to the Government of Bengal, says:

"There is no great harm in saying that the land belongs to the 'State,' when the State is only another name for the people, but it is very different when the state is represented by a small minority of foreigners, who disburse nearly one-third of the revenues received from the land on the remuneration of their own servants, and who have no abiding place on the soil and no stake in the fortunes of the country. It is because we have acted on this principle all over India, with the exception of the permanently settled districts, that we have reduced the agricultural classes to such poverty."

"New India" p. 54.

He has himself most painfully witnessed it in those parts of country with which he was connected, and he has every reason to believe, that the same evil exists, with but slight modification, throughout our eastern empire." Again: "Most of the evils of our rule in India arise directly from, or may be traced to, the heavy tribute which that country pays to England." *

Data for the ascertainment of the material condition of India not satisfactory.

Notwithstanding these and other apparently pessimist views the question whether the material condition of India is improving or not is one for a satisfactory discussion of which we have not the necessary data. And the Government do not appear to be at all desirous of collecting such data. Sir Louis Malet who was for a long time permanent Under-Secretary of State for India says in a minute: "If there is any one thing which is wanting in any investigation of Indian problems it is an approach to trustworthy and generally accepted fact. Now I am compelled to say that since I have been connected with the India office I have found a strong repugnance to the adoption of any adequate measures for the collection of a comprehensive and well digested set of facts." This repugnance is likely to be attributed—as it has, in fact, been so attributed—to the great probability of such facts showing "an appalling

* Quoted by Dadabhai Naoroji in his pamphlet on "The Poverty of India."

picture of poverty and misery." † Even such facts as are in the possession of Government, they appear to be unwilling to make public. In 1876, Mr. Dadabhai Naoroji made some elaborate calculations from which he deduced the average income of an Indian to be Rs. 20. In 1882, Lord Cromer calculated the average income to be Rs. 27 from data collected in a minute by Sir David Barbour the then finance minister. Mr. Naoroji after repeated attempts failed to secure the publication of the data. Last April he put the following questions in the House of Commons:

"Whether as Lord Cromer had stated with regard to his statement of 1882 about the annual average income per head that although he was not prepared to pledge himself to the absolute accuracy of a calculation of this sort, it was sufficiently accurate to justify his conclusion that the tax-paying community was exceedingly poor, and as the calculation was thus accurate, he would grant the return.....as such return was the only means of forming a fairly correct idea of the material condition of British India:

And, whether if he were unwilling to grant as a return the details of Lord Cromer's calculations, as asked in the first part of the motion he would give an opportunity to the honourable member for Finsbury of personally inspecting them."

Mr. George Russell replied:

"Considering that the statement to which my honourable friend refers was confessedly founded upon uncertain data, and that any similar calculation which might now be made must be founded on equally uncertain data, and might probably be misleading, the Secretary of State is unable to agree to my honourable friend's motion."

† Report of the tenth Indian National Congress, p. 52.

We have admittedly not got a body of well-ascertained, well-digested facts on which calculations with regard to the material condition of the people could be based. In fact, a member of the House of Commons of some thirty years' Indian experience, who had occupied the high posts of the Governorship of Bengal and of Bombay,* went so far as to declare on one occasion, in reference to the figures published by the Indian authorities, that they are "simply tabular statements of particular theories," and that "they are in fact shams, delusions and snares."

The average income which Lord Cromer allows the people of India is small enough. But it is curious that a civilised and highly expensive Government should not possess or publish reliable data for judging accurately whether that income had been larger or smaller before 1880, and whether it has been increasing or diminishing since. Yet it is certainly very important that we should know this.

We have, on the one hand, rose-coloured descriptions of the continued material prosperity of the people, and, on the other, heart-rending pictures of their poverty and gradual impoverishment. There are, however, certain facts periodically published by Government which throw some light upon material condition. The average monthly wage in rupees of unskilled labour in

* Sir Richard Temple at the debate on the motion of Mr. Samuel Smith for an inquiry into the condition and wants of the Indian people, and their ability to bear their existing financial burdens (August 1894).

certain selected stations roughly representing the provinces inwhich they are situated, between 1876 and 1890, was as follows: *

	Bengal Presidency.		N. W. Prov. and Oudh	Punjab		Bombay Presidency	Central Provinces	Madras Presidency
	Bengal	Behar						
	Bakhergunj R	Patna R	Cawnpore R	Delhi R	Amritasar R	Ahmedabad R	Raipur R	Salem R
Triennial average † 1873 to 1875	7·5	3 to 4	3·75	5·41	5·95	5·9	3·7	2·5
Quinquennial average 1876 to 1880	7·5	3 to 4	3·85	5	6	6·9	4	2·6
Do. 1881 to 1885	7·5	3·75	3·8	5·12	6	7·39	4·1	2·3
Do. 1886 to 1890	7·7	4·55	4·09	5·79	6·62	7·5	4·5	3·53

* Compiled from the tenth issue of "Prices and Wages in India" (Calcutta, 1893).

† Wages previous to 1873 are not given in the publication to which I have had access.

The average annual prices of staple food grains at these stations between 1871 and 1890 is shown by the following table (in *seers* per rupee) : *

	Bengal Presidency.		N. W. Prov.	Punjab.		Bombay Presidency.	Central Provinces.	Madras Presidency.
	Bakhergunj Rice.	Patna Rice.	Cawnpore Wheat	Delhi Wheat	Amritsar Wheat.	Ahmedabad Wheat.	Raipur Rice.	Salem Jawar.
Quinquennial average 1871-1875	21·71	20·45	20·12	27·1	23·86	13·44	34·33	32·1
Quinquennial average 1876-1880	15·87	16·83	17·5	17·78	19·46	11·04	25·58	14·78
Do 1881-1885	21·99	18·76	20·48	19·89	24·25	14·66	31·61	26·87
Do 1886-1890	16·23	18·44	16·88	16·43	18·56	12·02	18·07	25·55

It will be seen from the figures given above, that except in such places as Patna † and Salem where the wages were abnormally low, the rise in wages in the

* Compiled from the tenth issue of "Prices and Wages in India," Calcutta, 1893.

† With regard to the rise in wages in the Patna Division, however, the annual resolution of Government on the administration report of the Patna Division for 1893 says :

other places has not kept pace with the rise in the prices of the staple articles of food, so that generally the condition of the labourer in 1890 was worse than in 1880. At Raipur his monthly wages would, during the period 1886 to 1890, buy him only 81 seers of rice instead of 127 seers as in the period 1873 to 1875; at Delhi it would buy him 95 seers of wheat instead of 146; at Amritsar 122 instead of 141; and at Bakhergunj 124 seers of rice instead of 162. The discordance between wage and price of staple food appears strikingly great when compared with what they were two or three centuries ago. In the time of Akbar the monthly wages received by an unskilled labourer would have bought him 192 seers of wheat. *

The difficulties, however, in the way of arriving at a true picture of the material condition of India are so great that we shall not attempt it. But whether the annual drain referred to above has caused actual impoverishment or not, there can be no doubt, that by taking away from India what should have added to her capital, it has retarded her material development, and, therefore indirectly, her intellectual development also.

"Though the price of food-grains has owing to the opening out of railways and roads and other causes, risen greatly in this division in the past twenty years, there yet appears to be no corresponding rise in the wages of unskilled agricultural labourer. The wage of a common cooly is said to be now as it was eighty years ago 1½ to 2½ annas a day."

* See Vol. I. Introduction, p. lxxxv.

The evils of an alien rule are in the case of the British greatly aggravated by absenteeism. Had the British settled in the country the evils would have been minimised, if not counterbalanced, by the benefits resulting from their integration in the Indian community, and from consequent identification with the interests of that community.

Hindu ascendency in pre-Mahomedan times.

The moral effect of nearly all the responsible posts under the English Government being held by Europeans has been no less injurious than the economical effect. For the first time in their long history, the Hindus have come into contact with a people who have treated them as intellectually incompetent even to manage their own affairs, and who have excluded them from high positions of trust and responsibility. From remote antiquity India has been subject to invasions from beyond her north-western frontier. But, excepting the Mahomedans, whenever the invaders established themselves in India they could not resist the moral influence of the superior civilisation of the Hindus, and were sooner or later absorbed into the Hindu community. The Sacæ or Sakas, who made repeated incursions into India for several centuries before and after the Christian era, and who ultimately became ascendant over parts of Northern India, preserved their individuality but for a short time. The Huns, who repeatedly invaded India from the fifth century after Christ, and who established a separate kingdom in the

Punjab in the sixth, soon lost their national individuality and were merged in the Hindu nation. Even the Mahomedans, who when they occupied India had a civilisation scarcely inferior to that of the Hindus of the time, and a religion one of the most uncompromising that the world has ever seen gradually succumbed to Hindu influence. Throughout the Mahomedan period, Hindus occupied the highest posts under Mahomedan sovereigns both in the military and civil departments. The Hindus did not sink into political nonentity even in those parts which directly owned Mahomedan sway. They were admitted into situations of trust and responsibility. They commanded armies, governed kingdoms, and acted as ministers under Mahomedan kings. Ibrahim the fourth king of Golconda, had Jogadeo, a Hindu, for his prime minister. Mahomed Shah Sur Adil, who occupied the throne of Delhi about the middle of the sixteenth century, committed the conduct of his Government to one "Hemu, a Hindu who had once kept a retail shop, and whose appearance is said to have been meaner than his origin. Yet with all these external disadvantages, Hemu had abilities and force of mind sufficient to maintain his ascendency amidst a proud and martial nobility, and to prevent the dissolution of the Government, weighed down as it was by the follies and iniquities of its head."*

Hindu influence in Mahomedan period.

* Elphinstone's History of India. Cowell's Ed.—pp. 460-3.

During the reigns of the Emperors Feroksir, Rafi-ud-Darját, Rafi-ud-Doula, and part of the reign of Mahomed Shah, Rattan Chand, formerly a retail shopkeeper, enjoyed uncontrolled influence all over Hindusthán. He was deputy to Abdulla Khan, Vizier of the Empire. It was through his influence and that of Raja Ajit, that the poll tax upon the Hindus re-established by Aurangzeb was abolished. "He interfered," complains the Mahomedan historian, "even in judicial and religious concerns, in a way that reduced the crown officers to the condition of ciphers. It was impossible to become a Kazi of any city, without the consent of this Hindu being previously taken."*

When Alivardi Khan became prime minister of Shúja Khan, he called to his councils Raja Aalem Chánd and Jagat Set, the former of whom, says Golam Hussein Khan, "possessed great merit, and deserved all the confidence reposed in him." When Alivardi Khan became Governor of Bengal, he appointed as his prime minister Jánkírám, "who was a man of merit, and figured among the trustiest and most zealous of the Viceroy's friends."

Mohanlála was the minister of Surája-ud-Dowla, Governor of Bengal; amongst his other officers who held positions of trust, were Durlavrám and Rámnáráyan.

The Ain-i-Akbari gives a complete list of the high

* *Siar-ul-Mutakharin* (Briggs' Translation), pp. 89, &c.

officers during the reign of Akbar.* The following is the number of Hindus amongst them :—

I. Commanders of Five Thousand

1. Raja Bihari Mall.

2. Raja Bhagwan Das.

3. Raja Man Sing. He was for some time Governor of Bengal. Akbar promoted him to a full command of seven thousand ; hitherto Five Thousand had been the limit of promotion. It is noticeable that Akbar in raising Man Sing to a command of seven thousand, placed a Hindu above every Mahomedan officer.

II. Commanders of Four Thousand

4. Raja Todar Mall. Though often accused of headstrongness and bigotry by contemporaneous historians, Todar Mall's fame as general and financier has outlived the deeds of most of Akbar's grandees ; together with Abul Fazl and Man Sing, he is best known to the people of India at the present day. One of the most important reforms associated with Todar Mall's name is, the substitution of Persian for Hindi as the Court language.

5. Rai Rai Sing. He was promoted by Jehangir to be a commander of Five Thousand.

III. Commander of Three Thousand—Jagannath.

IV. Commanders of Two Thousand.

Raja Bir Bal. An entirely self-made man. He was very poor when he came to Akbar's court. Akbar conferred on him the title of Rai Kabi (or Poet Laureate) and had him constantly near himself.

8. Raja Ram Chandra Baghela.

9. Rai Kalyan Mall.

10. Rai Surjan Hada.

V. Commanders of One Thousand and Five hundred—2.

VI. Commander of Twelve Hundred and fifty—1.

VII. Commanders of One Thousand—3.

VIII. Commanders of Nine Hundred—3.

* *Ain-i-Akbari* (Blochmann's translation) pp. 308-526.

IX. Commanders of Eight Hundred—2.
X. Commanders of Five Hundred—12.
XI. Commanders of Four Hundred—5.
XII. Commanders of Three Hundred—6.
XIII. Commanders of Two Hundred—8.

The total number of Commanders in the various grades from Seven Thousand to Two Hundred was 415, so that the Hindus filled twelve per cent. of the most responsible political posts under Akbar. The Commanders named above all saw active service. Several governed important provinces; one (Todar Mall) occupied the high post of Vizier or Minister of Finance; and one (Man Sing) was raised to a distinction, which up to his time had been reserved only for Princes of the royal blood.

Mahomedan princes sometimes took Hindu wives, and several of the Emperors of Delhi were descended from Hindu mothers. It is said of Akbar, that from his youth he was accustomed to celebrate the *Hom* (a Hindu ceremony) from his affection towards the Hindu princesses of his harem.* Two of Akbar's wives were Hindus; and Jahangir was the son of one of them. Jahangir had ten wives, of whom no less than six were of Hindu descent. Shah Jahan was the offspring of one of these.† He had more of Hindu than of Mahomedan blood in him.

The Indian Mahomedans gradually became partially Hinduised. Their zeal for the propagation of Islam

* *Ain-i-Akbari*, Blochmann's translation p. 184.
† *Ain-i-Akbari*, Blochmann's translation pp. 308-9.

abated. The blind bigotry of the Moslem was gradually tempered by the philosophic culture of the Hindu ; and Hindu influence on the religion and government of the Moslem, gradually became more and more marked.

The brightest period of the Mahomedan Empire was unquestionably the period between the accession of Akbar and the deposition of Shah Jahan, and it was during that period that the Hindu influence was the strongest. Akbar and his most cultured Mahomedan courtiers—the brothers Faizi and Abul Fazl,—were greatly under Hindu influence. Abul Fazl was, in fact, held by some of his contemporaries to be a Hindu.* Akbar held the Hindu belief that it was wrong to kill cows and interdicted the use of beef.† The Hindu princesses of the harem gained so great an ascendency over him, that he not only foreswore beef, but also garlic, onions and the wearing of a beard. "He had also introduced," says Badaoni, "though modified by his peculiar views, Hindu customs and heresies into court assemblies, and introduces them still in order to please and gain the good will of the Hindus." Raja Bir Bar is said by some historians to have influenced Akbar in abjuring Islam. Bir Bar was the special favourite of Akbar. Badaoni says, "His Majesty cared for the death of no grandee more than for that of Bir Bar." The jealousy which the

* *Ain-i-Akbari*, p. 27.

† The Emperor Nasiruddin forbade the killing of oxen. Ferishta speaks of him as practising idolatry like the Hindus, so that the Koran was occasionally placed as a stool and sat upon.

pro-Hindu policy of Akbar excited amongst bigoted Muslims was intense, and finds expression in such passages as the following from Badaoni : *

"As it was quite customary in those days to speak ill of the doctrine and orders of the Koran, and as Hindu wretches and Hinduizing Mahomedans openly reviled our Prophet, irreligious writers left in the prefaces to their books the customary praise of the Prophet..... It was impossible even to mention the name of the Prophet, because these liars [Abul Fazl and Faizi] did not like it.

"The Hindus, of course, are indispensable ; to them belongs half the army and half the land. Neither the Hindusthanis (Mahomedans settled in Hindusthan) nor the Moguls can point to such grand lords as the Hindus have among themselves."

The Hindu Man Sing, Todar Mall and Bir Bar, and the practically Hinduised Abul Fazl and Faizi were amongst the most, if not the most, trusted of Akbar's councillors. They probably contributed more to build up the Mogul Empire on a sound basis of liberal and enlightened policy than all the other officers of Akbar put together. The pro-Hindu policy of Akbar was continued by Jahangir and Shah Jahan. The contest between Dara and Aurangzeb was really a contest between enlightenment and bigotry, between a pro-Hindu and an anti-Hindu policy. Dara belonged to the school of Akbar. He wrote a book attempting to reconcile the Hindu and Mahomedan doctrines. He had translations made of fifty *Upanishads* into Persian. Like Akbar, he was considered an apostate. He is said to have been constantly in the society of Bráhmans, Yogis and Sannyásis, and to have considered the Vedas

* *Ain-i-Akbari*, pp. 185, 204.

as the word of God. Instead of the Mahomedan, he adopted the Hindu name (*Prabhu*) for God, and had it engraved in Hindi upon rings. "It became manifest," says the author of Alamgir-námá, "that if Dara Sukoh obtained the throne and established his power, the foundations of the faith would be in danger." Aurangzeb was a bigot such as orthodox Mahomedans had long been looking for; they advocated his cause, as the Hindus did that of the elder brother. The cause of orthodox Islam triumphed. But the triumph was only temporary, ending with the reign of Aurangzeb.

Intellectual effect of the exclusive policy in military and political departments.

Under British rule, the Hindus are not *en rapport* with the governing class, at least to the extent they were under Mahomedan rule.* The military and political services except in the very lowest ranks are closed against the Hindus.† Opinions differ with regard to the wisdom of such exclusion. The policy of the Roman Empire was different as the following extracts from Gibbon's "Decline and Fall of the Roman Empire" shew:

"The grandsons of the Gauls who had besieged Julius Cæsar in Alesia, commanded legions, governed provinces, and were admitted into the senate of Rome. Their ambition, instead of disturbing the tranquillity of the state, was intimately connected with its safety and greatness."

* "The belief, then," says Sir C. Dilke of foreign observers, "is that our Indian Government.....needs to places itself in closer sympathy with the natives."

"Problems of Greater Britain" p. 124.

† "The officers of our native army are only superannuated old pri-

"Domestic peace and union were the natural consequences of the moderate and comprehensive policy embraced by the Romans."

"The obedience of the Roman world was uniform, voluntary, and permanent. The vanquished nations, blended into one great people, resigned the hope, nay, even the wish, of resuming their independence, and scarcely considered their existence as distinct from the existence of Rome. The established authority of the emperors pervaded without an effort the wide extent of their dominions, and was exercised with the same facility on the bank of the Thames, or of the Nile, as on those of the Tiber. The legions were destined to serve against the public enemy, and the civil magistrate seldom required the aid of a military force."

"The empire of Rome was firmly established by the singular and perfect coalition of its members. The subject nations, resigning the hope and even the wish of independence, embraced the character of Roman citizens, and the provinces of the West were reluctantly torn by the barbarians from the bosom of their mother country."

"The narrow policy of preserving, without any foreign mixture, the pure blood of the ancient citizens had checked the fortunes, and hastened the ruin of Athens and Sparta. The aspiring genius of Rome sacrificed vanity to ambition, and deemed it more prudent, as well as honourable, to adopt virtue and merit for her own wheresoever they were found among slaves or strangers, enemies or barbarians." *

Commenting on the exclusive policy of the British administration, Sir C. Dilke says: "To those who take a purely selfish view it may be urged that we can hardly

vates, who in virtue of their longer services draw larger pay, and are permitted to sit down in the presence of an English subaltern.....The Russians can get from the territories they have absorbed in Central Asia an Alikhanoff or a Louis Melikoff. We can only produce men who rise to the rank of Naik, Havildar, or Resaldar, or to some other subordinate post, the name of which perplexes the English public." "New India." (pp. 118-119).

* "Decline and Fall of the Roman Empire." ch. II.

long go on as we are, refusing to proceed further in the direction of the employment of natives in high office, with the Russians at our door pursuing the other policy, although pursuing it in a less degree than is commonly believed. The unshared rule of a close bureaucracy from across the seas cannot last in the face of widespread modern education of a people so intelligent as Indian natives."*

We do not consider war or politics to be a good school for progress, intellectual or moral. The less need there be for war or political strife the better would it be for humanity. But constituted as the world is now, and as it will probably be for many generations to come, the military and political types of intellectual progress must be valued, and their want in any people must be deprecated. The British system of administration, however, renders the development of such types, among the Hindus an impossibility, though there are apparently men who, if they had the opportunity, might have become highly capable generals and statesmen. The late Raja Mádhava Rao† may be cited as an instance of the latter. Many native statesmen have been pro-

* "Problems of Greater Britain" pp. 145-146.

† Mádhava Rao was born in 1828. He became Dewan of Travancore in 1858, and between that year and 1872, the Government of Travancore was virtually in his hands. He removed various fiscal restrictions and revised the system of administration. On his retirement from the service of the Travancore State he was for sometimes Prime Minister to the Maharaja of Holkar. Between 1875 and 1883, he administered the Baroda State. The late Mr. Fawcett called him the *Turgot of India*.

duced" says Sir Richard Temple "of whom the Indian nation may be justly proud"; and among them he mentions, besides Mádhava Ráo, Dinkar Ráo of Gwalior, Kirparam of Jammu, Pandit Manphul of Alwar, Madho Rao Barve of Kolhapur, and Purnia of Mysore.*

Exclusion in civil departments.

In the Civil departments of administration, the Hindus are practically, if not theoretically, almost excluded from the higher posts; as will be apparent from the following return furnished in 1891 by the then Under-Secretary of State for India in the House of Commons: "The proportion of Europeans, Eurasians and Indians in the covenanted and uncovenanted services [civil?] of India on March 31, 1886 at salaries varying from 50,000 and more rupees to 1000 rupees were as follow: Salaries of 50,000 rupees and upwards, 26 Europeans, 1 native; 40,000 Rs. to 50,000 Rs., 47 Europeans, 3 natives; 30,000 Rs. to 40,000 Rs., 125 Europeans; 20,000 Rs., to 30,000 Rs. 346 Europeans, 3 Eurasians, 2 natives; 10,000 Rs. to 20,000 Rs., 951 Europeans, 12 Eurasians, 40 natives: 5,000 Rs. to 10,000 Rs., 2078 Europeans, 111 Eurasians, 446 natives; 2,500 Rs. to 5,000 Rs., 1,334 Europeans, 1,647 Eurasians, 545 natives; 1,000 Rs. to 2,500 Rs., 2097 Europeans, 1,963 Eurasians, 6,915 natives."

In 1892, the covenanted Civil Service was composed of 939 members of whom only 21 were Indians.† The

* "India in 1880." p. 76.

† Strachey's "India," 1894, p. 58.

following table compiled from the report of the Public Service Commission (1886) exhibits the proportion of the higher grade appointments held by the Indians (Hindus, Mahomedans, Parsis &c.) in some of the minor departments :

Name of Department	Non-domiciled Europeans.	Domiciled Europeans.	Eurasians.	Indians.	Remarks.
Accounts Department ...	25	8	3	6	*"Domiciled Europeans" include Eurasians.
Customs	13	60	117	12	
Jails.....	60	15	13	16	
Opium.....	49	13	8	1	
Police	315	33	5	17	
Public Works.....	810	119*	—	86	
Salt	35	32	16	7	
Survey.....	108	103	38	2	

Policy of the exclusion

With reference to the exclusive policy of the British administration Mountstuart Elphinstone wrote as long ago as 1850 :

"I conceive that the administration of all the departments of a great country by a small number of foreign visitors in a state of isolation produced by a difference in religion, ideas, and manners, which cuts them off from all intimate communion with the people, can never be contemplated as a permanent state of things. I conceive also that the progress of education among the natives renders such a scheme impracticable, even if it were otherwise free from objection. It might perhaps, have once been possible to have retained the natives in a subordinate condition (at the expense of national justice and honour) by studiously repressing their spirit and discouraging their progress in knowledge ; but we are now doing our best to raise them in all mental qualities to a level with ourselves, and to instill into them the liberal opinions in government and

policy which have long prevailed in this country, and it is vain to rule them on principles only suited to a slavish and ignorant population." *

A writer quoted by Mr. H. J. S. Cotton in his "New India"† says :

"Repress educated natives, distrust them, let them see that the policy of India for the Indians and of training them to administer their own country is a fiction, and you weld them all into a solid phalanx united by the common bond of despair and hatred towards Europeans. Can any policy be more insensate than this? But open the door to their ambitions, and you at once let in all the emulations, class interests, sectional friction, which, if not in themselves good, are at any rate a necessary element in a healthy state of society, and instead of a solid phalanx you have a crowd of aspirants competing with one another under conditions which the Government will prescribe, and in a race of which it will be the umpire and distributor of the prizes."

Divergence of opinion with regard to the admission of Indians into responsible administration.

The Hindu is often authoritatively declared to be incapable of any work which is likely to exercise or develop his higher faculties ; and it is but seldom that he is allowed opportunities to rise above the routine work of clerkship. It is true the authorities sometimes differ very markedly in their estimates of the capabilities of Indians, though the facts on which the estimates are based may be the same. The proceedings of the Public Service Commission furnish curious instances of such divergence. Mr. J. Westland (now Sir J. Westland) said :

"A native will not bear the personal responsibility of going out of routine, and will be apt to break down when urgent work must be

* C. H. Cameron, "The duties of Great Britain to India" pp.173-174.
† *Op. cit.* pp. 78-79.

done. One Native did very well in such employment; but he was altogether an exceptional man, and no system of recruitment would bring half a dozen Natives equal to him into the department. A Native is not equal to a man bred and trained in European ways in the work of organisation and management of a large office. A Native Superintendent can rarely get over the fact that he belongs rather to the side of the clerks than of the masters. You cannot trust him to the same extent to work his clerks, and the work is not so efficiently turned out as under a European. . . .

"Some of the thirty-four appointments might be filled by Natives, but not one-third or anything approaching one-third, could be so filled with any advantage to the public service."

On the other hand, Mr. H. Cotterell Tupp, Accountant General, N. W. Provinces, held almost diametrically different views regarding the comparative merits of Europeans and Indians:

"We have already in our Accounts offices a class of officers called Chief Superintendents, who are the backbone of these offices; they are selected for merit from among the Superintendents, and it is so essential that they should be men of ability and energy that very little favouritism is shown in their selection. They are almost entirely Natives or Eurasians, and are fit for any work below the grade of Deputy Accountant-General; indeed it is upon them, and not on his European assistants, that an Accountant-General now depends for the carrying out of any really difficult task. . . . Besides the Chief Superintendents, there are in each large Accounts office ten or twelve Superintendents, most of whom are quite fit to do the work of an Assistant Accountant-General. From this large class we could at once recruit the forty Native and Eurasian assistants we require, and I would make Europeans unless domiciled, ineligible for these appointments. They have hitherto been appointed by nomination after a limited competition (which has been very nominal), and they have not been a success. A few good officers have entered in this way, but the majority are of very average ability and industry, and do not do their work in any way better than Natives of India, while they cost

much more. On the other hand, a few are much worse and more useless than Native officers would ever be, for the natives would be turned out, whereas the Europeans are allowed to remain out of pity for the fate that would befall them if they were dismissed."*

The Director General of the Post Office of India considered natives of India to be not well suited for the post of Superintendent; the Post Master General of Bombay, on the other hand, gave his evidence that they were.†

* Proceedings of the Sub-Committee of the Public Service Commission, Accounts Department.

† The Director General said:

"The recruitment of the Department is practically limited to domiciled Europeans or Eurasians, and to natives by race and blood. Comparing these classes as respects efficiency of service I would remark that the pure Native is usually specially qualified for sedentary occupation, such as the charge of a post office while the European or Eurasian is better fitted for work of a more active character. A native is trustworthy in money matters, obedient to rule, extracts hard work from subordinates, rarely objects to long office hours, is not addicted to exercise, and if employed near his home will work for a small salary. He therefore usually makes a good Post-master. For the position of Divisional Superintendent, which entails duties of inspection and supervision there is a general preference for Europeans on the part of heads of postal circles."

The Post-master General of Bombay, on the other hand, after describing the duties of the Superintendent, which are certainly not of a sedentary nature says:

"These duties are being efficiently discharged at the present time by Natives of India—Brahmans, Parbhu, and Parsi—in this circle who rank among the best Postal Superintendents in India; and so far as the ordinary postal administration of the circle is concerned, European agency in the Superintendent's grade is not, in my opinion, required so long as men of the same character and ability as the best of the present Native Superintendents can be obtained. There are,

There are it is true, a few Europeans, official as well as non-official, who have borne emphatic testimony to the fitness of the Indians for high positions of trust and responsibility. Sir Charles Turner remarked in his convocation address delivered before the University of Madras in 1887 said :

"Modern India has proved by examples that are known to, and honoured by, all in this assembly that her sons can qualify themselves to hold their own with the best of European talent in the council chamber, on the bench, at the bar, and in the mart."

We need scarcely make any apology for making the following rather long extract from the evidence of Mr. A. O. Hume before the Public Service Commission :

"The fact is—and this is what I, who claim to have had better opportunities of forming a correct opinion than most men now living, desire to urge—there is no such radical difference between Indians and Britons, as it too generally flatters the latter to suppose. The colour of the skins differ, and the ways and methods of thought of the two races, both descended from the same ancestral stock, have also come under the pressure of different environments to differ during the lapse of long ages, but at the bottom their hearts are much the same. Each race exhibits in a greater degree of development, virtues and vices, which are less prominent in the other; but if both races be judged impartially, and all *pros* and *cons* be fairly set down on both sides, there is very little ground for giving preference to either. If you compare the highest and best of our Indians with the ordinary of the rabble in England, these latter seem little better than monkeys beside grand men. If you compare the picked Englishmen we often get in India, trained and elevated by prolonged altruistic labours, and sobered and strengthened by weighty responsibilities, with the ordinary

however, outside demands to meet, for which it is essential that there should be some European Superintendents."* (Proceedings, Sub-Committee of the Public Service Commission, Postal Department.

rabble of India, the former shine out like gods amongst common mortals. But if you fairly compare the best of both, though each class will exhibit excellencies and defects less noticeable in the other, neither can as a whole be justly said to be better or worse than the other. No doubt amongst India's 250 millions there are too many of whom no good report can be made, these being the men who chiefly fawn upon, and strive to curry favour with Europeans, and those by whom these latter mostly guage the national character, but, may I ask, are there any lack of similar n'er do weels, even amongst the 30 millions of Britons.

This whole misconception arises from the habit Englishmen in India have acquired, of regarding only the blackest side of the Indian and the brightest side of the English character, and from their theories as to the capacities of the two races being based on a consideration of the worst specimens of the one and the best specimens of the other.

If only they could free themselves from race and class bias, and consider the two races as a whole with absolute impartiality, then all their honest, though erroneous, apprehensions as to the results of much more extended employment of Indians in even the highest offices of the state would disappear, and all the best men among them, at any rate would be as eager to promote as they are now to prevent this necessary and just measure."*

Mr. Routledge in his "English Rule and Native opinion in India" says:

"Again I have heard it said that a native of India goes as far as he is taught, and can go no farther. I deny this thoroughly and entirely. It is a gross misrepresentation. The native of India is an essentially capable man, and he is often badly used. I have seen Englishmen going through crowds of the people of India, as at the Calcutta and Howrah landing-stage, elbowing their way as through a herd of cattle, and the people, as a rule, falling back on all hands. Sometimes the rule is broken, and the brutality meets with its match;

* For some of the facts upon which the opinion of Mr. Hume is based, see Appendix.

but as a rule it selects the poorest people, and rarely is met with real determination. We count them as of inferior race, deny them careers, and then talk of them as incapable of higher life. When the Catholic in England was shut out from public life, what did he become? Some sank, for want of society, to a low state; some went abroad; some, like Mr. Charles Waterton, the naturalist, found a need for all their innate gentlemanliness and loyalty to preserve them from intense hatred to the nation that had proved to them so hard a step-mother. Yet no Roman Catholic ever knew aught so disheartening as the lot of the native of India." *

But the great body of Anglo-Indian opinion, official and non-official, is more or less antagonistic to the employment of Indians in high positions of trust and responsibility. The source of this incompetency is not always exactly indicated, and often not indicated at all. According to Sir George Campbell, "they [the literary Indians] have all the intellectual power and ability of the European, but have not always his courage and resource." † On some ground or other—on the ground of policy if not on that of qualification—the path to higher employment is practically closed against the Hindus. There is now almost a consensus of opinion as to their fitness for the highest grades of the judicial service. Sir C. Trevelyan said:

"There are whole classes of employment for which the natives are specially qualified. The natives are specially qualified for revenue functions. The whole of the appointments in the Customs might be filled by natives. Then there is the great judicial department. It stands that if they are fit to be judges in the High Court, surely they are *a fortiori* fit

* *Op. cit.* p. 277.
† "The British Empire" p. 84.

for all inferior appointments. The native judges are fully up to the mark not only in point of ability but in point of integrity likewise."

Mr. H. J. S. Cotton says:

"The intellectual attainments and moral virtues of Dwarkanath Mitter sufficiently vindicate the competence of natives to exercise the most responsible judicial functions. He sat for many years upon the Bench of the High Court of judicature in Bengal. Other native gentlemen might also be mentioned who before and after him have occupied the same post and acquitted themselves with credit. In the highest departments of the Judicial Service, as well as in the lowest, the employment of natives is admitted to be a successful experiment." *

Sometimes, indeed, reasons are assigned for keeping the Indians down at a low level which would not at all harmonise with the declared principles of British Rule. "I hold" said the Conservator of Forests, Berars Division, in his evidence before the Public Service Commission "that the highest posts in the department—those of administration—should always be held by Englishmen. It is right and proper, as well as necessary, that they should in India be at the head of all departments." †

It is the opinion of Sir John Strachey, that "in some branches of the service there is almost no limit to the share of public employment which they may properly receive. This is especially true of the Bench, for the performance of the judicial duties of which Natives have shewn themselves eminently qualified, and in which the higher offices are equal in importance and dignity and emolument to almost any of the great offices of the state."

* "New India" pp. 72-74.

† Proceedings of the Sub-Committee, Public Service Commission, Forest Department.

"Even on the Bench, however," adds Sir John Strachey "there are important administrative duties for which some degree of English supervision is necessary, nor would it be politically wise to place this great department of the Government altogether in Native hands."* Notwithstanding the admitted competency of the Indians for the highest judicial posts, it is probably on grounds of policy that they are still so largely kept out of them.

Colonel De Pree, Surveyor-General of India, said in a memorandum submitted to the Public Service Commission:

"I may here remark incidently, that my numerous late inspections show me that the tendency of the European Surveyors is to stand and look on, while the Natives are made to do the drawing and hand-printing as if they thought themselves quite above that sort of thing. This is a mistake, and it cannot be permitted for the future. Besides, it is suicidal for the Europeans to admit that Natives can do any one thing better than themselves. They should claim to be superior *in everything* and only allow Natives to take a secondary or subordinate part. . . .

"In my old parties I never permitted a Native to touch a theodolite or an original computation, on the principle that the triangulation or scientific work was the prerogative of the highly-paid European; and this reservation of the scientific work was the only way by which I could keep up a distinction, so as to justify the different figures of pay respectively drawn by the two classes, between the European in office time, and the Native who ran him so close in all the office duties as well as in field duties.

"Yet I see that Natives commonly do the computations now-a-days, and the Europeans some other inferior duties." †

* "India," p. 389."

† Proceedings of the Sub-Committee, Public Service Commission, Survey Department.

But instances of such indiscreet plain-speaking are rare. The moral effect of the exclusive policy has been no less disastrous than the economic effect. At every step the Hindu cannot but feel his degradation. If a man, though healthy, be repeatedly told that he is unhealthy, at least be treated as such, he will, very likely come in time to believe that there is really something wrong; even so, the Hindu, systematically treated as if he were unfit, is apt to lose his faith in his capacity, which, within proper limits, is essential for sound, intellectual development. The circumstances under which he is placed tend to make him morbidly timid and diffident. If his good fortune has carried him into the higher ranks of any of the services, his actions are subjected to a watch and a criticism to which those of his European colleagues would never be subjected; as a consequence errors which would be scarcely noticed in the case of the former, become prominent in his case and are pointed out as establishing his own unfitness and that of the race he represents.

Moral effect of the exclusive policy.

It is not necessary to suppose that his actions are intentionally subjected to exceptional criticism. The prejudiced eye sees faults and shortcomings where none exist, at least to the extent imagined. Besides, a community has usually a keener sight for the errors and failings of another community than for those of its own, especially when the relations between the two communities are such that the suppression of the one tends directly or indirectly to the elevation of the other.

Adverse criticism constantly repeated tends to create diffidence and want of boldness. These are however, not the only undesirable traits of character fostered by the exclusive system of British administration. The patronage of kings has since time immemorial, been the principal nursery of genius and talent in India. Literature, science, and art flourished mainly under the fostering care of some court or other. The British Government now occupies the position of these Hindu courts. The Government not only legislates, administers justice, and collects revenue, but also constructs railways, roads and buildings, and prosecutes scientific and literary research. Government service offers the best scope for ambition. It is preferred to such professions as law and medicine, because of the certainty of its prospects, and consequently absorbs as a rule the best talent of the country. Though this is not a desirable state of things, under present conditions it may be said to be almost unavoidable. The community is too poor to support literary or scientific work on Western conditions. But the Indian's scope for ambition in Government service is very limited. There are no great prizes for him, and consequently no great exertions are made. The tendency of the present exclusive system of the Government is to make him discontented and apathetic. There is no stimulus to call forth extraordinary energy and extraordinary vigour of mind, and consequently these qualities are not generally found well developed in him. We have already seen how the physical environment of the Hindu has