

the contrary, may be regarded as combining the characters of the two groups; in *Agassizia* the posterior lateral ambulacra having the usual petaloid structure, while the anterior pair of ambulacra are only petaloid in the posterior half, the anterior half retaining the characteristic features usually found only in the anterior ambulacra, and this genus having in addition the embryonic features of a globular test and ambulacra flush with the test; in *Hemipneustes* the double structure of the petals extends to all the lateral ambulacra. In *Echinocardium*, *Breynia*, and *Lovenia* we find, with the internal fasciole, that the structure of the pores is again simple, while in all the ambulacra the petals correspond to that of the group to which *Hemiaster* and the like belong.

Yet in all the young of true Spatangoids I have had occasion to examine, the ambulacra consist of simple pores, extending from the apical system to the actinostome, the change which characterises the groups thus spoken of taking place very gradually with advancing age. The pairs of pores such as we find in the Cassidulidæ can be traced directly to the affinity of the Cassidulidæ to such groups as *Holectypus* (which in their turn retain features of the Desmosticha), and while the ambulacra assume a more or less petaloid shape, yet the pores never come together into a single foramen. The earliest known Spatangoids (*Collyrites*?) retain this feature, and it is still found at the present day existing to a certain extent in *Homolampas*, *Argopatagus*, and *Genicopatagus*, which differ, however, from these earlier types in having the well-developed labiate Spatangoid actinostome, and seem to hold from the structure of their ambulacral system much the same relation to the Spatangina which *Hemipneustes* does to *Ananchytes* and *Agassizia* to the Brissina.

**Palæotropus lovéni* (Pl. XXI. figs. 3-16; Pl. XXXIX. fig. 33; Pl. XLI. figs. 28, 29).

Palæotropus Lovéni, A. Agassiz, Proc. Am. Acad., vol. xiv. p. 204.

The anal system is placed above the median line (Pl. XXI. figs. 3, 5), above the angle made by the curve of the posterior extremity of the test extending from the apex, and that extending from the actinal surface along the subanal shield. The anal system is elliptical transverse (Pl. XXI. fig. 8), surrounded by an outer row of large plates, the rest of the system covered by plates irregularly arranged. The plates of the apical system are indistinct (Pl. XXI. figs. 12, 13); the madreporic body is prominent; there are three genital openings. The larger primary tubercles are perforate, crenulate (Pl. XXI. fig. 16); and the test is covered by a dense minute granulation between the primaries and secondaries. Although *Palæotropus* has the rudimentary ambulacral system, simple pores perforating the primary ambulacral plates as we find them in *Pourtalesia*, it yet has a simple compact apical system; the ambulacra are not disconnected as in that group at the summit by the encroachment of large distinct interambulacral plates extending from the ambulacral area across the apical region so as to separate the bivium