

characteristic and harmoniously varying series are of considerable value in the discrimination of the different formations. In the soft white chalk of the south of England their remains are extremely abundant. Perhaps the most abundant and characteristic fossils in the chalk are the *Cidaridæ*, and these more than any other chalk fossils illustrate the peculiar conditions under which the chalk has been laid down. The great spines of *Cidaris* are attached to the plates of the shell by a central ligament which passes from the cup on the spine to a perforation in the ball on the plate, and by a membrane which rises from the plate and passes over the base of the spine. The spines are, however, so disproportionately large, and the soft matter softens and decomposes so rapidly after death, that it is difficult to keep the spines attached to a specimen prepared even with considerable care. In the chalk, tests of *Cidaris* are frequently preserved absolutely entire, with all the spines in position; so that by carefully working out the chalk with a penknife, we can here have the whole animal perfect. It is difficult to see precisely how this result can have been produced. The urchin must have sunk into the soft chalk-mud and been covered up by a sufficient quantity to support its spines and test, and allow the whole to become gradually compacted into a solid mass. One of the new deep-sea *Cidarites* belongs to a genus which had previously been supposed to be extinct, but the chalk-mud forms generally do not show any special approach to any particular chalk species. Still the general character of the group is the same. The *Echinothuridæ* were previously known only as chalk