

THURSDAY, MARCH 1, 1888.

PHYSICAL SCIENCE AND THE WOOLWICH EXAMINATIONS.

WE are glad to learn that several Members of Parliament are interesting themselves in this important matter, and that Sir John Lubbock and Sir Henry Roscoe have both put down notices of motion calling attention to the changes that it is proposed to make in the regulations for admission to Woolwich. We hope and believe that their efforts will result in a rectification of these ill-conceived regulations.

We have already shown in our previous articles on this subject how completely the new regulations fail to find any justification, so far as their treatment of experimental science is concerned. We have demonstrated, by an examination of the professional course of training which the successful cadets will go through when at the Royal Military Academy, that of the subjects of general education experimental science stands below mathematics alone in practical importance for Woolwich cadets; whilst even a cursory inspection of the results of past examinations is sufficient to reveal the hollowness of the suggestion that in scientific subjects marks may be easily obtained by superficial study or cram. When we consider that the results of applying similar regulations in the case of the Sandhurst examinations are, or ought to be, familiar to the War Office authorities, it is astonishing that their extension to the scientific branches of the army should ever have been seriously contemplated.

The deliberate adoption of this scheme for selecting young men for a highly scientific profession, after the experience of several years had so completely established that it is eminently calculated to reduce the chances of candidates of scientific power to a minimum, can only be regarded as a remarkable example of official blundering. The rectification of the mistake is the more imperatively required because the treatment of natural science—that is, of candidates whose abilities are rather scientific than linguistic or mathematical—in public examinations has hitherto been altogether unsuited to the real wants of the age. Science in examinations being to a great extent a non-paying subject, the quality or even the existence of science teaching is regarded, at the best, as a matter of secondary importance in many or most of our schools. The question, therefore, deserves the closest attention from all who hold that it is absolutely essential that there shall be a steady and sure advance in the standard of elementary science teaching in this country.

In his reply to Mr. Howorth, the Secretary of State for War is stated to have said that these Woolwich regulations had been considered by a “strong Committee.” It would be interesting to know of whom this Committee consisted, and whether it was strong from a military or an educational point of view. Such information as we have been able to obtain leads us to conclude that it was a military Committee, and that though, as such, it was no doubt eminently fitted to come to wise conclusions on military questions—such, for example, as the proper training to be given to successful cadets after their admission to the Royal Military Academy—it was

by no means composed of men equally fitted by experience to deal with the other side of the question. It is surprising to find that this important change, which will profoundly affect much of the higher school work of the country, was apparently decided upon without, or almost without, consultation with those most experienced in such questions. This helps us to understand how it has happened that regulations not altogether unsatisfactory, and to which many places of education had adapted themselves, often at considerable expense and trouble, are suddenly to be displaced by others that are open to the gravest objections.

The new regulations seem to have almost every order of fault. They will be unfair to the candidates, leading to the rejection of those best fitted for the work to be done. It is to be feared, too, that they will encourage residence and study abroad, with the consequent loss of the valuable moral and physical training that can be had only in England. They will also act prejudicially on the general tendency of school education. We hope we may soon hear that better counsels have prevailed, and that these unfortunate regulations are to be replaced by others more in accordance with modern needs and ideas.

TEA CULTIVATION IN INDIA.

Die Theekultur in Britisch-Ost-Indien, im fünfzigsten Jahre ihres Bestandes, Historisch, Naturwissenschaftlich, und Statistisch. Dr. Ottokar Feistmantel. (Prague: O. Beyer, 1888.)

THE subject of tea cultivation in India is one to which innumerable writers have devoted their attention, and not the least valuable portion of Dr. Feistmantel's work, “*Die Theekultur in Britisch-Ost-Indien*,” is the bibliography of the subject with which, while recording his indebtedness for much of his information to many of the English and German authors enumerated, he commences his remarks. In his preface he explains that in the course of an address on the products and exports of British India, recently delivered by him in Prague, he alluded to the fact that on the Continent of Europe tea was generally known only as either Russian or Chinese, and that it was barely known that India produced a large and annually increasing quantity of high-class teas, which are largely used in London for mixing with and improving China tea. The correspondence which ensued when these remarks were reported by the local press induced him to publish the present work as the result of information he had the opportunity of collecting while serving in India for eight years as palæontologist to the Geological Survey.

It is Dr. Feistmantel's aim to place before the German-speaking peoples of the Continent as complete an exposition of the conditions of the tea industry in India as has already been laid before English-speaking people by other writers; and he therefore begins with an abstract of the early history of the tea-plant in India, the dates of its first discovery as an indigenous shrub, and its first introduction into the different districts in which it is now cultivated. He mentions the first export from India to England in 1838 of twelve chests of tea, which sold for 19s. 5d. per pound.

He points out the differences between the indigenous, the "China," and the hybrid varieties of the plant which are cultivated in India, and enumerates the various pseudo-teas which are known either in the frontier countries of India or in other countries: such as *Osyris nepalensis* or *arborescens*, in Kumaon, Garhwal, and lately in Kashmir; *Elæodendron persicum*, in Burmah, from which, when mixed with oil, salt, garlic, and assafoetida, is prepared the nauseous compound, to European taste, known as "pickled tea"; *Ilex paraguayensis*, the Paraguay tea, or "Mate," of South America; *Ledum palustre*, or Labrador tea; the Tasmanian tea, made from various varieties of *Melaleuca* and *Leptospermum*; and the Faham tea, *Angræcum fragrans* of Mauritius; and others.

The number of plantations in the various provinces, area under cultivation, and annual yield of tea for all India, are given in detail; and the differences between the various kinds of China and Indian tea, as proved by analysis, are very fully treated of. The principal black teas made in India are flowery pekoe, orange pekoe, souchong, pekoe souchong, congou, and bohea; as also the several varieties of broken leaf, such as broken pekoe, pekoe dust, &c. All these are not, as is commonly supposed, the produce of different plants, but are prepared from one and the same plant, the classification being caused by the difference of age and development of the leaves used for the several varieties. The principal kinds of green tea are gunpowder, hyson, and young hyson, and these are manufactured almost exclusively in the North-West Provinces and Kangra.

It may be accepted as a fact that Indian tea is very rarely adulterated, being packed on the plantation, and shipped direct from the planter to the market; but "China tea" passes through many hands before it is packed for shipment, and is frequently mixed with willow or other leaves, or with artificial colouring-matter. But the adulterated tea is not now readily saleable in London, and is therefore re-exported to the Continent. A direct importation of tea from India to the Continent would insure the purity of the supply.

In a lecture given before the Society of Arts, in May last, by Mr. J. Berry White, and quoted by Dr. Feistmantel, a table is given showing the steady rise of the Indian tea crop from 232,000 pounds in 1852 to 76,585,000 pounds in 1886; and Mr. White estimated that the crop for 1887 would not fall far short of 90,000,000 pounds. The amount of tea exported from India between October 1, 1885, and September 30, 1886, is officially returned as 68,784,249 pounds, of which 66,640,749 pounds went to England. Nearly the whole of this tea is consumed in Great Britain, a small quantity being sent to the Continent mixed with inferior China teas, and consequently sold as China tea. The percentage of Indian tea used in England has also been steadily rising, for whereas in 1865 China tea formed 97 per cent. of the entire consumption, in the first quarter of 1887 the proportion was 51 per cent. of Indian to 49 per cent. of China tea.

Notwithstanding the steadily increasing production in India, China tea is still imported into the country; in 1885-86 about four million pounds were imported, but mainly into Bombay, where none is grown, and much of it for re-export to the Persian Gulf, Afghanistan, and some to Trieste, where it arrives as Indian tea.

Statistics concerning the consumption of tea show that the greatest tea-drinkers are the Australians, who in 1881 consumed 81 ounces per head of the population. England ranked next with 73 ounces, while the United States of America came next with 21 ounces. Russia, Belgium, Holland, and Denmark rank highest among Continental nations as tea-drinkers, but they only consume from 7 to 8 ounces per head of the population.

Dr. Feistmantel fully indorses the prevalent English opinion as to the superiority of Indian to China tea, and attributes its being almost unknown on the Continent mainly to the fact that "China tea" is a much older, and therefore better known, product throughout Europe. Even in England Indian tea took years to establish its reputation. It will in the end be as much appreciated on the Continent as it is in this country if a few merchants and tradesmen in different Continental cities, whose commercial standing will be a guarantee for the purity of the goods they supply, are induced to keep it.

A special chapter is devoted to the cultivation of tea in Ceylon, and shows the marvellous progress made by this new industry in consequence of the coffee disease having caused the conversion of so many coffee plantations into tea plantations. In 1875 only 1080 acres were under tea, whereas in 1885 no less than 102,000 acres were occupied by it, and the exports rose from 282 pounds in 1875-76 to nearly four million pounds in 1884-85. The plantations are principally in the western and southern provinces of Ceylon.

Dr. Feistmantel's work concludes with an interesting chapter on caravan teas, compiled from an article by Herr Walter Japha, published in the *Revue Coloniale Internationale* for September-October 1887.

Some amongst us are apt to feel a certain amount of jealousy at the not infrequent employment of foreigners in Government appointments, and this feeling is perhaps intensified by the knowledge that in this matter, as in Free Trade, there is no apparent reciprocity—for we seldom hear of the employment of Englishmen by Continental Governments; but the present is an instance, and by no means a solitary one, of the great service done to us by foreigners who avail themselves of the information they have collected in the course of their employment by our Government to diffuse among their fellow-countrymen such an intelligent knowledge of the productions of our distant possessions as is calculated to largely benefit our commerce by leading to an extensive demand for the goods of which they write.

It would seem, however, scarcely just that the work of diffusing this knowledge should be left to other nations, seeing that the benefits are to be reaped by ourselves. It is hardly likely that in England it will be recognized, as it is in some other countries, to be part of the duties of any Government Department; but why should it not be part of the work of such a body as the London Chamber of Commerce, or the new Imperial Institute, to disseminate information regarding our Colonial and Indian products among Continental nations, and to translate and circulate any useful works on commercial and kindred subjects, published in foreign languages, among such classes of the community as they would be likely to interest?

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