

In *Linopneustes* the pedicellariæ (Pl. XLIII. figs. 6-8 ; Pl. XLV. figs. 11-19) do not greatly differ from the pedicellariæ of *Paleopneustes*, and are remarkable for the great size of the spaces left between the valves of the head.

**Linopneustes murrayi* (Pls. XXV., XXXV.^b figs. 8, 9 ; Pl. XXXVIII. figs. 24, 28, 29 ; Pl. XLIII. figs. 6, 8 ; Pl. XLV. figs. 11-19).

Paleopneustes Murrayi, A. Agassiz, 1879, Proc. Am. Acad., vol. xiv. p. 210.

It was with considerable doubt that I referred this species to *Paleopneustes*. The presence of a subanal fasciole and a peripetalous fasciole would at first seem to remove it from *Paleopneustes*, with which it agrees in its general features, such as the structure of the ambulacral petals, of the actinostome, and of the actinal side of the test. The series collected is composed mainly of large specimens varying in size from 80 mm. to 130 mm. ; in some of them the subanal fasciole is most indistinct, consisting merely of an occasional accumulation of miliary tubercles, and the same is the case with the peripetalous fasciole which is in some cases interrupted by breaks, or so diffuse as to lose its distinctive character as a fasciole. So much weight has been laid upon the presence or absence of this fasciole especially in the fossil genera, which had been multiplied now to an extraordinary degree, that a careful study with large material in all possible stages of growth of some of the recent genera such as *Hemiaster Shizaster*, *Faorina* and *Maretia* would go far to determine whether the presence or absence of fascioles really has the systematic value attached to it. In the species of *Hemiaster* which I have had occasion to study, the changes undergone by the fascioles during growth are remarkable and the variations in the extent and importance of the fasciole extreme. See the descriptions of *Hemiaster cavernosus* collected by the Challenger.

From the specimens of *Paleopneustes* proper collected by the "Blake" very great changes in general appearance evidently take place during growth, and it may be that the fragments of a species of Spatangoid which I regarded in the report on the "Blake" Expedition (Echini, Bull. Mus. Comp. Zool., 1878, vol. v. No. 9) as intermediate between *Eupatagus* and *Paleopneustes*, may be perhaps only a species of *Paleopneustes* allied to *Linopneustes murrayi*, having like it a very prominent peripetalous fasciole more marked even than in any specimen of that species I have had occasion to examine. I have called attention to the unsatisfactory state of our knowledge of the value of fascioles while speaking of some species of *Maretia* and of *Lovenia*, from which it would almost appear as if disconnected lengths of fascioles might appear anywhere on the test provided the miliaries of that portion of the test were sufficiently crowded together.

A fragment of a large specimen was obtained at Station 210 in which the peripetalous fasciole is quite close to the ambitus, running immediately on the edge of the test, and in which the anterior ambulacral groove is somewhat deeper than in the specimens from Japan. Around this there are from three to four smaller lines of fascioles made by the