The resemblance of the different species of *Discodermia* to one another is in all cases very marked; the present species appears to be distinguished by its usually smooth desma, and by the characteristic forms of its phyllotriæne, as well as by the general form of the whole sponge. It is very similar to *Discodermia calyx*, Döderlein, and may very possibly be identical with it. Döderlein represents some spined styles as occurring in *Discodermia calyx*, but it seems to me more than probable that these do not properly belong to the sponge, but to some incrusting Monaxonid. From *Discodermia ornata* it is distinguished by the character of its desma, and from *Discodermia panoplia* by this character and the form of its phyllotriæne, such forms as those represented in figs. 7–9, for instance, not being present in the latter sponge.

As Döderlein has already pointed out, the claims to generic distinction of *Racodiscula*, Zittel, so far as they are founded on the form of the phyllotriænes, fail through the association of both *Racodiscula* and *Discodermia* forms in the same sponge; the same remark will probably be found to apply to Zittel's fossil genus *Rhagadinia*,[1] the discotriænes which he regards as distinctive being similar to those of *Discodermia panoplia*. On the other hand, it does not follow that *Racodiscula* is not a good genus, and with an amended definition it will be found adopted on a subsequent page.

Discodermia panoplia, n. sp. (Pl. XXXII. figs. 12–25).

Sponge (Pl. XXXII. fig. 12).—A small mass, with a broad, incrusting base, straight even sides ascending to an expanded summit, with well-rounded margin. Oscules several, small, occupying the summit of small conical elevations, situated in the upper surface of the sponge. Pores simple, singly distributed on the sides of the sponge.

Spicules.—I. Megascleres. 1. *Desma* (Pl. XXXII. fig. 13), of fairly regular tetrad form, with short, stout, cylindrical, simple or branched epactines, studded all over with tubercles (Pl. XXXII. fig. 14), which are either simply conical with rounded summits, or cylindrical, either with flat summits and rounded edges, or with expanded heads and secondary tubercles; zygosis takes place chiefly at the ends of the epactines or cladi, which are highly tubercular; the length of the epactine is usually about 0·16 to 0·24 mm., its thickness from 0·09 to 0·1 mm. Three of the actines of the axial rod usually differ in length from the fourth, which is longer; the three shorter are from 0·04 to 0·45 mm., the fourth and longer is from 0·84 to 0·9 mm. long.

2. *Discotriæne* (Pl. XXXII. figs. 15–19), a short conical rhabdome with rounded or pointed end, expanding distally into a more or less circular or cymbal-shaped cladome, with entire, sinuate, or lobate margins. The axial rod extends the whole length of the rhabdome, but its cladal processes do not proceed further than 0·019 to 0·026 mm. into the cladome. Rhabdome 0·045 to 0·10 by 0·02 mm.; cladome about 0·1 mm. in

[1] *Cf.* Zittel, *loc. cit.*, pp. 87, 88.