

THE ANNALS
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XXVI.—*On the Antipatharian Genus Gerardia.*
By M. LACAZE-DUTHIERS*.

THE animals producing the polyparies to which Lamarck gave the names of *Gorgonia tuberculata* and *Antipathes glaberrima*, and for which Dr. Gray established the genus *Leiopathes*, have hitherto been unknown. The object of the researches which I now submit to the Academy of Sciences is the filling up of this gap in our knowledge, the definition of a new genus, and the precise determination of the objects described by the authors under the names which have just been cited.

M. Valenciennes having done me the honour of handing over to me the revision of the collection of *Antipathes* belonging to the museum, I have ascertained, by the examination of the tickets written by Lamarck himself, that this illustrious naturalist gave the name of *Antipathes glaberrima* to the denuded polypary of the same species that he called *Gorgonia tuberculata* when it bore the animal layer; that Dr. Gray created the genus *Leiopathes* for *Antipathes glaberrima*, Esper; and lastly, that Jules Haime has described this same species under the name of *Leiopathes Lamarcki*. On the other hand, I easily perceived that if Lamarck had distinguished by two different names one and the same thing in different states of preservation, he had, on the other hand, confounded two different things under the name of *Antipathes glaberrima*.

Without mentioning the names of *Zoanthus* and *Palythoa*, given in collections to specimens of *Gorgonia tuberculata*, Lamk., preserved in spirit and having their polypes expanded, it is easy to prove that great confusion exists with regard to these objects. However, it is just to add that this confusion is the necessary consequence of having for examination only specimens in various

* Translated from the Comptes Rendus, July 11, 1864, p. 861.

states of preservation ; but, at the same time, everything is explained when we examine living animals, and see what they become by desiccation.

The *Antipathes glaberrima* of Esper and Lamarck is very distinct from the species of *Antipathes* proper ; the genus *Leiopathes* of Gray may therefore be adopted for it. But we must avoid regarding as belonging to it the polypary of *Gorgonia tuberculata*, Lamk., whether denuded or covered with sarcosoma, as has been done by J. Haime. On the other hand, this Lamarckian species represents a very clearly defined type, which must be regarded as a genus for which a name is necessary ; for it is not an *Antipathes*, and still less a *Gorgonia* ; and its very smooth polypary, examined by itself, has alone led to its being looked upon as a species of *Leiopathes*.

The new genus *Gerardia* which I propose presents a set of positive characters which distinguish it at once from *Antipathes*, *Leiopathes*, and *Gorgonia* : its validity does not appear to me to be doubtful. As to the species, it will be convenient to retain for it the name given to it by Jules Haime.

At the commencement of its development, *Gerardia Lamarcki* spreads its zoanthodema, formed entirely of sarcosoma, upon other polyparies ; at this time it is perfectly parasitic. Subsequently it covers these foreign bodies with its own polypary, and produces branches and twigs ; from this period it becomes independent, and its parasitism ceases. This is the reason why we find in the centre of the thick trunks of its polypary the slender stems of *Muricea placomus*, *Gorgonia subtilis*, &c. A Crustacean which lives parasitically in the soft tissues sometimes has its carapace covered by the horny deposits of the *Gerardia*. The egg-cases of Sharks and Rays, the suspensory filaments of which have seized its zoanthodemata, are first of all covered by expansions of its sarcosoma, and then taken bodily into its polypary. It is only by long-continued researches that I have been able to recognize the true part that must be ascribed to this parasitism.

The anatomy of *Gerardia Lamarcki* possesses great interest in a scientific point of view. The bodies of the animals, like the intermediate tissue that unites them, are formed of two layers of cells : the inner one, which is yellow and granular, lines all the cavities, and is covered with vibratile cilia ; the external layer, which is nearly colourless, is contractile and filled with bundles of nematocysts.

The polypes resemble young Actinæ ; they have twenty-four simple tentacles, arranged in two rows round the mouth, and the oblong and turned-up lips of the latter form a central mamilla. The number of tentacles is a multiple of six, and

Gerardia thus approaches *Antipathes* and *Leiopathes*; but the number in those genera, never exceeding six, separates it from them generically. The cavity of the body displays the same number of radiating folds, analogous to those of the polypes of other Corals.

A very abundant vascular network occupies the whole of the sarcosoma, and opens into the body-cavities of the polypes, which thus communicate with each other. A similar condition was already known to occur in the Alcyonaria, but has not previously been indicated in other groups of Corals. It leads us to suppose that an analogous arrangement exists in all the species living in colonies—that is to say, forming a zoanthodema.

The sarcosoma secretes a viscous and plastic fluid capable of agglutinating all small bodies which come into contact with it. Thus we find on the surface of *Gerardia* grains of sand and spicules of *Bebryces*, *Muriceæ*, *Gorgonia*, and Sponges which live beside it. It is to this, no doubt, that we must refer for the origin of Haime's opinion that his *Leiopathes Lamarcki* was a spiculigerous Antipatharian.

The reproductive organs are developed in the thickness of the radiating folds, behind the convoluted filaments, precisely as in the *Actinia*. The sexes are most commonly borne upon distinct polyparies; nevertheless both male and female polypes may be met with in the same colony. I have not seen any hermaphrodite polypes, but it would not be surprising if such should exist.

In the form of its polypes *Gerardia* much more closely resembles the Actiniadæ than the Alcyonaria. This approximation, established by Dana for two species of *Antipathes*, and accepted by Milne-Edwards and Haime, is therefore confirmed in this case by a minute investigation which cannot leave room for any doubt; for *Gerardia* is much more nearly related to the Zoantharia than *Antipathes*.

XXVII.—*Descriptions of new Species of Fluviate and Terrestrial Operculate Mollusca from Trinidad.* By R. J. LECHMERE GUPPY.

§ 1. *Fluviate Species.*

Ampullaria purpurascens, n. sp.

Shell ovate, narrowly perforate, rather thin, subopaque, simply horn-coloured, or purplish with numerous indistinct darker purple bands; striated by close lines of growth, which are crossed at right angles by more distant, interrupted, low,

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PRIDEAUX JOHN SELBY, Esq., F.I.S.,
CHARLES C. BABINGTON, Esq., M.A., F.R.S., F.L.S., F.G.S.,
JOHN EDWARD GRAY, Ph.D., F.R.S., F.L.S., V.P.Z.S. &c.,

AND

WILLIAM FRANCIS, Ph.D., F.L.S.

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ERRATA.

- Page 213 line 4 from bottom for Maesfeldt read Mansfeldt.
- „ 220 „ 10 „ „ for Zeitmuscheln read Leitmuscheln.