Bwang, A Martial Art of the Caroline Islands

WILLIAM A. LESSA and CARLOS G. VELEZ-I.

Department of Anthropology, University of California, Los Angeles, California 90024

Abstract.—Bwang is a traditional martial art of the Caroline Islands that has not been ethnographically analyzed for the important cultural form that it is. Relying on a number of scattered sources and original field research, this ethnographic account reviews the available historical materials, places the art within its proper social and cultural context, systematically details the technological operation of the art and illustrates its dynamic qualities

The *bwang* techniques were dynamic in the sense that practitioners appreciated the importance of movement and body control to maximize power efficiency with the minimum of energy expenditure. The whole body was used as a generator of power in each technique; the appendages were not just utilized as an extension of the body. Attack and defense used gliding, slipping, or evading body motions which added momentum and power to each strike, jab. or thrust executed. "Soft parts" of the body—the nose, throat, eyes, diaphragm and groin areas—were particularly focused on as targets. The martial arts of *bwang* were not analogous or comparable to judo or karate because *bwang* was widely adaptive to various contexts such as aboard canoes, on the beach, from kneeling, standing, or prone positions, with or without weapons, and particularly because *bwang* techniques were for real, no quarter given, personal combat. *Bwang* evolutionarily predates judo or karate which are designed for the spiritual self-perfection and self-protection of the individual.

Introduction

Lessa recently uncovered field notes and photographs pertaining to an art of hand-to-hand combat called *bwang* on Ulithi Atoll, where he has done research. Coincidentally, it was brought to his attention that Velez-I., like himself on the faculty of the Department of Anthropology at the University of California, Los Angeles, was a practitioner of martial methods. They then planned what initially was to be a quick review of the literature and of the solicited observations, if any, of anthropologists and others who had worked in the Carolines, but the undertaking turned out in fact to be much more complex. Both authors raised a number of theoretical and technical questions concerning the larger social and cultural contexts of the art, the developmental importance of the form to Carolinian culture and to present day remnants, the crucially significant problem of origins and diffusion, and the comparison of Carolinian martial systems with others to which the scattered literature and commentaries had made reference. The analysis and description is the collaborative effort of two colleagues whose theoretical assumptions differ, one relying on a more diffusionist position and the other a basically developmental evolutionary point of view. The result, however, represents the fusion of both perspectives, and what follows is the intended and unintended consequences of their labor.

Micronesica 14(2): 139-176. 1978 (December).

As will be demonstrated, *bwang* or something closely akin to it was once prevalent throughout the islands and now has been virtually forgotten except for scattered teachers in their declining years. An aspect of Micronesian culture as highly elaborated as this deserves to be rescued from the almost complete oblivion that has long surrounded it. As matters now stand, most of what we know about the martial arts comes from lifeless museum collections of spears, clubs, staffs, daggers, knuckledusters, and slings that do not tell us precisely how they were used.

Published Sources

Possibly the first published notice of *bwang* is that of the German missionaryanthropologist, Laurentius Bollig, who in 1927 described eighteen grips that he had observed in Truk during his residence there in 1912–14. Although he did not refer to *bwang* by name, this is what he was writing about. He also touched upon other matters pertaining to the martial arts (Bollig 1927: 110–11). We shall have occasion to make good use of his brief comments.

Apparently the next reference to *bwang* comes in the form of some dictionary definitions by the linguist, Samuel H. Elbert, in his Trukese-English and English-Trukese Dictionary (1947). He too deals with Truk, where he did field work for eight months in 1946. Under the entry, "education," he lists a subentry, "schools of fighting-wonoto, fänäpuch, neuma" (italicization of his native words is ours), and another subentry, "education in judo and all types of fighting-amönöu" (p. 259). (Throughout this article the original orthographies and diacritics used by different writers have been retained without trying to reduce them to a common system. Cf. Bollig 1972: 259; Elbert 1947: 4-7; Lessa 1950a: 4; Alkire 1965: 175-76; and Goodenough and Sugita, Trukese-English Dictionary, ms.) Elsewhere in the dictionary he gives the derivation of the names for the schools. He states that wonoto is a school or system of fighting, as boxing, wrestling, judo, or fighting with clubs or spears, the name of the schools being that for a legendary character who defeated his rivals, Fänäpuch and Neuma (p. 230). On another page he defines fänäpuch as "a school or system of fighting, as boxing, judo, knifing, clubbing, wrestling; named for a legendary character who was defeated by Wonoto" (p. 177). On still another page he defines neuma as a "school or system of fighting and of pwen, named for a low island near Uman" (p. 134). Elbert says little about the word pwen, which is obviously a cognate of the Ulithian word bwang; he defines it in a variety of very different ways, only one of which has any connection with fighting: "art of Trukese judo and disarming a foe" (p. 177). And, lastly, he says something more about amönöu, defining it as "practice, esp. judo; learn how to fight" (p. 45). Scattered and disjointed as these definitions may be, they obviously refer to something on Truk comparable to the Ulithian art of one-onone fighting. If nothing else they stress the prevalence of various schools of fighting. Unfortunately, replying to an inquiry on the subject, Elbert indicated that he could not supply further information than this.

Possibly the only other published references to *bwang* are contained in random dictionary entries. For Puluwat we are told that *pwangiy* (obviously a cognate of

bwang) means, among other things, "to fight according to certain techniques" (Elbert 1972: 138). For Woleai there are some words under the entry "fight" that possibly refer to the art in question, but none of these words are cognates of *bwang* (Sohn and Tawerilmang 1976: 239).

Unpublished Sources

In order to ferret out any other information about *bwang* that might be unpublished, a number of anthropologists and others having first-hand knowledge of Carolinian culture were contacted in 1976, several of them being in the field at that time. It was immediately apparent from the replies received that despite some negative reports there was more awareness of the art than had been anticipated. Cognates of the Ulithian term were several times used.

Thus, Mike McCoy, District Fisheries Officer for Yap, wrote that although this form of fighting, which he calls *pwang*, was once practiced all the way from Truk to Ulithi, he did not know of any present masters of the martial art, but that most likely there were still some men on Puluwat and Pulusuk who continued its teaching until at least twenty-five years ago, and that there were perhaps others who were probably instructed in the finer points. McCoy made no mention of Yap but did not seem to imply that the art did not exist there.

As a matter of fact, knowledge of something akin to *bwang* did exist in Yap, which is only about eighty five nautical miles from Ulithi. Unpublished information received from two anthropologists who had been on Yap in 1948–49 as members of the Harvard team working under CIMA (the Coördinated Investigation of Micronesian Anthropology) does not include any Yapese names for the art, and therefore no cognates. However, given the possibility that the language is only marginally Micronesian, cognates should not be expected.

Notwithstanding, the first of these two respondents, David M. Schneider, confirmed that what he calls the "art of special hand to hand fighting" is known on Yap and that, in fact, it still exists (presumably beyond the time of the original field trip, which Schneider supplemented by a later trip in 1968). He said that it is a little like judo, but not exactly. "There is much grappling, kicking, and hacking with the hands, and so on. But it is rather sharply formalized—each motion, each pose, having a name and a special place in the repertoire of moves." Schneider admittedly did not explore this area very closely and consequently was not sure that it was not contaminated by Japanese influences. However, the Yapese did tell him that they had had this special art of fighting (without weapons, and/or with bamboo staves or spears) "from long ago" and before contact with the modern world. Despite the informal nature of his remarks, Schneider has clearly established the presence of *bwang*, or at least a local variety of it, on Yap.

Edward E. Hunt, Jr., another member of the five-man Harvard CIMA team, gathered no notes on the subject but recalls that a kind of Micronesian "wrestling" was mentioned several times by his younger male informants, who maintained ("given selective bragging") that at times during the Japanese administration Yapese wrestlers

were pitted against experienced wrestlers from Japan and usually won. Hunt believes that the Yapese still remember this traditional art and may even practice it. It is highly probable that like most wrestling styles in the Orient it was originally a martial art, further details of which have been discovered in Yap by Schneider and with less exclusive emphasis on wrestling.

Something closely akin to bwang must have prevailed until recently on Palau, if Robert K. McKnight's personal recollections on the subject are interpreted as such. In a letter replying to our call for help he briefly alludes to conversations he had with Palauans in which they boasted of their skills in individual fighting and the superiority of a trained Palauan over a trained Japanese. He developed what he calls the "hypothesis" that particular forms of individual fighting that have been elaborated particularly in Japan (judo, karate, akido, etc.) are "extractions" from the more generalized forms found in Palau or rather the western Pacific only. McKnight says that he developed another "hypothesis," namely that particular forms of fighting (as in Japan) illustrate or may even be historical ramifications of earlier traditions in which specific forms and styles were associated with particular lineages, as seemed to be the case in Palau, where apparently fighting was learned within the clan, presumably from ego as instructor to sister's son. McKnight's hunches are provocative and adumbrate some of the remarks that we shall have occasion to make in the course of this paper. Incidentally, as with Yap, there is no reason to expect to find the word bwang or its cognates in Palau, whose language is not even Micronesian but Indonesian.

The persistence and widespread occurrence of the martial art under consideration in this article is further evidenced by letters received from two anthropologists who were in the field in 1976. In one of these, Mac Marshall wrote from Truk that he had learned about "Carolinian judo" while on an earlier trip to Namoluk. The word there is *pwäng* (an obvious cognate of the Ulithian term). Marshall stated that, prompted by our letter of inquiry, he checked with one of his Namoluk informants, who happened to be likewise in Truk while he himself was there recently in 1976, and was told that a few old men still recall the technique.

According to the other communication received from anthropologists in the field in 1976, a Faraulep informant told William H. Alkire that the martial arts were most highly developed in his atoll and that there were several variations of this karate-like fighting, called *bwang*, *usulap*, and *hapilifachailap*. One learned the techniques, says Alkire, from a master, of whom there are still two or more on Faraulep Atoll, the most renowned being Himo, the aged chief of Pigue islet. As with other specializations, one usually was taught by either a mother's brother or father. Alkire indicates that the techniques are still taught in Faraulep, probably encouraged in part by the kung-fu and karate movies the young men see while visiting Yap, and that *bwang* is not entirely a thing of the past. A rather provocative suggestion made by Alkire is that there is a connection in the Carolines between *bwang* and similar techniques, on the one hand, and a poorer armentarium of weapons or a lesser use of sorcery, on the other; but we leave it to him to develop this hypothesis further.

The final source of unpublished information about the martial art is the most detailed of all and comes to us from Ward H. Goodenough, who has generously placed all his valuable field notes at our disposal. Goodenough was a member of the Yale team that went to Truk in 1947–48 as part of CIMA. He has returned to the field more than once since then, mostly to prepare a definitive dictionary of the Trukese language. His original field notes were augmented in letters sent to us in 1976 and 1977, in which he offered some useful comments and conjectures, and at the same time provided a revised orthography of native words that he has used in connection with $pw\dot{a}\dot{a}n$, as he calls the Trukese art of man-to-man combat. Goodenough's contributions, which include a description of sixteen sample grips, are too lengthy to present in this brief introduction to source materials. They will, however, be used in the subsequent analyses, syntheses, speculations and conclusions that will be the preoccupation of the remainder of this article.

A postscript to these responses comes as the result of some general correspondence with Eric Metzgar, a cinematographer working on Lamotrek in 1977–78. Replying to a chance inquiry, he acknowledged the presence of *bwang* (borrowing our term?) on that atoll. Metzgar makes an intriguing comment about the technique, saying that it is his understanding that it not only includes holds and counterholds for fighting purposes but is also an "art" used to replace the main posts supporting canoe houses. So, he adds, an individual who is accomplished at *bwang* is also something of an engineer with knowledge of vector forces. We have already encouraged Metzgar, who has had some university courses in anthropology, to make a film on Lamotrek's version of *bwang*. Unless he has been misled by homophones, his linkage betwen *bwang* as a system of fighting and as an aspect of carpentry could say something about techniques that has hitherto not been suggested.

Ulithian Sources

During his third field trip to Ulithi Atoll in 1960 and to a much lesser extent in a brief trip in 1961, Lessa took some notes and photographs about *bwang*, an art that hitherto had been completely unknown to him.

His informants were two masters of the art. One of them lived on the islet of Fassarai. His name was Tanglemal and he was about seventy-four years of age at the time. He belonged to the Hofalü lineage. The information garnered from him was eagerly volunteered and could have been greatly enlarged upon had circumstances permitted. In the photographs taken of him in 1960 his fictive opponent is Remalie, a native of Eauripik Atoll who had been residing in Ulithi for some time with his Fassarai wife. In the few additional photographs taken in 1961 his fictive opponent is Yamalmai, Lessa's assistant during each of his four field trips to the atoll but a man who like him had never previously heard of *bwang*.

The other informant was Habwungomar, who lived on the isle of Falalop and was about sixty-seven years of age in 1960 when interviewed and photographed in *bwang* positions with a staff. He belonged to the small Iucholop matrilineage. Due to certain exigencies he too had had insufficient time to expand his information. In the photographs that follow, Habwungomar's opponent is again Yamalmai, a noninitiate.

In 1977–78 Yamalmai was called upon to answer by correspondence a long series of questions that Velez-I. had raised in analyzing the photographs taken on the earlier occasions. An elaborate method was worked out to insure clarity and accuracy. Yamalmai had been present thoughout the years in almost all of Lessa's interview work and been strongly indoctrinated in the need for accuracy. He had done some bits of interviewing on his own and had proven that he had the utmost tact, efficiency, and integrity.

Even if nothing else the foregoing review of both the published and unpublished materials relating to *bwang* confirms not only the widespread distribution of a traditional martial art in the Carolines but also its present-day persistence, at least in the memories of older men, in such islands as Palau, Yap, Ulithi, Faraulep, Lamotrek, Truk, and Namoluk, and probably also Woleai, Puluwat, and Pulusuk. At the same time it has undoubtedly raised in the mind of the reader a number of questions, among which are the following: How was the art learned and what is the nature of its various systems of movements? To what extent was *bwang* a form of combat rather than a sport? Does the whole complex stress weaponless fighting more than armed combat? What is the relationship of *bwang* to such Oriental martial ways as Japanese jiu-jitsu, judo, and karate? And, on a more theoretical level, what is the relationship developmentally between the martial arts and their broader social and cultural contexts?

Historical Considerations

Delaying for the time being the question of any possible Asian affinities for *bwang*, some speculations may be permitted regarding the internal history of the art.

On linguistic grounds, Goodenough hints at an old Trukese center of dispersal. Although in his early field notes he did not use any terms that were cognates of Ulithian names of grips and movements, or even use a cognate of *bwang* except to clarify a phrase misused by Krämer (*rochen fáán pwanang*, "darkness under the porch"), he makes up for this in his forthcoming dictionary. In a personal communication that reflects his most recent field work and anticipates some of the entries in his dictionary, he lists three definitions of the word *pwáán*. The applicable one is "art of Trukese judo and of disarming a foe, *pwenin Chuuk* or *pwáánin Chuuk* Trukese judo." As a synonym for *pwáán* he gives *émwénéw* (cf. Elbert's *amönöu*). He concludes from the Trukese form of the word that we are dealing with what can be reconstructed as a proto-Trukic form and apparently not a recent borrowing. Proto-Trukic, within which he includes Ulithian, would have been **pwangi* (bound form) and **pwaangi* (independent noun form). He infers that if the word for this kind of fighting was borrowed into a Trukic language from some other source, the loan took place in the history of Trukese, but he cannot say how long ago that would have been.

Unfortunately, linguistic and other information pertaining to Yapese forms of individual combat are insufficient to bring to bear on a definitive solution to questions of historical origins and diffusion. It is true, as Goodenough has suggested in one of his

144

letters, that "Yap has borrowed things from the Carolinians of Trukic background, certainly from the Ulithians (and vice-versa), so Yapese 'judo' may be derived from Ulithian *pwáán*. It is at least a possibility to be investigated." Such a suggestion would of course be totally repugnant to the Yapese, who for centuries have exacted tribute from Ulithi and most of the islands between that atoll and Truk, keeping them in a low-caste status (Lessa, 1950b). The linguistic evidence is clear that Yap is not the place from which the Carolines were peopled, at least not most recently. Ulithian and Trukese are much closer to Ponapean, Marshallese, and Gilbertese than to Yapese.

Warfare and Military Training

To understand properly the cultural and social dimensions of *bwang* it is advantageous to place it in the wider context of Carolinian military operations. Because our knowledge of warfare and military training is so scant for the smaller islands, such as Ulithi, it is necessary to rely to a large extent on what is known about the situation in Truk. This group of islands is, however, of so much greater size and population than any of the other islands under consideration, except Yap and Palau, that allowance must be made for any effects these two factors may have had in shaping the military complex.

According to Krämer, warfare had ceased to exist when he first went to Truk in 1906, but he was able to gather a fair amount of information and combined it with the writings of some others, notably Kubary, who had preceded him at a time when wars were still flourishing. War was caused by such factors as jealousy of political influence, jealousy over a certain area of land, a good harvest of a neighbor, anger caused by maliciousness, disputes over women, and so on. Warriors went into battle under the leadership of a priest. They would put on every possible decoration and would protect the most exposed parts of their bodies from a well aimed spear by enveloping them with a thick layer of textiles and a belt. Battles were carried on both on land and sea, often at night. Special favorites were the reefs outside of the mangrove woods. Women would uncover their genitals to arouse the fighters. As soon as the enemy was close enough he was covered by a hail of stones slung at him, followed by javelins. The death of some of the combatants decided the battle (Krämer 1932: 268–269).

The question naturally arises as to how these combatants were trained. The Trukese warrior's wider training, according to Goodenough, included the handling of such weapons as the war club, the spear, and the sling, and in more recent times the knife and the rifle. The warrior learned, too, how to fight effectively with the shark tooth knuckle-duster. Most importantly for our purposes he had to learn also a system of grips for disarming armed assailants. This system, known as *pwáán*, or alternatively as *émwénéw*, must obviously be regarded as an art within a wider set of martial skills.

Some rare comments regarding Trukese training come to us from Bollig. Without using the word for *pwáán* or any of its synonyms, his remarks are prefatory to a description of eighteen sample grips that are easily recognizable as belonging to *pwáán*.

The young crew was systematically trained in schools of war. An experienced warrior who knew many devices for hand-to-hand fighting took over instruction in a secluded house. He showed his pupils how

it was possible to seize an opponent and disable him in spite of knife and spear. These schools of battle remained secret so that other tribes would not become agitated. During the instruction master and pupil stood opposite each other. First the master called the name of the grip that they were about to practice and then said to the pupil: "*asidiei*, attack me." Now both hit the thigh with their hand. Then the pupil attacked the master, and he parried the attack by means of the grip that they were supposed to learn (Bollig 1927: 109–10).

Returning to military training of the broader kind, Goodenough's field notes on the subject say that it was intensive over a period of a month's time and was required of all young men on Truk between the ages of eighteen and nineteen. The social classification of such young men changed after their schooling from that of *énúwén áát* to that of *énúwénúsich*, which they remained until the wearing out of the loincloth they had received at puberty. This heralded a significant change in their status in the community. Thus Goodenough illustrates that martial training served an important part in the rites of passage of young males in Trukese society.

The badge of having completed the training and entered the class of fighting men was the *pinu*, a poncho-like cape woven of banana fibers and decorated about the neckhole with red perforated shell disks traded in from the Mortlocks. The cape could only be worn by men who had completed this military training (Goodenough notes).

Having completed their training, the young men were allowed to go on war expeditions. They also indulged in raids of their own, for which they did not need the permission of the district or lineage chief. These raids consisted of night forays against the people of another district, killing someone caught out, or burning down a house, after which they quickly fled back to their own district. The name for such a small scale night raid was *ménúken* or *terennif* (Goodenough notes).

To gain a reputation as a warrior meant that others would follow him if he suggested a raid somewhere, whereas the man without a reputation as a successful fighter would have difficulty getting companions if he wished to go out raiding. A man remained a warrior until old age made him too weak to be of any use on a military expedition. Cowardice was ridiculed, and the coward, *nissimwa*, was called a "woman" (Goodenough notes).

Although all men underwent military training and there was therefore no special warrior group apart from the males in general, certain especially successful warriors were called *wáán Resim*, "the vehicle of Resiim," the Rainbow or War god. To them was accorded the privilege of certain functions in precombat ceremonies. The top man in the military picture aside from the district chief was the *itang*, the specialist in war and lore of the land, and in many respects he outranked the district chief. He performed the main magical rituals for insuring success, and through divination he indicated the manner of attack. It was he who determined who would go in which canoe. Anyone violating his orders would be sure to die in the ensuing battle. The *itang* was the one who could call a halt to hostilities. Aside from him, there were persons who knew various *rong* (magic rites) associated with war. Important among these were the *sowuneerongun* (the man who knew the rite connected with "making hot" the arm of the war-club man) and the *sowumáchew* (the man who knew rites connected with making spears effective). Only these two could bring the weapons from the men's

house. No one else handled them until these two had performed their rites over the weapons, after which they would be distributed (Goodenough notes).

The expression "making hot" must be understood in terms of *neerongun* magic, performed just before setting out on a military expedition. Some medicine is put in a giant tridachna shell, which is put on a fire. When it boils, the warrior's right arm is rubbed with medicine and then placed in the boiling contents of the shell up to the elbow. The arm is kept there to cook until the effects of the medicine that had been smeared on it begin to wear off, when it is removed. The purpose of the magic is to make the arm of the warclub wielder strong, and to make the warclub "hot."

Ulithian *bwang* must be understood as having flourished originally in a context like that prevailing in Truk but in the course of time survived only as a residue of a wider system of combat. This would account for one informant's statement that training did not begin until the pupil was about thirty years of age. When the full complement of martial arts was flourishing and had not been reduced to present techniques alone, the trainee must have been considerably younger. Statements about the nature of this wider system and the training of those who participated in it need not be purely speculative. They can be derived from our knowledge of the Trukese martial arts, which they must have resembled even if as a paler reflection, and by drawing upon the considerable body of knowledge that we have concerning other specialized Ulithian arts.

We do know that Ulithian training in *bwang* was given under the tutelage of a specialist-teacher called a *iulbwang*. He need not, according to one informant, have been a member of the pupil's matrilineage; he could be a relative or a friend. This is in accordance with the instruction given to an aspiring practitioner of any of the arts, such as typhoon magic, knot divination, navigation, community fish magic, healing, house carpentry, and canoe construction. Teachers were always compensated with gifts in the form of goods. In Truk, training was essentially a lineage affair conducted in the lineage men's house, but such non-members of the lineage as the warrior fathers of the trainees and the warrior husbands of women of the lineage could be teachers. In this connection, McKnight's earlier comments about the primacy of the lineage or clan in the training of Palauan fighters are worth recalling. He says, too, that fighting was learned "with the door closed" for privileged members of the clan.

The relation between the *iulbwang* and his Ulithian student seems to have been marked by deference and respect but not the formalized etiquette that apparently prevailed in Truk. A successful pupil, who was himself recognized as a *iulbwang*, carried on in the tradition of the master's specific system, or *chap*, which had been created in the past by some particular innovator. It will be recalled that Elbert had listed three such systems or schools of fighting for Truk and said something about their origins. Similar information concerning Ulithi is not available, but there can be no doubt that different techniques from different schools existed there, too, and might be utilized for the same action. Both Carolinian versions, it must be emphasized, were martial systems designed by and for warriors and were important parts of the general cultural patterns adopted for warfare.

Magico-Religious Dimensions

Further evidence of the seriousness with which the training and success of the *iulbwang* was taken on Ulithi can be seen in its religious and magical associations. *Bwang* had a patron deity, Iälumes, to whom apparently no offerings were made, as they often were to other patron deities. The Trukese have not been ascertained to have had such a patron, but Goodenough is of the opinion that since they had patrons for other similar arts the spirits of Wonoto, Fáánapuuch, and Newúmá (cf. Elbert's schools of fighting, *wonoto, fänäpuch, neuma*) would be the expected candidates for the role of patron, each serving as patron of his own school. He feels that neither *anu ën mesen*, whom Krämer (1932: 268) calls the god of war, nor the mythological Resiim, the Rainbow or War god, would be appropriate as patron, not fitting in the pattern of patrons and having other functions.

Even though magical appurtenances to Ulithian *bwang* have not been noted, there can be no doubt whatsoever that they once existed, just as magic permeated and often completely dominated every other one of the traditional arts of the atoll. Certainly the art of war had its magical aspects in Truk, although the information we have from Goodenough applies not to the individual warrior but three kinds of specialists knowledgeable in certain rites. Krämer (1932: 269–70) has additional information not only on Trukese martial magic but also prayers by the *itang* to the great Carolinian gods, Aluelap and Lugeileng. Once more, however, these actions were the business of community specialists and were not performed by individual warriors for themselves.

Some magical rituals can be connected to *bwang* in only a remote sense but are worth mentioning. In two photographs of himself volunteered without explanation at the time that he was posing for *bwang* movements, Tanglemal may be seen holding a double-pointed spear with his arm cocked to hurl it at what was presumed at the time to be an opponent. Years later, elucidation of his position brought the explanation that probably Tanglemal was ready to attack the elements of nature and graveyard spirits. There are good examples of the actual use of spears in weather magic, so this explanation is not far-fetched. A *serawi* or typhoon magician, for instance, jabs repeatedly with a palm leaf-bedecked spear in the general direction of a dreaded wind threatening the islands (Lessa 1964: fig. 2 above). A *tolo* or wave magician uses a similarly bedecked spear to attack symbolically the huge waves that may be threatening canoes at sea or an island (Lessa 1964: fig. 2 below). The spears, however, are wholly subordinate in efficacy to the magical incantations that constitute the essence of the rituals. One cannot even say with certainty that they are used as part of the *bwang* complex, yet they are suggestive of it and its aggressive nature.

Information regarding any possible sacred interdicts that had to be observed by the Ulithian trainee and the *iulbwang* is lacking, but there is no reason to doubt that they once existed or that they differed much, except in numbers, duration, and intensity, from the taboos imposed on other specialists. These restrictions were concerned with such matters as foodstuffs, eating practices, bodily contact, sexual intercourse, menstruating women, and firewood, behind which was a fear of

supernatural sanctions. Usually both master and pupil had to observe taboos during the instruction period (Lessa 1950a: 129–48 passim; 1966b: 63–71 passim).

Restrictions were placed on Trukese trainees, too, though the ones that are known can only be called taboos in a loose sense of the word. They were practical measures comparable to those imposed on athletes in our own society. They included restraints against overwork, overeating, overindulgence in sex, and extensive fishing, all of which, says Goodenough, were considered to render a man unfit for battle.

Individual Combat in Folklore

There is an extensive body of Carolinian folklore and in much of it there are accounts of hand-to-hand combat. Although none of the tales apparently use the term bwang or any of its cognates and synonyms in this connection, possibly this is what the narrators had in mind. Confining ourselves to examples from Ulithi, there is a traditional narrative called "Discoverer-of-the-Sun" that details the reversal of fortune of a maltreated boy who arrives in the Sky World dirty and unkempt, but succeeds eventually in overcoming his enemies and is made chief of his island. In part aided by growth magic employed by his adoptive father, who is the trickster-god Iolofäth, Thilefiäl (as the hero comes to be named) nevertheless defeats a variety of supernatural and human opponents with the training in the martial arts that he has received from a spirit, or *iälus*. Indeed the tale focuses upon the agility and ability of the hero to defend himself from multiple spear attacks. Even though the hero is killed two times, once being resurrected by his adoptive father, he becomes more adept in the martial arts with each resurrection (Lessa 1966a: 6-11). It would seem that symbolically the universal cyclical process of birth and death may have been a vehicle to illustrate the value of the martial arts system.

In an oedipal tale from Ulithi, which has close cognates in Truk, Kapingamarangi, Sumatra, and Java and less obvious ones throughout the world that are probably derived from the same source as the Greek Oedipus story, a youth unknowingly commits incest with his mother. The woman's husband, who is a chief and the boy's real father, threatens to kill his wife's unknown lover if he can identify him. The boy's adoptive father, Rasim, who is himself a chief, prepares the boy against this threat by teaching him how to wrestle and to protect himself. When the boy's father discovers that the boy is the culprit he swings an ax at him, but the lad uses his newly-acquired training to seize the ax and behead his father instead (Lessa 1961: 50). It is significant that Rasim who taught the boy how to defend himself is the same Resiim who, in the previous story, twice tries to kill Thilefiäl with a spear. And he is the same as the Resiim whom Goodenough calls the Rainbow or War God, as noted in previous pages.

Methods of Offense and Defense

As a martial arts system *bwang* (Trukese *pwáán*) is not limited to the unarmed aspects of attack and defense and so therefore must be understood as a truly, well-

developed method of killing for warriors and not a sport designed for exercise or leisure. With this in mind, the system consists of both unarmed and armed methods and techniques. We do not propose that the material that will be presented is either exhaustive or representative of the total number of systems of fighting as they existed at the time of their actual use. Nevertheless, we have tried to categorize and describe systematically each movement of all systems with which we are familiar, including $pw\dot{a}\dot{a}n$ techniques. The system of classification that we use is one based on Velez's knowledge of martial art systems in the Orient and the field data collected by Bollig Goodenough, and Lessa.

Each technique when described will have the letters "B", "G", or "L" immediately following the term used in order to indicate the sources of the original data. When translations of native terms have been made, these are usually in quotation marks. Where no native term was found or when no term was available we have freely substituted a term for the action and added some commentary for clarification. In addition, where two sources have the same technique, the one deemed more accurate and detailed will be the primary source and the other mentioned following the description.

A. UNARMED METHODS

Unarmed methods are presented in four main sections: first is a description of striking, thumbing, choking, and kicking techniques; second, throwing and tripping methods; third, turning and twisting joints and fingers; and fourth, defense against spear attacks. While all of these techniques are presented separately for categorical reasons, in reality they were used in combination in actual combat. The permutations for the various techniques in combination are impossible to present here but an appreciation of the dynamic quality of the various methods must be noted and will be described later.

1. Fist, Hand, and Foot Measures

nipoires (B), fist art. This is a punch against the opponent's fingertips and attests to the technical focus of such a method. There may be an alternative explanation which we hypothesize may provide a different orientation. This technique may have been a spearhand jab with the fingertips rather than a punch as Bollig describes it. There are systems around the world that utilize the fingertips to attack the soft parts of the opponent's anatomy. (Goodenough comments that he does not understand Bollig's term *nipoires*, unless it is something like his own *nipéwiires*, "the repeated hand.")

säreboad (B), "disappearance of the nose," fist art. This is a punce against the opponent's nose. The specificity of the target is important to note in that the nose is a particularly vulnerable point of contact for a strike and so therefore some knowledge of such susceptibility must have been considered by the practitioners. However there are two questions that are raised by both the above technique and

this one. They refer to our lack of knowledge as to (1) whether the punches were jabs, thrusts, or strikes and were hooked, straight, or uppercut, and (2) what part of the fist was used—middle knuckles, bottom fist, side, or back fist. (Goodenough says that Bollig's *säreboad* makes sense as *sárepwéét*, "nose finish," in his own orthography.)

falafal (B), "to hew." A handblade attack in which the opponent's arm is hit hard with the side of the flat hand. It is improbable that this technique should be limited to only striking the upper arm and we propose that it was directed toward any soft part of the body or head area. The angle of attack we hypothesize could have been directed from a direct horizontal, vertical, or oblique position, or reversed utilizing the same angles. Thus at least six possible positions and directions could have been generated. In addition, the relation of this technique to knife arts, *falfal*, should be noted. Both *falafal* and *falfal* are lexically synonymous and it is more than likely that this handblade attack is derived from the example of a knife or spearhead. As Figure 1 illustrates, the thumb is pressed inwardly and the little finger pressed toward the thumb, which creates the tension necessary for a rigid side of the flat hand. The Japanese technique *shuto* in karate was developed from a knife blade or spearhead, so it is most probable that the Carolinian form was similarly evolved. *fanafan* (G).



Fig. 1. Falfal.

fiyemas (G), "eye gouge." A thumb attack in which both thumbs are pressed into the eyes. This action is difficult to accomplish without accompanying techniques such as grabbing the back of the head and ears and kneeing the groin if this were done while standing. It is also probable that this may have been primarily a "ground" action where the head against the ground does not give way as it would if it were done from a standing position. *fiemas* (B), "pressing the eyes."

chiyoromá (G), "throat death," pressing the throat together. According to the

description the technique is a defense against an armed slash in which the defender grabs the opponent's slash arm, pushing it to the right. The right arm goes under the left arm over the opponent's slash arm and pushes against his throat using the leverage for pressure. It is most probable that it is the left hand which pushes against the throat in combination with the entrapment process, although Goodenough does not detail this last action. In addition this technique would be done in combination with a sweeping foot action or foot block to the ground. This is a kind of so-called "catch-22" choke with the greater the struggle, the more pressure is exerted on the arm and throat. *tioremä* (B), "death throat."

chepthakh (L), front kick. According to our informant, this is a "karate" motion which can be done from any position and is aimed especially at the groin. The informant indicated that the kick is also directed to the throat, under the rib cage, side of head, joints, and any other delicate or fragile part of the body. It is not clear whether the action is snapped or thrust or whether the instep or the ball of the foot is the striking surface, but nevertheless this technique is illustrative of an appreciation of the most vulnerable places where an enemy could be dispatched efficiently.

2. Throwing and Tripping Techniques

neeyam (G), leg trip. Used in canoe fighting, this technique is a defense against a club. An opponent slashes with a club and the defender crosses his arms, blocking the blow with them, turns the club past his own body, and passes behind his opponent, shoving him overboard or grabbing his leg from behind and tripping him overboard. We further suggest that this technique shows a high degree of balance, quickness, strength, and dexterity, and illustrates an appreciation of "giving way" to the opponent's strength and using it against him. *neam* (B).

pwiison (G), leg throw. This technique is a defense against a club blow in which the defender ducks under the blow and grabs the opponent's leg, pitching him forward on his face with the momentum of his swing. Here the defender has crouched in such a manner that as the opponent swings and as his balance is broken forward, the defender grabs his opponent's legs at the knee and heaves up, pitching his opponent over his shoulder. As in the previous technique, *pwááng* practitioners appreciated "giving way" to strength, *puison* (B).

eyiniwow (G), "carrying pole," over-the-shoulder throw and elbow-break. This technique is a defense against a knife slash in which the defender grabs the opponent's knife-holding wrist with both hands, twists the wrist underneath his arm and brings it down hard across the defender's shoulder, breaking the opponent's elbow, and then bending forward pulls the opponent and pitches him over the shoulder. This technique is a bit more complicated than Goodenough's description. It also requires the defender to step into the opponent as the wrist is

twisted under the arm, lowering the center of gravity sufficiently to become a fulcrum for the elbow-break, and then to lift slightly upwards on the toes while bringing the arm downward before the final throw over the shoulder. *einiwow* (B), "to carry on a pole."

thor-A (L), defense against front hair grab with an entangling armlock and lateral twist and throw. This combination technique, as Figures 2 and 3 illustrate,

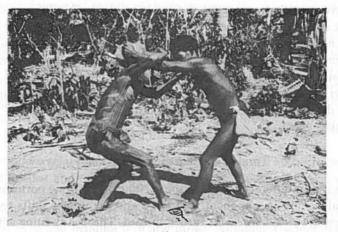


Fig. 2. Thor-A (1)



Fig. 3. Thor-A (2)

educardi sen anti ican da construcción de desirio da construcció de desirio da construcció de gene da construcció de gene los area estrolo forder les area estrolo forder les area estrolo forder un destavelesteresta a

has the defender simultaneously footblocking the attacker in order to gain control over his momentum, crossing his own right arm over the opponent's left to grasp the opposite right arm at the forearm, twisting and pulling the opponent's left arm downward and then pushing it up at the elbow, while at the same time pulling the right arm to the right lateral side. This twisting action, plus the opponent's forward movement and a last quick flick of the opponent's wrist, results in the opponent flipping head-over-heels in a lateral direction.

There is an alternative explanation that suggests this defense consists of the defender striking his opponent with his wrist while simultaneously blocking the forward movement. The second position shown also illustrates a similar punching movement. We disagree with this interpretation, and in fact *thor* represents one continuous action as we described it and not two separate actions. In addition, one other technique described on p. 168 is also defined as *thor* by our informants. We will distinguish these by the designation of capital letters "A" and "B" to differentiate them.

3. Turning and Twisting Joints and Fingers

There is a clear difference between the twisting and turning portions of the body. When the balance of the opponent is forward and the weight shifts to the toes, the elbow joint rises with the forearms turned inward. This is a twisting action. Turning actions are those in which the posture is broken to the rear and the elbow joints lower, with the forearms turning outward. We will also differentiate between elbow techniques and wrist techniques and the following outline can be used as a guide to designate the specifics of each method:

ELBOW TECHNIQUES

Arm lock: push down, pull down Entangled armlock: arm twist, arm turn

WRIST TECHNIQUES

Forearm twist: regular twist, reverse twist Forearm turn: regular turn, reverse turn

soon ekiyek (G), entangling arm lock. This technique requires that the defender block an opponent's club blow.with the left hand and then pull his head down with the right hand, and then he slides to his own left and behind his opponent, simultaneously reaching underneath his opponent's legs and grabbing the club hand. It is also most probable that in addition this technique may also include the defender grabbing the opponent's hair while maintaining control of the arm held between the legs. The effect is devastating and the attacker can literally be carried on his tip-toes wherever the defender wishes. In addition, with the proper snap the opponent's neck can also be broken if an alternative solution is sought.

efin (G), wrist twist. This defense is against a man with a bush knife who attacks with a downward slash. With the right hand the defender seizes the back of the knife hand and twists clockwise, at the same time seizing the knife blade with the left hand and prying it up in a clockwise direction. In the martial arts this is among the most basic of all grip defenses, with a follow-up in which the opponent's knife is usually taken as the weapon to kill the attacker. Other alternatives—such as kicking, breaking the wrist, or developing the wrist twist into an arm bar and takedown with a downward stomp of the foot—may also be generated.

áseeng me nóón (G), turning entangled armlock. This defense is against a man with a bush knife who attacks with a downward slash, or against the overhead smash of a war club. The left hand seizes the opponent's club hand and turns it counterclockwise so that the palm is up, the defender at the same time stepping in and planting the elbow of the club arm down on the right arm, which will disarm the opponent. In other arts the usual follow-up in this method is to remove the club and then continue the action until the arm breaks.

áseeng me núkún (G), bending arm lock and wrist twist. This measure is designed to defend against and to disarm a man making a downward slash with a bush knife. The left hand seizes the opponent's attacking arm under the elbow while the right arm is thrust out under the upper arm of the opponent's attacking arm, seizing the wrist and bending it in and down. Although Goodenough does not mention it, the follow-up is a leg trip in which the defender continues to maintain the hold while his opponent falls backward. The usual result is a hard blow to the back of the opponent's head from striking the ground, a dislocated shoulder, and most probably a broken wrist. A usual follow-up is to take the opponent's knife and use it.

 $w \delta kusor$ (G), a reverse wrist twist. This defense against an opponent with a knife begins with the defender twisting back the knife hand of the opponent with both hands and then thrusting it forward so that the opponent is stabbed with his own knife. Goodenough mentions that the defender twists back the knife in the opponent's hand, but we would suggest that it is not the knife that is twisted back but instead the hand that grips the knife. This technique nevertheless illustrates the awareness of the relationship between the forward momentum of a knife thrust, its reversal, and its most certain outcome.

finikúúween (G), "lizard twist," entangled arm lock and wrist twist. This technique is to make an unarmed opponent helpless. The defender seizes the opponent's left wrist with the left hand, bringing his left arm down across his body, at the same time grabbing his right wrist with the right hand and bringing it across the opponent's left arm. Next, the defender runs the right arm under the opponent's left arm and over the upper right arm, grabbing the left wrist in the right hand. Then the opponent is bent forward and his other wrist is grabbed from behind between his legs. Except for *thor*-A (p. 153) this is probably the most

complicated technique to use and to master for it requires extreme dexterity, speed, and strength to accomplish it. This technique must have been used as the opponent was moving forward in an outward-arms, stretched, pushing motion. It is also most probable that the opponent is caught as his motion places his heels in an upward position with most of the weight of the body resting on his toes, at which time he could offer the least resistance and in fact places himself in an extremely vulnerable position, literally caught in mid-air. Nevertheless the quickness necessary to respond to this attack by the defender is instantaneous and is totally reactive without thought or preparation. The practice involved for this technique must have been long and arduous. *fin kuen* (B), "female lizard." (Bollig confused *fin* "twist" with *fin/fin* "woman.")

refisu (G), entangled armlock. This technique involves grabbing the opponent's right hand and bending his right arm back up behind him, then forcing him forward and with the left hand grabbing his left hand from behind with his legs. Like *soonekiyek* and *finikúúween* it induces total immobility on the opponent; but it is also likely to be part of a larger design such as pitching the person to the ground by lifting him upward against his groin while maintaining control of the armlock. The fall is usually sufficient to break the arm as the person's back strikes the ground. Other follow-up techniques are then applied. *refisu* (B). According to Bollig the follow-up if it invoves defense against a weapon, is to step on the weapon as the opponent drops it and use it against the opponent.

sootiw (G), "alight." A technique in which an opponent has thrusted against the defender, at which time he steps low behind the attacker and pulls his arm down. He grabs it with his left hand from behind between the opponent's legs and pulls back and up, pushing him forward on his butt with the right hand. Although we have classified this technique as part of the turning and twisting measures, it is quite possible to include it within the throwing techniques if it were not probable that the original intent of the technique was not to throw but to make the individual immobile. In fact, Bollig has a technique called *rugun kapä* (not included in our listings) that is such a variant in which the opponent is held fast and not pushed forward. The pushing and throwing of the opponent was probably developed after the immobilizing version. Nevertheless, like the three previous versions this technique usually results in the fracture, at least, of the opponent's coccyx.

wiisenúúr (G), reverse wrist twist. According to Goodenough the opponent's right wrist is grasped with the left hand and the back of the right wrist with the right hand. The wrist is twisted clockwise and the hand bent back at the same time. From our point of view, there is some difficulty with the description provided us. For the most part this technique is normally developed by the defender grasping the right wrist with the right hand and then twisting in a clockwise motion while simultaneously grasping the back of the right hand with the left hand and bending the hand back at the same time. Normally if the technique as Goodenough

describes it is developed, the wrist is not twisted but turned. This means that the wrist and hand are turned in a counter-clockwise motion and not in a clockwise motion as Goodenough describes it. Otherwise the clockwise motion is quite awkward for the defender to accomplish unless he is double-jointed.

péwúpwór (G), reverse wrist turn. This technique has the least information and merely referred to one in which the opponent's hand is thrust back against his chest. It is more than likely the technique was accomplished by taking the opponent's right wrist with the left hand, raising the arm and twisting counterclockwise while simultaneously grabbing the back of the right hand with the right hand and bending it forcibly towards the chest. The violence of the thrusting action usually results in a broken wrist for the opponent, and other techniques such as leg trips or frontal kicks are usually cohorts of this technique. *poupo* (B).

soumül (B), "the swimmer," arm lock and strike. This technique involves turning the arm of the opponent and hitting the opponent in the small of the back when he bends down. This description by Bollig is not technically correct and is not a "turning the arm" but twisting the arm since this is the action required to make the opponent bend forward. The strike may be either a handblade technique (*falafal*) or a fist measure (*säreboad*); however, it is probable that it is a handblade strike with the edge of the hand since a fist strike is a bit more awkward to accomplish. In either case this technique illustrates the appreciation by *bwang* warriors of the vulnerability of the exposed vertebrae as the opponent bends down. (Goodenough says that he cannot make sense of Bollig's *soumil* or his *döfara* below.)

döfara (B), finger hold. The hand of the opponent is seized and the fingers are pulled apart. This action, we suggest, was probably done pulling the fingers apart and bending the fingers back toward the wrist while simultaneously pulling the opponent down and then adding leverage to the hold by raising up on the toes and pushing down on the opponent's bent hand. The usual aftermath of such a hold is not just the submission of the opponent but also a number of hand and wrist fractures.

nugun gumut (B), "back of the fist," wrist turn. This technique includes seizing the opponent's hand and then turning it outward. It is interesting to note that Bollig differentiated between twist and turn in this technique and was accurate in his description. It is one of the most basic of submission holds in the martial arts repertoire around the world. It was more than likely done while grabbing the opponent's right wrist with the left hand, swinging it in a counterclockwise manner, and simultaneously grabbing the back of the hand with the right hand and continuing the motion begun, while bending the hand back toward the wrist and turning it to the rear of the opponent's rear. The usual aftermath is that the opponent falls to his own right rear.

sunukus (B), "turning the octopus," double arm lock. This technique is done by turning the opponent's right arm back behind him and then trying to seize the left arm also in the same manner so that both of the opponent's arms are pinned on his back. While this is basically a submission hold only, it can be turned into a takedown technique rather easily, or the knee can be applied to the coccyx or even to the groin. While we have no data which implicity or explicity verifies this statement in the use of the knee, we nevertheless speculate that since most other parts of the body which have a bony or hard surface were used, the knee was most probably appreciated for the weapon that it can be.

(Goodenough finds Bollig's translation of *sunukus* questionable. He says that-*khus* is an intensifying suffix meaning "very," which Bollig seems to have confused with *kúús*, "octopus" [German *Polyp*].)

thorchap (L), grabbing with both hands. The description by the informant does not elaborate the technique but more than likely it was a bear-hug or shoulder grab method used as an initial unarmed attack.

puenin fefin (B), "embracing a woman," bear hug. (Goodenough says that this is *pwenin feefin*, "woman's *pwáán*," that is, an embrace.) According to Bollig, an opponent is embraced and is pressed close to one's self. Both this method and the above of course take great strength to accomplish and it was probably done by only the strongest warriors since the expressed intent is to make the opponent unconscious either by pressing against his diaphragm or by cracking the opponent's lower vertebrae if the hold includes the pressing of one's knuckles against the lower spine.

4. Defense against Spear Attacks

dohowb (L), defense against spear with *falafal* (handblade). As Figure 1 illustrates, this technique is an extremely complicated one in which the defender simultaneously grasps the opponent's left wrist, sliding underneath that upraised arm, and then deflecting the attacking spear by continuing his own forward motion and attacking the spear-held arm at the wrist, forearm, or upper arm as the attacker's own arm stabs forward. The deflection procedure is extremely quick and technically very difficult without a fluidity of motion on the part of the defender. At no time can the defender interrupt his defense with a moment's lapse in movement, it must be accomplished in one continuous movement. The follow-up for such a technique usually involves further strikes with the handblade technique to the throat or to the temple.

ire seiai (L), defense against a spear. As Figures 4 and 5 show, this defense is accomplished by the defender grasping the opponent's spear shaft—placing the right hand on the upper part of the attacker's forward thrusting spear, simultaneously lifting the lower end of the spear with his left hand—and twisting

158

the spear, which causes the attacker's arms to twist in a pretzel fashion. As he does so, he continues the motion to his left oblique and tosses the attacker over his own left shoulder in a flipping manner. The follow-up is a stabbing of the opponent's abdomen as Figure 5 illustrates.

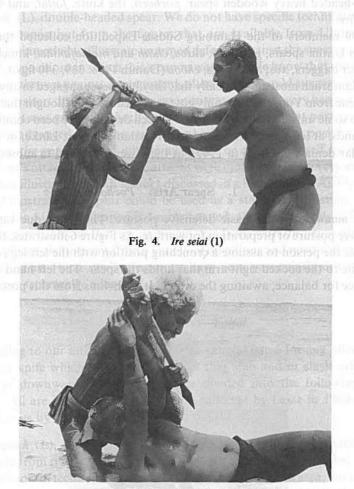


Fig. 5. Ire seiai (2)

B. ARMED ATTACK

The weaponry that we will describe is limited only to those weapons about which we have adequate descriptions concerning their use. In actuality, the use of such weapons as clubs and spears was quite extensive throughout both Micronesia and Polynesia, but we have little information as to the techniques employed. For example, in Goodenough's generously supplied field notes it is indicated that the weapons that the Trukese learned to use were the war-club, $w \dot{o} \dot{o} k$; the spear, $\dot{o} ppong$; the sling,

éwúnúún (which was primarily used as artillery in sea battles); the knife, *nááyif*; the shark tooth-studded knuckle duster, *nikkumwuch*; and in very recent times the rifle, *nikesúk*. But we are told little as to how they are used. Our own Ulithian field data is limited to three weapons about which we have descriptive details regarding their use: the double-headed heavy wooden spear, *pochoch*; the knife, *falfal*; and the fighting staff, *metalire*.

In 1909 members of the Hamburg Südsee-Expedition collected the following weapons on Ulithi: spears, $g\bar{e}$ or $k\bar{e}i$; clubs, $ch\bar{o}th$ and *methafarithel*; knuckle dusters, *riserăs*; finger daggers, *xõs*; and slings, $ch\bar{o}\bar{o}n$ (Damm 1938: 339, 340 figs.). The natives told Paul Hambruch most emphatically that they had never engaged in any wars; their weapons came from Yap, and they only got them because they thought that they might be blown to some unfriendly shores! (p. 339). Such denials have been commonplace in the low islands, at least since the visit of the Russian explorer, Lütke, in 1828. Lessa heard similar denials in Ulithi in 1947 but these were modified in subsequent years.

1. Spear Arts: Pochoch

bongel mauwel (L), the basic defensive posture. This technique was the basic defensive posture of preparation for warfare. As Figure 6 illustrates, this position requires the person to assume a crouching position with the left leg forward and opposite to the cocked right arm that holds the spear. The left hand rests on the left knee for balance, awaiting the attack. It is obvious from this posture that the

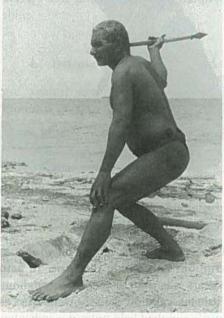


Fig. 6. Bongel mauwel

160

person is able to move laterally or obliquely, forward or backward, in a balanced position. Inasmuch as such movements are done in a sliding or gliding manner to keep the center of gravity low, it is most likely that club as well as spear attacks were carried out in the same manner.

pochoch (L), double-headed spear. We do not have specific techniques for the use of this weapon but from the figures that are available from Ulithian material originally intended to illustrate unarmed defenses against the spear, we can show a variety of positions in which this weapon was used. We know that the weapon was evidently thrown against an opponent, although we would suggest that it was for extremely short distances since the weapon was short and very heavy and unstable in flight. It was gripped in both hands for close in-fighting at port arms position. one foot advanced, with the rest of the body in a crouched position. From this position, the person could initiate an attack or defend himself by parrying the opponent's attack. The offensive attacks were more than likely very much like the ones that illustrate the staff attacks discussed in a later section. As Figures 19 and 20 will illustrate, the spear could be used as a stabbing, thrusting, or slashing instrument. Since the weapon is double-headed, all three methods of attack could be used alternately so that the opponent was faced with thrusting, stabbing, and slashing butt-end to point from a variety of directions and positions in continuous motions. This "buzz-saw" effect must have been particularly disconcerting for those less technically adequate.

2. Knife Arts: Falfal

According to our informants, *falfal* is the general name for any offensive attack made with a knife which includes techniques that stab and/or slash side to side or upwardly or downwardly. *Falfal* is further divided into the following subset of techniques. All are Ulithian terms originally collected by Lessa in 1960 and further described for us by an informant in 1977 in Ulithi.

falpúngakh (L), a slashing attack. This technique requires the attacker to swing the knife from right to left if right-handed or vice versa if left-handed. We suggest that this sort of technique is usually aimed at the abdominal area, but the inclusion of the arms as targets is also normally a part of the focus, especially the connecting tissue between the forearm and upper arm. We would speculate that the knife was held in the palm of the hand with the handle held between forefinger and thumb and the sharp side of the blade facing left. The blade would be held just the opposite for a left-handed person. It is also conceivable that if the knife were also double-edged, it would make quite a formidable weapon in the slashing attack but we have no data to verify a double-edged knife's existence.

falsu (L), overhead knife strike. This technique, according to our informant, is one in which the knife is swung downwardly on the head or shoulder area and then upwardly in a slashing motion. It is not quite clear whether the upward motion is

really a slashing movement but it would stand to reason that it might be more of a stabbing technique. The position of the knife in the hand is a crucial variable. If the knife were held in an overhand-fist position in which the blade of the knife were extended from the bottom of the fist, then the motion downward would be more of a stabbing motion than a slashing movement and it is probable that the knife blade would imbed itself. On the other hand if the knife were held so that the blade extended between forefinger and thumb with the blade edge facing downward, then the probability of a slashing motion is greater with a follow-up stabbing technique. It should be pointed out that the latter technique is difficult to execute unless the blade is quite long and the position of the opponent is below that of the person attacking. It is most probable that both our speculated versions are correct.

falthakh (L), groin strike. This technique is the opposite of *falsu* and the attack point is the groin. The movement focuses upon the groin in an upward motion and then downwardly after the apogee of the upward thrust is reached. It is more than likely that the handle of the knife was held between thumb and forefinger with the knife-edge facing upwardly. Like the technique described above, once the apogee of the knife is reached it is more than likely that the final movement is a stabbing technique. In either case, such a method of attack is quite effective and calls for a low angle of attack and a momentary weakness in the upper defenses of the attacker.

talai iefief (L), hidden knife and multiple attack. The movement begins with the knife being hidden under the underarm and then pulled out with slashing motions in all directions. Here the important aspect is its hidden dimension which differentiates it from the general name of *falfal*. Regardless, however, for each one of these techniques there is a follow-up motion and more probably all of the techniques—upward, downward, side-to-side—were performed dependent on the resistance of the opponent. *Talai iefief* in fact combines *falpúngakh*, *falsu*, and *falthakh* into one continuous movement of attack and was more than likely the preferred combat form. The other three techniques might be regarded as the broken down elements of *talai iefief* which were taught first as building blocks for the more complicated technique.

hathiafüch (L). No further description or information was provided us by our informant other than that it is part of the *falfal* movements and therefore some kind of knife technique.

C. STAFF ARTS: METALIRE

According to our informants in Ulithi, *metalire* applies only to fighting with staffs or sticks and has a subset of offensive techniques called *fadeg* and a subset of defensive methods called *pelet* which means "to protect." Our best information suggests that the word *metalire* does not also include fighting with other weapons such as clubs, spears,

or knives; however, as later sections will illustrate staff techniques were used against spear attacks. Thus, in a later section we will include defenses against spears with the use of staffs as metalire but primarily for classificatory convenience. With this disclaimer in mind, we point out that according to our informants there were no standard sizes or weights to the staffs that were used by warriors and in fact any goodsized stick that was about could be used. Yet from the figures that will illustrate the techniques, the staffs seem to be rather uniform in diameter and length, very much like the ancient Chinese staffs but different from the Okinawan ones, which generally had tapered heads (Draeger and Smith 1974: 64). For the most part, the staffs seem to be quite proportionate to the size of the practitioners who are shown and it seems some care was taken in the selection of the staffs and were not in fact such random choices as our informants have indicated. There is one other puzzling aspect to these forms which we have not yet unraveled. Many of the staff and spear forms were done from a lefthanded posture, yet all of the informants and practitioners shown were right-handed individuals. While it is normal for martial arts to be practiced to ambidexterous ability. the right-side is nevertheless favored by right-handed persons, especially for demonstration purposes. Nevertheless, the fact that so many of the techniques are demonstrated from left-handed positions indicate the high degree of expertise which the practitioners exercised. Just as a point of information which might indicate the degree of difficulty to overcome in the practice of such forms, it is normally a five-year process in staff training to learn to a high level of performance the basic grips, stances, movements, and methods of thrusting, striking, parrying, and deflecting in modern Asian versions of staff fighting (Draeger and Smith 1974: 64). Left-handed techniques are the last to be mastered and are usually practiced twice as much in order to gain parity with right-handed techniques for right-handed persons. The practitioners of bwang may have subtly been communicating their mastery of metalire by demonstrating their techniques from left-handed postures.

long hours of delibering procees to become adept with this is

1. Offensive Techniques: Fadeg

 $p \delta khrabw \ddot{o} th$ (L), crossing staffs. This position is the result of an exchange of blows in which the staffs meet simultaneously in mid-air and lock momentarily. Although we do not have a figure specifically detailing this movement, Figure 14 in the defense against spear (p. 169) is more than likely a close description of $p \delta khrabw \ddot{o} th$. This technique is the most basic of all methods of attack from which most other movements follow and in fact can be considered a type of "test" of strength and ability of an opponent.

iräsu (L), overhead strike. This technique, as illustrated in Figure 7 by the attacker standing, refers to any kind of offensive blow directed downwardly with a staff or stick. However, the method shown on this plate is only one of many possible overhead strikes and could range from those like the one shown here to techniques in which the staff is held more like a baseball bat at the end and then swung downwardly. Any such technique which requires a downward movement can be classified as *iräsu*.



Fig. 7. Iräsu.

iräsu small end (L), butt-end strike. We call this technique by this name because the informant did not supply us with the correct nomenclature and have devised the above. The blow as Figure 8 depicts it is quite more complicated than it appears because the defender must have gone through the following sequences before the actual technique was applied. First, he had to move in closely toward the attacker and inside his attacker's offensive range; second, slide his own stick from the port arms position to one in which he balances the stick more than halfway down its length with one hand; third, grasp and deflect the opponent's attacking end; and fourth, then strike the opponent's hand accurately and move into a new position of attack, or actually strike the opponent on the head with *iräsu* (downward blow). It is obvious that the most difficult portion of this technique is the striking of the hand with accuracy, and it must have taken very long hours of deliberate practice to become adept with this technique.



Fig. 8. Iräsu small end.

irehamereu (L), forward thrust. This technique, as Figure 9 shows, is a spearing action that can be applied not only to the breast bone as illustrated but also to the eyes, throat, or any other soft part of the anatomy. This movement is also deceptively simple but is quite complicated for it requires the attacker to "scoot" underneath the guard of the opponent, which requires moving his whole body in unison with the staff. This illustrates that the staff is not used as an extension away from the body but instead as an extension of the body. Thus the power of the whole body is thrown into the technique, which makes for a much more powerful thrust. It is exactly the use of the body which differentiates this method from "jabbing" techniques that do not use the body as the force behind the technique and are extensions away from the body.



Fig. 9. Irehamereu.

hameltökh or **hamel** (L), butt-end thrust. This offensive reaction to a middle body staff lunge is done as Figure 10 illustrates. The defender turns his body laterally and steps slightly behind the lead foot of the attacker, thus placing himself within the maximum range of his opponent. This allows him complete freedom to thrust his own staff butt-end to the open middle of his opponent. The most likely target would be the breast area but the head or throat could also be struck. Rightly so, the informant indicates that this is a "split-second" move. This movement also illustrates, however, the dynamic aspect of this art in that it uses the opponent's forward momentum as a force against itself. Thus the opponent's forward motion combines with the defender's back thrust to double the force of the blow.

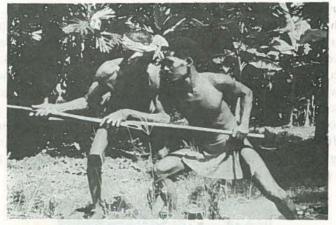


Fig. 10. Hameltökh.

lelig (L), grab and strike offense. As Figure 11 shows, this technique is initiated while the opponent is at the port arms position. The attacker simultaneously grabs the opponent's staff and executes the irehamereu (forward thrust technique as previously described [p. 165]). The subtlety of these movements, however, lies in the fact that the attacker pulls the defender as he thrusts the staff into the breast area. Thus two motions, one pulling and the other thrusting, create a double crippling force which must make the opponent totally incapacitated.



2. Defensive Techniques: Pelet

ire pengakh (L), entangling defense. As Figure 12 illustrates, the defense to a high left-hand thrust involves the defender shifting his weight to the back heel of his right foot and simultaneously turning his body slightly to by-pass the end of the attacking staff and grab it with his left hand. At the same time the defender swings

166

his own weapon from the butt-end to his attacker's body. The attack may focus anywhere but more than likely underneath the upraised arm of the attacker and on to the "floating ribs" area which are the most vulnerable at this point. In addition, the angle of the defender's staff seems to be on line with that area of the body.



Fig. 12. Ire pengakh.

wafalui (L), defense against overhead strike. Figure 7 shows the defense against *iräsu* in which the defender lowers his center of gravity and by a sideward movement of his staff deflects his opponent's strike. Here the action is not to meet the power of the downward strike, but to deflect and dissipate the force of the blow away from the defender's head. What is most interesting to note is the dynamic use of the defender's entire body in movement with the deflection and not merely the use of the arms as the major means of defense. Such use of the body illustrates a profound appreciation for body shifting and power dynamics in this system of *bwang*.

 $p \delta khrafich$ (L), defense against an overhead strike. The defender blocks the opponent by horizontally blocking the oncoming staff, then deflecting it to the side. Both sticks end up in a crisscrossed position much like $p \delta khrabw \overline{o} th$ (p. 163). The difference however lies in that the initial defense is the horizontal blocking by the defender of the attacker's blow and not the crossing of staffs due to simultaneous attacks. It is usual of course for such a block to be the beginning of an offensive measure the specificity of which cannot be stated because of the almost unlimited possible reactions.

metalim (L), parry against a straight thrust. This technique is done by deflecting the opponent's staff to one side by parrying the blow from a port arms position. More than likely the parry would look very much like the "2" and "3" positions in modern fencing but in this case the follow-up would more than likely consist of a

butt-end strike very much like those commonly accomplished during bayonet training by modern soldiers.

irepelokh (L), defense against overhead strike. This is not a block but a parry that deflects the opponent's weapon during its delivery toward the head. Although the informant did not clearly describe the technique, more than likely this parry catches the downward blow in the air with a movement much like the "2" and "3" parry described above and the follow-up would also resemble the one mentioned in the previous technique of *metalim*.

ithilfú (L), block and grab defense. According to our informants this movement is an entrapment technique in which the defender blocks a straight thrust, which causes the weapon to fall on the defender's arm, at which time he grabs the opponent's weapon and prevents further attacks. He then can strike his opponent with either the butt-end of his own staff or the end of the staff. We would speculate that this technique is similar to *hameltökh* but we do not have any more information on this technique. We are not sure as to whether the blocking technique is done with the staff or with some part of the arm but it would be more likely that, given that the block results in the attacker momentarily losing control of his spear, more than likely it would be a staff block.

D. MISCELLANEOUS TECHNIQUES

The following forms are also part of "stick" fighting but are not *metalire* in the strict sense of the term in which only staffs are used, and in the examples illustrated here, the defensive staff seem to be a randomly selected type of artifact without the seeming consistency of size and length exhibited for strictly staff combat. It may very well be that in the following illustrations the weapon for defense is an example of defense with whatever literally happened to be on the ground.

thor-B (L), stick attack against front hair-grab. According to our informants, the technique on Figure 13 begins with the opponents facing each other and the attacker grabbing the defender's hair, at which time the defender half-turns to his left, grabbing his opponent's wrist, and then strikes his opponent with the buttend of the stick in the area of the body opened by his movement. It is most interesting to note that the technique includes the notion of "giving way" to the opponent's grab, which places him at an off-balance position forward. The simultaneous butt-end blow and the momentum forward again produces a double force to the blow. One other follow-up is also quite possible and that might include the *eyiniwow* (G), over-the-shoulder throw and elbow break.

crossed weapons (L), no name provided by informants. As Figure 14 illustrates, this technique is similar to $p \delta khrabw \ddot{o} th$ (p. 163) in which the opponents meet in simultaneous attack. Although this technique is shown at a kneeling position, such a method was also done at a standing position. Nevertheless, from the

168

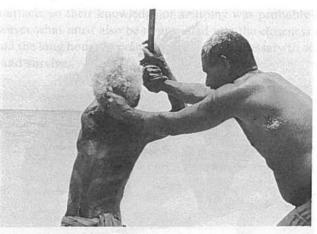


Fig. 13. Thor-B.

defender's point of view, to induce the spear-holder to a kneeling position is a positive step since it reduces the opponent's forward and lateral movement and "equalizes" the combat somewhat more by limiting the angle of attack and his opponent's flexibility.



Fig. 14. Crossed weapons.

pelat (L), overhead defense. This technique is the continuation of the attack described above and as it appeared on Figure 14. In Figure 15, the defender engages the spear head in order to control his opponent's movement, from which he can follow up with a butt-end attack or even a front kick as he rises against the spear.

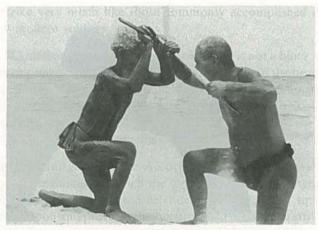


Fig. 15. Pelat.

entangled pelat (L), elbow block. This technique (Figure 16) was merely named "pelat" by the informant; however, it is most obvious that it is quite different from the one described above. Here the defender is trying to force his opponent's right hand over his left, leaving the spear horizontal to his body and his arms crossed, at which time his balance is shaken and his head and chest opened to attack. In addition if the leverage is correct, the opponent's spear may be taken away if the fulcrum is maintained.



Fig. 16. Entangled pelat.

killing blow to the temple (L), no name was given by the informants. In this technique as shown in Figure 17, the defender has slipped by the opponent's lateral thrust, crooked the spear in his arm and controlled it, and simultaneously struck the defender on the temple. By the focus of the blow on the temple, it is most probable that *bwang* practitioners appreciated the vulnerability of the temple area

to such an attack, so their knowledge of anatomy was probably quite sophisticated. However what must also be appreciated was the closeness of the combat involved and the long hours of practice which were necessary to accomplish such technique and survive.



Fig. 17. Killing blow to temple.

thethag (L), stomach thrust. From a kneeling defense as Figure 18 shows, the defender slips his own weapon over that of the standing opponent who seems to be preparing to attack or whose defense is momentarily lapsed. In either case, these are the most vulnerable junctures during any attack and defense phase and it is most obvious that *bwang* practitioners appreciated these momentary weaknesses in an opponent.



deflection of reverse spear thrust (L), no name given by informant. This technique as Figure 19 shows is done in response to a defense by the spear holder. The staff-

bearer has grabbed the hair of the spear holder who has twirled around in defense. At this point, he will attempt to thrust his spear backwards in retaliation. The defender on the other hand slides closely behind in order to limit himself as a target and inserts his staff between his opponent's body and the trajectory of the spear in order to deflect it as it moves backwards. This is an extremely dangerous close-quarter defense whose follow-up may include flinging his spear-wielding opponent on his back.



Fig. 19. Deflection of reverse spear thrust.

sogalap (L), staff defense against rear attack. As Figure 20 illustrates, the defender has begun to swivel to his rear while blocking the descending spear attack. In this technique, it is more than likely that the defender will succeed not only in deflecting the spear strike but will also force the spear from the attacker's hand with the energy of his parry, at which time the defender will more than likely use a butt-end thrust on the opponent.



Fig. 20. Sogolap.

ire saiou (L), overhead defense. This technique as displayed in Figure 21 uses the double momentum of the opponent and the blow of the staff on the head. As the opponent moves forward with a spear thrust, the spear is entrapped by moving slightly and permitting it to go past under the defender's underarm. With this side-slipping of the initial thrust and the attacker's momentum moving forward, the defender then brings his own staff overhead from behind his own shoulder and in an arc brings it crashing down on the attacker's head. Here again quickness, agility, and precision mark the execution of this technique.



Fig. 21. Ire saiou.

E. MOVEMENTS WITHOUT DESCRIPTIONS

The following residual movements have been referred to by Ulithian informants, but without any descriptive information: *ileng, iralies, iralwelemokh*, and *thar* (probably a variant of *thor*). Nothing further can be said about them.

Conclusions and Implications

While descriptions of the various *bwang* techniques have been elaborated in order to provide us with a better sense of appreciation for their complexity and difficulty, a few comments should be devoted to their sophisticated use of body motion and the way in which these techniques were adopted to differing environments. First, all of the techniques are dynamic ones in the sense that its practitioners appreciated the importance of movement and body control in order to bring to bear the maximum efficiency with the minimum of energy expenditure. For example, the various striking and thrusting arts with the feet or the fist were focused on particular parts of the anatomy as targets. The nose, throat, eyes, diaphragm and groin areas—the "soft parts" of the body—were spots of special attention. However, just as important, as the various illustrations have shown, was the close attention to the use of the whole body in

each technique and not just methods in which an extension of the body was utilized. The difference that such an underlying understanding makes in the execution of the technique and the energy brought to bear on the target cannot be overstated. Coupled with this insistence on the use of the whole body as the generator of power was the fact that the various methods of attack and defense used gliding, slipping, or evading body motions which added to the momentum of each technique and of course greater power for each strike, jab, or thrust executed.

In addition we have many examples in which the opponent's strength was turned against himself by the defender by "giving way" to the thrust of the opponent's technique. This action, combined with the defender's body motion and the power generated, executed powerful techniques with and without weapons, which produced mortal results. What must also be kept in mind is that such techniques were executed in a variety of contexts including aboard canoes, on the beach, from kneeling positions, from standing positions, and most certainly from prone positions. Whether they were using knives, clubs, spears, knuckle-dusters, staffs, or discarded pieces of wood as weapons, *bwang* practitioners were quite adaptive to changing environments and contexts.

This adaptive ability, however, must be understood in part as a measure of the flexibility of the combat systems themselves. Each technique, we have shown, most probably had an almost unlimited number of "follow-ups" which together made for quite a repertoire of possible permutations. Thus, in combat the expert warrior had at his command the instant basic reactions which could generate combinations of spear, staff, club, and knife methods. Together with the unarmed techniques of fisticuffs, kicking, thumbing, throwing, and choking, as well as tripping, turning, and twisting joints, the Carolinian warrior was indeed a formidable opponent.

It must be made absolutely clear, then, that such martial arts were part of a warrior's culture, of real no-quarter given, personal combat and therefore not comparable to karate and judo, with which they have been compared. The comparisons are socially misplaced and do not consider the evolutionary difference between modern "martial ways" and traditional "martial arts." Both judo and karate are "martial ways" designed for the spiritual self-perfection and self-protection of the individual, as opposed to "martial arts," which are combative systems designed to promote self-protection and group solidarity and which evolutionarily predate "martial ways" (Draeger 1973: 19). (Draeger does not make the evolutionary comment, which is ours, but he does point to the definitional differences between "martial ways" and "martial arts.") This individual versus group dimension is crucial for understanding that the Carolinian systems of fighting were not in fact judo or karate analogies. Instead they were comparable to the various *bujutsu ryu* systems in seventeenth century Japan that were developed for and by warriors (Draeger 1973: 52), and which were in fact the genitors of what we now know as "judo" and "karate."

Draeger points out the ryu as a corporate body perpetuated by an unbroken hereditary line of lineal or collateral or nonconsanguineous headmasters who are responsible for the various techniques in combative arts (*bujutsu*). These are both armed and unarmed systems for warriors. It is interesting to note that the Ulithian *bwang* systems were also in the hands of headmasters who were not necessarily consanguineally or affinally related to the trainees.

The Carolinian forms of the martial arts were important cultural adaptations within the Carolinian cultural systems. Although we have only remnants of the total martial systems, what has been salvaged indicates that these were highly elaborated and systematized. Its practitioners had certainly internalized the technical relationships between body structure, efficient energy use, the generation of power maximally, and physical action in defeating an opponent at a profound cultural level of learning.

Future research would hopefully add much more to our understanding of these traditional Carolinian martial systems. A return to the field would permit the exploration more fully of a number of unresolved questions and the testing of various hypotheses. Among the questions to be resolved are whether the known forms formerly practiced are historically related to those indigenous to the Asian mainland; whether the remnants practiced today are exchanged in trading activities; the extent to which any of the martial arts are being taught presently to trainees, and if so whether there are changes in traditional methodology; whether the traditional arts are presently a part of syncretic religious beliefs; and finally whether the present political climate will initiate a revival of traditional beliefs that include martial arts.

ACKNOWLEDGMENTS

The authors wish to express their gratitude to the following: William H. Alkire, Ward H. Goodenough, Edward E. Hunt, Jr., Mac Marshall, Mike McCoy, Robert K. McKnight, Eric Metzgar, and David M. Schneider, for furnishing unpublished information about martial arts obtained in the field; Samuel H. Elbert, Sherwood Lingenfelter, Rupert I. Murrill, Saul H. Riesenberg, and Melford E. Spiro, for at least replying to our call for information, even though negatively; and our colleagues Robert Byles and Michael Moerman for reading the manuscript and making suggestions derived from their knowledge of martial arts. The National Research Council and the Office of Naval Research supported all of Lessa's field trips to Ulithi. The Research Committee of the University of California, Los Angeles, provided a grant for the preparation of the manuscript for publication. Finally, we are indebted to our Ulithian informants—Tanglemal, Habwungomar, and Yamalmai— for their unusual cooperation, skill, and unselfishness.

After completion of our manuscript, a considerable amount of new field data from his 1947–48 trip to Truk was received from Ward H. Goodenough, but except for the comments on the *neerongun* magic performed just before setting out on a military expedition, his field data were not used because they dealt with the broader aspects of warfare and not with individual combat. His data pertained to the magic associated with war expeditions; post-battle sorcery; battle grounds; tactics; prisoners; treatment of the wounded; disposal of corpses; and war indemnities. It is hoped that Goodenough will some day see fit to publish this exceptionally useful material.

References Cited

- Bollig, L. 1927. Die Bewohner der Truk-Inseln: Religion, Leben, und kurze Grammatik eines Mikronesiervolkes. Anthropos Ethnol. Biblio. Band III, Heft 1. Aschendorffsche Verl., Münster i. W. viii + 302 p.
- Damm, H., ed. 1938. Zentralkarolinen. 2 Halfband: Ifaluk, Aurepik, Fauralip, Sorol, Mogemog. In G. Thilenius (ed.), Ergebnisse der Südsee-Expedition 1908–1910. II, B, 9 Pt. 1. Friederichsen, De Gruyter, Hamburg. xxv+379 p., 465 figs., 33 pls.
- Draeger, D. F. 1973. Classical Bujutsu. The martial arts and the ways of Japan Series, Vol. 1. Weatherhill, Urbana. 111 p., illus.
- Draeger, D. F. and R. W. Smith. 1974. Asian fighting arts. Medallion Pub. Co., Berkeley. 207 p., 61 figs., 40 pls.
- Elbert, S. H. 1947. Trukese-English and English-Trukese dictionary, with notes on pronunciation, grammar, vocabularies, phrases. U. S. Military Government, Pearl Harbor. vi+337 p.
 - ———. 1972. Puluwat dictionary. Pacific Linguistics, Ser. C, No. 24. Linguistic Circle, Australian National University, Canberra. ix + 400 p.
- Krämer, A. 1932. Truk. G. Thilenius, ed., Ergebnisse der Südsee-Expedition 1908–1910. II, B, 5. Friederichsen, De Gruyter, Hamburg. 452 p., illus., maps.
- Lessa, W. A. 1950a. The ethnography of Ulithi Atoll. CIMA Report, No. 28. Pacific Science Board, Washington, D. C. vii+269 p., 4 figs.
 - -. 1950b. Ulithi and the outer native world. Am. Anthro. 52: 27-52.
- ------. 1961. Tales from Ulithi Atoll: A comparative study in Oceanic folklore. Univ. Calif. Pub. Folk. Stud., No. 13, Univ. Calif. Press, Berkeley and Los Angeles. x+493 p., 5 maps.
 - -----. 1964. The social effects of Typhoon Ophelia (1960) on Ulithi. Micronesica 1: 1-47.
- _____. 1966a. Discoverer-of-the-Sun: Mythology as a reflection of culture. J. Am. Folk. 79: 3-51.
- _____. 1966b. Ulithi: A Micronesian design for living. Holt, Rinehart & Winston, New York. x + 111 p., figs., pls., map.
- Sohn, H. and A. F. Tawerilmang. 1976. Woleaian-English dictionary. PALI Language Texts: Micronesia. Univ. Press Hawaii, Honolulu. xix+363 p.