

PUBLIC NATURAL HISTORY COLLECTIONS.

The following correspondence has just passed with the Chancellor of the Exchequer:—

"SIR.—As one of a body of working Naturalists deeply interested in the fate of the Natural History Collections now in the British Museum, I am requested to transmit for your consideration the enclosed Memorial, which we believe to express the views of a large number of persons engaged in the pursuit of science, although it has not been considered necessary to send it round for general signature. We also understand that it has the full concurrence of Sir William Hooker and others whose official situation prevents their actually joining in it.

"Should you desire to receive any personal explanation of our views we shall be happy to form a deputation to wait upon you at whatever time you may be pleased to appoint.

"I have the honour, &c.,

(Signed) "JOHN LINDLEY."

To the Right Honourable the Chancellor of the Exchequer.

SIR.—The necessity of the removal of the Natural History Departments from the British Museum having been recently brought prominently before the Public, and it being understood that the question of their reorganisation in another locality is under consideration, the undersigned Zoologists and Botanists, professionally or otherwise engaged in the pursuit of Natural Science, feel it their duty to lay before Her Majesty's Government the views they entertain as to the arrangements by which National Collections in Natural History can be best adapted to the twofold object of the advancement of Science, and its general diffusion among the Public—to show how far the Scientific Museums of the Metropolis and its vicinity, in their present condition, answer these purposes,—and to suggest such modifications or additional arrangements as appear requisite to render them more thoroughly efficient.

The Scientific Collections or Museums, whether Zoological or Botanical, required for the objects above stated, may be arranged under the following heads:—

1. A general and comprehensive *Typical or Popular Museum*, in which all prominent forms or types of Animals and Plants, recent or fossil, should be so displayed as to give the Public an idea of the vast extent and variety of natural objects, to diffuse a general knowledge of the results obtained by Science in their investigation and classification, and to serve as a general introduction to the Student of Natural History.

2. A complete *Scientific Museum*, in which Collections of all obtainable Animals and Plants, and their parts, whether recent or fossil, and of a sufficient number of specimens, should be disposed conveniently for study; and to which should be exclusively attached an appropriate *Library*, or Collection of Books and Illustrations relating to Science, wholly independent of any general Library.

3. A comprehensive *Economic Museum*, in which Economic Products, whether Zoological or Botanical, with Illustrations of the processes by which they are obtained and applied to use, should be so disposed as best to assist the progress of Commerce and the Arts.

4. Collections of Living Animals and Plants, or *Zoological and Botanical Gardens*.

The *Typical or Popular Museum*, for the daily use of the general Public, which might be advantageously annexed to the *Scientific Museum*, would require a large building, in a light, airy, and accessible situation. The Collections should be displayed in spacious galleries, in glass cases, so closed as to protect them from the dirt and dust raised by the thousands who would visit them; and sufficient room should be allowed within the cases to admit of affixing to the specimens, without confusion, their names, and such illustrations as are necessary to render them intelligible and instructive to the Student and the general Public.

The *Economic Museums* and *Living Collections* in Botany might be quite independent of the Zoological ones.

The *Scientific Museum*, in Zoology as in Botany, is the most important of all. It is indispensable for the study of Natural Science, although not suited for public exhibition. Without it, the Naturalist cannot even name or arrange the materials for the *Typical, Economic, or Living Collections*, so as to convey any useful information to the Public. The specimens, though in need of the same conditions of light, airiness, &c., as, and far more numerous than, those exposed in the *Typical or Popular Museum*, would occupy less space; and they would require a different arrangement, in order that the specimens might, without injury, be frequently taken from their receptacles for examination. This *Scientific Museum*, moreover, would be useless unless an appropriate Library were included in the same building.

The union of the *Zoological and Botanical Scientific Museums* in one locality is of no importance. The juxtaposition of each with its corresponding *Living Collection* is desirable, but not necessary—although, in the case of Botany, an extensive Herbarium and Library are indispensable appendages to the Garden and Economic Museum.

The existing Natural History Collections accessible to Men of Science and to the Public, in or near the Metropolis, are the following:—

IN BOTANY.—The Kew Herbarium, as a Scientific Collection, is the finest in the world; and its importance is universally acknowledged by Botanists. It has an excellent Scientific Library attached to it; it is admirably situated; and being in proximity with, and under the immediate control of the Head of the Botanic Garden, it supersedes the necessity of a separate Herbarium for the use of that Garden and Museum. But a great part of it is not the property of the State; there is no building permanently appropriated for its accommodation, and it does not include any Collection of Fossil Plants.

The Botanical Collection of the British Museum, consisting chiefly of the Banksian Herbarium, is important, but very imperfect. It is badly situated, on account of the dust and dirt of Great Russell Street; and the want of space in the existing buildings of the British Museum would prevent its extension, even were there an adequate advantage in maintaining, at the cost of the State, two Herbaria or Scientific Botanic Museums so near together as those of London and Kew. The British Museum also contains a valuable Collection of Fossil Plants, but not more readily available for Science than its Zoological Collections.

There exists no *Typical or Popular Botanical Museum* for public inspection.

The efficiency of the Botanical Gardens and Museum of Economic Botany at Kew, as now organised, and the consequent advantages to Science and the Public, are too generally recognised to need any comment on the part of your Memorialists.

IN ZOOLOGY.—The British Museum contains a magnificent Collection of Recent and Fossil Animals, the property of the State, and intended both for public exhibition and for scientific use. But there is no room for its proper display, nor for the provision of the necessary accommodation for its study—still less for the separation of a *Popular Typical* series for public inspection, apart from the great mass of specimens whose importance is appreciated only by professed Naturalists. And, in the attempt to combine the two, the Public are only dazzled and confused by the multiplicity of unexplained objects, densely crowded together on the shelves and cases; the man of science is, for three days in the week, deprived of the opportunity of real study; and the specimens themselves suffer severely from the dust and dirt of the locality, increased manifold by the tread of the crowds who pass through the galleries on Public Days,—the necessity of access to the

specimens on other days preventing their being arranged in hermetically closed cases.

A Museum of Economic Zoology has been commenced at South Kensington.

There is an unrivalled Zoological Garden or Living Collection, well situated in the Regent's Park, but not the property of the State, nor receiving any other than indirect assistance, in the terms on which its site is granted.

The measures which your Memorialists would respectfully urge upon the consideration of her Majesty's Government, with a view to rendering the Collections really available for the purposes for which they are intended, are the following:—

That the Zoological Collections at present existing in the British Museum be separated into two distinct Collections,—the one to form a *Typical or Popular Museum*, the other to constitute the basis of a complete *Scientific Museum*.

These Museums might be lodged in one and the same building, and be under one direction, provided they were arranged in such a manner as to be separately accessible; so that the one would always be open to the Public, the other to the man of science, or any person seeking for special information. This arrangement would involve no more trouble, and would be as little expensive as any other which could answer its double purpose, as the *Typical or Popular Museum* might at once be made almost complete, and would require but very slight, if any, additions.

In fact, the plan proposed is only a further development of the system according to which the Entomological, Conchological, and Osteological Collections in the British Museum are already worked.

That an appropriate *Zoological Library* be attached to the *Scientific Museum*, totally independent of the Zoological portion of the Library of the British Museum, which, in the opinion of your Memorialists, is inseparable from the General Library.

That the *Scientific Zoological Museum and Library* be placed under one head, directly responsible to one of her Majesty's Ministers, or under an organisation similar to that which is practically found so efficient in regard to Botany.

That the *Museum of Economic Zoology* at South Kensington be further developed.

Your Memorialists recommend that the whole of the Kew Herbarium become the property of, and be maintained by, the State, as is now the case with a portion of it—that the Banksian Herbarium and the Fossil Plants be transferred to it from the British Museum—and that a permanent building be provided for the accommodation at Kew of the *Scientific Museum of Botany* so formed.

This consolidation of the Herbaria of Kew with those of the British Museum would afford the means of including in the *Botanical Scientific Museum* a Geographical Botanical Collection for the illustration of the Colonial Vegetation of the British Empire, which, considering the extreme importance of vegetable products to the commerce of this country, your Memorialists are convinced would be felt to be a great advantage.

Your Memorialists recommend further, that in place of the Banksian Herbarium and other miscellaneous Botanical Collections now in the British Museum and closed to the Public, a *Typical or Popular Museum of Botany* be formed in the same building as that proposed for the *Typical or Popular Museum of Zoology*, and, like it, be open daily to the Public.

Such a Collection would require no great space; it would be inexpensive, besides being in the highest degree instructive; and, like the *Typical or Popular Zoological Collection*, it would be of the greatest value to the public, and to the Teachers and Students of the Metropolitan Colleges.

That the *Botanical Scientific Museum* and its *Library*, the *Museum of Economic Botany*, and the *Botanic Garden*, remain, as at present, under one head, directly responsible to one of her Majesty's Ministers.

The undersigned Memorialists, consisting wholly of Zoologists and Botanists, have offered no suggestions respecting the very valuable Mineralogical Collection in the British Museum, although aware that, in case it should be resolved that the Natural History Collections generally should be removed to another locality, the disposal of the Minerals also will probably come under consideration.

November 18, 1858.

GEORGE BENTHAM, V.P.L.S.

GEORGE BUSK, F.R.S. and Z.S., Professor of Comparative Anatomy and Physiology to the Royal College of Surgeons of England.

WILLIAM B. CARPENTER, M.D., F.R.S., and Z.S., Registrar of the University of London.

CHAS. DARWIN, F.R.S., L.S., and G.S.

W. H. HARVEY, M.D., F.R.S. and Z.S., &c., Professor of Botany, University of Dublin.

ARTHUR HENFREY, F.R.S., L.S., &c., Professor of Botany, King's College, London.

J. S. HENSLAW, F.L.S. and G.S., Professor of Botany in the University of Cambridge.

THOMAS HUXLEY, F.R.S., Professor of Natural History, Government School of Mines, Jernyn Street.

JOHN LINDLEY, F.R.S. and L.S., Professor of Botany in University College, London.

Home Correspondence.

Planting Wall Trees.—We have a border here about 200 feet in length and 27 in width, with a wall facing south-west, on which are growing Pear trees, which I doubt not are very old; they have evidently been cut back within the last few years, as their limbs are young while their trunks are old; they are unfruitful, at least, what little they produce is very inferior both as regards size and quality. The roots are probably deep in the subsoil, which is something between a stiff rank loam and clay. My employer wishing to have better Pears gave me permission to remove the whole or replant, but instead of that I have adopted the following plan, first cutting away the lowest branches from the growing trees sufficiently so as not to interfere with newly planted ones for a year or two (upon the principle that a half loaf is better than no bread). I then caused holes to be dug midway between the trunks of the old trees 9 feet by 7 feet, 18 inches deep on the side next the wall, and 24 inches deep on that furthest from it; I placed a layer of brickbats and stones over the bottom, breaking them moderately small with a hammer. After that I rammed them down firmly with a bricklayer's rammer; I then mixed up in a tub with water, hot lime, sand, and fine gravel, and poured over the broken rubble a quantity sufficient to form a hard concreted surface. Along the front of the border a row of circular holes, 15 feet apart from centre to centre and 6 feet in diameter, has been dug the same depth as that under the wall and concreted in the same way. In these I intend planting Pear trees to form pyramids. All the holes I have filled with pure turfy loam of a somewhat sandy nature, viz., the top spit and shovellings from old pasture land. I should have stated that the mould

taken out of the holes was spread over the border, except the rank soil from the bottom which was carted away. [We advise you to burn this.] By this means the whole border has been sensibly raised. Is there any reason why these preparations should fail to grow good sorts of Pears well? Of course as the roots extend it may be necessary to enlarge the size of the holes. Will the soil I have used prove suitable of itself for Pears? or would it have been better to have mixed with it a considerable quantity of the surface soil alluded to above? Would it have been wise to have introduced well rotted manure with the loam in so confined a space? or to have mixed in rubble for drainage? Will the plan just described suit Peach trees? And lastly, what sorts of Pears are likely to yield a moderate supply in succession from so limited a number of trees, viz., about two dozen. We have also to cover a high wall about 150 feet in length, with a north aspect, the half of which I purpose to plant with Morello Cherries. What kind of trees and what sorts would succeed best on the remaining half? If any of your correspondents deem these questions worthy of notice I shall be glad to receive through your columns any good practical suggestions on the subject, as I have other kinds of wall trees to plant, and I am desirous of doing so with every possible chance of success, having available means at hand for any reasonable amount of extra labour and cartage. A. Z.

Water Lilies.—In answer to "Novice" (see p. 734), I beg to say that the best means of getting rid of these is to cut them with a scythe twice in a season; the first cutting is not always sufficient to kill them, but the second cutting opens the pores, lets in the water, and kills them. Generally, however, the first year's cutting is sufficient. W. Henderson, Inventor of the Patent Improved Broomhead, Dunkeld.

Musical Mouse.—We hear now and then of things so unlikely or rather so unlike what have at any time come within the grasp of our experience and observation, that, on those nows and thens, one is much more faithless than believing, still the following is quite true, however unlikely. There is now in the possession of Henry Brockhurst, 36, Clinger Street, Hoxton, a mouse gifted with a canarified power of song. It appears to have been in the habit of visiting the birds in their cages, of eating of their food, and drinking of their drink, of listening to their strains, and enjoying them, until it bethought itself of the propriety of repaying its entertainers in notes current among them. It made the attempt and succeeded; timidly at first in its retreat it commenced its warbling. At length, however, its song grew richer, its notes of melody being poured forth in the cages of the birds. Caught at last, it now occupies its own cage, and still at morn, noon, and quiet eve, are its pleasant melodies performed. Nor would any one not pre-informed to the contrary say they came from aught but a bird. It is undeniably a four-footed wonder. It makes no secret of its abilities. Doubtless its sweet music is the result of lessons received from the canaries, and there is only about as much difference between its notes and those of the birds as there is between the tones of a flageolet and a flute. J. Swain, General Post Office. [We once heard one of these melodious mice, but its music appeared to our ears very like squeaking.]

Miselto on the Oak.—Miselto is mentioned as growing upon an Oak on my estate here in your volume for 1850, p. 518, and that bunch of it is still alive and flourishing. I communicate this, because there is an error in your recent notice of this Oak with Miselto in it (see Nov. 20, 1858, p. 848) which obviously arises from a misprint of Ledbury for Sedbury in the notice of it given in 1850. *Geo. Ormerod, Sedbury Park, Chepstow, Nov. 22.*—The place near Ledbury where the Oak carries the Miselto is the park at Eastnor Castle, the seat of the family of Somers Cocks; and is I believe one of very few instances of that parasite growing on the Oak. J. B.—I notice in the *Gardeners' Chronicle* of Nov. 20 an answer to an inquiry on this subject, in which it is stated that it may be made to grow on anything except resinous trees. It is perhaps inferring more than is absolutely stated to conclude that the author of this answer meant that it does not and will not grow on resinous trees, though I do not see why it should be impossible to make it grow upon any and every tree upon which it grows naturally, unless experience has proved the contrary. That it does grow upon resinous trees naturally I have ascertained from personal observation. I have seen it upon the Silver Fir in extreme profusion; and also abundantly upon a Fir in the valley of the Rhone, which I could not distinguish from the Scotch. In a valley of the Eastern Pyrenees to the south of Pau, either that of the Eaux Chaudes or the western valley above Caunterets, in 1852 I saw Miselto growing on the Silver Fir in such abundance as absolutely to smother and kill the natural growth of the tree—from 30 to 50 plants on a single tree; and a forest of some extent was thus affected. In 1856 I saw it growing abundantly, but not so profusely on a true Pinus, I believe Pinus sylvestris, in the Valais, in the neighbourhood of Tourtagnie; and in this present autumn, 1858, I saw it growing on Firs in the valley of the Inn—between Sils and Imst, if I recollect the exact place rightly. In this case I believe it was upon a true Pinus, allied to P. sylvestris, but having previously seen it growing upon one of that highly resinous section, I did not remark the fact as a novelty with so much accuracy as in 1856. At all events Miselto grows naturally upon several species of the Pine tribe, and I see no reason why it should not grow