

tion and usually broken, but the following species have been identified:—*Phyllonotus nigritus* Mensch., *Strombus gracilior* Sby., *Arca grandis* Brod., *Chione dionaea* Menke, *Cardium procerum* Sby., and *Cardium consors* B. & S. These species, which formed part of the food-supply of the former inhabitants, are abundant in the fauna of the Gulf of California at the present day.

FEBRUARY 22, 1878.

**ARSENIC ACID FOR PROTECTING ANATOMICAL PREPARATIONS
FROM INSECTS.**

By J. B. S. JACKSON, M. D.

Arsenic acid is most intensely strong, and comes in the form of a solid and of a liquid, and the two are of about equal strength. Half an ounce (avoirdupois) of the one, or one-half of a fluid-ounce of the other, is to be added to a pint (f $\bar{3}$ xvj) of soft water, and it is ready for use. Any membranous preparation that is to be distended and dried, as a portion of the alimentary canal, any of the hollow organs, an ovarian cyst, an aneurism, and many preparations that are not to be distended, will be most thoroughly protected, I believe, by the arsenical solution. A solution of corrosive sublimate will probably prove an equal protection; but the membrane, when dried, has a disagreeably opaque and ash-colored look, whereas, after the arsenical solution, it dries without any change. I cover the preparation fairly with the solution, and leave it for about twenty minutes, then take it out, let it drain, then inflate or distend it, and, lastly, hang it up to dry.

BOSTON, MASS., February 19, 1878.

THE OCEANIC BONITO ON THE COAST OF THE UNITED STATES.

By G. BROWN GOODE and TARLETON H. BEAN.

A specimen of the Oceanic Bonito, *Orcynus pelamys* (Linné) Poey, was captured off Provincetown, Mass., in July or August, 1877, and taken to the Museum of Comparative Zoölogy by Mr. James H. Blake. The specimen was lent to the Fish Commission for study. Drawings have been made, and a table of measurements and description are here presented.

The specimen measures 447 millimetres (17.6 inches) to the end of the caudal carina. In form it closely resembles *Orcynus alliteratus*. The caudal rays are frayed, and their length cannot be exactly determined. The height of the body is a trifle more than one-fourth (0.26) of the length. The circumference of the body (0.71) is equal to the distance from snout to origin of anal (0.70). The length of the head (0.30) is

contained $3\frac{1}{3}$ times in length of body. The width of the interorbital region (0.075) is as much less than the length of snout (0.08) as it is greater than the length of the operculum (0.07). The length of the maxillary (0.11) is nearly equal to that of the ventral (0.115), and more than double the diameter of the orbit (0.05). The length of the mandible (0.14) is double that of the operculum.

The distance of the first dorsal fin from the snout (0.34) is slightly greater than that of the pectoral (0.325), and less than that of the ventral (0.38) by a distance nearly equal to the diameter of the orbit; it is also a trifle less than half the distance from the snout to the origin of the anal (0.70).

The length of the first dorsal spine (0.145) is double the length of the longest anal ray (0.0725). The distance from the origin of the first dorsal to the end of the base of the second dorsal (0.36) is four times the length of the anal base (0.09).

The length of the pectoral (0.15) is less than half its distance from the snout (0.325), and exactly half the length of the head; it is contained $6\frac{2}{3}$ times in the length of the body; its origin is slightly in advance of the origin of the dorsal, while its extremity reaches to the vertical from the tenth dorsal ray.

The length of the ventral (0.115) is about one-third that of the distance of the first dorsal from the snout.

The corslet is very prominent. Its contour is defined by lines beginning at the edge of the branchial cleft, about midway between the axil of the pectoral and the median line of the belly, extending below, beyond, and around the extremity of the pectoral (which, when normally placed, touches with its tip the outer margin of the corslet), then extending beyond its tip for a distance nearly equal to its length, round up into the lateral line, down which a narrow tract of scales continues to its extremity, though narrowed to a single row after passing its curve; passing the lateral line, the contour of the corslet curves forward and inward, then ascending to a point distant from the median line of the back about the diameter of the orbit, it follows backward in a direction parallel to this line, to a point opposite the posterior extremity of the second dorsal, where it curves upward to the median line of the body, and completes its circuit.

When viewed from above, the rows of scales appear to be arranged concentrically about the origin of the first dorsal fin. The scales are largest along the edges of the pectoral arch and the dorsal fin, decreasing rapidly in size as they recede from these regions. There are about thirty rows between the dorsal and the upper margin of the pectoral, normally placed.

Radial Formula.—D. XIV, 2 + 12, VIII. A. 2 + 12, VII. P. 28. V. 6.

Color.—The upper parts must have been deep blue in life; the belly and flanks below lateral line, the opercles, and throat, pearly opalescent white. The lower part of the pectoral arch and tracts at the base of

the ventrals and anal, as well as those parts of the opercles where the bone is close to the outer skin, were of a chalky white. The corslet is bronzed brown in the alcoholic specimen.

There are four distinct bluish lines upon the sides, which are nearly parallel with the lateral line, and which constitute the most prominent specific character. The first of these begins directly under the tip of the pectoral, the second at the margin of the corslet, at a point in the line from the upper to the lower axillary angles of the pectoral. The third and fourth are rather indistinct anteriorly, but are very distinct in the posterior half of the body, and are about as far distant from each other as are the first two, the interval between the two pairs being slightly greater than that between the members of each pair, and equal to the diameter of the orbit. The first or uppermost line is nearly straight, the others, following the lower contour of the body, curve upward over the anal fin, and all four become lost in the darker color of the caudal peduncle.

This is without doubt the *Scomber Pelamis* of Linné, characterized by him as "*Scomber pinnulis inferioribus VII, corpore lineis utrinque quatuor nigris*" (Syst. Nat. ed. 10, 1758, i, p. 297), and given by Günther as *Thynnus pelamys* (Cat. Fish. Brit. Mus. ii, 1860, p. 364). It is hopelessly confused by Cuvier and Valenciennes with *Pelamys sarda*. Professor Poey assigned it to its present generic relations in 1868 (Syn. Pisc. Cubens. p. 362).

The geographical distribution of this species is not very well known, owing to the uncertainty of its synonymy. The British Museum has two stuffed specimens, one from the Cape Seas, and one from Yarrell's Collection of British fishes. Couch records it from the Frith of Clyde (July), and from Cumberland, England, and Ireland. Poey has it from Cuba. It has also been recorded from the seas of India and China.

The presence of this form upon our coast was first suggested by Messrs. E. G. Blackford and Barnet Phillips of New York, who recognized the species in New York Market from the plates in Couch's History of British Fishes. Only one was seen, and it was unfortunately not preserved. This was in the summer of 1873; and as none have since been found, it may be said, with some certainty, that the species is at present only accidental in our fauna.

DISTRIBUTION OF CALIFORNIAN TERTIARY FOSSILS.

By W. H. DALL.

Further information has been received from Mr. Hemphill in regard to the Tertiary fossils enumerated lately in these Proceedings. These facts, having an important bearing on geological and faunal changes, are now summarized.