# THE FISHHOOK INDUSTRY OF THE ANCIENT INHABITANTS OF THE ARCHIPELAGO OF CALIFORNIA*

E. Hamy

## Editor's Preface

The following article by E. Hamy, who was the founder of the Musée d'Ethnographie which later became the Musée de Trocadero and ultimately evolved into the present Musée de l'Homme, has been ignored perhaps because of its appearance in a series which is very rare, and, in our opinion, deserves publication in a more readily available source.

The process of manufacture of the curved shell hooks of the Santa Barbara region is described in essentially the same way by other authors, namely, Schumacher, 1875; 1877, pl. 22; Rau, 1884, fig. 212; Yates, 1900, fig. 378; Rust, 1907, pl. 31; Heye, 1921, pp. 135-136, pl. XCIX; Gruvel, 1928, pp. 102-103, fig. 87; Woodward, 1929, pp. 45-46, pl. 22; Colton, 1941, p. 6; Robinson, 1942, pp. 60-61; Irwin, 1946, p. 19.

Two general studies of curved shell fishhooks of the California coast are by Robinson, 1942, and Heizer, 1949. The student interested in Oceanian curved shell hooks may start with the works of Anell, 1955, and Emory, Bonk and Sinoto, 1959.

I am indebted to Miss Sonia Ragir for the translation.

Robert F. Heizer

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The excavations performed for some years on the coast and offshore islands[1] of California have placed a great abundance of material into the hands of ethnographers, which permits recreation in the most minute detail of the daily life of the inhabitants who, at no point, had a knowledge of metal.

Every item in the enormous collections sent to the ethnographic museums of Washington, Cambridge, and Paris by the representatives of the Peabody Museum and by our Ministry of Public Information is informative,

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* "L'industrie hamençonnière chez les anciens habitants de L'Archipel Californien," Revue d'Ethnographie, Vol. 4, pp. 6-13. Paris, 1885.

and among these there are none more interesting than the ancient fishing instruments from the islands of the California Archipelago which were collected by M. Léon de Cessac.[2]

The Trocadero Museum, in particular, possesses a complete technology of shell fishhooks[3] whose industrial processes I am going to review briefly for the reader.

Paul Schumacher has already, it is true, called the processes of the fabrication of California fishhooks to the attention of men of science in a short note printed in 1875,[4] and M. Putnam has returned to the same subject in his excellent studies of the archaeology of the Indians of the West.[5]

But these two ethnographic scholars did not, it appears, possess the considerable quantity of material which I have at my disposal thanks to the collection of M. de Cessac, and the information that I have brought together in the following pages is not redundant.

The haliotis shell, the main material of most of the Californian fishhooks, is first broken in pieces with the aid of a stone (fig. 6), then roughly retouched along the edges (fig. 7). The fragments thus prepared have very variable dimensions, the largest may attain 8 by 6 cm. and the smallest 2 cm. squared.

The workman then pierces the shell disc about the middle with the aid of a well-pointed flint (figs. 9 to 13). The hole obtained is of variable dimensions; I measured some not more than 2 to 3 mm. and others that attained, on the contrary, 1 cm. and more.

The placque thus roughed out is sometimes nearly round, but more often it results in the form of a triangle with a contracted base whose longest sides will be noticeably convex (figs. 14 and 15). The height of the triangle can vary from 2 to 8 cm. Its size at the base varies between 17 and 60 mm.

A new operation is undertaken for smoothing the contours of the perforated placque which one has just obtained: it is accomplished with the aid of a piece of flattened sandstone which one rubs around the circumference (fig. 16). The fabricator of the fishhook must then enlarge and round out the opening practically in the center of the plaque, which is done at first with the aid of a spindleform drill of hard and rough sandstone, by prolonged rotation of which the hole takes on a very exact circular form (fig. 17 and the following).

The internal and external circumferences tend more and more to harmonize, except at a point which corresponds to the apex of the triangle of which I spoke above, and which finally supplies the projection destined to suspend the fishhook. The manufacturer cuts little by little to obtain that kind of auricule, a portion of which he has left at the periphery of the piece, just as it is shown in the three figures attached (figs. 20 to 22).[6] He does not stop then, for in order to complete the fishhook it is necessary to remove a small part of the circumference in front of this auricule with the aid of a small stone drill. When the fishhookmaker has finished the manufacture of the hook he has just obtained, and when he has hollowed out [a narrow channel] between the auricule and the other end of the piece, only then will his tool be completely finished.

Figures 23 through 25 represent three fishhooks of this type which were most [commonly] in use in the sites of the fishing tribes of the Californian shores.[7] Figures 26 and 27 represent a variety of the same type which were less common and in which the auricule is shown much elongated.[8]

From the 4 to 12 mm. which the fishhooks of the first type usually attained, those of the second type shown here increase to 21 and 22 mm. in length, that is to say, to two- and even three-fifths of the total curve of the tool. However, not all of the shell fishhooks from the Californian archipelago possess all the more or less long appendages that I have just described. M. de Cessac has found that some have been fixed on a line with the aid of a transversal notch. Figures 28 and 29 reproduce two specimens of that kind of suspension. Still other fishhooks (these much more rare) were pierced with an eye (fig. 30) in which the suspending line was introduced and knotted.[9]

The preceding applies exclusively to fishhooks made of haliotis shell at San Miguel, San Nicolas, Santa Catalina, and San Clemente.

Various California tribes, those of Santa Cruz in particular, use both bone and shell fishhooks. Thanks to the barb provided on their external curve, a little beneath the point, these tools appear greatly superior to those of which I have been talking. M. Schumacher discovered fourteen of these fishhooks in his excavation of Santa Cruz; several were still fitted with their lines fixed in a notch of bone, transversely rolled on the end of the device to which it was secured by a thick layer of asphalt.

Two similar pieces from the collection of Cessac from the Trocadero

Museum (our fig. 31 represents the larger of the two pieces) are comparable to those which Schumacher and Putnam have represented, but one does not see any vestige of cord on the latter.

These bone fishhooks are, moreover, nearly identical to those that the Hawaiians formerly constructed with the aid of fragments of sperm whale tooth. I described, in 1879,[10] one of these fishhooks, which was a part of the Ballieu collection deposited in the Trocadero Museum. That piece (fig. 32) reproduces nearly exactly the general form of the Californian bone fishhooks. The sole noticeable difference between the two types of implements consists in the direction of the groove (channel, furrow) for the insertion of the line, which is longitudinal to the side [on one type], the other, on the contrary, being transversal. The auricle of the Hawaiian fishhook, reduced to its minimum, forms the body with the rest of the piece; in place of its being separated by a furrow, the binding is effected at this place around the inside edge by means of a horizontal notch provided on its surface.

It is probably to this fishing instrument of the ancient Hawaiian Islands that M. Rau alludes when he says that the fishhooks of California "resemble very closely" pieces of the same nature and function (use) in the Pacific. The fishhooks of Tahiti, of Samoa, etc., appear in effect very different from those of the islands off California, composed as they are of two pieces, a hook of bone or shell without barbs, and a small placque of mother-of-pearl more or less curved, to the middle of which the hook is fixed by two lines which pierce it transversely.

The analogy of the fishhook forms from Hawaii and from Santa Cruz have an even greater interest for me because they do not constitute an isolated fact. This is a strong argument that the material culture is going to furnish for the ethnologists who consider a certain part of the coastal population of the New World between 30 and 40 degrees north latitude as coming from the west and originating in the Polynesian Archipelago.

## Notes and References

1. These islands, which form a small archipelago situated at 33-34° N. latitude, are eight in number: San Miguel, Santa Rosa, Santa Cruz, Anacapa, Santa Barbara, San Nicolas, Santa Catalina, San Clemente.

2. This explorer [Cessac] has collected and brought back no less than 400 objects connected with the fishing industry.

3. About 250 pieces, of which a large number are duplications.

4. P. Schumacher. Die Anfertigung der Angelhaken aus Muschelschalen bei den früheren Bewohnern der Inseln in Santa-Barbara Canal. (Archiv für Anthrop. Bd. VIII, s. 223-224, 1875, in-4.)

5. F. W. Putnam. Reports upon archaeological and ethnological collection from vicinity of Santa Barbara, California, and from ruined pueblos of Arizona and New Mexico, and certain interior tribes. (United States Geographical Surveys west of the one hundreth meridian, vol. VII, p. 223, 1879.) Cf. W. W. Holmes, Art in Shell of the Ancient Americans (Second Annual Report of the Bureau of Ethnology to the Secretary of the Smithsonian Institution. Washington, 1883, grand in-8, p. 209, pl. XXVIII.)

6. Cf. Putnam, op. cit., pl. XII, figs. 22, 27.

7. Cf. Schumacher, loc. cit., fig. 80; Putnam, loc cit., figs. 24, 26.

8. Cf. Putnam, loc. cit., fig. 25; Ch. Rau, The archaeological collection of the United States National Museum (Smithsonian Contributions No. 287, Washington City, 1876, in-4, p. 69, fig. 256).

9. Cf. P. Schumacher, loc. cit., fig. 81; Putnam, op. cit., pl. XI, figs. 2, 3, 4.

10. E.-T. Hamy, Catalogue descriptif et méthodique de l'exposition organisée par la Société de Géographie, à l'occasion du centenaire de la mort de Cook, no. 305 (Bulletin de la Société de Géographie., 6$^{e}$ sér., t. XVII, p. 474, 1879).

## Editor's Bibliography

Anell, Bengt
1955 Contribution to the History of Fishing in the Southern Seas. Studia Ethnographica Upsaliensia, IX. Uppsala.

Colton, H. S.
1941 Prehistoric Trade in the Southwest. The Scientific Monthly, 52:308-319. Washington, D. C.

Emory, K. P., W. J. Bonk and Y. H. Sinoto
1959 Fishhooks. Bernice P. Bishop Museum Special Publication 47. Honolulu.

Gruvel, A.
1928 La pêche dans la préhistoire, dans l'antiquité, et chez les peuples primitifs. Paris.

Heizer, R. F.
1949 Curved Single-piece Fishhooks of Shell and Bone in California. American Antiquity, 15:89-97. Menasha.

Heye, G. G.
1921 Certain Artifacts from San Miguel Island, California. Museum of the American Indian, Indian Notes and Monographs, 7:135-136. New York.

Irwin, M. C.
1946 Canaliño Fishing Tackle. Santa Barbara Museum of Natural History, Museum Leaflet, 21:19. Santa Barbara.

Rau, C.
1884 Prehistoric Fishing in Europe and North America. Smithsonian Institution, Contributions to Knowledge, Vol. 25. Washington, D. C.

Robinson, E.
1942 Shell Fishhooks of the California Coast. Bernice P. Bishop Museum, Occasional Papers, 17:60-61. Honolulu.

Rust, H. N.
1907 Archaeological Collections from San Miguel Island, California. American Anthropologist, n.s., Vol. 9. Washington, D.C.

Schumacher, Paul
1875 Die Anfertigung der Angelhaken aus Muschelschalen bei den früheren Bewohnern der Inseln in Santa-Barbara Canal. Archiv für Anthropologie, Vol. 8. (Trans. and reprinted in Univ. of Calif. Archaeol Survey, Report No. 50, pp. 23-24. Berkeley.

1877 Researches in the Kjökkenmöddings and Graves of a Former Population of the Santa Barbara Islands and Ádjacent Mainland. United States Geographical and Geological Survey Bulletin, Vol. 3. Washington, D. C.

Woodward, A.
1929 Shell Fishhooks of the Chumash. Bulletin of the Southern California Academy of Science, pp. 45-46. Los Angeles.

Yates, L. G.
1900 Archaeology of California: Southern California. In W. K. Moorehead, Prehistoric Implements, Sec. VII. Cincinnati.

Fig. 6.

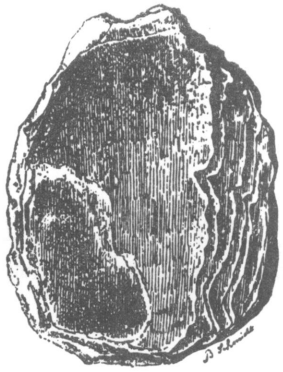

Fig. 7.

Fig. 8.

Fig. 9 à 13.

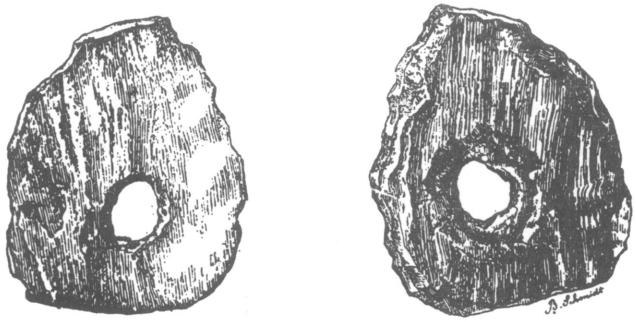

Fig. 14 et 15.

Fig. 16.

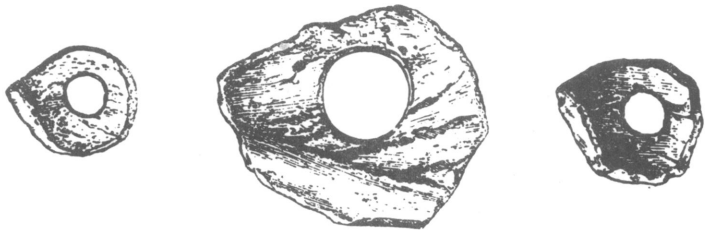

Fig. 17, 18 et 19.

Fig. 20, 21, 22.

Fig. 23, 24, 25.

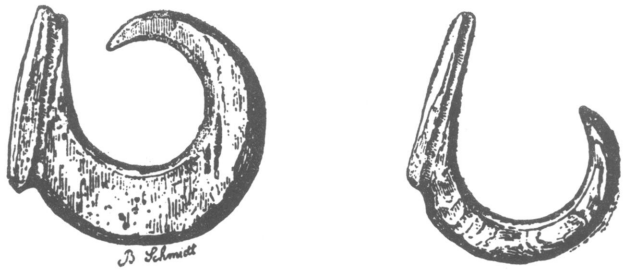

Fig. 26, 27.

Fig. 28.

Fig. 29.

Fig. 30.

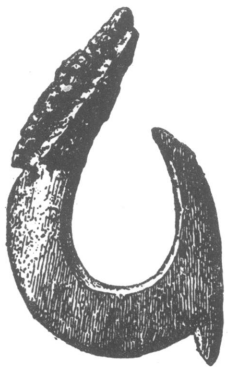

Fig. 31.

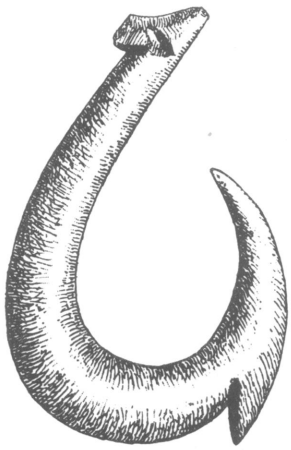

Fig. 32.