

showing that the lateral fasciole is an extension of the anal fasciole, and that as far as we know the lateral and anal fascioles, when they appear independently or united, are of greater permanence than when the anal fasciole appears as a branch of the subanal fasciole.

These young Schizasteridæ show very plainly that such genera as *Aceste* are strictly embryonic Schizasteridæ; that is, they retain as the young of *Schizaster* very rudimentary posterior lateral ambulacral petals, the odd anterior ambulacrum occupies the greater part of the abactinal surface of the test, the ambulacral suckers of this odd ambulacrum retain the gigantic size for which they are marked in the younger stages, and the peripetalous fasciole follows closely the lines drawn from the extremities of the petals. At a still earlier stage when *Schizaster* is more globular, it assumes a still more embryonic stage as the young of *Brissopsis*, that is, it passes then through what might be called its *Hemiaster* stage, and of this stage, when the actinostome is as yet not developed, *Aërope* is the representative at the present day; having the prominent peripetalous fasciole, the greatly developed odd anterior ambulacrum, but slightly sunken at first in the *Aceste* stage, and scarcely flush with the test in the *Hemiaster* stage, with its gigantic ambulacral suckers, and the more or less cylindrical shape so characteristic of all young Spatangoids. To a certain extent *Agassizia* may be regarded also as an embryonic type; it retains the globular shape of young Spatangoids, and the structure of the petals is embryonic in part. The presence of a well developed lateral fasciole dates back to the cretaceous *Prenaster*.

The unsatisfactory nature of the characters derived from the extent and course of the lateral fasciole is well shown from the subdivisions of *Faorina* attempted by Troschel, which are based mainly on the fascioles. Although the presence of a peripetalous fasciole appears greatly to modify the character of the abactinal part of the ambulacra, yet we are not able to make any classification of the Spatangoids based on the presence or absence of fascioles alone which corresponds in any way to the other structural affinities. The Prynnodesmians of Lovén (Spatangoids with a subanal fasciole) unite such widely distant types as *Palæotropus*, *Spatangus*, *Brissus*, and *Breynia*; while among the Prynnaletes we find *Hemiaster*, *Desoria*, and *Schizaster*, and it is often very difficult, as in the case of *Urechinus* and many fossil genera, to decide whether they belong to the Adetes or either of the other groups, and we find in the Pourtalesia, for instance, otherwise closely allied genera which would in this character alone be placed either in the one group or the other.

Schizaster fragilis.

Brissus fragilis, Düb. o. Kor., 1844, Skand. Echin., p. 280.

Schizaster fragilis, Agassiz, 1847, C. R. Ann. Sc. Nat., vol. viii. p. 22.

The Challenger collected this species off the coast of Nova Scotia. It has also been dredged by the United States Fish Commission in the Gulf of Maine. This species like *Brissopsis lyrifera* and *Spatangus raschi*, has an extensive geographical range in the