

SCHOLARSHIPS AND EXAMINATIONS FOR  
NATURAL SCIENCE AT CAMBRIDGE, 1873

THE following is a list of the Scholarships and Exhibitions for proficiency in Natural Science to be offered at the several Colleges in Cambridge during the present year :—

TRINITY COLLEGE.—One or two of the value of about 80*l.* per annum. The examination will be on April 5, and will be open to all Undergraduates of Cambridge and Oxford, and to persons under twenty who are not members of the Universities. Further information may be obtained from the Rev. E. Blore, Tutor of Trinity College.

ST. JOHN'S COLLEGE.—One of the value of 50*l.* per annum. The examination (in Chemistry, Physics, and Physiology, with Geology, Anatomy, and Botany) will be in December, and will be open to all persons who have not entered at the University, as well as to all who have entered and have not completed one term of residence. Natural Science is made one of the subjects of the annual college examination of its students at the end of the academical year, in May; and exhibitions and foundation scholarships will be awarded to students who show an amount of knowledge equivalent to that which in classics or mathematics usually gains an exhibition or scholarship in the college. In short Natural Science is on the same footing with Classics and Mathematics, both as regards teaching and rewards.

CHRIST'S COLLEGE.—One or more, in value from 30*l.* to 70*l.* according to the number and merits of the candidates, tenable for three-and-a-half years, and for three years longer by those who reside during that period at the College. The examination will be on April 1, and will be open to the undergraduates of the College; to non-collegiate undergraduates of Cambridge; to all undergraduates of Oxford; and to any students who are not members of either University. The candidates may select their own subjects for examination. There are other Exhibitions which are distributed annually among the most deserving students of the College. Further information may be obtained from John Peile, Esq., Tutor of the College.

CAIUS COLLEGE.—One of the value of 60*l.* per annum. The examination will be on April 1, in Chemistry and Experimental Physics, Zoology, with Comparative Anatomy, Physiology, and Botany, with Vegetable Anatomy and Physiology; it will be open to students who have not commenced residence in the University. There is no limitation as to age.—Scholarships of the value of 20*l.* each, or more if the candidates are unusually good, are offered, for Anatomy and Physiology, to members of the college.—Gentlemen elected to the Tancred Medical Studentships are required to enter at this College; these Studentships are four in number, and the annual value of each is 113*l.* Information respecting these may be obtained from B. J. L. Frere, Esq., 28, Lincoln's Inn Fields, London.

CLARE COLLEGE.—One of the value of 50*l.* per annum, tenable for 3½ years. The examination (in Chemistry, Chemical Physics, Comparative Anatomy, and Physiology, and Geology) will be on March 26, and will be open to students intending to begin residence in October.

DOWNING COLLEGE.—One or more of the value of 40*l.* per annum. The examination (in Chemistry, Comparative Anatomy, and Physiology) will be early in April, and will be open to all students not members of the University, as well as all undergraduates in their first term.

SIDNEY COLLEGE.—Two of the value of 40*l.* per annum. The examination (in Heat, Electricity, Chemistry, Geology, Zoology and Physiology, and Botany), will be on April 1, and will be open to all students who intend to commence residence in October.

EMMANUEL COLLEGE.—One or more of the value of 50*l.* tenable for two years. The examination on April 1

will be open to students who have not commenced residence.

PEMBROKE COLLEGE.—One or more of the value of 20*l.* to 60*l.* according to merit. The examination (in June, in Chemistry, Physics, and other subjects) will be open to students under twenty years of age.

ST. PETER'S COLLEGE.—One from 50*l.* to 80*l.* per annum, according to merit. The examination, date not yet fixed, in Chemistry, Comparative Anatomy and Physiology, and Botany, will be open to students who will be under twenty-one years of age on October 1, 1873, and who have not commenced residence.

KING'S COLLEGE.—One of the value of about 80*l.* per annum. The examination, on April 21, will be open to all candidates under twenty, and to undergraduates of the College in their first and second year. There will be an examination in elementary classics and mathematics, in addition to three or more papers in Natural Science, including Physics, Chemistry, and Physiology.

Although several subjects for examination are in each instance given, this is rather to afford the option of one or more to the candidates than to induce them to present a superficial knowledge of several. Indeed, it is expressly stated by some of the colleges that good clear knowledge of one or two subjects will be more esteemed than a general knowledge of several.

Candidates, especially those who are not members of the University, will, in most instances, be required to show a fair knowledge of classics and mathematics, such, for example, as would enable them to pass the previous Examination.

There is no restriction on the ground of religious denomination in the case of these or of any of the Scholarships or Exhibitions in the colleges or in the University.

Further information may be obtained from the Tutors of the respective Colleges.

It may be added that Trinity College will give a Fellowship for Natural Science once, at least, in three years: and that most of the Colleges are understood to be willing to award Fellowships for merit in Natural Science equivalent to that for which they are in the habit of giving them for Classics and Mathematics.

NOTES ON ZOOLOGY AND BOTANY IN  
LISBON

LISBON possesses a remarkable natural history collection which is at present in process of transference to the new Polytechnic School buildings, which are only just completed. This institution is of imposing dimensions, built in the form of a square, with a quadrangular garden in the centre, and contain spacious and well-lighted laboratories, lecture rooms, and galleries for museum purposes. On the ground floor is a mineralogical and palæontological collection, and over this is the natural history series, which is contained in four fine rooms, one of which is devoted entirely to the African fauna, in which the museum is particularly rich. In all the rooms table cases are placed down the central line containing the collection of shells, which is very fine and well arranged, whilst upright cases are ranged along the walls and are filled with stuffed Mammalia, and birds, and variously preserved reptiles and fish. Amongst the Mammalia are two manatees, a fine specimen of the Aye-Aye, *Cheiromys*, and also one of the curious little otter-like animals from Africa, *Potamogale velox*, which has its tail flattened out into a vertical rudder. These are mentioned as rarities. The series is large and especially good in insectivora, moles, shrews, &c.

The birds are quite remarkable for the excellence of their preservation, and as the series is very extensive, it forms the chief feature of the collection. There are a large

number of rarities, amongst which may be mentioned a perfect specimen of the great auk, *Alca impennis*, in excellent plumage and preservation, *Didunculus strigirostris*, and a fine series of Birds of Paradise, including *Semiopteryx*.

Amongst the reptiles are large specimens of *Alligator nigra*, and a large number of *Chelonia*, and amongst the fish a fine series of *Selachians*. There is also a collection of the skeletons of vertebrata, and a large number of Invertebrata, corals, sponges, starfish, &c.; but this part of the collection is not yet arranged in the new building. The natural history department is under the direction of Prof. Barboyo du Bocage, who, it will be remembered, first described the siliceous sponge, *Hyalonema*, from Setubal Bay and on the Portuguese coast.

About a mile and a half or two miles from the heart of the city of Lisbon on high ground is the Botanical garden. The garden consists of two terraces, one above the other. The lower terrace contains nothing remarkable except a group of date palms, *Phoenix dactylifera*, one of which is about 45 ft. high, which are now in various stages of flower and fruit. On the upper terrace are two glass houses, but in bad repair and apparently not containing anything remarkable. But growing in the open air is a splendid specimen of the dragon tree, *Dracæna draco*, with a perfectly circular head of foliage, which must be 36 yards at least in circumference, whilst the stem is about 16 feet in circumference. The tree was covered with the dried remains of its fruit. *Aloe arborescens* is plentiful in the garden and indeed all over Lisbon, and is now in flower. Also growing in the open air are *Musa paradisiaca*, *Ficus elastica*, *Euphorbia verticifolia*. There is a nice series of plants classified according to their natural orders, the aloes and cactuses being well represented; but the whole garden has been allowed to fall into neglect, and presents a dreary appearance, being overrun with weeds, and most of the beds are nearly choked. It is intended to abandon the garden as a botanical one, and remove as many plants as possible to the garden attached to the new Polytechnic school, but it is to be hoped that the *Dracæna* will not be neglected. The flora generally which one meets with in Lisbon is most remarkable; Australian and Brazilian acacias abound in all the gardens, and thrive and become large trees. There is quite a rage for Eucalypti, which are said to grow as much as 14 feet in height here in a single year. They are to be seen everywhere, and some species are at present in blossom. At Embia, in the neighbourhood, tree ferns grow in the open air, and in the grounds of the King's palace besides *Chamærops* and *Phoenix dactylifera*, which are common in gardens about the town, *Fubæa spectabilis* and the Seychelle double cocoa-nut palm, *Lodoicea*.

H. N. MOSELEY

#### NOTES

MR. COLE, we regret very much to say, after fifty years public service, has announced his intention of resigning his post in connection with the Science and Art Department. It would be difficult indeed to estimate the extent and value of the services performed by Mr. Cole in behalf of science, services which have hitherto been most inadequately recognised, though we are certain this will not now be long the case. He has done more than any other man in the kingdom to establish schools of science throughout the country and to foster scientific instruction in every way, and that, too, in the face of opposition from quarters from which it would have been little expected.

PROF. SYLVESTER, late of the Royal Military Academy, Woolwich, has been elected a corresponding member of the Imperial Academy of Sciences of St. Petersburg.

WE have with great pleasure recorded from time to time the encouragement given to the study of Natural Science in our Universities and public schools, and are glad in reporting progress to notice that the governors of the Giggleswick Grammar School are carrying out the spirit of recent legislation in providing for the wider education which the age has called for. Giggleswick is an ancient village close to which, on the opposite side of the river Ribbles, the more modern town of Settle has sprung up. Situated at the foot of the mountainous moorlands of north-west Yorkshire, where the Ribbles quits its rocky gorges to wander over a wide rich valley, where peaty flats represent ancient lakes, this has long been known as a most interesting spot by the naturalist and antiquary. It was fortunate therefore for the cause of Natural Science, that the existence of an old well-endowed institution induced the Commissioners to fix upon Giggleswick as the chief school of a large district in the north of England, embracing some of the most important towns in Yorkshire. It so happens that in the immediate neighbourhood there are several very interesting caves, the exploration of which is being carried on by a Committee, amongst whom are many of our leading men of Science. The Committee have handed over the whole of the valuable remains obtained from the caves to the governors of the school, on the understanding that they will provide for their safe keeping and exhibition to the public. The Council of the Leeds Philosophical Society have followed up this by promising a very large series of duplicates from their museum, and the able curator of the Leeds Museum has undertaken to assist in the arrangement and classification of the collection. It is the duty of all scientific men to watch and encourage all *bonâ fide* efforts to give a prominent place to the teaching of Natural Science in our schools, especially where, as in this case, it is combined with a movement to form a scientific centre where illustrative specimens may be examined; and it is to be hoped that by-and-by all the standard works on scientific subjects may be consulted by a wide circle outside the school. The names of Sir James Shuttleworth, one of the governors of the school, and of Sir Charles Lyell among the supporters of the movement, offer a sufficient guarantee as to its character.

THE following extracts from a letter of Mr. Alexander Agassiz will be read with interest. It will be seen from them that the great fire at Boston did not spare the labours of scientific workers. The passage which refers to the health of his father, Prof. L. Agassiz, will give especial satisfaction to every naturalist on this side of the Atlantic:—"I am just in the middle of my Echini. I have had a very narrow escape with my book. The great fire, which has destroyed half Boston, came near to putting a stopper on my work. The plates of nearly one-third of the whole edition have not been printed, as the stones were lost in the fire. Fortunately I had about three hundred copies of the plates of parts I. and II. at the Museum out of the way, so must manage as best I can with that number. I lost, in addition, the stones of six plates of anatomy, with all the original drawings, which had been sent to the lithographer for lettering the plates. This is more serious, as it represents over a year's hard work, and the bulk of the notes being on the back of the drawings, it will delay the publication of my book for a good while. Parts I. and II. are at last out. My father has returned from his long trip a much better man than when he left, and it looks as if he would do a good amount of work yet. He has not been in such excellent health for many years."

THE increasing use of scientific terms in popular literature may be a good sign, but such terms have now and then to do unwonted duty. Witness a passage from a new tale entitled "Little Hodge," by the author of "Ginx's Baby." It is out of a pathetic description of a very small new-born child being weighed in the workhouse. "'Poor little creetur!' said the