

thorace transversim conico; elytris subtiliter griseo-pubescentibus; pedibus ferrugineis. Long. 2 lin.

Hab. Ceylon.

Longer and less cylindrical than *P. ephippiata*, the basal patch with a whitish border, &c. I received this species from the late, lamented Dr. Schaum.

EXPLANATION OF PLATE XIV.

- Fig. 1.* *Elestora fulgurata*; 1a, mentum and labium and its palpi.
Fig. 2. *Nessiara histrio*; 2a (by mistake numbered 12), front view of the head and antennæ.
Fig. 3. *Atasthalus spectrum* (♂).
Fig. 4. *Phides xanthodactylus*; front view of the head and antennæ.
Fig. 5. *Habrissus heros*.
Fig. 6. *Ancylopoma punctigera*.
Fig. 7. *Exeniotis collaris*; 7a, head and part of prothorax; 7b, side view of head &c.
Fig. 8. *Calymmus cucullatus*; 8a, side view of head and part of prothorax; 8b, apical lamina of prothorax.
Fig. 9. *Egestria tæniata* (♀).
Fig. 10. Head and antennæ of *Toxicum grande*.
Fig. 11. Prothorax and antenna of *Allophasia Fryi* (♂). The fourth joint of the latter should be transverse, like the one following it.
Fig. 12. See figure 2.

BIBLIOGRAPHICAL NOTICE.

M. TERQUEM'S *Researches on the Foraminifera of the Lias and the Oolites.*

- I. *Recherches sur les Foraminifères de l'étage moyen et de l'étage inférieur du Lias.* Par M. TERQUEM, &c. Metz, 1862. Second Mémoire. Extrait des 'Mémoires de l'Académie Impériale de Metz,' année 1860-61.

M. TERQUEM, having given some general information about the Rhizopods, taking Schultze's plan of classification, proceeds to particularize the results of his researches in the several stages of the Lias. As a rule, he finds that where Entomostraca occur, Foraminifera are also found, whether in calcareous, marly, or sandy strata. The Upper Lias has as yet proved unproductive of these Microzoa. In the middle stage, the oolitic marls (*marnes à ovoïdes ferrugineux*) have yielded numerous *Oolinæ* [*Lagenæ*], *Nodosariæ*, *Frondiculariæ*, *Dentalinæ*, *Marginulinæ*, and *Cristellaræ*, arranged in 59 species by M. Terquem. He found a *Glandulina*, too, and an *Orbulina*, which he had previously termed *Orbiculina*; also materials for two new genera, namely:—(1) *Uncinulina*, described but not named in his first memoir (p. 678)—a free, hyaline, slender tube, straight or curved, square in section, without septa, with attenuated equal ends, variously hooked; (2) *Involutina*, English specimens of which were

described in 1853 by Rupert Jones with some doubt as *Nummulites liassicus*. M. Terquem's determination of the arenaceous structure and other special characters of this abundant little shell gave him full reason to place it in a new genus.

A form from the Middle Lias that he had previously referred to *Siderolina* he found to be a Polyzoon, *Neuropora*.

In some shales at Montigny-lès-Metz he found *Orbulina*, *Fron dicularia*, *Dentalina*, *Marginulina*, *Cristellaria*, *Robulina*, *Rosalina*, and *Involutina*—fifteen species, nine new, and some like those of the beds above; also a new genus, *Annulina*, which has the look of being closely related to, if not the same as, the last mentioned.

M. Piette and M. Terquem together found Foraminifers in all the strata of the Lower Lias of the Departments of the Moselle and the Meurthe, of Luxemburg, Belgium, and the Ardennes. These amount to twenty-three species, some of them new, and some like those of the *marnes à ovoïdes*. Among these are *Webbinae* [and *Placopsilineae*], particularly abundant as parasites in a bed of *Gryphæa arcuata*.

In his previous memoir on the Liassic Foraminifera, M. Terquem had noticed a little fossil like the "*Orbis infimus*" of Strickland, and had then referred it to *Serpula*; but in his second memoir he describes its Foraminiferal characters with exactness, and, showing its relation to *Involutina*, names it *I. silicea*. Strickland's minute fossil has also been referred to Parker and Jones's sandy genus *Trochammina*; and Terquem's *I. silicea* has been referred to *T. incerta*, D'Orb. sp., by H. B. Brady (Geol. Mag. vol. i. p. 196), and quite correctly, and without any great violence to M. Terquem's arrangement; for without doubt *Trochammina* and *Involutina* are very close allies, the latter, indeed, being merely a more advanced development from the simple and naked coil of the former.

In the two plates (pls. 5 & 6) illustrating M. Terquem's Second Memoir we have his usual numerous, small, beautifully neat, and natural figures, for which palæontologists owe him many thanks. We doubt the zoological value of all his "species;" and we are sure that many would fall under old names had the veteran author had the opportunity of comparing all the published illustrations of Foraminifera. That is a labour, however, which some younger rhizopodist may undertake, for the sake of a more strict collocation of the Liassic with other forms, and the readier recognition of biological relationship by the reading student. Thus in pl. 5 we easily discern the known species (or, rather, notable varieties) *Nodosaria humilis*, *radicula*, *ovicula*, *Dentalina communis*, &c., under new names.

Fig. 4, *Orbulina liasica* (p. 432), is an interesting reticulated form. Fig. 5, *O. punctata* (p. 432) can scarcely differ from *O. universa*, D'O. Figs. 1, 2, and the woodcut at p. 431, and fig. 12 in pl. 6, present remarkably attenuated *Lagenæ*; whilst fig. 3, *a, b* supply the passages towards *L. globosa*. Fig. 6, *Annulina metensis*, must be, as intimated above, a small *Involutina liasica*, such as is figured by H. B. Brady in pl. 9. fig. 3, Geol. Mag. vol. i. Figs. 8, 14, & 19, termed *Fron diculariæ*, are rather *Lingulinæ*; and fig. 13, also "*Fron dicularia*," can scarcely be said to have relinquished the *Nodosarian* type. In pl. 6 some

bizarre Cristellarians succeed the various Nodosarians of the foregoing plate; and, beside a very doubtful Foraminifer (fig. 10) named *Rosalina polygona*, there are several specimens of *Webbina* (figs. 15, 17, 18, 19) in their characteristic variable forms of growth; also what seems to be a small rough *Placopsilina* (fig. 16, named *Webbina scorpionis*, D'Orb.); the *Involutinæ* above mentioned; and, lastly, a curious spiral organism, referred to *Cristellaria*, but having much the look of a Sertularian germ-sac.

Without further criticism on these most acceptable results of M. Terquem's enthusiastic industry, whose motto "in tenui labor" well indicates his precision and perseverance, we proceed to the next of his valuable memoirs that we have at hand, trusting to enhance the value of his work by pointing out what seems to be a discrepancy here and there with the notions of other rhizopodists, and thus producing a uniformity whereby the whole may be worked together for the good of palæontology.

The first Memoir on the Foraminifera of the Middle Lias of the Department of the Moselle was published in the Mém. Acad. Imp. Metz, année 1857-58. The series reached to the Sixth Memoir; but they have not come to hand.

II. *Deuxième Série. Premier Mémoire sur les Foraminifères du Système oolithique. Etude du Fuller's-Earthe de la Moselle.* Par M. O. TERQUEM, &c. Metz, 1867.

In 1867, M. Terquem treated of the Foraminifera of the Oolitic rocks, particularly the "Fuller's-Earthe" of the Moselle; and of these he first described a host of very similar and indubitably related forms under the general term "*Marginulina*." This generic name he adopted with caution, and gave reasons for his plan of arrangement in his "Critical Review of some Genera," at pages 40-58, wherein he shows why he considers it best to merge the broad flat *Vaginulinæ* (*Citharinæ*) with the long *Planulariæ* under *Marginulina*. Eight plates, of thirty figures each, besides edge and end views of these Vaginuline *Marginulinæ*, do not fail to give us an insight into the enormous prolificness of the Foraminifera and their endless versatility of growth (modified in every individual by every passing condition of life), into the richness of the Oolitic fauna in varieties of the great *Nodosarina* genus, and into the extent and energy of MM. Terquem and Piette's labours in both field and cabinet. How individually different, and yet strikingly alike, these 240 specimens really are, with continuous passage-forms among them, can be seen at a glance; and their division by M. Terquem into two sections, five divisions, two subdivisions, and thirty-two "species" (one of which has a whole plate in its illustration) has required his greatest patience and acumen. It would certainly appear easy, to English rhizopodists at least, to group the majority under half a dozen well-known accepted names, beginning with *Vaginulina harpa* and ending with *Dentalina communis*; but, as an example of the difficulty of arranging a large and well-preserved series of Forami-

nifera under definite zoological names, nothing could be offered to the student of more practical value than this interesting little monograph. M. Terquem first explains the stratigraphical relations of the Bajocian Oolites near Metz: (1) ferruginous limestone below, and (2) coralline and subcompact limestones above; neither these nor their marls give many Foraminifera. Next the Fuller's-earth Oolites are described according to their localities over the now touchingly interesting fields between Metz and Longwy, comprising Romain, Thionville, Gorze, Gravelotte, and especially Fontoy, where the marls are exceedingly rich in Foraminifera. A review of various classifications of, and works on, Foraminifera follows, those of De Haan, Lamarek, D'Orbigny, Dujardin, Schultze, Claparède, and Reuss being chiefly treated of, by way of introduction to the study of the special objects of the work itself and their puzzling changefulness of feature.

III. *Deuxième Série. Troisième Mémoire sur les Foraminifères du Système oolithique, comprenant les genres Frondicularia, Flabellina, Nodosaria, Dentalina, &c. de la Zone à Ammonites Parkinsoni de Fontoy (Moselle). Par M. O. TERQUEM, &c. Metz, 1870.*

We have not seen the Second Memoir (treating of *Cristellarie*) of this Second Series; but we can readily understand that, as M. Terquem states, it demonstrates the great variability and instability of species, showing that in certain forms the shape of the shell, and even the ornament, changes not only among individuals, but often even on the two faces of the same specimen. Seven clear and well-filled plates (pls. 22-29) illustrate this Third Memoir; and they are highly worthy of attention. Pl. 22 contains thirty forms illustrative of the passage of *Frondicularia* into *Lingulina*, or *vice versa*, according to our views of the degradation or development of the individuals. They pass under the name "*Frondicularia*," in accordance with the author's explanatory remarks on this (subgeneric or really varietal) group. Pl. 23 is half occupied by *Lingulina*, here called *Frondicularie*; some of them, however, are reproduced as *Lingulina*, by correction, in pl. 25. In pl. 23 commences the Flabelline series of about forty specimens, divided into seven divisions and eighteen species, with careful attention to their individual features. There is nothing to separate them essentially.

In figs. 23 & 24 (*Flabellina agglutinans*) we have a very interesting Foraminifer, which, though apparently Flabelline in shape, is really a sandy species belonging to *Textularia* and growing on the Spiroplectine plan—that is, spiral at first and more or less alternate in its segments afterwards. With its terminal aperture it resembles the Textularian *Tritaxia*, *Holostomella*, and *Bigenerina*. It is probably a coarse arenaceous *Spiroplecta* with terminal aperture. It might, however, be Lituoline in structure, a meeting-point of *Textularia* and *Lituola*. Figs. 25 & 26 (*Flabellina dubia*) is a Vaginuliniform *Lituola*, near the Nodosariform *Lituola Soldani*, J. & P. This also is of great interest. Figs. 27-30 are the common, variable,

lituate *Lituolæ* that come under Reuss's genus *Haplophragmium*; as indicated by our author; but they do not require new names.

Pl. 25 has *Lingulinae* and *Glandulinae*, figs. 1–11, undeserving of the new names given them. Of figs. 12–20, grouped as *Cornuspiræ* (six new species), we think that figs. 12, 13, 16 are *Trochammina incerta*, varieties; figs. 14, 17, 18, 19, concavo-convex simple *Involutinæ*; fig. 15, apparently identical with D'Orbigny's *Soldania limia* and *S. orbicularis*, which are both referred with doubt to *Cornuspira* by Mr. Parker and his colleagues in Ann. Nat. Hist. Oct. 1871, p. 238, pl. 8. figs. 1, 2. Figs. 20–26 are interesting specimens of *Lagena globosa* and some attenuate varieties, with (fig. 22) a prickly variety. Figs. 27–29, however, though Lageniform, are most probably *Saccamminæ*—that is, rough Lituoline Foraminifers, unilocular in growth. Pl. 26 (thirty figures) illustrates various conditions of *Nodosaria raphanus*. A few such (figs. 1–4) occur also in pl. 27, which is mainly occupied by variations of *N. radicula*, passing into the variable *Dentalina communis* (figs. 5–34). The same may be said of pl. 28. Figs. 1–17 of pl. 29 belong to the same category; but fig. 18 (“*N. agglutinans*”) is most likely a Nodosariform *Lituola*. Figs. 19–30 are arranged in three species of *Webbina*; but figs. 19 & 30, though doubtful, must go with figs. 20–23, 25 & 26, as *Nubeculariæ*; whilst figs. 24, 27–29 are *Webbinae*. Fig. 24 is a curious, heaped, or acervuline *Webbina*. Figs. 25 & 26 may be regarded as typical *Nubeculariæ*.

Lastly, we must remark that both the Liassic and the Oolitic Foraminifera figured in these Memoirs may, with advantage to the student, be compared with the English specimens from the Upper Keuper (Rhætic?) Clay, figured by Jones and Parker in the Geol. Soc. Journ. vol. xvi. 1860, pls. 19 & 20, and with those from the Lias figured by H. B. Brady in the Proc. Somerset. Archæol. Nat. Hist. Soc. xiii. 1867, pls. 1–3. A very large proportion of M. Terquem's species and varieties will be there found, with the old names applied to them. Similar forms occur in the Upper Triassic strata of Saint Cassian and Raibl, as figured by Dr. C. Gümbel in the ‘Jahrbuch k. k. geol. Reichsanstalt,’ xix. 1869; and Reuss, Schwager, and others have published Jurassic Foraminifera of the same types.

MISCELLANEOUS.

Note on the Ptilornis Alberti. By G. R. GRAY.

MR. ELLIOT, in the ‘Proceedings of the Zoological Society,’ just published, has made some remarks on the adoption of a MS. name that I gave some years ago to the Northern-Australian *Ptilornis*, when observing the differences which appeared to exist between it and that of New Guinea. Mr. Elliot is right in remarking that I had never published, but he is wrong in stating that I never “wrote” any account of it. The reasons of the non-publication were:—

1. That Mr. Gould had already fully described and beautifully



1871. "M. Terquem's Researches on the Foraminifera of the Lias and the Oolites." *The Annals and magazine of natural history; zoology, botany, and geology* 8, 361–365. <https://doi.org/10.1080/00222937108696504>.

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