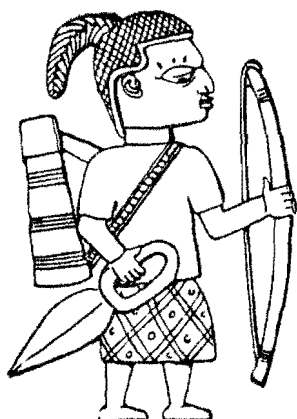


Contribution
to the History of Fishing in
the Southern Seas

BY

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The Fishing Kite

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STUDIA ETHNOGRAPHICA UPSALIENSIA IX

UPPSALA

Fishing with a fishing kite implies, briefly, that the fisherman, at a time when a strong wind is prevailing, sends up a kite made of one or several leaves or strips of leaves held together with a skeleton of thin ribs or laths. The flight of the kite is directed with the help of a long line, and from the kite itself a baited line hangs down. The bait consists either of a tuft of spider's web or a piece of sharkskin. Owing to the irregular movements of the kite, the bait jerks and bounces up and down on the surface of the water, which arouses the interest of the fish in a high degree. In those cases in which the above-mentioned bait is used no special catching contrivance such as hook or snare is needed, as the game, garfish, snaps so hard at the bait that it is unable to free itself therefrom on account of its tough consistency. In some places in Indonesia, however, the kite is baited with a little fish bound in the middle of a snare, which is automatically drawn tight at the moment when the bait is taken.

The reason why a fishing kite is used for catching garfish, and not the simpler method with hook and line, has, as a matter of fact, never been definitively ascertained. It has been pointed out that the jerky movements of the bait on the surface of the water cannot be attained in such an alluring way by any other means, and it has further been asserted that the kite is used on account of its bird-like shape, which is claimed to entice the fish to the surface. The point here is that the garfish hunt schools of small fish and are considered to be guided, in this connection, by birds of prey, which can be seen at a great distance, hovering over the schools. It may also be assumed that the garfish is a very shy fish that would never venture in the vicinity of a hooked line held by hand from a canoe.

The fishing kite has been earlier dealt with in two studies, by H. BALFOUR (ESR pp. 583-608) and H. PLISCHKE (VSML 6), which, where first-hand sources are not available, are quoted. That the method is here taken up for renewed discussion is due partly to the fact that fresh material has appeared, and partly to the circumstances that certain objections may be made to some of the conclusions drawn earlier.

In Micronesia the fishing kite appears to have occurred only in the western and central parts of the Carolines. The method has not been instanced east of Truk. With one possible exception, the Micronesian fishing kites belong all to the same single-leaf type. On Tobi, Pur, Songosor and Merir the kite is made of a single bread-fruit leaf. The skeleton consists of the main vein of the leaf itself and of small sticks keeping the leaf stretched out. Cross-ribs of leaf-veines are also used. The

bait varies, the natives of Tobi and Merir using spider's web, and those on Songosor sharkskin. One kite from Songosor measured 87×50 cm, but the usual size of the Micronesian specimens is considerably smaller. Concerning the fishing on Tobi, we read that the natives used a long rod, but nothing is said about the occurrence of this on the other islands. As far as is known, fishing kites with rod do not occur anywhere else in Oceania, whereas this is common, on the other hand, in Indonesia (ESE 2:B:9:1, pp. 96, 269, 390-1, fig. 18; 9:2, pp. 183-4). Neither A. KRÄMER nor J. KUBARY mentions the occurrence of fishing kites on Palau. In a comparison of the cultures on Palau, Yap and Truk, however, the former writes (MDS 21, p. 175): "Gemeinsam ist ferner allen dreien das Fischen mit Drachen ...". As KRÄMER's Palau monograph (ESE2: B:3:1-5) issued later than the above-cited work, it appears probable that in his older work he confused the fishing kite with the kite used in games and religious festivals. KRÄMER's statement that the fishing kite was used on Yap seems to be uncorrect also, for W. MÜLLER-WISMAR reports that "der Fischdrache kommt weder auf Yap weder auf Mogemog vor" (ESE 2:B:2:1, p. 203). A. SENFFT instances ordinary flying kites from Yap, but does not mention their use for fishing (PM 49, p. 56). In the Central Carolines the kite appears to have been a rather common tackle, and it has here an unbroken area of distribution. With the exception of the type occurring on Truk, they are all made of a single leaf. In contradistinction to the specimens from the southwestern Carolines, the entire flying surface is stretched between two long peripheral sticks consisting of leaf-ribs. SENFFT describes the fishing on Oleai as follows (PM 51, p. 57):

Zum Fange eines Fisches, der durch sein langes schnabelähnliches, mit Zähnen bewaffnetes Maul und durch sein überaus kräftiges Schnellen aus dem Wasser gefährlich ist, wenden sie eine sehr sinnreiche, mir bisher unbekannt gewesene Methode an. Sie verfertigen aus den Rippen der Kokosblätter einen kleinen rundlichen Drachen, auf dem statt der Leinwand oder des Papiers ein grosses Brotfruchtsblatt befestigt wird. Den Drachen bringen sie vom Kanu aus über dem Wasser zum Steigen, vom Geripp führt eine Leine zum Fischer, eine andere mit dem Köder ins Meer. Der Fischer hat es, wenn der Drachen steht, in der Gewalt, einen beliebig grossen Abstand zwischen sich und dem Köder zu schaffen, so dass er aus der gefährlichen Nähe kommt und die Fangleine erst einholt, wenn der Fisch angebissen hat.

The natives catch garfish with similar kites and fishing methods on several islands, including Lamutrek, Feis, Ifaluk, Aurepik, Faraulip, Sorol, Polowat, Satowal and Hok, whereas in the Luku-nor group the fishing kite is instanced only from Ku (BNGV 2, p. 413; ESE 2:B:6:1, p. 143; 6:2, p. 55; 10:1, pp. 48-9, 234, 335, figs. 103, 109; 10:2, pp. 31-2, 125, 166, 240). The bait consists for the most part of a portion of the shark's stomach, which has a consistency of sufficient toughness. On Ifaluk, however, a little wad of spiderweb is often used instead, and on Aurepik a piece of meat. It is not stated whether this is so tough that the teeth of the game get stuck in it, or whether hooks are used. The first-mentioned alternative, though, appears the most likely. The use of a hook, made of metal wire, is, however, reported from Faraulip. This is, of course, a recent improvement. The kite on Truk is, to judge from the available evidence, composed of several breadfruit leaves arranged like the blades on a clover-leaf and held together with ribs of palm-leaf veins. The bait used consists of a bit of shark-skin (ESE 2:B:5, p. 142, fig. 105). Even in L. BOLLIG's time the fishing kite, *asuda*, had fallen into disuse. He mentions the occurrence of hooks, and, unless he is entirely mistaken, these are undoubtedly, as on Faraulip, a late improvement (AEB 3:1, pp. 149-50).

On many Micronesian islands, on which the kite fishing is not carried on, kites are known as toys or as cultic objects. This was the case on Palau and Yap, as stated above, and further instances are known from the Marianas, Kusae, the Marshall and the Gilbert Islands and Nauru. A feature common to all these kites is that they are generally constructed with much more care than the fishing kites, that they frequently consist of several leaves and are provided with all kinds of ornaments (AEB 2:1, p. 282; BMM 3, pp. 198-9; EN 3:3, p. 57; ESE 2:B:1:1, p. 342-3, fig. 74; 2:1, p. 203; 3:3, p. 322; 4:2, pp. 459-60, 497; G 91, pp. 62, 73; MDS 1, p. 72; NUSE 5, p. 105; PM 49, p. 56; VGEB 22, p. 482).

In Melanesia the kite is known from several island-groups. Its most westerly occurrence is on the Admiralty Islands, where it is made, like the Micronesian kites, of a single leaf. PLISCHKE depicts a specimen 60 to 70 cm in length and NEVERMANN another measuring 24×48 cm (ESE 2:A:3, p. 163, fig. 76; VMVL 6, pl. 1:1). Apart from the differences in size, both of these exemplify the same type, being made of a single banana-leaf. It is elliptical in form and the skeleton consists of two mid-ribs, the vein of the leaf itself and that of another leaf bound parallel with that of the kite-leaf. Further, there are transverse and lateral ribs tied round the outer edge of the leaf. PLISCHKE's specimen has also streamer-like decorations, and the outer edges of the leaf are fringed, a feature which does not, however, occur on NEVERMANN's specimen. The bait-line is affixed to the lowest part of the mid-rib and the hand-line to a wooden rod one and a half dm in length, to which in their turn two thin strings proceeding from the upper and lower transverse ribs have been bound. According to PLISCHKE, the hand-line measures 60-80 m and the bait-line 40-50 m. The bait consists of spider's web (cf. PM 60, p. 317; ZFE 40, p. 282).¹

On New Guinea the kite occurs only among the Jabim, and the type used here is similar to that known from the islands of Tami and Siassi. These kites are very small, measuring only 12 to 13 cm in length. They are made of two taro leaves placed one over the other with the mid-veins tied together. The upper edge is straight and the lower curved. Along the upper edge runs a strip of palm-leaf one and a half cm in breadth which is sewn fast to the kite-leaf. The thread with which the two mid-veins of the leaves are bound together continues downwards in the bait-line, upwards in the hand-line. The bait is cobweb (DKL 1, p. 631; VMVL 6, p. 21, pl. 1:3).

The Massim region appears to be a real centre for kite-fishing in western Melanesia. A rather complicated form of kite is described from Dobu. This is made out of four leaves. The upper part consists of three leaves arranged in such a way that together with the two halves of the intermediate leaf the inner halves of the two outer leaves form a leaf-wall doubled in the middle. The lower leaf is so placed that its upper part is inserted between the middle leaf of the upper row and the insides of the outer leaves. The backbone of the kite is constituted by two leaf-veins running parallel, one on each side of the kite-leaves. Further, there are at the top and bottom of the kite two pairs of transverse ribs, and in the middle of the kite a simple rib that is stuck in and out through the leaves in zig-zag fashion. Two pairs of side-ribs, running parallel with the backbone, also occur. On the outermost parts of the transverse ribs are attached small streamers, and round

¹ A kite resembling "... a sail consisting of an oval leaf kept stretched out with thin ribs" is preserved in S.E.M. (13.4.82). According to the catalogue, it drives from the

"islands south of New Guinea". This kite, made of a single leaf and measuring 62×25 cm, derives in all likelihood from the Admiralty group.

each is sewn a protective border to prevent the leaf from being torn by the wind. The length of the kite is as a rule between 50 and 75 cm, the breadth between 20 and 30 cm. The handline, about 400 m in length, is generally bound fast where the midmost transverse rib intersects the backbone. From this point runs also the bait-line, between 60 and 80 m long, which is, however, fastened about the lowest part of the backbone. In the middle of it a long narrow tail-like strip of leaf is attached. The bait is a wad of cobweb or, as also in the northern Solomons, the cocoon of a grub, which functions in the same way. Apart from certain differences in respect of the number of cross-ribs and the placing of the above-mentioned streamers, all the specimens known from here are of the same type (ARBNG 1897-99, pp. 46 et seq., pls. 1-2; cf. AAAS 7, pp. 791-2; AQM 5, p. 2 et seq.; DKL 1, p. 631; ESR, pp. 588-91, figs. 6-10; G 76, p. 100; JAI 28, p. 343; NH 65, pp. 488-9; TAG 4:6, p. 146; VMVL 6, pl. 1:4; B.M.L. 1950 Oc. 2.111).¹ The fishing kite is also known from Goodenough, Ferguson and Normanby Islands, and it seems probable that it is here of the same type as that mentioned above from Dobu (ESR, p. 588).² It is further said to be common in the Trobriand group, e.g. on Kitawa,³ and in the Marshall Bennet Islands. The kite of the last-mentioned group is thus described (ESR, p. 592, fig. 11):

The body of the kite is oval and composed of broad strips of palm-leaf sewn together with vegetable fiber. The central strip is prolonged below to form a tapering tail. A strengthening rod of palm mid-rib runs longitudinally from end to end and there are three transverse rods. The margin of the kite is stitched to prevent fraying out in the wind. In use, the kite is flown from a canoe as usual and the lure is of spider's web.

The length of the kite, including the tail, is 90 cm, the breadth 40 cm. This is the only known example of a kite constructed of leaf-strips from this part of Melanesia.

The fishing kite is known also from the St. Matthias group. On Emir the kite, *raura*, is according to NEVERMANN used for catching fish, "angeblich nur Haie", which is obviously a misunderstanding (ESE 2:A:2, pp. 92-3, figs. 37-9, pl. 6:1). According to this writer the method is not common on St. Matthias, although he does give a picture of a specimen from here. It is constructed with not fewer than seven leaves laid one on top of the other. Further constructional details are not apparent from the illustration. According to P. CHINNERY, again, the kite is made of "a broad leaf, dried in the sun" (ARTNG 2, p. 188). R. PARKINGTON states that the kite from Tench has the elliptical space between the lateral ribs "mit einen braunen, papierdünnen Substanz bekleidet" (PDJ, p. 344). NEVERMANN's kite has an oval shape and the skeleton is composed of mid-rib, lateral ribs running round the outer edge of the kite, and three cross-ribs. The bait consists of a bundle of cobweb that has been daubed around a little bit of wood. Concerning the practical application, CHINNERY writes (ARTNG 2, p. 188): "It flies at the end of a long string held by a man sitting in the bow of a canoe, while another man paddles vigorously from the stern" (cf. O 5, p. 221).⁴

R. PARKINSON has described the fishing kite in an earlier work, but seems at that time not to have rightly understood its proper function (G 88, p. 70). From the above contradictory reports

¹ W. BROMILOW, *Twenty years among primitive Papuans*. London 1929, p. 99.

² D. JENNESS and A. BALLANTYNE, *The Northern d'Entrecasteaux*. Oxford 1920, pl. 26; J. MURRAY, *Papua, or the British New Guinea*. London 1912, pp. 117-8.

³ Cf. B. GRIMSHAW, *The new New Guinea*. London 1910, p. 313; SILAS, *A primitive Arcadia*. London 1921, p. 191.

⁴ Cf. VOGEL-HAMBURG, *Eine Forschungsreise im Bismarck-Archipel*. Hamburg 1911, p. 64.

it would seem to emerge that on the St. Matthias Islands the kite was made with several leaves placed on the top of the other, as in the Huon Gulf. CHINNERY's statement, however, that only one leaf was used may be due to a misunderstanding.

On New Ireland, New Britain and Duke of York Island the fishing kite is not found, while it is briefly mentioned, on the other hand, from the island of Lir, though with total absence of details (MDS EH 5, p. 149; MGGZ 19, p. 16; PM 67, p. 134).

The largest unbroken area of distribution in Melanesia is in the Solomon and Santa Cruz groups. In the first-mentioned group the fishing kite is known from all the larger islands except Choiseul and San Cristobal, but it probably occurs here too. The kite is not found on the Polynesian outliers, e.g. on Ontong Java (ESE 2:B:12:1, p. 125). A feature common to the kites in the Solomon Islands is that they are all made of strips of leaves. In other respects, several local types can be distinguished in this group.

Concerning the kite on Petats, P. CHINNERY writes (ARTNG 1, pp. 64-5):

The kite, *batoa*, is made of leaf of pandanus, sewn together, and supported by ribs of the leaf. The structure is then braced with cross-sticks consisting of six thin strips of split cane laced transversely in three bars of two strips each, one on each side of the kite. To the center bar is attached a fiber line, one end of which is held by the fisherman, the other end, after being passed round the ribbed tail of the kite, falls to the water. To the distal end is attached a tangled spider's web, which swells as it becomes wet.

B. BLACKWOOD describes a kite, *vavatoa*, from the same island. It is made of five strips of leaf, of which the two outermost are divided in such a way that only one half of the leaf and the mid-vein are used. The latter here forms a natural side rib. The two outer strips are prolonged, which may be interpreted to mean that the natives have tried to make the kite resemble a bird as much as possible. The specimen depicted by B. BLACKWOOD, however, is without such wings and is, as regards its shape, most like a lyre,¹ whereas CHINNERY's is triangular (cf. AL 4, p. 173; AMD 7:6, p. 34; PDJ, p. 511; SKB 1, p. 124). K. ZÖLLER mentions kite-flying from the same region, but says nothing of fishing with kite (PM 37, p. 11).² A fishing kite, *dala*, made from strips of leaves from the ivory palm, is known from Ysabel, and the use of kites both for fishing and as a toy is further instanced from Roviana and Florida (O 18, p. 226; QGJ 24, p. 34).³ A peculiar type of kite, *belama*, the frigate-bird, occurs on Roviana. Its form coincides completely with the conventional representations of this bird. According to one report it is used for catching "sea-snakes"; but garfish are here, too, undoubtedly the game (B.M.L. 1927. 3-10.8). It appears likely that H. GUPPY is referring to this type of kite when he writes: "Some of these kites, which I saw, had a form rudely representing a bird with expanded wings".⁴ GUPPY has here chosen to see a parallel to Tahiti's feathered albacore cranes, where the aim was to entice fish of prey that were believed to look for schools of smaller fish with the help of the easily distinguishable fish-feeding birds hovering over them.

¹ B. BLACKWOOD, Both sides of Buka Passage. Oxford 1935, pp. 348-9, pls. 44-5.

² K. ZÖLLER, Deutsch-Neu-Guinea. Leipzig 1891, p. 326.

³ C. RIBBE, Zwei Jahre unter den Kannibalen der Salomo-Inseln. Dresden 1903, p. 271.

⁴ B. GUPPY, The Solomon Islands and their natives. London 1887, p. 151-2.

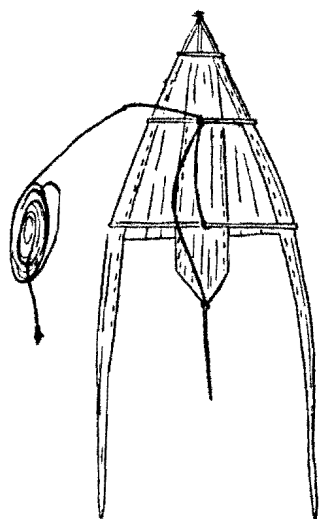


Fig. 1. Fishing kite, the Solomon Islands (M.V.H.:2668:05).

GUPPY may, however, have been referring in his pronouncement to the type of kite common on Malaita, which is distinguished from the specimens of Buka Passage in having only two cross-ribs. The upper border of its rectangular surface is straight, while the lower border is trilobate, as the two outer strips of leaf are prolonged downwards, as is also the middle one, whose central vein forms the mid-rib of the kite (EPA 1, pl. 197:1; ESR, pp. 593:6, figs. 13-16; M 12, pp. 9-11).¹ PLISCHKE depicts a kite with three cross-ribs, a lower half resembling that of the above-mentioned type, but with the upper part ending in a point giving the kite a triangular form (VMVL 6, pl. 2:2). Its provenience is unknown, but it would appear that it is to be regarded as a probable transitional form between CHINNERY's triangular Petats kite and the square type referred to in the foregoing. The type of kite occurring on Guadalcanal is, like that on Malaita, rectangular. It has, further, a downward prolonged mid-rib and prolonged outer strips. Its cross-ribs are double, and it is, furthermore, provided with outer ribs consisting of the centre vein of the outer strips. The line to which the baitstring is attached is affixed where the upper cross-rib intersects the centre rib (M.V.B. v:7008; cf. QGJ 6, p. 57). Kite fishing is also known on Sa'a and Ulawa, whence, however, no detailed informations as to the construction of the tackle is given.² There are good reasons for assuming that it is here a matter of a variant of the above-described rectangular Malaita-type. On Owa Raha the kite was constructed of strips of leaves from the ivory-palm. Concerning its construction, BALFOUR writes (ESR, p. 596, fig. 17):

It is constructed as usual from strips of palm-leaf sewn together, the central strip including its mid-rib which forms the central support or stiffening rod. There are two transverse rods and at the points where the ends of these meet the margins of the kite, little clips of palm-leaf are added to prevent the margins from tearing.

The main difference between this specimen and those from Malaita consists in its straight lower part, which is entirely without "wings", and its upper part, which has a triangular profile (cf. B.M.L. 1939. OCT. 1.21).³ The Solomon Islands fishing kite is, further, often mentioned in the literature but without more detailed information as to the provenience and construction (FMVB S, p. 10; IAE 1, p. 66).⁴ In a few cases, doubtless in consequence of a misunderstanding, there is mention of the occurrence of hooks as the actual catching device instead of spider's web, which is probably the only sort of bait in use in Melanesia (AMD 7:6, p. 52).⁵

¹ W. G. IVENS, *The island builders of the Pacific*. London 1930, p. 256.

² F. COOMBE, *Islands of enchantment*. London 1911, p. 277; W. G. IVENS, *The Melanesians of the south-east Solomon Islands*. London 1927, p. 386.

³ H. A. BERNATZIK, *Owa Raha*. Wien 1936, pp. 64-5; *Südsee*. Leipzig 1934, fig. 23.

⁴ G. BROWN, *Melanesians and Polynesians*. London

1910, p. 323; R. H. CODRINGTON, *The Melanesians*. Oxford 1891, p. 318; N. HARDY and W. ELKINGTON, *The savage South Seas*. London 1907, p. 116; H. PENNY, *Ten years in Melanesia*. London 1887, p. 77; W. F. WAWN, *The South Sea Islanders and the Queensland labour trade*. London 1893, p. 327.

⁵ S. KNIBBS, *The savage Solomons*. London 1929, p. 52.

Kite fishing has also occurred on the Santa Cruz Islands. The kite is made of strips of leaf (according to COOMBE, pp. 172-3, also bark is used) arranged in such a way that the middlemost strips are prolonged upwards. The skeleton consists of a mid-rib and two cross-ribs. The lower part of the kite is quite straight. From the upper part of the kite depend two streamers, slanting down on each side. Kites of this kind are depicted both from Vanikoro and the Reef Islands, and it is obvious that this is the established and sole occurring type in this island-group (ASAG 4, p. 226; BNGV 2, p. 400; EA 1, pp. 104-5; 2, pp. 186-7; ESR, p. 597-8, figs. 18-19; FL 4, p. 509; FMVB NS, p. 33; GLP, pp. 114-6, fig. 99; VMVL 6, pl. 2:7).¹ In some sources there is mentioned the occurrence of hooks or gorges instead of the ordinary cobweb. It is, however, obvious, that a confusion between kite fishing and the mode of catching flying fish has been committed.²

In the more southerly parts of Melanesia kite fishing is not practised (BAEU, pp. 171, 179). Kite-flying is, on the other hand, known in the Banks Islands and in the New Hebrides, here as in the Carolines much better constructed than the fishing kites of the more northerly island-groups, something which may indicate that the kite have been a cultic object (EPA 1, pl. 151: I; II, pl. 79; CODRINGTON, p. 342).³ In the Loyalty Islands and on New Caledonia the kite is not found at all,⁴ while according to B. SEEMANN it was introduced to Fiji during the 19th century by missionaries. It is claimed, for the rest, that the kite was here used in war "to keep the symbol of defiance floating over the heads of the approaching foe".⁵ In northern and western Melanesia the kite as a plaything is known only from the Elema district of New Guinea (JAI 38, p. 282; PPSG 18, p. 68).⁶

Kite-fishing does not occur in Polynesia. Kite-flying as a pastime, on the other hand, is common, and there are frequent allusions to this in the folklore (cf. JAI 61, pp. 455-92). The kite as a plaything is known from Pukapuka and the southern Cook Islands, Tubuai, Tahiti, the Tuamotus, the Marquesas, Hawaii, Easter Island and New Zealand, whereas it is not found in western Polynesia (AA 1, p. 224; BMB 9, p. 300; 48, p. 279; 70, p. 93; 75, pp. 555, 677; 79, p. 65; 145, p. 154; 150, p. 214, fig. 49:A; 160, p. 353; 179, pp. 257-9, figs. 160-1; BMM 3, pp. 198-9; 8, p. 453; BSNG 14, p. 140; CIP 174, pp. 72, 289; DMB 8, pp. 67-81; EPA 1, pl. 369; G 76, p. 341; HS 2:32, p. 324; JAI 19, p. 115; JPS 4, p. 5; 10, pp. 164, 204-5; MMR 1, pp. 331-5, 346-7; MPS, 3, p. 186; 5:2, p. 115-120; 6:1, pp. 95, 924; MVEL 1910, p. 165; TNZI 24, pp. 465-6; 45, pp. 375-84).⁷

¹ C. v. D. BROEK D'OBRENAN, *Le voyage de La Korrigane*. Paris 1939, p. 113; J. GIRIEUD et H. HERRENSCHMIEDT, *La Nouvelle Calédonie suivie d'un aperçu sur les Nouvelles Hébrides, les Iles Santa-Cruz et les Swallow*. Rouen 1898, p. 106; G. LENNIER, *Notes d'ethnographie océanique*. Havre 1896, pl. 3; F. SPEISER, *Südsee, Urwald und Kannibalen*. Stuttgart 1924, p. 340.

² See e.g. GLP p. 116; VK 4, p. 155; according to J. JENNINGS flying fish were caught with fishing kites. The catching device is said to have consisted of "boomerang-shaped hooks of tortoise-shell attached by a short line to weighted floats" (JAI 28, p. 165). That two entirely different methods, i.e. gorge- and kite-fishing, have here been confused is obvious (cf. p. 76).

³ B. DEACON, *Malekula*. London 1934, p. 44; J. LAYARD, *Stone men of Malekula*. London 1942, p. 374;

F. SPEISER, *Ethnographische Materialien aus den Neuen Hebriden und den Banks-Inseln*. Berlin 1923, pl. 29:6-7.

⁴ F. SARASIN, *Nova Caledonia*. München 1929. D, p. 314.

⁵ B. SEEMANN, *A mission to Viti*. Cambridge 1862, p. 45; B. THOMPSON, *The Fijians*. London 1908, pp. 93-4.

⁶ J. CHALMERS, *Pioneering in New Guinea*. London 1887, p. 183.

⁷ R. ANDRÉE, *Ethnographische Parallelen und Vergleiche*. Neue Folge. Leipzig 1889, p. 95; ANDREWS, *A dictionary of the Hawaiian language*. Honolulu 1865, p. 365; F. ANGAS, *Savage life and scenes in Australia and New Zealand*. London 1847, I, p. 314; G. BROWN, *Melanesians and Polynesians*. London 1910, p. 338; E. DIEFFENBACH, *Travels in New Zealand*. London 1843, II, p. 31; J. DUMONT D'URVILLE, *Entdeckungsreise der französischen*

The type of fishing kite that is known from the Malacca Sound, from the north-western coast of Java, Bawean and the Thousand Islands, is of the most primitive kind. It is made from a single leaf, as a rule *Polypodium quercifolium*, and is entirely without skeleton. The actual catching device consists of a noose in the middle of which the bait, generally a small fish, is affixed. The hand-line is directed with a rod whose top is provided with a ring through which the line runs. Great skill was doubtless required to keep the noose in the right position while fishing. It is regarded as an established fact that in the Singapore area the fishing-kite was introduced by immigrants from Java. As regards the Javanese kite, it is said to have been introduced from the southern Celebes by the Bugineses, which may be possible, although kite-fishing is nowhere mentioned from this region (BCIA 2:2, p. 98, fig. 4; ESR, figs. 1-2; MDL 9, pp. 93-4, pl. 16).¹

The type of kite occurring on Flores is made of several leaves. The skeleton is composed of a backbone and two cross-ribs; the kite is also provided with a tail. The bait consists "aus dem dichten, baumwollähnlichen Gespinnst einer Spinne (*lawalawa*; weiter östlich *sakarawang* genannt)". This bait is also mentioned from Bandanera.² From the east coast of Flores, for the rest, kite-fishing is mentioned even by REINWARDT, who observed with surprise the natives fishing with "vlieger".³ VATTER describes fishing kites from Tanah Boleng on the south coast of Andonare, "wo die Drachen im Gegensatz zu den aus einzelnen Blattstreifen zusammengesetzten Exemplaren von Wureh und Pura, aus einem einzigen Blatt bestehen soll". At Larantuka Sound, again, the kite is made of strips of the pandanus leaf, sewn fast with "Gebang-Blattfasern", and similar strips are sewn round the outer edges of the kite. The combined hand and bait line is bound firmly to the backbone, which is nearly 2½ m in length. The bait consists of a tangle of silk threads functioning in the same way as the wad of cobweb.⁴ The kite found on Pura is considerably bigger than the one from Larantuka Sound, but not, on the other hand, so well made. It is rectangular, with the dimensions 110 × 55 cm. The material consists of strips of pandanus leaf, not sewn together, but "mit dünnen Palmblattrippen zusammengesteckt ...". The skeleton is composed by a backbone nearly two meters in length, a cross-rib and four staves arranged crosswise and woven in and out through the leaf wall. The upper edge of the kite is reinforced with a strip of pandanus leaf and two borders taken from the same leaf. Cobweb is used as bait.⁵

From Ternate there is an early picture of kite-fishing with rod reproduced by MIDDLETON.

Corvette Astrolabe. Schaffhausen 1832 p. 71; W. ELLIS, Polynesian researches. London 1853, I, p. 228; L. DE FREYCINET, Voyage autour du monde. Paris 1829, II:1, p. 607; W. GILL, From darkness to light in Polynesia. London 1894, p. 39; Life in the Southern Isles. London 1876, p. 64-5; Myths and songs from the South Pacific. London 1876, p. 122-4; W. GIBBORNE, The Colony of New Zealand. London 1891, p. 32; A. HAMILTON, Maori art. Wellington 1896, p. 377; MEINECKE, Die Inseln des Stillen Ozeans. Leipzig 1888, I, p. 330, II, pp. 190, 307; J. S. POLACK, Manners and customs of the New Zealanders. London 1840, I, p. 92, II, p. 170; L. ROLLIN, Les Iles Marquises. Paris 1929, pp. 185-6; K. v. D. STEINEN, Die Marquesaner und ihre Kunst. Berlin 1928, II, p. 61; R. TAYLOR, Te ika a Maui. London 1870, p. 346; E. TREAGER, The

Maori race. Wanganui 1904, pp. 51-2; WESTERVELT, Maui, the demi-god. Honolulu 1910, p. 112; W. YATE, An account of New Zealand. London 1835, p. 113.

¹ W. SKEAT, Malay magic. London 1900, p. 485; R. WINSTEDT, The Malays, a cultural history. London 1950, p. 104.

² J. JACOBSEN, Reise in die Inselwelt des Banda-Meer. Berlin 1896, pp. 77-8.

³ REINWARDT, Reis naar het oostelijk gedeelte van den Indischen Archipel, in het jaar 1821. Amsterdam 1858, p. 331.

⁴ The fishing kite is also used on the Solor side of the Sound (CIKA, 130).

⁵ VATTER, Ata Kiwan, unbekannte Bergvölker in tropischen Holland. Leipzig 1932, pp. 184, 260-1, pl. 78B-C.

method is not, however, mentioned in the text (HS 1:19, pl. 6). M. WEBER mentions from here te with bait-line ending in a noose of copper wire. Rods are also used and, as is the case on Java, line runs through a ring at the top of the rod (SE 1, p. 61). A kite from Bandanera is depicted BURGER. This is 64 × 18 cm; it is used with a rod, and the bait-line ends in a noose of brass wire s 30-45, pp. 69-70, pl. 10:4; KZ 1914, p. 339). Another kite from the same island has been made n a single lancet-shaped leaf from a plant, *rio*, which is said to come from Ceram. The bait sists of spider's web, *lawwa-lawwa-sakarawang* (KIFA, p. 10). A third specimen from Bandanera is cribed by PLISCHKE (VMVL 6, p. 14):

er besteht aus einem breitovalen Gestell von Blattrippen oder dünnen Gerten, das durch Quer- und Längsrip-
verstärkt ist. Darüber sind als Flächenmaterial getrocknete Blattstreifen gespannt und aneinandergenäht.

From Babber there is further an account of a kite, made of strips of leaf and a skeleton comprising vertical rib and four pairs of cross-ribs; it is rectangular in shape, measures 60 × 25 cm, and has ine of a kind of liana ending in a wad of spider's web (VMVL 6, pp. 14, 17). Among other islands the Moluccas from which kite-fishing has been instanced is Ambon, where the catching vice consists of "das zusammengeklopfte Nest der auf Gunong Api lebenden Riesengiftspinne", lled *lávava secravang* (JWS 30-45, p. 70). Kite-fishing is also said to have occurred on Gisser, here, too, the bait was cobweb (SE 1, p. 61).

A fishing kite from Karakelang is finally described by M. WEBER. This is made of a single leaf. he skeleton consists of "deux petits batons qui, en s'entrecroissant le (cerf-volant) tiennent relevé" B 1, pp. 60-1). At the point of intersection of the two ribs and the main vein of the leaf is fastened e bait-line. At the end of the latter is a hook. In his hand the fisherman holds a spool upon which e hand-line is wound.

Kite-flying at feasts of various kinds is well-known in the whole of Indonesia, and is known so in the Philippines and in south-eastern Asia (JAI 51, pp. 445-92; VMVL 6, pp. 12-13). In Indonesia hese kites are not made of leaves, but of thin paper; and, as was the case with the ordinary flying ites of Micronesia and Melanesia, they are of a considerably better construction than the kites sed for fishing (ENI 4, p. 55).

From the above material it appears that the fishing kite has a rather restricted distribution as ompared with the kites used as playthings. It may further be pointed out that although it has been ossible to instance the fishing kite within a region extending in the west to Singapore and in the ast to Vanikoro in the Santa Cruz group, it is by no means ubiquitous here. There are, as a matter of fact, rather big gaps in its distribution, e.g. Sumatra, Borneo, Celebes, the north coast of New Guinea, the Bismarck Archipelago etc.; and even if there are good grounds for the assump- tion that the method has been in use in many of these places, it is not mentioned in the literature. It may further be observed that (although the kite as a plaything is wellknown there) kite-fishing is not found in that part of Micronesia situated to the east of Truk and in the Marianas, nor, for the rest, in the whole of Polynesia, though kite-flying does occur there in the most groups.

As regards the construction of the fishing-kite, it may be mentioned that it is made of a single leaf in the Caroline Islands and in the Admiralty group, in Singapore, on northwestern Java, the Thousand Islands, Bawean, Andonare, Bandanera and Karakelang. Kites made of several

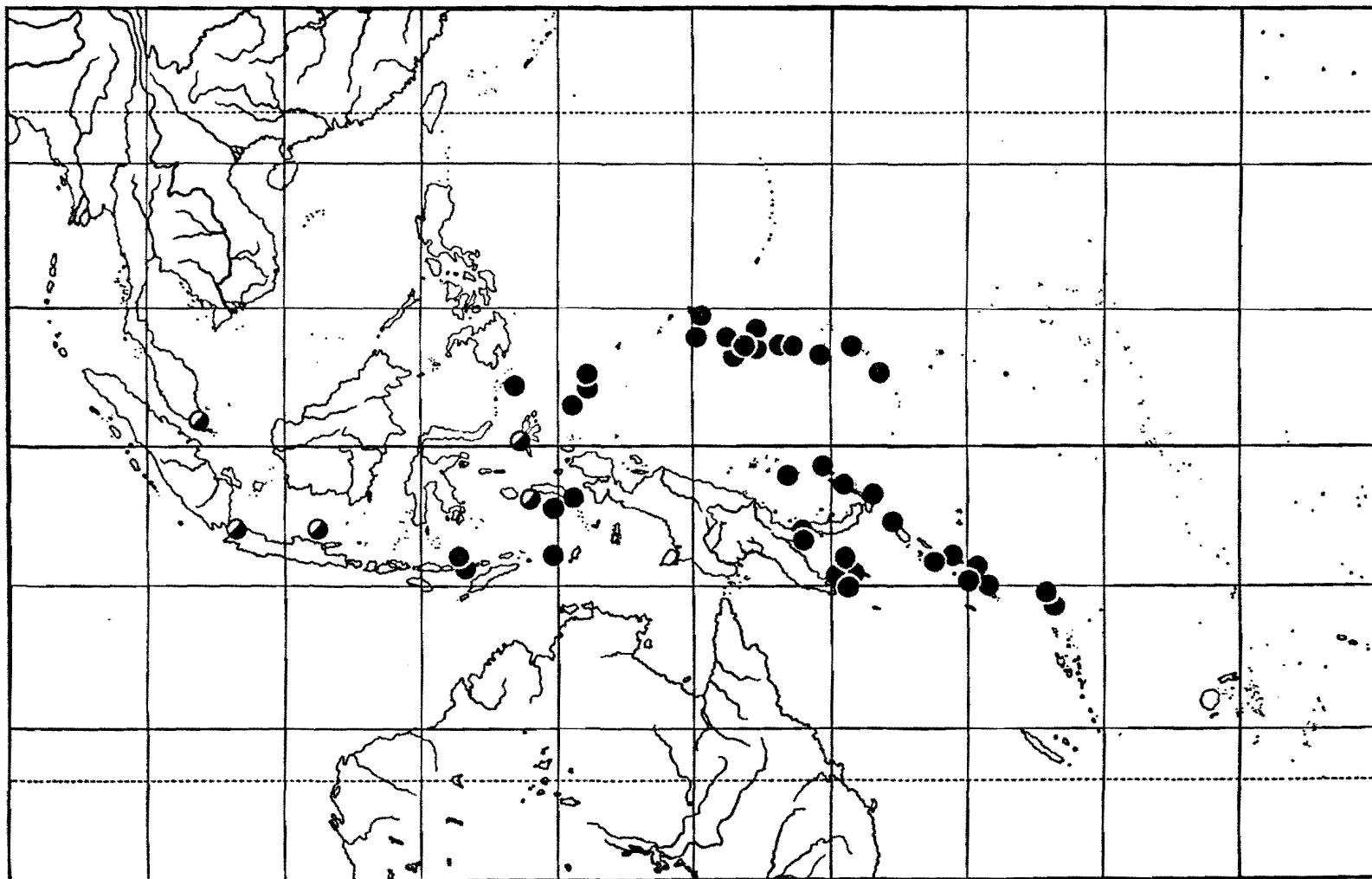
leaves placed one over the other are known from the Huon Gulf, the islands of Tami and Siassi and in the St. Matthias group. Another variant is instanced from Dobu, where the leaves are placed one beside the other; and a specimen from Truk, depicted by KRÄMER, may also possibly belong to this category. Fishing kites made of strips of leaves are known from e.g. the Marshall Bennet Islands, the Solomon Islands and the Santa Cruz group, from Flores, Pura, Wureh, Babber, Bandanera and possibly also from Solor. As regards the skeleton of the kite the main vein is always, as in the case of the single-leaf kites, the backbone. Specimens from western Indonesia and Bandanera are without skeleton, while those from Karakelang and the Carolines have lateral ribs round the outer edge of the leaf and as a rule also cross-ribs. Kites made from several leaves, like those constructed with strips of leaf, generally have skeleton consisting of a backbone, in the case of the last-mentioned type frequently the main vein of the middle strip, and a number of cross-ribs, double or single. The lateral ribs of the frequently rectangular kites made of strips of leaf occur, as far as is known, only in the Solomon group. In Indonesia fishing kites appear as a rule to be without decorations, and the same applies to those from the Carolines. In Melanesia, on the other hand, decorations are a common feature. They consist either of streamers hanging from the cross-ribs (e.g. on the Admiralty Islands, Dobu) or the same adornment fastened at the top of the vertical mid-rib (Santa Cruz). Other forms of ornamentation are "tails" consisting of a strip of leaf tied to the bait-line (e.g. on Dobu), or the downward prolongation of the outer strips so common in the Solomons, which are obviously intended to give the kite a bird-like appearance.

In the Carolines the actual catching device consists of a piece of tough sharkskin, in which the teeth of the garfish stick fast. In this group of islands one finds also the cobweb bait, which functions in the same way. This is also known everywhere in Melanesia where kite-fishing is carried on, and in Indonesia it has been instanced from Flores, Pura, Ambon, Babber, Bandanera and Gisser. In addition to this there is mention from Larantuka Sound of a bait consisting of a tangle of silk threads which has a similar function. A catching device of quite another kind, viz. a baited noose, as a rule of metal wire, is used in Singapore and on north-western Java with adjacent islands, Bandanera and Ternate. An interesting point, moreover, is that precisely on these islands the flight of the kite is directed with the help of a rod at the top of which is a metal ring through which the line runs. Kite-fishing with rod has also been instanced from Tobi. Hooks as catching device is mentioned from Karakelang and from some islands in the Carolines, and, further, from different parts of Melanesia. As to the hooks of Karakelang and of the Carolines it seems likely that they have recently replaced older catching devices, sharkskin or spider's web, whereas the mention of hooks in eastern Melanesia apparently is due to a confusion of two entirely different fishing methods.

It remains to decide in what way and where the kite first originated and how it was afterwards spread. It may be assumed that we have here to do with one single and specific invention, firstly because the method is rather complicated, secondly because it is unknown in other parts of the world.¹ As regards the place of origin of kite-fishing, BALFOUR and PLISCHKE are in complete

¹ Europeans returning from the South Sea Islands, however, have on various occasions tried to introduce the method in Europe and America. Thus, it is recorded from

England 1901 (DM 21.9.1901; cf. ESR, pp. 605-6, fig. 20) and from California 1909 and 1931, used for tuna fishing (BFB 48, pp. 75-9; CFG 2, pp. 15-16; cf. HF p. 64).



Map 4. Distribution of the fishing-kite in south-eastern Asia and Oceania. Catching device: a tangle of cobweb or a piece of shark-skin, ●, or a running noose, ○.

agreement. According to them this was the Banda group, since it is here that one finds all the essential variants of kite and kite-fishing. Both single leaf kites and kites made from strips of leaves occur here. Further, kite-fishing with rod and noose is known from here as well as the hand controlled line with cobweb bait. From the Banda group the kite is considered to have spread to Java and Singapore in the west, to Babber, Flores and the Larantuka Sound in the south, to the Talaut group and the Carolines in the north, and to Melanesia in the east. This theory seems in itself to be well founded, in the first place in view of Banda's central position, and in the second place in the light of the variations of construction and methods of use to be found here. It remains, however, to explain why the method with rod and noose was spread eastwards and occurs neither in Micronesia nor in Melanesia, and why, on the other hand, fishing with cobweb or sharkskin bait was spread to the north, south and east. It is, as a matter of fact, possible to consider the problem from another angle, which is intimately connected with the way in which the method arose in the first place. As far as the kite itself is concerned, it is obvious that it has existed in south-eastern Asia, whither it had been spread from China, since olden times. As has emerged from the material adduced, the kite as a plaything is widely distributed in Oceania, thus occurring on Palau, in the Marianas, in eastern Micronesia, central and marginal Polynesia and in southern Melanesia with the exception of New Caledonia and the Loyalty group. As regards the cobweb bait, fishing with this, but without the use of a kite, has been reported from different parts of the South Sea (e.g. North Queensland, parts of New Guinea, Tanga, the Solomon Islands, Fiji, Rotuma, Samoa, Pukapuka, the Marshall Islands and Nauru). In Indonesia a method, in principle the same, is known from Celebes where, however, worms are used as bait (MGGJ 17, pp. 34-5). As regards the noose, this, in its simpler forms, is known in practically all parts of the earth, not least in Indonesia, as is apparent from, *inter alia*, J. LIPS' work on hunting traps (EA 3).

Undoubtedly all of these three main components of the fishing kite taken individually are older than the fishing kite itself. The fishing kite is thus a combination of the ordinary flying kite introduced much earlier and a method of fishing known from time immemorial (snaring or "bobbing"). The fact that both noose and cobweb bait occur precisely in the Banda group thus need not necessarily indicate that kite-fishing originated here; it may be interpreted to mean that in earlier times the natives used to catch fish both with noose and a wad of cobweb, but without kite. The notion of combining the latter with the older methods may very well have come from some other quarter. In view of the fact that "bobbing" with spider's web without the use of a kite has not been reported from Indonesia, moreover, there is a certain justification for assuming that kite-fishing arose in Melanesia and afterwards spread eastward to Indonesia, chiefly to the Moluccas, where the natives either adopted the use of cobweb bait or preferred the noose, with which they were more familiar. That the kite itself long before had been introduced to Melanesia from Indonesia is in this connection irrelevant. The part of Melanesia in which in this case the kite may conceivably have arisen is an area bounded by the Admiralty Islands and the St. Matthias group in the north and by the Huon Gulf, Tami, Siassi and the Massim region in the south. Within this region one finds every variant of kite construction, and the central position of the area may have rendered possible its spreading both to Indonesia in the west and to the Solomons and Santa Cruz in the east. To the Carolines, in any case, the fishing kite appears to have come from Indo-

nesia, probably from Karakelang. Here are found single-leaf kites; on a number of islands, as also on Karakelang, the natives have begun to use hooks and, at least on Tobi, also rods.

Concerning the age of kite-fishing nothing is known. It would, however, appear to be a relatively young element. Thus SPEISER considers it to belong to the Micronesian-Polynesian culture, though it should be noted that he seems in this connection not to distinguish between the ordinary flying kite and the fishing kite.¹ The inconsiderable age of the last-mentioned sort of kite is indicated by the fact that it is not found in eastern Micronesia and Polynesia, where the kite as a plaything does occur, with the exception of western Polynesia. The reason why the kite does not figure as an accessory fishing tackle in these regions has been considered by BALFOUR and PLISCHKE to reside in the fact that the kite was here a cultic object that it was desired not to profane. This seems rather unlikely, and there is an abundance of instances of objects with both sacrosanct and profane function. If, on the other hand, it is assumed that the kite *per se* is considerably older than the fishing kite, it is, however, easy to realize that the Polynesians and East Micronesians reached their present places of abode with their flying kites long before the invention of the fishing kite was made. As regards the fishing kite, it is probable that on the Solomons and Santa Cruz, as also on the Carolines, this was introduced comparatively late; and a conceivable expansion in southern Melanesia, eastern Micronesia and western Polynesia may have been broken off by the contact with European culture.

It is thus probable that the fishing kite originated either in the Banda group in Indonesia or in north-western Melanesia, and that it is a relatively late invention, which would be one of the reasons of its restricted distribution area in Oceania proper.

¹ Thus he writes (DSNG 77, p. 57): "Der Fischdrache kann von Ceram über die Palau- und Karolinen- nach den Admiralitäts-Inseln, Neu-Irland, den Salomonen, Santa Cruz, den Banks-Inseln, dem Matengebiete der Neuen Hebriden nach Polynesien verfolgt werden; dort ist er

allerdings nur noch Spieldrache ...". He does not point out that it is a "Spieldrache" also in the Palaus, New Ireland, the Banks Islands and the New Hebrides. And, furthermore, he thinks that the kite as a plaything and as a fishing tackle is of the same age.

of hook occurring are, according to him, due to alien influence (BF p. 86; BMB 162, p. 134; ES 7, p. 130; JMG 14, p. 275; MPS 22, p. 13).¹

According to URDANETA, the Chamorro made their hooks of turtle-shell; but no such hooks have been found in connection with the excavations, and it is, moreover, pointed out that turtle-shell suitable for the purpose is very rare here. L. DE FREYCINET too, however, mentions hooks of this material, as well as such of pearl-shell and coconut-shell, which are said to be of the same kind as those occurring in the Carolines.² Archaeologically, only hooks of pearl-shell have been found, these being U-shaped, having a short point and some grooves in the shank for line-attachment. They are known from Guam and Tinian (BMB 100, p. 46, fig. 21 A; 185, p. 31; EN 3:3, p. 79; MSOB 10, p. 220; DE FREYCINET, II: 1, p. 435).³

The commonest type in the Carolines is the round turtle-shell hook with outer barb. Its surface is flat, and the barb is placed at the junction of the point-leg and the base, thus a good deal below the actual point. The hooks have been shaped by drilling and filing, not heat-treated and bent as in e.g. the Solomons. The line-attachment consists as a rule of a peg projecting from the inside or the outside of the shank. Not infrequently, moreover, there is a hole a little below the top of the shank, a feature that is always found on ornamental hooks of this type, though it probably also occurs on many ordinary hooks. Specimens of this type are known from Yap, where also variants with several barbs and line-attachment consisting of grooves are known, from Ngulu, Songosor, Merir, Mapia, Mogemog, Ifaluk, Sorol, Lamutrek, Oleai, Feis, Hok, Polowat, Satowal, Truk, Namoluk, Nukuor, Losap, Nama, and, finally, from Ponape and Kusae (AHK 14, pl. 18:393; BA 2, p. 153; BF fig. 43, pls. 151-2; BPA 1, pl. 175:3; II, pl. 21: 13-14, wrongly signed Tahiti; ESE 2:B:2:1, p. 72, fig. 109-111; 4:1, p. 103; 5, p. 142; 6:1, p. 143; 6:2, p. 49; 7:3, p. 52; 8, pp. 73, 239, figs. 20, 108-9; 9:1, pp. 95, 231, figs. 44, 168-170; 10:1, figs. 24, 89, 158; 10:2, figs. 88-90, 398; HCPV p. 313, fig. 109 B; JAST 54, pp. 63, 66; JMG 1:2, p. 21; 1:4, pl. 4:4 A-B; JPS 51, p. 277, fig. 67; KEBK p. 108, pl. 12:7, 15; MGGH 1878/9, p. 49; PSM fig. 257 A; E.M.O. 26850-60; G.E.M. 25.25.54-7, 66-68; M.V.W. 90257; DE FREYCINET, pl. 58:12). Besides these specimens, which differ from one another only in the presence or absence of hole and in the distance between point and barb, other variants of turtle-shell hook occur in different parts of the Carolines, all doubtless deriving from the same original type closely akin to that mentioned above. Thus a special type is found on the Southwest Carolines, above all on Tobi; it is round or triangular in shape, has an inner barb and a grooved shank-top. Like those described in the foregoing, these hooks are used both as ornaments and for actual fishing (BF, p. 99, fig. 40; ESE 2:B:9:1, p. 267, fig. 16; 2, p. 183, figs. 42, 138-9, 141; B.M.L.: BC 2210). Atypical round turtle-hooks are further known from Palau. A specimen with both inner and outer barb and line-attachment consisting of both anterior and rearward projections occur also on a specimen depicted by H. WILSON.⁴ Double projections occur on two specimens reproduced by J. KUBARY. They are both U-shaped; one has both outer and inner barb, while the

¹ R. A. DERRICK, A history of Fiji. Suva 1950, I, p. 20; B. QUAIN, Fijian village. Chicago 1948, p. 150; T. WILLIAMS, Fiji and the Fijians. London 1860, I, p. 90.

² L. DE FREYCINET, Voyage autour du monde. Paris 1829-35. Historique. II:1, p. 435.

³ E. H. BLAIR and J. A. ROBERTSON, The Philippine Islands, 1493-1803. Cleveland 1903-09, II, p. 86; L. THOMPSON, Guam and its people. N. York 1941, p. 128.

⁴ H. WILSON, An account of the Pelew Islands. London 1788, pl. 2:4.