

## PLATE XI.

- Fig. 1. *Quinqueloculina Candiana*, D'Orb.,  $\times 95$  diam.: a, lateral aspect; b, end view, showing the aperture.
- Fig. 2. *Quinqueloculina fusca*, n. sp.,  $\times 95$  diam.: a & c, lateral aspects; b, end view, showing aperture.
- Fig. 3. Portions of the test of the same, more highly magnified,  $\times 200$  diam.: a, portion of the test mounted in Canada balsam and viewed by transmitted light; b, similar fragment decalcified by means of strong acid before mounting, the chitinous matrix alone remaining.
- Fig. 4. *Trochammina squamata*, P. & J.,  $\times 40$  diam.
- Fig. 5. *Trochammina inflata*, var. *macrescens*,  $\times 90$  diam.: a & c, lateral aspects; b, peripheral aspect, showing aperture.
- Fig. 6. *Lagena gracillima*, Seguenza,  $\times 100$  diam.: a & c, lateral views; b, end view, showing one of the apertures.
- Fig. 7. *Lagena Lyellii*, Seguenza,  $\times 95$  diam.

## PLATE XII.

- Fig. 1. *Lagena pulchella*, Brady,  $\times 65$  diam.: a, lateral aspect; b, end view, showing aperture.
- Fig. 2. *Dentalina guttifera*, D'Orb.,  $\times 115$  diam.
- Fig. 3. *Marginalina glabra*, D'Orb.,  $\times 115$  diam.
- Fig. 4. *Tectularia globulosa*, Ehrenberg,  $\times 115$  diam.: a, lateral aspect; b, end ditto.
- Fig. 5. *Gaudryina pupoides*, D'Orb.,  $\times 115$  diam.: a, lateral aspect; b, end ditto.
- Fig. 6. *Verrucilina spinulosa*, Reuss,  $\times 95$  diam.: a, view of one of the three faces; b, general lateral aspect perpendicular to one of the carinae; c, end view, showing the aperture.
- Fig. 7. *Bolivina plicata*, D'Orbig.,  $\times 95$  diam.: a, lateral aspect; b, end view and aperture.
- Fig. 8. *Rotalia Beccarii*, Linn., brackish variety,  $\times 55$  diam.: a & b, superior and inferior lateral aspects; c, peripheral aspect.

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XXVII.—Notes on Anchoring Sponges (in a Letter to Mr. Moore). By Dr. J. E. GRAY, F.R.S. &c.\*

MY DEAR MOORE,

Mrs. Gray, who was very much pleased with the additions to and alterations of the Museum, since she saw it five years ago, has not been unmindful of the wish you expressed to have a specimen of the globular anchor-sponge, from the coast of Portugal, which Mr. Kent has named *Phoronema Grayi*, to exhibit during the meeting of the British Association.

On speaking to Mr. Kent, he placed a specimen at Mrs. Gray's disposal for the purpose you wished. As the specimen, like all the others brought home from Portugal, and like those of *Holtienia Carpenteri* from the North Sea, had the

\* Read at the Biological Section of the British Association, Sept. 1870.

anchoring-filaments in a wisp, and all entangled together—and knowing that Mr. Laughlin had unravelled for me the fibres of a specimen of *Holténia Carpenteri* which is now in the collection of Miss Saul, of Bow, and had shown that they form a ring-like series of tufts round the lower end of the body of the sponge, giving it quite a different appearance from the representations of it given by Prof. Wyville Thomson, I placed the Portuguese specimen in the hands of your son-in-law, Mr. Edward Gerrard, junr., and requested him to try to unravel the very long anchoring-filaments; and I think you will allow that he has been very successful and has made a very beautiful and most interesting preparation of it, and most important in a scientific point of view, as it shows very distinctly the character which separates the Portuguese from the North-Sea species; that is to say, that, instead of having the anchoring-filaments in twenty-five or twenty-six tufts from the base of the sponge, they arise separately from almost the entire surface of it. These long filaments, like those of *Euplectella*, are called anchoring-filaments, because they are spread out in the mud and hold the sponge in its place. For this purpose they have at the end of the filament a whorl of three or four hooks, like a grapnel, and a few scattered recurved hooks above them.

There appear to be several species of Sponges allied to the one from Portugal; and I should be inclined to form them into a family, which may be called *Pheronemadae*. They are peculiar in having an ovate, globular, or purse-like body, with a large internal cavity, and outer walls formed of hex-radiate spicules placed side by side, producing a tessellated surface formed of stars.

The first account of a sponge of this kind was by Dr. Leidy, who described a specimen from Santa Cruz, presented by Dr. Griffith to the Museum of the Academy of Natural Sciences of Philadelphia, in the *Journal of that Academy* for 1860; in the same *Journal* for 1869 he gave it the name of *Pheronema Annae*, after his wife; and in the '*American Naturalist*' for March 1870, he gave figures of the specimen and of its spicules, one of the figures showing the anchor-termination. This species has the anchor-filaments in twenty-five distinct tufts, but they are not so long as the length of the sponge; and there are no rings of cilia on the upper surface near the opening of the internal cavity; but this may be occasioned by the state of the specimen.

Dr. Carpenter and Prof. Wyville Thomson discovered in the deep-sea dredging in the North Sea a beautiful sponge of this family, which Prof. Thomson has described and figured in the

'Proceedings' and 'Transactions' of the Royal Society, under the name of *Holténia Carpenteri*. This sponge is very like the one described by Dr. Leidy, but differs from it in the tufts of filaments surrounding the base being very much longer, longer than the length of the body of the sponge; and the upper surface of the sponge has a series of very fine spines round the edge of the oscule, and another, similar series on the upper part of the body, at some distance from the former.

Prof. Barboza du Bocage, the Director of the Museum at Lisbon, obtained some specimens, from the coast of Portugal, of a sponge which he considered to be a globular variety of *Holténia Carpenteri*.

Mr. Kent, who went out for the purpose of dredging on the coast of Portugal in Mr. Marshall-Hall's yacht 'Norna,' obtained several specimens of this sponge, which he thought, like M. Bocage, was the same as the one from the North Sea. On my inspecting them in company with him, however, we were satisfied that it was a distinct species; and in the 'Annals and Magazine of Natural History' for August 1870, p. 182, Mr. Kent has described it under the name of *Pheronema Grayi*; but one very important character he does not seem to have recorded (which is not extraordinary, as it is not distinctly visible in the sponge in the state in which he examined it, but has become much more distinct in the specimen that Mr. Gerrard has prepared)—that is to say, that, instead of the filiform anchoring-spicules being in tufts at the hinder end of the body, they arise separately from all parts of the surface of the body, except from a small broad nude band round the oscule. This being the case, I think that it forms a distinct genus, for which I propose the name of *Callisphaera*. This position of the anchoring-filaments gives the sponge much the appearance of an old man's head with long silvery locks.

Dr. Oscar Schmidt, of Grätz, in his work just published on the Sponges of the Atlantic, describes an *Holténia* under the name of *H. Pourtalesii*, from Florida, and indicates a second species from the same place, under the name of *Holténia saccus*. Both these are small bag-like species, and they appear to be entirely deficient of any slender filiform anchoring-spicules, but have the surface of the body scattered over with spreading, moderately long, filiform spines. This form certainly indicates a very distinct group from all the species above noticed, and I should be inclined provisionally to designate it by the name of *Vazella*.

Prof. O. Schmidt, in the same work, describes a sponge of quite a different structure, but of much the same form, divided into several tubercles below, and probably belonging

to the family Tethyadæ, which, like the *Holtenia*, are free Sponges, only attached by numerous long filiform anchoring-spicules which arise from the hinder part of the body. He calls it *Tetella polyura*; but it has little in common with the other *Tetella*, and I think it should be distinguished by the name of *Polyurella Schmidtii*.

I am in hopes that, when the results of the dredging on the coast of Portugal are distributed, the specimen which you now exhibit will become the property of the Derby Museum; but I cannot at present assure you of the donation.

I am, my dear Moore,

Yours very sincerely,

J. E. GRAY.

British Museum, Sept. 10, 1870.

XXVIII.—*Description of a new Species of Pheasant from the Province of Szechuen, China.* By D. G. ELLIOT, F.L.S., F.Z.S., &c.

*Phasianus elegans.*

*Mas.* Capite colloque viridibus, sub certa luce cyaneo nitentibus; dorso rufo, plumis viridi terminatis; scapularibus dorso concoloribus (parte mediana nigra), albo transfasciatis; uropygio virescenti-cinereo, plumis late viridi terminatis, nigro et albo transfasciatis; plumarum omnium parte basali alba: pectore superiore abdomineque latissime viridibus; hypocondriis et pectoris lateribus castaneis, plumis omnibus saturate cyaneo terminatis; tetricibus supra-caudalibus late aurantiacis, viridi-cinereo lavatis; tetricibus subcaudalibus brunnescenti-nigris, rubro terminatis; cauda saturate castanea, late nigro transfasciata: pedibus plumbeis, cano pallide tinctis: plaga orbitali scarlatina; macula pone oculos viridi.

Head and neck green, with bluish reflections; back red, each feather tipped with green. Scapulars, like the back, with black centres crossed with diagonal white bars. Rump greenish grey, with a broad mark of emerald-green near the tip, succeeded by a narrower one of black, this followed by an irregular one of white; base of feathers blackish. Upper part of breast and abdomen rich emerald-green. Flanks and sides of breast chestnut-red, each feather tipped with dark blue, the feathers becoming rich purple as they approach the centre of the breast, and those next to the abdomen have their inner webs green. Upper tail-coverts bright orange-red, with the greenish grey of the rump-feathers showing through in the centre. Under tail-coverts brownish black, tipped with red. Tail deep chestnut-red, crossed with broad bars of black.