It becomes quite a common feature in many of the genera of the Cassidulidæ and the like; but although it is only in such forms as *Pygurus* and its allies that there is a tendency to form an abactinal anal beak covering the anal system, it is mainly among the Spatangoids that the actinal anal beak appears as a modification of the subanal plastron or an indication of its presence in an exaggerated form such as we have it in *Pourtalesia* proper.

In those Cassiduloid genera in which such a rudimentary actinal beak is formed, the width of the test is generally greatest at the posterior extremity (*Cassidulus*, *Rhynchopygus*). An anal groove is indicated early among the Jurassic and Cretaceous genera in *Pygaster*, *Clypeus*, and *Hyboclypus*, and less distinctly among the Discoideæ and Galeritidæ, and in the latter there is a trace of an abactinal anal snout as in the modern *Echinocrepis* or *Cystechinus*, and *Urechinus*, while a true actinal groove, although indicated in *Dysaster* and perhaps in *Asterostoma* where all the actinal ambulacra are sunken, is well seen in the Ananchytidæ and especially in *Infulaster*, which by its abnormal outline recalls to us strikingly the Pourtalesian genus *Echinocrepis*.

The absence of a fasciole in such genera as *Echinocrepis* and *Cystechinus*, and the presence of a distinct anal fasciole in *Pourtalesia* and *Urechinus*, plainly shows that in the Petalosticha the earliest fasciole to appear was probably a subanal one, as it seems to exist in such genera as *Urechinus* in which the anal snout exists in a very rudimentary form, and in which the subanal shield (Pl. XXX. fig. 19) is quite faintly indicated.

The subanal fasciole of such Cretaceous genera as *Cardiaster* and *Micraster*, in which it first makes its appearance among the fossils, would seem to bear out this view.

In *Pourtalesia* proper I have in the description of the species called attention to the structure of the apical system, and shown that the four genital plates are with one exception in the trivium; and this is well separated from the bivium by the intercalated apical interambulacral plates. In *Cystechinus* the separation is different, two of the genital plates (Pl. XXXV.[a] fig. 5) are associated with the bivium and two with the trivium, and the bivium and trivium are separated by the intercalated apical interambulacral plates. The same is the case with *Urechinus* (Pl. XXX. figs. 16, 17).

In *Echinocrepis*, however, as in *Pourtalesia rosea*, the genital plates are contiguous, and the bivium and trivium are not separated, while in *Spatagocystis* the apical system is like that of *Pourtalesia* proper; the genital plates are connected with the trivium (Pl. XXVI.[a] fig. 8), and that is separated from the bivium by the intercalated apical interambulacral plates.

The many differently shaped species of the genera of Pourtalesiæ take their outline from the greater or less development of the different ambulacral and interambulacral regions. The high and short ambulacral and interambulacral coronal plates, nearly of uniform size, of the anterior portion of the test, combined with a moderate elongation of the posterior lateral ambulacra and interambulacra, give us such forms as *Pourtalesia laguncula*, *Pourtalesia jeffreysi*, and *Pourtalesia miranda;* with lower coronal plates in the