

from the Mediterranean, one primary tubercle on the equatorial part of the test showing most distinct traces of crenulation.

I have not found crenulated tubercles in any of the species of *Goniocidaris* I have thus far examined (*Goniocidaris tubaria*, *Goniocidaris geranioides*). In all the specimens of *Dorocidaris* I have thus far examined, the tubercles were all smooth, with the exception of an occasional pit, which may prove to be the first indication of a more definite crenulation in the genus. Even in *Dorocidaris blakii* (Alexander Agassiz, Bull. Mus. Comp. Zool., 1879) no trace of crenulation has been found in any of the specimens I have examined. Yet this species, from its remarkable radioles alone, would, if found fossil, have been referred to *Rhabdocidaris* without any hesitation by every palæontologist.

I hope, in the examination of the series of *Dorocidaris blakii* for the final Report of the Echinids of the "Blake," to have some additional data on this subject, and to enter again into an examination of the crenulation of the tubercles in the other families of recent Echinids in which this character is found, more particularly in the Clypeastroids and Spatangoids, where the crenulation of the primary tubercles is not uncommon in many species on some part of the test.

The mammary boss is prominent and perforate. There are not in either of the denuded specimens of this collection any traces of the muscular impressions on the areola on which Desor characterised the genus, and which, as Thomson has already shown, is not an important feature, being frequently greatly developed in other genera, and depending on the strength of the muscular attachment of the spines. This species and *Porocidaris purpurata* differ in the position of the genital openings. In the present species, in a specimen measuring 41 mm. in diameter, the female openings are large (Pl. III. fig. 2), circular, and entirely within the genital plates; and do not extend, as in *Porocidaris purpurata*, into the interambulacral area. The large female genital openings probably indicate that *Porocidaris elegans*, like *Goniocidaris canaliculata*, is viviparous.

Thomson has described in an alcoholic specimen of *Porocidaris purpurata* the large eggs and ovaries, which resemble those of other viviparous species of *Cidaris*. The position of the genital openings in some of the Cidaridæ (as in *Goniocidaris*) encroaching upon the interambulacral system is interesting, as indicating the first trace of the separation of the genital openings from the apical system. Such an absence of connection, or so indifferent a connection between the so-called genital plates and the apical system, occurs in many groups of Echinids. This connection becomes entirely severed in some species of Clypeastroids. The ocular plates are broader than in *Porocidaris purpurata*. In a younger specimen measuring 28 mm. in diameter (Pl. III. fig. 4) the genital openings were quite small. This specimen may be only a male, or the genital openings may be developed to their full size much later. It is more probable, however, that this example is a young male.