

ment at South Kensington, under the superintendence of Professor Oliver, will be valuable for such collections, so far as botany is concerned. The Museum at Clifton College, built by Mr. Perceval at a cost of 900*l.*, will, we understand, be confined to British objects, and will be a combination of Museum and Library.

In conclusion, it cannot be too strongly insisted that objects of *virtu* or of curiosity should be rigidly excluded from any Museum, be it large or small, which is ostensibly set apart for the illustration of Natural History. It may require a certain amount of firmness to draw the line, and so run the risk of offending good-natured persons by the rejection of their proffered help; but it is best to take at once a definite position, and, unless the space at command be much larger than is usual in local Museums, to refuse even objects of Natural Science which do not illustrate some typical peculiarity, or at the least tend to the completion of a provincial collection. It is better to have a few objects, well arranged, and each teaching some definite truth, than hundreds of disconnected specimens, which, however interesting in themselves, are valueless as aids to instruction.

SCIENCE IN VIENNA

IT is well to turn from time to time to what is doing in the cultivation of Science in other lands. We are able to give the following details of the progress of Science, or rather of the machinery for the cultivation of Science, in Vienna, from a letter addressed by Prof. Haidinger to Dr. E. Döll, the editor of the *Realschule*, in the December number of which periodical the letter appeared. It was written by Prof. Haidinger in commemoration of the establishment, on the 8th November, 1845, of the first Viennese association for the cultivation of pure science, the twenty-fifth anniversary of which the writer thought deserving of celebration even in the midst of the exciting events of the disastrous war then waging between two of the most advanced of European nations; events the results of which, as he justly remarks, do not constitute the highest objects of human life, but on the contrary, evils, originating only from our still imperfect civilisation.

Before the year 1845 it appears from this letter that the only scientific societies established in Vienna dealt solely with the applications of scientific knowledge. Thus the Imperial Agricultural Society was founded in 1807, with the warm interest of the late Archduke John. Its progress was interrupted by the war of 1809, and its statutes were not confirmed until 1812. In 1836 the Imperial Medical Society was founded, followed in 1837 by the Imperial Horticultural Society, and in 1839 by the Industrial Association of Lower Austria. Gatherings of German naturalists and medical men took place at Vienna in 1831, at Prague in 1837, and at Gratz in 1843.

In 1835 a step of the greatest importance was taken in the establishment of the Imperial Mineralogical Collection, which took the name of the Imperial Montanistic Museum in 1843. The instruction given at this institution was supplemented by the forms of a society.

In the year 1845, the period of the Industrial Exposition produced considerable excitement, and on the 8th of November in that year a number of young miners, medical men, and naturalists, met in the Museum, and es-

tablished an association under the title of the "Friends of the Natural Sciences in Vienna." The list of those present at the first meeting includes the names of several men who have since risen to the highest reputation. Haidinger himself, then president of the Montanistic Museum, took the warmest interest in the success of the nascent society, and endeavoured to bring it into a perfect form, but, for some reason, without success. The meetings, however, were continued until the year 1850, and the subscriptions of the members enabled Prof. Haidinger to publish seven volumes of "Proceedings" in 8vo., and four volumes of "Memoirs" in 4to. The association was broken up after the foundation of the Imperial Geological Institute in 1849, and the library belonging to it was subsequently presented to that institution.

1846. The 30th of May is the date of the Imperial decree for the foundation of an Academy of Sciences in Vienna.

1847. On the 14th of May the statutes of the Imperial Academy of Sciences were promulgated, and the first forty members nominated. On the 29th of June the first functionaries of the Academy were nominated, and on the 2nd of December its first meeting took place.

1848. On the 2nd of February, the Imperial Academy of Sciences was solemnly opened by its curator, the Archduke John, and after this meeting the first part of the "Proceedings" was issued, forming the commencement of a long series of most important works in all branches of Science. The Academy of Sciences is not a society formed by the spontaneous action of its members, but rather an exclusive corporation founded by authority.

1848. On the 8th June, the Austrian Society of Engineers was founded, and is the first spontaneously-formed Society.

1849. The Imperial Geological Institute was established on the 15th November, under the Minister von Thinnfeld, on the foundation of the Montanistic Museum. This Institution partakes of the nature of a school of instruction, combined with that of a society.

1851. The 9th April witnessed the foundation of the first spontaneously-formed Natural History Society in Vienna, namely, the Zoologico-botanical Society, which owes its establishment to the exertions of Georg von Frauenfeld, who opened its first meeting on this day with an introductory address delivered in the hall of the museum of the Botanic Gardens. Frauenfeld was the first secretary of this society, a position which he still continues to hold.

1851. In this year also the Imperial Central Institute for Meteorology and Terrestrial Magnetism was founded under the direction of Karl Kreil, as a sequel to the labours of a Meteorological Committee of the Academy, appointed on the 18th January, 1849.

1853. The Antiquarian Society was formed under the presidency of Prince Aloys of Liechtenstein, on the 23rd March. On the 29th March, 1854, Dr. T. G. von Karajan was elected president. This is an independently-formed society.

1855. On the 1st December another independent society was established, namely, the Imperial Geographical Society, which held its first meeting on this day in the rooms of the Imperial Geological Institute. On this occasion the first president, Prof. Haidinger, delivered an address.

In the year 1856 much excitement was produced among the naturalists of Vienna by the meeting of German naturalists and physicians in that city, and a great impulse was given to Natural History studies by the voyage of circumnavigation performed in the years 1857-1859 by the frigate *Novara*, under the auspices of the Archduke Ferdinand Max, afterwards, to his misfortune, Emperor of Mexico. During this period also there was a movement in favour of publicity in the medical and philosophical faculties of the University, and some series of public lectures were delivered.

1860. On the 6th December the Society for the Diffusion of Physical Knowledge commenced its proceedings in the apartments of the Imperial Academy of Sciences. The first general meeting took place on the 13th May, 1861, in the hall of the Musical Society, when Prof. Eduard Suess delivered a foundation address. The proceedings and lectures may properly be carried back through the agency of Dr. J. Grailich and his associates to the year 1855, when they commenced in the meeting-room of the Imperial Geological Institute. This society has continued to give lectures on Natural Science in two places, in one of which the old forms of a society are retained, whilst in the other lectures find interested listeners.

1861. The Photographic Society, independently formed, held its first meeting under the presidency of Prof. A. Schrötter in the green saloon of the Imperial Academy of Sciences on the 22nd March. The first photographic exhibition in Vienna was opened on the 17th May, 1864.

1862. The Austrian Alpine Club was established, its first constituent general meeting being held on the 19th November.

1864. The Lower-Austrian Society for "Landeskunde" held its first constituent meeting on the 16th December.

1865. The Austrian Meteorological Society was founded on the 16th November, with an address from Dr. Karl Jelinek.

1866. The year of the war. Prof. Haidinger retired in consequence of ill health from the direction of the Imperial Geological Institute, and was succeeded by Franz von Hauer.

1869. A section of the German Alpine Association held its meeting in Vienna.

1870. The Chemico-physical Society established under the presidency of Prof. H. Hlasiwetz.

1870. The Anthropological Society founded on the 13th February. Its opening meeting was held in the Consistorial Hall of the University, when the president, Prof. Karl Rokitansky, delivered an address.

1870. The Numismatic Society established.

It is with a considerable pride that the venerable Prof. Haidinger describes the rapid advance that has been made in the scientific progress of his native city, and dwells upon the fact that the first impulse to this movement was given by the association of the "Friends of the Natural Sciences," in which he took so much interest. The cause of the failure to form a well-established society from such a promising commencement he finds in the unfavourable conditions of the time; and doubtless the spasmodic political movements which so closely followed the year 1845 may well have distracted the attention of German men of science. The nascent society seems, however, to

have merged into the Imperial Geological Institute, which has already done so much good work, and Prof. Haidinger is probably in the right when he claims for the "Friends of the Natural Sciences" in their new capacity a vigorous influence in the establishment of other scientific societies both in and out of Vienna.

The 8th November, 1845, may therefore well be "a day of joyful commemoration" with Austrian scientific men, for although, as Prof. Haidinger remarks, any retrospect reaching so far back must bring with it serious thoughts of the many participators in the first labours of the period who have disappeared from the scene, there is yet a higher point of view of a satisfactory nature, namely, that this period of twenty-five years has raised Austria to a far higher scientific position among nations than could have been claimed for her before, and, as he says, "Peaceful progress is certainly the highest and worthiest object of human endeavours."

LAUGHTON'S PHYSICAL GEOGRAPHY

Physical Geography in its Relation to the Prevailing Winds and Currents. By John Knox Laughton, M.A., F.R.G.S., &c. (London: J. D. Potter, 1870.)

THIS work is designed to show that the whole atmosphere, relatively to the surface of the earth, continually moves or tends to move from west to east, and that the permanent local variations from this direction are either eddies or deflections, formed in accordance with the principles which regulate the motion of fluids (p. 312). In the course of the discussion, Mr. Laughton has done good service by showing that prevailing opinions respecting the circulation of the atmosphere are very far from being in accordance with many well-ascertained facts; and by insisting on the dependence of oceanic on atmospheric currents, which is confirmed in every case where the facts are tolerably well known. The book also contains the best popular account we have of the prevailing winds over large portions of the ocean. But he is not so happy with respect to prevailing winds over the land, and in the reasoning he employs in proof of a general motion of the atmosphere from west to east.

It is stated that from Japan northwards the prevailing winds in summer are westerly (p. 136); and to the influence of these winds, blowing across the northern opening of the narrow seas of this part of the earth, are ascribed the southerly winds on the coast of China, and thence southward to the equator (p. 280). Now the prevailing winds of this region are not westerly in summer, the direction being E.S.E. at Tong-chow, S.S.E. at Peking and New-Chwang, S.S.W. at Nangasaki, S.E. by S. at Chacodate, E. at Nicolajewsk near the mouth of the Amoor, and N.E. at Ajansk, S.W. also prevailing to some extent at the last place.

We are told that the wind blows almost constantly from the west on the north-west coasts of the Old and New Worlds respectively (p. 154). Now, whilst in winter the prevailing wind in Vancouver Island is S.W., at Sitka it is E.S.E., easterly winds being to westerly as 4 to 1, and E.N.E. at Ikogmut. Again, over the whole of the west of Norway, the prevailing winds in winter are either S. or S.S.E. or S.E.; at Christiania they are N.E., easterly