

The genus *Schleinitzia* was established by Studer (Proc. Berlin Acad., p. 463), for a *Cidaris* in which the anal system is allied to that of *Stephanocidaris*, the spines recalling *Porocidaris*, while the crenulation on which he principally based his genus recalls *Rhabdocidaris*; and it may possibly be that Studer's *Schleinitzia* is after all only a new species of *Stephanocidaris* or of *Porocidaris*, more probably of *Stephanocidaris*, since *S. bispinosa*, has crenulate tubercles, and pores joined by furrows.

Thomson (Trans. Roy. Soc., 1874, vol. lxiv., part 2, p. 726), in his description of *Porocidaris purpurata* dredged in the "Porcupine" expedition, had already called attention to the simultaneous occurrence of crenulated and smooth tubercles on the same specimen. He has figured these crenulated tubercles as existing in his specimen mainly round the abactinal system (pl. lxi. fig. 2).

Until the publication of Thomson's paper, which seems to have escaped Studer, it was supposed that the crenulation of the tubercles distinguished the fossil from the recent species as a whole. The unsatisfactory nature of this character, however, was well known from those groups among recent Echinids in which crenulated tubercles occur, and the impossibility of assigning to it any definite value. In the Diadematiidæ and Pseudodiadematiidæ we find on the same specimens primary tubercles identical in size, which are either crenulated or not. Loriol has expressed his opinion of the variability of this character as regards fossil Cidaridæ, of which the tests are frequently so admirably preserved as to retain the smallest details of structure. Troschel, in 1877, called attention to the presence of crenulated tubercles in a new species of *Cidaris* (*Rhabdocidaris recens*, Archiv. f. Nat., vol. xliii. p. 127). Subsequently Troschel (Sitzungsber. d. Nieder Rhein Gesell., Dec. 8, 1877) returns to the same species, calling attention to the fact that Loriol, on examining his specimens of *Cidaris annulifera* and *Cidaris lütkeni*, found that in both specimens the tests were covered with primary tubercles of which some were crenulated and others smooth. Troschel at the same time shows that his *Rhabdocidaris recens* is closely allied to *Cidaris bispinosa*. On the peculiar structure of the anal system of *Cidaris bispinosa*, radically different from that of other Cidaridæ, I had based the genus *Stephanocidaris* (Bull. Mus. Comp. Zool., vol. i.). I have also examined the tests of *Stephanocidaris bispinosa* and of *Phyllacanthus annulifera* in our collections (Mus. Comp. Zool.), and find that in both these species we have existing on the same tests tubercles more or less distinctly crenulated as well as smooth tubercles. In *Stephanocidaris* the crenulations were limited to those tubercles placed immediately round the abactinal system, which, as is well known, are not the largest nor most characteristic tubercles in the Cidaridæ, and do not always carry spines identical in appearance with the other primary spines of the test. In *Phyllacanthus annulifera*, on the contrary, the crenulated tubercles were found irregularly scattered on the coronal plates. I may add that I was much surprised to find on a specimen of *Dorocidaris papillata* (*hystrix*)