

Chest to expend a sum of 7500*l.* on the erection of an annex to the east side of the present University Museum to contain the collection and to provide the requisite cases and fittings; a vote of thanks to General Pitt-Rivers was also passed.

This most important collection, therefore, which commenced its public existence at Bethnal Green, and has so long been exhibited at South Kensington, will rest finally at Oxford, where it cannot fail to be studied with ever increasing interest and benefit to learning generally. The title of the collection as the "Pitt-Rivers Collection" is to be maintained, and the developmental and gradational system of arrangement devised by the donor, and carried out by him in the greater part of the collection, with such valuable and interesting results is to be retained. The new building, which will be provided with two galleries, will be entered by two doorways at different levels from the present University Museum.

The delegates of the Museum have elected Dr. E. B. Tylor to be Keeper of the Museum in place of the late Prof. Henry Smith, so that the new collection, as well as the anthropological collection of the late Prof. Rolleston, will fall into the hands of the man most suited to arrange and explain them.

JOHN RICHARD GREEN

THE death of Mr. Green, at the early age of forty-five years, we regard as a serious loss not only to historical literature but to science. We have frequently maintained that science has no peculiar sphere, that every field of human research is capable of scientific treatment. As we pointed out in reviewing Mr. Green's famous "Short History" and his "Making of England," he has the credit of having been the first historian who appreciated the function of science in a State, or the moulding power of the environment of a people. Not only so, but he distinctly aimed at showing that the history of a people is simply an evolution dependent for its course and outcome on the action and reaction between the entity and its surroundings. This conception of the function of the historian was probably even more distinctly brought out in the "Geography of the British Isles," by Mr. Green and his accomplished and congenial wife. As we pointed out in our notice of the "Short History" moreover, Mr. Green not only wrote his "History" on a scientific method, but gave large space in that history to a record of the progress of science and of scientific societies, as distinct and influential elements in the life of our nation. Indeed he may be regarded as the first historian who, breaking away from the old conventional methods of writing history from the outside, and thus mistaking the shell for the kernel, adopted the method of the physical geographer as distinct from the mere topographer, and, penetrating deep beneath the surface, traced the forces which have actuated the nation and brought it to its present standpoint. Although the impulse given by Mr. Green to historical study will certainly bear fruit, his loss cannot be overestimated. His "Making of England" was evidently only a prelude to a series of volumes in which he intended to show in minute detail the interaction between the various elements that go to make up the life of these islands,—the ethnical and moral elements on the one hand, and the encompassing physical elements on the other. Happily he has left behind him in a nearly complete state a second volume on "The Coming of the Northmen," which brings his scheme down to the point when it may be said that all the forces were in the field, the continued action of which has gone to make up the England of to-day. Since Mr. Green's death ample testimony has been borne to his rigidly scientific method of work, and the patience with which he wrote and rewrote ere his own severely critical

standard was reached. It will be difficult to find a successor to Mr. Green so far as stirring eloquence of style is concerned, but we trust that his scientific method may find favour, and that historians in future will endeavour to trace the life of a nation as he did, after the manner of the biologist and physical geographer.

THE BOTANY OF THE "CHALLENGER" EXPEDITION

FROM time to time various contributions to the Botany of the *Challenger* Expedition have been published in the *Journal* of the Linnean Society, chiefly in the fourteenth and fifteenth volumes; but hitherto no part of the botanical results has appeared in the series of sumptuous volumes in which are recorded the discoveries and observations of the expedition. The Government have at length decided to devote one volume of about 350 pages and fifty plates to the elucidation of the flora of the more interesting countries visited, which the writer of the present article has undertaken with the assistance and under the superintendence of Sir Joseph D. Hooker. There can be no doubt that the Government are right in their estimate of the relatively small importance of the results obtained in botany as compared with those obtained in other branches of science; yet we think we shall be able to show that the botanical collections are sufficient to form the basis of a most interesting volume. It is almost superfluous to state that the botanist of such an expedition has little chance of exhausting the flora of any of the numerous countries or regions visited; and the task of elaborating the materials seemed at first an unpromising one. At many of the places visited, and especially some of the more interesting ones, the stay was too short and the means inadequate for making and drying large collections of plants. Nevertheless the naturalist, Mr. H. N. Moseley, seems to have lost no opportunity, having collected in almost every place touched at. Unfortunately the plants of the least-known countries, such as the Aru and Admiralty Islands, reached England in a very much damaged condition. But imperfect as they are, they include a large proportion of novelties, and indicate a flora rich in endemic species. The best collections, so far as number and quality of the specimens are concerned, are those from Chili, Juan Fernandez, Japan, the Sandwich Islands, &c.; yet they contain little or nothing new to science, and by no means fully represent the vegetation of the several countries. There remain the collections made in the remote islets of the Atlantic and Southern Oceans, which, with what was previously known, afford material for a practically complete flora of these isolated spots, so interesting to the student of the distribution of plants and animals. And it has been decided that this shall be the scope of the work.

The Bermudas, the oldest English colony, come first in the arrangement adopted. These islands, having an area of about one-seventh of that of the Isle of Wight, are situated about six hundred miles from the American continent, and although settled as long ago as 1612, nothing approaching a complete and critical account of their vegetation has hitherto been published. The flora is a poor one, especially in regard to number of species, and is evidently of comparatively recent origin, being in this respect in striking contrast to that of various other Atlantic islands—that of St. Helena, for example. The indigenous element has been, almost without exception, derived from the West Indies and the extreme south-east of the mainland of North America. By the indigenous element we mean those species which have reached the islands independently of human agency, direct or indirect. With unimportant, though rather numerous, exceptions, the indigenous and introduced elements are easily dis-

tinguished. A remarkable feature in the vegetation is the almost total absence of endemic forms. The possible important exceptions are the native palms. There are two or possibly three species, of which one belongs to the genus *Sabal*. Without due investigation, it has been generally accepted as a fact that there was only one indigenous palm, and that this was identical with the *Sabal Palmetto* of south-eastern North America; but in elaborating the palms for the "*Genera Plantarum*," Sir Joseph Hooker became aware that the imperfect herbarium specimens in this country represent two species, one of them at least evidently different from *Sabal Palmetto*. Several historical passages in Sir J. H. Lefroy's work on the Bermudas confirm this view. Thus, in one place it is recorded that the only food certain fishermen took out to sea with them on a given occasion was "Palmitoe berries"; and in another place that the workmen did not hesitate to share this fruit with pigs and other animals, and even preferred it to bread to eat with their meat. Every effort is being made to obtain material this season to set this question at rest. The earliest references we find to the vegetable productions of these islands are in the "History of the Bermudæ," edited by Sir J. H. Lefroy, and some of these are valuable, because they enable us to say with certainty that one species of *Opuntia*, for example, existed in abundance previous to the settlement of the islands.

François André Michaux was the first botanist who visited the Bermudas. In his case it was unintentional, the fortunes of war having been the cause of his spending a week there in 1806. He published an interesting sketch of the vegetation, though the following extract reveals a want of exactitude: "Parmi ces plantes [*i.e.* les plantes naturelles au pays] on en trouve plusieurs de l'ancien continent, qui ne paroissent pas de nature à y avoir été transportées: telles sont *Verbascum thapsus*, *Anagallis arvensis*, *Mercurialis annua*, *Leontodon taraxacum*, *Plantago major*, *Gentiana nana*, *Oxalis acetosella*, &c." The two last names must have been a slip of the pen. Since Michaux's time two imperfect lists of Bermudan plants have been published, both in 1873. One, by J. M. Jones, F.L.S., is marred by some rather gross errors in classification and nomenclature, yet it contains some interesting information. The other, by Dr. J. Rein, was prepared with greater care, and contains 128 species of introduced and indigenous flowering plants and ferns, besides upwards of 100 algæ. Altogether Mr. Moseley collected 162 species of plants. In addition to these is a considerable number sent to Kew by Sir J. H. Lefroy during his governorship of the islands, making a total of about 320 species that occur in a wild state. These may be classified as follows: indigenous, 130; probably indigenous, 57; certainly introduced, 133. The last number would be higher if we included solitary waifs of other species.

Next in order of the *Challenger* collections come those of St. Paul's Rocks and the island of Fernando Noronha, in which Mr. Moseley collected about sixty species, including a new species of *Oxalis*, one new *Asclepiad*, and one fig, &c. Had permission to collect objects of natural history not been withdrawn after the first evening, there is no doubt this collection would have been an important one.

Proceeding southward and taking the other islets on our way, we have Ascension, St. Helena, Trinidad (off the coast of Brazil, in about 20° 30' S. lat.), Tristan d'Acunha, and the neighbouring islets Inaccessible and Nightingale; and thence southward and eastward, Gough Island, Lindsay and Bouvet Islands, Prince Edward and Marion Islands, the Crozets, Kerguelen Island, the Heard group, St. Paul and New Amsterdam. With the exception perhaps of Kerguelen Island, the published accounts of the botany of these oceanic islets are all most imperfect and scattered. We are unaware of any complete enumeration

of the exceedingly meagre indigenous flora of Ascension. St. Helena has fared better; but the fifty or so indigenous species are lost amongst the 1000 species of introduced plants enumerated in Mr. Melliss's book "St. Helena," the botanical value of which consists chiefly in the figures of the endemic plants. Moreover Mr. Melliss did not elaborate the synonymy of the flora, and some of the Cyperacæ were undetermined, whilst a few, we believe, were omitted.

The island of Trinidad is rather farther from the coast of Brazil than the Bermudas are from North Carolina, and very little is known of its vegetation. On the outward voyage of Sir J. Ross's Antarctic Expedition, Sir Joseph Hooker and some of the other officers landed on a small rocky cove, where they were unable to scale the barrier cliffs, so they could not penetrate to the interior of the island, and they brought away only one fern (*Polypodium lepidopteris*) and one sedge (*Fimbristylis*, sp.), though there were tree-ferns and other trees, in sight from the ship, on another part of the island. In 1874 Dr. Ralph Copeland, of the Duncecht Observatory, who accompanied one of the transit expeditions, landed on the east side of the island, and succeeded in reaching the elevated centre, where he found several ferns in great luxuriance, and collected a few scraps of plants, including a new tree-fern. The most interesting plant, however, was *Asplenium compressum*, a fern previously known only from St. Helena, though Melliss, by some unfortunate slip, records it from South Africa, Madagascar, &c. Dr. Copeland further states that, although most of the valleys of the north side of the island contained enormous numbers of dead trees, not a single living one was to be seen, except near the highest points. They appeared to have been dead many years and were mostly overturned. He was unable to investigate the phenomenon, but suggests that they may have been destroyed by goats, though he adds not a mammal of any kind was seen.

Tristan d'Acunha itself was explored by Dupetit Thouars in 1793, and he described the plants in a paper which he read before the *Institut* of France in 1803. The next botanist who visited the island was Carmichael, who published an enumeration of the plants he collected in the *Transactions* of the Linnean Society. Mr. Moseley botanised the same island and the neighbouring Nightingale and Inaccessible Islands, and collected not only those previously known, but also some new species of Cyperacæ. Previously, too, *Gnaphalium pyramidale*, Thouars, was unknown at Kew, or rather a young plant of it collected by Carmichael could not be identified as such with certainty.

We have little space left, so we can merely mention the groups of islets in the Southern Ocean. Mr. Moseley added considerably to our knowledge of the flora of Marion Island and the Heard Group, and Kerguelen Island, whilst the Americans, Germans, and French, of their respective expeditions, investigated the Crozets and New Amsterdam and St. Paul's Islands. Kerguelen Island, the largest by far of all these oceanic islets, being about eighty miles in diameter, has been explored by the naturalists of the English, German, and American transit expeditions, and the results published. One of the most interesting discoveries of late years connected with the vegetation of these islets was made by the late Capt. Goodenough, about ten years ago, when he collected *Phyllica arborea* in Amsterdam Island, till then only known in the island of Tristan d'Acunha, separated therefrom by ninety degrees of longitude, which in this latitude are equal to a distance of about 4700 miles. Mr. Moseley also found it abundantly in Inaccessible and Nightingale Islands. *Phyllica arborea* is likewise remarkable in being the only plant of these southern islets that is arboreal in habit, though at the outside it is only about twenty feet high in the most sheltered localities.

W. BOTTING HEMSLEY