desirability of making arrangements for the future preservation of the collection, Dr. Davis entered into negotiations about a year ago with the College of Surgeons of England, by which body it was purchased, and in whose museum it has now been arranged in such a manner as to be accessible to all workers at anthropology. Such a collection as this, well cared for in a public museum, is a solid and permanent increase to the wealth of the country, for even if the methods of investigation now used are superseded by others, and the present literature comes to be looked upon as obsolete, the specimens will remain as materials for building up the history of the human race; and as the interest in the subject increases—as it certainly will—many of these evidences of the physical structure of people passed or passing away will come to be objects of priceless value. W. H. F.

M. H. MILNE-EDWARDS

WE referred some time ago to the fact that a medal, subscribed for by a number of his admirers, had been presented to the venerable zoologist, M. H. Milne-Edwards. No one better deserves such a recognition, and none know better than the French how to do such an honour gracefully and impressively. Our illustration is reproduced from *La Nature* of May 7, where will be found a pretty complete list—and it is a long one—of M. Milne-Edwards' works. The medal, a production of some artistic merit, is the work of M. Alphée Dubois.

Medal presented to M. H. Milne-Edwards.

THE ZOOLOGICAL RESULTS OF THE SOCOTRAN EXPEDITION

AT the meeting of the British Association in 1878, upon the motion of Mr. Sclater, a Committee, consisting of Dr. Hartlaub, Sir Joseph Hooker, Capt. J. W. Hunter, Prof. Flower, and the mover, was appointed to take steps for the investigation of the natural history of Socotra. Socotra, it was stated, was one of the few spots in the world which seemed never to have been trodden by the foot of the naturalist, and would in all probability be found to contain distinct insular forms, of which it would be highly interesting to know the relations, and to secure specimens for our collections.

The grant of 100*l.*, given by the Association for this excellent object, having been subsequently increased by two sums devoted to the same purpose out of the Government Fund of 4000*l.* administered by the Royal Society, the Committee felt strong enough to proceed to action, and in the winter of 1879 were fortunate enough to secure the services of Prof. J. B. Balfour, of the University of Glasgow, for a special expedition to the island.

Prof. Balfour left England on January 9, 1880, accompanied by Alexander Scott, a gardener from the Royal Botanic Gardens, Edinburgh, as collector, and reached Aden by the French mail on the 24th, where he obtained every sort of advice and assistance from the civil and naval authorities for his expedition. Owing to adverse winds and other difficulties Prof. Balfour did not manage finally to reach Socotra until February 11, when the party, which had been reinforced by the addition of Lieut. Cockburn of the 6th Royals and a corps of attendants from Aden, were put on shore at Gollonsir, a village situated at the north-west end of the island, by H.M.S. *Seagull*. In his report to the Socotran Committee Prof. Balfour gives the subjoined account of his subsequent proceedings:—

"Making in the first instance Gollonsir our head-quarters, we explored the adjacent country to the south and south-west until February 25, when we struck tents, and sending our heavy baggage and stores by sea, started to march to Hadibu. We took four days to accomplish this, reaching Hadibu late on the night of the 28th inst.

"Having communicated to the Sultan the fact of our arrival, he came to Hadibu on March 1, when we had an interview.

"Establishing our *depôt* now on the Hadibu plain, about a mile from the town, we spent the time until the 7th inst. investigating the magnificent Haggier range of hills shutting in on the south the Hadibu plain.

"On March 8, leaving a tent-Lascar in charge of the *depôt* at Hadibu, we started upon a trip to the eastern end of the island, going eastward along the northern side and returning westward by the southern side of the island. During this trip we reached Ras Momé, the extreme eastern headland. Camp at Hadibu was again entered on March 18.

"As yet we had not seen much of the southern parts of the island, so on March 22 we left Hadibu on our last excursion. Crossing the Haggier range we emerged upon the southern shore at Nogad, traversed the coast-line for some distance, and then recrossed the island so as to

come down upon Kadhab village on the north side. We regained Hadibu on the 27th inst."

From Hadibu the party were conveyed back to Aden in H.M.S. *Dagmar*, and arrived at the latter port on April 9.

The two months thus spent in Socotra were certainly not sufficient for the proper investigation of its fauna and flora, though considering the time occupied very satisfactory results, as will be seen further on, were obtained. As observed by Prof. Balfour in his report, what has been done by the expedition is but a fragment of what remains to be accomplished. In exploring the island he deemed it better, considering the short time of the sojourn, rather to attempt to cover as much ground as possible, with the view of obtaining a representative collection, than to examine in detail a limited tract of country. By doing this much barren land was travelled over, and many rich and fertile spots were necessarily only superficially looked at. Especially amongst the hills of the Haggier range there are valleys which would well repay a careful and extended investigation. The expedition must, therefore, be considered only preliminary, for Prof. Balfour feels assured that a rich harvest awaits any collector who may hereafter visit the island.

"If, at any future time," Prof. Balfour observes, "an expedition is sent to the island, it would be well if the date of its arrival were timed so that it should have the last months of a year and the first months of the following upon the island. Our expedition reached the island too late in the year, so that before we left the heat was so intense as to prevent our doing so much work as we desired. Again, the inaccuracy of our knowledge of the geography of the island is a point to which the attention of future expeditions should be directed. The chart based on Wellsted's observations is the only available one, and that is so incomplete and incorrect as to be almost useless to any one moving about the island."

Collections in all branches of natural history were made by Prof. Balfour's expedition, Prof. Balfour, as might have been anticipated, devoting himself specially to the botany of the island. As arranged by the Socotran Committee, the first set of the zoological specimens have been sent to the British Museum, and that of the plants will go to Kew when Prof. Balfour's memoir on them has been published. The rocks and geological specimens have been placed in the hands of Prof. Bonney of Cambridge.

The collections are as yet but imperfectly worked out, but sufficient has been done to give results of very great interest in every branch of natural history.

The Birds, reported upon by Mr. Sclater and Dr. Hartlaub,[1] are found to belong to thirty-six species—generally "North-East African in character, being mostly such as are included in Heuglin's 'Ornithologie Nord-ost-Afrikas.'" Six however are peculiar to the island, the most remarkable of them being a new form of sparrow with a very thick bill, which is named by Messrs. Sclater and Hartlaub *Rhynchostruthus Socotranus* (Fig. 1). It is however possible that the *Rhynchostruthus* and other new species may still turn up on the peninsula of Gardafui, of which the zoology is almost unknown to us.

Mr. Butler's report on the Butterflies and Moths captured by Prof. Bayley Balfour and his assistants in Socotra[2] tells us that of the thirteen species of which examples were brought, not less than seven were new to science. "Of the new forms five are allied to previously-recorded types from the following localities:—one from the Comoro Islands, one from South-West Africa, one

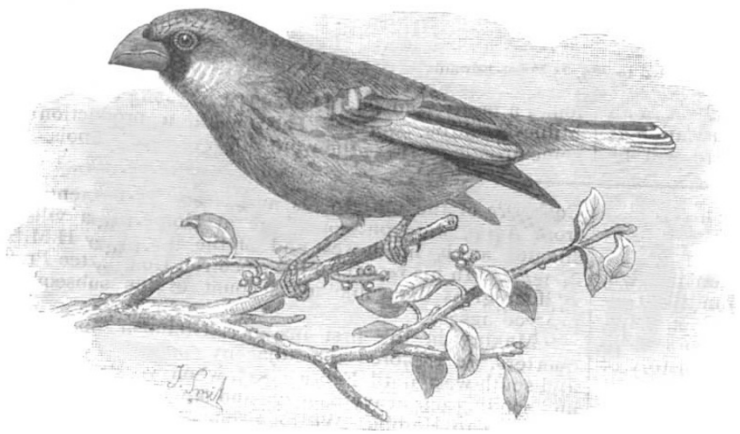

FIG. 1.—*Rhynchostruthus Socotranus.*

FIG. 2.—*Tropidiphorus Balfouri.*

from Zanzibar, and two from Arabia. Without the help of these last two it would therefore have been impossible for any one not acquainted with it to guess at the locality from which this collection had been obtained."

The land-shells obtained in Socotra have been assigned to Lieut.-Col. H. H. Godwin-Austen, F.R.S., for examination, and his report on the Cyclostomaceæ was read before the Zoological Society on February 1 last.[1] Col. Godwin-Austen states that the Socotran Cyclostomaceæ, as a whole, "are, as might have been expected, African and Arabian in character, the relationship being certainly, as regards the operculated forms, more Arabian than African. The collection contains a number of very distinct, fine, and interesting forms, of which some were already known, but many are new, and considerably extend the list of Socotran species. The large area of limestone formation on the island is especially favourable to the existence of these creatures, while island conditions have as usual modified and increased the species."

"Judging from the land-molluscan fauna of Socotra," continues Col. Godwin-Austen, "there is strong evidence that the island was once directly connected with Madagascar to the south. We know the great antiquity of that island, and it is not unreasonable to suppose that in Socotra, the Seychelles, Madagascar, and Rodriguez, we have the remnants of a very ancient, more advanced coast-line on this western side of the Indian Ocean, which line of elevation was probably continuous through Arabia towards the north. With an equally advanced coast on the Indian side, the Arabian Sea would, under these con-

[1] "On the Land-Shells of the Island of Socotra collected by Prof. J. B. Balfour," Part 1 (Proc. Zool. Soc, 1881, p. 251).

[1] "On the Birds collected in Socotra by Prof. J. B. Balfour" (Proc. Zool. Soc. 1881, p. 165).

[2] "On the Lepidoptera collected in Socotra by Prof. J. B. Balfour" (Proc. Zool. Soc., 1881, p. 175).

ditions, have formed either a great delta, or a narrow arm of the sea into which the waters of the Indus and Euphrates drained. Such conditions would have admitted of the extension of species from one side to the other, which the later and more extensive depression of the area, as shown in Scinde, afterwards more completely shut off."

Amongst the more remarkable of the operculated land-shells described by Col. Godwin-Austen is a new species of *Tropidiphorus*, which is proposed to be named *T. Balfouri* after its discoverer (Fig. 2).

The Reptiles collected by Prof. Balfour in Socotra have been worked out by Dr. Günther [1] and Mr. W. T. Blanford, Dr. Günther taking the Snakes and Amphisbænians, and Mr. Blanford [2] the remaining Lacertilians. Both of these collections were found to be of considerable interest. Among the snakes is a new form allied to *Tachymenis*, which Dr. Günther has proposed to call *Ditypophis*, and a new species of *Zamenis* (*Z. Socotræ*). Both these indicate an alliance with the circum-Mediterranean fauna. On the other hand the Socotran Sand-Asp (*Echis colorata*) belongs to an Arabian and Palestine species, while the Amphisbæna of Socotra (*Pachycalamus brevis*, gen. et sp. nov.) has its nearest allies in Eastern and Western Tropical Africa. Of the six species of lizards of which examples were in Mr. Blanford's series, three proved to be new to science.

At the same meeting of the Zoological Society Mr. Charles O. Waterhouse read a paper on the Coleopterous Insects which had been collected by Prof. Bayley Balfour in Socotra. The number of species of which examples were collected was stated to be twenty-four, and showed that the fauna of Socotra, judging from this collection, was distinctly African. Twelve of the species were described as new to science.

It will be seen, therefore, that although the zoological collections made by Prof. Balfour were very small in each group—in some cases almost of a fragmentary character—the results in every case present features of great interest. It is obvious that, judging from what is thus known, Socotra must possess—what was thought scarcely probable by many at the time the scheme for exploring it was first started—an indigenous fauna of considerable extent, one well worthy of further investigation, which the Socotran Committee, we believe, are quite resolved to undertake if they can obtain the necessary means. As regards the flora of Socotra we have said nothing, because Prof. Balfour, who has himself undertaken the investigation of the botanical collections, has not yet completed his task. But a preliminary examination has shown, we believe, that his series embraces about 150 absolutely new flowering plants, amongst which are from fifteen to twenty representatives of new genera—so that it is manifest that, like the fauna, the flora of Socotra possesses a strong autochthonous element.[3] Of this we hope to be able to give some account when Prof. Balfour is further advanced in his work. Meanwhile there can be no question that the Socotran Committee have accomplished a most useful bit of work, and that in this case, at all events, the public money devoted to scientific research has been well applied.

A GEOLOGIST'S NOTES ON THE ROYAL ACADEMY

ONLY of late years has the importance of accuracy in the drawing of rock structure been recognised either by artists or by the general public. For this we are indebted to no one so much as to Mr. Ruskin, whose chapters on the subject in the fourth volume of "Modern Painters" should be read again and again by every student who considers the faithful representation of Nature not unworthy of the aims of Art. It is true that some of the greatest among the older masters—as Titian or Dürer—rendered with great spirit and considerable accuracy the more salient features of rock structure, but from one cause or another they seldom entered into details, and were rather prone to exaggeration. The majority, till almost the present time, appeared to consider themselves unfettered, and "improved" upon Nature in accordance with the fancied requirements of the principal theme of their pictures. Some of the results may be seen in the volume to which we have referred. Within the last few years a due estimate of the special excellencies of Turner's work has produced a salutary influence, and more than one artist (like Elijah Walton, to speak only of the dead) has grappled successfully with the difficulties of rock structure. Thus the boulders, studied apparently from lumps of modeller's clay, the dilapidated crags, tottering like habitual inebriates, the attenuated peaks, which might have been decapitated with a walking-stick, are rapidly disappearing from the walls of our exhibitions. In many pictures however we still perceive more of good intention than of knowledge, and the number of those who cannot be said to "draw with the understanding" is by no means small.

We venture then to offer a few remarks on rocks as they are represented on the walls of the Royal Academy. In No. 13, "Gorse-cutting," passing clouds render the hillside in the background rather vague, but it may be doubted whether this is the only cause of an indefiniteness in the rock-structure, which is certainly also observable in that of the foreground. 28, "Llyn and Nant Gwynant," exhibits much careful mapping-out of the rocks, but cannot otherwise be said to be successful. There is a want of character in the craggy hillside in 55, "A Mountain Road," and the boulders are flat and indefinite, as though the artist had inserted them in his studio when the memory of their appearance in the field was beginning to fade from his mind. The same inability to seize the dominant characteristics of the rocks appears in 80, "Waiting for the Ferry." In 85, however, the "Land of Streams," its artist has been much more successful. Mr. C. E. Johnson has given us a painstaking study of a mass of hard stratified rock, which, as it dips away from the spectator, forms outcropping, curving ledges, over which the water dashes. In these, and in the craglets, both in foreground and middle distance, the principal facts of bedding and jointing are accurately rendered. Not so, however, in 89, "The Head of Teesdale," where we are led to conclude that the rocks are modelled from the same material as those in the scenes of theatres. The artist of 98, "A Storm in the Desert," has been more careful, but unless there is something exceptional in the locality it is difficult to conjecture what the rock may be. A mountain streaked with snow in the background of 122, "A Sermon in the Hayfield," is carefully studied, but still is rather wanting in character, and the colouring strikes us as crude. Mr. C. E. Johnson has again been successful in "The White Sands of Iona" (188), which is a very careful rock study. Rough craglets either of granite or of the granitoid gneiss, common on the western coast of Scotland, crop out among the slopes of sand. Of some the upper parts are smooth and polished, exhibiting traces either of the action of glaciers, like many another reef around the Western Highlands, or possibly in this case an example of the gentler attrition of blown sand; the rocky knolls in the middle distance should also be noticed. "The Scapegoat" (211) is a picture which causes us some little perplexity. There is an appearance of careful study both in the foreground craglets and in the bare mountains, which make up the scenery of this "Land not inhabited"; but still it is difficult to decide upon the

[1] "Descriptions of the Amphisbænians and Ophidians collected by Dr. Bayley Balfour in the Island of Socotra" (Proc. Zool. Soc., April 5, 1881).
[2] "On the Lizards collected by Prof. Bayley Balfour in Socotra." (*Ibid.*)
[3] A very fine new *Begonia* from Socotra, of which tubers brought home by Dr. Balfour have flowered at Kew, is figured in the April number of the *Botanical Magazine*, tab. 6553.