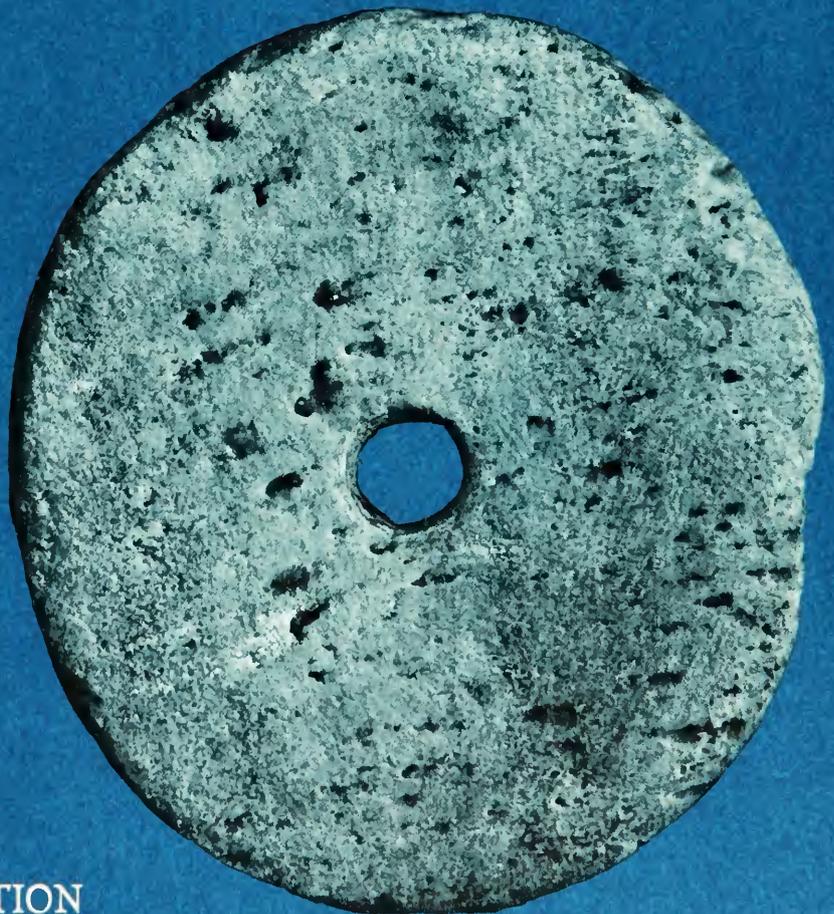


The Stone Money of Yap

A NUMISMATIC SURVEY

Cora Lee C. Gilliland



SMITHSONIAN INSTITUTION

THE STONE MONEY OF YAP
A Numismatic Survey

ISSUED
OCT 23 1975

Bringing of *Rai* to a festival, Yap, 1964. (Courtesy of Dr. James R. LaForest, Middletown, New York)



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ABSTRACT

Gilliland, Cora Lee C. The Stone Money of Yap: A Numismatic Survey. *Smithsonian Studies in History and Technology*, number 23, 75 pages, 33 figures, 1 graph, 1 table, frontispiece, 1975.—This synopsis of the history and role of *rai* or stone money of Yap within the culture of the islands has been drawn from the accounts of early travelers, anthropologists, and administrators in the Western Pacific. The descriptions, quarrying practices, and shipping methods of these stones are discussed, as well as some of the “myths” that have grown up around these large primitive media of exchange. Early and more recent “exchange values” of the stones are traced within the islands, as well as in the international numismatic world.

The location and pertinent data of 149 pieces of stone money removed from Yap and now in public and private collections throughout the world are provided within the table for reference and comparison of sizes, dates and history of accession. Sixty-four stones are illustrated, providing one of the most thorough studies of Yapese *rai* now available.

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Preface

This paper reviews the early history of the *rai* or stone money of Yap as reported by early foreign travelers and relates these stories to more recent observations, both of which comprise the “mythology” of stone money. I have compiled information documenting the location and acquisition of pieces that have been taken out of Yap, and by so doing I have attempted to provide some basis for a comparison of the stones.

By private correspondence I contacted all institutions listed in the tables and the data I have used was drawn from these sources. The private owners were either contacted personally or the data employed was obtained from the Yap District Administrator’s file on stone money.

The *rai* numeration given in the tables and illustrations is according to my own system derived from arrangement of the stones by location and ownership. In the “Notes,” HRAF refers to the page number of the translated work in the Human Relations Area Files at the Federal City College, Washington, D.C. In the appendixes, the spelling and wording of quoted material is that of the original documents.

A great deal of invaluable assistance was received from individuals here in the United States, as well as from residents of Micronesia, whose contributions are acknowledged either in the text or in the notes. Without the assistance and cooperation of colleagues in museums and institutions around the world this work could not have been accomplished. I specifically wish to thank Dr. Saul Riesenber, Senior Ethnologist, Department of Anthropology, National Museum of Natural History, Smithsonian Institution, for his great generosity and assistance; and Dr. Vladimir Clain-Stefanelli, Chairman, Department of Applied Arts, and Curator, Division of Numismatics, National Museum of History and Technology, Smithsonian Institution; as well as Mrs. Elvira Clain-Stefanelli, Curator, Division of Numismatics, National Museum of History and Technology, Smithsonian Institution, for their usual superior professional guidance and encouragement in this project.

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The Stone Money of Yap

Cora Lee C. Gilliland

Introduction

Our world of credit cards, discounts, prime rates, and collection agencies makes it easier for us to comprehend the nineteenth-century Yapese economy than it was for the whalers, traders, and anthropologists of that era who wrote about and created the romance of the stone money island.¹ As was the case in many other primitive societies, there were several different types of “money” used on the island of Yap. One of these forms, stone money (*rai*), has come to be known internationally, surpassing in notoriety the *yar* of pearl shell, the *gau* or pearl shell bead necklaces, the *ma* or huge ceremonial pestles, and even the *mbul*, the specially woven mats.

The size, form, and material brought distinction to Yapese stone money. Changing customs and values, exceptions to rules, consideration of occasions and people involved are all a part of *rai* economics. To the nineteenth-century European visitors, to whom money was for the most part hard metal with pre-established values adjustable only by the state, this was a particularly foreign concept of currency.

The legends and myths surrounding Yapese *rai* are varied. Their origin is known only through oral history, which has been collected by foreigners, translated and often adapted to the theory of the writer. This license will become apparent in light of other accounts when the origin question is discussed in a later section. Likewise, there are many faulty impressions written into numismatic accounts of Yapese *rai*. One has to know the social customs in order to understand the monetary system. Unqualified statements have often led to oversimplification. An early twentieth-century anthropologist, Wilhelm Müller, established a relative date for the beginning of stone money at 200 years before his writing.² He established this by asking his informants for the names of all Yapese chiefs from the time of the earliest known stone money to that of his own day and assuming a certain number of years to a generation, in this case

to that of a chief. More current writers, in quoting Müller, have rewritten his statement and inferred that, indeed, some stones on Yap are 200 years old. This writer’s experience of observing court cases, wherein the lineage of the islanders was given, leads her to believe that this approach may not necessarily have been correct. The original dating was based on mathematical theory, but retelling has completely altered the original statement.

Early foreign investigators have placed exchange values on stones, which for years thereafter have been quoted as though a part of the definition of *rai*. Incorrect information is due, in part, to the fact that entry to the area was restricted by foreign powers for the greater part of our century. Accurate information has been so difficult to obtain that in 1966 Einzig was forced to cite as “up-to-date” data supplied by an informant who had visited Yap briefly 21 years earlier.³

There has been the “south sea allure” type of reporting in numismatic writings of the Pacific area. Grass skirts, loincloths, doughnut-shaped stones exchanged but seldom moved, the island of stone money: how often these descriptions appear. One visualizes the same retouched scene that Willard Price etched in the 1930s when describing an island queen going to market followed by slaves carrying the great stones.⁴ Though columnists continue to paint with the same rosy hues, the people of these islands are, in fact, going about their contemporary business of negotiating with Presidential appointees on the terms of their current and future political status. The palms of the Pacific today sway with the breezes of the modern world!

Within the span of a century the stones of Yap have had an alternating and varying place within the society. Their manufacture and use, as well as local value, were and are yet modified by the cultural invasion of the foreigners. It is within this context of change that the author has attempted to study stone money from a numismatic point of view.

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Accounts of Foreign Voyagers

Yap Is Sighted by the Foreigner

Unlike some emerging areas, such as those in Central Africa, Yap has been known to the Western World for over four centuries. Any available account of the Yapese and their early outside contacts are those of foreign observers. An account of early Pacific history by Wilhelm Müller, a German anthropologist who studied in Yap between 1908 and 1910, constitutes the accepted version of Yap's discovery.⁵ He recites that a Portuguese captain, Diego da Rocha, representing his own country and Spain, was trying to find a way to curb the Turkish blockade of the spice route. During 1525-1527, while sailing among the Molucca Islands, he was driven off course and sighted Yap. This account of the original discovery, however, is still obscure, and there is a dispute as to whether Rocha's "Islands of Sequeira" were either Yap or Ulithi.⁶ There is also a question relative to a second "discovery." Müller states that this was made by the first Spaniard to become associated with Yap, Alvaro Saavedra (or de Sayavedra). He set out from the harbor of Siguantanejo in New Spain on 31 October 1528 bound for the rich Moluccas in Indonesia. William Lessa of the University of California, Los Angeles, states that Saavedra stopped in the Northern Marshalls and on his second trip sighted islands in the Eastern Carolines.⁷ Müller mentions that Saavedra, on his way to the Philippines, had reached Ulithi in the Eastern Carolines, which he termed "Los Reyes". These early inquiries become even more confusing when one reads that Ruy Lopez de Villalobos, in January 1543, was met on the island of Fais with the greeting "*Buenos dias, metelotas.*" It was reported that he was also met either on Yap or Ulithi with the same greeting.⁸ Where knowledge of European languages may have been acquired is questionable considering that this occurred only 22 years after Magellan discovered the Marianas.⁹

Andrew Sharp, writing about the Pacific Islands, places 15 February 1626 as the date of the first clearly established European contact with Yap. This encounter was made by the Nassau Fleet under

Gheen Hugo Schapenham crossing the Pacific from New Spain to Guam. Sharp points out that the early sequence of two islands lying south of Guam near the latitude ten degrees north, could "only be Fais or Ulithi for the first island and Yap for the second." He concedes that this atoll probably was discovered earlier by the sixteenth-century visitors mentioned above.¹⁰

Early Accounts of *Rai*

In the late seventeenth and early eighteenth centuries, Yap was cited by Jesuit missionaries who had heard accounts of these islands from natives of other island groups.¹¹ One, Father Clain, S.J., working in the Philippines, met people who had drifted westward from Fais. Another missionary, Father Cantova, writing from Guam, was told of the western islands and their valuables by native visitors to Guam:

The same Indian tells me, which I find hard to believe that there are on his island silver mines, but they take only small quantities from it for lack of proper metal instruments for digging in the ground where they are found and that when they do find a piece of pure silver they try to round it off and make a present of it to the Lord of the Island; and that he has enough of it to serve him as a throne. . .¹²

The phrase "mines of silver" rings a strange note. The description of "rounding off" the pieces (i.e., final quarrying procedures) is interesting in light of stone disks as we know them, although the account indicates that the pieces collectively served as a throne.

More specific accounts of the Yapese did not appear until the nineteenth century when various powerful countries sent expeditions to the Pacific. In the early portion of that century several accounts testify to the existence of the stone disks. Little comment, however, is given to the economic phenomenon which accompanies the stones. It is interesting to look at the various early accounts in order to assess the changing place and values of the stones within the

local culture. All, of course, are presented from the foreigner's view.

In the early 1800s, Otto von Kotzebue, sailing for the czar of Russia, stopped in the Carolines. In one of his journals of the trip, a reference is made to the stone disks:

Eap [Yap] produces whet-stones, which the low easterly islands obtain from thence. They are a kinder gift of nature than the silver, Cantova, on the testimony of the native, Cayal, ascribes to this island. Kadu has explained to us this tradition. A white stone is found in the mountains of Eap, to which the chiefs have an exclusive right; their seats of honor are made of it. One block forms the seat, and the other the back. Kadu has seen this stone; it is neither silver nor metal. A yellow stone has the same honour in Pelli (the Pelew islands).¹³

He later mentions that "in Wilson's voyage, the seat of a chief [of Palau] was carried away as a military trophy."¹⁴ The writings of Adelbert von Chamisso, the naturalist who sailed with Kotzebue and who wrote volume three of the Kotzebue journals of the voyage, contain the same statement.¹⁵ Their accounts are extremely confusing, for "whet-stone," it would seem, could only refer to the stone money disks; yet these publications, as did Cantova's, immediately proceed to a brief discussion of the chiefs' seats of honor. Both of these types of stone, the disks (money) and the slabs (seats of honor), are now found placed about the *failu* or men's houses on Yap. One wonders if the connection by the early travelers was due to some misunderstanding or if there is a relationship. A booklet published by the Office of the District Administrator, Yap, in 1966 speaks of these two types of stone monuments and links them together. When mentioning "some Yapese taboos" the booklet notes:

It is forbidden to sit or stand on top of the stone money that stands upright or to sit on the stones which are around the platform of the houses and are used for back rests.¹⁶

One also questions from where did Kotzebue and Chamisso, or their native informants understand the stone to originate? Did the stone used for the "whet-stones" come from the mountains of Yap? They mention Palau, but not as the source of the stone, as is indicated by later observers.

Twenty years after Kotzebue's trip, Captain Dumont D'Urville visited these Pacific islands. He mentioned "cylinders" in reference to the people of "Pillelew." In the January 1839 entry of his journal, he states:

I exchanged with the natives some objects of their industry, like boxes, combs of bone, cylinders of lime, a platter of clay and a grand dish designed for their food. ¹⁷

The "cylinders of lime" could possibly refer to stone disks, but in the possession of Palauans, not Yapese. The description is broad, however, and more than likely refers to a tool such as a breadfruit pounder.

By the middle of the century European traders had descended upon the Carolines. Captain Andrew Cheyne, making his third voyage in the brig *Naiad* sailed through various island groups, intending to establish depots for tropical produce. With Cheyne came all the hatred and disease so often associated with the Pacific traders.¹⁸ Although by the time of this voyage Palau was well known to explorers and traders, Cheyne considered his visit to Yap to be a relatively early foreign contact. Dorothy Shineberg, editor of his papers, states that he was probably correct in this assumption.¹⁹ Certainly he was one of the first to make more than a few passing remarks about the island. His journal entry for 23 August 1843 reads:

At 9 A.M., the premier and chiefs of Tomal [Yap] came on board to receive their present, sent by Abba Thule [one of the chiefs of Palau], for their king, which consisted of nothing more or less than a round stone, with a hole in the centre, similar to a small upper millstone. These stones are very rare, and consequently highly prized, being only found in the mountains of the Pallou Islands.²⁰

Upon welcoming them, the head of the Palauan delegation, whom Cheyne had brought with him, said to the chiefs of Yap:

I am the bearer of a message to you from the great and powerful Abba Thule King of Koroar. The message is this: —Abba Thule has sent us with this English ship as interpreters to your village for the purpose of bartering with you for a cargo of biche de mer [sic]. He also placed in our charge this present of money, which we now deliver to you, and request you will present it to your king as a token of friendship from Abba Thule.²¹

The so-called "Prime Minister" in thanking the Palauans was reported to have said:

We have heard the message you have brought from your king, accompanying this present of money and our answer is this: —We accept of your present, and desire you to convey our thanks to the good Abba Thule for this token of his regard, and also for sending this English ship to our island. This is the first ship of that nation which has ever anchored in our harbour, and we shall use our influence with our people to collect a cargo of biche de mer for her. ²²

The trader responded:

I have cautioned my crew not to take any thing from any of your subjects without paying them for it; and should I find them acting contrary to my orders, I shall most assuredly punish them; and I therefore hope that you will give your natives a similar caution so that nothing may intervene to mar our friendly intercourse.²³

He then adds that he "handed them a present for their King."²⁴ and told his men that they must "pay" the natives for anything they took. One wonders what kind of payment he expected the men to use. Cheyne's ship was under taboo for one month and he did not go ashore until 22 September 1843.²⁵ He was an intelligent and painstaking observer, who described the council square, the large council house, the dress, canoes, weapons, food and the Yapese habit of using betel nut.²⁶ Yet despite all this he never mentioned seeing pieces of stone money about the council houses or in the homes or anywhere on the island.²⁷ If they were in evidence, then as now, one cannot help but question why they were not included in his many meticulous observations.

He does describe having been conducted "to the council square in the center of the village where all the chiefs meet, when discussing the affairs of the tribe."²⁸ Council square is identified in a footnote to his diary by Dr. Saul Riesenbergh of the Smithsonian Institution, who described it as "a slightly raised and paved area, with upright slabs of stone which were the designated seats for chiefs at meetings," and remarks that Cheyne indicated that "women were not allowed to set foot on this elevated area."²⁹ Yet Cheyne himself did not mention the stone slabs and used the word "millstone" only in reference to the gift he brought from Palau.

Alfred Tetens, a German trader and himself a significant figure in Pacific history, became Cheyne's agent and partner. Tetens thereby assumed sole command of Cheyne's ship, *Acis*, in its enterprises with Palau and Yap.³⁰ It is in Tetens' writings³¹ that one finds some of the first descriptions of the Yapese going to Palau to quarry and bring back the stone disks to Yap. Up to this point the available accounts have only attested more or less to the existence of the stones. The Jesuits heard about the custom. Kotzebue and Chamisso reported that the stones were obtained by "the low eastern islands" from Yap. Dumont D'Urville may have obtained one in trading with the Palauans. Cheyne was sent with one from Palau (which he believed to be the only source of the stone) in order to give it as a gift on Yap. The form, however, was certainly not unknown by the Yapese since Cheyne goes into detail about the men of another village being disappointed that his vessel did not come there for they very much wanted the gift which was sent by Abba Thule.³² It is with Cheyne's agent, Alfred Tetens, and then in all following accounts that the tradition of the stones

being quarried on Palau by the Yapese and carried from there to Yap is told and retold. Tetens' memoirs from 1862-1863 state:

My friendship with Abba Thule was of the greatest importance to me; for although Yap is hostile to Palau, the people of Yap had to visit Palau for the preparation of the great stones which serve them as money, and for obtaining the consent of the king to carry them away.³³

In late 1865 while sailing for the Hamburg firm of Johann Caesar Godeffroy, Tetens recorded in his journal:

There were also passengers on board the *Vesta*. These were ten natives of Yap who wished to return home with the big stones they had cut on Palau and which are used as money and are considered of great value. For small change large shells of mother-of-pearl are used. The large coins cut out of glistening white stone have the shape of a big Swiss cheese; in the middle is a hole as big as a fist through which the beam for carrying them is passed. Only a limited amount of this coinage may be made at one time, thus assuring a controlled financial system.³⁴

The Pivot of Change

It is from the writings of Tetens and the observers of this period and those who were there after this time that one senses a turning point in the political position of Yap vis-à-vis Palau. Before the great influx of European traders, there are various accounts of a large circle of control wielded by Yap over other island groups. William Lessa writes:

There is ample early documentation to illustrate that as part of this tributary system the natives for about 700 miles east of Yap annually arrived in great fleets to bring tribute and carry on trade.³⁵

He states that Father Cantova said, "These islands (Ulithi) like so many others of this archipelago are subjects of the king of Yap."³⁶ Frederick William Christian, an Englishman visiting in the Caroline Islands in the 1890s, knew of this tradition and said, "The natives on Ulithi or Mackenzie group (northward of Yap) from ancient times were subject to Yap. They came down every February to pay their tribute."³⁷ Father Salesius, a missionary who was in Yap around the turn of the century, told of the canoes from the East that came to trade on Yap and brought the tribute for the chief of Gatschabar (in Yap).³⁸ A few short years later, Arno Senfft, a German observer studying on Yap, said of the custom, "Until a few decades ago, the chief of Gatschabar (in Yap) of that day traveled to all his tributary islands, took with him some representatives from each of them. . . ." ³⁹

The tribute was brought from the eastern low islands to the high island of Yap. The Yapese power was, in part, due to their feats of black magic. In the early nineteenth century, Kotzebue spoke of the threats of storms with which the Yapese terrorized their neighbors.⁴⁰ Tetens observed, "Yap owes its dominion over these islands primarily to religious, mythological conceptions and fears."⁴¹ Lessa maintains that magic was the real threat wielded by the Yapese.⁴² With this they subjugated those who fearfully brought tribute from the east.

Contact, at least in trade, existed directly or indirectly between Yap and Palau to the west. Kotzebue spoke of the trade between the islands as the "main spring of navigation," and stated that the curcuma root (turmeric) was "in great abundance at Eap."⁴³ This root "which is rasped to a powder, forms a considerable branch of the trade of Eap."⁴⁴ Palau is then mentioned in this system of trade by Kotzebue as the place where

the iron which the Europeans bring is exchanged for curcuma. On the south western group of islands they exchange stuffs for iron of which they are in want. A squadron of ten sail, five from Magemog and five from Eap.⁴⁵

Yap had curcuma and Palau the European iron. The Yapese from ancient times maintained suzerainty over their eastern neighbors probably, as Lessa pointed out, by the threat of magic. In the 1860s and 1870s, with increased European contact, the amount of iron and then of fire arms available to Palauans multiplied. At the same time, accounts begin to appear of the growing importance of Palau, specifically of Koror, as a center of European trade. "The people of Koror, owing to the fact that foreign ships touched only at their port, had become more powerful than those of other districts of the Palaus. They possessed more weapons and hence had subdued their neighbors."⁴⁶ I have noted above that Tetens spoke of the hostility that existed between Yap and Palau. As centers of their individual domains they were also, no doubt, rivals. In his statement, Tetens implied that Palau had the upper hand and the Yapese had to obtain consent and permission to quarry the stone disks; but twenty years earlier Cheyne told of the King of Palau sending a present to Yap. It would appear, therefore, that political fortunes had changed, wherein the Yapese not only had to obtain the consent of the people of Palau to quarry stones, but now also were forced to perform menial tasks for their Palauan hosts. In the last quar-

ter of the nineteenth century, it was said that when Yapese strangers came in canoes to Palau they were

treated disdainfully, because, other than personal ability, they brought nothing with them but hunger. They were permitted to go to the uninhabited Koheals (coral islands south of Babeldaob) and hammer out their Argonite money, and for occasional food offered them they were required to perform services, which were willingly rendered by the enterprising sons of Yap who were unsure of themselves on foreign soil. They gathered firewood, carried water, built fish-weirs, and acted as sooth sayers, doctors and conjurers.⁴⁷

In 1903 Arno Senfft wrote:

The broad, paved street of the island of Koror in Palau was not constructed by the inhabitants of Koror but by Yapese as payment for permission to quarry in order to manufacture money.⁴⁸

This is a far different Yapese than the one portrayed by the words of Cheyne and Tetens. The statement that the Yapese were unsure of themselves on foreign soil also seems to be in opposition to what early writers said of Yapese trade, navigational abilities, and conquests.

The Foreigners Come to Stay

Europeans during the mid-nineteenth century moved throughout the Pacific, always in search of marketable commodities, often collecting scientific data on their way, and providing national claims for later colonial expansion. Therefore, foreign ships in Yap harbor were not unknown before the arrival of Cheyne and Tetens, though they were few.⁴⁹ In the last quarter of the century, however, strangers came in greater numbers. Their influence soon altered the trade and economy in a most dramatic way. In the 1860s Tetens mentioned other Europeans in the islands: Captain Woodin, for example, who is also named by the visiting scientist, Dr. Karl Semper.⁵⁰ Jan S. Kubary, a Pole who had been employed by the Godeffroy firm of Hamburg and who lived first on Palau and later on Ponape, made visits to Yap. He first came in 1870.⁵¹ This untrained but skillful scientist observed the Yapese money forms and wrote of the stone disks, of their transport, and their value both in local and European terms. The Godeffroy family provided such men with their means of support and established a museum for their collections and a journal for publication of their observations. The smaller and less influential Hershheim trading company, also of Hamburg, established a branch on Yap in 1873,⁵² with Robert Friedlander stationed there as

its agent.⁵³ This firm took over the Godeffroy interests in the Pacific when those pioneer financiers declared bankruptcy in 1879.⁵⁴ In the 1880s, a traveling British colonial officer wrote of “a native of Scotland named Wylie” as well as the British subject R. I. Abbott and “the Americans Henderson and Captain Holcomb.”⁵⁵ One of the largest of the German firms dealing in the Pacific trade, the Deutsche Handels-und Plantagen-Gesellschaft, also operated a station on Yap in 1885.⁵⁶ This array of German companies brought men of varying talents, all of whom helped to establish a German claim in the Carolines. Few, though, made any great inroad into the profitable copra business.⁵⁷

One of the Pacific’s more colorful characters, whose legend was enhanced in 1950 by the publication of a novel and subsequent production of a movie based on his life, was David Sean O’Keefe. This Irish-American adventurer’s unconventional tactics gave him the upper hand in the difficult business of collecting copra. He was paid with copra for transporting *rai* from the quarries to Yap, enabling the Yapese to obtain *rai* with much less risk of life or loss of stone. Captain O’Keefe obtained both power in the islands and wealth in the Hong Kong market through this device. For almost thirty years, from 1872 to 1901, the Yapese obtained passage on one of the Captain’s ships.⁵⁸ After hewing out the precious stone on Palau, they “hocked” it to O’Keefe for transport back to Yap and then later reclaimed it with prepared copra.

Not only did writers such as Kubary mention the presence of O’Keefe on Yap, but the Spanish government in defense of its ownership of the Carolines noted the “Englishman O’Keef” as a resident of the port of Yap.⁵⁹ J. R. LeHunte, traveling as the British Judicial Commissioner aboard the HMS *Espegle*, reported to the Acting High Commissioner for the Western Pacific at Fiji that O’Keefe was held in high regard by the natives of the islands. “We hear him spoken in terms of eulogy by the Pelew and Yap natives alike.”⁶⁰ Even his “bitterest enemy,” Walter Amery, said of him:

During the last year O’Keefe has done more copra trade than any other firm in Yap, owing to his having the stone money mainly in his hands, and his being kind to the natives. O’Keefe has done his best to ingratiate himself with the Yap people principally the chiefs.⁶¹

LeHunte, himself, observed:

Almost the whole trade of Yap and Pelew is in the hands of O’Keefe. He also has a monopoly for a nominal rental of the produce of St. David’s Island (claimed by the Dutch Governor) [Mapia Island, Indonesia] from which he exports about 220

tons of copra per annum. There being no local labour at that place, the inhabitants having been almost killed off by the natives of Ternate and New Guinea, O’Keefe employs in making copra there natives of Yap and also of Sansoral or Pulo Anna

The arrangement between the Yap natives and O’Keefe is that he conveys the money cutters to Pelew and with their cargoes back to Yap in consideration for which he obtains a proportionate number of labourers to go to St. David’s for the term of six months. Both the chiefs and the common people we examined expressed themselves perfectly with this arrangement which had been faithfully carried out by both sides for a considerable time and is likely to continue as long as O’Keefe’s interest in St. David’s, and this demand for Pelew stone-money in Yap, exists.⁶²

O’Keefe is also mentioned as one of the “two Americans engaged in the manufacture of stone money on Palau and the transporting of them to Yap” in an 1890 journal of a Japanese ship.⁶³ In 1895 upon his arrival on Yap, Christian also spoke of

Captain O’Keefe to whom I have a letter of introduction and who is to act as my banker and general business agent in these waters, is away on one of his long cruises in the Pelews and Central Carolines.⁶⁴

The captain’s business ventures based on the transportation of *rai* had been profitable as evidenced by his will. After the captain’s death, there was confusion as to whom should be heir to his fortunes. His first wife, Kathryn of Savannah, Georgia, employed the law firm of O’Byrne, Hartridge, Wright, and Brennan to secure her claim to his fortune. Mr. Hartridge of this firm made several trips to Yap on her behalf.⁶⁵ According to O’Keefe’s will of 1890, he left his estate to his second wife, Charlotte, whom he had married without benefit of prior divorce. Charlotte, alone, was to have received an annuity of one hundred pounds sterling.⁶⁶ The conversion at that time was approximately five dollars to one pound sterling. Five hundred dollars was a good yearly income, above the average annual earnings for workers in all United States industries.⁶⁷ Kathryn’s claim, however, was upheld by the German courts on Yap and the heirs then maintained the O’Keefe interest in copra, transferring the business to a German trading company. With the advent of World War I, though, Japan seized control of the property.⁶⁸ As late as 1923, O’Keefe’s wife, Charlotte, was reported “to live on the island of Tarang in the harbor of Yap where his trading station was.”⁶⁹ His daughter, Mrs. Alfred Scott, was then living on the island of Dunig. It is an understatement to say that this colorful Captain O’Keefe changed the economy and customs of Yap. Contrary to Paul Einzig’s statement, O’Keefe’s

contribution depreciated the cultural value of *rai*, by making possible the quarrying of more and larger stones.⁷⁰ The increased availability and frequency of transportation that his business afforded gave the individual Yapese a chance for private ownership, thus disrupting the traditional economic pattern of dissemination of holdings from the apex to the wider base of the society.

Over German protests, which were supported by Great Britain, Spain officially received title to the Carolines by Papal confirmation in December 1885.⁷¹ The Spanish flag flew until 1899 when Spain accepted Germany's offer to purchase the area. Once again German traders hoisted their own flag. German

officials exercised more local control than had Spain, and their strict regulations somewhat altered the local habits. The Germans brought scientists who studied the island peoples and cultures in depth and left the most extensive record of stone money. During this period Japanese traders began to appear, and at the beginning of World War I (1914) when Germany was expelled, Japan already controlled commerce. Remaining competition was quickly eradicated and until the end of the World War II the islands served as an integral portion of Japan, herself. With the end of hostilities in 1945, the United States assumed the administration of the area as a United Nations Trust Territory.

The Maze of Scientific Accounts

Descriptions of the Stones

Scientists who came or wrote about Yap used the local name for the stone money disks, but many different phonetic forms occurred. The Germans seemed to prefer *fā*. The Englishman Frederick W. Christian and the American William H. Furness, a Philadelphian who lived on Yap for a year, spelled the word *fe* and *fei*, respectively. Müller explained that the term “*rai*,” which he had heard in connection with the stone money, was the word used for the stone material, aragonite.⁷² The current explanation is that there were two designations for the stones. The people in the southern and south central parts of Yap once used the word *fei*, while those of the northeastern and northern regions called stone money “*rai*.”⁷³ The term *fei* is no longer used by the Yapese, as *fei* may also mean “faces” in the outer islands of the Yap administrative district.⁷⁴ Thus, “*rai*” is now the accepted term in Yap proper and in contact with the outside world.

In reading descriptions of *rai* one often finds the comparison with a millstone. As previously mentioned, Cheyne equated the piece brought from Palau as being similar to a “small upper millstone.” Tetens and Kubary 30 years later observed that the size varied from that “of a Swiss cheese up to that of a millstone.”⁷⁵ Russell Robertson, speaking from notes taken aboard the British schooner *Rupak*, which left Singapore in 1875, said that the money of the “Uap group consisted of larger worked pieces in the shape of a millstone.”⁷⁶

In trying to discover what these expressions of size might have meant to the nineteenth-century Europeans mentioned above, the writer consulted Mr. George Terry Sharrer of the Department of Industries, Smithsonian Institution. He informed me that in the Smithsonian collection the smallest hand-operated millstone measures 25 centimeters (10 in) in diameter and that an average stone would be about 91 centimeters (3 ft). I then talked to Mr. Carlos Estrada of the internationally known gourmet Wine and Cheese Shop of Georgetown, Washington, D. C.,

who told me that appenzeller Swiss cheese made in Appenzeller, St. Gall, and Zurich, Switzerland, measures about 53 or 56 centimeters (21 or 22 in) in diameter. This variety probably would have been better known to a German than would the other significant variety, emmenthal Swiss cheese, the average of which would measure 1 meter (39 in).

Foreigners reported that *rai* was measured by the Yapese in terms of fathoms (the outstretched arms) or spans (length of the outstretched fingers). The smallest units were sometimes determined by the width of the finger.⁷⁷ Kubary spoke of a three-span piece, which represented a considerable worth.⁷⁸ Müller in writing of the Yapese caste system found that among the many restrictions imposed upon the low caste or tribute payers was that they could not own stone money of more than four spans.⁷⁹ Senfft said that this caste at that time represented about twenty per cent of the population.⁸⁰ The *rai* brought from Palau to Yap in the Yapese canoes and/or rafts could not have exceeded eight spans at the most.⁸¹ It is currently said on Yap that the largest pieces were not brought on rafts.⁸² The large *rai* seen today on Yap and in many museums outside Yap are ones that were transported by foreign-built ships. Tetens, speaking of the Yapese who returned from Palau aboard his *Vesta*, said that the 10 natives had spent a long time on Palau in order to hew out the stone money and that they had 20 large pieces. He mentioned that the “taler sized pieces of the same kind of stone . . . serve as lesser money.”⁸³ It is after the time of O’Keefe that the many accounts of the extremely large *rai* appear. One must remember, however, that the coming of O’Keefe also coincided with the arrival of a number of Europeans. LeHunte noted in his report:

Equally remarkable . . . is the native money of Yap, which is all procured from the neighborhood of Koror (Abba Thule for political reasons retaining a monopoly of the supply). These pieces of money are disks of aragonite, a stone in appearance, like large crystals of quartz. I am not exaggerating the truth or trespassing on the bounds of humour proper to an official report when I say that an average sized grindstone is smaller than an average sized piece of Yap money (called a

“dollar”) and that a millstone is not an extravagant comparison. We found no less than a hundred Yap natives at Pelew occupied in cutting these stones and preparing them for transport to Yap. Many exceeded six feet in diameter and were proportionally thick, having a large hole in the centre through which a log of wood is passed and this when laid across two canoes is sufficient to support the stone in transit. We had information of one piece, which we carried to Yap, being nine feet four inches in diameter and weighed four and one half tons. These extraordinary stones are set up in front of the owner’s house, his importance and wealth being betokened by the number of “dollars” he can set up.⁸⁴

The same year R. S. Swanston, traveling in the area of Yap, wrote in his journal for 23 March 1883:

Their currency consists of pearl shells which are all imported, [and] a quartzose tshist [?] stone obtained in Pellou which is cut out by the natives with great labour into circular pieces resembling great stones from two to six feet [.6 to 1.8 m] in diameter and from three to six inches [7.6 to 15 cm] on the edge and five and eight inches [13 and 20 cm] in the centre through which a hole about four inches [10 cm] in diameter is cut some are semi-transparent and fairly smooth .⁸⁵

Escudé y Bartolí, briefly noted in 1885 that the stone pieces were “worked into diverse large sizes.”⁸⁶ The same year a Spanish countryman, Butron y de la Sêrna, was more specific in quoting 20 centimeters to one meter as the size of the “millstones.”⁸⁷ A Russian visitor to the tropics, Miklucho-Maclay, wrote in 1878 that the millstones vary from one to seven feet [.3 to 2.1 m] in diameter and weigh up to a couple of tons.⁸⁸ Christian in the 1890s reports that the “medium of exchange in Yap, stone money, consists of limestone or aragonite wheels varying from six to eight inches [15 to 20 cm] to twelve feet [3.6 m] in diameter.”⁸⁹ Otto Finsch writing around the turn of the century quotes Miklucho-Maclay and repeats the one to seven foot [.3 to 2.1 m] measurement but alters Miklucho-Maclay’s weight designation by saying that the pieces “in the form of a millstone” may weigh up to one thousand pounds [453 kg].⁹⁰ Volkens, who was on Yap around 1900, described the “fa [as] ranging in size from palm-sized pieces to those that look like gigantic millstones reaching at maximum three meters in diameter, which weigh ten or more centners”⁹¹ Salesius, a Catholic priest working in Yap around 1900, recorded that “the circumference of the stones varied between the size of a thaler or palm of a hand to that of large millstones one to one and a half meters and more in diameter.”⁹²

It would seem from the above that foreign observers often used their own judgment as an instrument of measurement. We see a similar approach taken when foreigners discuss the value of *rai*. Otto Lütje, while

compiling his dissertation in 1906 and perhaps using some of the sources quoted above, said the “millstones” measured one half to two meters and the “value was established by the size and way of production.”⁹³ The implication, which continues even today, is that the larger the stone, the greater its value. The New York market also seems to establish price by the size rather than historical data.⁹⁴ Perhaps this is because size is a known factor! Akira Matsumura wrote, during the Japanese occupation, that the stone money wheels were usually 30 to 55 centimeters in diameter, though some were found that measured 90 centimeters to 1.20 meters. “In rare cases, the diameter reaches 3.50 meters.” He mentioned the two extremes: a piece by the roadside near Tomil, which measured 1.93 meters, and one that he obtained with a diameter of 7.3 centimeters.⁹⁵

Quarrying and Shipping Practices

Quarrying of the stones must have been an almost superhuman task. A Catholic priest reported in 1900 that a local Yapese legend had those in Hell condemned to breaking stones on Palau.⁹⁶ Whether this was a local understanding of afterlife or whether the Christian foreigners put the money makers in this light in order to illustrate their theological point, I am not sure. At any rate, to attack a stone mountain of Palau with any kind of hand tool would seem to be the most difficult of tasks. This may partially account for the earlier pieces being small. The Yapese desire for the foreign iron available on Palau, which we have discussed, could in part be attributed to this need.

Yapese men originally went to Palau in canoes. They were experienced sailors and able navigators, though the trip itself involved the risk of life. The distance from Yap to Palau is approximately 402 kilometers (250 miles). In 1865, Tetens reported ten men returning to Yap on his ship. Presumably they had initially come to Palau via canoe.

Otto Finsch reported that in 1882 Kubary saw four hundred men in the quarries on Koror.⁹⁷ Müller says Kubary found 400 quarries—not four hundred men, but this would seem unlikely.⁹⁸ Originally the men who went to quarry the money went with the chief’s permission. When the stones were returned to Yap they were distributed by the chief who retained the larger ones and two-fifths of the smaller ones for himself.⁹⁹ This allotment is not unlike the chief’s

share in copra production found in some islands even today. In 1875 Robertson noted:

Until recently the natives of Uap visit (the Pellews) in canoes. Recently, however, the number of European vessels trading to these islands has been greater than formerly and passages are readily granted to islanders to and from Uap to the Pellews where they dig out and fashion what serves them as currency.¹⁰⁰

At the time of Müller's writing, each Yapese "went individually or sent his bondsman for him."¹⁰¹ With the ready availability of foreign ships any man could seek his own passage and hew out his own stone money.

Some vestiges of former regal privileges extended into the twentieth century. The history of the large piece owned and exhibited by the Department of Anthropology of the Smithsonian Institution records restraints imposed upon the commoner. This piece was quarried by Mr. You of Kaday while he and Chief Rangnibay of Tolpong were on Palau Island at the money quarry:

At that time only one small German steamship was available to haul money. A system of priorities was in effect which gave first shipping priority to high-ranking Yapese, relegating the rank and file to second place. Quite often the latter never got their money shipped.¹⁰²

Rai were often given individual names. Inez De Beauclair, an anthropologist who lived on Yap from March 1961 to January 1962, stated that she found a name might be that of the chief who had given permission to sail to Palau or that of the canoe in which the piece had been shipped. She also mentioned that the name of the maker might be used if he died during the work in Palau or perished at sea.¹⁰³ Franz Hershheim, Consul of the Marshalls who travelled throughout Micronesia, wrote in 1884 that the older stones had engraved on them the "names" of those who quarried and shipped the piece to Yap.¹⁰⁴ I have found no evidence elsewhere of this custom and am not aware of stones that have writings on them. Einzig, however, repeats Hershheim.¹⁰⁵ *Rai* named after commoners probably increased once Yapese began to go to Palau on their own rather than as a member of a sanctioned party. Obtaining money became a more individual affair and the ownership of this money also became more individual over the years.

The aragonite most in demand was the stone most difficult to work, which probably explains its value. "The streaked aragonite of a brownish chocolate color and the milky white stone with small crystals" was preferred.¹⁰⁶ The locations of the quarries were

often quite inaccessible so that men were required to build special frameworks. The best made stones reportedly are those which are thicker at the center hole and slope towards the rim.¹⁰⁷ There is one such unusually thick piece in the Department of Anthropology, National Museum of Natural History, Smithsonian Institution.¹⁰⁸ It is the darkest of the stones in that collection, almost chocolate brown in color. With the early stones the center hole was made by using a "shell adze (*gi*) and then drilled with a reef-stone used as a fire-drill."¹⁰⁹ De Beauclair says that the procedure required a great deal of time and thus "there are only a few pieces of that kind on the island."¹¹⁰ Relative to the overall number there were probably few made with these early tools. Before the use of iron the surface of the stones was polished with pumice.¹¹¹ The surface texture and appearance of *rai* vary greatly. The change in tools and techniques of quarrying over the years may explain these differences. The larger piece in the Division of Numismatics, National Museum of History and Technology, Smithsonian Institution, is polished to a very smooth, almost enamel-like surface. This is also true of those owned by the Tokyo National Museum, the Lannan Foundation, and the Pennsylvania University museum. The surfaces of almost all of these stones are also stepped or smoothed into two distinct planes. Usually both sides of a *rai* are similar in appearance, though the smaller of the two stones on exhibit in the National Museum of Natural History, has only one side stepped. Many large specimens, as those owned by the Chase Manhattan Bank in New York City, the large piece on exhibit in the National Museum of Natural History, the largest of the pieces in the Übersee-Museum, Bremen, and the one in the Svenska Handelsbanken in Stockholm, are extremely rough and porous in surface appearance and are not stepped. A distinctive feature of the Leiden stone is a groove around the lip of the center. One example held by the Department of Anthropology, National Museum of Natural History, has rough, whitish marks on the surface as if inscribed by an iron file.¹¹² This piece is extremely dark in color, verging on brown, and also has a sparkling appearance. The rough, porous stones tend towards the creamy colors and are dull in finish.

Müller found that before the days when the foreigners' transportation was utilized, the stones were drifted out to sea on large bamboo rafts and in a matter of days were picked up by the canoes for towing to Yap.¹¹³ If the canoe and raft arrived

home, the large pieces had to be deposited at a given place, usually the *failu* or men's house. A story first told by William Furness reported a large *rai* on Yap which was completely submerged under water, yet the ownership and purchasing power was well known in the community.¹¹⁴ Most matters are common knowledge and secrets among local people are rare; thus theft of *rai* is relatively unknown.

One sometimes hears in the islands that the stones from Guam are more valuable than those from Palau because of the distance and hardship in transporting them.¹¹⁵ Müller mentions that O'Keefe brought some aragonite from Guam. The fact that such were brought in European ships without risk of life and at this late date would deflate the value of the Guam stones. De Beauclair states that only a few pieces were quarried on Guam and that the German officials at the beginning of World War I sent the ship *Germania* to return the stone masons and their products to Yap.¹¹⁶ It is interesting that the large stone now exhibited by the Smithsonian Institution (*rai* number 100) was transported from Palau to Yap on this same ship.¹¹⁷

Fran Defngin, a Yapese District anthropologist, told the writer that the German administration in 1899 issued an order to cease the quarrying of stone money on Palau. This order, he stated, was aimed at O'Keefe in hopes of jeopardizing his monopoly and to help the German traders succeed in their business ventures on Yap. It was also hoped that the order in preventing the younger men from traveling outside of Yap would provide more able bodies for road building and other labor projects. Defngin stated that the acquisition of stones from Guam was initiated by O'Keefe to counteract the German hostility to the trade. This order must not have been a far-reaching one, for there are reports of the German ships carrying stones from Palau shortly thereafter.¹¹⁸

During the Japanese period, a survey was made showing that in 1929 there were 13,281 pieces of stone money in the possession of the natives of Yap.¹¹⁹ By 1965 De Beauclair estimated that this number had been reduced to about one-half. The greatest loss was caused by World War II when the stone disks were broken, smashed, used for anchors, or became part of a defense wall. Since that time strong typhoons and floods have also taken their toll and left many buried or covered by jungle.¹²⁰

Local Uses

Large pieces of *rai* are frequently found outside the *failu*. Furness said early in the century that "the smaller, more portable 'coins' were used for the purchase of fish from the *failu*."¹²¹ The money was deposited on the ground near the *failu* possibly several days before the fishermen returned. It remained until the owner received a gift of fish.¹²² Via the island type of "quiet communication" it would simply be known who left the money and to whom the fish would go. The stone disks became the property of the *failu*. The men of the *failu* also received stone money as remuneration for their work in building houses.¹²³

Though the stones might have been placed outside the men's house, they did not necessarily remain there as a "decorative bank." There seems to have been what one might term a "circulating economic system." *Rai* left the *failu* as payment for fishing equipment, canoes, for pigs or for a feast. Even festivals and dances, which constituted a great part of the Yapese life, called for the exchange of *rai*. Each affair involved an unspoken reciprocal agreement. The host chief and village that presented the *rai* would in time and in turn be the guests and recipients.¹²⁴

The arts also had a place within this monetary system. There is a record of the payment of four stones "each of which was so large that two men could just stretch around it" for the choreography of four separate dances.¹²⁵ Dance groups might even specify in their songs the name of what they desired in the way of gifts. The distribution of gifts was an integral part of many of the dances and, thus, of the festivals. Dance groups often competed for gifts of money.¹²⁶ Villages holding these affairs were expected to pay; but, as noted above, all such actions were reciprocal. Tradition demanded repayment.

Not only friend but also foe figured into the money giving. Robertson, traveling in 1875, observed that the principle uses of "the large stones in the shape of a mill stone" was for money to pay war indemnities and the funeral expenses of the chiefs.¹²⁷ Less than ten years later another traveler to Yap, Consul Hershheim, indicated that in war the stone would buy the assistance of a neutral tribe.¹²⁸ Such debts and payments would involve the village as a group via the chief.

Rai was used as compensation for the family of a *mispil* (the woman who resided in the *failu*).¹²⁹ Furness

was told that "well-finished *fei* about four feet [1.2 m] in diameter" was usually paid either to the parents of the *mispil* or to the chief of her village.¹³⁰ Christian, who must have been a real romantic, stated that "the reason that the stone wheels are piled at the foot of these structures (the *failu*) is that the *Mespil* may in looking upon them remember that they themselves were bought with great price, and must prove themselves worthy of the honour conferred on them."¹³¹ In expressing the many occasions for spending money that a Yapese experienced, Müller said "that even the fair sex in the clubhouses is not there for free."¹³² Money had to be spent for the *mispil* so the men of the *failu* first had to earn the money. If they went fishing the canoe in which they went cost money. Money was a driving force and this fact does not seem to have drastically changed over the years. In 1949, Francis Mahoney, evaluating the compelling forces of the island psychology, stated that all groups that were tested "placed a strong positive valuation on hard work and money-making."¹³³

Individual, as well as group, need for money was a real part of the Yapese life. Mahoney made the point in his paper that the islander was a conformist.¹³⁴ Particular things were expected of an individual and one needed stone money in order to conform. A man must be ornamented. He had to pay the tattooer and the maker of ornaments. His doctor, sorcerer, even priest would want monetary compensation. Senfft commented in the early part of the century that "whatever could be provided by his fellow countrymen, the Yapese pays for with Yap money."¹³⁵

There were times when one needed money for the purchase of food in this subsistence economy. Hershheim stated that a small *rai*, the size of a small plate and thick as an upper arm, would buy a family's monthly supply of fish, yams, and taro.¹³⁶ I imagine that this price was reported to Hershheim only as an example of the food which could be purchased. Certainly there were special occasions, such as festivals or funerals, which would necessitate the purchase of food in order to serve the many guests. Normally, though, a family would sustain itself from their own land and would not use the valuable *rai* for daily needs.

Marriage is often mentioned as a time when the stone money might be exchanged. I find little documentation of its use strictly as a "bride price." Kotzebue in 1821 stated:

Marriages are concluded without any solemnities. A man makes a present to the father of the girl, consisting of fruits, fish

and similar things. The value of the gift is according to the rank of the father of the bride.¹³⁷

Over 80 years later Müller reported that the betrothal gift to the father of the bridegroom consisted of *yar* or shell money. Again, however, there were reciprocal gifts. Several months after marriage the groom received 10 to 30 little pieces of stone money from his father-in-law. He kept two pieces for himself and gave the others to his relatives.¹³⁸ One must remember that in "giving" away the remaining *rai* he would be paying for the item which they would soon be "giving" him. The system is almost one of pre-payment.

As mentioned previously, death necessitated the redistribution of money. Müller reported that the brothers and father of the surviving spouse gave *rai* to other members of the family of the deceased. Again reciprocity was involved for the brothers and father received shell money in return.¹³⁹ As death came unannounced, often the family was not financially equipped to meet the burden. The borrowing of money that was distributed at the funeral came to have a special Yapese name.¹⁴⁰ *Rai* was needed as gifts for the invited guests. Senfft wrote that gifts might represent "a value of thousands of marks."¹⁴¹ The donors, however, in the course of time would be repaid for they would be guests at another funeral.

One of the last stones quarried in Palau was made in 1931 and transported in 1932. It was chipped out by one Gilimoon of Dechmur, Romil, and given to Figir of Luwech, Rull, "as payment for services." Gilimoon had been exiled from Yap and "this stone money enabled him to return to Yap from Angaur Island [Palau district]."¹⁴² Unfortunately the stone was later used by the Japanese for airport construction and thus destroyed.

In the examples above, we have observed occasions for the "giving" of stone money. It must be reiterated though that no piece of money had a definite, unalterable value. Buying power was always dependent upon the social position of the buyer and the receiver, as well as the occasion for use. One would have been expected "to pay a bit more to an old man or to a woman."¹⁴³ Kubary said that an exchange between chiefs would involve different values than if men of lesser standing had been involved.¹⁴⁴ Value was somewhat relative in such dealings, but it was never arbitrary. Custom and tradition established a firm criteria of exchange.

Foreign Interpretation of Value

When foreigners became involved in exchanges of *rai* with the Yapese, size became a dominant feature of valuation and questions of equivalence developed. Precedent for the exchange and thus the evaluation that had formerly been established suddenly had no bearing on the situation, for one of the parties had no knowledge or concern for the customary but unspoken tradition.

Captain Tetens, one of the earliest observers, did not place a definite trading price on the stones. Writing in the 1860s, he injected a qualifying note by saying that the stones were considered to be of "great value."¹⁴⁵

Kubary must have searched for a set limit by which to define the value of the stone. It appears that he was concerned with a translation of Yapese value into one that could be comprehended by the European. What he saw and learned had to be understood by the Godeffroy family and the cosmopolitan readers of their museum publications. During his first visit he stated that the stones were of "high value."¹⁴⁶ Later in 1889 he said, "even after O'Keefe the value of a stone measuring three hand spans remained constant, that is a stone that size was worth one pig."¹⁴⁷ In the next century this valuation remained the accepted foreign rate. Kubary further observed that a six foot [1.8 m] piece might be valued at one common big canoe or Palau necklace. Later in his paper, when discussing Yapese loan interest rates, he qualified his statements by observing that values in all exchanges depend upon who is the lender and who is the borrower.¹⁴⁸ He was not the first to note this phenomenon, for Kotzebue in 1821 commented on marriage presents: "The value of the gift is according to the rank of the father of the bride."¹⁴⁹

O'Keefe introduced the wholesale trade in transporting *rai*, which he rendered in exchange for marketable goods, such as copra and *bêche-de-mer*. He was not "buying" or "selling" with the stones. He only retained them until they were collected by their owners and he was paid for his service in copra.

The value placed on stone money pieces by the foreigners is the only indication we have today of the

foreign "rate of exchange" of these items. Sliding scales of local value have been discussed in the previous chapter. It is interesting to look at the foreign values placed on *rai* over the years.

In 1877, Captain Ravnkilde gave to the Danish National Museum a piece of stone money 29 by 24 centimeters. At that time the estimated value placed on the piece was ten Danish crowns.¹⁵⁰ One year later, Miklucho-Maclay, the Russian traveler who visited Yap, wrote that "many of the stone pieces have a value of many hundred dollars."¹⁵¹ The Museum für Völkerkunde at Frankfurt, Germany, has a piece that was collected by August Mockel, who visited Yap between 1879 and 1883. He commented:

The Yapese Islanders fetch the stone from Corrore and work it into discs of different size. These are then taken to Yap by raft and the big ones of high value are put up at the houses of their possessors. The stone in question, 28 cm. in diameter, represents a value of about 40 mark. The stone is aragonite. In Palau-language it is called *palony*.¹⁵²

Not all visitors, of course, placed a European value on *rai*. Carl Edward Meinicke, who published his *Die Inseln des Stillen Oceans* in 1876, only described them.¹⁵³ In 1885 Don Emilio Butron y de la Serna merely remarked that "money satisfies the king his tribute."¹⁵⁴ Christian was concerned with the "great price" paid for the *mispil* by the men of the *failu*.¹⁵⁵

Consul Hershheim wrote in the 1880s that a small stone might purchase a family's food for one month.¹⁵⁶ In 1897, when making a gift of a stone measuring 38 centimeters to the Museum für Völkerkunde in Berlin, he equated its value to that of "a piece of shell money of the value of DM10 [ten Deutsche mark]."¹⁵⁷

A piece measuring 24 centimeters was given to the Rijksmuseum voor Volkenkunde, Leiden, in 1896 by Mr. P.K.A. Meerkamp van Embden, Consul of the Netherlands in Manila. Remarks made at that time, perhaps by Mr. Meerkamp, in relation to the payment for the piece equate the value as that "of a sack of copra equalling an amount of ca. D.Fl. 1,50 [about one and one half Dutch florin]."¹⁵⁸

In 1903 Senfft spoke of *rai* in relation to burial rites. "Gifts represent the value of thousands of

marks.”¹⁵⁹ In the same year a piece of stone money was given by Dr. H. Hallier to the Hamburgisches Museum für Völkerkunde, Hamburg, Germany. The item was purchased from a Chief Ruipung for “about ten marks.”¹⁶⁰ This figure is the same as that used by Hershheim in placing a value on the Berlin piece mentioned above.

The Smithsonian Institution in 1908 paid \$43.50 to one Mr. Costenoble of Guam for a “collection of sling-stones, stone axes and stone mortars from the island of Guam and a perforated stone disk from Yap.”¹⁶¹ The 25.5 centimeter *rai* in the Department of Anthropology collection is the stone disk mentioned in this accession.

Furness said in 1910 a “three span fei ought to purchase fifty baskets of food or an 80 or 100 pound pig or 1,000 coconuts.”¹⁶² His estimate of the pig and the coconuts has since been repeated over and over again. The pig equivalent was first mentioned by Kubary; however, it must have been Furness who popularized it in America. The writers Paul Einzig and A. H. Quiggin repeat Furness almost forty years later.¹⁶³ In 1957, Edwin H. Bryan, while curator of the Bernice P. Bishop Museum in Honolulu quoted Furness almost word for word.¹⁶⁴

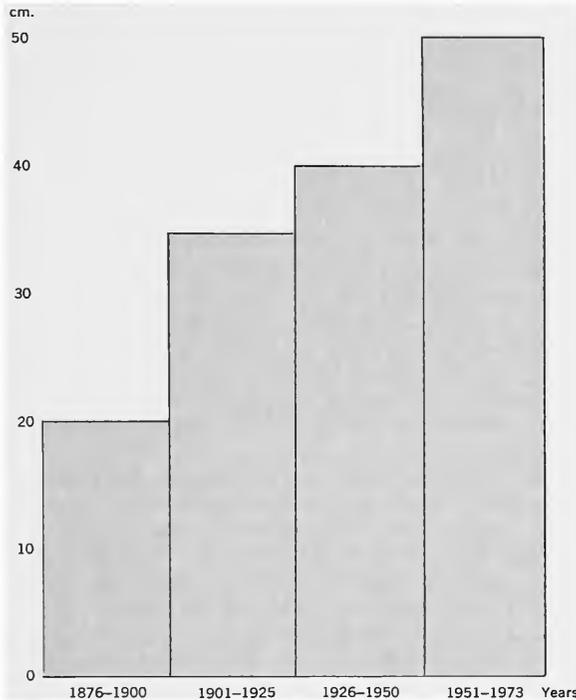
While writers for numismatic periodicals have tended to inscribe the “one *rai* equals one pig” equation into the folklore of the Pacific, Furness, himself, listed other equivalents. He said that a three span stone should purchase “a pearl shell measuring the length of the hand plus the width of three fingers up the wrist.”¹⁶⁵ A *rai* larger than three span might buy a fifty pound bag of rice, though Furness added that this was an exorbitant price! He had purchased a 50-centimeter *rai* for a short-handled axe.¹⁶⁶ As noted before, he suggested that 1000 coconuts might purchase a three span *rai*. For the reader’s information, it takes approximately three coconuts to make a pound of copra (6000 coconuts equal one ton of copra). The missionary, Father Salesius, who was working in Yap around 1900, cited that a ton of copra was reckoned at 120 to 260 marks depending on quality.¹⁶⁷ Furness’ 1000 coconuts would thus make a three hand span *rai* worth between 20 to 43 marks at that time. August Mockel’s 28-centimeter piece, now in the museum in Frankfurt, was also recorded in 1879–1883 as being worth about forty marks.¹⁶⁸ Depreciation occurred, for twenty years later the 22-centimeter piece in the Hamburg museum was purchased for “about ten marks.”¹⁶⁹ Müller, in 1908–1910, found that the “value of the *fä* gradually decreased because of con-

tinuous accumulation and better means of transport. A piece measuring one span was then worth three marks.”¹⁷⁰ In 1912 Richard Deeken wrote that a 20-centimeter piece (about one hand span) would be worth two marks.¹⁷¹ Müller’s assertion concerning decreased valuation is borne out by the declining values placed on similar sized *rai* found in European museum collections.

Akira Matsumura, whose work was published in 1918, wrote that he and his associates paid five yen on Yap for “a piece sixty-eight centimeters in diameter of fine quality and good shape.” In comparison an 85-centimeter piece, which was presented by a visiting Yapese chief to the Japanese Minister of the Navy in 1915, was said by the Yapese to be worth 500 yen.¹⁷² This piece is now in the anthropology collection of the University of Tokyo.¹⁷³

The equation of one *rai* being equal to one pig, which was first mentioned by Kubary and popularized by Furness, may be found in Japanese writings as well. Matsumura told that a piece measuring 68 centimeters that he purchased was “worth a pig weighing forty-five kg. [99.2 lbs.]”¹⁷⁴ Furness said his three span disk (the writer would estimate this to be approximately 51–57 cm) was worth a pig of 100 pounds.¹⁷⁵ Father Salesius around 1900 found that pigs were often given tender care by the women of Yap. He stated that they are rarely eaten by the Yapese people but often traded to the Europeans.¹⁷⁶ In 1937 the Japanese government issued an ordinance which paid 30 yen for a pig kept for breeding purposes. During that year only 158 yen were expended for that purpose on Yap, 70 of which went to Japanese nationals on the island.¹⁷⁷ It appears that it was more profitable for a Yapese to use a pig for trade than to collect the 30 yen from the government.

During the 1930s the Japanese imposed a rigid security on the islands, and reports of exchanges and purchases of the Yapese stone money by foreigners is extremely limited though one finds sales of the disks between museums. In 1931, the Staatliche Museum für Völkerkunde in Berlin sold three pieces of *rai* to The Chase Manhattan Bank in New York City.¹⁷⁸ Farran Zerbe, whose interest in primitive media of exchange is well known, was then curator of the Chase Manhattan collection. This New York museum currently reports possession of only two disks.¹⁷⁹ In 1935, a rather unreliable source reported a piece one foot [.3 m] in diameter being purchased by an American museum for 75 dollars.¹⁸⁰ The cost of the Chase



Average size of *rai* in collections outside of Yap (smallest single stone (#64) is 3.5 cm, collected on Yap before 1906; largest stone (#95) is 228.4 cm, removed from Yap in 1964).

Manhattan pieces from the Berlin museum had been well above this figure.¹⁸¹

It was also during the 1930s that another prominent collector of primitive media, H. D. Gibbs, obtained a

Yapese *rai* for his collection. Mr. Gibbs, then Director of the Pittsburgh Numismatic Museum, wrote to Pennsylvania Senator David A. Reed requesting his help in securing a *rai* with the assistance of the Japanese ambassador in Washington.¹⁸² The Japanese government, though involved in building fortifications in the Pacific at the time, wrote the senator in December 1933 that, "owing to the infrequency of steamer travel between Japan and Yap . . . it will take some time."¹⁸³ By February of the next year, however, Mr. Gibbs had his specimen, the ocean transportation cost having been paid by the Japanese Foreign Office in Tokyo.¹⁸⁴ The bill paid by the Pittsburgh Numismatic Museum to Endo and Kotachi, Inc., for clearing the disk through customs amounted to \$3.56.¹⁸⁵ This same piece was offered for sale in New York City in 1971 for 500 dollars.¹⁸⁶

During the period between the wars almost all effort in the Pacific area was militarily directed. It is miraculous that so much of the stone money escaped destruction. As noted before, many were used to pave Japanese airstrips or to construct sea walls or piers. After the hostilities of World War II, Yap became a part of the Trust Territory under United States administration. The United States Navy retained rigid security, which it continued to impose even after 1951 when the area was turned over to the Department of the Interior for administration. Collectors and tourists were not permitted entry into the Trust Territory; but many stone disks did leave the islands in the possession of American military and civil service personnel (see Table).

Local Interpretation of Value

A Judicial Account

The *rai* monetary system has been subjected to the influence of foreign monetary values, resulting in a conflict between traditional and modern concepts within the Yapese society. These changing concepts are exemplified in the landmark case known in Micronesia as Civil Action No. 25 (see Appendix 1).

The action commenced in the spring of 1960, when the National Bank of Detroit acquired a Yapese stone disk measuring 152.5 centimeters (5 ft) in diameter.¹⁸⁷ On 20 January 1961, a local civil action suit was filed with the District Court of Yap District, Trust Territory of the Pacific Islands. In this case, the plaintiff, Choo, charged that the defendant, Pong, had received 125 dollars for the sale of a stone to the National Bank of Detroit. That stone, Choo maintained, rightly belonged to him. Therefore, he demanded in compensation the total sum of 125 dollars or return of the same stone. On 10 April 1961, the Yap District Court requested that this action be transferred to the trial division of the Trust Territory High Court. This was done and the case became Civil Action No. 25 on the High Court docket. The court's pre-trial order provides an invaluable account of the history of this piece of *rai*.

The following portion of the history of the stone money is agreed upon.

- a. Urun and Tamangiro, from Af Village, in Tamil Municipality, went to the Palau Islands and obtained three pieces of stone money. They gave the larger piece to the people of Af Village. By agreement between them, Urun retained one of the smaller ones and Tamangiro the other smaller one. The piece in question in this action is the one retained by Urun in this division.
- b. Urun's house burned down and the people of Af Village helped him rebuild it. In payment of this assistance, Urun gave the stone money now in question to the people of Af Village.

During a "tam" celebration given by Af Village, the people of Dechumur Village put on a dance about people going on a trip and, in appreciation for this dance, the people of Af Village gave the stone money in question, among other things, to the people of Dechumur Village and the

stone money was removed to Dechumur Village and remained there until about January 15, 1960.

- d. Some people from Dechumur Village made a trip to Palau and brought more stone money of various sizes. The piece brought in on this trip by Tamag was the same size as that given by Af Village to Dechumur Village, and this piece brought in by Tamag was given to Af Village and the piece now in question given to Tamag in exchange for the one he brought in.
- e. Tamag gave the piece now in question to his brother Fazagol when the latter was about to build a house. Fazagol gave this stone money to Puguu in payment for some tin roofing for the house.
- f. On or about January 15, 1960, the defendant Pong, with a group of men gathered by him, removed the stone money in question from Dechumur Village over the protests of the plaintiff Choo who was present during part of the removal, protested that the stone money belonged to him, and told them not to remove it. Later, on Pong's authorization, the stone money was shipped to the Money Museum of the National Bank of Detroit, Michigan, in accordance with the agreement of sale with Pong under which he received \$125.00 for the stone money.¹⁸⁸

Choo, the plaintiff, claimed that the stone was given to him by Puguu as "gidigen," or a type of marriage gift, in return for Choo's guarantee to care for three children, which Choo's wife brought into his home at the time of their marriage. The defendant, Pong, claimed that Puguu had given the stone money in question to him in an exchange for alcohol, two pieces of shell money, and assistance. The Chief Justice of the High Court, E. P. Furber, ruled in favor of the plaintiff Choo and ordered that he be repaid by Pong. Judge Furber's decision reads in part:

1. Puguu's transfer of the stone money to Choo entirely cut off Puguu's rights in the stone money, and any effort he may have made thereafter either to transfer the stone money to the defendant Pong or to confirm or establish Pong's ownership thereof was of no legal effect.
2. Inasmuch as this stone money was given to Choo as "gidigen" under Yapese custom his rights in it are presumably held in common with certain of his relatives and not by him alone. It is believed, however, that, as against the defendant Pong, the plaintiff Choo is entitled to speak for his entire group and that Pong is accountable to Choo for the entire sum which he received for the stone money regardless of what obligations Choo may have to other members of his group.¹⁸⁹

This case, which was heard by the court in 1961, corroborates reports of several customs and uses of the stone money which were mentioned at the beginning of the century by Müller and others: joint ownership, the use of the stone as a type of promissory note, as payment for a dance, and as payment for material goods, i.e., the housing materials and beverages previously mentioned. Even though the court in its decisions cited that "under Yapese custom his rights in it are presumbaly held in common with certain of his relatives and not by him alone," Choo and Pong as individuals alone were involved in the suit. They claimed ownership for themselves. Pong alone was responsible for the imposed fee. This manner of thinking and wording, as evidenced in the trial records, indicates evolution of custom and practice.

The history of this same *rai* as told by the present owner, the National Bank of Detroit, is not the same as that found in the pre-trial order of the High Court of the Trust Territory. The supervisor of the Money Museum reports:

The stone was quarried in Babelthaupt Island, Palau, by an expedition led by a Yap named Falluwem, a member of the ranking Miniw household in the Village of Teb in the Tomil District of Yap Island. He was accompanied by low-caste laborers from Af Village. The expedition took place between 1875 and 1885. Upon his return to Yap, Falluwem presented the piece of Af Village as payment to his laborers. Shortly after, Af Village presented the *rai* to Dechumur Village in exchange for services, and Dechumur passed it on to a high-ranking chief named Gubgol. During the 1920s Gubgol gave it to a man from Talangth in exchange for building materials, who presented it to his daughter. Upon her death the *rai* passed to her surviving husband and children. All these transactions took place without moving the stone from its original location in Af Village, Tomil District.¹⁹⁰

The writer does not know why their historical records differ from those found in Civil Action Number 25.¹⁹¹

Transfer of Traditional Yapese Monies

The concept of a cash economy with set values has always been foreign to island society, where the importance of any given item often relates more to cultural and social factors. Even though the item is or was used as a medium of exchange, any concept of constant value must be carefully weighed. Adjustment to a certain monetary exchange equivalent is a learned process. In the case of Yap, with their accommodation

to the mark, the yen, and the dollar, this adjustment has taken place three times in our century.

In the 1960s, the Yapese leaders placed on their *rai* a value of 25 dollars per diameter foot and the National Bank of Detroit paid that price for their stone. In 1962 this was the price when the Smithsonian Institution negotiated the purchase of their largest stone now on exhibit in the National Museum of Natural History. Twenty-five dollars was an often quoted value in the islands in the 1950s and early 1960s. When the Trust Territory government attempted to settle land claims in the 1950s its offer was 25 dollars per acre per year for rental. Twenty-five dollars per coconut tree was that demanded by the islander in damage claims. "Twenty-five dollars per" was the convenient price in dealings with the foreigner. Local philosophy was one of "that price which worked for one item should work for others." This attitude towards foreign currency was noted early in the twentieth century by Salesius who wrote that when the German administration had forbidden the sale of alcoholic beverages but allowed the consumption on a few specific days, the islander paid for the beverage on these days with German coins. He had to save these coins and to do this he sold everything he had for hard cash:

then he would demand "one peso" or "two marks" for every trivial thing and would be astonished if one did not pay him for every little fish the equivalent of the weight in silver.¹⁹²

The Yapese often overpaid as well as over-demanded when bartering with the foreigners. Furness wrote of an extravagant deal where "Old Ronoboi paid twenty thousand coconuts for a cooking stove 'made in Germany' of thin sheet-iron."¹⁹³ At that time 20,000 coconuts would have brought approximately 420 to 910 marks.¹⁹⁴ Barter, of course, had always been known in the islands and as with local items the foreigners' imports slowly came to represent known values.¹⁹⁵ This trade, however, was apart from the real economy of the island. Salesius noted that a trade item such as copra "represents only an object of trade, not a piece of money with an ideal value, like stone and shell money with which to buy other things, but merely barter."¹⁹⁶ He felt:

It would be a mistake, however, to believe that pure commercial trade does not exist on Yap. On the contrary, it most certainly does, since there are various kinds of real money on Yap, i.e., objects that have no practical and use value apart from their value as a medium of exchange and thus are purely tender . . . as the famous "stone money". . .¹⁹⁷

The foreign governments only occasionally interfered with the Yapese media of exchange. Salesius recounts that the Germans early in their administration discovered that fines imposed upon the Yapese were of no consequence unless collected in *rai*. Demands for road repair went unheeded until the government took advantage of the native custom of transferring title of money without moving it. On certain *rai* they painted "B.A." (Berzirks-Amt or District Office) to indicate the government acquisition. As Salesius pointed out, "a show piece sometimes [became] an incriminating accuser."¹⁹⁸

Usually it was the islander who made the rapid adjustment to the new economy of the foreigner. A certain size stone quickly came to have the value of a certain number of German marks or Japanese yen or American dollars. Antiquity of use has had little to do with the island interpretation of custom.

The number of stones leaving Yap increased after restrictions upon aliens entering the area were lifted in 1963. The Yapese by then had had a generation of dealing with Americans and their economy. Many things combined to make the Yapese people aware of the worth of *rai* and the danger of mass exportation. Apparent interest of various foreign museums played a role in this. Even the influence of a fledgling museum in the Trust Territory was felt. These changing attitudes toward value were mentioned when the Smithsonian Institution was preparing to purchase the large *rai* that is now on exhibit. District Administrator Robert Halvorson wrote Dr. Saul Riesenberg of the Smithsonian:

The Council has discussed your request for both types of *rai*. There is no objection to providing both types, but they now believe they should get a better price for a pre-contact piece—\$2,500 per piece! I'm not sure where this idea came from. I specifically asked earlier when the price of \$25.00 per foot was set if size, history, or other differences warranted different rates.

At that time they seemed very decided that the rates should be the same for all. The inflationary price may have been inspired by a visit of two of our Council members to Koror where they saw two pieces of Palauan "money" in the museum, each of which somebody had tagged at \$5,000.¹⁹⁹

It was not until the fall of 1965 that the Yap Island Congress passed Resolution Number 10-65 (Appendix 2), levying a tax on the transfer of traditional Yapese monies. A transfer of ownership document had to be obtained if a citizen of the Trust Territory sold or gave any traditional Yapese monies to any business establishment or any person who was not a citizen of the Trust Territory. A 50 percent tax was levied on a sale and a 25 percent tax on the estimated value of a gift. This tax and the 500 dollar fine imposed on offenders put some teeth into an older Yapese law, which required only a transfer of ownership document.²⁰⁰ Though as one may note in the list of private owners (Table), there are many stones that left Yap that are not recorded in the District Administration's file of transfer or ownership. It has been the Yapese legislators themselves who have felt the need to tighten the process for alienation of the *rai*. The Yap Island Congress and the United States administration have at times both attempted to fix current selling prices of the stone disks. The Smithsonian Institution was quoted \$25.00 per foot in 1961.²⁰¹ In April 1965, the price was \$2.09 an inch.²⁰² The measurement scale but not the price had changed. In March 1968, the then District Administrator wrote that the Yap Island legislature in 1966 had set a price of \$3.75 per inch.²⁰³ The actual going price seems to have stabilized at \$3.50 per inch.²⁰⁴ This price represents the cost of a stone purchased from a Yapese on Yap by a foreigner. The value placed on *rai* by a foreigner outside of Yap is quite different as indicated by the New York market.²⁰⁵

And Now the Origin Question

The beginnings of stone money are wrapped in and enhanced by legend, the telling of which varies according to the preference and memory of the teller. The Yapese story of the origin of their *rai* credits a Yapese figure, Anagumang, with the discovery of the beautiful stone in the Palauan Islands.²⁰⁶ Christian was told that this “wise old man” after being tutored by the fairy mother, Le-gerem, took seven men with him on his sailing journey. Seven, Christian added, was the “perfect” number in Yapese tradition.²⁰⁷ (In the beginning of the nineteenth century Kotzebue was told that the number of Yapese divinities were fixed at seven.²⁰⁸) On the small island of Magaragar in southern Palau the Yapese reputedly found the new shining stone, which they worked in various shapes.²⁰⁹ After trying designs of a fish and of a crescent moon they worked a stone into the shape of the full moon. They then bored a hole through the middle and produced a wheel-like form which satisfied Anagumang and his patron, Le-gerem. The symbol of the moon and its stages are often present in Yapese stories.²¹⁰ According to legend the Yapese also took the pearl shell which they found in abundance to fashion *yar*, another medium of exchange, and the giant tridacna shell from whose hinge the valuable *ma* or huge ceremonial pestles were made.²¹¹

In attempting to arrive at a date for the earliest stones that are said to have been quarried on Yap, Müller asked the names of all of the chiefs of Talanie since the custom was initiated. He was told that the discovery was made under Givai. His informer then named the chiefs from the time of Givai to the then living chief, Rev, who was the seventh in line from the time of the first quarrying.²¹² Again the magic number “seven” appears. Stones and magic are often linked together in Yapese legend. The missionary, P. Sixtus Walleser, retells the Yapese legend of the original inhabitants of Yap who were half man—half *kan*. (German *geist*, which is spirit or ghost). “The big stones lying around testify to their presence. The bodies of these people were changed to these stones.”²¹³

Captain Cheyne, one of the early observers of the *rai*, indicated that the stone was similar to a small upper millstone. He made no reference in his rather

detailed journal to any large stones having been seen on Yap. Later investigators, however, do lead us to believe that the earliest stones were small. Kubary was of the opinion that the colored foreign beads of the Palauan monetary system had been known and used on Yap.²¹⁴ He believed that when the aragonite stone was found on Palau, the Yapese economically replaced the beads with the stones. He says “the earlier pieces (of stone) were smaller.”²¹⁵ Miklucho-Maclay, who was on Yap in 1876, spoke of necklaces of shell and stone, which were owned by chiefs.²¹⁶ Müller mentions that the Yapese people in the early part of the twentieth century had small specimens of *rai*, which were about 4 centimeters in diameter strung on cords.²¹⁷ He adds:

They are practically worthless today; however, they may explain the origin of stone money. The custom of stringing shell disks as objects of value may have been extended to aragonite disks which gradually, since new material was unlimited, hypertrophied to the present form.²¹⁸

In writing about media of exchange in the Pacific, Helmut Petri also spoke of the hypertrophied form that Yapese *rai* may have acquired. He believed that of the many forms found in Oceania, the stone money was the earliest. Mother-of-pearl, he added, also had archaic forms, while the mat and feather forms represent the younger types.²¹⁹

Fairly recent excavations on Yap did not reveal stone money artifacts per se. There were objects found, however, which seem to be related and to further indicate the possibility that the very early stones were quite small. W. W. and D. S. Gifford of the University of California discovered at one site a perforated bone disk at the depth of 121–182 centimeters (48–72 in) (carbon dated 176 A.D. \pm 250). While at the 60–76 centimeter (24–30 in) depth at the same site a disk of tridacna shell was unearthed (carbon dated 1856 A.D. 100+200, –100).²²⁰ Another unperforated disk of white stone was found at another site at a depth of 122–137 centimeters (48–54 in) (carbon dated 1636 A.D. \pm 200).²²¹ This piece measures 34 millimeters in diameter and varies in thickness from 3 millimeters on one edge to 5 millimeters on the opposite edge. The edge looked as if it “had been

chipped and then ground, at least a little bit."²²² A piece which Gifford referred to as "child's toy" or "toy money" was found in a fourth site at a depth of 60–76 centimeters (24–30 in) (carbon dated 1756 A.D. ± 200).²²³ Gifford states that such small pieces of calcite or aragonite could not definitely be classed as "money stone." They may actually be shell, he says, as the formation of calcite and aragonite occur in both inorganic and organic forms.²²⁴ One such piece measured about 112 millimeters.²²⁵

It is worth noting here that the progression of the size of some pieces coincides with the passing of years:

1636 (carbon date)	34 mm piece (phosphate).
1756 (carbon date)	112 mm piece (form of calcite).
1843	Piece brought with Cheyne, which was similar to a small upper millstone. Could be as small as Smithsonian millstone of 25–26 cm (10 in).
1862	Tetens' report of "twenty large pieces," larger than the "taler-sized" stones he says were used for "lesser money." German talers of 1860s (those of Saxony and of Prussia) measure about 3.2 cm. Earlier ones of the 1820s measure 3.6 cm.
1873	Tetens and Kubary's description that <i>rai</i> "vary in size from that of a Swiss cheese to a millstone." Average Appenzeller Swiss cheese measures 53–56 cm (21–22 in). Average millstone measures about 91 cm (3 ft).
Collected prior to 1899	Stones now in foreign museums not larger than 36.5 cm.
Collected after 1959	Stones now outside Yap that are larger than 1 m; exception: Bishop Museum, Hawaii, piece.

The Yapese themselves acknowledge that early pieces were small. Robert Halvorsen, while Yap District Administrator, said that, according to sources on Yap,

prior to western contact, Yapese canoes and rafts were bringing in no pieces larger than three and one half or four feet in diameter [1.06 or 1.2 m]. O'Keefe started quarrying pieces up to six feet [1.8 m] in diameter which was the maximum size he could get into his holds. Following O'Keefe's disappearance, a larger German trading vessel started bringing in the larger pieces found today.²²⁶

Halvorsen's statement was corroborated in a 1960 letter to Dr. Riesenbergh at the Smithsonian Institution by anthropologist David M. Schneider:

Hal is quite right. The "old" way was to work a fleet of canoes, sometimes two, sometimes six or so, and spend a good spell on Palau, quarrying, shaping, etc., and then making a

raft of the stones by putting bamboo poles through the holes and then building the raft around the stone so that the stone hung on the pole and its thin edge was a kind of keel in the water. Such stones were quite small by O'Keefe standards. Any stones over about four feet [1.2 m] across would certainly be recent, handled off large ships.²²⁷

The thought that the early stones were quite small presents the question of whether or not the stone money disks and shell money beads (*gau*), also used as a medium of exchange on Yap, have a direct connection. Did one or the other come first? Was one an outgrowth of the other? Several authors have pointed to the Far East as a possibility for the geographic origin of stone money.²²⁸ It would seem that at this point one can only say that a constant stream of cross-infusion must have existed between the shell ornamental medium of exchange and the stone ones. One finds the same vacillation between the two as relates to their values. It is never a clear "cut and dried" matter. As was pointed out earlier, the value depends not only on what one has, but also on who one is and with whom the exchange is made. If the thesis that the Yapese wielded a fearful weapon of magic and unexplainable power over their area is accepted, perhaps one will not object to the definition of an early connection between shell and stone as a transmutation of substances. Small disks of both shell and of stone are found. *Yar*, which is traditionally of pearl shell, is also made of stone. Müller describes one as a "piece of stone money in the shape of a pearl shell."²²⁹ The valued triangular pendant hanging from a small shell necklace is most often made of a prized pink-colored shell, sometimes of tortoise shell, and even of whale's tooth; but it has also been described as being made of stone.²³⁰

Perhaps we can illustrate the connection by the following diagram:

shells ← ————— → beads

If we accept Kubary's assertion that glass beads were present and acknowledge the fact that Gifford in his excavations found disks made of shells, we can add to the diagram:

beads ← ————— → shells ← ————— → stones

The importance that beads acquired in Palau can be credited to the great number of traders who reached there. Iron and glass appeared early in Palau. Yap, on the other hand, was more out of the way. If beads were known, the possibility of adding to the islands' fortune was not great in that area.

The idea of stone disks as a medium of exchange grew in isolation on Yap. The form of the earliest disks on Yap, be they shell or stone, appear to have exploded to gigantic proportions with the influx of the foreigners.

The growth of the custom of stone money on Yap is a story of a society in transition. The place of the disks in the early part of the nineteenth century seems to have been exclusive to the chiefs as reported by Kotzebue and others. In the 1840s, when Cheyne visited Yap, the stones were "very rare." The gift of one was enough to cause the chief of another district to become jealous. It has been reported by De Beauclair that there are few pieces of *rai* on Yap made by the early difficult process of quarrying with primitive tools. In 1865 Tetens said that "only a limited amount of this coinage may be made at one time, thus assuring a controlled financial system." In the last half of that century the arrival of the foreigners with ships for transportation and iron tools for quarrying greatly proliferated the custom. Stones were numerous and available and commoners made the trip to Palau for their own self interest. O'Keefe established trade based on his transportation of the stones.

In 1843, the stones were a scarce item. In 1929, a span of 86 years, the Japanese government counted 13,281 stones on the island. The population of Yap, interestingly enough, was 7808 in 1899, while in 1925 it had decreased to 4401.²³¹ If one subtracts 12,000 stones from the Japanese count of 13,281, leaving 1281 stones on Yap in 1843, which would seem a great number, then it can be inferred that 12,000 were transported from Palau over a period of 86 years; this would mean an average of 139 stones a year. The Germans cut off the quarrying of stones in 1899, though obviously unsuccessfully. The 12,000 stone volume implies that one new stone was added to the Yapese money bank every 2.48 days for 86 years. Compared with the amount of shipping now available in the Trust Territory, this volume of shipping would appear impossible to duplicate.

The marked increase in the pace of activities that occurred with the arrival of foreigners during the 40-year period, 1875 to 1915, must have meant a tremendous change of life style for the Yapese, a change which could only now be duplicated with the advent of self government and increased tourism on Yap. The often stated hypothesis that the Yapese are conservative and slow to change obviously is open to challenge.

Appendix 1

Civil Action No. 25

On 20 January 1961, the case of Choo, plaintiff, vs Pong, defendant, was docketed in the District Court, Yap District, Trust Territory of the Pacific Islands, as Civil Action No. 27.

COMPLAINT

1. The plaintiff lives in Dechumur village Tomil Municipality Yap Islands, Trust Territory of the Pacific Islands.
2. The defendant lives in Bugol village Tomil Municipality Yap Island, Trust Territory of the Pacific Islands.
3. On or about February, 1960, the defendant took and applied to his own use one stone money (Ray) of the value of one hundred and twenty-five (\$125.00) dollars, belonging to the plaintiff and sold onto the National Museum in Detroit, Michigan U. S. A., which in return, he the defendant received one hundred and twenty-five (\$125.00) dollars in check #1405.
4. Therefore the plaintiff demands judgment against the defendant in the sum of one hundred and twenty-five (\$125.00) dollars or make return of the said stone money itself to the plaintiff.

On 2 February 1961, the defendant filed his answer demanding trial. On 6 April, the plaintiff filed "Motion for Request Permission to Take Deposition" of one Defngin, who was "leaving for Koror, Palau District and may not be able to return in time for trial" The deposition was taken the same day before Judge Joseph Fanechoor. The plaintiff's counsel was Gilganangin; the defendant's counsel was Frank Falounug. The deponent testified as follows:

DIRECT EXAM

- C-P Q. Please state your name, age, address and occupation?
A. Defngin
35
Woneyan, Gagil Municipality
Asst. Anthropologist
- C-P Q. Have you heard about this case that are involved stone money being sold by Pong to U. S.
A. Yes, I have heard about it.
Q. Did you help prepare the story behind this stone money by writing it?
A. Yes

- Court Q. What did you write?
A. The story behind the stone money.
- C-P Q. Was Pong the one who gave you the story?
A. Yes
Q. Where?
A. Tablau Office (old Distad Building)
- Court Q. Do you have the written story in your possession?
A. No, Mr. Halvorsen took it.
Q. Please tell the court about the story you wrote on the stone money?
A. Pong told me that during working at Tarang, a man by the name of Puguu came and asked him for 300 yen.
- C-P Q. Did he asked for something else beside money?
A. What I was told was only the money.
Q. During what?
A. During working at Tarang.
Q. Did he get the stone money in return for the 300 yen he was asked for?
A. They exchanged the stone money with the 300 yen.

CROSS EXAM

- C-D Q. Was the 300 yen written on the paper you gave Mr. Halvorsen?
A. Yes
Q. What you have said were the only things you and Pong talked about?
A. There were more but I couldn't recall them.
Q. About how long did you and Pong talked?
A. Assuming (3 full written pages)
Q. When was the time Puguu and Pong exchange the stone money with the 300 yen?
A. During working at Tarang.
Q. Did Pong ever told you where the stone money came from to Puguu?
A. He said, "It was given to him by Fazagol"
Q. Did he tell you when was this actually took place?
A. No.
Q. Did he tell you why Fazagol gave Puguu the stone money?
A. They exchange the stone money with some tin roofings.
no further question
- C-P Q. The very day the stone money was exchanged with the 300 yen, did you yourself didn't write it date down or weren't you told?
A. I wasn't told.
no further question from either parties.

On 10 April, Chief Justice E. P. Furber directed that the case be transferred to the Trial Division of the High Court for the Yap District, where it became Civil Action No. 25. After a pre-trial conference held on 11 and 18 April he entered the following:

PRE-TRIAL ORDER

1. The plaintiff Choo lives in Dechumur Village, Tamiil Municipality, Yap District.
2. The defendant Pong lives in Bugol Village, Tamiil Municipality, Yap District.
3. This action is for damages for alleged conversion of a particular piece of Yapese stone money, about five feet in diameter, or the return of the stone money, which the defendant Pong has admittedly sold or purported to sell to the Money Museum of the National Bank of Detroit, Michigan, for \$125.00. The case, therefore, turns on whether the money belonged to the plaintiff Choo or the defendant Pong at the time of the alleged sale. The following portion of the history of the stone money is agreed upon:—
 - a. Urun and Tamangiro, from Af Village, in Tamiil Municipality, went to the Palau Islands and obtained three pieces of stone money. They gave the larger piece to the people of Af Village. By agreement between them, Urun retained one of the smaller ones and Tamangiro the other smaller one. The piece in question in this action is the one retained by Urun in this division.
 - b. Urun's house burned down and the people of Af village helped him rebuild it. In payment of this assistance, Urun gave the stone money now in question to the people of Af Village.
 - c. During a "tam" celebration given by Af Village, the people of Dechumur Village put on a dance about people going on a trip and, in appreciation for this dance, the people of Af Village gave the stone money in question, among other things, to the people of Dechumur Village and the stone money was removed to Dechumur Village and remained there until about January 15, 1960.
 - d. Some people from Dechumur Village made a trip to Palau and brought more stone money of various sizes. The piece brought in on this trip by Tamag was the same size as that given by Af Village to Dechumur Village, and this piece brought in by Tamag was given to Af Village and the piece now in question given to Tamag in exchange for the one he brought in.
 - e. Tamag gave the piece now in question to his brother Fazagol when the latter was about to build a house. Fazagol gave this stone money to Puguu in payment for some tin roofing for the house.
 - f. On or about January 15, 1960, the defendant Pong, with a group of men gathered by him, removed the stone money in question from Dechumur Village over the protests of the plaintiff Choo who was present during part of the removal, protested that the stone money belonged to him, and told them not to remove it. Later, on Pong's authorization, the stone money was shipped to the Money Museum of the National Bank of Detroit, Michigan, in accordance with the agreement of sale with Pong under which he received \$125.00 for the stone money.
4. The plaintiff Choo claims as follows:—
 - a. Choo's wife Bulum is a close relative of Puguu. She had three children before she married Choo and brought them with her to Choo's home at the time of her marriage.
 - b. Puguu gave Choo the money in question in return for his promise to take care of the three children Bulum had before her marriage to Choo. This was during 1937 before the bauxite was being carried to Tarang Island.
 - c. The defendant Pong was the mafen of Fazagol, who had been adopted into Bugol Village. Pong was, therefore, responsible for Fazagol's children after Fazagol had died. Fazagol's daughter Baroy was married to Gaangred. Pong asked Choo for the money in question to give to Gaangred in connection with this marriage and Choo refused to give it to Pong.
 - d. During American times, following a party held at Af Village at which Bugol Village, with the assistance of Palau Village, provided the tuba, some people from Palau, Bugol and Dechumur Villages collected in the men's house in Bugol and there was discussion about the money in question. Pong asked Puguu for the money. Puguu refused and told Choo that Pong had been asking for the money and had offered him a bill for twenty something for it but Puguu had refused. Puguu urged Choo not to give the stone money to Pong and reminded Choo that Fazagol had already received 72 pieces of tin roofing from Puguu for the money.
 - e. When Pong, with Falalay, Tuguru, Gamaruu and Fireg came to Dechumur on or about January 15, 1960, to take the stone money in question, Choo protested that the money was his and told them not to remove it, but Pong insisted he had become the owner when he gave Puguu some sochu (liquor) in exchange for it. They proceeded to remove the stone money and later, on Pong's authorization, it was shipped to the United States in accordance with an agreement of sale by Pong under which he received one hundred twenty five dollars (\$125.00) for it.
5. The defendant Pong claims as follows:—
 - a. During 1938, while bauxite was being carried to Tarang Island, Puguu gave the stone money in question to Pong in exchange at that time for 28 bottles of sochu. Faren, Falen, as well as Pong and Puguu, were present at the exchange. After that Pong and his father helped Puguu for a long time and gave him two pieces of shell money and a necklace during a dance celebration at Talangiz Village and on another occasion helped him by giving three cases of beer and two and one half gallons of tuba.
 - b. Around 1945 to 1947 Choo told Falalay, who is considered as a brother of Pong under Yapese custom, that Choo was the owner of the stone money in question. During the celebration of the completion of the Tamiil school, a group of people including the plaintiff Choo had assisted Pong in straightening up another piece of stone money belonging to him and then gathered at the men's house, in Bugol Village. Before offering them tuba, Pong asked Puguu, in a loud voice from about twenty feet away so that all present could hear, whether the stone money

now in question had been given to him by Puguu in the presence of Falen and Faren or whether it had been given to any one else, and Puguu stated that he had given it to Pong and not to any one else. Pong asked Choo at that time whether he heard what Puguu had said and Choo made no reply.

- c. On or about January 15, 1960, Pong gathered the group of people that helped him carry the stone money in question away from Dechumur. Choo told them not to remove the stone money because it belonged to him through his wife Bulum. Pong asked if he was at the meeting in the Bugol men's house when Pong had asked Puguu about this stone money. Choo admitted that he was there, but said Puguu had winked at him and had privately told him that the money was really given to Choo.
 - d. When the money in question had already been placed on a raft at Dechumur Village Choo told Pong he had heard there was to be some money paid for the stone money and stated that they should share it. Pong stated he would not give Choo any of the money if he was claiming ownership of the stone money, but that, if he was just asking for money, Pong would give him any amount he asked.
6. The pleadings are amended to cover the claims as stated in this order.
 7. Important questions on which evidence is to be presented are as follows:—
 - a. Did Puguu transfer the stone money in question to Choo before 1938?
 - b. Did Puguu transfer or purport to transfer the stone money in question to Pong about 1938?
 - c. What statements did Puguu make later as to any transfer he had made of the stone money to either Choo or Pong?
 - d. What statements have either Choo or Pong made which are inconsistent with their present claims?
 8. Either party may submit evidence on other matters connected with this action that are not covered by the agreements in this order.
 9. Judge Fanechoor is believed to be disqualified to act as assessor at the trial of this action. Both counsel state that there is no objection to Judge Falyoor acting as assessor at the trial.

The case brought by Choo of Dechumur village against Pong of Bugol village, both residents of Tamiil Municipality, Yap District, was tried before Chief Justice Furber, 19 to 23 October 1961, at Colonia, Yap District. Judges Joseph Fanechoor and Falyoor acted as assessors, Feichin C. Faimau as interpreter, Florence H. Shook as reporter, Gilganangin as counsel for the plaintiff, and Frank Falounug as counsel for the defendant. There were seven witnesses (all from Yap District) for the plaintiff: Choo, Dechumur village, Tamiil Municipality; Fagaldefeg, Af village, Tamiil Municipality; Giltaman, Bugol village, Tamiil Municipality; Fillimew, Bugol village, Tamiil Municipality; Yanolang, Bugol village, Tamiil Municipality; Nuuan, Af village, Tamiil Municipality;

Defngin, Woneyán village, Gagil Municipality (by deposition). There were five witnesses (all from Yap District) for the defendant: Pong, Bugol village, Tamiil Municipality; Tithirow, Palau village, Maap Municipality; Falalay, Dechumur village, Tamiil Municipality; Matmag, Atliu village, Fanif Municipality; Faren, Palau village, Maap Municipality. The case was taken under advisement.

On 26 October 1961, the Chief Justice conducted a hearing on a motion filed that day by the defendant (this time not represented by counsel) wherein he requested the court to hold the announcement of this civil action at this sitting for the following reasons:

1. That the defendant unable to understand the English language and failed to called another witness for his side.
2. That the defendant asked his own counsel to present some evidence which was not shown but the counsel refuse to do so.

Therefore I request to this Honorable Court to give the defendant another chance to present the evidence.

The motion was denied, and a Judgment Order was entered.

FINDINGS OF FACT

1. Puguu, on behalf of Bulum, gave the stone money in question to the plaintiff Choo as "gidigen" in connection with Choo's marriage to Bulum and his assuming responsibility for the children whom she had borne prior to her marriage to Choo.
2. This transfer of stone money from Puguu to Choo occurred prior to the work under the supervision of the Japanese on Tarang Island.

CONCLUSIONS OF LAW

1. Puguu's transfer of the stone money to Choo entirely cut off Puguu's rights in the stone money, and any effort he may have made thereafter either to transfer the stone money to the defendant Pong or to confirm or establish Pong's ownership thereof was of no legal effect.
2. Inasmuch as this stone money was given to Choo as "gidigen", under Yapese custom his rights in it are presumably held in common with certain of his relatives and not by him alone. It is believed, however, that, as against the defendant Pong, the plaintiff Choo is entitled to speak for his entire group and that Pong is accountable to Choo for the entire sum which he received for the stone money regardless of what obligation Choo may have to other members of his group.

JUDGMENT

It is *ORDERED*, *ADJUDGED*, and *DECREED* that the plaintiff Choo who lives in Dechumur Village, Tamiil Municipality, Yap District, recover from the defendant Pong, who lives in Bugol Village, Tamiil Municipality, Yap District, the sum of one hundred twenty five dollars (\$125.00) damages and one dollar (\$1.00) costs, making a total of one hundred twenty six dollars (\$126.00), and interest thereon at six per cent (6%)

per year from this date until this judgment is paid in full, together with any lawful costs incurred in the collection thereof.

On 20 March 1962, an affidavit by Gilganangin, counsel for the plaintiff, Choo, was filed and Pong was ordered to "show cause why he should not be adjudged in contempt of court for failure to comply with the order heretofore entered by this court on the 26th day of October, 1961, in the above entitle action, and why any further relief the court deems just should not be granted."

On 26 March 1962, a hearing was held before Master Joseph Fanechoor, P.J., who thereupon made his report in pertinent part as follows:

FINDING OF FACTS

The defendant tells the court the reasons as to why he did not fallow the judgment order released by the Trial Division of the High Court in above caption proceeding, and reasons as such;

Defendant owned some lands but there are not enough cocunut trees on the lands in order for the defendant to make copra.

Defendant is a man of about 50 years old, unemployed and have seven children plus his wife gives a total number of 8 persons in his family under his care. Four out of his seven children are attending school while two are just babies, and the elder one who is a female daughter of about 21, is the only person in the family who works as a teacher in Tomil Elementary School, and her salary sum up to \$22.00 a month.

Defendant has no other suit against him and shows interest of willingness for payment in connection with the judgment order. Since the defendant's daughter started working two months ago, the defendant is willing and offer to pay to the plaintiff \$11.00 on the last day of every month, which is half of her daughter's monthly salary.

COUNSEL FOR THE PLAINTIFF-GILGANANGIN

I have no comments on part of defendant's statements. However, the defendant should bear in mind that the plaintiff himself is about 90 years old and is very ill, and have no other means of earning money. If the defendant pay little by little then the plaintiff may not live long enough to enjoy the use of the money he is entitled to.

MASTER'S OPINION

Defendant has 8 people in his family under his care including his wife. Defendant has no job at the present time, owned some lands but does not provide enough copra. Selling a piece of his lands may result in not enough lands to provide the needs for the future of his children.

In view of all things mentioned above, this court concluded the following:

- (a) Defendant is still strong in spite of his age, capable of doing things by means of earning money.
- (b) Defendant has a brother who is employed by the Yap Constabulary, also has many relatives and friends, which under local custom, the defendant can ask them for help.

In conclusion, this court feels that the defendant's ability to pay to the plaintiff \$11.00 per month is reasonable enough and that if the defendant put in extra efforts he may then double the payment.

On 10 May 1962, an Order in Aid of Judgment, signed by Paul F. Kinnare, Associate Justice, was entered in this case.

Upon consideration of the master's report filed herein, it is *ORDERED* that the defendant Pong pay the plaintiff Choo the sum of eleven dollars (\$11.00) every month commencing with the month of May 1962 until the judgment heretofore entered herein is satisfied in full or until further order of this court.

On 20 August 1962; a second affidavit and Order of Notice to Show Cause was entered. On 24 August 1962, upon order of the court, Pong paid the entire \$33.00 due to date and the second Order was subsequently dismissed. Approximately 14 months later on 18 December 1963, Counsel for the Plaintiff Gilganangin filed an untitled paper, which read as follows:

I, Gilganangin, counsel for the plaintiff in the above-caption proceeding, have talked to plaintiff Choo' himself and decided that the interest that should bear on the judgement of the same case at the end of each calendar year provide that such judgement has not been fully satisfied, will not be paid by the defendant Pong.

I ask the court to take into consideration the above request that the defendant Pong will not be subjected to pay the interest as described above, and a copy of this request has been sent to the defendant Pong.

Appendix 2

Yap Islands Congress, Resolution No. 10-65

TRUST TERRITORY OF THE PACIFIC ISLANDS
YAP ISLANDS CONGRESS
FALL SESSION
1965

RESOLUTION NO. 10-65: LEVYING A TAX ON THE TRANSFER OF TRADITIONAL YAPSESE MONIES AND OTHER VALUABLES AND CONTROLLING THE EXPORT THEREOF, AND FOR OTHER PURPOSES.

BE IT ENACTED BY THE YAP ISLANDS CONGRESS THAT:

Section 1. In order for any citizens of the Trust Territory resident in Yap Islands Proper to sell or give to any business establishment or any person who is not a citizen of the Trust Territory resident in Yap Islands Proper any traditional Yapese money or other valuables, it shall be necessary for the seller or the donor to first obtain a transfer of ownership document. Such document shall state the name or title of the money or the valuable, if any, and the selling price, or in the case of a gift, the estimated value of the money or other valuables. Such transfer of ownership document shall be cosigned by the *Magistrate of his Municipality and the Paramount Chief of his village, and also by the District Administrator.* The transfer of ownership of the money or other valuable shall become effective when the seller or donor thereof certifies on the document that he has received the stated selling price or has made the stated gift, as the case may be. The District Administrator shall notify the District Treasurer of any such document which he signs.

Section 2. The District Treasurer is authorized to prescribe the form of the transfer of ownership document.

Section 3. There is hereby levied upon the sale, as prescribe in Section 1 above, of traditional Yapese money and other valuables a tax of fifty per cent (50%) of the selling price. Such tax shall be paid by the seller of any Yapese money or other valuables within seven (7) days after such sale is transacted. The tax shall be paid to the District Treasurer.

Section 4. There is hereby levied upon the giving, as described in Section 1 above, of traditional Yapese money and other

valuables a tax of twenty-five per cent (25%) of the estimated value thereof. Such estimated value shall be determined by enactment of Yap Islands Congress.

The tax levied hereunder shall be paid by the donor of any Yapese money or other valuables within seven (7) days after the gift thereof is made. The tax shall be paid to the District Treasurer.

Section 5. In order to remove from the Yap Islands any traditional Yapese money or other valuables, the bearer or shipper thereof must have in his possession a document, prescribed by Section 1 above, certifying the ownership thereof. The District Administrator may prevent any person from shipping, carrying or otherwise removing any traditional Yapese money or other valuables for which such person does not have a properly signed document of ownership.

Section 6. The provisions of this Resolution shall not apply to Yapese cultural objects presently being manufactured for sale or other disposition.

Section 7. PENALTY. Any person who violates any provisions of this Resolution shall, upon conviction thereof, be punished by a fine of not more than five hundred dollars (\$500.00) or by imprisonment not to exceed six (6) months, or both.

Section 8. This law shall take effect upon approval of the High Commissioner of the Trust Territory of the Pacific Islands.

Passed by the Yap Islands Congress this *19th* day of November, 1965.

/s/ Joachim Falmog
President, Yap Islands Congress

/s/ Mangarfir, Jesus
Secretary, Yap Islands Congress

/s/ Maynard Neas
District Administrator, Yap

January 12, 1966
Date

APPROVED THIS 11th DAY OF March, 1966.

/s/ M. W. Goding
High Commissioner, Trust Territory
of the Pacific Islands

Appendix 3

Yap District Code, Part B, Traditional Property

YAP DISTRICT CODE

PART B. TRADITIONAL PROPERTY: (Sections 7100–7199)

Section 7100. REGULATION OF TRANSFER OF OWNERSHIP. In order for any citizen of the Trust Territory resident in the Yap District to sell or give to any business establishment or any person who is not a citizen of the Trust Territory any traditional Yapese money or valuables, it shall be necessary for the seller or the donor to first obtain a transfer of ownership document. Such document shall state the name or title of the money or the valuable, if any, and the selling price, or in the case of a gift, the estimated value of the money or the other valuable. Such transfer of ownership shall be signed by the Magistrate of his municipality or the Paramount Chief of his village, or his island, and co-signed by the District Administrator. The transfer of ownership of the money or the other valuable shall become effective when the seller or the donor

thereof certifies on the document that he has stated the selling price or has made the stated gift, as the case may be. The District Administrator shall notify the District Treasurer of any such document which he signs. The District Treasurer is authorized to prescribe the form of the transfer of ownership document.

Section 7101. REMOVAL FROM YAP DISTRICT. In order to remove from the Yap District any traditional Yapese money or valuable, the bearer or shipper thereof must have in his possession a document, prescribed by Section 7100, certifying the ownership thereof. The District Administrator may prevent any person from shipping, carrying or otherwise removing any traditional Yapese money or other valuable for which such person does not have a properly signed document of ownership.

Section 7102. EXCEPTIONS. The provisions of Section 7100 and 7102 shall not apply to Yapese cultural objects presently being manufactured for sale or other disposition.

Notes

See "References" for complete citations

¹ A comparison of a primitive medium of exchange with an economic tool of our modern world was made in reference to Africa: "This manilla had no actual value in itself but was used to represent wealth—on the lines of a modern cheque." JOHANSSON, *Nigerian Currencies*, p. 10.

² MÜLLER, *Yap*, p. 131 (HRAF p. 228).

³ The Japanese restricted entry to the area and, after World War II, the United States Navy imposed tight restrictions until 1 July 1963. Date given by the Department of the Interior, Office of Territories, February 1974. EINZIG, *Primitive Money*, p. 40.

⁴ PRICE, "Big Money of Yap," p. 457.

⁵ MÜLLER, *Yap*, p. 1 (HRAF, p. 1). Müller's version was repeated in 1944 by the UNITED STATES NAVY, *Civil Affairs Handbook*, p. 21; used in 1947–1948 by HARVARD UNIVERSITY, PEABODY MUSEUM, "The Micronesians of Yap and Their Depopulation," p. 3; published in 1949 by HUNT, et al., *The Micronesians of Yap and Their Depopulation*, p. 3; and quoted in 1962 by LESSA, "Evaluation of Early Descriptions," p. 314 ff.

Villalobos' coming in 1543 and Lezcano's in 1686 had been mentioned previously in 1907 by SALESUS, *Die Karolinen-Insel Yap*, pp. 1–3 (HRAF, pp. 1–3). Father Salesius of the Capuchin Order did field work on Yap around 1900.

⁶ LESSA, "Evaluation of Early Descriptions," p. 315.

⁷ Ibid. Also SHARP, *Discovery of the Pacific Islands*, p. 23. Sharp, however, does not mention Yap as one of the islands possibly sighted by Alvaro de Saavedra.

⁸ MÜLLER, *Yap*, p. 1 (HRAF, p. 1). Previously reported by TETENS and KUBARY, "Die Carolineninsel Yap," p. 126 (HRAF, p. 58). *Buenos dias, matelotas* may be translated "Good morning, seafarers!" *Matalotes* is found in both Spanish and Portuguese, though now obsolete. According to the Language Services Division of the U.S. Department of State, February 1974, the word came into both languages from the French *matelot*, meaning "seafarer." The UNITED STATES DEPARTMENT OF THE INTERIOR, OFFICE OF GEOGRAPHY, *NIS Gazetteer West Pacific Islands*, p. 71, lists four different spellings of this word as previous names for Ngulu Atoll, Caroline Islands.

⁹ In the seventeenth century there are accounts of Yapese lost at sea who had drifted to the Philippines where they heard the Spanish language. See KRAMER, *Palau*, p. 31.

¹⁰ SHARP, *Discovery of the Pacific Islands*, pp. 79–80.

¹¹ CANTOVA, "Lettre du P. Jean Cantova," and CLAIN, "Lettre de Père Paul Clain."

¹² CANTOVA, "Lettre du P. Jean Cantova," p. 216.

¹³ KOTZEBUE, *Voyage of Discovery*, p. 182.

¹⁴ Ibid., p. 183.

¹⁵ CHAMISSE, *Reise um die Welt*, p. 377 (extract translated by Carl Jaeschke, Smithsonian Institution).

¹⁶ *Welcome to Yap*, p. 5. The taboo is also mentioned in relation to the stone money by MATSUMURA, "Contributions to the

Ethnography of Micronesia," p. 164: "The Yapese do not like to have them touched by foreigners."

¹⁷ DUMONT D'URVILLE, *Voyage au Pole Sud et dans L'Océanie*, p. 208 (extract translated by author).

¹⁸ Captain Cheyne's vessel brought to Yap the then deadly sickness, influenza. Finally, in the 1860s after "defrauding the natives of Koror and defaulting on his indebtedness," as well as supplying arms and ammunition to their enemies, the Palauans retaliated and brutally killed Cheyne. UNITED STATES NAVY, *Civil Affairs Handbook*, p. 28.

¹⁹ SHINEBERG, *Trading Voyages of Andrew Cheyne*, p. 14. Cheyne did speak of the earlier though infrequent traffic that had been established with Yap by other European vessels which had been there. Many had been attacked and the crews massacred. Captain Cheyne took on board ship Lorio, a young man from Manila, who was himself from a crew of an attacked Spanish ship. See also CHEYNE, *Description of Islands*, p. 154.

Müller stated that early European settlements must have been formed by the beginning of the nineteenth century. "The natives have a dim recollection of it." There were "vestiges of the stay on Yap in the few earthen plates which the natives hold in high esteem." MÜLLER, *Yap*, p. 4 (HRAF, p. 4).

²⁰ CHEYNE, *Description of Islands*, p. 148.

²¹ SHINEBERG, *Trading Voyages of Andrew Cheyne*, p. 248.

²² Ibid., Bêche-de-mer (spelled "biche de mer" by Cheyne) is *trepan* or sea cucumber.

²³ Ibid., p. 249.

²⁴ Ibid.

²⁵ Ibid., p. 261.

²⁶ Ibid., pp. 14, 264–265, 281–284.

²⁷ Müller reported on the location of *rai*. "The smaller ones are stored in houses, the larger ones stand leaning against the foundation or flanking the village roads and the large platforms in front of the clubhouses." MÜLLER, *Yap*, p. 130 (HRAF p. 224).

²⁸ SHINEBERG, *Trading Voyages of Andrew Cheyne*, p. 264.

²⁹ Ibid., p. 264, footnote 37.

³⁰ SHINEBERG, *Trading Voyages of Andrew Cheyne*, p. 22.

³¹ TETENS, *Among the Savages of the South Seas*, p. xxx.

³² SHINEBERG, *Trading Voyages of Andrew Cheyne*, p. 250. Editor Shineberg states that the "village" Rull was actually "a district and leader of a powerful alliance."

³³ TETENS, *Among the Savages of the South Seas*, p. 12.

³⁴ Ibid., pp. 62–63.

³⁵ LESSA, "Evaluation of Early Descriptions," p. 335.

³⁶ Ibid., p. 351. This is documented by Lessa as Francisco Carrasco, "Carolines: Descubrimiento y descripción de las Islas Garbanzos," *Boletín de la Sociedad geográfica de Madrid*, vol. 10, no. 2(1881):264.

³⁷ CHRISTIAN, *Caroline Islands*, p. 19.

³⁸ SALESUS, *Die Karolinen-Insel Yap*, p. 102 (HRAF, p. 111).

- ³⁹ SENFFT, "Ethnographische Beiträge, p. 58 (HRAF p. 24).
- ⁴⁰ KOTZEBUE, *Voyage of Discovery*, p. 205.
- ⁴¹ TETENS and KUBARY, "Die Carolineninsel Yap," p. 126 (HRAF, p. 58).
- ⁴² LESSA, "Evaluation of Early Descriptions," p. 362.
- ⁴³ KOTZEBUE, *Voyage of Discovery*, p. 193.
- ⁴⁴ *Ibid.*, p. 183.
- ⁴⁵ *Ibid.*, pp. 193-194.
- ⁴⁶ SPOEHR, *White Falcon*, p. 72.
- ⁴⁷ MÜLLER, *Yap*, p. 27 (HRAF, p. 47). Müller was quoting Kubary.
- ⁴⁸ SENFFT, "Ethnographische Beiträge," p. 57 (HRAF, p. 21).
- ⁴⁹ TETENS and KUBARY, "Die Carolineninsel Yap," p. 127 (HRAF, p. 59), mention the schooner *Dash* from Boston, which visited Yap in 1834, and the full-rigged ship *Ebba Brahe*, which was stranded there in 1864. CHEYNE, *Description of Islands*, p. 154, tells of the two Manila ships that were attacked by the Yapese in 1836.
- ⁵⁰ TETENS, *Among the Savages of the South Seas*, pp. 6-8, and SEMPER, *Die Palau-Inseln im stillen Ocean*, pp. 42, 255.
- ⁵¹ KUBARY, "Über das einheimische Geld," p. 4.
- ⁵² UNITED STATES NAVY, *Civil Affairs Handbook*, p. 28.
- ⁵³ BUTRON Y DE LA SÈRNA, *Memoria sobre las Islas Carolinas*, p. 24.
- ⁵⁴ SPOEHR, *White Falcon*, p. 47; UNITED STATES NAVY, *Civil Affairs Handbook*, p. 28.
- ⁵⁵ LEHUNTE, "Report of HMS *Espiegle* to Sir G. W. Des Voeux, Acting High Commissioner for the Western Pacific," p. 28. Loaned to the author by Dr. Saul Riesenberg, Smithsonian Institution, who copied the manuscript from Professor Harry Maude, retired, Department of Pacific History, Australian National University.
- ⁵⁶ UNITED STATES NAVY, *Civil Affairs Handbook*, p. 28.
- ⁵⁷ "Die Entwicklung der Deutschen Interessen in der Südsee," pp. 367-374.
- ⁵⁸ UNITED STATES NAVY, *Civil Affairs Handbook*, p. 28.
- ⁵⁹ BUTRON Y DE LA SÈRNA, *Memoria sobre las Islas Carolinas*, p. 3, and MARENCO, *La ficcion y la Verdad de lo ocurrido en Yap*, p. 120.
- ⁶⁰ LEHUNTE, "Report of HMS *Espiegle*, p. 25.
- ⁶¹ *Ibid.*, p. 30.
- ⁶² *Ibid.*, pp. 27-28.
- ⁶³ MATSUMURA, "Contributions to the Ethnography of Micronesia," p. 164. The second American mentioned may have been a Mr. Holcomb, proprietor of the *Bartola*, who was mentioned by BUTRON Y DE LA SÈRNA, *Memoria sobre las Islas Carolinas*, p. 25.
- ⁶⁴ CHRISTIAN, *Caroline Islands*, p. 51.
- ⁶⁵ "Walter Charlton Hartridge."
- ⁶⁶ O'KEEFE, "Last Will and Testament."
- ⁶⁷ UNITED STATES DEPARTMENT OF COMMERCE, BUREAU OF THE CENSUS, *Historical Statistics of the United States*, p. 91.
- ⁶⁸ SUTLIVE, "Savannah Man was King," p. 5, and Deeken, *Die Karolinen*, p. 55.
- ⁶⁹ HOBBS, *Cruises Along By-Ways of the Pacific*, p. 86. This expedition had a grant from the Honorable Chase S. Osborn, one time Governor of Michigan and regent of the University of Michigan. It was supported by the Navy Departments of the United States and of Japan, and sailed under the auspices of the University of Michigan.
- ⁷⁰ EINZIG, *Primitive Money*, p. 393.
- ⁷¹ UNITED STATES NAVY, *Civil Affairs Handbook*, p. 24, and HARVARD UNIVERSITY, PEABODY MUSEUM, "The Micronesians of Yap," p. 219.
- ⁷² MÜLLER, *Yap*, p. 129 (HRAF, p. 222).
- ⁷³ DE BEAULAIR, "Stone Money of Yap," p. 153.
- ⁷⁴ Robert Halvorsen, District Administrator, Yap, to Saul Riesenberg, Smithsonian Institution, 10 December 1959, Smithsonian Institution Registrar's file, accession #228,912, catalog #400,073. DE BEAULAIR, "Stone Money of Yap," p. 153, says that Yapese believe it is "derived from the Ulithian word for sexual intercourse." Defngin, "The Rai of Yap," p. 17, says that *fee* or *ffey* is Ulithian in origin and refers to the reproductive functions. He adds, "When the first discus-shaped piece of stone was quarried, the Ulithian in the group stated that the word *fee* meant full moon, the obvious shape of the piece of stone."
- ⁷⁵ TETENS and KUBARY, "Die Carolineninsel Yap," p. 93 (HRAF, p. 222).
- ⁷⁶ ROBERTSON, "Caroline Islands," p. 48.
- ⁷⁷ SENFFT, "Ethnographische Beiträge," p. 83 (HRAF, p. 29). The definition of a span as the stretch of the index finger and thumb was given by FURNESS, *Island of Stone Money*, p. 96.
- ⁷⁸ KUBARY, "Über das einheimische Geld," p. 5.
- ⁷⁹ MÜLLER, *Yap*, p. 249 (HRAF, p. 418).
- ⁸⁰ SENFFT, "Ethnographische Beiträge," p. 50 (HRAF, p. 4).
- ⁸¹ MÜLLER, *Yap*, p. 129 (HRAF, p. 224).
- ⁸² Robert Halvorsen, District Administrator, Yap, to Saul Riesenberg, Smithsonian Institution, 21 January 1960, Smithsonian Institution Registrar's file, accession #228,912, catalog #400,073.
- ⁸³ TETENS and KUBARY, "Die Carolineninsel Yap," p. 93 (HRAF, p. 18).
- ⁸⁴ LEHUNTE, "Report of HMS *Espiegle*," p. 25.
- ⁸⁵ SWANSTON, "Journals 1857-1866, 1874-1885," p. 8. Loaned to the author by Dr. Saul Riesenberg.
- ⁸⁶ ESCUDÉ Y BARTOLÍ, *Las Carolinas*, p. 79.
- ⁸⁷ BUTRON Y DE LA SÈRNA, *Memoria sobre las Islas Carolinas*, p. 42.
- ⁸⁸ MIKLUHO-MACLAY, "Die Insel Wuap," pp. 40-45.
- ⁸⁹ CHRISTIAN, *Caroline Islands*, p. 236.
- ⁹⁰ FINSCH, *Carolinen und Marianen* p. 49.
- ⁹¹ VOLKENS, "Über die Karolinen-Insel Yap," p. 74 (HRAF, p. 14).
- ⁹² SALESIIUS, *Die Karolinen-Insel Yap*, p. 95 (HRAF, p. 103).
- ⁹³ LÜTJE, *Beitrag zu einer Landeskunde des Karolinen-Archipels*, p. 103.
- ⁹⁴ See Table, *rai* numbers 128-142, Hans Schulman pieces offered for auction.
- ⁹⁵ MATSUMURA, "Contributions to the Ethnography of Micronesia," p. 162.
- ⁹⁶ SALESIIUS, *Die Karolinen-Insel Yap*, p. 96 (HRAF, pp. 103-104).
- ⁹⁷ FINSCH, *Carolinen und Marianen*, p. 49.
- ⁹⁸ MÜLLER, *Yap*, p. 131 (HRAF, p. 227).
- ⁹⁹ *Ibid.*
- ¹⁰⁰ ROBERTSON, "Caroline Islands," p. 49.
- ¹⁰¹ MÜLLER, *Yap*, p. 131 (HRAF, p. 227).
- ¹⁰² Francis Defngin, Office of the District Administrator, Yap, "History of Stone," Smithsonian Institution Registrar's file, accession #228,912, catalog #400,073.
- ¹⁰³ DE BEAULAIR, "Stone Money of Yap," p. 153.

- ¹⁰⁴ HERNSHEIM, *Südsee-Erinnerungen*, p. 20.
- ¹⁰⁵ EINZIG, *Primitive Money*, p. 36.
- ¹⁰⁶ MÜLLER, *Yap*, p. 129 (HRAF, p. 224), and DE BEAUCLAIR, "Stone Money of Yap," p. 153.
- ¹⁰⁷ MÜLLER, *Yap*, p. 130 (HRAF, p. 224), and DE BEAUCLAIR, "Stone Money of Yap," p. 154.
- ¹⁰⁸ Smithsonian Institution, Department of Anthropology, accession #227,555, catalog #297,772.
- ¹⁰⁹ DE BEAUCLAIR, "Stone Money of Yap," p. 154.
- ¹¹⁰ Ibid.
- ¹¹¹ Ibid., p. 156.
- ¹¹² Smithsonian Institution, Department of Anthropology, catalog #176,089 (no. 2).
- ¹¹³ MÜLLER, *Yap*, p. 129 (HRAF, p. 224).
- ¹¹⁴ FURNESS, *Island of Stone Money*, p. 97.
- ¹¹⁵ This may also be found in numismatic accounts, for example: OBOJSKI, "Stone Money from Yap," p. 69.
- ¹¹⁶ DE BEAUCLAIR, "Stone Money of Yap," p. 156.
- ¹¹⁷ Smithsonian Institution, Department of Anthropology, accession #228,912, catalog #400,073.
- ¹¹⁸ Francis Defngin to author, 7 April 1972.
- ¹¹⁹ UNITED STATES NAVY, *Civil Affairs Handbook*, p. 181.
- ¹²⁰ DE BEAUCLAIR, "Stone Money of Yap," pp. 154–155.
- ¹²¹ FURNESS, *Island of Stone Money*, p. 95.
- ¹²² Ibid., p. 45.
- ¹²³ MATSUMURA, "Contributions to the Ethnography of Micronesia," p. 165.
- ¹²⁴ MÜLLER, *Yap*, p. 258 (HRAF, p. 431).
- ¹²⁵ Ibid., p. 263 (HRAF, p. 441).
- ¹²⁶ Ibid., p. 258 (HRAF, p. 431), and p. 262 (HRAF, p. 437).
- ¹²⁷ ROBERTSON, "Caroline Islands," p. 48.
- ¹²⁸ "Deutsche Niederlassungen in der Südsee," p. 97.
- ¹²⁹ MÜLLER, *Yap*, p. 88 (HRAF, p. 153).
- ¹³⁰ FURNESS, *Island of Stone Money*, p. 45.
- ¹³¹ CHRISTIAN, *Caroline Islands*, p. 291.
- ¹³² MÜLLER, *Yap*, p. 133 (HRAF, p. 231).
- ¹³³ MAHONEY, "Projective Psychological Findings in Palau Personality," p. 22.
- ¹³⁴ Ibid., p. 14. Also FURNAS, *Anatomy of Paradise*, p. 382.
- ¹³⁵ SENFFT, "Ethnographische Beiträge," p. 83 (HRAF, p. 29).
- ¹³⁶ HERNSHEIM, *Südsee-Erinnerungen*, p. 20.
- ¹³⁷ KOTZEBUE, *Voyage of Discovery*, p. 210.
- ¹³⁸ MÜLLER, *Yap*, p. 223 (HRAF, p. 378).
- ¹³⁹ Ibid., p. 268 (HRAF, p. 450).
- ¹⁴⁰ Ibid., p. 254 (HRAF, p. 424).
- ¹⁴¹ SENFFT, "Ethnographische Beiträge," p. 60 (HRAF, p. 28).
- ¹⁴² Francis Defngin to author, 7 April 1972.
- ¹⁴³ MÜLLER, *Yap*, p. 133 (HRAF, p. 231).
- ¹⁴⁴ KUBARY, "Über das einheimische Geld," pp. 9–10.
- ¹⁴⁵ TETENS, *Among the Savages of the South Seas*, p. 63.
- ¹⁴⁶ KUBARY, "Über das einheimische Geld," p. 4.
- ¹⁴⁷ Ibid., p. 5.
- ¹⁴⁸ Ibid., p. 10.
- ¹⁴⁹ KOTZEBUE, *Voyage of Discovery*, p. 210.
- ¹⁵⁰ Danish National Museum, Copenhagen, Denmark, Ethnographical Department, to author, 10 March 1972. For relative comparison, only, the exchange rate of various foreign

currencies compared to the then current United States dollar was as follows:

1875	Denmark	1 crown	U. S. \$.2675
1881, 1905, 1910	German Empire	1 mark	.238
1895, 1896	Netherlands	1 florin	.402
1915, 1916	Japan	1 yen	4985

UNITED STATES DEPARTMENT OF THE TREASURY, BUREAU OF THE MINT, *Annual Report*, 1875, p. 43; 1881, p. 42; 1895, p. 54; 1896, p. 67; 1905, p. 48; 1910, p. 64; 1915, p. 66; 1916, p. 217.

¹⁵¹ MIKLUCHO-MACLAY, "Die Insel Wuap," p. 44.

¹⁵² Museum für Völkerkunde, Frankfurt, Germany, to author, 3 June 1972.

¹⁵³ MEINICKE, *Polynesien und Mikronesien*, p. 98.

¹⁵⁴ BUTRON V DE LA SÈRNA, *Memoria sobre las Islas Carolines*, p. 42.

¹⁵⁵ CHRISTIAN, *Caroline Islands*, p. 291.

¹⁵⁶ "Deutsche Niederlassungen in der Südsee," p. 97.

¹⁵⁷ Museum für Völkerkunde, Berlin, Germany, to author, 19 November 1971. This piece was sold in 1931 to The Chase Manhattan Bank in New York City, New York.

¹⁵⁸ Rijksmuseum voor Volkenkunde, Leiden, The Netherlands, to author, 19 November 1971.

¹⁵⁹ SENFFT, "Ethnographische Beiträge," p. 60 (HRAF, p. 28).

¹⁶⁰ Hamburgisches Museum für Völkerkunde, Hamburg, Germany, accession #823:05.

¹⁶¹ Smithsonian Institution Registrar's file, accession #48,520, catalog #248,987. These items were originally cataloged to total 26, though Dr. Hough, then chairman of the Department of Anthropology, changed this to 27 before authorizing payment. The last item indicated on the bill that was presented by Mr. Costenoble of Guam lists "1 shell money Yap—\$5.00." It is not clear if this is the same item as that listed by Dr. Hough as "1 ornament" or the one indicated as "one stone disc." Perhaps the five dollars asked by Mr. Costenoble referred to the "stone disc" or stone money rather than to the shell money. It is impossible to say at this time. The current policy of the Smithsonian Institution is that Government funds are not available for the purchase of items for the collections.

¹⁶² FURNESS, *Island of Stone Money*, p. 101.

¹⁶³ EINZIG, *Primitive Money*, p. 40, and QUIGGIN, *Survey of Primitive Money*, p. 145.

¹⁶⁴ BRYAN, "Money of the Pacific Islanders," p. 432.

¹⁶⁵ FURNESS, *Island of Stone Money*, p. 101.

¹⁶⁶ Ibid.

¹⁶⁷ SALESIIUS, *Die Karolinen-Insel Jap*, p. 100 (HRAF, p. 108). Today a ton of copra sells for \$182.50 to \$162.50, depending on quality (Department of the Interior, Office of Territories, 19 February 1974). See also *Highlights*, 1 December 1973, p. 1.

¹⁶⁸ Museum für Völkerkunde, Frankfurt, Germany, to author, 3 June 1972.

¹⁶⁹ Hamburgisches Museum für Völkerkunde, Hamburg, Germany, accession 823:05.

¹⁷⁰ MÜLLER, *Yap*, p. 131 (HRAF, p. 227).

¹⁷¹ DEEKEN, *Die Karolinen*, p. 55.

¹⁷² MATSUMURA, "Contributions to the Ethnography of Micronesia," p. 164.

¹⁷³ The University of Tokyo, Library, Tokyo, Japan, to author, 27 December 1971.

¹⁷⁴ MATSUMURA, "Contributions to the Ethnography of Micronesia," p. 164.

¹⁷⁵ FURNESS, *Island of Stone Money*, p. 101.

¹⁷⁶ SALESIVS, *Die Karolinen-Insel Jap*, p. 148 (HRAF, p. 166). Repeated in UNITED STATES NAVY, *Civil Affairs Handbook*, p. 44.

¹⁷⁷ *Ibid.*, p. 44.

¹⁷⁸ Museum für Völkerkunde, Berlin, Germany, to author, 24 November 1971.

¹⁷⁹ The Chase Manhattan Bank Money Museum, New York City, New York, to author, 30 November 1971.

¹⁸⁰ PRICE, *Japan's Islands of Mystery*, p. 80.

¹⁸¹ The Chase Manhattan Money Museum did not wish to have quoted the prices paid for the *rai*.

¹⁸² The address of the Pittsburgh Numismatic Museum as indicated on correspondence concerning this *rai* is the same as that of Mr. Gibb's residence as given in the Pittsburgh telephone book of 1933.

¹⁸³ T. Miura, First Secretary, Japanese Embassy, Washington, to Senator David A. Reed, 21 December 1933.

¹⁸⁴ Senator D. A. Reed to H. D. Gibbs, 16 February 1934.

¹⁸⁵ Endo & Kotachi, Inc., New York, bill concerning charges for stone money shipped on M.S. *Nankai Maru*, to Consulate of Japan, New York City, New York, 1 March 1934.

¹⁸⁶ SCHULMAN COIN AND MINT, Inc. Auction catalog, 18-20 June 1971, p. 102. During the same sale a piece about 16 cm (6½ in) larger sold for \$1,100 (prices realized).

¹⁸⁷ National Bank of Detroit, Money Museum, Detroit, Michigan, to author, 26 November 1971.

¹⁸⁸ UNITED STATES TRUST TERRITORY OF THE PACIFIC ISLANDS, TRIAL DIVISION OF THE HIGH COURT, Civil Action 25, Pretrial Order, 18 April 1961.

¹⁸⁹ *Ibid.*, Judgment Order (E. P. Furber, Chief Justice), 26 October 1961.

¹⁹⁰ National Bank of Detroit, Money Museum, Detroit, Michigan, to author, 26 November 1971.

¹⁹¹ In Micronesia, lineage is not a casual affair. The facts are memorized and known by many.

¹⁹² SALESIVS, *Die Karolinen-Insel Jap*, p. 98 (HRAF, p. 106).

¹⁹³ FURNESS, *Island of Stone Money*, p. 106.

¹⁹⁴ According to SALESIVS, *Die Karolinen-Insel Jap*, p. 100 (HRAF, p. 108), who reckoned a ton of copra at 120-260 marks.

¹⁹⁵ Equivalents according to CHRISTIAN, *Caroline Islands*, p. 270: 2 sticks of tobacco=1 large fowl, 1 stick of tobacco=1 small fowl. Equivalents according to SENFFT, "Ethnographische Beiträge," p. 83 (HRAF, p. 29): 1 stick of tobacco=10 coconuts, 10 sticks of tobacco=1 fathom of cloth. Equivalents according to FURNESS, *Island of Stone Money*, p. 106: 1 large pilot biscuit=3 coconuts, 1 stick of "nigger-head" tobacco and Japanese safety matches=6 coconuts.

¹⁹⁶ SALESIVS, *Die Karolinen-Insel Jap*, p. 168 (HRAF, p. 188).

¹⁹⁷ *Ibid.*, p. 92 (HRAF, p. 100).

¹⁹⁸ *Ibid.*, p. 97 (HRAF, p. 105).

¹⁹⁹ Robert Halvorsen, District Administrator, Yap, to Dr. Saul Riesenber, Smithsonian Institution, 10 March 1960, Smithsonian Institution Registrar's file, accession #228,912.

²⁰⁰ See Appendix 3.

²⁰¹ Francis Defngin, Office of the District Administrator, to Dr. Saul Riesenber, Smithsonian Institution, 7 November 1961, and Robert Halvorsen, District Administrator, Yap, to

Dr. Saul Riesenber, Smithsonian Institution, 5 November 1959, Smithsonian Institution Registrar's file, accession #228,912.

²⁰² Francis Defngin, Office of the District Administrator, to Howard Van Zandt, Vice President, International Telephone and Telegraph Corp., Tokyo, Japan, 21 April 1965. Stone money file, Office of the District Administrator, Yap.

²⁰³ James Flannery, District Administrator, Yap to David Boyer, National Geographic Society, 6 March 1968, stone money file, Office of the District Administrator, Yap.

²⁰⁴ See Table. Stones purchased by Daniels (nos. 113-115), 1968; by Robinson (no. 126), 1971; and by Sedore (no. 143), 1971, were cited as \$3.50 per inch (per 2.5 cm). Stone money file, Office of the District Administrator, Yap.

²⁰⁵ See Table, *rai* numbers 128-142, Schulman pieces.

²⁰⁶ CHRISTIAN, *Caroline Islands*, p. 319, and MÜLLER, *Yap*, p. 129 (HRAF, p. 222).

²⁰⁷ CHRISTIAN, *Caroline Islands*, p. 319.

²⁰⁸ KOTZEBUE, *Voyage of Discovery*, p. 203.

²⁰⁹ CHRISTIAN, *Caroline Islands*, p. 319, mentions as a variant the shape of a fish. The shape of a turtle was added to this in CHRISTIAN, "On Micronesian Weapons," p. 300, but MÜLLER, *Yap*, p. 129 (HRAF, p. 222), mentions only the shape of a new moon.

DEFNGIN, "The Rai of Yap," p. 16, states that the first shape was that of a whale. His version of the first piece of stone money varies from the others in that the fishermen from Rul village were driven by a storm to Palau. After finding the stone and returning home to Yap, they went to the king and gave him the stone. "They told the king that they had almost lost their lives while catching fish for him, and therefore the stone fish should be acceptable to the king, and considered as even more valuable than other Yapese treasures."

²¹⁰ KOTZEBUE, *Voyage of Discovery*, p. 206. Kotzebue was told by Kadu about Enopei, an artist in conjunction, who at night in the full moon prepared a cake of taro dough. As he ate the cake, the shape of the moon was altered accordingly. He re-rolled the cake into a circle and again the moon became full. Simultaneously, the shape of the moon and of the cake increased and decreased as the conjurer decreed.

DE BEAUCLAIR, "Some Ancient Beads of Yap and Palau," p. 1, told the story of Giluai who went to the sky-world where he obtained beads, the largest of which was "crescentic in shape."

²¹¹ DE BEAUCLAIR, "Stone Money of Yap," p. 151, fn. 1.

²¹² MÜLLER, *Yap*, p. 131 (HRAF, p. 228).

²¹³ WALLESER, "Religiöse Anschauungen," p. 616. TETENS and KUBARY, "Carolineninsel Yap," p. 109 (HRAF, p. 37), includes a vocabulary of Yap by J. T. Blohm and Alfred Tetens. Here *kann* is translated as "ghost" and also as "god."

²¹⁴ KUBARY, "Über das einheimische Geld," p. 25.

²¹⁵ *Ibid.*

²¹⁶ MICKLUCHO-MACLAY, "Die Insel Wuap," p. 44.

²¹⁷ MÜLLER, *Yap*, p. 130 (HRAF, p. 225).

²¹⁸ *Ibid.*

²¹⁹ PETRI, "Typenanalyse der Geldformen Ozeaniens," p. 316. The "younger" type was also mentioned by MÜLLER, *Yap*,

p. 132 (HRAF, pp. 228–229), who said “according to tradition the *mbul* or mat money was invented to compete with the *fā*. When people of Rul and Tamil were able to procure the latter the west coast villages became jealous and made mat money which accordingly would be more recent.”

²²⁰ GIFFORD and GIFFORD, “Archaeological Excavations in Yap,” pp. 198–199.

²²¹ *Ibid.*, p. 193. Gifford states that according to Professor Francis J. Turner of the Department of Geology, University of California, the stone may be phosphate.

²²² *Ibid.*

²²³ *Ibid.*, p. 194.

²²⁴ *Ibid.*, p. 193.

²²⁵ *Ibid.*, p. 205.

²²⁶ Robert Halvorsen, District Administrator, Yap, to Dr. Saul Riesenber, Smithsonian Institution, 21 January 1960. Smithsonian Institution Registrar’s file, accession #228,912.

²²⁷ D.M. Schneider, Department of Anthropology, University of California, Berkeley, to Dr. Saul Riesenber, Smithsonian Institution, 25 January 1960, Smithsonian Institution Registrar’s file, accession #228,912.

²²⁸ KUBARY, “Über das einheimische Geld,” p. 27. DE BEAUCLAIR, “Stone Money of Yap,” p. 151, points to the similarity of the Chinese jade disc *pi*.

²²⁹ MÜLLER, *Yap*, p. 129 (HRAF, p. 222), pl. 36, no. 5.

²³⁰ FURNESS, *Island of Stone Money*, p. 61, and MATSUMURA, “Contributions to the Ethnography of Micronesia,” p. 107.

²³¹ HUNT, et al., *Micronesians of Yap*, p. 36, table 1.

References

- APPLE, RUSS, and PEG APPLE. "Native Money." *Pacific Saver*, volume 5 (October 1970), [no pagination].
- BARNETT, H. G. *Being a Palauan*. New York: Holt, Rinehart and Winston, 1960.
- BASSETT, MARNIE MASSON. *Realms and Islands: The World Voyage of Rose de Freycinet in the Corvette Uranie 1817-1820; from the Journal and Letters and the Reports of Louis de Saulces de Freycinet, Capitaine de Corvette*. London: Oxford University Press, 1962.
- DE BEAUCLAIR, INEZ. "Some Ancient Beads of Yap and Palau." *Journal of the Polynesian Society*, volume 72, number 1 (1963), pages 1-10.
- . "The Stone Money of Yap." *The Bulletin of the Institute of Ethnology, Academia Sinica*, volume 16 (1963), pages 147-160.
- . "The Stone Money of Yap." *Micronesian Reporter*, volume 12, number 6 (15 August-1 October 1964), pages 10-15.
- BRAGG, LILLIAN C. "The King from Savannah." *Savannah Morning News*, 28 February 1960.
- BRIGHAM, WILLIAM TUFTS. "Report of a Journey around the World to Study Matters Relating to Museums." (Volume 5, number 5, of *Occasional Papers of the Bernice Pauahi Bishop Museum of Polynesian Ethnology and Natural History*.) Honolulu: Bernice P. Bishop Museum, 1913.
- BRITISH MUSEUM, DEPARTMENT OF BRITISH AND MEDIEVAL ANTIQUITIES AND ETHNOGRAPHY. *Handbook to the Ethnographical Collections*. Oxford: British Museum, 1910.
- BROWN, JOHN MACMILLAN. *Peoples and Problems of the Pacific*. London: T. F. Unwin, Ltd., 1927.
- BRYAN, EDWIN H. "Money of the Pacific Islanders." *The Numismatist*, volume 70, number 4 (April 1957), pages 430-432.
- BUTRON Y DE LA SÉRNA, DON EMILIO. *Memoria sobre las Islas Carolinas y Palaos presentada Al Excmo. Sr. Comandante General del Apostadero de Filipinas por El Comandante del Crucero 'Velasco' Capitan de Fragata Don Emilio Butron y de la Sërna*. Madrid: Fontanet, 1885.
- CANTOVA, JUAN ANTONIO. "Lettre du P. Jean Cantova, missionnaire de C. de J. au R. P. Guillaume Daubenton, Agadna, March 20, 1722." Pages 188-247 in volume 18 of *Lettres édifiantes et curieuses, écrites des missions étrangères, par quelques missionnaires de la Compagnie de Jésus*. Paris: Chez N. LeClerc, 1728.
- CASEY, JOHN. "The Weighty Problem of Being a Rich Yapese." *Coins, Medals & Currency*, 14 July 1967, page 2.
- CHAMISSO, ADELBERT VON. *Reise um die Welt mit der Romanzoffischen Entdeckungs-Expedition in den Jahren 1815-1818 auf der Brigg Rurik, Kapitän Otto von Kotzebue*. (Tagebuch in part 1 of volume 2 of *Chamisso's Werke*.) Hildburghausen: Verlag des Bibliographischen Instituts, 1869.
- . "The Changing Face of Palauan Custom." *Micronesian Reporter*, volume 11, number 1 (January-April 1963), pages 28-32.
- CHAPMAN, PETER S. "Japanese Contributions to Micronesian Archaeology and Material Culture." In *Prehistoric Culture in Oceania: A Symposium*, edited by I. Yawata and Y. H. Sinoto. Honolulu: Bernice P. Bishop Museum Press, 1968.
- CHEYNE, ANDREW. *A Description of Islands in the Western Pacific Ocean North and South of the Equator: with Sailing Directions together with their Productions, Manners and Customs of the Natives and Vocabularies of their Various Languages*. London: J. D. Potter, 1852.
- CHORIS, LUDOVIK. *Voyage pittoresque autour du Monde, avec des portraits de sauvages d'Amérique, d'Asie, d'Afrique, et des Îles du Grand Océan; des paysages des vues maritimes, et plusieurs objets d'histoire naturelle; accompagné de descriptions par M. le baron Cuvier, et M. de Chamisso, et d'observations sur les crânes humains, par M. le docteur Gall*. Paris: Didot, 1822.
- CHRISTIAN, FREDERICK WILLIAM. *The Caroline Islands. Travel in the Sea of the Little Lands*. New York: Charles Scribner's Sons, 1899.
- . "On Micronesian Weapons, Dress, Implements, etc." *The Journal of the Anthropological Institute of Great Britain and Ireland*, new series 1 (1899), pages 288-306, plates 19-24.
- CLAIN, PAUL. "Fragment d'une lettre du Père Paul Clain, 1697." Pages 19-26 in volume 2 of *Morceaux choisis des lettres édifiantes et curieuses, écrites des missions étrangères, sur la Religion, les Moeurs et les usages des Peuples visités par les Missionnaires; suivis de fragments de Nouvelles Lettres Édifiantes, d'un coup d'oeil général sur les Missions, etc.* 2nd edition. Paris: Antoine Caillot, 1813.
- . "Lettre de Père Paul Clain, de la Compagnie de Jésus, au Révérend Père Général de la même Compagnie, sur la nouvelle découverte qu'on a faite de trente-deux Îles au Sud des Îles Mariannes." Pages 112-136 of volume 1 of *Lettres édifiantes et curieuses, écrites des missions étrangères, par quelques missionnaires de la Compagnie de Jésus*. Paris: Chez N. LeClerc, 1703.
- CLYDE, PAUL HIBBERT. *Japan's Pacific Mandate, 1935*. [Reissued, Port Washington, New York: Kennikat Press, Inc., 1968].
- COELLO Y QUESADA, D. FRANCISCO. "La Question des Carolines." Translated from Spanish by Arthur Williamson Taylor. (Number 20 in volume 3 of 2nd series, *Bulletin de la Société Académique Indo-Chinoise*.) Paris: Société Académique Indo-Chinoise de France, 1887.
- COULTER, JOHN WESLEY. *The Pacific Dependencies of the United States*. New York: Macmillan Co., 1957.
- . "Currency in the Island of Yap." *The Numismatist*, volume 39, number 1 (January 1926), pages 24-25.
- DAEUFER, ALICE S. *Pathways to Micronesia: An Annotated Bibliography of Selected Works*. Saipan, Mariana Islands: Department of Education, Trust Territory of the Pacific Islands, 1969.

- DEEKEN, RICHARD. *Die Karolinen; nach eigenen Reisebeobachtungen, älteren Monographien und den neuesten amtlichen Berichten*. Berlin: Susserott, 1912.
- DEFNGIN, FRAN. "The Rai of Yap." *Micronesian Reporter*, volume 9, number 2 (March-April 1961), pages 16-18.
- . "The Traditional Ceremonies of Yap." *Micronesian Reporter*, volume 10, number 6 (November-December 1962), pages 15-17.
- "Deutsche Besitzergreifung der Karolinen." *Deutsche Kolonialzeitung*, volume 2, number 17 (1 September 1885), page 535.
- "Deutsche Niederlassungen in der Südsee." *Deutsche Kolonialzeitung*, volume 1, number 5 (1 March 1884), pages 93-100.
- DODSON, O. H. "The Hard Money of Yap Island." *Coinage*, volume 3, number 10 (October 1967), pages 48-51.
- . "The Incredible Money of Yap." *Log of the Circumnavigators Club*, volume 53, number 5 (Christmas 1965), pages 18-22.
- DUMONT D'URVILLE, JULES SÉBASTIEN CÉSAR. *Voyage au Pole Sud et dans L'Océanie, sur les corvettes L'Astrolabe et la Zélée, exécuté par ordre du roi pendant les années 1837-1838-1839-1840, sous la commandement de M. J. Dumont D'Urville, Capitaine de vaisseau, publiée par ordonnance de sa Majesté sous la direction supérieure de M. Jaquinet, Capitaine de Vaisseau, Commandant de la Zélée*. (Volume 5 of *Historie du Voyage*.) Paris: Gide, 1843.
- EINZIG, PAUL. *Primitive Money in the Ethnological, Historical and Economic Aspects*. New York and London: Pergamon Press, 1966.
- "Die Entwicklung der Deutschen Interessen in der Südsee während der Jahre 1880 bis 1885." *Deutsche Kolonialzeitung*, volume 3, number 12 (15 June 1886), pages 367-374.
- ESCADÉ v BARTOLÍ, MANUEL. *Las Carolinas: Descripción geográfica y estadística del Archipiélago Carolino con datos recopilados y ampliados*. Barcelona: L. Tasso Serra, 1885.
- FARQUHAR, FRANCIS PELOUBET. *A Brief Chronology of Discovery in the Pacific Ocean from Balboa to Captain Cook's First Voyage 1513-1770*. San Francisco: The Grabhorn Press, 1943.
- FINSCH, OTTO. *Carolinen und Marianen*. Hamburg: J. F. Richter, 1900.
- FISCHER, JOHN L. (with assistance of ANN M. FISCHER). *The Eastern Carolines*. New Haven, Connecticut: Pacific Science Board National Academy of Sciences National Research Council, 1957.
- FRANCO, JOSÉ LUIS. "Las monedas mas grandes del mundo: La fabulosa Isla de Yap." *Sociedad Numismática de Mexico—Boletín*, volume 2, number 13 (October-December 1956), pages 3-7.
- FREYCINET, LOUIS CLAUDE DE SAULES. *Voyage autour du monde entrepris par ordre du roi. Exécuté sur les corvettes de S. M. l'Uranie et la Physicienne, pendant les années 1817, 1818, 1819, 1820*. Paris: Imprimerie Royale, 1824.
- FURNAS, JOSEPH C. *Anatomy of Paradise: Hawaii and the Islands of the South Seas*. New York: W. Sloane Associates, Inc., 1947.
- FURNESS, WILLIAM HENRY. *The Island of Stone Money: Uap of the Carolines*. Philadelphia and London: J. B. Lippincott Co., 1910.
- GIBBS, HOWARD D. *Odd and Curious Money of the World*. New York: Hans M. F. Schulman, 1946.
- GIFFORD, E. W., and D. S. GIFFORD. "Archaeological Excavations in Yap." (Volume 18, number 2, in *Anthropological Records*.) Berkeley and Los Angeles: University of California Press, 1959.
- GRATTAN, C. HARTLEY. *The Southwest Pacific to 1900*. Ann Arbor, Michigan: University of Michigan Press, 1963.
- HARVARD UNIVERSITY, PEABODY MUSEUM. "The Micronesians of Yap and Their Depopulation: Report of the Peabody Museum Expedition to Yap Island, Micronesia, 1947-1948." Report number 24 of Coordinated Investigation of Micronesian Anthropology. National Research Council Pacific Science Board, Washington, D. C., n.d.
- HERNSHEIM, FRANZ. *Südsee-Erinnerungen (1875-1880)*. Berlin: A. Hofmann, 1883.
- HERSKOVITS, MELVILLE JEAN. *Economic Anthropology: A Study in Comparative Economics*. New York: Alfred A. Knopf, 1960.
- Highlights* (Saipan, Mariana Islands: Office of the High Commissioner, Trust Territory of the Pacific Islands, 1971-1974).
- HOBBS, WILLIAM HERBERT. *Cruises Along By-ways of the Pacific*. Boston: The Stratford Company, 1923.
- HUNT, EDWARD, DAVID M. SCHNEIDER, R. NATHANIEL KIDDER, and WILLIAM D. STEVENS. *The Micronesians of Yap and Their Depopulation*. Washington, D.C.: Pacific Science Board National Research Council, 1949.
- "Interest Revives in Island of Yap." *Savannah Morning News*, 20 November 1939.
- JOHANSSON, SVEN-OLOF. *Nigerian Currencies, Manillas, Cowries and Others*. Translated by Jim Learmonth. Norrköping, Sweden: Alfa Tryck, 1967.
- KEATE, GEORGE. *An Account of the Pelew Islands Situated in the Western Part of the Pacific Ocean, Composed from the Journals of Captain Henry Wilson and Some of his Officers Who in Aug., 1783, were There Shipwrecked in the Antelope, a Packet Belonging to the Honorable East India Company*. 2nd edition. London: G. Nicol, 1788.
- "King of Yap Saga May End in Suit." *Savannah Morning News*, 9 November 1952.
- KITTLITZ, F. H. VON. *Denkwürdigkeiten einer Reise nach dem russischen Amerika, nach Mikronesien und durch Kamtschatka*. Volume 1. Gotha: J. Perthes, 1858.
- KLINGMAN, LAWRENCE and GERALD GREEN. *His Majesty O'Keefe*. New York: Charles Scribner's Sons, 1950.
- KOTZEBUE, OTTO VON. *Voyage of Discovery into the South Sea and Beering's Straits for the Purpose of Exploring a North-east Passage Undertaken in the Years 1815-1818 at the Expense of his Highness the Chancellor of the Empire Count Romanzoff in the Ship Rurick under the Command of the Lieutenant in the Russian Imperial Navy—Kotzebue*. London: Longman, Hurst, Rees, Orme and Brown, 1821.
- KRAMER, AUGUSTIN F. *Palau*. (Band 2, theilband I, of *Ergebnisse der Südsee-Expedition 1908-1910*, edited by G. Thilenius, 1917-1918.) Hamburg: L. Friederichsen & Co., 1917.
- KRIEGER, HERBERT W. "Island Peoples of the Western Pacific: Micronesia and Melanesia." (Number 16 in *Smithsonian Institution War Background Studies*.) Washington, D.C.: Smithsonian Institution, 15 September 1943.
- KUBARY, JAN STANISLAW. "Über das einheimische Geld auf der Insel Yap und auf den Pelau-Inseln." Chapter 1 of *Ethnographische Beiträge zur Kenntnis des Karolinen Archipels*. Leiden: P. W. M. Trap, 1889.
- LEHUNTE, J. R. "Report of HMS *Espiegle* to Sir G. W. Des Voeux, Acting High Commissioner for the Western Pacific,

- 10 October, 1883." *General Proceedings*, nos. 1-83. Central Archives of Fiji and the Western Pacific, Suva, Fiji.
- LESSA, WILLIAM. "The Ethnography of Ulithi Atoll." Report number 28 of *Coordinated Investigation of Micronesian Anthropology*. Washington, D.C.: National Research Council Pacific Science Board, 1950.
- . "An Evaluation of Early Descriptions of Carolinian Culture." *Ethnohistory*, volume 9, number 4 (fall 1962), pages 313-403.
- . *Ulithi: A Micronesian Design for Living*. New York: Holt, Rinehart and Winston, 1966.
- LESSON, RENÉ PRIMEVÈRE. *Voyage autour du monde entrepris par ordre du gouvernement su la corvette la Coquille*. 2 volumes. Paris. P. Pourrat frères, 1838-1839.
- LONDON MISSIONARY SOCIETY. *A Missionary Voyage to the Southern Pacific Ocean, Performed in the Years 1796, 1797, 1798, in the Ship Duff, Commanded by Captain James Wilson; Compiled from Journals of the Officers and the Missionaries*. London: S. Gosnell for T. Chapman, 1799.
- LUDWIG, KOHL-LARSEN, *Unter Roten Hibiskusblüten: Ein Süd-seebuch*. Eisenach and Kassel, 1957.
- LÜTJE, OTTO. *Beitrag zu einer Landeskunde des Karolinen-Archipels*. Leipzig-Reudnitz: A. Hoffmann, 1906.
- LÜTKE, FEDOR PETROVICH. *Voyage autour du monde, exécuté par ordre de sa majesté l'empereur Nicolas 1^{er} sur la corvette le Séniavine, dans les années 1826, 1827 et 1829*. Volume 3. Paris: Didot Freres, 1836.
- MAHONEY, FRANCIS. "Land Tenure Patterns on Yap Island." Part I of *Land Tenure Patterns: Trust Territory of the Pacific Islands*. Volume I. Guam, Marianna Islands: Office of the Staff Anthropologist, Trust Territory of the Pacific Islands, 1958.
- MAHONEY, FRANCIS B. "Projective Psychological Findings in Palau Personality." Report number 22 of *Coordinated Investigation of Micronesian Anthropology*. Washington, D.C.: National Research Council Pacific Science Board, [1947-1949].
- MAIR, E. H. "A Selection of Primitive Monies and Currencies." *Australian Coin World*, volume 1 (November 1966), pages 4-11.
- MARENCO, S. *La ficción y la Verdad de lo ocurrido en Yap: Reseña histórica con las instrucciones y documentos oficiales*. Madrid: Estab. tip. de el Globo, 1886.
- MATSUMURA, AKIRA. "Contributions to the Ethnography of Micronesia." (Volume 40, article 7, in *Journal of the College of Science, Imperial University of Tokyo*.) Tokyo: Imperial University of Tokyo, 1918.
- MEINHARDT, GUNTHER, "Deutsch-Mikronesien und Samoa." (Part 6 in *Die Geldgeschichte der ehemaligen deutschen Schutzgebiete*.) Dortmund: Rundschau der Geldzeichensammler, 1964.
- MEINICKE, CARL EDWARD. "Polynesien und Mikronesien" (Volume 2 of *Die Inseln des stillen Ozeans: Eine Geographische Monographie*), Leipzig, 1876. [Reprint edition, Amsterdam: Meridian Publishing Co., 1969.]
- MIKLUCHO-MACLAY, NICHOLAS VON. "Die Insel Wuap." *Globus*, volume 33, number 3 (1878), pages 40-45. [Published first in *Russian Geographic Journal*, 2 (1877).]
- MOORE, W. ROBERT. "Pacific Wards of Uncle Sam." *The National Geographic Society Magazine*, volume 94, number 1 (July 1948), pages 73-103.
- MOSHER, STUART. "The Story of Money as Told by the Knox Collection." (Volume 17, number 2, in *Bulletin of the Buffalo Society of Natural Sciences*.) Buffalo, New York: Buffalo Society of Natural Sciences, 1936.
- MÜLLER, WILHELM. *Yap*. (Band 2, Halbband 1, of *Ergebnisse der Südsee-Expedition 1908-1910*, edited by G. Thilenius, 1917-1918.) Hamburg: L. Friederichsen & Co., 1917. [Translated for Yale Cross Cultural File, 1942; Human Relations Area Files, 1962.]
- . "Numismatica Solida." *American Journal of Numismatics*, volume 21 (1887), page 86.
- OBOJSKI, ROBERT. "Stone Money from Yap." *Numismatic News*, 17 February 1964, page 69.
- O'KEEFE, DAVID SEAN. "Last Will and Testament." Hong Kong: 1890 and 1895. [On file with Clerk of Superior Court, Chatham County, Savannah, Georgia.]
- PETRI, HELMUT. "Die Geldformen der Südsee." *Anthropos*, volume 31 (1936), pages 187-212 and 509-554.
- . "Typenanalyse der Geldformen Ozeaniens." *Archiv für Anthropologie*, N. F. 23, number 12 (1935), pages 309-317.
- POMERY, EARL S. *Pacific Outpost: American Strategy in Guam and Micronesia*. Stanford, California: Stanford University Press, 1951.
- PRICE, WILLARD. "Big Money of Yap." *Natural History*, volume 37, number 5 (May 1936), pages 457-462.
- . *Japan's Island of Mystery*. London and Toronto: W. Heinemann Ltd., 1945.
- QUIGGIN, ALLISON HINGSTON. *A Survey of Primitive Money. The Beginnings of Currency*. London: Methuen and Co., 1949.
- RACKUS, AL. M. "Stone Disc Money of Yap Island." *The Numismatist*, volume 45, number 3 (March 1932), pages 149-150.
- RAMSDEN, H. A. "Cowry Substitutes Used as Currency in Ancient China." *Numismatic and Philatelic Journal of Japan*, volume 3 (1914), pages 14-17.
- RAYMOND, D. "Stone Money of Yap Island." *The Numismatist*, volume 45, number 7 (July 1932), pages 451-452.
- RIESENBERG, FELIX. *The Pacific Ocean*. 1940. [Reprint edition, Freeport, New York: McGraw-Hill Book Co., 1971].
- RITZENTHALER, ROBERT E. *Native Money of Palau*. Milwaukee, Wisconsin: Milwaukee Museum, 1954.
- ROBERTSON, RUSSELL. "The Caroline Islands." *Transactions of the Asiatic Society of Japan, 1877*. Reprint edition. Tokyo: The Asiatic Society of Japan, 1888.
- RONCK, RONN. "Cable TV and 'Friends': They Loom for Yap." *Pacific Daily News*, 15 October 1973, pages 3, 11.
- . "King of Yap's Castle Crumbles." *Pacific Daily News*, 5 October 1973, pages 4, 23.
- . "The Old Stone \$\$ Story." *Pacific Daily News*, 6 October 1973, pages 4, 51.
- . "So It Is Time for Tourism?" *Pacific Daily News*, 13 October 1973, pages 6, 13.
- . "The Talk: Tourism." *Pacific Daily News*, 4 October 1973, pages 1, 4.
- . "Ulithi: Rusty Tin Midst Diamonds." *Pacific Daily News*, 11 October 1973, page 14.
- . "Ulithi: A Story of Chance, Derring-Do." *Pacific Daily News*, 10 October 1973, pages 10, 14.
- . "What We Must Keep." *Pacific Daily News*, 9 October 1973, pages 6, 16.

- SALESIUS, P. [JOHANN GUSTAV HASS]. *Die Karolinen-Insel Yap: Ein Beitrag zum Kenntnis von Land und Leuten in unseren deutschen Südsee-Kolonien* [The Carolines Island Yap: A Contribution to the Knowledge of the Land and Peoples in our German South Sea Colonies]. Berlin: William Susserott, [1907]. [Translated for Yale Cross Cultural File, 1942. Human Relations Area Files, 1963.]
- SCHOLEFIELD, GUY H. *The Pacific: Its Past and Future and the Policy of the Great Powers from the Eighteenth Century*. London: John Murray, 1919.
- SCHULMAN COIN AND MINT, INC. Auction Catalogs, 23–24 March 1956, 28 February 1959, 6–8 October 1970, 18–20 June 1971, 30 September–1 October 1971, 31 May–2 June 1972, 27–29 June 1973.
- SCHULMAN, HANS M. F. "Yap Stone Money Holds Interest to all Voyagers." *Coin World*, 31 December 1969, page 42.
- SEMPER, KARL GOTTFRIED. *Die Palau-Inseln im stillen Ocean*. Leipzig: F. A. Brockhaus, 1873.
- SENFETT, ARNO. "Ethnographische Beiträge über die Karolineninsel Yap" [Ethnographic Contributions concerning the Carolines Island of Yap], *Petermann's Mitteilungen*, 49 (1903): 49–60, 83–87. [Translated for Yale Cross Cultural File, 1942; Human Relations Area Files, 1962.]
- SHARP, ANDREW. *Ancient Voyages in the Pacific*. London: Penguin Books, 1957.
- . *The Discovery of the Pacific Islands*. Oxford: Clarendon Press, 1960.
- SHINEBERG, DOROTHY, editor. *The Trading Voyages of Andrew Cheyne 1841–1844*. Canberra: Australian National University Press, 1971.
- SPOEHR, FLORENCE MANN. *White Falcon: The House of Godeffroy and Its Commercial and Scientific Role in the Pacific*. Palo Alto, California: Pacific Books, 1963.
- SUTLIVE, JOHN. "Savannah Man Was King." *Savannah Morning News*, 15 January 1928, page 5.
- SWANSTON, R. S. "Journals 1857–1866, 1874–1885." Manuscript Bureau 121, Australian National University, Canberra, 1883.
- "Taro Cultivation Practices and Beliefs, Part I: The Western Carolines." (Number 6 in *Anthropological Working Papers*.) Guam: Office of the Staff Anthropologist, Trust Territory of the Pacific Islands, January 1960.
- TETENS, CAPTAIN ALFRED. *Among the Savages of the South Seas: Memoirs of Micronesia, 1862–1868*. Translated by Florence Mann Spoehr. Stanford, California: Stanford University Press, 1958. Tetens' journals, written in German, were collected and edited by S. Steinberg in 1888 and published under the title *Vom Schiffsjungen zum Wasserschout*. This publication is the basis for Mrs. Spoehr's translation.]
- TETENS, ALFRED, and JOHANN KUBARY. "Die Carolineninsel Yap Oder Guap nach den Mittheilungen von A. F. Tetens und Johann Kubary." ["The Carolines Island Yap or Guap, According to Reports of Alfred Tetens and Johann Kubary"]. Prepared by Dr. E. Gräffe. *Journal des Museum Godeffroy*, volume 1 (1887), pages 84–130. [Translated for Yale Cross Cultural File, 1942. Human Relations Area Files, 1962.]
- "Tree Dedicated to Captain O'Keefe." *Savannah Evening Press*, 14 January 1954.
- "Uncle Sam Wants the Isle of Yap." *Savannah Evening Press*, 23 November 1939.
- UNITED STATES DEPARTMENT OF COMMERCE, BUREAU OF THE CENSUS. *Historical Statistics of the United States: Colonial Times to 1957*. Washington, D. C.: Government Printing Office, 1961.
- UNITED STATES DEPARTMENT OF THE INTERIOR, OFFICE OF GEOGRAPHY. *NIS Gazetteer West Pacific Islands*. Washington, D. C.: Central Intelligence Agency, 1957.
- UNITED STATES DEPARTMENT OF THE TREASURY, BUREAU OF THE MINT. *Annual Report of the Director of the Mint to the Secretary of the Treasury*. Washington, D. C.: Government Printing Office, 1875, 1881, 1895, 1896, 1905, 1910, 1915, 1916.
- UNITED STATES NAVY. *Civil Affairs Handbook: West Caroline Islands OPNAV 50E-7*. Washington, D. C.: Office of the Chief of Navy Operations, Navy Department, 1 April 1944.
- UNITED STATES TRUST TERRITORY OF THE PACIFIC ISLANDS. Stone Money File, Office of the District Administrator, Yap.
- UNITED STATES TRUST TERRITORY OF THE PACIFIC ISLANDS, TRIAL DIVISION OF THE HIGH COURT. Civil Action 25, 1961.
- UTINOMI, HUZIO. *Bibliography of Micronesia. (Bibliographia Micronesia: Scientiae Naturalis et Cultas)*. Edited and revised by O. A. Bushnell, Honolulu: University of Hawaii, 1952.
- VOLKENS, G. "Über die Karolinen-Insel Yap" ["Concerning the Carolines Island of Yap"]. *Verhandlungen der Gesellschaft für Erdkunde zu Berlin*, volume 28 (1901), pages 62–76. [Translated for Yale Cross Cultural File, 1942. Human Relations Area Files, 1968.]
- WALLESER, P. SIXTUS. "Religiöse Anschauungen und Gebräuche der Bewohner von Yap (Deutsche Südsee)." *Anthropos*, volume 8 (1913), pages 607–629 and 1044–1068.
- "Walter Charlton Hartridge," Page 435 in volume 33 of *The National Cyclopaedia of American Biography*. Ann Arbor, Michigan: University Microfilms, 1967.
- Welcome to Yap*. Yap: Office of the District Administrator, Yap, Western Caroline Islands, October 1966.
- Western Pacific (New Guinea and Islands Northward)*. (Volume 4 in *Pacific Islands*.) British Naval Intelligence Division, H. M. Service, 1945.
- WOOD, HOWLAND. "The Stone Money of Yap." *The Numismatist*, volume 19, number 1 (January 1906), pages 7–11.
- ZERBE, FARRAN. "Stone Money of the Island of Yap." *The Numismatist*, volume 45, number 1 (January 1932), pages 10–13.

TABLE.—Rai exported from Yap
 [Measurements in centimeters unless indicated otherwise]

<i>Rai number</i> (*illustrated herein)	<i>Location</i>	<i>Accessions number</i>	<i>Acquired from</i>	<i>Year acquired</i>	<i>Diameter</i>	<i>Thickness</i>	<i>Hole diameter</i>	<i>Value at time of acquisition</i>	<i>Surface</i>
OWNED BY MUSEUMS AND INSTITUTIONS									
AUSTRIA									
1	Museum für Völkerkunde, Vienna	90409	Finsch collection	1910	35-34	40-38 mm	65 mm	-	-
2	"	"	"	"	5	13 mm	-	-	-
CHINA									
3	Institute of Ethnology, Academia Sinica, Taipei, Taiwan	-	Inez de Beauclair	1961	-	-	-	-	-
DENMARK									
4	Danish National Museum, Copenhagen	l.c. 447	Captain Ravnkilde	1877	29×24	-	-	10 Danish crowns	-
GERMANY									
*5	Staatliche Museen Preussischer Kulturbesitz, Museum für Völkerkunde, Berlin	VI 7883a	Kubary	1885	8.0-7.5	1	-	-	-
*6	"	VI 7883b	"	"	4.3	.8	-	Equal to pearl shell	-
*7	"	VI 20665	Prof. Volkens	1901	12	-	-	-	-
*8	"	VI 20666	"	"	9.5	-	-	-	-
*9	"	VI 46909	Max Kelling	1961, collected on Yap, 1900	26.5-24	4	-	-	-
10	Übersee-Museum, Bremen	D 3371	-	-	6.5×6.5	-	-	-	-
11	"	D 5786	-	-	19×18	-	-	-	-
12	"	D 5787	-	-	18×18	-	-	-	-
*13	"	D 13940	-	-	89×82	-	-	-	Rough, porous
*14	Staatliches Museum für Völkerkunde, Dresden	35068	-	1925	24.8	-	-	-	-
*15	"	42575	Umlauff collection	1929	ca. 40-45	-	-	-	-

See footnotes at end of table.

TABLE.—Rai exported from Yap—Continued
 [Measurements in centimeters unless indicated otherwise]

Rai number (*illustrated herein)	Location	Accessions number	Acquired from	Year acquired	Diameter	Thickness	Hole diameter	Value at time of acquisition	Surface
*16	"	51597	—	1952	4.8×3.7	—	—	—	—
*17	"	51598	—	"	7.4	—	—	—	—
*18	"	53535	—	1961	25	—	—	—	—
19	Museum für Völkerkunde, Frankfurt am Main	NS 24 244	No documentation. "Found without mark of registration in the magazine during 1908."						
20	"	NS 28 895	Purchased from daughter of collector, August Mockel, who visited Yap 1879–1883	1932 (1879–1883)	28	—	—	Collector said "represents value of about 40 mark"	—
*21	Hamburgisches Museum für Völkerkunde, Hamburg	E 4008	Consul F. Hershheim	1903	60	13	—	—	Stepped
*22	"	E 4009	"	"	71	—	16	—	"
*23	"	823:05	Dr. H. Hallier who purchased it from Chief Ruipung, 1903	30 Oct 1903	22	6.5	—	10 mark	Bamboo stick (26cm) used for transporting stone
*24	"	1168 ^{II} M214	Loan from Hamburgische Wissenschaftliche Stiftung. Acquired: Südsee Expedition, Dr. Müller.	1908–1910	14.5×11	3	—	—	—
*25	"	1169 ^{II} M218	"	"	3.5–4.5	—	—	—	Stepped
*26	"	1325 ^{II} M315	"	"	66.5	13	—	—	—
*27	"	1341 ^{II} M391	"	"	53	12	—	—	—
*28	Museum für Völkerkunde, Leipzig	Mi 500	Purchased from Godeffroy firm	1885	5–6	—	—	—	Smooth
*29	"	Mi 501	"	"	19.5	—	—	—	Rough

See footnotes at end of table.

TABLE.—Rai exported from Yap—Continued
 [Measurements in centimeters unless indicated otherwise]

<i>Rai number</i> (*illustrated herein)	<i>Location</i>	<i>Accessions number</i>	<i>Acquired from</i>	<i>Year acquired</i>	<i>Diameter</i>	<i>Thickness</i>	<i>Hole diameter</i>	<i>Value at time of acquisition</i>	<i>Surface</i>
*30	"	Mi 502	"	"	6.5-4.0	-	-	-	Unworked surface, center hole
*31	"	Mi 503	"	"	5	-	-	-	Unworked
*32	"	Mi 504	"	"	7.7-4.5	-	-	-	"
*33	"	Mi 505	"	"	7-4	-	-	-	"
*34	"	Mi 506	"	"	8-4	-	-	-	"
*35	"	Mi 507	"	"	5.5-4.0	-	-	-	"
36	"	Mi 512	Gift of Jaluit Society (Hernsheim)	1904	70	(specimen missing—lost after war damage)			
*37	"	Mi 647	Gift of Arno Senfft	1904	82-70	14 (at rim 6-3)	12	-	-
*38	"	Mi 3387	Purchased from Lorenzen	1911, collected 1909	15.5-13.5	-	-	-	-
*39	"	Mi 3388	"	"	22.5-22.0	-	-	-	-
*40	"	Mi 4739	Transfer from Archaeological Museum, Weimar	1957	13-12	-	-	-	-
*41	"	Mi 4744	"	"	12.5-8.5	-	-	-	-
*42	"	Mi 4610	Purchased from Deubner	1960	10.5	-	-	-	-
*43	"	Mi 4611	"	"	13	-	-	-	-
*44	"	Mi 4746 a-c	Purchased from Schroder	1969	4, 3.5, 3	-	-	-	Three pieces strung together
*45	"	Without number, records destroyed	-	-	71-66	10.5	12	-	-
*46	"	"	-	-	53-50	11	9-8	-	-
*47	"	"	-	-	8-7	-	-	-	-
*48	Linden-Museum Gesellschaft für Erd-und Völkerkunde, Stuttgart	109 560	Gift of Ernst Heinrich, Stuttgart Bad Cannstatt (private collector of Oceanic & African Art)	July 1932	6.3-6.1	1.4 (at rim .7)	1.3-1.2	-	Stepped

See footnotes at end of table.

TABLE.—Rai exported from Yap—Continued
 [Measurements in centimeters unless indicated otherwise]

<i>Rai number</i> (*illustrated herein)	<i>Location</i>	<i>Accessions number</i>	<i>Acquired from</i>	<i>Year acquired</i>	<i>Diameter</i>	<i>Thickness</i>	<i>Hole diameter</i>	<i>Value at time of acquisition</i>	<i>Surface</i>
*49	"	120 541	"	22 Nov 1958	22.5–21	2.6–2.5 (at rim 1.8–1.7)	6.2–6.0	–	Broken and repaired
*50	"	Records lost	–	–	39	5.4 (at rim 2.0)	8	–	–
GREAT BRITAIN									
51	British Museum, Ethnography Department, London	99–23	Collected by F. W. Christian	1899	51	–	–	–	(note a)
52	"	No number	H. G. Beasley collection (Granmore Museum)	1944	46.5	–	–	–	–
JAPAN									
53	Tokyo National Museum, Tokyo	29875	Gift of Ukichi Taguchi who acquired it on Yap	20 Oct 1891	31.7 × 30.25	4.75	10.0	–	–
54	"	30605	Gift of Mr. Sadajiro Shibata	Mar 1903	24.35	4.5	5.4	–	–
55	"	31488	Gift of Chief of Yap on occasion of visit to Japan	Mar 1915	77.8 × 63.6	12.05	9.65	–	–
*56	"	31489	"	"	54.8 × 46.9	7.5	13.0	–	Stepped
*57	The University of Tokyo, Department of Anthropology, Faculty of Science, Tokyo	–	Presented by Chief from Yap on occasion of visit to Ministry of the Navy, Japan	Aug 1915	85 × 68	–	15	Valued by donors at 500 yen. (note b)	Rough, weathered

See footnotes at end of table.

TABLE.—Rai exported from Yap—Continued
 [Measurements in centimeters unless indicated otherwise]

<i>Rai number</i> (*illustrated herein)	<i>Location</i>	<i>Accessions number</i>	<i>Acquired from</i>	<i>Year acquired</i>	<i>Diameter</i>	<i>Thickness</i>	<i>Hole diameter</i>	<i>Value at time of acquisition</i>	<i>Surface</i>
THE NETHERLANDS									
*58	Rijksmuseum voor Volkenkunde, Leiden	1109-36	Gift of Mr. P. K. A. Meerkamp van Embden, Consul of the Netherlands in Manila	1896	ca. 24	ca. 2	—	Donor's comment, "value equal to a sack of copra equalling an amount of about D. Fl. 1,50"	Rough, interesting tool (?) mark around lip of hole
59	Museum voor land-en Volkenkunde, Rotterdam	—	Purchased from estate of German physician, Dr. Lau, who purchased it in village of Dulukan, Yap, 1909	1951, collected 1909	25.5-22.5	4	5	—	Stepped
SWEDEN									
*60	Svenska Handelsbanken, Stockholm	—	Acquired from Yapese citizen through administration, transported from Lamer-Ngaff village, 1967	Mar 1967	150-100	20-15	—	\$30 per foot or \$150	Rough, weathered
SWITZERLAND									
*61	Museum für Völkerkunde, Basel	Vc 47	Purchased from Rautenstrauch-Joest Museum für Völkerkunde, Cologne, Germany	1911	7	1	—	—	Piece strung with coconut rope

See footnotes at end of table.

TABLE.—Rai exported from Yap—Continued

[Measurements in centimeters unless indicated otherwise]

<i>Rai</i> number (*illus- trated herein)	<i>Location</i>	<i>Acces- sions number</i>	<i>Acquired from</i>	<i>Year acquired</i>	<i>Diameter</i>	<i>Thick- ness</i>	<i>Hole diam- eter</i>	<i>Value at time of acquisition</i>	<i>Surface</i>
*62	"	Vc 48	"	"	11	16 mm	—	—	—
*63	"	Vc 254	"	1911, said to be collected by A. Creifelds before 1906	7	—	—	—	—
*64	"	Vc 255	"	"	3.5	—	—	—	—
*65	"	Vc 99	Acquired from Mr. Koniezko by Prof. Felix Speiser who donated it to museum	1921	35	5	—	—	—
66	Bernisches Historisches Museum, Berne	Mikr. 37	Gift of former curator, Dr. Zeller, who purchased it from A. J. Speyer, Berlin	1920 deposited in museum, 1928 donated	36.0–28.5	11.3, at rim 4	4.5	Taxation, 1928, 50 Swiss francs	—
	U.S.S.R.								
*67	Museum of Anthropology and Eth- nography, Leningrad	N 168– 188 ¹	N. N. Miklucho- Maclay	1886	36.5	8.5	—	Donor wrote: "many of the stone pieces have a value of many hundred dollars".— (note c)	—
*68	"	N 168– 188 ²	"	"	16.5	8.0– 5.5	—	"	Large sloping hole
*69	"	N 168– 188 ³	"	"	18	8	—	"	—
70	"	N 168– 188 ⁴	"	"	20–15	8.5	—	"	—
71	"	N 168– 188 ⁵	"	"	13	4	—	"	—

See footnotes at end of table.

TABLE.—Rai exported from Yap—Continued
 [Measurements in centimeters unless indicated otherwise]

<i>Rai number</i> (*illustrated herein)	<i>Location</i>	<i>Accessions number</i>	<i>Acquired from</i>	<i>Year acquired</i>	<i>Diameter</i>	<i>Thickness</i>	<i>Hole diameter</i>	<i>Value at time of acquisition</i>	<i>Surface</i>
UNITED STATES									
72	The American Museum of Natural History, New York City	80.1/4473	Purchased from John H. Brandt, then a Trust Territory Government employee	1962, collected in Kong, Yap, 1959	5½ in (14 cm)	—	—	—	—
73	Bernice P. Bishop Museum, Honolulu, Hawaii	9653	Gift of the Honorable Henry Naupu	1907	116–100	15.5	23–20	—	—
74	"	B5568	Collected by Hans G. Hornbestel in Agana, Guam	9 Oct 1922	19–15	—	20 mm	—	—
75	"	C8432	Collected by Yoshio Kondo at Uluach, Yap	3 Jul 1936	35–33	6	—	—	—
76	"	C8808	Collected by Museum's Micronesia Expedition	17 Oct 1936	55–50	12	140–65 mm	—	—
77	"	D3674	Mrs. James Murray	1 Jul 1965, collected in Koror, c. 1953	12	3.7	—	—	—
78	"	5851	Gift of estate of Governor Ingram M. Stainback who acquired it from Rear Admiral Richard B. Black	7 Feb 1963, collected before 1952	60–56	9	82–65 mm	—	—
79	"	D4357	Gift of Edmund Gilmer	29 Jun 1967	17.5–15.2	28 mm	18–8 mm	—	Brownish color
80	"	D4538	"	"	11.9–9.1	10×10 mm	—	—	Flat, "modern manufacture"

See footnotes at end of table.

TABLE.—Rai exported from Yap—Continued
 [Measurements in centimeters unless indicated otherwise]

<i>Rai number</i> (*illustrated herein)	<i>Location</i>	<i>Accessions number</i>	<i>Acquired from</i>	<i>Year acquired</i>	<i>Diameter</i>	<i>Thickness</i>	<i>Hole diameter</i>	<i>Value at time of acquisition</i>	<i>Surface</i>
81	"	1973.14	Gift of Theo. J. Fabik, Rear Admiral, Coast Guard Ret. Presented to donor by Yapese Chief at commissioning of U.S. Loran C Station on Yap, 11 Sep, 1964	1973 (1964)	44.5	80 mm	7	—	—
82	Museum of Science, Buffalo, New York	Kn 428	Knox Collection	Prior to 1936	21–16½ in (53.5–42 cm)	5 in (13 cm)	9 in (23 cm)	—	(note d)
*83	The Robert H. Lowie Museum of Anthropology, U. of California, Berkeley	11–32430	Collected by E. W. Gifford during archaeological investigations in Micronesia. Obtained 21 May 1956, from Ada Ariadna and Alexander A. Tretnof, Rul, Yap	1956	24.8	5.6	5.2	—	Incised, spokelike lines
*84	"	11–32743	Collected by E. W. Gifford from A. J. Roboman, Tomil, Yap, 15 May 1956	1956	37.7	5.3	7.7	—	Fairly smooth, sharp edged hole
*85	"	11–32750	Collected by E. W. Gifford from Kent R. Groote, 19 May 1956	1956	27.1	5.3	3.8	—	"Palau made piece"

See footnotes at end of table.

TABLE.—Rai exported from Yap—Continued
 [Measurements in centimeters unless indicated otherwise]

<i>Rai number</i> (*illustrated herein)	<i>Location</i>	<i>Accessions number</i>	<i>Acquired from</i>	<i>Year acquired</i>	<i>Diameter</i>	<i>Thickness</i>	<i>Hole diameter</i>	<i>Value at time of acquisition</i>	<i>Surface</i>
*86	The Chase Manhattan Bank Money Museum, New York City	-	Purchased from Staatliche Museen Preussischer Kulturbesitz Museum für Völkerkunde, Berlin	1931	30-29 in (76.2-73.7 cm)	-	-	Author asked not to cite price paid	Rough, weathered
87	"	-	"	"	12 in (30.5 cm)	-	-	"	-
(87a)	"	(note e)							
*88	The National Bank of Detroit, Michigan	-	Purchased from Mr. Pong, Bugol village, Tomil, Yap	1960	5 ft (about 152.3 cm)	7-4 in (17.8-10.2 cm)	10 in (25.4 cm)	\$25 per ft or \$125 (T.T. court records)	Rough
89	World Heritage Museum, U. of Illinois, Urbana, Ill.	-	Gift of Andrew Roboman, Yap	Mar 1965	18 in (45.7 cm)	-	-	-	-
90	National Geographic Society, Washington, D.C.	-	Purchased from sources on Yap. Stone from Neff village. Obtained by staff member David Boyer through offices of District Administrator, Yap	1967	5 ft 11 in (180.3 cm)	-	-	\$3.75 per inch or \$266.25	Broken
91	Peabody Museum of Archaeology & Ethnology, Harvard University, Cambridge, Mass.	-	Collected by Museum Expedition headed by Schneider, Stevens, Kidder and Hunt	1948	7-5½ in (17.8-14 cm)	½ in (1.3 cm)	⅝ in (1.5 cm)	-	"Fragment of larger stone"
92	"	-	"	"	9¼-8⅜ in (23.5-21.3 cm)	1⅞ in (2.9 cm)	1⅜ in (3.5 cm)	-	

See footnotes at end of table.

TABLE.—Rai exported from Yap—Continued
 [Measurements in centimeters unless indicated otherwise]

<i>Rai number</i> (*illustrated herein)	<i>Location</i>	<i>Accessions number</i>	<i>Acquired from</i>	<i>Year acquired</i>	<i>Diameter</i>	<i>Thickness</i>	<i>Hole diameter</i>	<i>Value at time of acquisition</i>	<i>Surface</i>
93	The University Museum, U. of Pennsylvania, Philadelphia	P1743	Gift of Dr. William Furness	1904 collected 1903	6 cm	—	—	—	—
*94	"	P1744	"	"	19½ in (49.5 cm)	—	—	Furness said: "a good pig worth stone of about 19 inches". Valued by Museum, 1970 at \$2,000, 1967 at \$1,000	—
95	Ripley's "Believe It or Not" Museum St. Augustine, Fla.	—	On loan from Grover Criswell of Citra, Fla. who acquired it from A. Roboman of Yap. "Said to come from stone bank at Balabat (sic)"	1964	7½ ft (228.4 cm)	—	—	Cost paid in 1964, "several hundred dollars"	—
96	Department of Anthropology, National Museum of Natural History, Smithsonian Institution, Washington, D.C.	176,089 (no. 1)	Not recorded	5 Jan 1897	58–56	rim 3	10	—	Dull finish, gouge marks .5 cm wide, piece broken and repaired

See footnotes at end of table.

TABLE.—Rai exported from Yap—Continued
 [Measurements in centimeters unless indicated otherwise]

<i>Rai number</i> (*illustrated herein)	<i>Location</i>	<i>Accessions number</i>	<i>Acquired from</i>	<i>Year acquired</i>	<i>Diameter</i>	<i>Thickness</i>	<i>Hole diameter</i>	<i>Value at time of acquisition</i>	<i>Surface</i>
*97	"	176,089 (no. 2)	"	"	61-59	rim 3	10	—	Stepped only on one side, step begins 6 cm from rim, creamy color, traces of gouging or filing
98	"	48,520 (cat. 248,-987)	Purchased from H. L. Cons-tenoble, Agana, Guam through W. E. Safford, Dept. of Agriculture	30 Mar 1908	25.5	4 (at rim 1.5)	6.5	—	One side flat, light color, crystal-like surface
*99	"	227,555 (cat. 397,-772)	Arnold C. Mason through Gilbert Corwin. Collected on Babelthnop, Palau Islands	6 Oct 1959 (1948)	58-48	10.2 (at rim 1.5)	12	—	Darkest of stones in coll. Very thick at center, smooth
*100	"	228,912 (cat. 400,-073)	Chief Gaag of Rul, Yap	22 Jun 1962	2.08-1.83	18	—	\$25 per ft or \$175	—
101	"	244,937 (cat. 400,-679)	Mrs. Dewitt C. Ramsey	7 Nov 1962	13.9 (cat. card reads 18.4)	.8	2	—	Stepped, yellowish or golden brown color, file marks
*102	Division of Numismatics, National Museum of History and Technolgy, Smithsonian Institution, Washington, D.C.	242915 (cat. 69631)	Purchased from H. H. Kricheldorf, Stuttgart, Germany	20 Dec 1962	18	3.5	2	—	—

See footnotes at end of table.

TABLE.—Rai exported from Yap—Continued
 [Measurements in centimeters unless indicated otherwise]

<i>Rai number</i> (*illustrated herein)	<i>Location</i>	<i>Accessions number</i>	<i>Acquired from</i>	<i>Year acquired</i>	<i>Diameter</i>	<i>Thickness</i>	<i>Hole diameter</i>	<i>Value at time of acquisition</i>	<i>Surface</i>
103	"	303400 (cat. 72.-172.1)	Col. William C. Moore, Arlington, Va. Item from central depositories on Yap. Given by chief to Douglas Xiques of Guam, 1967, then to a Major Raymond E. Sullivan and finally to Col. Moore	13 Dec 1972 (1967)	60	11 (at rim 4.5)	9	—	Smooth, stepped, broken when being unloaded from Palau Islander onto Guam
104	Thomas Burke Memorial Washington State Museum, Washington, University of Seattle	4.13841	Gift of Shig Kaneshiro, then a Trust Territory Government employee. Collected by Douglas Osborne for the museum	1953	—	—	—	—	Fragments of broken rai
105	"	4.13842	Gift of Shig Kaneshiro. Collected on Koror at old Japanese residential area.	1954	25–21 in (63.5–53.3 cm)	—	4 in (10.2 cm)	—	—
106	"	4.13843	"	"	19 in (48.2 cm)	—	3½ in (8.9 cm)	—	Broken, ¼ of rim missing

See footnotes at end of table.

TABLE.—Rai exported from Yap—Continued
 [Measurements in centimeters unless indicated otherwise]

<i>Rai number (*illustrated herein)</i>	<i>Location</i>	<i>Accessions number</i>	<i>Acquired from</i>	<i>Year acquired</i>	<i>Diameter</i>	<i>Thickness</i>	<i>Hole diameter</i>	<i>Value at time of acquisition</i>	<i>Surface</i>
107	"	4.13844	Gift of Shig Kaneshiro. Found in water of Koror by local Palauan. Given to Weather Bureau on Koror, then to donor by U.S. meteorologist, Richard Hagelmeyer.	"	22 in (55.8 cm)	—	—	—	Undrilled, incomplete shape
108	"	91.0/31	Gift of Mrs. Ford Elvidge, Seattle	1963	14 in (35.6 cm)	2 in (5.1 cm)	2 in (5.1 cm)	—	—
109	"	91.0/333	Gift of, and collected by Mr. Jim Eslinger, Pan American pilot on Yap.	1968	16–15 in (40.7–38.1 cm)	4–3 in (10.2–7.7 cm)	2½ in (6.4 cm)	—	—
PRIVATELY OWNED									
110	Abalos, Filomeno J. Colonia, Yap	—	Sale registered in file of District Administrator, Yap, from John D. Tamaglibian, Waned village, Maap municipality, Yap.	5 Aug 1971	15 in (38.1 cm)	2 in (5.1 cm)	—	\$6	—

See footnotes at end of table.

TABLE.—Rai exported from Yap—Continued
 [Measurements in centimeters unless indicated otherwise]

<i>Rai number</i> (*illustrated herein)	<i>Location</i>	<i>Accessions number</i>	<i>Acquired from</i>	<i>Year acquired</i>	<i>Diameter</i>	<i>Thickness</i>	<i>Hole diameter</i>	<i>Value at time of acquisition</i>	<i>Surface</i>
111	Becker, Neil Great Neck, N.Y.	(Schulman #827)	Purchased from Hans Schulman who said it was "received by Catholic priest, T. Kurosawa, from Roupon of Yap"	27 Jun 1973	6 in (15.2 cm)	—	¾ in (1.9 cm)	Offered for \$120-\$140	Stepped, light color, file marks
112	Crawford, Josephine and William, Hawaii	—	Sale registered from Andrew Roboman of Tomil, Yap	28 Aug 1968	20 in (50.8 cm)	—	—	\$70	—
113	Daniels, Bill (past Governor of Guam), Liberty, Tex.	—	Sale registered from Francis Defngin, Wonayan village, Gagil municipality, Yap	15 Nov 1968	18½ in (47 cm)	—	—	Purchased for \$3.50 per inch or 3 stones for \$160.50	—
114	"	—	"	"	15 in (38 cm)	—	—	"	—
115	"	—	"	"	16½ in (41.9 cm.)	—	—	—	—
116	Farrington, Mrs. Elizabeth, (past Director of Office of Territories, Department of Interior), Washington, D.C.	—	Sale registered	—	—	—	—	—	—
117	Kahn, Paul J., Palo Alto, Calif.	—	Given by Chief Andrew Roboman, Yap, at dedication of Yap District Legislature Bldg. in appreciation of assistance given Yapese students at U. of Guam	Jan 1969	11×10 in (27.1×25.4 cm)	1½ in (3.8 cm)	—	—	—

See footnotes at end of table.

TABLE.—Rai exported from Yap—Continued

[Measurements in centimeters unless indicated otherwise]

<i>Rai number</i> (*illustrated herein)	<i>Location</i>	<i>Accessions number</i>	<i>Acquired from</i>	<i>Year acquired</i>	<i>Diameter</i>	<i>Thickness</i>	<i>Hole diameter</i>	<i>Value at time of acquisition</i>	<i>Surface</i>
118	Kennedy, David M., Ambassador at Large (note f)	—	Given to President Nixon via Ambassador Kennedy by Chief Andrew Roboman, Yap	Spring 1971	ca. 3 ft (ca 91.4 cm)	ca. 2½ in (6.4 cm)	—	—	—
119	"	—	"	"	"	"	—	—	—
120	LaForest, Dr. James R., Dean, Orange County Community College, Middletown, N.Y.	—	—	—	14½ in (36.8 cm)	—	—	—	Stepped, broken
*121	Lannan, J. Patrick, The Lannan Foundation, Palm Beach, Fla.	—	Acquired through offices of District Administrator Yap, by Howard F. Van Zandt, Vice President International Telephone & Telegraph Corp., Tokyo	1966	29×26 in (73.6×66 cm)	—	—	Purchased for \$60	Stepped
122	Linear, Captain Ova, S/Y Klaraborg, (Sweden)	—	—	—	—	—	—	—	—
123	Montvel-Cohen, Marvin, Carbondale, Ill.	—	Given by Chief Andrew Roboman, Yap, at dedication of Yap District Legislature Bldg.	Jan 1969	—	—	—	—	—
124	Ostheimer III, A. J., Honolulu, Hawaii	—	Sale registered from Fanechoor, Yap	6 Aug 1968	26 in (66 cm)	—	—	—	—

See footnotes at end of table.

TABLE.—Rai exported from Yap—Continued
 [Measurements in centimeters unless indicated otherwise]

<i>Rai number</i> (*illustrated herein)	<i>Location</i>	<i>Accessions number</i>	<i>Acquired from</i>	<i>Year acquired</i>	<i>Diameter</i>	<i>Thickness</i>	<i>Hole diameter</i>	<i>Value at time of acquisition</i>	<i>Surface</i>
125	"	—	Sale registered from Andrew Roboman, Yap	—	21 in (53.3 cm)	—	—	—	—
126	Robinson, David, University of Guam	—	Sale registered from Figir Leerwon of Wanavan village Gagil municipality, Yap	29 Mar 1971	24 in (60.9 cm)	—	—	Purchased for \$3.50 per inch or \$84	—
127	Schneider, David M., University of Chicago, Dept. of Anthropology, Chicago	—	Sale registered from Andrew Roboman, Yap	28 Aug 1968	18 in (45.8 cm)	—	—	\$63	—
128	Schulman, Hans M. F., New York City. Pieces listed for auction 23–24 Mar 1956	440	—	—	4×2 in (10.2×5.1 cm)	—	1½ in (3.8 cm)	Offered at \$100	—
129	Schulman auction 28 Feb 1959	2477	"Given by Chief Roupon to Mr. Kurosawa (Japanese sign painter)"	—	9 in (22.9 cm)	½ in (1.3 cm)	2 in (5.1 cm)	Offered at \$150, realized \$90	—
130	"	2478	—	—	11 in (27.5 cm)	—	—	Offered at \$250, realized \$100	"Dark brown and white, spotted with crystallized dots"
131	"	2479	—	—	6 in (15.3 cm)	—	1¼ in (3.2 cm)	Offered at \$100, realized \$82.50	—

See footnotes at end of table.

TABLE.—Rai exported from Yap—Continued
 [Measurements in centimeters unless indicated otherwise]

<i>Rai number</i> (*illustrated herein)	<i>Location</i>	<i>Accessions number</i>	<i>Acquired from</i>	<i>Year acquired</i>	<i>Diameter</i>	<i>Thickness</i>	<i>Hole diameter</i>	<i>Value at time of acquisition</i>	<i>Surface</i>
132	Schulman auction 6-8 Oct 1970	1081	Howard D. Gibbs	-	2 and $\frac{3}{4}$ in (5.1×1.9 cm)	-	-	Offered at \$65-\$75, realized \$60	Reported by Neil Becker to be a Toga stone
133	"	1082	"	-	3 in (7.6 cm)	-	-	Offered at \$75-\$100, realized \$35	-
134	Schulman auction 18-20 Jun 1971	1361A	Howard D. Gibbs who acquired it from Japanese administration in Yap	1934	13 in (33 cm)	-	-	Offered at \$500-\$600. Reported by Neil Becker to have been withdrawn from sale	-
135	"	1362	Howard D. Gibbs (Schulman said "brought by a Navy officer who married a Yap girl related to a tribal chief.")	-	19½ in (49.5 cm)	-	-	Offered at \$1,000-\$2,000, realized \$1,100	-
136	"	1363	Howard D. Gibbs	-	12 in (30.5 cm)	-	-	Offered at \$350-\$400, realized \$350	-
137	"	1364	"	-	2½×1¼ in (6.4×3.2 cm)	-	-	Offered at \$100-\$150, realized \$52.50	-

See footnotes at end of table.

TABLE.—Rai exported from Yap—Continued

[Measurements in centimeters unless indicated otherwise]

<i>Rai number</i> (*illustrated herein)	<i>Location</i>	<i>Accessions number</i>	<i>Acquired from</i>	<i>Year acquired</i>	<i>Diameter</i>	<i>Thickness</i>	<i>Hole diameter</i>	<i>Value at time of acquisition</i>	<i>Surface</i>
138	"	1365	"	—	3 in (7.6 cm)	—	—	Offered at \$150–\$200, realized \$55	—
139	"	1366	"	—	12 in (30.5 cm)	—	—	Offered at \$275–\$300, realized \$275	—
140	Schulman auction 1 Oct 1971	550	"A Navy captain"	—	20 in (50.8 cm)	—	—	Offered at \$1,250, realized \$400 (note g)	—
141	Schulman auction 31 May– 2 Jun 1972	1128	Captain Don Kann, U.S. Air Force	—	16½ in (41.9 cm)	—	—	Offered at \$1,250–\$1,750, realized \$450	—
142	Schulman auction 27–29 Jun 1973	828	—	—	5 in (12.7 cm)	—	⅜–1 in (1–2.5 cm)	Offered at \$750–\$1,000	—
143	Sedore, William H. Reno, Nev.	—	Sale registered from Stanley Filmed of Kaday Village, Weloy municipality, Yap	Aug 1971	14 in (35.5 cm)	—	—	\$3.50 per inch or \$49	—
144	Seaby Ltd., B.A. London, Great Britain, Piece listed for auction Aug 1965	—	—	—	21 in (53.3 cm)	—	—	5 pounds	—

See footnotes at end of table.

TABLE.—Rai exported from Yap—Continued
 [Measurements in centimeters unless indicated otherwise]

<i>Rai number</i> (*illustrated herein)	<i>Location</i>	<i>Accessions number</i>	<i>Acquired from</i>	<i>Year acquired</i>	<i>Diameter</i>	<i>Thickness</i>	<i>Hole diameter</i>	<i>Value at time of acquisition</i>	<i>Surface</i>
145	Smith, Dr. Don, George Mason College, Fairfax, Va.	—	—	1970	36–32 cm	8 cm	9–4 cm	—	Brown to yellowish color
146	Tolentino, A. M. Manila, Philippines	—	Sale registered from Andrew Roboman, Yap	21 Sept 1968	18 in (45.8 cm)	—	—	Purchased for \$63	—
147	Weinrich, Mrs. Harriet, Hawaii	—	Sale registered from Francis Defngin, Wonayan village, Gagil municipality, Yap	29 Aug 1967	26 in (66 cm)	—	—	Purchased for \$65	—
*148	Wilson, Prof. W. Scott, U. of Guam	—	Given by Chief Andrew Roboman at dedication of Yap District Legislature Bldg.	1969	40×30 cm	7.5 cm	7.5 cm	—	—

* Illustrated by CHRISTIAN, "On Micronesian Weapons," pl. 23: fig. 2.

^b MATSUMURA, "Contributions to the Ethnography of Micronesia," p. 164.

^c MIKLUCHO-MACLAY, "Die Insel Wuap," p. 44.

^d Illustrated by MOSHER, "The Story of Money," pl. 9.

^e The Museum für Völkerkunde, Berlin, indicated that three pieces were sold to The Chase Manhattan Bank Money Museum. The curator of the Money Museum at the time of purchase was Farran Zerbe who wrote in *The Numismatist*, 45 (1932), p. 12, that the three pieces received measured 12, 26, and 30 inches (30, 65, and 75 cm). The 26-inch piece must be the one that the Berlin museum said was given by Consul Hershheim in 1897. This original donor said that the item was "worth a piece of shell money of the value of DM 10."

^f Both Kennedy stones are now in Ambassador David M. Kennedy's home in a Chicago suburb though they have previously been displayed by various banks.

^g "Auction Reports," *Australian Coin Review*, vol 8, No. 9 (March 1972), p. 15.

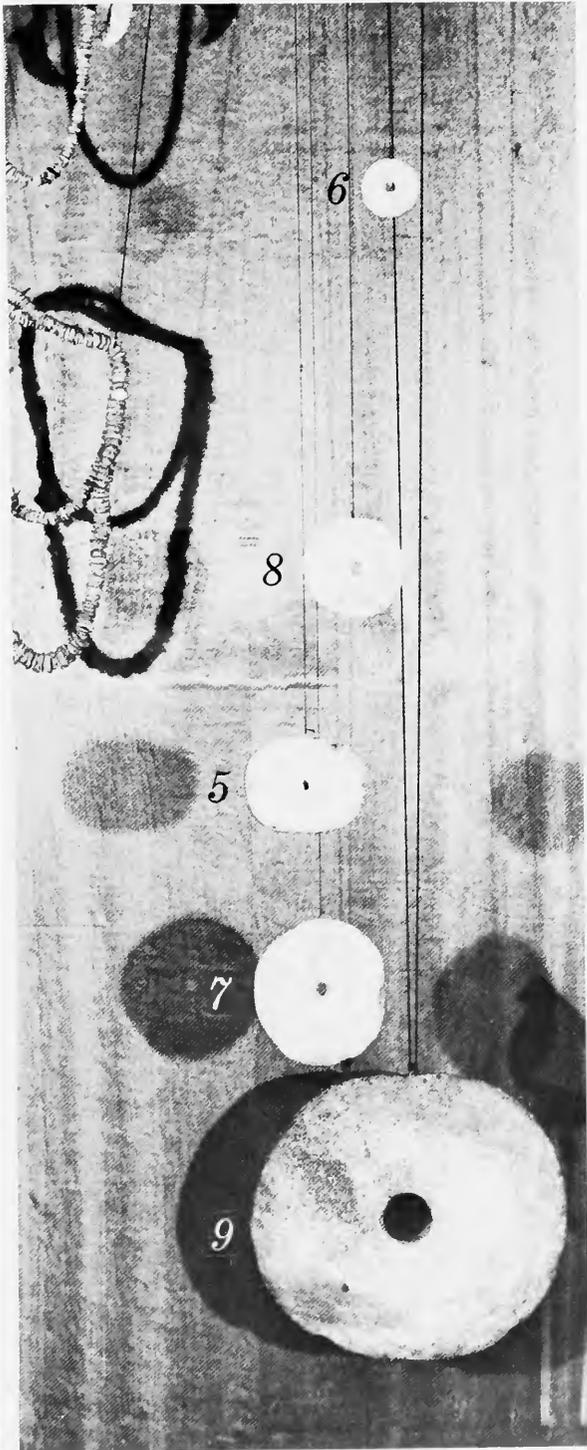


FIGURE 1.—*Rai* numbers 5-9, Staatliche Museen Preussischer Kulturbesitz, Museum für Völkerkunde, Berlin, Germany. (Courtesy of museum)



FIGURE 2.—*Rai* number 14, Staatliches Museum für Völkerkunde, Dresden, Germany. (Courtesy of museum)

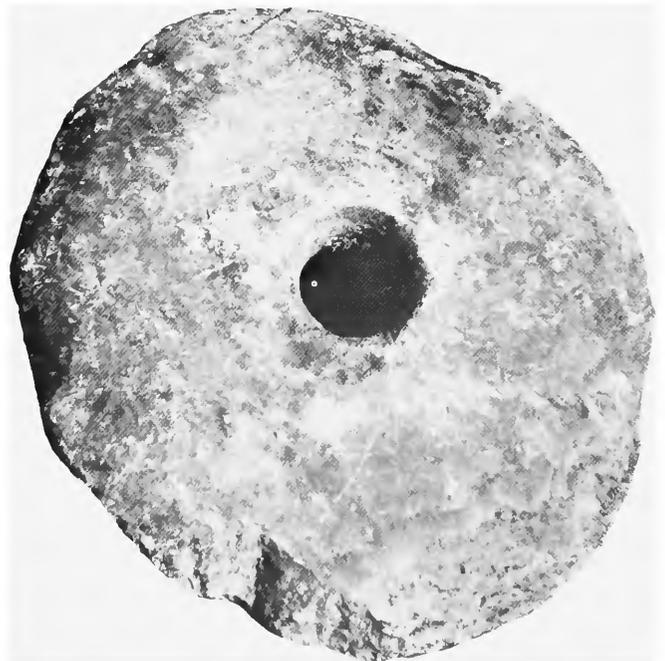


FIGURE 3.—*Rai* number 15, Staatliches Museum für Völkerkunde, Dresden, Germany. (Courtesy of museum)

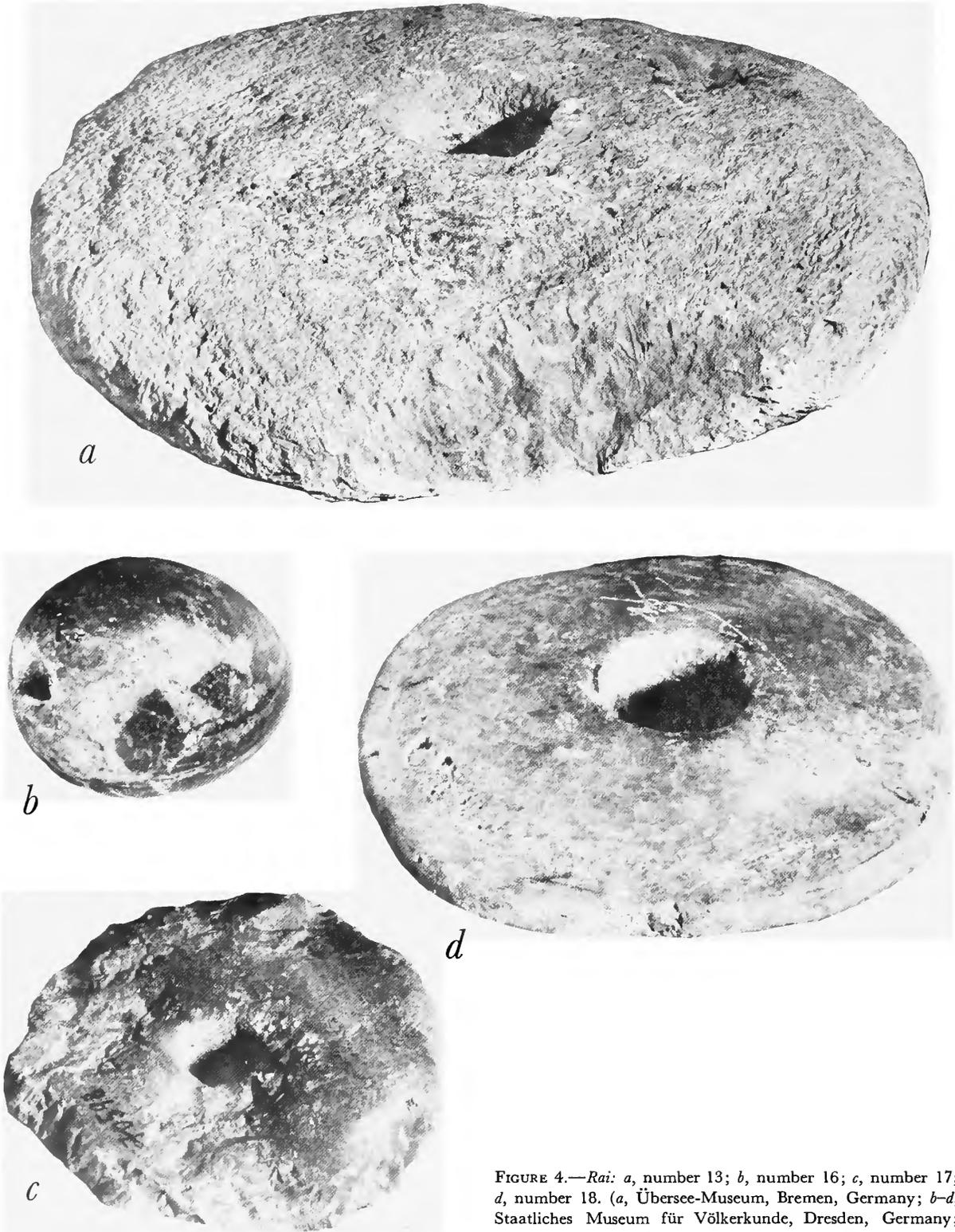


FIGURE 4.—*Rai*: *a*, number 13; *b*, number 16; *c*, number 17; *d*, number 18. (*a*, Übersee-Museum, Bremen, Germany; *b*–*d*, Staatliches Museum für Völkerkunde, Dresden, Germany; courtesy of museums)

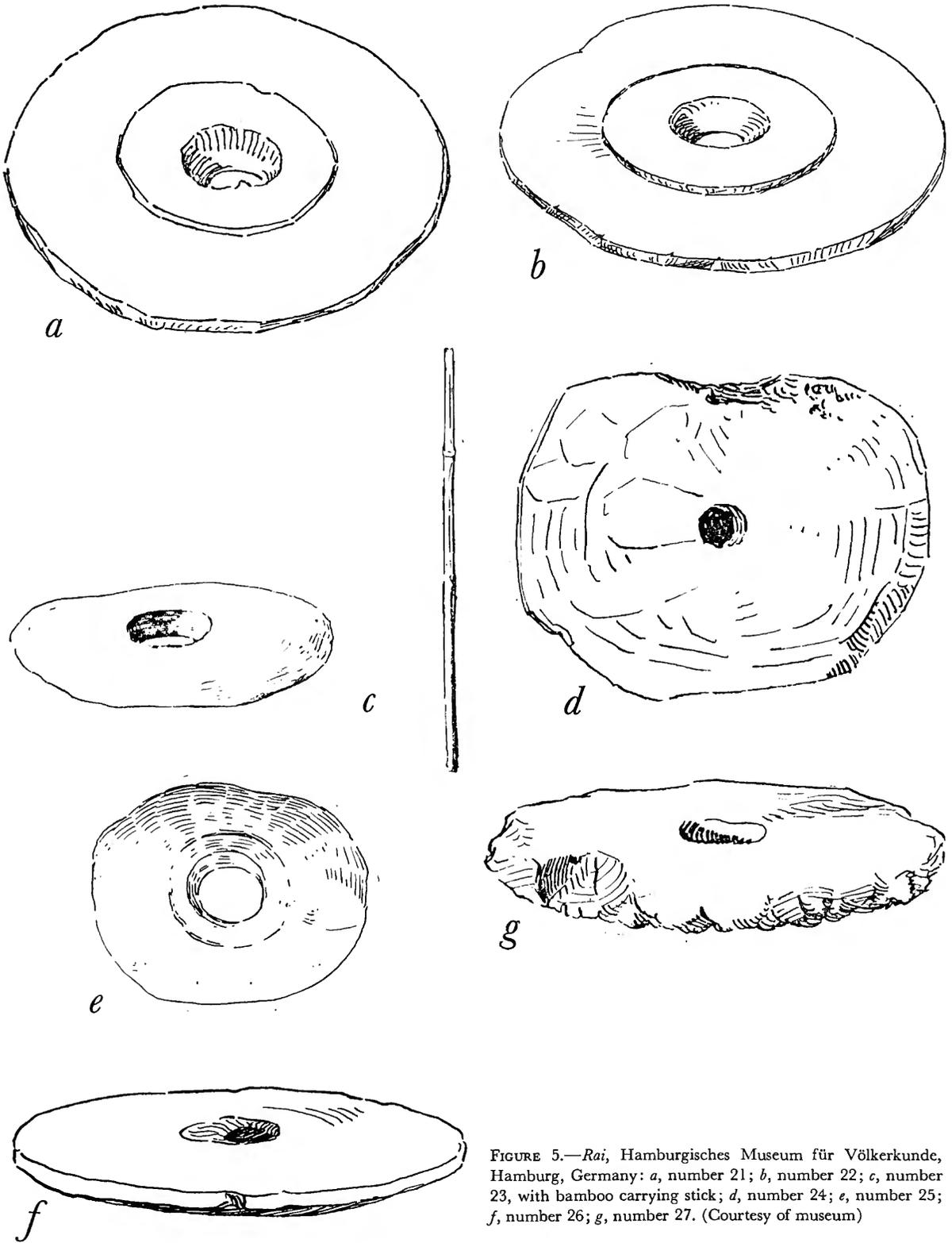


FIGURE 5.—*Rai*, Hamburgisches Museum für Völkerkunde, Hamburg, Germany: *a*, number 21; *b*, number 22; *c*, number 23, with bamboo carrying stick; *d*, number 24; *e*, number 25; *f*, number 26; *g*, number 27. (Courtesy of museum)



FIGURE 6.—*Rai* number 28, Museum für Völkerkunde, Leipzig, Germany. (Courtesy of museum)

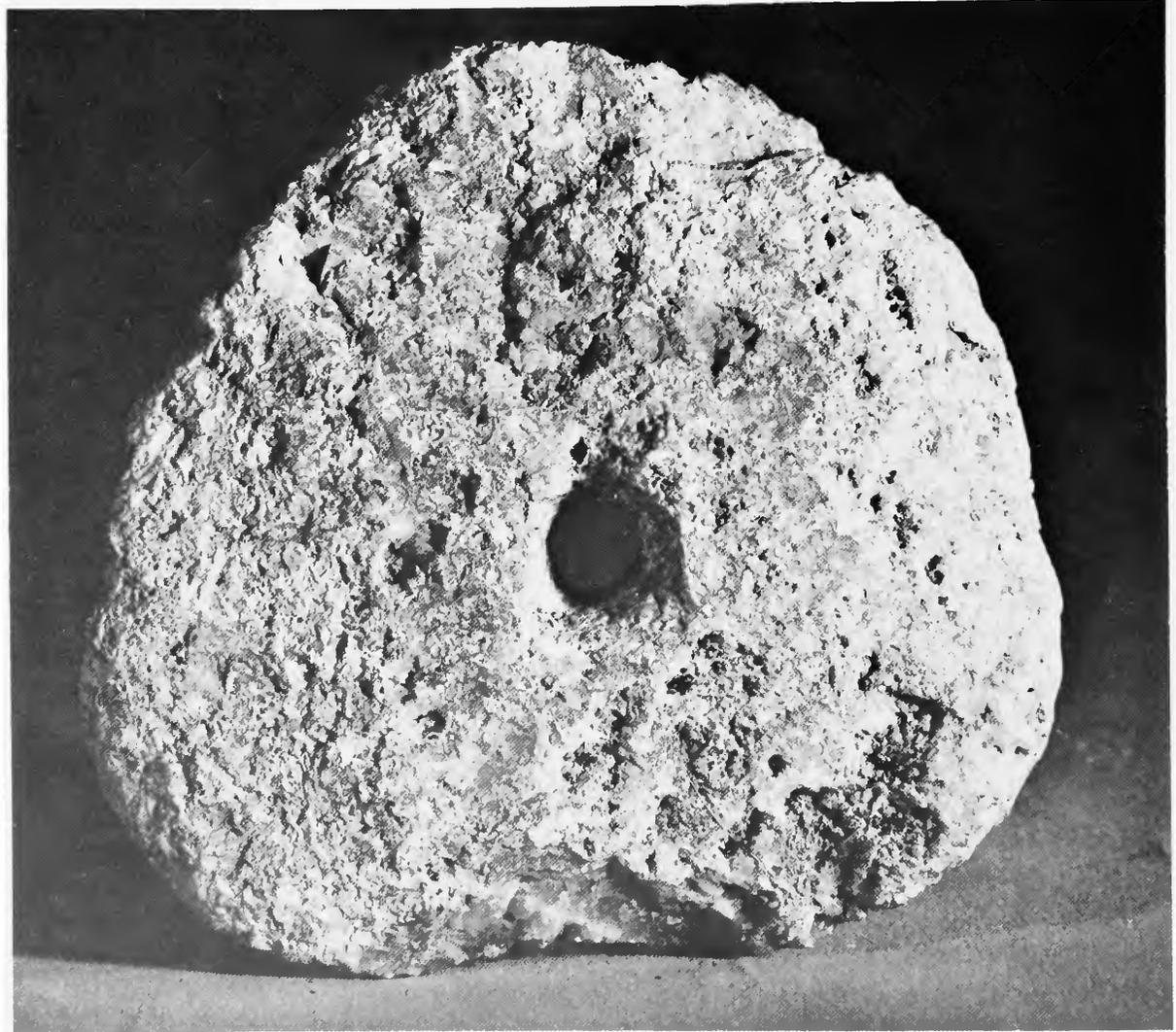


FIGURE 7.—*Rai* number 29, Museum für Völkerkunde, Leipzig, Germany. (Courtesy of museum)

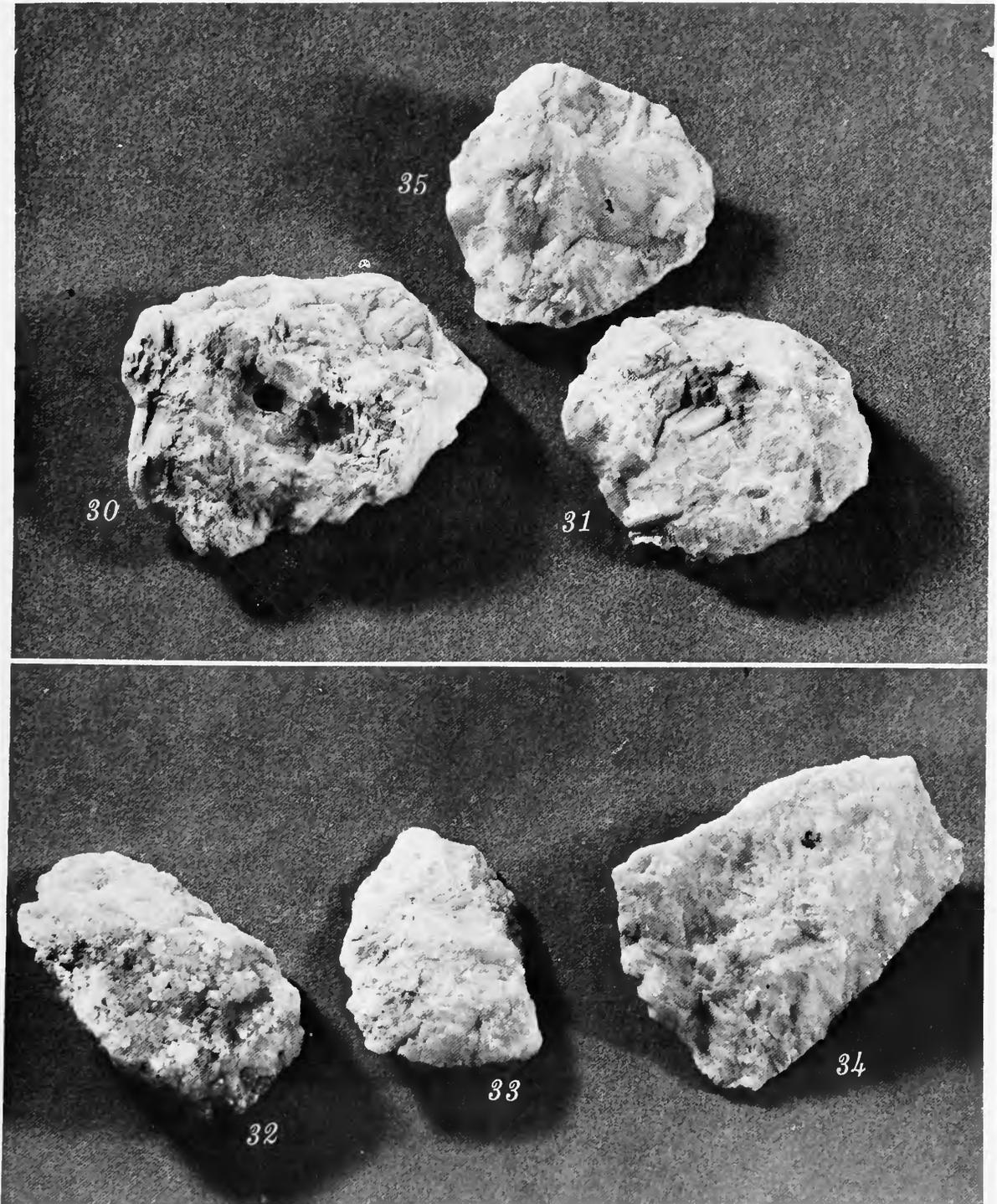


FIGURE 8.—*Rai* numbers 30–35, Museum für Völkerkunde, Leipzig, Germany. (Courtesy of museum)

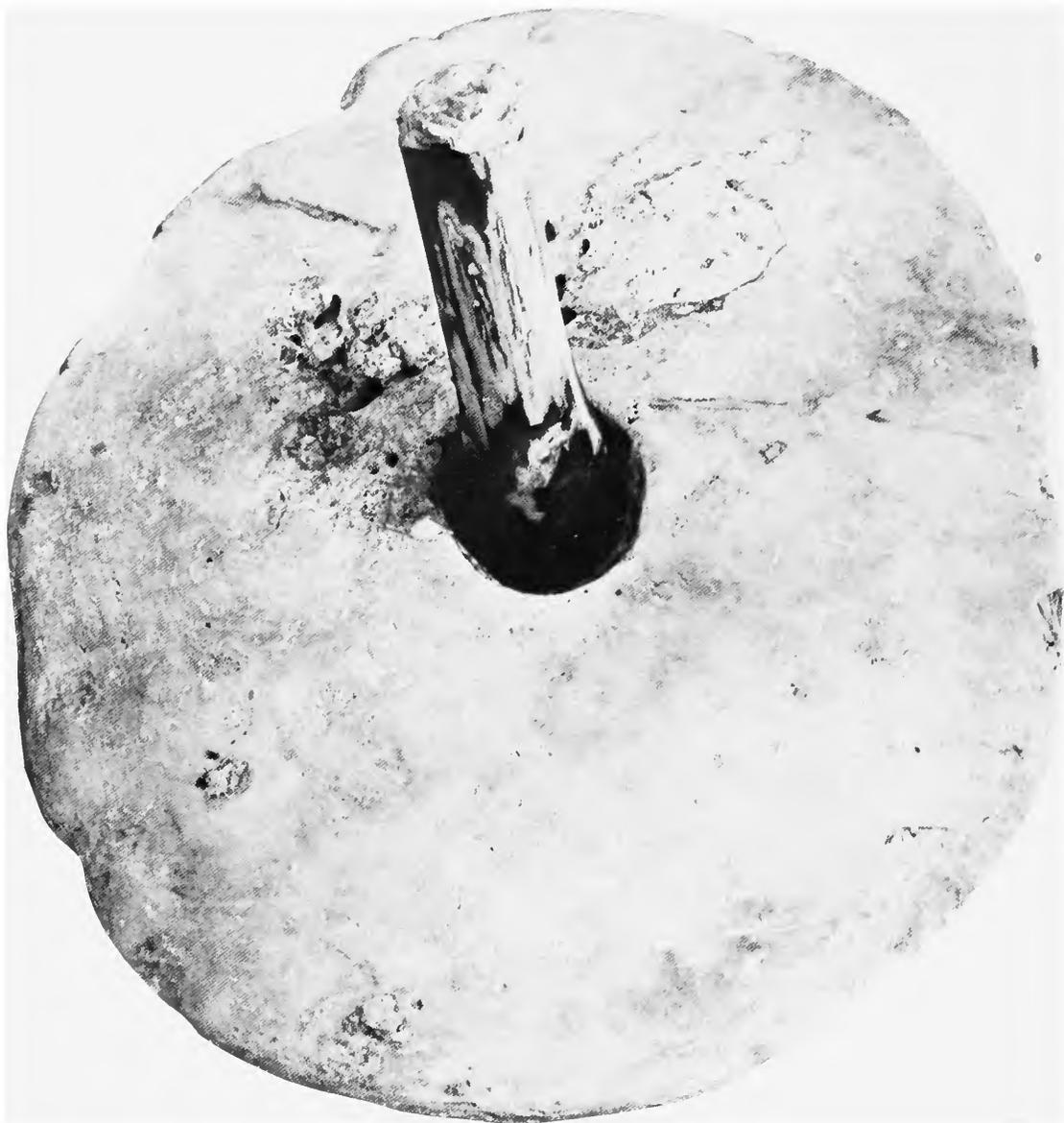


FIGURE 9.—*Rai* number 37, Museum für Völkerkunde, Leipzig, Germany. (Courtesy of museum)

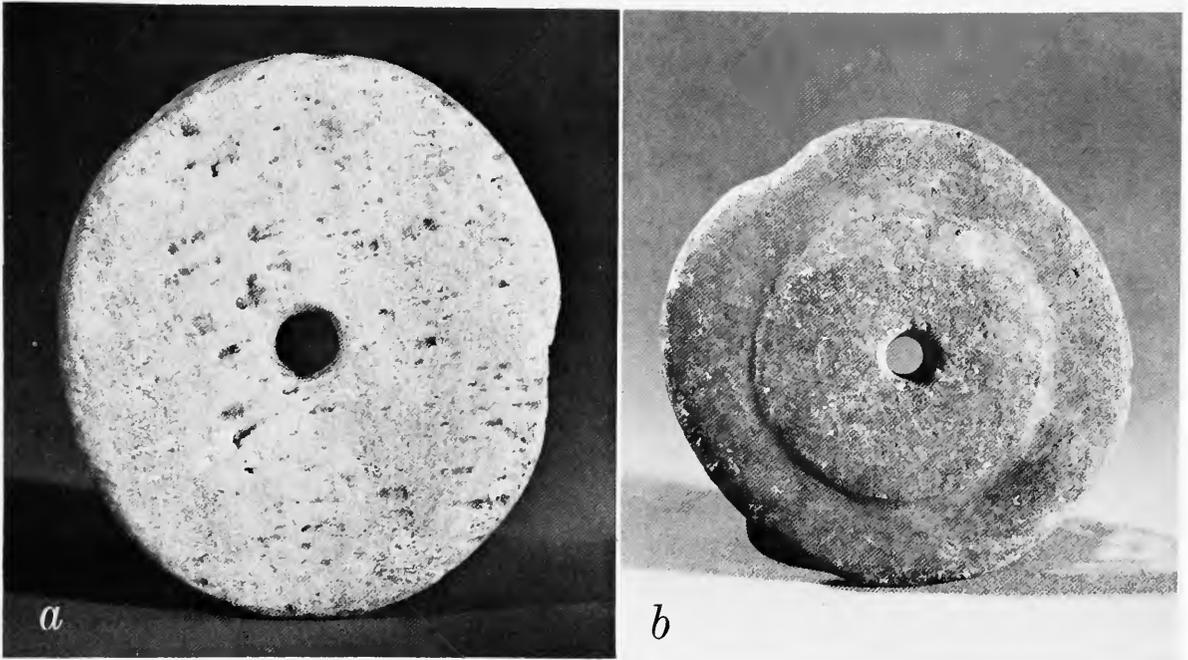


FIGURE 10.—*Rai*, Museum für Völkerkunde, Leipzig, Germany:
a, number 38; *b*, number 40. (Courtesy of museum)

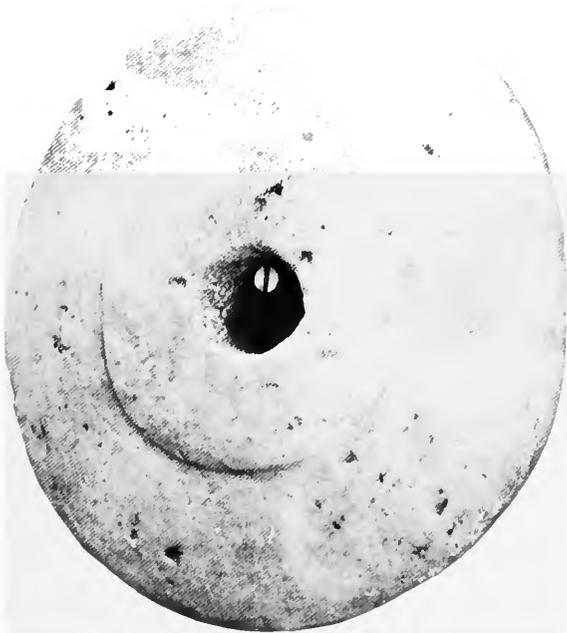


FIGURE 11.—*Rai* number 39, Museum für Völkerkunde,
Leipzig, Germany. (Courtesy of museum)

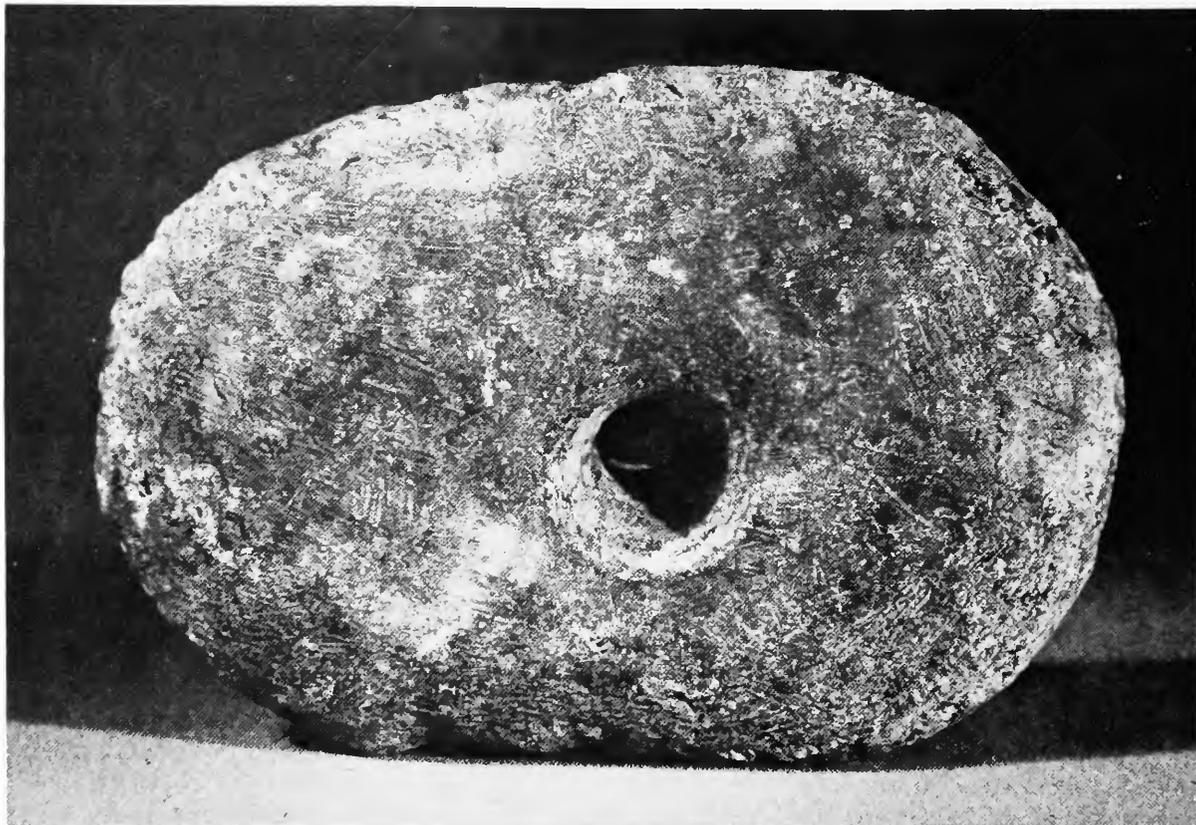


FIGURE 12.—*Rai* number 41, Museum für Völkerkunde, Leipzig, Germany. (Courtesy of museum)

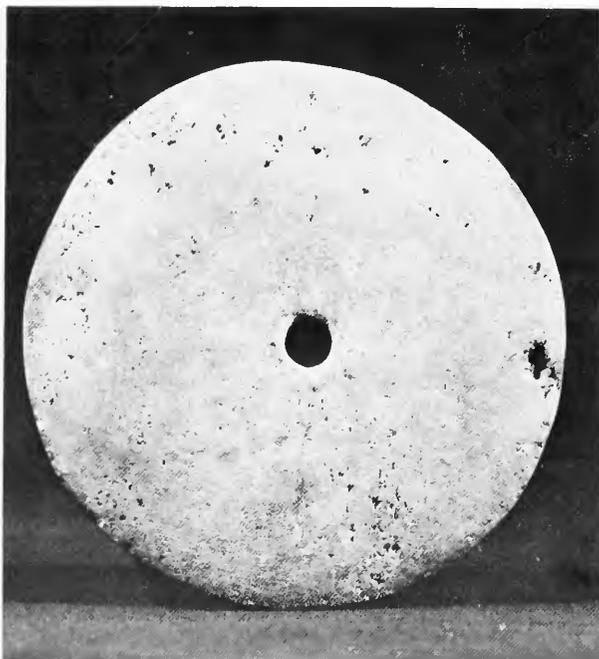


FIGURE 13.—*Rai* number 42, Museum für Völkerkunde, Leipzig, Germany. (Courtesy of museum)

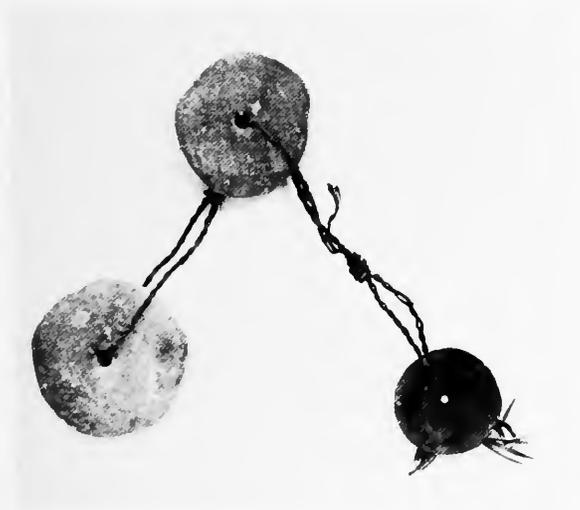


FIGURE 14.—*Rai* number 44, Museum für Völkerkunde, Leipzig, Germany. (Courtesy of museum)

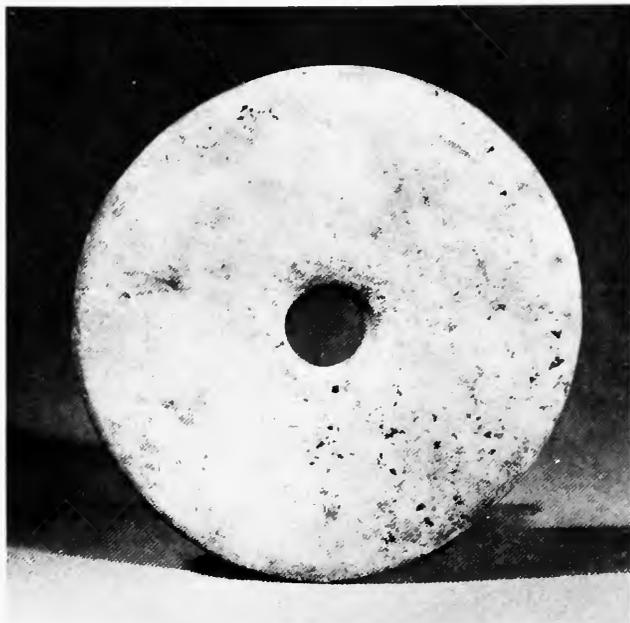


FIGURE 15.—*Rai* number 43, Museum für Völkerkunde, Leipzig, Germany. (Courtesy of museum)

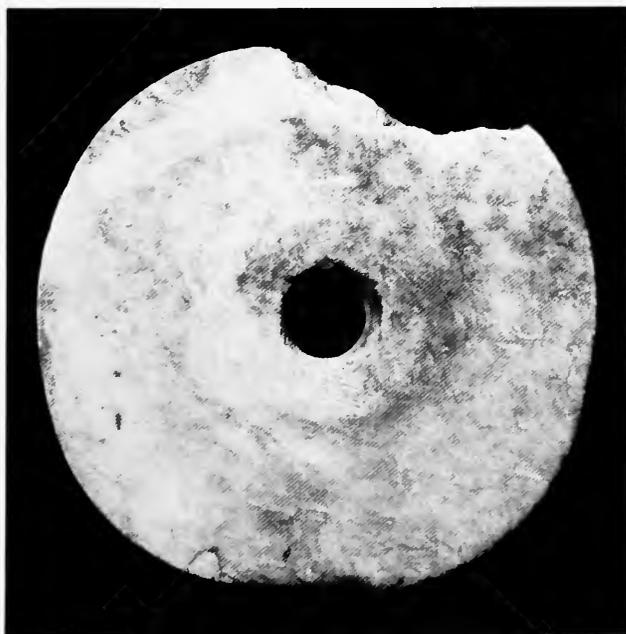


FIGURE 16.—*Rai* number 45, Museum für Völkerkunde, Leipzig, Germany. (Courtesy of museum)



FIGURE 17.—*Rai* number 46, Museum für Völkerkunde, Leipzig, Germany. (Courtesy of museum)

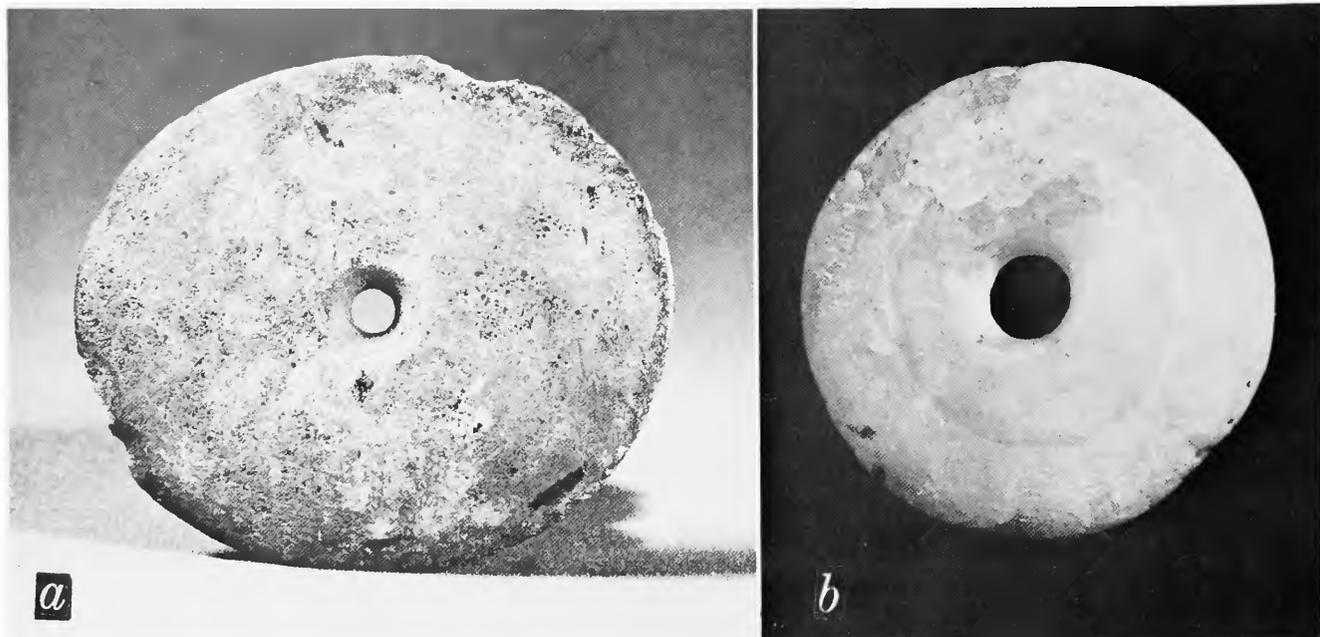


FIGURE 18.—*Rai*: *a*, number 47, Museum für Völkerkunde, Leipzig, Germany; *b*, number 48, Linden-Museum Gesellschaft für Erd-und Völkerkunde, Stuttgart, Germany. (Courtesy of museums)

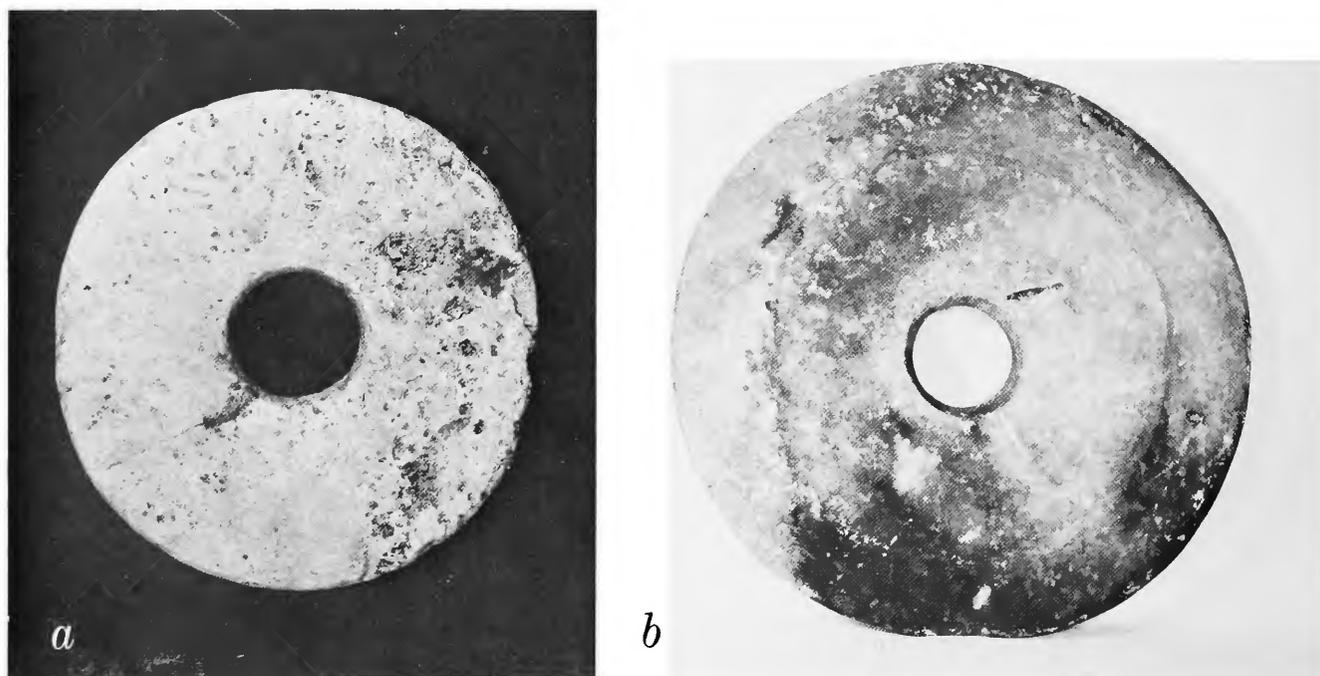


FIGURE 19.—*Rai*, Linden-Museum Gesellschaft für Erd-und Völkerkunde, Stuttgart, Germany: *a*, number 49; *b*, number 50. (Courtesy of museum)



FIGURE 20.—*Rai*: *a*, number 56, Tokyo National Museum, Tokyo, Japan; *b*, number 57, The University of Tokyo, Department of Anthropology, Faculty of Science, Tokyo, Japan; *c*, number 58, Rijksmuseum voor Volkenkunde, Leiden, The Netherlands. (Courtesy of museums)



b



c



d

← FIGURE 21.—*Rai*: *a*, number 60; *b*, number 61; *c*, number 62; *d*, number 63; (*a*, Svenska Handelsbanken, Stockholm, Sweden; *b-d*, Museum für Völkerkunde, Basel, Switzerland; courtesy of museums)



FIGURE 22.—*Rai* number 64, Museum für Völkerkunde, Basel, Switzerland. (Courtesy of museum)

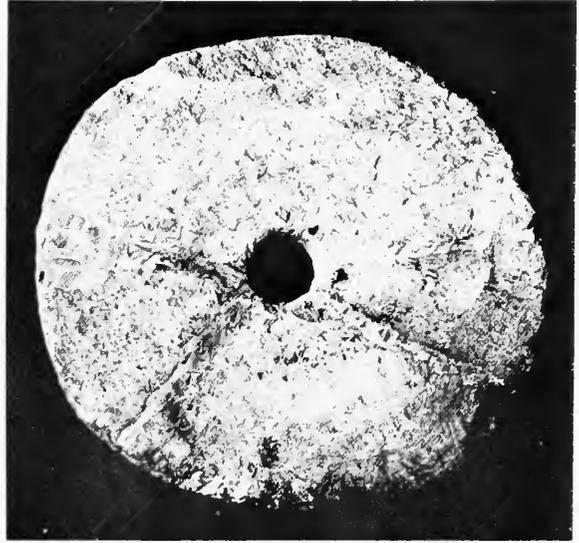


FIGURE 23.—*Rai* number 65, Museum für Völkerkunde, Basel, Switzerland. (Courtesy of museum)



FIGURE 24.—*Rai* numbers 67-69, Museum of Anthropology and Ethnography, Leningrad, U.S.S.R. (Courtesy of museum)

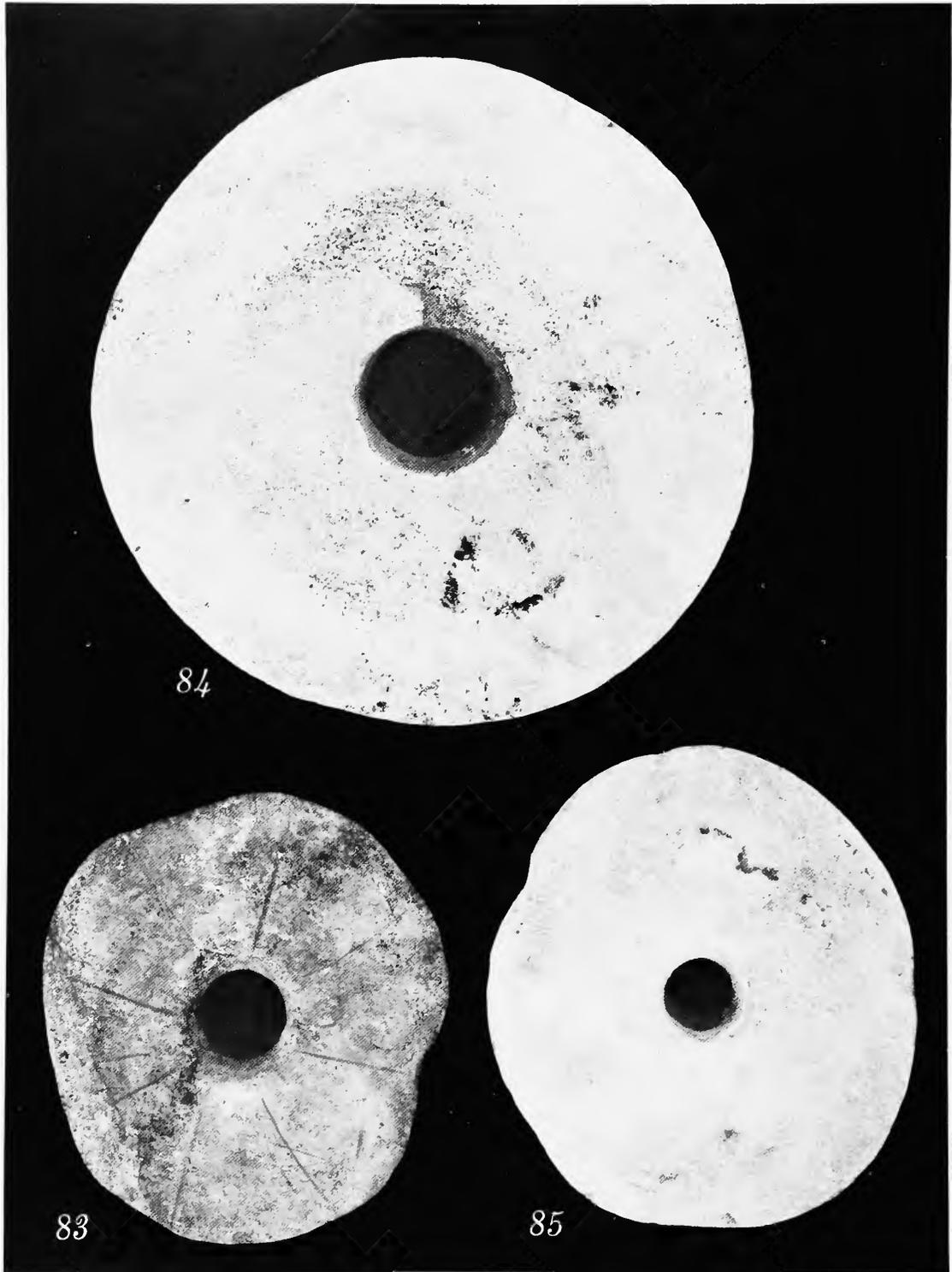


FIGURE 25.—*Rai* numbers 83-85, The Robert H. Lowie Museum of Anthropology, University of California, Berkeley, California. (Courtesy of museum)

NUMBER 23

FIGURE 26.—*Rai* number 86, The Chase Manhattan Bank Money Museum, New York City. (Courtesy of bank museum)

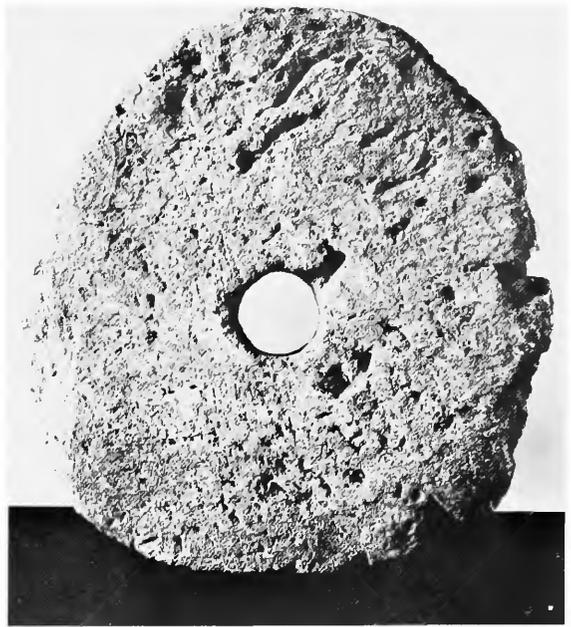


FIGURE 27.—*Rai* number 88, The National Bank of Detroit, Detroit, Michigan. (Courtesy of bank museum)



FIGURE 28.—*Rai* number 94, The University Museum, University of Pennsylvania, Philadelphia, Pennsylvania. (Courtesy of The University Museum)

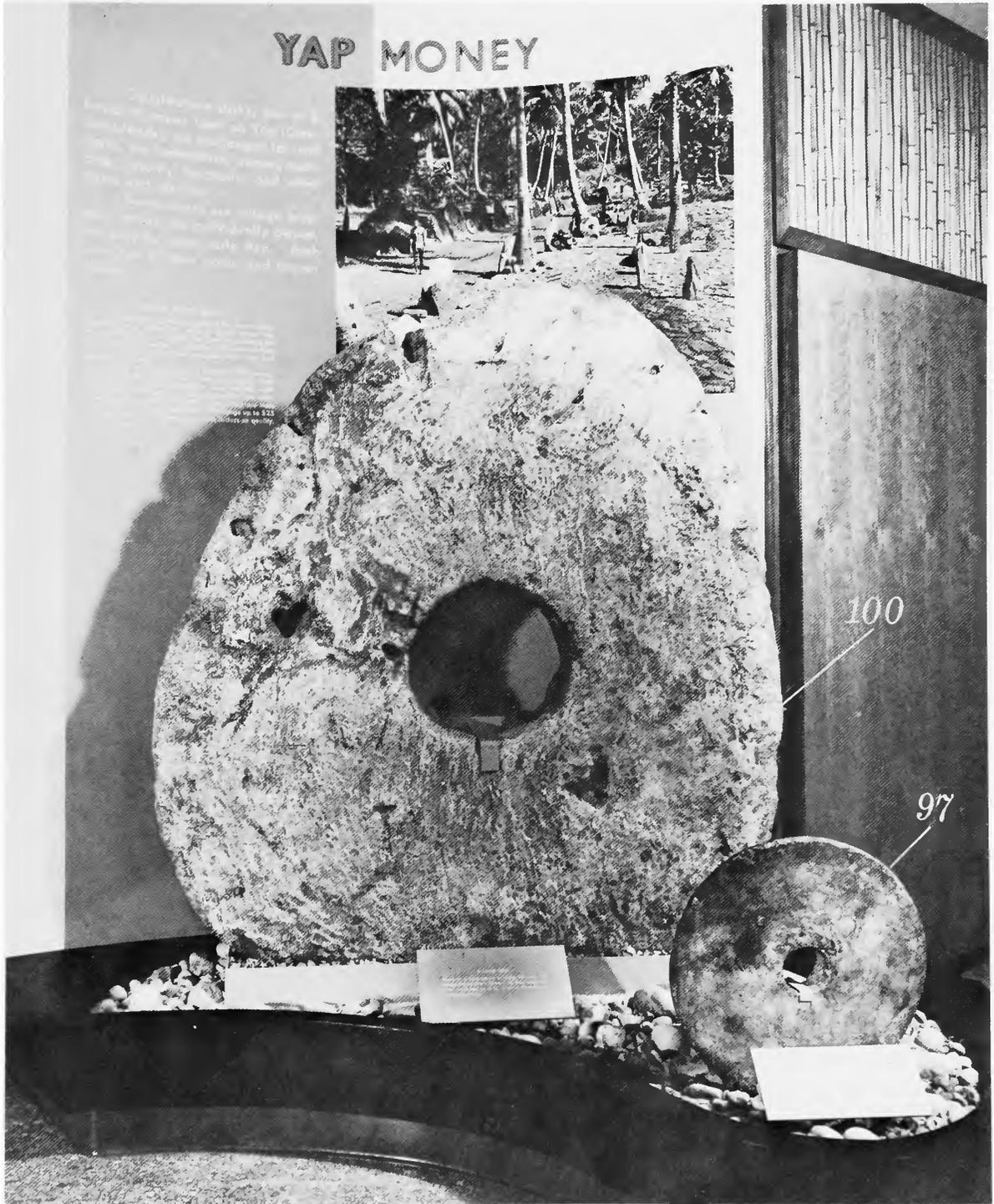


FIGURE 29.—*Rai* numbers 97 and 100, Department of Anthropology, National Museum of Natural History, Smithsonian Institution, Washington, D. C. (Smithsonian photo)



FIGURE 30.—*Rai* number 99, Department of Anthropology, National Museum of Natural History, Smithsonian Institution, Washington, D. C. (Smithsonian photo)



FIGURE 31.—*Rai* number 102, Division of Numismatics, National Museum of History and Technology, Smithsonian Institution, Washington, D. C. (Smithsonian photo)



FIGURE 32.—*Rai* number 121, The Lannan Foundation, Palm Beach, Florida. (Courtesy of J. Patrick Lannan)

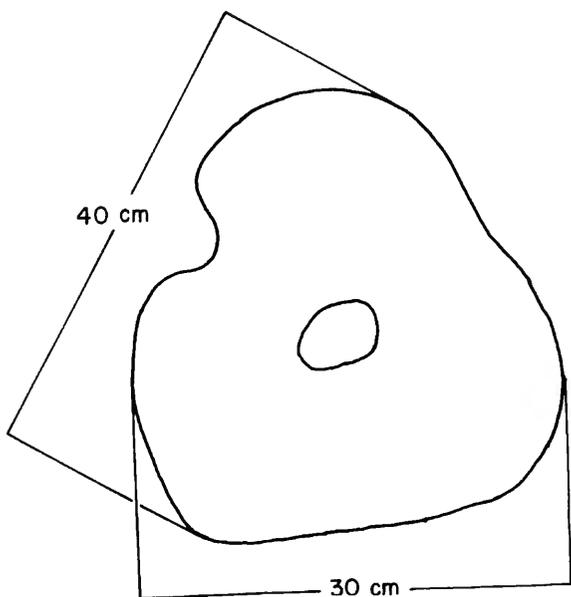


FIGURE 33.—*Rai* number 148. (Courtesy of Professor W. Scott Wilson, University of Guam, Agana, Guam)

SERIAL PUBLICATIONS OF THE SMITHSONIAN INSTITUTION

The emphasis upon publications as a means of diffusing knowledge was expressed by the first Secretary of the Smithsonian Institution. In his formal plan for the Institution, Joseph Henry articulated a program that included the following statement: "It is proposed to publish a series of reports, giving an account of the new discoveries in science, and of the changes made from year to year in all branches of knowledge." This keynote of basic research has been adhered to over the years in the issuance of thousands of titles in serial publications under the Smithsonian imprint, commencing with *Smithsonian Contributions to Knowledge* in 1848 and continuing with the following active series:

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Smithsonian Contributions to Astrophysics
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Smithsonian Contributions to Zoology
Smithsonian Studies in History and Technology

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