

—to trace step by step the progressive stages by which the prothalloid phase has been diminished, and the ever, though gradually, increasing approach in the complexity and mode of reproduction to the Phanerogams—has demanded the most patient and prolonged research. The promised second volume will further diminish the hiatus still left between Phanerogams and Cryptogams, and make clear, the authors believe, the precise lines through which the evolution of the one from the other has been accomplished.

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MUSEUMS AND EXHIBITIONS IN JAPAN

THERE is probably no function of Government which the rulers of new Japan have performed so adequately and thoroughly, with such persistence and such unvarying success, as that which consists in the education of the people. It would be impossible in the space at our disposal to describe the course and results of education under the usurpation of the Shōgun; suffice it to say that, though learning of a peculiar kind always received support and encouragement, these were given on no sound or general system. The masses were neglected as beneath consideration, while literary labour of the best kind was always rewarded. No Japanese Horace need ever have lacked a generous Mæcenas. But it was not until the restoration of the Mikado and the overthrow of the feudal organisation that a system of universal education which should reach the lowest classes of the people was introduced, and the Government of Japan then looked abroad to those Western lands, to which the eyes of all Japanese were then turned, for models on which to base their new scheme. American teachers of eminence were first brought to the new University established in Tokio; these were soon followed by subordinate instructors for the various schools in the local centres, and in six years after the restoration there were two large educational establishments—the University and the College of Engineering—besides numerous smaller ones in the capital, while every administrative division had its central school—all provided with competent foreign professors or teachers. A large normal college in Tokio trained instructors for the schools in the interior in Western knowledge and Western methods of teaching; and from that time to the present the wise and beneficent system of general education adopted by the Government has gone on extending itself into the remotest parts of the country. As mentioned in a previous article, the number of foreign instructors was gradually reduced, first in the interior, afterwards at the capital, as Japanese trained at home or abroad became competent to take their places. The history of this remarkable spread of education in Japan will be found in the annual reports of the Minister of Education to the Emperor, and in an excellent series of papers published by the Japanese Commissioners to the Philadelphia Exhibition. The spirit in which this work is carried out is well shown in a circular recently issued by the Minister of Education for the guidance of teachers in elementary schools. According to the *Japan Mail* this document contains sixteen clauses, embodying a number of directions for the conduct of school officials. The chief points are (1) "the importance of imparting a sound moral education to the students, both by precept and example, since the condition of a man's heart is of far greater moment than the extent of his knowledge; (2) the necessity of proper hygienic arrangements, which have more effect upon the health of the students than gymnastics or any other physical training; and (3) the value of mental energy in a teacher, for without it he cannot possibly support the fatigue and trouble of really careful tuition." The circular goes on to advise teachers not to constitute themselves advocates of any particular religious or political

doctrines, and to take every opportunity of increasing their own stock of knowledge.¹

But while thus caring for the education of the youth of the country, that of its risen generation has not been neglected. Besides annual and triennial domestic exhibitions, museums have been established in most of the large towns in the country, and it is to these we would more particularly refer in the present article. It should be remarked at the outset that the Japanese are a nation of sightseers; not the vulgar, pushing, noisy mob to which we are too much accustomed in this country, but a quiet, orderly, pleased, and pleasing crowd. They are always anxious to see something new; failing this, they are content with their own temples and ancient festivals. In a visit to any of the numerous museums of Tokio or a Sunday or other holiday, the stranger from the West cannot fail to be struck with the order, good humour, and never-failing interest manifested by the people. The descriptions of the objects are generally very full and clear, so as to bring them within the meanest comprehension; and when these are read out to a group by some one more learned than the rest, the exclamations of wonder, admiration, or delight are incessant, and form a pleasing contrast to languid or imperfect interest frequently taken by our own crowds in their museums.

The first museum in Japan—the *Hakubutsu-kuwan*—was opened, as an experiment, in 1873. A few objects of Western manufacture and some Japanese productions were placed in the Confucian Temple, situated in one of the prettiest suburbs of Tokio. Vast crowds, attracted chiefly no doubt by the foreign exhibits, visited the place daily; and the Government, acting, we believe, on the advice of the governor of the city, determined to enlarge the exhibition considerably and make it permanent. It was accordingly removed to a more central position, the partially-dismantled residence of one of the old nobles being chosen for this purpose. Here the collection was deposited and gradually increased, until at the present time it fills a range of narrow buildings nearly a quarter of a mile in length. This may be called the permanent museum of the capital. A visit to it would strike one accustomed to the museums of Europe with a certain sense of incongruity. Close to the lacquered bullock-carts and chairs of the emperors of a thousand years ago we find English machinery of yesterday: in one compartment we see art treasures of a remote antiquity; in the next, Minton and Wedgwood; a corridor containing a large and valuable collection of the old paper currency brings us, it may be, to a collection of modern glassware. This joggling together of the ancient and modern, of articles familiar in the homes in the West with the priceless art rarities of the East; of the products of the skill and loving care of old Japanese artists with, we may almost say, Brummagem, jars unpleasantly on foreign taste. But it must be remembered that this establishment is founded, not for the educated foreigner or even native, but for the Japanese shopkeeper, farmer, artisan, and labourer, whose interest is not a whit diminished when he passes from a beautiful antique relic to a Bradford loom or a copy of the Milton shield. Indeed, we are not sure that

¹ As an instance of the general spread of elementary education, the present writer may take this opportunity of mentioning what he saw during an examination of some of the principal Japanese prisons in the summer and autumn of last year. He found all the children and youths in gaol—in some cases numbering a few hundreds—attending the prison schools for four or six hours each day, while the adults attended in the evenings and on Sundays. He saw in the chief penal settlement in Tokio about three hundred boys learning reading, writing, and the simple rules of arithmetic. In the senior class the boys were learning ciphering with *European figures* from one of their own number. In the large prisons a teacher or teachers form portion of the staff; they are assisted by convicts who act as ushers or monitors. In the smaller ones an inmate—generally a political prisoner—is selected as master, and enjoys in return certain small advantages. The prison system of Japan, theoretical and practical, would well repay examination at the hands of a competent authority on penal discipline. The present Governor of Hongkong, Sir John Pope Hennessy, who has had much experience in the subject in his various governments, has expressed his high appreciation of the excellent condition of Japanese prisons.

the modern exhibits, trumpery as many of them would undoubtedly appear to us, do not attract more attention than the productions of ancient Japanese art industry. We have even heard it suggested that, by placing these various articles under one roof, the Government desired to check in their people an unreasoning admiration of everything foreign, by showing them what Japanese themselves have done in the olden time.

It would be impossible here to describe in detail even the most striking museums of the capital. The Government of the great northern island, Yeso, have established one containing specimens of the flora, fauna, and other productions of that territory near the sacred grounds of Shiba. In the great park at Uyeno, a northern suburb of the city, the Education Department exhibits all the educational appliances of most of the civilised countries of the globe; while in the same neighbourhood is a smaller museum containing a collection of ancient art treasures, to which the Emperor himself has contributed. In all the chief towns throughout the country also—notably in Osaka, Kioto, and Nagoya—museums have been established by the local authorities. Sometimes these contain only specimens of the productions, natural and artificial, of the province in which they are situated; but generally objects of more universal interest are to be seen. These, as we have before remarked, are thronged on holidays by crowds of eager sightseers, and it would be difficult, more especially for a foreign observer, to estimate accurately their beneficial effect on the nation at large, in humanising the people and stimulating healthy competition and production.

The temporary exhibitions have been not less successes than the permanent museums. An annual exhibition of domestic products is held at Kioto, in the old palace grounds, and lasts for 100 days; and a triennial one on a large scale takes place in Tokio. This also is reserved for domestic productions. The second of these has just been closed, an Imperial prince representing the Emperor at the closing ceremonial. His Majesty, having attended at the inauguration and at the distribution of prizes, was able to say (we quote from the report of the *Japan Gazette* newspaper) that there were over 800,000 visitors in 122 days. Each of the speakers on this occasion bore witness to the value of these exhibitions, and noticed the marked improvement in the exhibits now over those of three years ago.

The prospectus of a domestic exhibition of trees and shrubs has just been issued. It is to take place in February next year, and besides specimens of the forests and plantations under Government, private individuals are invited to send exhibits of timber. The exhibition will be under the control of the Department of Commerce and Agriculture, and the result will doubtless be an interchange of knowledge which will be of the utmost value in a country where wood is one of the most universal necessities of life.

Two years since a most interesting exhibition took place at Nara, the site of an ancient capital of Japan. It was confined wholly to Japanese antiquities, and was under the direct patronage of the Emperor, who contributed many of the most valuable articles. We have referred in a previous paper to the success of an exhibition of the various instruments which have from time to time been employed to test the direction and intensity of earthquake shocks, which was held under the auspices of the Seismological Society of Tokio.

As cognate to the subject of this article we may refer to the public libraries of Japan. Lending libraries have existed in the country from very early times; but it is only recently that the Government have provided large collections of native and foreign works for students. One free library in Tokio, which was founded in 1873, contained a year ago 63,840 volumes of Chinese and Japanese works, 5162 English books, 6547 Dutch, and about 2000 volumes

in other European languages. It possesses a large reading-room, provided with many leading foreign journals; admission is wholly free, and permission to borrow books for a certain period is easily obtained. The number of readers is about three thousand a month. Another, containing about 143,000 volumes, including many ancient books and manuscripts, is practically free, an entrance fee of less than a halfpenny being charged. In addition to these many of the leading towns throughout the country are provided with free libraries, which are much used and appreciated by students. The cost of foreign books renders these institutions peculiarly valuable to natives, who, as a rule, cannot afford to pay our heavy prices.

It will thus be seen that the introduction of museums and similar establishments was a happy move on the part of the Japanese Government; they are heartily appreciated by the people, and their educating influence is immense. With the exception of the newspaper press no Western institution has been so rapidly or so successfully acclimatised in Japan.

THE INTERNATIONAL EXHIBITION AND CONGRESS OF ELECTRICITY AT PARIS¹

III.

THE Congress held its concluding sitting on Wednesday, the 5th inst., and was formally dissolved. Three international Commissions are to be appointed in accordance with the recommendations of the Congress, viz. :—

1. A Commission to determine what length of mercury at zero Centigrade, with a section of a square millimetre, has a resistance equal to the theoretical Ohm, that is, to 10⁹ C.G.S. units.

2. A Commission for the following distinct purposes:—To arrange for a general system of observations of atmospheric electricity; to arrange for a general system of observations on earth-currents; to determine the best system of lightning-conductors; to investigate the practicability of a general system of automatic transmission by telegraphic wires of the indications of meteorological instruments. The idea of this last investigation is taken from the apparatus of M. van Rysselbergh, which we described in a previous notice. In fact it is understood that the Committee will report on the advisability of extending to Europe generally the system which already exists in Belgium.

3. An International Commission for fixing upon a standard of luminous intensity, to be used in measurements of electric lights, and for deciding upon the best methods of making such measurements.

The following recommendations have also been made by the Congress:—That the diameters of wires employed in telegraphy be stated in millimetres; that the cultivation of the gutta-percha tree be guarded by suitable regulations, to prevent this important product from becoming scarce; that the Governments of the different countries be requested to legislate on the subject of submarine cables, the present state of the law being insufficient to guarantee the rights of property in such cables.

In illustration of the present state of things Dr. C. W. Siemens mentioned a case where a cable which his firm had laid was wilfully cut by a captain who had caught it with his anchor in deep water, and the law afforded no remedy. It is also understood that regulations are to be made as to the repair of cables which are crossed by other cables belonging to a different company.

A further recommendation, that all countries should adopt for ships engaged in laying cables the same code of signals which is already in use in English ships was withdrawn upon the presentation of indubitable evidence that the code in question was adopted months ago in a note signed by the representatives of all the nations concerned.

¹ Continued from p. 533.