IV. *Contributions to our Knowledge of the Antipatharian Corals.*

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[Plates XI. & XII.]

I. *Observations on a particularly fine example of the "Black Coral" of the Mediterranean lately acquired by the Trustees of the British Museum.*

The Trustees of the British Museum have lately purchased from Messrs. Cresswell, the well-known importers of Sponges, a very remarkable example of one of the best-known of the products of the Mediterranean. Common enough as pieces of the "black coral" of the Mediterranean are, and elaborate as were the classical researches made on it by the eminent French naturalist, H. de Lacaze-Duthiers[1], the size and beauty of the specimen herewith figured are sufficient to justify me in offering the Society some account of its history and appearance. I have sent photographs[2] of it to various naturalists and curators of museums, and I have been favoured by Dr. v. Marenzeller, of the Museum in Vienna, with the following remarks:—"I have never seen such a splendid specimen. Our Museum possesses an example from the Adriatic nearly as high, but not so densely branched. There are also very large trunks without branches. Your example is indeed what we call 'Cabinetstück ersten Ranges.'"

Dr. F. Bernard, of the Muséum d'Histoire Naturelle of Paris, has favoured me with the following notes on the specimen, which, in the second edition of Lamarck's 'Animaux sans Vertèbres' (t. ii. p. 491), is said to be "un échantillon gigantesque.... dont le tronc égale la grosseur du bras"—:"Il a 63 centim. seulement de hauteur; il est en effet réduit à ses grosses branches; tous les rameaux plus petits ont été brisés. Le tronc mesure 12 centim. environ de large sur 8 du profondeur."

Our President, who has lately visited many of the larger museums of the Continent, assures me that nowhere has he seen a specimen which can vie with that which has lately been acquired for the nation.

Mr. Cresswell tells me that the specimen which he sold us was dredged by sponge-

[1] Ann. Sci. Nat. (Zool.) (5) ii. p. 169.

[2] These were taken for me, with great kindness, by my accomplished colleague Mr. Antony Gepp, M.A., of the Department of Botany.

fishers, in some 20 fathoms of water, not far from the Island of Negropont. The size of the boat and the appliances it contained were doubtless well adapted even for the magnificent sponges which those fishers obtain, but it was not sufficient to carry a specimen more than 6 feet high and more than 6 feet wide. To these unfortunate limitations of strength and space are due the fact that the base of the specimen had to be cleft in twain, so that part of the brittle base was lost. No other serious accident befell the specimen, though tact and diplomacy were needed to effect its removal. It is now in process of being skilfully mounted, and will, no doubt, be for many years one of the most noticeable features in the Zoological Galleries of the Museum.

Description of the Specimen, with measurements.

As will be immediately seen from the figure (Plate XI.), the great beauty of this example lies in the density of the reticulation. The base is convex with a sharp edge, where it is uninjured, and spreads over an area of 350 by 200 millim. ; from it at once arise two great trunks, the larger and finer of which gives rise to a fan which is almost 2 metres high (6 ft. 6 in.), while it is more than 2 metres wide (6 ft. $8\frac{1}{2}$ in.); the smaller fan is 1·425 metre (4 ft. 8 in.) high, and is 1·280 metre broad (4 ft. $2\frac{1}{2}$ in.). The main trunk of the former is 425 millim. (1 ft. 5 in.) in circumference, and that of the latter is about 290 millim. ($11\frac{1}{2}$ in.).

This last trunk rises some 100 millim. and then divides into two branches, one of which, that on the left, as seen in the figure, is more than twice as wide as the other; it again rises some 100 millim. before dividing, and then gives off several branches; the one most to the right begins almost at once to enter into intimate reticular connection with the original right trunk; the next does not do so for some distance from the point of origin, and still further off it becomes connected with its neighbour. It is only quite at the top of the whole of this smaller fan that this second trunk to the right becomes connected with the branches given off to the left; but somewhat lower down there are distinct signs of a fracture and loss of pieces which might have well effected a more extensive reticular connection.

Of the trunks which I speak of as being given off to the left four belong distinctly to the left side, and one is almost median in its position ; the four laterals almost immediately become connected with one another, and three of them fuse to form a stem 150 millim. in circumference ; this rises almost parallel to the more median trunk, with which it enters into close connection. From the middle of the reticulation between them another trunk arises, which effects unions with the continuations of the stems both to the right and to the left of it. To the left, and in a plane more remote from the observer (who may be supposed to be standing in front of the whole colony), a large trunk rises up, soon swelling into a considerable enlargement. Thus, joining their neighbours here, bending forward there, or sidewards, now outwards, then inwards,

the stems pass on, getting steadily, if slowly, more and more slender; sometimes the reticulating bands are stout, short, and frequent; sometimes a considerable space is bridged over by a much more delicate bar.

The fan behind is of greater beauty than the more stunted and more injured branch that lies in front of it, but it is needless to enter into the details. It divides into three main branches, one of which occupies the left, and the other two the right halves of the fan; this mass, being more complete than that in front of it, is much more beautiful, far more beautiful than any description of mine would lead the student to suppose; the imagination may well allow itself to revel in the idea of the vision of beauty that must have presented itself when this magnificent fan was covered by the living matter which formed it, when the polyps with their expanded tentacles were drawing on the nourishment around for the means to sustain and increase it.

On the hinder fan there are to be seen outgrowths from stems of various sizes which did not take any share in the formation of the network; these may be merely sessile knobs, or they may be as much as 60 millim. long, but the free end is always converted into a rounded head.

Saving only the information which the specimen gives us as to the size and beauty to which the "black coral" may grow, it adds nothing to our knowledge of the morphology of the species, but this has already been studied. When, however, we reflect on the delight which an object of such beauty can give us, we may congratulate ourselves on the good fortune of the Trustees in securing it.

On the Name to be applied to the "Black Coral" of the Mediterranean.

I must pass from this poor attempt to express to others the feelings that the sight of this object arouses in me, to the more prosaic and infinitely less agreeable question as to the generic and specific names which this species should bear.

Prof. Lacaze-Duthiers has already [1] pointed out that it has received more than one "scientific name" from having been described by different authors in different degrees of perfection; on these there is no need to dilate, as the question was, to a certain extent, settled by the eminent zoologist to whom I have referred, and there may be said to have been a universal acceptation of the name he applied to it, *Gerardia lamarcki*, Haime. Yet more recently we have been again made familiar with the generic name by the same zoologist's beautiful investigations into the history of the crustacean parasite which he has called *Laura gerardiæ* [2].

Mr. Brook, in his valuable report on the Antipatharia collected during the voyage of H.M.S. 'Challenger,' uses the generic name *Savaglia*.

[1] Ann. Sci. Nat. (Zool.) (5) ii. (1864) p. 173.

[2] Mémoires de l'Acad. des Sciences de l'Institut de France, xlii. (1883) no. 2, p. 4.

It has been a matter of some trouble to trace the history of the name *Savaglia* [1]. The first reference which I can find to it is in the "Dell' historia naturale di Ferrante Imperato" [2], published at Naples in 1599; on p. 724 of which we read, "Savaglia. La Savaglia è pianta nel ramiggiare, e l'effigie tutta simile à Corallo," &c.; these words are repeated on p. 632 of the edition of 1672, which was published at Venice. Nearly a century later (in 1755) there were published the "Opere postume" of Giuseppe Ginanni, who takes (p. 17) *Savaglia* as his type of "quelle Pianze dell' Adriatico, che sono di sostanza legnosa senza foglie." Eleven years later Pallas writes in his notes to *Gorgonia Antipathes*—"Quæ cum Corallio nigro vulgo confunditur et a multis auctoribus pro vero descripta fuit, *Savalia* Maris Mediterranei, truncus magnorum Ventilabrorum, detritis ramis, politus esse solit" ('Elenchus Zoophytorum,' pp. 194 & 195).

Up to this time it is clear that the term had no definite generic or specific significance in the Linnean sense. But some years later (in 1819) A. Bertolini published his 'Amœnitates Italicæ,' and gave an account of *Savaglia*, for which he makes a definite zoological position by calling it *Gorgonia savaglia*. In 1844 Nardo, in the 'Atti della quinta Unione degli Scienziati italiani,' published (p. 433) a classification of Zoophytes, wherein the portion which interests us runs thus:—

Fam. IV[a]. ANTIPATIDI.
Sotto famiglia I[a] ANTIPATINI.—Polipi a sei tentacoli.
Gen. *Anthipathes*, Pall. Gen. *Cirripathes*, Blainv.
S. f. II[a] SAVALINI.—Polipi a sedici tentacoli.
Gen. *Savalia* N.

The new genus is for the *Gorgonia savoglia* [sic] (Bertolini). Nardo does not write out the full name or names of the species to be placed in this new genus, but it is clear that had he done so he would have then written *Savaglia savaglia* [or *Savalia savalia*]. This use of a specific for a generic name has been forbidden by the rules of the British Association.

Meanwhile this species had become famous by the researches of Lacaze-Duthiers, who, conferring on it (in 1864) the generic name of *Gerardia*, retained for it the specific name of *lamarcki* given it by Haime (in 1849) when he called it *Leiopathes lamarcki*.

Mr. George Brook, in his recently (1889) published 'Challenger' Report, which adds so much to our knowledge of the obscure group of Antipatharia, seems to have suffered from incomplete bibliographical information, for he writes:—"I have not seen the original, and do not know if Nardo gave the species a specific as well as a generic

[1] The word is not in any Italian dictionary that I have been able to consult, and my learned colleagues in the Printed Book Department have been unable to throw any light on the origin of the word. Count Salvadori does not know the word, and his learned friend Prof. Lessona is unable to throw any light on its history.

[2] I was not assisted in my search by Nardo's exquisite misprint of "Ferravite Traparuto;" but I was greatly aided by the bibliographical knowledge of Mr. Carruthers, F.R.S., on whose patience I made severe demands.

name; there is no mention of one in his recent publication. I have, therefore, retained the specific name of Haime."

It is clear that there is no escape from the conclusion that the proper specific name of this Coral is *savalia*, and the generic *Gerardia*, and the synonymy will stand thus:—

Family GERARDIIDÆ, Verrill, Trans. Connectic. Acad. i. p. 499.
Savagliidæ, G. Brook, Chall. Rep. Antipath. 1889, p. 79.
Savalini (subfamily), Nardo, Atti 5ª Union. Scienz. Ital. (1844) p. 433.

Genus GERARDIA.

Gerardia, Lacaze-Duthiers, Ann. Sci. Nat. (Zool.) (5) ii. 1864, p. 175.
Savaglia, Nardo, loc. cit.
Savaglia, id. Atti R. Ist. Veneto, (v.) iii. 1876, p. 674; Brook, loc. cit.
Gorgonia (pars), *Antipathes* (pars), *Leiopathes* (pars), auctor. complur.

Species GERARDIA SAVALIA.

Gorgonia savaglia, Bertolini, Amœn. Ital. (1819) p. 219.
Leiopathes lamarcki, Haime, Ann. Sci. Nat. (Zool.) (3) xii. (1849) p. 225; M.-E. & H. Hist. Nat. Corall. i. p. 322.
Gerardia lamarcki, Lacaze-Duthiers, loc. cit. (1864).
Savaglia lamarcki, Brook, op. cit. p. 80 (1889).

II. *On a remarkable Antipathid from the neighbourhood of Mauritius.*

Shortly after the arrival of the beautiful specimen just described, M. de Robillard forwarded to us a very remarkable Antipathid from the neighbourhood of the island of Mauritius. As the specimen is dry it is impossible to assign it definitely to any one of the genera now strictly limited by Mr. Brook; and, like some other Antipathids, it may, following that naturalist's proposal, be called [*Antipathes*]. As it is proposed to exhibit this example, which I am fairly confident is at present unique, it is necessary to give it a name, and to publish such a description and figure of it as shall enable it to be recognized.

M. de Robillard has forwarded, during the last few years, many fine examples of Anthozoa to the British Museum, and I am glad to have this opportunity of commemorating his services by associating his name with this remarkable growth.

Description of [Antipathes] robillardi. (Plate XII.)

From a small horny base there arise abruptly several trunks; these soon divide and give rise to a number of greatly elongated stems; some of these are, henceforward, simple; others divide at once two or three times, and others do not divide till they are some slight height from the base. In the case of one stem only is there any division at a distance greater than 7·5 centim. from the base. The result of this mode of growth is an appearance quite different from that of most Antipathids.

The stems taper quite gradually, and are fairly flexible near the tip, though rather brittle at their base. Where a branch is given off from a stem it is nearly always given off a short distance only from the base, and is ordinarily set at a very wide angle. In a few cases the stems have, during growth, been diverted from their line of growth, and an angle or elbow is thus produced, or there is a more or less irregular curve in the course of the stem. The stems vary in length and thickness, and those that are thicker and longer appear to be older than those which are thinner and shorter.

Where the sclerenchyma is well preserved it has the appearance of being transversely striated, as its dark yellow colour is relieved by narrower and lighter bands; it is quite rough to the touch owing to the shagreen-like spinulation of its horny axis; the spines on this axis are blunt and very numerous (Plate XII. fig. 3).

There are about 45 of these stems, the longest of which are about 3 feet 3 inches (that is, almost exactly one metre) long; the shortest are about 15 inches, or rather less than 40 centim. long.

Hab. Mauritius.

It is to be hoped that the publication of this notice will lead to a fuller knowledge of this interesting form; for the present we must be content to know of its existence, but the attention of collectors should be called to it and every effort made to obtain examples preserved in spirit; from such specimens alone can we get the information which will enable us to assign a satisfactory systematic position to it, and justify us in speculating as to its origin and affinities.

DESCRIPTION OF THE PLATES.

PLATE XI.

Gerardia savalia; the size of the specimen figured may be estimated by the foot measure placed at the side of the Plate. The figure is a tracing of a photograph of the object, so that the relative proportions of the branches may be relied on.

PLATE XII.

[*Antipathes*] *robillardi.*

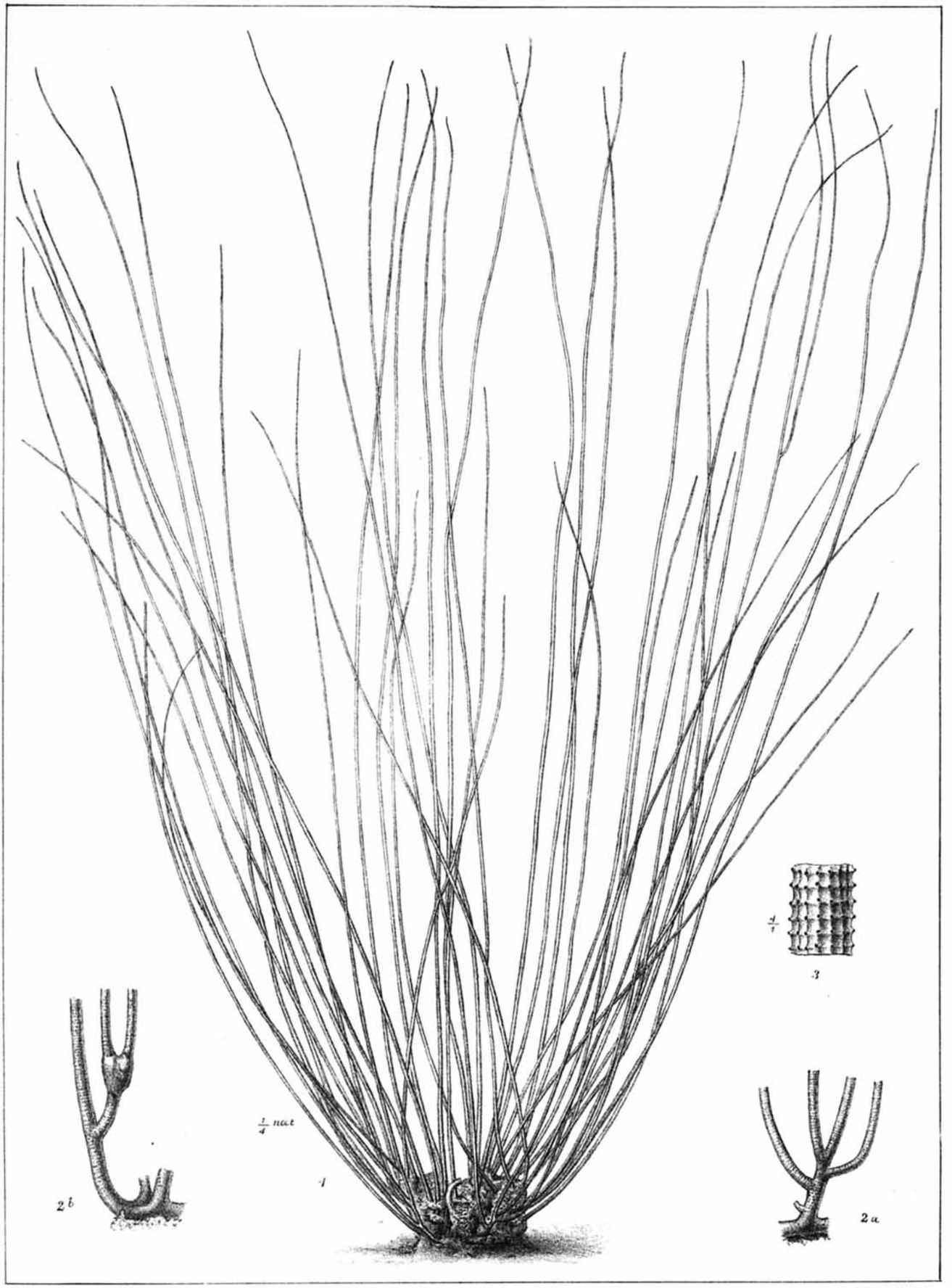
1. View of the skeleton of the whole colony, showing its general form, the relations of its stems, and the mode of branching; $\frac{1}{4}$ nat. size.

2^a, 2^b. Branches at base; nat. size.

3. Surface of stem, magnified four times, to show the character of its spinulation.

Bergeon & Highley del. et lith.
Hanhart imp.

GERARDIA SAVALIA.



Berjeau & Highley del. et lith.

M&N. Hanhart imp.

ANTIPATHES ROBILLARDI .