step is the appearance of a limited subanal fasciole or of a subanal fasciole with anal branches; something like this we find in *Homolampas*. In *Homolampas fragilis* we have an indistinct anal fasciole branching from the subanal fasciole, the peripetalous fasciole evidently developing only at a late stage. This genus has on the whole more important embryonic features than other Spatangoids of which the development is known; *Hemiaster* and *Schizaster*, it is interesting to note, show quite a marked difference in the appearance of the fascioles if we can judge from the two species of *Hemiaster* thus far discovered. Yet while in the genus *Homolampas* the structure of the ambulacra show such embryonic features as to connect it with some of the most typical of the Cretaceous Echinoderms, there are other features which in their turn give it a most modern facies. These are the highly specialised subanal fasciole, the compact abactinal system which the genus has in common with *Paleopneustes*, *Linopneustes*, *Argopatagus*, and other Spatangina not possessing petaloid ambulacra; the development of its primary tubercles as in *Lovenia*, and the well-defined actinal plastron and specialisation of the tubercles of the actinal surface. The resemblance of the miliary tuberculation of *Homolampas fulva* to that of *Spatangus loncophorus*, Meneg., figured by Dames (1877, Palæontog., vol. xxv., pl. ix. fig. 6), is very remarkable, and were it not for the singularly well-developed petaloid ambulacra of the Tertiary species, we could most readily assign it to the genus *Homolampas* from the outline of its test, as the delicate peripetalous fasciole would very easily escape notice unless the specimens were in an extraordinary state of preservation. Unfortunately, nothing is known of the structure of the actinal surface of that species.

Argopatagus and *Homolampas* agree in having a flattened test, a labiate actinostome, and a well-developed subanal fasciole, and in having the typical Spatangoid embryonic ambulacra such as are characteristic of the Cretaceous genera *Holaster* and *Cardiaster* and other Ananchytidæ; while in *Genicopatagus*, with which both *Argopatagus* and *Homolampas* are closely allied, the outline of the test resembles to a remarkable degree that of *Holaster* and its allies.

* *Homolampas fulva* (Pls. XXIV., XXXVIII. fig. 26).

Homolampas fulva, A. Agassiz, 1879, Proc. Am. Acad., vol. xiv. p. 309.

Although this is a gigantic species compared to the small *Homolampas fragilis* which I described from among the Echinids dredged by Mr Pourtalès in the Straits of Florida, I do not hesitate to refer it to the genus *Homolampas* in spite of the very rudimentary petaloid structure of the abactinal part of the lateral ambulacra. This species has all the other features characteristic of the genus, such as the slightly sunken anterior ambulacrum, the deeply indented test at the edge of the anterior extremity, the very elongated lateral posterior ambulacra, the presence of a subanal fasciole, the position of the anal system, and of the actinostome, the structure of the actinal surface, and especially the presence of huge primary tubercles like those of *Lovenia* in the abactinal part of the interambu-