

II.

NOTICE OF THE RECENT EXPLORATIONS IN THE KITCHEN MIDDENS
OF EXTINCT INDIAN TRIBES, SANTA BARBARA, CALIFORNIA.
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All students of the natural sciences and archæology will cordially own their indebtedness to the Smithsonian Institution authorities for the great benefits they are year by year conferring on their special studies. The operations of the Institution embrace the increase and diffusion of knowledge in almost all departments of observation and thought, and at the same time the management of the National Museum, in which the United States Government stores its remarkably rich and rapidly increasing collection of specimens in natural history and ethnology. Though the care of the Museum does not fall within the terms of the Smithsonian Bequest, its office-bearers have hitherto co-operated very heartily with the Government in promoting the interests of the Museum. A good illustration of this co-operation recently occurred in connection with the explorations which form the subject of this paper.

A little more than three years ago, the Institution and the Government "Indian Bureau" being anxious to increase the anthropological collection of the Museum, agreed mutually to bear the expense of an expedition to the Pacific coast, with the view of examining the Kjökkenmöddings and burying-places of certain tribes of extinct Indians. To this end, a well-known and accomplished ethnologist, Mr Paul Schumacher, was sent to Santa Barbara county, California. The explorations were conducted with great earnestness, zeal, and intelligence by Mr Schumacher and his assistants, and recently fifty-one large boxes of ethnological specimens were forwarded to Washington as the fruit of the expedition.

The records of the explorations, as yet hardly known in this country, are very full of interest, and have close and intimate bearings on British archæology. I am able to submit to the notice of the Society a few good examples of the articles found.

As year by year the area of archæological investigation widens, facts are accumulated highly suggestive of the unity subsisting between tribes far removed from each other, and also of the comparatively brief period

within which objects have been realised, illustrative of the industrial art and social habits of tribes even now extinct. These objects, moreover, show us man, under climatal conditions widely diverse, and in the midst of an immense variety of circumstances, working in the same grooves, expressing his skill after a similar fashion, exercising his artistic taste in similar efforts, and hinting at, if never definitely expressing, gropings at least, towards something above and beyond the cares of family and of tribal life.

The explorations were made both on the mainland in Santa Barbara county and San Luis Obispo county, and also on the islands in the Santa Barbara Channel, as San Miguel, Santa Rosa, Santa Cruz, San Nicolas, Santa Catalina, and San Clemente. The contents of the various "finds" were mainly utensils of steatite and magnesian mica, fish-hooks of bone and of shell, spear-points of stone, stone borers, chisels, and axes, whetstones, mortars, and pestles. The mortars and pestles were numerous in almost all the localities visited—the latter generally far more numerous than the former; thus, of these objects found in Santa Cruz, the mortars numbered 127 and the pestles 200. This numerical disparity was explained several years ago by the discovery that the Indians on the north-west coast of the United States, who used these utensils for bruising the acorns on which they fed, had frequently dispensed with the mortar altogether, and employed instead a hollow in a large stone or on the face of a rock, around which they placed a bottomless basket, into which the acorns were thrown to be crushed. Some of these pestles are longer and more slender than most of the others, and may have served the double purpose of war club and acorn crusher.

Among the objects found were several circular bored stones similar to those described to the Society a year or two ago, as spade weights, such as are still in use in Caffraria, and were once used in Thibet, as shown by the specimen from that country now on the table.

In the course of Mr Schumacher's narrative of "finds" of utensils and implements in stone and other pre-historical material, it sounds oddly to be told that on one of the kitchen midden graves on Santa Cruz, "a wooden sword of a Roman pattern was found, having its hilt richly inlaid with shells, but in such a decayed condition that it had to be thickly coated with varnish for preservation." In the same heap occurred pieces

of board, sewed together with string and painted with asphalt, believed by a half-breed who was present to be the remains of a cradle. The use of asphalt seems to have been common. The hand point of the pestle on the table has been covered with it. Many of the bodies discovered seemed to have been buried in matting covered with asphalt. A number of pebbles, about as large as a pigeon's egg, were also found coated with it. Asphalt is plentiful on all the islands. It occurs as a marine spring in the Santa Barbara Channel, from which it is washed ashore among the rocks.

An interesting suite of specimens was gathered in Santa Cruz illustrative of the mode of manufacture of the shell fish-hooks. The makers seem to have worked in this fashion:—Pieces of *haliotis* shell were perforated by a flint point; the hole having been rounded by a double-pointed borer of hard sandstone, its rim was shaded into the shape of the hook, and the shaded part was worked out by a knife-like tool of stone. The hook thus finished was attached to a line for use. The various tools used for these ends were also found.

Many interesting observations were made as to the modes of burial. In all cases where the surface soil is sandy and apt to be altered by the wind, the skeletons, sometimes numbering two and three hundred, were found in the refuse heaps, where more compact and heavy material made it less likely that the wind would uncover them. They had been laid down without the least regard to direction or position, three or four resting one above the other, and if at all separated, this was by the bones of the whale.

Skeletons were also found in the central depressions of former habitations, the burial having taken place while the houses were inhabited. In Santa Cruz the bodies rest in separate graves. These lie on their back, as a rule, though not always, facing the east, the feet drawn up, the arms folded over the chest, and the head resting on the occiput.

An immense number of facts go to prove that the depopulation of the islands in the Santa Barbara Channel occurred so recently as about forty years ago, up to which time the Indians continued to practise the industrial habits, to use the implements and utensils, and to have recourse to the modes of burial mentioned above.

The following specimens were exhibited:—

1. Mortar and Pestle of very fine grained, hard, and compact sandstone.
2. Fragment of a Mortar of the same material, showing distinct marks of the maker's tools.
3. Olla, or Pot, of so-called steatite. Magnesian mica is a better characterisation for this mineral. The pot bears marks of having been on the fire. (See the accompanying figure.)
4. Two worked Stones, uses uncertain.
5. A black Mineral, with vitreous lustre, crystals showing distinct cubes. This seems to be a garnet. *Melanite?*
6. Skull: sutures not anchylosed; super-orbitals prominent; occipital depression large; teeth much abraded.
7. Vertebrae of one of the *Delphinidae*.
8. Vertebrae of large fish.
9. *Mollusca*.—(a.) *Natica*, specific marks obliterated. (b.) Operculum of *Turbo fluctuatus*. (c.) *Haliotis californiensis*. (d.) *Fissurella crenulata* (a good specimen of this rather rare form). (e.) *Spondylus flabellum*. Young? (f.) *Chamas?* specific features obliterated. (g.) *Cardium magnum*. (h.) *Pecten floridus*.
10. *Crustacea*: *Balanidae*, various.



Olla, or Pot of Magnesian Mica ($8\frac{1}{2}$ inches high).