

FRESH-WATER SPONGES FROM MEXICO.

By EDWARD POTTS.

Meyenia plumosa, Carter, var. *Palmeri*, n. v.

Sponge (as seen in a dry state) dark brown, massive, attached to and surrounding the dependent branches of small trees, whose stems are flooded by the spring freshets. Texture very loose, and when dry so brittle that the dermal surface cannot be satisfactorily examined. (The impression conveyed by the interior appearance of this sponge is that it is made up of an infinite number of radiating confluent branches.)

Gemmulae large, numerous throughout the deeper portions of the sponge; subspherical or ovoid, surrounded by long birotulates imbedded in a granular crust.

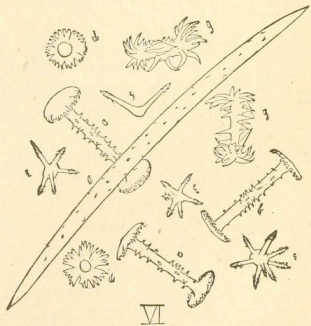
Skeleton spicules straight or slightly curved, mainly cylindrical but gradually sharp-pointed, sparsely microspined.

Dermal spicules irregularly stellate as in the typical species, but in the specimens examined much fewer in number. They vary from simple acerates with one or more long divergent branches to beautiful radiate spherical bodies whose rays are nearly equal, spined, and capitate by reason of recurved spines at their extremities. Another form of spicule, probably also dermal, of which several are seen upon nearly every slide prepared for microscopic examination, is very difficult of description. It may be said to be composed of an irregular series of smooth curved rays arising from a nearly common center, and is somewhat suggestive of a hedgehog or Scotch terrier.

Birotulate spicules pertaining to the gemmulae, in length about three times the diameter of the supported rotules; shafts cylindrical, plentifully spined; spines long, conical. Outer surface of rotules convex, margins lacinulate; ends of incomplete rays obtuse, recurved.

Sponge masses subspherical, reaching five or six inches in diameter.

The plate represents: *a*, skeleton spicule; *b*, *c*, *c*, birotulate spicules of the gemmule; *d*, *d*, ends or rotules of the same; *e*, *e*, *e*, *f*, dermal spicules; *g*, *g*, abnormal forms frequently observed. The spicules are magnified 200 diameters.



This sponge, collected by Dr. Edward Palmer along the banks of the Colorado River, near Lerdo, Sonora, in Northwestern Mexico, about

59 miles SSW. from Fort Yuma, California, is a valuable addition to the sponge fauna of this continent, and interesting from the fact that the typical species, *M. plumosa* of Carter, has heretofore only been found in his original locality, the rock water-tanks of Bombay, East Indies. That it should skip a whole hemisphere and only be found the second time at its own antipodes is indeed remarkable.

The lower reaches of the Colorado of the West extend for miles through a region described by the collector as "the hottest, driest, and most barren in the United States," whose "vegetation consists of mesquit, cacti, and the screw-bean, *Strombocarpus pubescens*." Its normal border lands are known as the "first" and "second" "bottoms," of which the latter is the higher and of course more distant from the channel. By the frequent changes in its bed, however, the river cuts through these, and, washing away the one and filling up the other, reverses their physical conditions. Upon the "second bottoms," then, said to be only reached to any considerable depth by the annual floods occurring during parts of May and June, and not to continue flooded more than six weeks at a time, the screw-bean abounds. It is described as a small tree of the general appearance of a peach tree, but with more slender drooping branches. More or less of an alkaline deposit whitens the ground upon which they grow, and the approaching traveler is puzzled to see in strong contrast with it hundreds or even thousands of dark masses, "like wasp's nests," suspended two or three feet above.

It was this conundrum that confronted Dr. Palmer during his recent visit, and the answer we have in the sponge before us. From the Amazon River in the tropics to the waters of Maine and Nova Scotia in the temperate regions of the north, sponges have long been known to affect the pendent branches of stream-bordering bushes; but it is unlikely that they have ever before been observed in such quantities suspended for nine or ten months of the year over land parched and desolate.

On referring to the earlier descriptions of his discoveries by H. J. Carter, Esq., F. R. S., we find that though he collected this species on two or more occasions, the fragments were always found detached from their place of growth and floating upon the surface in the water-tanks referred to, about one month after the rainy season had commenced. He believed that the vitality of the gemmules was preserved during the dry season, notwithstanding their exposure to the sun and desiccating winds, and that their germination after the water had again reached them was followed by a very rapid growth of new sponge. This would seem to have been the case also with the present variety, as, according to the reports of the collector, the masses could not have been submerged for a greater period than six weeks in any one year. Whether the whole bulk as now seen was attained during a single season, or is the cumulative result of several annual growths of the persistent masses, cannot now be determined.

It is worthy of notice that *M. plumosa* and this variety *V. Palmeri*, differ from all other known fresh-water sponges by the presence in them of a compound or substellate dermal spicule. The spiculæ of the dermis throughout the group are generally minute, spined acerates; in *M. Everetti*, Mills, we find them as minute birotulates. In *this* species the two forms seem to be combined; the spines have become central and prolonged, while their capitate extremities suggest the rotules of the last-named species.

Of the six sponge masses from the above locality, sent by the Smithsonian Institution for examination, the smallest was somewhat fusiform in shape and proved to belong to a different species—*Meyenia crateriforma*, Potts—heretofore found along the eastern border of the United States. In it alone the mass was not darkened by the presence of some pervading vegetable parasite.

DESCRIPTIONS OF NEW FISHES OBTAINED BY THE UNITED STATES FISH COMMISSION MAINLY FROM DEEP WATER OFF THE ATLANTIC AND GULF COASTS.

By G. BROWN GOODE and TARLETON H. BEAN.

A preliminary study of the collections of deep-sea fishes made under Government auspices has brought to light many new forms, some of which are here described in advance of their consideration in a final report now in preparation upon the extensive materials brought together by the combined efforts of the U. S. Fish Commission and the Museum of Comparative Zoology. Only the species secured by Fish Commission vessels are at present referred to, the rest being reserved for future discussion.

Aphoristia diomedea, n. s.

The species is described from a specimen (No. 37347) from Albatross station 2414 (latitude 25° 04' 30" N., longitude 83° 21' 15" W.; depth, 24 fathoms). Its length is 140 millimeters to base of caudal. The body is somewhat slender, its greatest height (43^{mm}) contained 3½ times in its length without caudal.

Scales moderate, somewhat loosely fixed, pectinated; about 85 in a longitudinal, 35 in a transverse, series. Jaws and snout covered with small thin scales.

Length of head contained 5¾ times in the standard length. Length of snout 5 times in that of head. Eyes moderate, equal, very close together, without intervening scales; the upper eye is *directly above the lower one*, and is distant from the dorsal outline an interval equal to its own least diameter; diameter of eye in length of head 6 times.

Mouth oblique, curved, its angle in the vertical through the front margin of the eyes; length of gape equal to that of snout, and con-