quadricostatus, Say (see fig. 165), and *Venus tridacnoides*, abundant in these same formations, but also some shells which, like *Fulgur carica* of Say and *F. canaliculatus* (see fig. 164), *Calyptræa costata*, *Venus mercenaria*, Lam., *Modiola glandula*, Totten, and *Pecten magellanicus*, Lam., are recent species, yet of forms now confined to the western side of the Atlantic,—a fact implying that some traces of the beginning of the present geographical distribution of mollusca date back to a period as remote as that of the Miocene strata.

Of ten species of zoophytes which I procured on the banks of the James River, one was formerly supposed by Mr. Lonsdale to be identical with a fossil from the faluns of Touraine, but this species (see fig. 166) proves on re-examination to be different, and to agree generically with a coral now living on the coast of the United States. With respect to climate, Mr. Lonsdale regards these corals as indicating a temperature exceeding that of the Mediterranean, and the shells would lead to similar conclusions. Those occurring on the James River are in the 37th degree of N. latitude, while the French faluns are in the 47th; yet the forms of the American fossils would scarcely imply so warm a climate as must have prevailed in France when the Miocene strata of Touraine originated.

Fig. 166.

Astrangia lineata, Lonsdale. Syn. *Anthophyllum lineatum*. Williamsburgh, Virginia.

Among the remains of fish in these Post-Eocene strata of the United States are several large teeth of the shark family, not distinguishable specifically from fossils of the faluns of Touraine.

India.—Sewâlik Hills.—The freshwater deposits of the sub-Himalayan or Sewâlik Hills, described by Dr. Falconer and Captain Cautley, belong probably to some part of the Miocene period, although it is difficult to decide this question until the accompanying freshwater and land-shells have been more carefully determined and compared with fossils of other tertiary deposits. The strata are certainly newer than the nummulitic rocks of India, and, like the faluns of Touraine, they contain the genera *Deinotherium* and *Mastodon*, with which are associated no less than seven extinct species of elephants. The presence of a fossil giraffe and hippopotamus, genera now only living in Africa, and of a camel, an inhabitant of extensive plains, implies a former geographical state of things strongly contrasted with what now prevails in the same region. A species of *Anoplotherium* (*A. posterogenium*) forms a link between this fauna and that of the Eocene period; yet, on the whole, the Sewâlik mammalia have a more modern aspect than those of the Upper Eocene, so many being referable to existing genera, whereas almost every Eocene genus is extinct. Moreover, the sub-Himalayan fauna exhibits a great development of the Ruminants, an order so feebly represented in the Eocene period. In addition to the camel and giraffe already alluded to, we have here the huge Sivatherium, a ruminant bigger than the rhinoceros, and provided with a large upper lip, if not a short proboscis, and