clypeo angusto, truncato, prothorace nitido, convexo, ubique minute punctato, lato, lateribus fortiter arcuatis, angulis posticis rotundatis, basi medio broviter lobato ; scutello punctato ; elytris sat crebre et æqualiter rugoso-punctatis, lateribus postice densius ; pedibus brevibus, tibiis anticis acuto tridentatis, dente superiori parvo, sed acutissimo, prope basin obsito :

♂, clypei margine valde reflexo, tarsis anticis crassissimis, ungue majori dilatato, minute fisso :

♀, elytrorum marginibus post medium subito contractis.

Long. 14·5–16; lat. max. 8·5–9 mm.

Hab. Guiana : Cayenne ; Brazil : Para.

This species occupies a very isolated position by its exceedingly short and broad form and the toothing of the front tibia; the latter is very short and has its uppermost tooth near the base and small but very sharp. The elytra may be entirely blood-red, except the margins, the red colour may divide into an anterior and posterior patch upon each, or the whole body may be black.

The figures of *Cyclocephala* and allied forms upon Plate IV. accompanying this paper serve only to indicate their outlines, the red and yellow colours appearing black upon the photograph. Upon Plate V. have been included figures of *Golofa antiqua* and *argentina*, described by me in the last volume of this Magazine (pp. 138, 139).

EXPLANATION OF THE PLATES.

Plate IV.

Figs. 1, 3. *Dipelicus borneensis*, sp. n., ♂.
Fig. 2. —— ——, ♀.
Figs. 4, 6. *Papuana semistriata*, sp. n., ♂.
Fig. 5. —— ——, ♀.
Fig. 7. *Pucaya pulchra*, sp. n.
Fig. 8. *Cyclocephala brevissima*, sp. n.
Fig. 9. —— *flora*, sp. n.
Fig. 10. *Ancognatha falsa*, sp. n.
Fig. 11. *Cyclocephala gregaria*, sp. n.
Fig. 12. —— *latipennis*, sp. n.
Fig. 13. *Dyscinetus dytiscoides*, sp. n.
Fig. 14. *Cyclocephala rufovaria*, sp. n.

Plate V.

Figs. 1, 3. *Dichodontus fissicornis*, sp. n., ♂.
Fig. 2. —— ——, sp. n., ♀.
Figs. 4, 5. *Golofa antiqua*, Arrow, ♂.
Fig. 6. *Pseudohomonyx crassus*, sp. n., ♂.
Fig. 7. *Golofa argentina*, Arrow, ♂.
Fig. 8. —— ——, ♀.

XVIII.—*On a new Lithonine Sponge from Christmas Island.*

By R. Kirkpatrick.

When looking over some pieces of rock dredged by me from 50 fathoms off Christmas Island, I came across two thin, vitreous-white crusts, which were found to be Lithonine sponges.

The larger crust, which covers an area of about 35 millimetres, is about 0·75 mm. thick in the centre, fining away to a very thin edge. When magnified, the surface shows a network of circular holes 0·09 mm. in diameter, and sharp conical spikes rising up vertically about 0·12 mm. At the bottom of the holes or pits and at the edges of the sponge a dense white crust is visible. No surface membrane or soft tissues remain, but loose spicules are visible, imbedded in the skeleton.

The latter is constructed of fused four-rayed spicules, the apical rays of which form the long conical surface spines, and the other three facial rays the walls of the pits. The dense basal crust is formed of much smaller, four-rayed, densely packed spicules. The facial rays are cylindrical and end each in a circular articulating surface. The under surface of the crust has almost the appearance of a mosaic, the facets being formed by the articular ends of the facial rays of the small four-rayed spicules.

The loose spicules are mostly monaxons, curved at one extremity, running to a sharp point at one end and rounded at the other. The average size is $120 \times 3{\cdot}5\ \mu$. One spicule appears to be bifurcated at one end, and may be regarded as a three-rayed form.

The sponge seems to me to belong to a new species of *Plectroninia*, Hinde, and I propose to call it *Plectroninia deansii*, after Captain J. Deans, by means of whose skill the specimens were obtained.

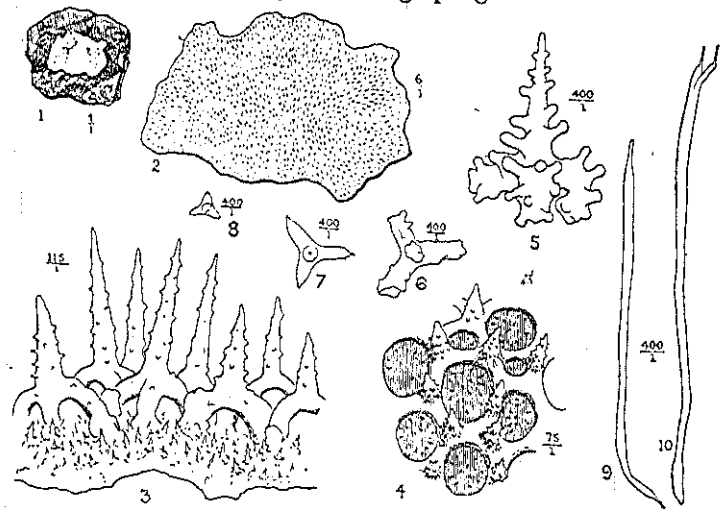
Three other species of this genus are known, viz.: *P. halli*, Hinde, a knob-shaped species from the Eocene of Victoria; *P. hindei*, Kirkp., a thin incrusting form from 50 fathoms off Funafuti; and *P. assindiæ*, Welter, a knob-like species from the Greensand of Essen.

The distinguishing feature of *P. deansii* lies in the character of the loose spicules.

In a paper on the Pharetron Sponge *Murrayona* (Proc. Roy. Soc. 1910, p. 124) I divided the family Pharetronidæ into three subfamilies, Dialytinæ, Lithoninæ, and Murrayoninæ, and stated that my classification was the same as that

given by Minchin (Lankester's 'Treatise on Zoology,' Porifera, p. 110); but my statement was partly incorrect, for the Dialytinæ, in my sense, included only one genus in Minchin's long list, viz. *Lelapia*, the whole of the rest of the genera in that list coming under Lithoninæ and Pharetroninæ (see below).

Concerning the theory of the nature of the "Pharetron fibre," Rauff, in his great work 'Palæospongologie' (Palæontographica, Bd. 40), expresses the belief that the spicules of the fibre were simply in apposition in the living sponge, and that they have been cemented into solid fibres during the process of fossilization. Steinmann ('Palæontologie,' ed. 2, 1907) considers that the spicules have been joined together by a cement formed by the living sponge.



Plectroninia deansii, sp. n.

Fig. 1.—Specimen incrusting rock. Nat. size.
Fig. 2.—The same. × 6.
Fig. 3.—Side view near edge of sponge. × 115.
Fig. 4.—Surface view. × 75.
Figs. 5–8.—Small four-rayed spicules of various sizes. × 400.
Fig. 9.—Monaxon spicule. × 400.
Fig. 10.—Triaxon spicule. × 400.

My own investigation of certain recent Pharetronid sponges inclines me to the belief that Steinmann's theory is the true one. Among living Pharetrones we find, however, some with spicules uncemented (*Lelapia*, *Kebira*), and others again with cemented spicules (Lithoninæ). A revised classification of Pharetrones, based partly on that of Minchin and partly on that of Steinmann and Welter (Verh. Ver. Rheinland, 1910, p. 1), would be as follows :—

Family **Pharetronidæ**, Zittel *.—Heterocœla with spicules united into bundles and fibres. (Tuning-fork spicules often present.)

Subfamily 1. Dialytinæ, Rauff.—Spicules not cemented. (*Lelapia, Kebira.*)

Subfamily 2. Pharetronidæ, Steinmann.—Spicule-bundles cemented into solid anastomosing fibres.

Subfamily 3. Lithoninæ, Düderlein.—Anastomosing fibres formed of 4-rayed spicules cemented together.

Subfamily 4. Murrayoninæ, K.—Fibres of main skeleton formed of calcareous substance (? cement), without an axial core of spicules.

XIX.—*Descriptions and Records of Bees.*—XXXVII.†

By T. D. A. Cockerell, University of Colorado.

Dianthidium sinapinum, sp. n.

♀.—Length about 8 mm.

Compact, light mustard-yellow, with black and pale dull ferruginous markings; head, thorax, and abdomen densely and strongly punctured; head large; eyes pale olivaceous; mandibles with the cutting-edge broad, dark brown, having only the apical tooth and a rather poorly developed second one; clypeus quadrate, its lower margin denticulate; scape yellow; flagellum ferruginous, the apical two-thirds dusky, the end of the last segment blackish; ocellar region black, sending a broad black stripe downward to each antennal socket, or these black markings may be evanescent and largely replaced by pale reddish; upper part of clypeus and sides of face sometimes stained with reddish; mesothorax with a broad median black band, expanding posteriorly, and two broad sublateral ones, ending in front at level of front of tegulæ, or these bands may be narrower and broadly edged with ferruginous; hair of face, sides of thorax, and ventral scopa pure shining white; anterior margin of mesothorax with appressed white hair, the rest with scanty

* A writer in 'Nature' (Jan. 12, 1911, p. 345) objects to the use of the term Pharetronidæ on the ground that there is no genus *Pharetron*.

† An error occurs in part xxxv. ('Annals,' 1911, vii. p. 311): Sigiri is in Ceylon, not in N.W. India.