THE BRONZE-IRON AGE OF INDONESIA

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THE BRONZE-IRON AGE OF INDONESIA

BY

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PREFACE

The art of metal casting was imported into Indonesia, but its peoples mastered the secrets of metallurgy, and applied these, in ways often original and unique, to create their own distinctive civilisation of the Bronze-Iron Age.

In this handbook, which is a sequal to my *The Stone Age of Indonesia*, I have endeavoured to assemble a comprehensive picture of the Indonesian Bronze-Iron Age from the results of excavations, innumerable stray finds in museums, and various studies scattered among numerous scientific journals and periodicals (often difficult to obtain).

The resulting picture can, of course, be a tentative one only, valid until many more scientific excavations have taken place. I have added a bibliography, as complete as it was possible to assemble.

The completion of this summary of the Prehistory of Indonesia has been assisted by a grant-in-aid from the Wenner Gren Foundation "The Viking Fund", New York.

I am grateful to Mr. Basoeki and Mr. Soebokastowo for the drawings of Figures 1, 11, 12, 13, 22 and 16, 23, 24, 25 respectively.

Figures 2—10 and 15 were drawn by the well-known artist, the late Mas Pirngadie, and are here published for the first time, with the generous permission of the Board of Directors of the "Bataviaasch Genootschap van Kunsten en Wetenschappen", Djakarta.

I am deeply grateful to my brother-in-law, Mr. J. H. Reiseger of Kempston, Bedfordshire, for so willingly undertaking the translation of the Dutch text into English.

I have now left Indonesia for good, and I hope that this handbook and its predecessor will be of help to my successors in carrying on the study of Indonesian prehistory. I wish them all good luck with their enterprise.

Heemstede, July, 1957 H. R. VAN HEEKEREN.

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INTRODUCTION

In Indonesia the Neolithic came to an end at dates that were widely different for various regions of the territory. In the Island of Enggano, for instance, an Early Neolithic Civilisation was still in existence in the 18th century [1]; the Neolithic colony of Kalumpang in West Central Celebes has been dated at 1000 A.D. by the author, and it is general knowledge that even today in the interior of New Guinea there are Papuan tribes living in conditions of the Neolithic proper.

The period following the Neolithic in Indonesia has been called by me the Bronze-Iron Age. The use of this term requires some explanation. As copper axes have never been found, it may be assumed that there was no Copper Age. We are not even convinced that there ever was a proper Bronze Age, as there are no primitive bronze axes and flat daggers in the various collections, and there is no knowledge of such finds in excavations. Moreover, no finding-places of bronze objects only are known, but on the contrary, such objects have always been found associated with iron ones. On the other hand, we have repeatedly been confronted with the well-known socketed axes (axes with a socket to take a wooden handle), a type which everywhere else designates the final phase of the Bronze Age or the beginning of the Iron Age.

The foregoing arguments cause me to prefer the term Bronze-Iron Age to Bronze Age, which latter term is used by some scholars. R. Heine Geldern [2] proposed the name Dongson Culture for this period: "...I proposed to use the term Dongson Culture for the whole Bronze Age of Further India and Indonesia, in the same sense as we speak of a Hallstatt or La Tène Culture, since Dongson was the first site where the respective

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[1] Heine Geldern, R. 1946: Research on Southeast Asia. Problems and Suggestions. Am. Anthropologist, p. 151—52.
Heine Geldern, 1945, p. 142.
Keuning, J. 1955: Enggano, de geschiedenis van een verdwenen cultuur. Indonesië, 3, p. 177—211.

[2] Heine Geldern, 1945, p. 143.

culture had been recognized as a more or less complete unit. However, we should keep in mind that the term suggested is only a provisional one and that subsequent research may induce us to restrict its use to a considerable extent. Not only is it possible that there existed several distinct, though interrelated, Bronze Age Cultures in Further India and Indonesia, but it becomes increasingly clear that during the period in question, Indonesia was affected not only by influences from Indo-China, but also by more direct contacts with China."

We observe that Heine Geldern considers Indonesia and Indo-China, at the period in question, as a cultural unity. This period we might also call Proto-Historic, because as we shall see later, the most ancient script dates from this period [3] and the oldest Chinese chronicles mention the Proto-Malayan (Indonesian) population of Indo-China of that period.[4]

Knowledge of the Bronze-Iron Age of Indonesia derives mainly from the following sources:

1. Stray finds which have been acquired by museums through purchase or gifts. These consist of bronze axes, spear-heads, daggers, ceremonial axes, kettle drums and vessels, bracelets, rings, pendants, beads and other ornamental and utilitarian articles.[5]
2. Hoards of bronze objects either by themselves or accompanied by earthenware, found by the population and sold to archaeological officials or to the Museum at Djakarta.
3. Descriptions and excavations of groups of megaliths in Java, Sumatra, Celebes and Borneo.
4. Descriptions and excavations of urn cemeteries in Java, Sumatra, Celebes, Salajar and Sumba.

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[3] Mr. Basoeki, assistant of the author, discovered some Chinese characters on the tympan of a kettle drum from the Island of Koer. The script has not yet been identified but the inscription probably indicates a certain period of regnal years.
Two more kettle drums with Chinese characters are known to exist outside Indonesia. One of them of a type Heger I has the inscription: "sixth year of the rule of Konang wou ti", i.e. 30 A.D. The inscription on the second drum, which is in the British Museum at London, reads: "made by Chang Fu in the seventh month of the fourth year of the rule of Chieng Hsing". This rule was about 226 A.D.

[4] Maspéro, 1918.

[5] These finds are described in: van der Hoop, 1941, p. 184—390; van der Hoop, Jaarboek Bataviaasch Genootschap, 1942—1947; van Heekeren, Jaarboek Bataviaasch Genootschap, 1948—1951, p. 35—58.

5. The excavations in North Annam of the classical settlement and necropolis at Dong So'n which informs us about the character of the Dongson Culture.
6. Studies and articles on kettle drums in South East Asia including Indonesia.
7. Chinese chronicles which give us important information about the population of the continent of South East Asia as they found it in the year 100 B.C.
8. Working-hypotheses by Heine Geldern and others drawing attention to the inception and the origin of the Dongson Culture.
9. Proto-Historic traditions which have survived up to the present in some more or less isolated parts of Indonesia.

The first collector of Proto-Historic objects such as bronze axes and kettle drums who described and portrayed these objects was G. E. Rumphius. He published his findings in 1703.[6] It struck him that the bronze axes had the appearance of human tools, but he could not free himself of the belief prevalent in Indonesia and elsewhere that these metal objects (and also the stone axes of the Neolithic) were thunderbolts. He even tried to give a scientific explanation, by assuming that the objects owed their existence to metallic vapours which became concentrated in the clouds by lightning, and were there condensed into objects in the shape of a tooth. The hole in the axe, and its sharp edge, he attributed to the action of the strong wind which always accompanies a thunderstorm.

The population worshipped the bronze axes as it did the stone axes. Magic powers were ascribed to them and for that reason they were sometimes worn on the body or melted down into finger rings to be worn on the index finger when going to war. The axes were also used as a protection against lightning, and an extract from them as a remedy for fevers. Furthermore, a piece of such an axe melted together with some lead would make a bullet which could pierce through any resistance. Bronze axes were therefore most valuable, and one was reluctant to part with them. As is known, many of these axes fell into the hands of the Dutch after their victory over the army of Macassar on the Island of Buton in 1667, and in the course of Indonesian wars they changed hands repeatedly. The common man was not allowed to own them, but should pass them on to the ruler. A condemned life might

[6] Rumphius, 1705.

be saved in exchange for a bronze axe. One hears continually of stories by the population that stone or bronze axes were found after lightning in coconut trees or in holes in the ground.

A different significance is attached to these objects at Luwu and Wotu in Mid-Celebes (around the north-western part of the Gulf of Bone). A bronze axe there is considered to be the only incisor of the spirit called Longga, who loses this tooth once every year. This spirit is only an inch tall but may suddenly rise in height until his head reaches the clouds. The happy tooth finder may be certain to be protected against any enemy attacks.

One may be inclined to consider that the foregoing observations belong to folklore rather than to archaeology. However, as early as 1882, J. J. A. Worsaae [7] came to the conclusion that some early culture had existed in the Malayan Archipelago which was conversant with the use of bronze utensils, and which had its origin in the continent of South East Asia. In 1898 H. E. Steinmetz [8] was able to give a description of megaliths in the eastern corner of Java, a description which may be considered as most accurate for that time. In 1902 A. B. Meyer and O. Richter published an account of the Bronze Age of Celebes in which they expressed the belief that cultural contacts had existed in that Age between Celebes, Flores, North Borneo and the continent of South East Asia. They went even so far as to look for the origin of this Bronze Age Culture in Eastern Europe.[9]

In fact they proffered ideas which are gaining in popularity particularly in recent years.

Further important researches have been taking place in Indonesia as follows:

In 1932 an excellent monograph on the megaliths of Southern Sumatra was published by A. N. J. van der Hoop.[10]

W. J. A. Willems in 1938 carried out some exemplary excavations of the urnfields of Sumba [11] and in a megalithic area in the eastern corner of Java.[12]

The author of the present book excavated in 1954 two sarcophagi in the Isle of Bali and in 1955 an urnfield in the Banten region of Java.

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[7] Worsaae, 1878/83.
[8] Steinmetz, 1898.
[9] Meyer und Richter, 1902/03, p. 73—91.
[10] van der Hoop, 1932.
[11] van Heekeren, 1956a.
[12] Willems, 1938.

Heine Geldern delighted us with a series of far reaching studies on the Bronze-Iron Age of which the latest [13] may be considered as of such importance that a resumé will be included in this book.

The prehistoric bronzes of Indonesia and of the continent of South East Asia consist of an alloy of 75 % copper and 25 % lead. We are therefore dealing with lead-bronze, a bronze in which the usual element, tin, is almost entirely replaced by lead. This, however, is not a law of Medes and Persians, and a sufficiency of objects could be mentioned in which the metal tin appears in combination with copper. The main ingredient of the bronzes, however, is always copper. In general South East Asia is deficient in copper ore, and if our information is correct, only South China would have been likely to make a paying proposition of copper mining. In Indonesia there are small deposits of copper ore in Sumatra, Java, Borneo, Celebes, Timor and also New Guinea. Bronze, therefore, was a rare and valuable metal which for the most part had to be imported. We may take it that the possession of luxury articles like bronze utensils and ornaments were the exclusive privilege of the rulers and of other important personages, whereas the remaining population continued to manufacture stone axes during the whole of the Bronze-Iron Age, and in some instances well into historic times. Because of the scarcity of raw material, old and broken bronze objects were melted down repeatedly and then recast into new moulds. Thus the influence of the decorative art of this period has probably been of more importance than the spread of the knowledge of metal casting. The artistic influence can still be clearly observed at the present time in the ornamentation of bamboo tubes and on the walls of houses in remote places. The artistic style of the Sa'dan Toradja of Mid-Celebes and the northern coast of New Guinea for instance, is a typical "hold over" of the Dongson Culture, whereas that of Dajak in Borneo and of the Ngada in Flores date back to the Late Chou style of China. The houses of the Toradja of Palau and of the Toba Batak in Sumatra are the same as those portrayed on some kettle drums; their shape is pure Dongson.

A few centuries ago bronze objects still had an important part to play in North Celebes. Thus R. Padtbrugge informs us that in 1679 he observed women and girls who covered themselves with such large quantities of bronze ornaments (sometimes up to 20 lbs) that they were promptly drowned if they fell into the water. At that time there were

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[13] Heine Geldern, 1951.

still a number of bronze foundries, the majority of which, however, have disappeared by now. Their old tradition is at present continued in a few places only, and the method used is that of the well-known "cire perdue". We are well justified in concluding that there is an unbroken line in the traditional technique of metal foundry from the Proto-Historic Age to the present day, for instance among the Western Toradja, and that the changes in procedure have been minor ones only.

A. C. Kruyt [14] has given us valuable information on the subject. The art of metal casting was passed down from father to son, the son customarily following in the trade of his father. The To Besoha are repeatedly referred to as being the originators of metal casting in Mid-Celebes, and from them the art was passed on to Napu, Bada, and Rampi. Perhaps it is no mere coincidence that a great wealth of megalithic antiquities is also found in the same region of Mid-Celebes.

The bronze objects are made in a smithy, where a pair of bellows is invariably encountered, and it is even forbidden to kindle the fire by blowing with the mouth. Bronze coins, old broken pots and pans, plates, etc., are melted in a crucible which has a spout. No mention is made anywhere of the use of copper ore acquired by mining. When the crucible has been partially filled with the pieces of old bronze, a layer of charcoal is put on top and the crucible is shoved into the oven. A replica of the object to be produced is then made by modelling in beeswax, and this is surrounded by a thick layer of clay. Two channels are left in the clay; through the one the molten metal is poured in, and the other serves the purpose of letting out the molten wax. The mould is then put in the fire and the clay is baked. After cooling down, the hardened layer is knocked off carefully and the bronze object is ready. When using this method of casting, the mould can be used once only. The method serves the purpose of making little bronze bells, axes, spear-heads, bracelets for arm and leg, and also small figurines and buffaloes. The bronze buffaloes are used as a magic means to protect the herds and to make them fertile. A. Grubauer tells us about realistically modelled female nudes which are only 6½ cm. high and used as amulets.[15]

During the Japanese occupation W. Rothpletz [16] found on the Plateau of Bandung in Java a large number of fragments of clay moulds for axes, spear-heads and bracelets, which prove that in

[14] Kruyt, A. C. 1938: De West-Toradjas op Midden-Celebes.
[15] Grubauer, 1913, p. 552; p. 557.
[16] Rothpletz, 1951, p. 78; p. 94—100.

Proto-Historic times such objects were actually manufactured in the locality and were not imported from abroad, as is often believed.

Side by side with the "cire perdue" method there was another technique of bronze casting, used for larger objects such as swords, kettle drums and vats. Such objects were cast with the help of stone moulds in two or more pieces, the halves of which must correspond exactly and must be clamped together, and these could be used over and over again. Walter Spies found in Manuabe in the Isle of Bali, some decorated fragments of such a stone mould for kettle drums of the Pedjeng type.

I. STRAY FINDS

1. *Bronze Socketed Axes.*

A fairly large number of bronze axes must have been in use in Indonesia, but many of these have no doubt been melted down in the course of the centuries in order to make them into ornaments. This tendency no doubt increased with the gradual substitution of iron for bronze in the manufacture of implements. The axes of the period as known to us are of diverse dimensions; the Museum at Djakarta for instance has a specimen measuring 299 × 143 × 31 mm., whereas another is only 45 × 37 × 10 mm. Furthermore, there are short axes which are wide, and long ones which are slender. The tail end is usually straight but sometimes swallowtail-shaped; the cutting edge is usually fan-shaped. Common to all axes is a hollow socket of circular or oval section in which the haft is to fit for tying to the handle. The surface of the axe is smooth except for that of a few specimens which have one or two pairs of ribs, emanating from the centre of the socket and diverging towards the extreme points of the cutting edge. (Pl. 1; Fig. 2 & 3).

Socketed axes have been found in the Isle of Java, round and about Djakarta, Banten, Bogor, Pekalongan, Rembang, Jogjakarta, Surakarta, Bodjonegoro, Madiun, Surabaja, Kedu, Malang and Bondowoso. Outside Java they have been found in Madura, Sumatra, Bali, Celebes, Salajar, Buton, Banda and Flores.[17] A specimen from Madura deviates from the others in so far as its cutting edge is oblique, making one side shorter than the other. Such asymmetric types are often found in Indo-China but in Indonesia the Madura specimen is unique.

Small bronze trowels and spades are found chiefly in Bali and Celebes, which can be used for weeding and perhaps also for digging when planting. (Pl. 2) Bali has also delivered up by way of scattered finds and in a few sarcophagi, a number of so-called votive axes which

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[17] van der Hoop, 1941, p. 184—200.
Verhoeven und Heine Geldern, 1954, p. 683—84.

are too fragile and too oddly shaped to be of practical use.

Most socketed axes are unadorned, but at the Museum at Djakarta there are a few specimens decorated with eye and mask motives and with geometrical designs.[18] From the neighbourhood of Djakarta came an axe, 73 × 51 × 14 mm., decorated with two oval-shaped eyes above which are some parallel curves. An exceptionally large axe from Bogor (252 × 109 × 23 mm.), with a swallowtail is adorned on one of its surfaces by a roughly drawn mask with bud-shaped eyes. (Fig. 3). Three axes from Priangan (respectively 215 × 129 × 27 mm., 243 × 134 × 36 mm., and 245 × 136 × 35 mm.) are decorated with a stylized mask, a pair of eyes and spiral and other geometrical motives. Near the centre of the socket of an axe from the neighbourhood of Bandung (299 × 143 × 31 mm.) we see a pair of eenes amid concentric curves and parallel lines. A damaged specimen from Pekalongan (116 × 73 × 16 mm.) has a curved line motif and four pairs of concentric circles. (Fig. 3).

Near Palembang a bronze axe was found which has a square hollow socket, a characteristic which this axe has in common with similar axes from China; this type is unknown in Indo-China. In considering this case one is tempted to suspect a direct influence from China.

2. *Ceremonial Axes.*

A striking feature of the Dongson Culture is the large ceremonial bronze axe of graceful but asymmetric shape, and often with handsome decoration. The cutting edge is very thin and broad, and its points are bent up. These axes are of no use for practical purposes as they are too large and too fragile. Illustrations of them appear on various kettle drums in Indo-China; in these illustrations the axes are carried by plumed warriors. There are in Indo-China also a fair number of asymmetric socketed axes, one side of which is drawn out to a greater extent than the other, and these are probably the forerunners of ceremonial axes. They are often decorated with the same motives as those on kettle drums, such as human figures with the head-dress of feathers or crescent-shaped ships with passengers. These motives are generally known from kettle drums in the continent of South East Asia, as well as Indonesia.

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[18] According to Carl Schuster the eye in these designs is the ultimate simplification and stylization of the complete face; some of these axes are decorated with complete faces, other with eyes only.

The Museum at Djakarta and some other museums possess exquisite collections of ceremonial axes. (Fig. 5). A specimen from Krawang has a blade whose points are severed and its length in this condition is 533 mm. Its shaft is decorated with spirals, rhomboids and other line motives and a small ring is attached by which the axe can be suspended. Another specimen from the same region has the corners of the cutting edge broken off, measures 1068 mm. and has a similar ornamentation.

Bogor provides seven specimens of which the largest is broken in two pieces, has a length of no less than 1337 mm., and is decorated with spiral, rhomboid and textile motives. The other axes are all broken into fragments, several of which show geometrical figures, and the shaft of one of them is decorated with a pair of eyes. Near Pekalongan was found the blade of a ceremonial axe with spiral and rhomboid motives. Rembang brought forth a real showpiece, decorated with the effigy of a bird of prey in flight, carrying in its claws a ceremonial axe with short handle, and with spiral and line motives on its shaft. (Pl. 3; Fig. 6). Near Sukabumi also there have been finds of damaged halberds or ceremonial axes.

All the ceremonial axes mentioned are from Java; up to the present none of this type have been found in any of the other islands. The ceremonial axes found in the Isle of Roti, and the one bought by auction in Macassar, are much different in shape. The Macassar one is typologically an ordinary socketed axe, but its size 705 × 450 × 83 mm.), is about six times the normal. This giant axe is wholly unfit for ordinary use. On the hollow socket near the opening are line ornaments and wavy lines, and underneath these is a mask, and still lower down, a band of spiral motives. The centre spiral contains a sun-wheel with four spokes. Along the edges of the blade are fish-bone motives. At the centre of the cutting edge is a square casting-jet. This axe must have been cast with the use of a multiple stone mould. (Fig. 4).

Three most remarkable ceremonial axes have been found in the Isle of Roti, one of which was lost in a fire during the Colonial Exhibition in Paris in 1931. The two remaining axes are very flat; blade and handle are cast in one piece. The first specimen has a slightly curved handle, terminating in the shape of the head of a crocodile. The uppermost part is decorated on both sides with squares containing concentric circles. The blade has a broad fan-shaped cutting edge and is decorated on one side with a masked figure with upstretched arms and with bands of parallel line motives and concentric circles, the other

side being plain except for a couple of spiral motives along the edges. At the joint of handle and blade is a round disc surrounded by two concentric circles, around which are three double-spiral motives. Round the disc are five projecting squares, and in line with these is a second disc. This disc also is contained in a pair of concentric circles, in the centre of which are three concentric circles surrounded by double-spirals. The maximum length of handle and blade is 890 mm., the width of the blade is 513 mm. This axe and the next one described were excavated at Landu on North Roti in 1875 and have been donated to the Museum at Djakarta by H. C. Humme.[19]

The second Roti axe (Fig. 7) resembles the first, but the handle is more curved, and the blade is almost circular. The human figure in the decoration rests its head on the drawn-up legs. The ornamentation is carried out in low relief as in the previous specimen, and is similar to that of the Dongson Culture. The head is adorned by a ceremonial head-dress similar to the kind which is still worn at present by some Papuan tribes and by the Melanesians, and with which we are also familiar by our knowledge of the ancient Bronze Age Culture of China. Underneath the body and in the spaces between the bent elbows and knees are three series of concentric circles consisting of so-called "joint-marks". Finally, may we quote what Carl Schuster has to say about this specimen: "This document is doubly precious because it combines a reminiscence of Asiatic forms with a presage of the modern "primitive" arts of Papua and Melanesia. It is of value for our study in particular because it provides a clue to the time and manner of transmission of the motif of the disembodied joint-mark from the Asiatic mainland into Oceania. This Roti axe thus represents a primary fulcrum or pivot upon which may well turn future investigations of motives of this type in the Pacific islands and perhaps even ultimately in America".[20]

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[19] van der Hoop, 1941, p. 197—99.

[20] Schuster, 1951b, p. 33—36.
Heine Geldern, 1937, p. 190.
The present-day decorative art of New-Guinea shows marked influence of the Dongson Culture. A bronze axe of great artistic value was found near the Lake of Sentani. (van der Sande, 1904, p. 247—48). It has a half circular blade and an undecorated shaft. Where blade and shaft meet there is the design of a mask, upside down, with a half circular head-dress. The ends of the cutting edges continue in a small perforated circle with four spokes and a tiny hole in the centre. Perhaps this represents a sun-wheel as van der Hoop thinks.

3. *Kettle Drums.*

The metal kettle drum is an extremely important element of the Dongson Culture of South Asia. From an early date the often richly adorned kettle drum drew the attention of European art collectors. Already in 1682 Rumphius [21] sent a kettle drum of unknown origin to the Grand Duke of Tuscany and in 1705 he gave a description of the drum of Pedjeng on the Island of Bali. In 1883 a kettle drum made its first appearance at an exhibition in Vienna; it was the property of the art collector Count Hans Wilczek who bought it in Florence. In the same year a similar kettle drum could be seen in the international exhibition in Amsterdam, which was adorned with four frogs on the tympan; an Austrian Anton Payer, who spent many years at the court of the King of Siam, some as a Buddhist priest, advocated the view that the drum in question was of South Asiatic origin. The third recorded drum is a specimen which today is still on the Isle of Salajar in Eastern Indonesia. It was noticed by the globe-trotter C. Ribbe, who made various drawings of it, which are of unequal merit. In 1884 the ethnologist A. B. Meyer [22] published a study on some fifty-two kettle drums, forty of which were in museums or private collections in Dresden, Vienna, Rome, Paris, London, Leiden, Calcutta, Djakarta, and Stockholm.[23] F. Hirth,[24] J. J. M. de Groot [25] and W. Foy [26] have all dedicated studies to this interesting topic.

Franz Heger wrote a classic on the subject, published in 1902, in which he mentions 165 kettle drums.[27] In 1917 G. P. Rouffaer made a compilation of the chief results of all previous studies and added an extensive bibliography.[28] H. Parmentier [29] in 1918 included in his study no less than 188 drums. Since then, many most important discoveries have been made, of which we make special mention of the beautiful

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[21] Rumphius, 1705.
[22] Meyer, 1884.
[23] Meyer und Foy, 1897.
[24] Hirth, 1890.
Schmeltz, 1904.
[25] de Groot, 1898.
[26] Foy, 1903.
[27] Heger, 1902.
[28] Rouffaer, 1900; 1918.
[29] Parmentier, 1918.

drum of Hoàng-Ha,[30] and the five magnificent specimens from the Isle of Sangeang or Gunung Api near Sumbawa.[31]

All these studies lead to two major conclusions: that the geographical distribution of kettle drums is very wide indeed, stretching from Inner Mongolia, Indo-China and the Indonesian Archipelago right up to the Kai Islands, and that the traditions connected with the method of manufacture of such drums, the use made of them, and the worship bestowed upon them, have been upheld for a span of more than two thousand years. Already before the start of the Christian era Chinese annals of the Han dynasty make mention of kettle drums captured from the "Man" barbarians. Other records mention that they were made and venerated by the non-Chinese population of South China such as the "Man", Miau-tze and Lolo tribes which were subjected by China in 41 A.D., by the well-known general Ma Yüan. On this occasion many drums were captured and subsequently melted down for the purpose of casting a bronze statue of a horse which was presented to the Chinese emperor.

The Chinese called these drums *t'ung-ku*. The subjection of the tribes mentioned did not prevent them continuing the casting of kettle drums. The "Man" still made them in 300 A.D. by buying up bronze coins in Canton and recasting these into drums. In 800 A.D. a drum was presented to the Chinese emperor by the country Phiao (in Burma). About 1200 A.D. drums were still seen among the "Man" in the South who used them as war drums and as votive offerings. During the Ming dynasty they were placed on mountain tops and when on special occasions they were beaten the inhabitants streamed along in their multitudes. In 1700 A.D. there were still ten acknowledged smiths in

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[30] Goloubew, 1940.
This beautiful drum is now in the Museum of Louis Finot at Hanoi. The tympan is decorated with human figures with feather head-dresses, pile-dwellings, birds with long beaks and long legs, flying in formation and in the centre is a sixteen-rayed star. The convex part of the mantle is identical with that of the drum of Ngoc-lu and has the same sickle-shaped ships of the dead. The rest of the mantle is decorated with bands of geometrical designs such as tangential spirals, small dots, and wading-birds flying in formation and also some funeral scenes. On the Ngoc-lu drum flying birds alternate with pelicans standing and there is on this drum a procession of deer. No deer-processions are found on any other kettle drum, but they appear on two bronze axes from Dong So'n. On the Hoàng-Ha drum the first signs of a tendency to schematize may be observed.

[31] van der Hoop, 1941, p. 213—22.
Heine Geldern, 1947.

Canton who cast kettle drums. The trade was traditionally passed on from father to son.[32]

The Karen tribe in Burma and Western Siam still know of the use of kettle drums and in 1905 they still made them. They beat drums at funeral festivities, calling up the souls of the dead transfigured into birds. They also use the drums as a kind of altar on which offerings of meat and rice are placed.[33] Apart from the ones mentioned, hundreds of drums of two different kinds are still in use, high ones and flat ones, both revered by the "Red" Karen. These "Red" Karen did not manufacture the drums but bought them from the Shan and Inthas tribes, who were still making them in 1894. It is a remarkable fact that the drums usually appear in pairs, one drum with and one without frogs on the beating surface of the drum. In Burma the first type are considered male and the second female. Lilly, from Rangoon, writes of the manufacture of drums as follows: "A clay cone is first made of the size of the inside of the gong (i.e. drum) and on this wax is placed and carefully modelled to the exact shape and covered with the appropriate ornamentation. When the wax model is finished, fireclay and water are dashed on the face of the wax with a brush, the clay and water being thrown with great force, penetrating into the small hollows and angles of wax. When a sufficient thickness of clay has been added in this way a coarse clay is laid on the outside to give strength. The wax is then melted out and the mould made nearly red hot. The metal is then poured in".[34] This method can only have been used for the smaller types, as the casting-seams on larger specimens indicate the use of multiple moulds.

Until recently kettle drums of the Heger IV type played a large part in the economic and social life of the mountain tribe Lamet in Laos. These people did not make the drums themselves but bought them from the Niang tribes. They bury the bronze drums in a secret place and bring them out only on festive occasions. Generally it appears that the highest purpose in the life of a Lamet is to collect the greatest possible number of drums. If a drum owner dies without leaving male descendants his drum is beaten until it falls to pieces. The fragments are then collected and added to his grave. If a Lamet possesses two kettle drums and some five buffaloes, he is raised to a kind of nobility, and is called a "Lem"; the title, however, is not hereditary. The creation

[32] van Heekeren, 1953.
[33] Heine Geldern, 1932, p. 530.
[34] Kenny, 1927.

of a "Lem" is accompanied by festivities during which two chickens are sacrificed and the so-called *tukti* ceremony takes place, "by tying cords of cotton to the frog ornament on the drum and then striking feathers and blood onto the star ornament placed in the middle of the drum while he recites magic spells containing a prayer that he may get even more drums and many buffaloes. When a couple of months have passed, this man must hold a feast for his ancestors and sacrifice a buffalo and he is obliged to invite all the inhabitants of the village to this ceremony".[35]

After the harvest, sacrifices are made to the spirit living in the drum and to the spirits of ancestors. It is believed that the latter are charmed by the musical sound of the beaten drum, and that they will be induced to go to the watch posts. A man without a drum is therefore unable to call up his ancestors.

The foregoing shows clearly the strength and tenacity of the traditions which have been maintened right through the ages. Unfortunately, no answer is given by the historical chronicles to the question of when all this started, i.e. when the first kettle drums were made. By archaeological methods, however, it is possible to arrive at an approximate answer, and this has been attempted by P. V. van Stein Callenfels.[36] He starts from the fact that in the necropolis of Dong So'n a number of miniature drums which served as funeral gifts were found in addition to the usual drums. He also makes use of the known fact that in several civilisations it was customary to give rich funeral offerings which accompanied the dead in their graves but that in the course of time this habit degenerated and instead of precious objects, valueless imitations were given. He deduced that some such sequence of custom must also have occurred at Dong So'n. Dong So'n is known to date from the time around 300 B.C. The oldest kettle drums should be dated at least a century earlier. Heine Geldern came to a similar conclusion along a different road.

Victor Goloubew is of the opinion that the first kettle drums were imitations of wooden war drums over which animal skins were stretched.

Heger's classical work distinguishes four main types of kettle drums, and his classification is still in general use. The first, Heger I, is the most important, and the others are derived from it. Heger I has a wide distribution and is even found in the most eastern part of the Indonesian

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[35] Izikowitz, 1951.
[36] van Stein Callenfels, 1938.

Archipelago. For this reason, Goloubew calls it "le type migrateur par excellence".

The four types are as follows:

Heger I: Some specimens of this type are very large indeed. For the purpose of the description it is convenient to divide the mantle of the drum into three zones. The uppermost zone, just under the beating surface or tympan, is convex; the next lower zone has the shape of a straight cylinder; and the bottom one is like an inverted, truncated cone. The bottom of the drum is always open. The convex topmost zone is often richly decorated with geometrical designs and occasionally with illustrations of sickle-shaped barges with a bow in the shape of a stylized bird's head and a stern like a bird's tail. Usually there are about six of these barges. Inside the barges we observe, in addition of the helmsman and the rowers, a number of passengers, sometimes winged and plumed warriors. The barges convey the spirits of the dead to the hereafter.[37] This imagery is probably connected with the festivities held while head-hunting.

The convex zone of the drum forms a sharp edge with the tympan. This tympan is also richly decorated. In the centre is a thickened star motif with either 8, 10, 12, 14, or 16 rays; around this are a number of concentric bands of varying width, decorated with a multiplicity of geometrical designs, such as ladder motives, oblique meanders, circlets which are connected with tangents or various naturalistic representations of flying birds nearly always flying counter-clock-wise, with human beings with feathers, eyes, and houses with saddle-shaped roofs within which various ceremonies are taking place. Round the circumference of the tympan are usually four frogs which serve as rain-makers. Heger I appears chiefly in Tonkin and South China and is also widely distributed in Indonesia. From illustrations on megaliths in South Sumatra it appears that small specimens of this type were carried by warriors on the back and were probably used as war drums. These specimens have four pairs of handles decorated with cord motives. The houses occasionally portrayed are exactly like houses which are still being built in Mid-Celebes by the Toradja in Palau and by the

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[37] It is well known that various Dajak tribes such as the Ot Danum and the Olo Ngadju use planks painted with soul-conveying ships for their funeral festivities or *tiwa*'s (see: Tillema, 1931). We find these ships again in stylized form, on the well-known 'ship-cloths' of Kroë in South Sumatra (see: Steinmann, 1937; 1939. Vroklage, 1936).
The Batak people also believe in the existence of a mysterious island in mid-ocean where the dead are: the Isle of the Immortals.

Toba Batak on Sumatra. The oldest drums carry chiefly naturalistic representations, but later these become interlaced with geometrical designs which indicate a European influence. Still later the bird images degenerate into four-legged monsters and composite animals, which have a magical significance.

Further stylization results in the change of human figures into ocellated plumes and wings. In the naturalistic representations the birds can be recognized as white herons with aigrette, pelican-shaped birds and hornbills.

Heger II: This type also is often of large size, with an eight-rayed star in the centre of the tympan. This tympan protrudes beyond the mantle of the drum. The decoration is delicately executed and usually consists of geometrical designs. Some drums have two pairs of handles.

Heger III: This type, also called the Karen type, is of average size but small ones also exist. The star on the tympan has twelve rays. In four places on this tympan are frogs. Usually these frogs do not appear singly but each carries one or more frogs on its back. Tympan and body are copiously decorated with stylized ornaments. The handles are small and elegant.

Heger IV: This is also called the Chinese type and has many Chinese decorations. It has a star with twelve rays on the tympan, frogs appear rarely, the cylindrical centre zone of the body is absent. There are two pairs of handles. The type is often found in cloisters and temples in China.

There is evidence that images of spirit-conveying ships and plumed and winged warriors and also certain geometrical ornaments are common to both socketed axes and kettle drums of type Heger I. Moreover, both types of bronze objects have been found together at Dong So'n, suggesting that kettle drums and socketed axes belong to one and the same culture. In Indonesia, as in Indo-China, the kettle drums are one of the most characteristic features of the Dongson Culture. In Indonesia the drums are all of the Heger I type, except for a specimen from Banten in West Java which may be classified as Heger IV, and another called the "Moon of Pedjeng" on Bali which looks like a giant *mokko*. The more recent hour-glass shaped *mokko*'s may no doubt be considered as a local development of the older kettle drums. In Alor and West Flores they play their part in the payment of dowries. The Pedjeng types and the *mokko*'s are the only types of which it is certain that they were cast in Indonesia.

There is a great similarity between the Heger I kettle drums of

Indonesia and those of the Tonkin area. It is striking however that in the decoration, the human figures tend to become more and more formal, finally degenerating to a mere excess of feather and eye motives, whereas the barges maintain their original shapes throughout. Furthermore, some alien Chinese influence may be detected occasionally in the representations of human beings and animals on Indonesian kettle drums; and recently ancient Chinese characters have been discovered on a drum in the Isle of Koer (one of the Kai Islands). It is a remarkable fact that the largest and most beautiful kettle drums are found in the most eastern part of the Indonesian Archipelago, usually on islands which are rather unimportant in other ways.[38]

We now proceed to a specific description of the kettle drums of Indonesia, most of which have found their way to the Museum of the "Bataviaasch Genootschap van Kunsten en Wetenschappen" at Djakarta. These have already been described provisionally by van der Hoop.[39]

a. Java.

The Museum at Djakarta possesses more than a dozen kettle drums or fragments thereof, all from the Island of Java. They come from the following provinces: Banten (one specimen of type Heger IV); Bogor (reduced-size model of Heger I, village of Tjibadak); Tjeribon (a fragment of the bottom part of the body of a Heger I specimen); Priangan (a specimen of the type Heger I, village of Tjiandjur); Pekalongan (specimen Heger I and a tympan of type Heger I); Banjumas (Heger I specimen, Fig. 8c); Semarang (a specimen Heger I found in the south of the town, a tympan of Heger I from the village of Banjumening, and some fragments of Heger I found in the cemetery Bergota); Kedu (fragments of the tympan of a Heger I, excavated near the temple Punta Dewa, Diëng Plateau); tympan of Heger I found near Tanuredjo, Temanggung.

The first drum found in Java, south of Semarang in 1883, was almost without blemishes. The height of this drum is 485 mm., the diameter of the tympan 599 mm., and that of the under side 650 mm. In the centre of the tympan is a low relief of a star with twelve rays. The space between the rays is decorated with small spheres, straight line

[38] Leti, Sangeang, Koer, Roti, Luang and Salajar.
Lately a beautiful kettle drum was found at Kataloka in East-Ceram.

[39] van der Hoop, 1941: A description of the drums which are on display at the Djakarta Museum.

motives and concentric circlets interconnected by oblique lines. This is followed by a narrow band of square meanders, circlets joined by tangents and small spheres, an undecorated band, and then a wide band with four herons with long beaks flying from left to right. The next zone consists of three small bands, of which the outer two are decorated with ladder motives and the inner one with circlets joined by tangents. The outer zone is unadorned and there are no frogs on the tympan. The body of the drum is decorated exclusively with horizontal and vertical bands containing ladder motives and circlets joined by tangents. In between are large unadorned panels. The drum has two vertical casting-seams and four pairs of handles decorated with cord motives. (Fig. 8b).

A second specimen from Semarang much resembles the first one but it is damaged, chiefly in the body. On its tympan are four sculptured frogs (Fig. 10). The diameter of the tympan is 805 mm.

From Priangan comes a damaged drum. The centre of the tympan carries a sixteen-rayed star in low relief, surrounded by five concentric bands decorated with tangential spirals, concentric circlets and fish-bone motives. The convex part of the body portrays pelican-shaped birds standing up with drooping wings. The centre zone is divided by horizontal and vertical bands into ten panels, six of which bear little decorations of triangles and concentrated circles, the other four showing fish-bone motives. In all ten panels appear pelicans of the same type as in the zone above. Four pairs of handles with cord motives are cast to the body. (Fig. 8a).

An interesting, almost undamaged drum comes from Pekalongan. Unfortunately the ornaments and decorations have become very faint through corrosion, but van der Hoop has succeeded in identifying many of the illustrations. His method was a careful comparison of this specimen with the well-known drum of Moulié which is closely connected with it. The diameter of the tympan is 639 mm. and the total height 452 mm. On the tympan were identified a dwelling on poles with saddle-shaped roof on which some birds are perched. On both sides of the house are platforms, underneath which are men beating on four kettle drums. The same zone shows feather winged human beings and birds flying from left to right. In addition to these illustrations the drum is decorated with traditional geometrical designs such as concentric circles, triangles, and ladder motives. On the body are hardly recognizable sickle-shaped barges for the conveyance of spirits. At Kedu a tympan of a kettle drum was found in 1911 which

must have belonged to the Pedjeng type. The Ethnological Museum at Leiden also possesses a specimen of this type; its origin, however, is unknown. We may assume that these drums have been cast in the Island of Bali as fragments of stone moulds for this type have been found there.

A miniature was excavated some time ago at Tjibadak, which was evidently cast by the "cire perdue" method. Its height is only 89 mm. It has four single handles; there is no doubt that we are dealing with a funeral gift. (Pl. 5).

A unique specimen was discovered in Banten. It is a low drum whose body consists of two zones only, i.e. a convex top zone resting on a cone with a wide base. The height of the drum is 273 mm. and the diameter of the tympan 473 mm. On the tympan is a twelve-rayed star in low relief, surrounded by five concentric bands. The first band is decorated with small squares, the second, third and fourth with fish-bone motives and rhomboids. The body has only horizontal parallel line motives as decoration. Two pairs of handles have been cast on the body, one pair of which has been lost. Four casting-seams can be recognized on the body and another between tympan and body. The tympan protrudes beyond the body. This drum may be classified as Heger IV and may be an import from China.

Other fragments of kettle drums in Java do not suggest any new points of view and are not of sufficient importance to warrant detailed description.

b. Sumatra.

In contrast with Java the large Island of Sumatra has brought forth little of interest. The Djakarta Museum has only some five fragments of Sumatran kettle drums. The first was found in 1936 on the tea plantation Danaugadang, south of the Lake of Kerinchi. In or near the same place other bronze objects were found and also a number of flakes of obsidian. Judging by the fragments of the drum, the diameter of the tympan must have been approximately 708 mm. The ornaments are damaged very considerably but in the centre a star is still discernible with bands of oblique meanders with flying birds around it. Van der Hoop had a piece of fragment analysed from which it appeared that the metal consisted of 84.04 % copper, 11.55 % tin and 3.94 % lead. This specimen was therefore made of real bronze, whereas in the metal of most drums the percentage of lead exceeds that of tin.

The best preserved although greatly damaged drum came from the Lampongs. On the tympan a star can be faintly seen but all other decorations are unrecognizable. The body shows panels separated by bands of ladder motives. It has four pairs of handles and traces of four casting-seams can be recognized. The height of the drum is 435 mm. and the diameter of the tympan 550 mm.

In Benkulen the centre part of a kettle drum was found, decorated with four vertical bands with fish-bone motives and a horizontal one with small circles and ladder motives. In 1914, in the course of road construction near the Lake of Ranau at Bandinagun, a fragment of a drum of little importance was found at the village of Sumberdjaja in South Sumatra. In 1953 part of the tympan of a kettle drum was found placed on a small circle of vertically placed stones. According to the discoverer there were some ashes inside this stone circle. The fragment is circular with a diameter of 29 cm. Only one ornament appears, a ten-pointed star.

c. Bali.

On this island can still be found the largest kettle drum ever discovered, the "Moon of Pedjeng." Its height is 1.86 metres and the diameter of the tympan 1.60 metres. From an early date this drum has been drawing the attention of explorers. Rumphius mentioned it already in 1704, although the actual observations were probably not his but Hendrik Leydekker's. The only more or less detailed description of this drum was given by W. O. J. Nieuwenkamp who also made some fine drawings of it. Typologically the drum does not belong to any of the Heger types. It looks more like a huge *mokko*. Nieuwenkamp points out the many apparent differences between this drum and other kettle drums: the exceptionally large overall dimensions, the large height as compared to the width, the large hangover of 25 cm. of the tympan over the body, the clearly marked division of the body into three zones, the straight profile of the centre zone, the large hinged handles which widen towards their centre, the decoration between the rays of the eight-pointed star in the centre of the tympan, and other decorations on the tympan such as wavy lines with knots and loops. Nieuwenkamp also draws attention to the four pairs of beautiful masks appearing on the body, masks with protruding noses and eyes and long stretched ear-lobes with coin-shaped ear-rings. (Fig. 11). The Balinese consider this drum as a former wheel of the "moon-carriage" which in older days

shone so clearly that it lighted up the night.[40]

At a later date near Badung a fragment was found of a similar but much smaller drum. Walter Spies and K. Ch. Crucq found at Manuabe some fragments of a stone mould which must have been used for the casting of drums of the Pedjeng type. Crucq published some interesting facts on this find, which have already been cited by van der Hoop [41] and which we quote once again:

"The fragments of a mould of a kettle drum which I discovered are to be found at Manuabe (near Tegalalang, sub-department at Gianjar, South Bali) in the Purah Puseh, where as *artja*'s (stones with magic power) they are regarded with veneration. There are three pieces, the largest of which belongs to the base of the drum (the portion below the middle belt). One of these parts gives the whole breadth of the middle belt, besides a small piece of the head; the other piece shows only a part of the breadth of the middle belt. It has been a mould for drums of the slender, long model, somewhat diabolo-shaped, such as, for example, the famous drum of Pedjeng, a village not far from Manuabe. Both of the first-mentioned pieces show the customary decorative work: along the underside a border of triangles (two rows of triangles — a row of S-shaped motives — two rows of triangles); along the under border of the middle belt, a similar band, on which stand perpendicularly eight triangle borders (each consisting of two rows of triangles with the bases against each other, thus diamond-shaped, a row of S-motives, and two rows of triangles, again with the bases against each other); the bands run to the upper border of the middle belt. On these drums the middle belt has eight similar vertical triangle-bands, above four of which stands a double head; above the other four an ear of the drum, alternately: a head-ear-head-ear-head-ear-head-ear.

The third and smallest piece has belonged to the part above the middle belt. It shows a double head, a piece of the middle belt, with the vertical band under the head and a triangle-band above the head, coinciding with the two other horizontal triangle-bands (two rows of triangles — a band with a S-shaped motif — two rows of triangles); the uppermost part on which there ought to be a ribbed band, is lacking. As already said, the mould was destined for drums of the model of that of Pedjeng, with which it corresponds absolutely. At the same time, it is of much smaller size than the very large "Moon of Pedjeng".

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[40] Nieuwenkamp, 1908.
[41] van der Hoop, 1932, p. 88—89.

The piece of our mould under the middle belt measures 48 cm., the middle belt itself 24 cm. Owing to the absence of the upper border, the total height cannot be exactly determined. The upper part, however, is always shorter than the under part. Our mould must have been about 1 metre to 1.10 metres high. The circumference of the bottom, calculating with 'bow, arrow and cord', may be estimated at about 242½ cm. The pieces, although clearly belonging to one mould, do not match; they belong to two different halves of the mould (the kettle drums show two vertical cast-seams; they were cast in two halves which are soldered together; also the ears and cover were cast separately). It is possible and even probable that the famous drum of Pedjeng was cast in the same foundry to which our mould belonged. The well-known kettle drums belong practically to two models, the model of our mould and that of Pedjeng, slender and diabolo-shaped; and the short, thick, bell-shaped model (like for example, the drum of Ngoc-lu of which an illustration is given in Bulletin de l'École Française d'Extrême-Orient XXIX, Plate 1). It is true that both sorts show the triangle-bands as decorative motive, if not always in the same proportion and division, but the latter sort show no double heads, if many other decorative motives: birds, ships of dead, human figures, etc. Also the ears are placed differently (two and two together). The slender model never shows the frogs (rain-callers?) which in the case of the short model sometimes sit on the cover. It is now remarkable that, as far as I know, outside Indonesia, only the short model occurs while in the Archipelago both sorts are met and that, for example, the drums of Alor which are certainly of later date than the others, alone possess the slender model. In my opinion, this shows that the short model is the original and oldest form and that it was already in use on the continent before the Malayo-Polynesians penetrated into the Archipelago. The slender model must then have been a variation, which either originated in the Archipelago itself or was a speciality of those Further Indian peoples who swarmed into the East Indian Archipelago. The former seems to me most probable. It is typical also that with the later drums of Alor, the double head makes way entirely for a single Javanese Kala-head. Summing up, therefore, we can not establish that the kettle drums as such first originated in the East Indian Archipelago, but we can state that there is every reason for believing that the long, slender type of these objects is an Indonesian variation, while it is certain that such drums were cast in the East Indian Archipelago. In short, the Malayo-Polynesians brought with them from their native

country the art of casting these drums, an art which they continued to apply here, whilst variations in the model arose. Most of the drums found in the Archipelago therefore, if not all, must have been cast there".

Crucq gave the above commentary on this important discovery in a letter addressed to van der Hoop.

d. Sumbawa.

The most beautiful and interesting of the kettle drums found in Indonesia come from the little Island of Sangeang or Gunung Api, east of Sumbawa. There are five such drums, in a very good state of repair, and the tympan of a sixth one. The discovery was made in 1937 by the then deputy commissioner S. Kortleven. Three of the drums stood by the side of some old graves in a deserted village The population of Sangeang venerated the drums and used them for rain-making by setting them upside down, i.e. with the hollow side upwards. They also believed that with the aid of the drums they could cast spells, causing fires among an enemy far away. The drums are now in the Museum at Djakarta. The largest and most beautiful of them has a height of 835 mm., and a tympan diameter of 1160 mm. The population knew it by the name of Makalamau. Heine Geldern has made a special study of this drum.[42] It has sustained some damage and a few pieces are missing but on the whole it is well preserved and the ornaments on tympan and body are easily recognizable. They consist of a multitude of geometrical designs, domestic pictures, scenes with a sacred meaning and representations of birds, elephants, deer, horses, poultry, dogs and tigers. The human images represent three different races. In the centre of the tympan is a twelve-pointed star motif surrounded by twelve narrow and wide bands with circlets joined by tangents, ladder motives, oblique meanders, stylized human figures with ocellated bird's wing motives (twenty in total) and birds flying counter-clockwise, with long beaks and aigrettes. Then follows a broad outer band with four sculptures of frogs but no other decoration. In the third zone we may observe four dwellings on piles with saddle-shaped roofs and gables sloping outwards, similar to dwellings which may still be seen among the Sa'dan Toradja. One of the houses has a pile into which steps are cut and a human figure

[42] Heine Geldern, 1947.
Deydier, 1949. According to Pelletier the warriors are Scythians.

with high head-dress stands half way up the pile, using it as a ladder to enter the dwelling. In front of the house someone is pounding rice in an hour-glass shaped block, and an animal with a long tail is moving in front of the gable. On the floor of the house is a man squatting on his haunches and bending low, paying homage to another man who accepts his gifts with outstretched hands. Next to these are two kneeling figures facing each other with a drum in between. Another figure stands with his back to them and seems to put something into a cupboard on the right under the attic. These men are dressed in bell-shaped clothes and have short beards. Dress and general appearance point to Chinese of high birth (Pl. 6). According to Heine Geldern the dress is essentially the same as that seen on Chinese roof-tiles of about 300 B.C. and also occasionally on reliefs of the Han period of about 200 A.D. The same similarity applies to the manner in which the figures are kneeling. Under the roof are partitions forming a kind of attic, which was perhaps used for the storing of precious objects. We discern, for instance, some baskets and a kettle drum. Underneath the dwelling a pig can be seen running and there are two chickens and a dog. Another house shows in the centre a human figure full face with arms stretched upwards and above it something like a four-leaved clover. Underneath the house are a deer turning its head, and a bird. The sides of the house are decorated with rhomboids and rows of circlets joined by tangents. The spaces in between the four houses are filled with a multitude of designs of ocellated bird's wings and with a few nude human figures in a sitting position with a very high head-dress made of feathers. The foregoing is a clear example of how the human figure is gradually losing its importance and becomes almost lost in a multitude of pure ocellated bird's wing designs. Heine Geldern has made a comparison between the dwellings on this drum and those on drums from Indo-China. He writes as follows:

"Like the houses on the Tonkinese drums, that on the drum of Sangeang stands on piles and has a saddle-shaped roof, lower in the middle than at the projecting ends. In other respects there are important differences. On the Tonkinese drums the projecting ends of the ridge-pole are supported by pillars. These are absent on the drum of Sangeang.

On the former, the edge of the powerful roof, reaching down to the level of the elevated floor, is clearly shown with its fringes of thatch. Its outline is sharply set off from the vertical posts supporting the floor. On the Sangeang drum, the roof is indicated only by its saddle-like

ridge and the ornaments (or thatch?) hanging down from its projecting ends. The lines on the walls at the right and left continue those of the supporting pillars and then gradually slope outward."

The body of the Sangeang drum is also richly decorated from top to bottom. The topmost convex part shows six crescent-shaped barges for the conveyance of the souls of the warriors; bow and stern of the ships seem to end in bird's heads. A nude male figure stands at the rudder and in the ship are four human figures in a sitting position, almost hidden by the excessive number of designs of ocellated bird's wings. In front of the bow a large fish is swimming, and above it is a tiger lifting its paw. Behind the ship is another fish swimming in the opposite direction, with a large bird on its back picking at its head. (Fig. 12). In the same band are some human and animal figures; a saddled horse, a robust-looking warrior with upraised sword, dressed in a long jacket, fighting a tiger with the assistance of a furiously barking dog, a deer with its head turned, elephants, a dancer in a flowing robe, a tall stiltwalker or wading-bird with a long beak, and another deer.

The centre part of the body of the drum is divided into eight panels by means of horizontal and vertical bands. These bands are filled with meanders, ladder motives and tangential spirals. The panels are filled with a plurality of ocellated bird's wing motives and nude human figures with high feather head-dresses.

The rich decoration is continued on the bottom zone of the drum. Two narrow horizontal bands are decorated with small rhomboids, and there are twenty square panels with various decorations: elephants are seen with men climbing on their backs in front and behind, a rider on horseback holding the reins with his left and a whip in the right, a sword hanging horizontally from his girdle. In front of the horseman stands a helmeted warrior in a long jacket. (Pl. 7). A third warrior holds a horse by its reins. Heine Geldern has taken particular note of the presence of these warriors on the drum. He has compared them with the images of warriors on coins from reigns of the Kushāna kings, about 200—300 A.D., a period during which the first commercial and diplomatic relations between the Kushāna's and their eastern neighbour states were established. The apparent similarity led him to the belief that the Sangeang drum was not cast locally, but that it was imported from Fu-nan about the middle of the third century A.D.

The second drum from Sangeang was called Waisarintji. Its height is 730 mm. and the tympan diameter well over 1010 mm. In the centre

of the tympan is a twelve-rayed star in low relief. Round this run five concentric zones. The first has decorations of geometrical designs such as rhomboids, circlets joined by tangents, and ladder motives. The second is filled with ocellated bird's wing designs in between which some human figures are vaguely visible. The third contains ten flying birds with long beaks. The fourth zone is unadorned but on its outer edge are four sculptures of frogs. On the topmost convex part of the body are six barges for conveyance of souls; the helmsman this time is a bird and the barges are filled with an endless repetition of ocellated bird's wings.

The third drum is minus its pedestal; in that condition its height is 470 mm., and the tympan diameter 835 mm. On the tympan is a twelve-rayed star in low relief. All other decorations have suffered by corrosion and have either gone completely or are only faintly visible. On the second zone appear once again the usual ocellated bird's wing designs intermingled with a few human figures with high plumes on their heads, squatting with their knees drawn up. The third zone has ten flying birds with long beaks, the fourth geometrical designs such as circlets joined by tangents, and ladder motives. The outer zone is not decorated but shows four sculptures of frogs. On the top zone of the body we observe once again barges filled with ocellated bird's wings, but this time human figures are completely absent. Between and underneath the barges are birds and fishes.

The fourth drum is 861 mm. high with a tympan diameter of 1115 mm. In the centre of the tympan is a twelve-rayed star in low relief. Round it are six concentric zones of which the second is rather narrow. The inner zone is divided into four narrow bands, of which the first one is divided by oblique lines into small parallelograms with a double toothed zigzag in each, the second and third are decorated with circlets joined by tangents, and the fourth with ladder motives. The second, narrow zone has oblique meanders. The third zone has ocellated bird's wings and in between, men sitting in the pose of oarsmen with outstretched arms and legs. Opposite each man is another who is bending forward and seems to grip the hands of his fellow opposite. This scene is repeated sixteen times. On the fourth zone are ten birds with long beaks, flying counter-clockwise. The fifth zone is divided in four bands of which the outer two carry ladder motives and the inner ones oblique meanders, and then follows a zone with circlets joined by tangents. The sixth, outer zone is unadorned, but on its edge are four sculptures of frogs. The topmost convex part of the body has four

bands, the outer ones with ladder motives, the inner two with circlets joined by tangents and underneath a tiny band with oblique meanders. In between the geometrical designs panels have been left open for some six soul-conveying barges. The stern is built up high forming a kind of capital, on which the helmsman, with large round eyes, is squatting with drawn-up knees. The bow and stern end in a stylized bird's head and tail. The midship area is once again completely filled with the conventional ocellated bird's wing designs. On the centre zone of the body are eight panels with ocellated bird's wings, separated by horizontal and vertical bands of oblique meanders. The drum had originally four handles which, however, have all been lost.

The fifth drum has a tympan with a fourteen-rayed star in low relief. Its height is 868 mm. and the tympan diameter 1147 mm. Seven concentric bands with geometrical designs such as zigzags, circlets joined by tangents and ladder motives surround the star. The next, second zone has nine birds with hooked beaks. The decorations of the third zone are too vague to be recognizable. The fourth carries ten flying birds with long beaks. The fifth consists of four narrow bands, the outer two with ladder motives, and the inner two with circlets joined by tangents. The sixth zone has oblique meanders, and the seventh, outer one is not decorated but carries four sculptured frogs. On the topmost convex zone of the body are four narrow bands, the outer two with oblique meanders and the inner ones with circlets joined by tangents. Underneath there is a narrow band with oblique meanders and six panels with soul-conveying barges decorated with ocellated bird's wings. The pedestal is unadorned. Two of the handles are broken.

Of a sixth drum the tympan only has been found. The diameter is 1036 mm.; it has a twelve-rayed star in low relief with four concentric zones round it, which are decorated with parallelograms, concentric circles, ocellated bird's wings, and flying heron-like birds with long beaks. As an exception to the rule these birds are flying clockwise. The tympan is badly corroded and some of the decoration has disappeared completely. On the fourth zone, however, ladder motives and circlets joined by tangents are still visible. The fifth zone is not decorated but there are traces which indicate that at one time there were four sculptures of frogs on the edge.

e. Roti.

This little island, which had our attention earlier because of the

discovery there of three beautiful ceremonial axes of bronze, must again be mentioned, as a kettle drum was found on the island in 1871 near Lole. J. A. van der Chijs presented this drum to the Museum at Djakarta. The drum is in a rather poor state of repair. It consists of a tympan, the top part of the body, a fragment of the centre part, and another thirteen loose fragments. As it stands, its greatest height is 590 mm. and the tympan diameter 728 mm. The tympan has a twelve-rayed star in low relief. Every other space between the rays is filled with rhomboids. Round the star are six concentric zones; the inner one is divided in narrow bands with ladder motives and concentric circles, then follows a wide zone with endless repetition of ocellated bird's wings. The third zone has 22 heron-like birds with long beaks moving counter-clockwise. The fourth has oblique meanders, and the fifth concentric circles and ladder motives. The sixth, outer zone is unadorned but carries on its edge four sculptures of frogs, of which three are still present. The topmost convex part of the body is decorated with horizontal bands with ladder motives and concentric circles. The decoration of the next zone is corroded away; probably it contained soul-conveying barges, but only ocellated bird's wing motives are recognizable. At the top is a band of oblique meanders. Only part of the body is present, carrying horizontal and vertical bands with oblique meanders, oblique lines, concentric circles, and in between, panels with ocellated bird's wings. The drum originally had four handles, two of which are still intact.

f. Luang.

Luang is a small island between Timor and Timor Laut. It is little known that in Luang too there is a kettle drum, or that at any rate there was one once. E. C. Barchewitz [43] was the first to report the presence of this drum. It was venerated by the local population, who refused to part with it. The drum stood half above the ground and half buried, on the top of a hill six hundred metres high. Its tympan and the topmost convex part of the body has disappeared. Its height in this condition was 510 mm. and its greatest width 910 mm. It had a simple decoration on the middle part of the body. A horizontal band with rhomboids was at the top and six vertical bands divided the rest

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[43] Notulen Bataviaasch Genootschap, 1880, p. 52—53; 1881, p. 16—19; 1881, p. 19.
Barchewitz, E. C. 1730: Ost-Indianische Reise-Beschreibung p. 312.

into six panels. The panels were decorated with parallel lines, a few concentric circles, and irregular designs which are sometimes mistaken for script, which they certainly are not. Others besides Barchewitz have paid attention to this drum. District controller Hannige devoted a few lines to it in 1880 when he was on a trip with lieutenant J. W. Doyer, who made some drawings. These drawings are the only ones in existence, and they are at present in the office of the Archaeological Department in Djakarta. The clergyman N. Rinnoy declares that the drum formerly belonged to the neighbouring Island of Moa, but that during a war it was captured and removed as booty by the Luangese, who afterwards venerated and feared it. They believed, for instance, that beating the drum could cause illness, and that death would follow unless a goat or pig was promptly sacrificed. J. G. F. Riedel also writes a few words on the subject which we translate from Dutch: "On the Island of Luang may also be found a brass pot or kettle drum of East Asian origin, which although not actually venerated is held in high esteem. According to some of the islanders the drum was brought along from the west, together with the riceplant. Others maintain that it fell from heaven".[44] As far as I know nothing has been published regarding this drum since 1886.

g. Leti.

The drum on the Island of Leti is heavily damaged, bent and corroded. Large pieces of the body are missing. What is left is now in the Museum at Djakarta. Calculation makes the height of the drum 690 mm., the diameter of the tympan is 970 mm. The tympan has a twelve-rayed star in the centre, around which are six concentric bands. The innermost one is unadorned; the narrow second band has oblique meanders, the third ocellated bird's wings, the fourth a row of herons with long beaks and aigrettes. The decoration on the fifth band is so much corroded as to be unrecognizable, and the sixth is not decorated, but has four sculptures of frogs on its edge, three of which are badly damaged. On the convex top zone of the body are soul-conveying barges with ocellated bird's wing designs. In between the barges are portrayed various birds, among them peacocks. The centre zone is divided into four bands, decorated with circlets joined by tangents,

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[44] Riedel, J. G. F. 1886: De sluik- en kroesharige rassen tusschen Selebes en Papua, p. 316.

and ocellated bird's wings. Of the four original handles, two are lost. This drum was bought by Nieuwenkamp at Luhulele.[45]

h. Kai Islands.

Two kettle drums were found in these islands. In 1890 G. W. W. C. Baron van Hoëvell [46] reported on them and later they were presented to the Museum at Djakarta by J. W. Admiraal. The drums were found in the mountains under a tree, half buried and already damaged. Of this pair of drums the larger one was called "the man" by the population, and the smaller one "the woman". In 1933 Admiraal learned that the small drum had been smashed completely by a fallen tree. The year after, he was able to investigate the situation on the spot, and it appeared that the greater drum was also badly damaged. He was told that a *tuan minjak* or *tuan kompani* had taken away large pieces of the bigger drum. Later it appeared that the deed was done by a Swiss mining engineer, and ultimately the pieces which were removed by him found their way to the Ethnological Museum in Zurich, where they were described by A. Steinmann.[47] The population did not object to Admiraal removing the remaining pieces. Three different legends were current on the island concerning these drums.

1. The drums were found hundreds of years ago on the southeast coast of the Island of Koer at Hirit. They had descended from heaven at the same time as the island emerged from the sea. They were later transferred to the mountains where the population venerated them as being most sacred.
2. One fine morning on the beach near the present village of Hirit, four kettle drums were found, which had been washed ashore by the sea. The inhabitants of Koer wanted to hide the objects, and tied sticks to them in order to carry them away, but the drums refused to budge an inch, and protested violently by growling *gaba-gaba.* The inhabitants then untied the sticks and replaced them by strong pieces of *gaba,* after which two of the drums meekly submitted to being carried away to the mountains. When the inhabitants returned to the beach for the other two drums, however, they found that these had turned into stone.

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[45] van Hoëvell, 1890b, p. 153—54.
[46] van Hoëvell, 1890a.
[47] Steinmann, 1941.

3. When the Bandanese were driven from their island by the Dutch, they carried with them four kettle drums. They landed on the Island of Koer, where the inhabitants were still most scantily dressed. Relations were friendly at first, but quarrels soon started and became so serious that the new-comers had to leave the island again; they left their drums behind.

The larger of the two drums is the better preserved. Its tympan is intact, although the decorations are difficult to recognize. The height is about 870 mm., the diameter 1135 mm. In the centre is a twelve-rayed star in low relief; around it are three narrow concentric bands with, respectively, zigzags, oblique meanders, and circlets joined by tangents. On the second zone stand flying birds with crooked beaks, and the third carries ocellated bird's wing motives. The fourth zone shows interesting hunting scenes; little archers hunting tigers which in their turn are stalking deer, other men hunting deer with a long stick provided with a loop which they throw over the deer's head. (Fig. 13). This method of stag hunting is still used today in South Celebes; in West Flores horses are still caught with the same kind of "lasso". Such "lassos" and similar representations of tigers are also known from reproductions of the Han Period of China. The sixth zone has oblique meanders, and the seventh is divided in three narrow bands with, respectively, ladder motives, concentric circles and again ladder motives. The eighth zone has oblique meanders, and the outer one is undecorated but has four sculptures of frogs, of which only one is intact. Recently a series of old Chinese characters has been discovered under one of the broken frogs. The writing has not yet been deciphered but it probably designates the reign of an emperor.

Most of the topmost convex part of the body has disappeared; it was taken to Zurich as previously mentioned. Near the top of the remaining part are hunting scenes, for instance a tiger stalking a deer. The Zurich fragment has been described by Steinmann.[48] This contains a ship of the dead, which has its bow ending in a stylized bird's head and the stern in a bird's tail. The crew cannot be recognized as such, as the design has degenerated into conventional ocellated bird's wings. A few human figures, however, can be discerned in the centre of the ship, and on the forecastle, and also a helmsman. Under the stern are five fish, among which are some rays, and there is also a fish under

[48] Steinmann, 1942.

the bow. Behind the rudder is a flying bird. This fragment also shows the bow of a second ship, and near the bow a human figure.

A piece of the metal of this drum has been analysed with the following results:

Pb	(lead)	15.82 %
Sn	(tin)	12.70
Cu	(copper)	71.30
Zn	(zinc)	0.22

We are therefore dealing with a kind of lead-bronze, as is usual for Heger I specimens, which sometimes contain even more than 26 % of lead.

All that is left of the second drum of Koer are the tympan with diameter of 1036 mm., and part of the pedestal. The twelve-rayed star in low relief in the centre of the tympan is clearly visible but all other decorations are corroded and indistinguishable.

i. Salajar.

At Bontobangun in the Island of Salajar, south-east of Celebes one can still find a large and interesting kettle drum, venerated by the population. The inhabitants were not prepared to hand this drum over to the Museum at Djakarta. The drum has the respectable height of 920 mm., the largest but one ever found in Indonesia. The Pedjeng drum which was found in Bali, is higher but, as pointed out, it does not belong to any Heger type kettle drum but looks more like a giant *mokko*. The Salajar drum has a tympan diameter of 1026 mm. C. Ribbe was the first European to see this drum when he visited the island in the last century. He made a drawing of it but as this drawing was not wholly accurate, van Hoëvell had a fresh one made at a later date.[49] The tympan of the drum carries a sixteen-rayed star in low relief. Around it run concentric bands of varying width decorated with a variety of designs which deviate in many ways from the conventional kettle drum designs. On the tympan are the usual ladder motives, tangential spirals, circlets joined by tangents, oblique meanders and twenty-four birds flying in line. There are also four sculptures of frogs,

[49] van Hoëvell, 1904.
Heine Geldern, 1945, Fig. 45.
Schnitger, 1943, p. 141—45.

of such large size that each is standing across three decorated bands. The top convex part of the body is divided into eight bands; the first is unadorned, the second has ladder motives, the third and fourth circlets joined by tangents, the fifth ladder motives, the sixth stylized bird's heads, peacocks and fishes, the seventh, narrow one, is unadorned and the eighth and last has oblique meanders. The centre part of the body is divided into several panels by vertical bands with ladder motives, oblique meanders, circlets joined by tangents and once again ladder motives. Above this is a surface decoration of stylized bird motives and narrow horizontal bands carrying tangential spirals and ladder motives. The designs referred to as unusual are chiefly in the broad lower zone of the body. This has uppermost a wide undecorated band, then follows a band with rhomboid designs and finally a wide band with elephants, little birds, coconut trees and peacocks. The last European who paid a visit to see this drum was C. J. H. Franssen who saw it in 1949. In his report to the Archaeological Service he mentioned that the drum was kept in a wooden shelter and was mounted on wooden blocks. It was in good repair and was being well maintained; one of the frog sculptures, however, was damaged.

4. *Bronze Vessels.*

a. Sumatra.

The first vessel of bronze was found in 1922 at Mendopo Lolo in the Province of Kerinchi in Sumatra. Its greatest length is 508 mm. and its width 370 mm. The vessel is in two pieces which fit together smoothly. A few pieces of the neck are missing. It has an all-over bluish-green patina. The shape is reminiscent of a Javanese "kepis" or fish basket worn on the hip in which live fish are stored.[50] The vessel is cast in two halves, fixed together with iron rivets. Both surfaces are covered with the same decoration in very low relief. On the neck are two shapes like a capital J on panels with irregular squares, and along the edges a band with large triangle motives which continues all round the vessel. Underneath the J's is a band with two rows of zigzags and underneath this another one with triangle designs. In the centre of the widest part of the body of the vessel is a plain square, set off by zigzag lines. Apart from this the top half of the body has three up-right J motives and the bottom half three inverted ones, and there are two elongated S shapes or spirals running almost the full height,

[50] Bosch, 1922.

equidistant from the centre line. Near the neck are traces of two handles, and at the bottom also there has been a metal loop, thus making it possible to hang the vessel on a string. (Pl.8). F. D. K. Bosch does not exclude the possibility that this vessel represents an indigenous development free from any Hindu influences.

Later discoveries of similar objects on the Island of Madura and in Cambodia make us believe that the existence of this type of vessel and of the kettle drum may well prove to be an important feature of the Bronze-Iron Age, and playing a significant, if as yet unknown, part of it.

b. Madura.

Another thirty years were to pass before the second bronze vessel was found in Indonesia. This event took place in 1951 when a large and exceptionally beautiful specimen was discovered at Asemdjaran in Sampang, on the Island of Madura, during operations in a ricefield. The vessel, which was severely damaged on one side, was dispatched to Djakarta by the Civil Service. Its length, including the loop at the bottom, is 900 mm., and its width 540 mm. The shape corresponds completely with that of the vessel previously described, and its decoration is similar in character and arrangement. A distinctive feature of this vessel, however, is the presence of a couple of rows of processions of animals. One of these, just under the neck, consists of five horizontal triangle motives, each containing the stylized image of a peacock; the other, at the bottom of the neck, is of four triangle designs, each bearing the figure of a stag with geometrical curls in lieu of antlers. The vessel has two small handles decorated with cord motives at the sides and a large one in the centre of the bottom. We cannot but conjecture that the bronze vessels are imitations of similar objects made of a more perishable material. (Fig. 14).

A quantitative analysis of the metal gave the following results:

Pb	(Lead)	2.83 %
Cu	(Copper)	63.4
Sb	(Antimony)	0.82
Sn	(Tin)	15.2
Mg	(Magnesium)	0.44
Si	(Silicon)	0.29
P	(Phosprorus)	0.041
S	(Sulphur)	0.61

The percentage of tin in the metal of this prehistoric vessel is remarkably large, and the lead percentage unusually small. In South East Asia most prehistoric bronzes are made of a metal which contains a greater percentage of lead than tin. Whatever the real significance of these bronze vessels may be, it is of importance to know that another specimen was found near Pnom Pen in Cambodia which is almost identical with our Madurese specimen. The style of the decoration in general, and the presence of processions of animals in particular, make us believe that the vessels belong to the Dongson Culture.

5. *Plastic Art.*

a. Sumatra.

The following were offered for sale in 1951 to the Archaeological Service at Djakarta: 14 bronze statuettes, some damaged; 4 decorated heavy bronze bracelets; 72 reddish-brown beads, and a single sherd of pottery bearing a comb design. The vendor alleged that all these objects were found at a depth of four metres during the digging of a well near the village of Kuwu in the district Bangkinang, on the border of Sumatra's West Coast and Palembang. The first thing that strikes one when looking at the human statuettes is their dynamic style. The loops attached to the heads so that the statuette can be suspended by them are a special feature. The dress is very scanty, consisting only of a loincloth or *tjawèt*. The figures are adorned with a large variety of trinkets which are indicated in low relief. The statuettes were cast by the "cire perdue" method. The figures usually carry on their chest one or two spiral-shaped breast-plates; if two, these sometimes touch or run into another so as to form twin-spiral designs. The spirals were perhaps soldered on and not cast together with the figure. Similar ornaments appear occasionally on the abdomen and in one case also on both buttocks. The statuettes without breast-plates have long hanging necklaces. Nearly all of them have bracelets on wrists and ankles and large spiral-shaped ear-rings, sometimes drop ear-rings. The facial expressions are varied indeed; sometimes the faces look like masks. The poses are those of the dance and athletics; they are all different but it would possible to combine them as of they formed figures of a concerted dance movement. Some seem to jump straight up in the air, knees bent, seat backwards, arms down and slightly backwards. Others have legs slightly bent, arms stretched sidewards or

forwards. Forearms and calves of legs are strongly accentuated, torsos are cylindrical, hands and feet are moulded in a primitive way and have only four fingers and toes respectively. One of the statuettes is considerably more forceful and better finished than the others. (Pl. 9a & b). It measures 94 mm. (including suspension loop) by 48 mm. between the fingertips. The face is strongly convex with a hooked nose and bulging eyes. This male statuette wears a loincloth and in addition a kind of apron with front and back, and on the wrists and ankles are heavy bracelets decorated with cone-shaped spirals. spirals.

The group of bronzes includes a couple of statuettes of dancers, identical in every way, which have their ears and forearms connected together and have one common loop. (Pl. 9c). They each have a necklace and their arms are stretched forwards obliquely.

So far we have only described the statuettes, but as all the objects offered for sale were probably part of one single find I think it desirable also to describe here the other objects:

The four heavy solid bronze bracelets are decorated along the outside edges with 13 × 2, 13 × 2, 14 × 2 and 12 × 2 cone-shaped spirals respectively, and in the centre a band with four parellel rows of connected V shapes. The bracelets are smooth inside and they have a diameter of 61, 59, 62, and 66 mm. respectively. (Pl. 9d).

The reddish-brown beads look at first sight if they are made of *terra cotta.* After one of them was split it proved to be of a glasslike texture. Hundreds of similar beads have been found in the megaliths of Besuki in Java and of the Pasemah Plateau in Sumatra.

The sherd of pottery is decorated with a comb or pseudo-cord design. Many similar sherds have turned up among the megalithic antiquities of Besuki in Java.

In my opinion the finds at Bangkinang are one of the most important discoveries of the Bronze-Iron Age in Indonesia ever made. The bronze statuettes are closely related in style and ornamentation to those of the Early Iron Age of the Caucasus (Koban Culture) and they reinforce considerably the working hypothesis of Heine Geldern which seeks the origin of the Dongson Culture in East Europe; we will discuss this hypothesis in a later chapter.[51]

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[51] Heine Geldern, 1954, p. 371.

b. Java.

In 1883 in the district of Limbangan (Priangan) there was discovered a bronze sculpture of a water-buffalo standing, executed in a rather static sculptural style. The statue is 109 mm. long and 72 mm. high. The left front leg of the buffalo and the extreme end of the left horn are missing. Another bronze statuette of a water-buffalo lying down was found in the same spot. This one has its tail, hind legs and left horn missing, whereas the other horn is bent down. The length of the bronze is 163 mm.

At Satus, near Bogor, about 1½ metres underground, the bronze statuette of a man was found, standing with arms akimbo, wearing a string of beads round his neck, bangles round his wrists and with a flat head-dress. His ears are elongated and his hands abnormally large. The style of this bronze is rather nondescript. (Fig. 15).

At Banjumas another primitive bronze statuette of a human figure was found. The body ends in a wide base, the left arm is bent, the face is coarse with a hooked nose and large eyes. The height is 46 mm.

In the Museum at Djakarta are two bronze statuettes of horsemen known as the Tartar statues, the origin and significance of which is still puzzling. These statues were found in 1923 and 1926 in the village of Bentji in the Lumadjang district in the eastern corner of Java, and were presented to the museum by Mühlenfeld. They were placed in the archaeological department. The horses are mounted on a square base, at the corners of which are small sockets, which may have served the purpose of carrying wheels. One horseman rides a stallion and carries a lance. The stallion has a long upper lip, a mane standing up high, and a long tail. There are no saddle or reins but only a halter with bells. A ring is fixed to the horse's chest. The spear-bearer sits up-right on his horse and wears a close-fitting jacket without sleeves, buttoned in front. He has heavy bangles on his wrists. His right hand carries a spear and his left a warrior's axe with bent handle. The other horseman is obviously an archer. He sits askew on his horse, the left leg forwards and the right backwards. A long jacket covers the whole body and on his head he wears a slightly bent head-dress with a kind of plume or horn. His left hand holds a bow, and an arrow rests against the neck of the gelding. F. D. K. Bosch draws attention to the similarity of the style of these horsemen with that of the most ancient of the Brunei bronzes.[52]

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[52] Bosch, 1926.

In 1934 the author was able to acquire a third specimen from the same part of the country. (Pl. 10). It was found at Tiris, a village in the saddle between the Tarub-Lamongan and the Yang Mountains. Once again the horseman is an archer. The stallion is mounted on a base with decorative openings which is supported on scrolls at the corners. The horse's legs are stretched out and it has a ring fixed to its chest. In contrast to the other two, this horse is saddled and the saddle is fixed with a girth. The stallion has long pointed ears, its mouth is open and the mane stands up high. The archer's left leg is stretched forward, his right is missing. The head-dress has the shape of a pagoda and the face, seen in profile, is strongly convex. The height of the bronze is 18 cm. It is not impossible that direct influence from China has been at play here.

6. *The Bronzes found at Pradjekan.*

Very little is known about stray finds of bronzes of the Bronze-Iron Age in the extreme eastern part of Java. When I was travelling there in the thirties, in search of such objects, my only success came at Pradjekan, a village between Bondowoso and Sitobondo. It was here that I succeeded in buying from the population two bronze socketed axes, and two bronze spear-heads with centre rib. These are now in the Museum at Djakarta. In March 1955, in the course of some digging operations, the population of Pradjekan found by pure accident a number of Bronze Age objects. These were bought by the Archaeological Service through the intermediary of the Civil Service, and are now in the Djakarta Museum. We may probably consider these objects as a closed find. They consist of:

1. Pottery; two small coarse globular pots with flared-out rim, 81 mm. and 73.6 mm. high and 115 mm. and 106 mm. wide respectively, and a pottery lamp on a base pierced with triangle shapes, 129.9 mm. high. Similar lamps have been reported from the well-known hoard at Dong So'n in North Annam by R. T. Olov Janse, and from the Island of Luzon in the Philippines by H. Otley Beyer.
2. A fine large bronze socketed axe with two sets of double ribs diverging towards the outside, measuring 133.2 × 100.4 × 32.6 mm.
3. A dagger with an iron blade and bronze handle decorated with circlets joined by tangents and ladder motives. (Pl. 11).
4. A small bronze container of conical shape measuring 103.5 mm × 55.2 mm.

5. A bronze buckle decorated with tangential spirals and plait patterns, measuring 25.5 × 89.2 × 5.5 mm. (Pl. 12).
6. A bronze cover of 290 mm. diameter, decorated with an eight-rayed star in low relief in the centre, and three concentric circles around it.
7. Six open bronze bracelets with an internal diameter of 40.8 mm. and external 60.8 mm.

During cleaning of the bronze buckle a reddish-brown bead in the size of a pin-head was found in the clay adhering to the buckle.

7. *Beads.*

The Museum at Djakarta possesses a large collection of beads, made of stone, semi-precious stone, glass, baked clay and shell. (Pl. 13). Most of these beads have not yet been properly examined. Efforts in that direction by G. P. Rouffaer [53] have not brought us much further. Most beads are surface finds, bought from the population. In several of the islands of Indonesia these antique beads still play their part, and are of considerable value. They are often used for sewing designs on bags or on clothes and occasionally they serve as currency, for instance on islands such as Borneo, Celebes, Timor, Sumba, Flores and New Guinea.

Magnificent beads of carnelian are still found at Sangiran, north of Solo, sometimes round, sometimes with facets like a prism, and occasionally beads made of black tektite (glass meteorites), a material which occurs fairly frequently in that country.

We have learned from excavations that many of these beads date from the Bronze-Iron Age, as thousands have been found in megalithic graves at Haut-Laos, in the Pasemah Highland of Sumatra, and on Bali. This applies to the carnelian, as well to the small reddish-brown beads which are called *mutisalah*'s; the latter have also been found in the megalithic graves of Besuki in East Java.

There is a remarkable resemblance between some of the beads from Borneo and certain Mediterranean specimens. Several of the types found in Borneo for instance, are all but identical with Roman beads,[54] whereas others look as if they might be Greek of the 4th Century

[53] Rouffaer, 1899.
Heine Geldern, 1945, p. 146.
[54] Nieuwenhuis, 1904.

B.C.[55] The yellow-green beads from Besuki also give the impression of having originated in the Mediterranean or of being copies of Mediterranean specimens.

At the request of the Museum at Djakarta, the Mines Department at Bandung has made the following eight chemical analyses of the beads:

	1	2	3	4	5	6	7	8
sp. gr.	—	2.47	2.90	2.68	2.70	2.58	2.52	2.51
	%	%	%	%	%	%	%	%
SiO_2	53.34	52.24	45.64	53.10	53.94	59.85	61.94	63.16
Fe_2O_3	3.52	2.10	1.51	1.75	1.41	3.60	0.98	1.48
TiO_2	0.53	0.32	0.19	0.29	0.12	0.39	0.09	0.22
Al_2O_3	8.95	9.40	5.56	5.50	2.69	7.73	2.03	2.64
CaO	2.88	3.50	3.88	3.86	6.26	5.08	6.20	5.84
MgO	0.75	0.62	3.61	2.42	4.36	1.48	4.08	3.54
K_2O	1.79	1.73	1.42	2.29	3.25	1.88	3.73	2.53
Na_2O	24.00	21.78	11.37	21.61	20.56	13.27	20.45	20.99
CuO	4.72	3.88	2.72	1.38	0.46	4.32	0.12	0.12
PbO	abs.	3.93	abs.	3.12	4.25	0.93	abs.	abs.
SnO_2	abs.	abs.	24.02	4.99	2.76	0.88	abs.	abs.

Bead 1. Plain stone-red, so-called *mutisalah*, found in a sarcophagus in the Pasemah Plateau of South Sumatra.

Bead 2. Plain green round bead, found in a dolmen on the border of Kalisat and Banjuwangi by J. B. Hubenet.

Bead 3. A round dark-green bead with white eyes, excavated from the same dolmen as bead 2.

Bead 4. A large green bead with yellow eyes, excavated from a dolmen between Mrawan and Garahan, Besuki, Java by B. de Haan.

Beads 5, 6, 7 and 8. These beads all come from Chandi Laras, Margasari, Ulu Sungei, South and East Borneo. They are, 5 round plain yellow; 6 round, plain red; 7 hexagonal, light-green; 8 hexagonal, blue, respectively.

[55] van der Sande, 1904.
Beck, H. C. 1930: Notes on sundry Asiatic beads. Man, p. 166—81.

C. E. A. Harloff, geologist of the Mines Department, wrote a commentary on these beads. He is of the opinion that bead 1 was made by rolling some clay round a wire, withdrawing the wire, cutting the now hollow tube of clay into pieces, and baking the pieces. Bead 1 shows the corresponding streaky structure. Beads 6 and 7 have first been kneaded and then baked. Bead 8 was poured into a mould like molten glass and afterwards polished in places.

The three beads from the dolmen at Besuki were probably made as follows: a small wooden rod is dipped into molten glass; it is then withdrawn while being twisted, so that a cone of glass adheres to the rod. To make the heavy bead 4, the rod was provided with a thickened part near the end in order to prevent the fluid bead from dropping off; a widening of the channel inside the bead is clearly visible. Little attention was paid to the finish of the inside of beads 3 and 4, as it only served as a carrier for the beautifully worked outer crust, for which a clear glass of very good quality was used. The eyes were then carefully inlaid in the outer crust, using the wooden rod as a hold, and after this the rod was removed, probably by burning. The beads which must still have been somewhat fluid were then flattened on both sides. For the beads 2 and 4, sodium and SnO_2 were used, to which siliced acid was supplied by the addition of quartz.

It is plain that all the knowledge acquired on this subject does not yet enable us to answer the question as to whether these beads were manufactured in Indonesia or imported from elsewhere. The last word on the antiquarian beads of Indonesia has not yet been spoken.

8. *Other Important Stray Finds.*

A bronze ring, 22 mm. in diameter and 4 mm. thick, on the front the image of an ibex in high relief. (Fig. 16). It was found in Kaponan, North Kedu on Jaxa, and was bought in 1936 for the Museum at Djakarta by J. L. Moens. The ibex image shows a close relationship with the so-called "animal style" of the Ordos desert in Mongolia.

A bronze armour plate (Pl. 14) for the protection of the arms, shaped like a sleeve, split lengthwise, slightly trumpet-shaped at both ends and wavy along its length, 119 mm. long, found in 1936 when some shallow digging took place south-west of Djudjun, south of the Lake of Kerinchi. It was offered to the Museum at Djakarta by Moens.[56] The year after a further fragment of the same armoured sleeve was found.

[56] The description is taken from: van der Hoop, 1941, p. 250.

A Chinese bronze or *Ko*, looking like a short, somewhat asymmetrical dagger. Fixed to it crosswise is a sheath, open at both ends, to take the long blade. It measures 235 × 66 × 22 mm. It came from Komeringulu, Palembang, Sumatra, and was offered to the Museum at Djakarta by E. W. van Orsoy de Flines in 1937.

Three bronze pendants in the shape of flat, severely stylized human figures, whose arms and legs are shaped to form loops with one another. The human figure of the first pendant has a head sculptured in the round. From the second pendant the head is missing. The arms are decorated with parallel lines; it has a small ring fixed to the right arm and the remains of such a ring on the left arm; on the right shoulder stands a four-legged animal; the one on the left shoulder is missing. Of the third pendant there is only a fragment left. The measurements of the first two pendants are 108 mm. high, 92 mm. wide, 7 mm. thick, and 108 mm. high, 106 mm. wide, and 7 mm. thick respectively.[57] Their origin in Tjigowong, Bogor, Java. (Pl. 15 A & B).

Six small bronze cylinders, forming part of a necklace; their length is 23 mm. and their diameter 11 mm. Two rings are fixed in line to each cylinder and three of them are provided on the opposite side with the heads of a horse, a bird and a deer respectively. They were found in 1936 at Malang, Java. (Pl. 15 F).

Three little bronze bells, sharply conical in shape, split at the side and with a ring fixed to the top. Their height is 60—80 mm. and widest diameter 18—20 mm. Probably from a sarcophagus at Bheng, Bali. (Pl. 15 c).

A primitive pair of tweezers, as used to pull out hairs of the beard, made of a U-shaped strip of bronze from the same site as the bells.

A small object in the shape of a finger-stall made of bronze spirals. In the laboratory of Surabaja H. W. Lubberhuizen found remains of finger bones inside it. From a sarcophagus at Bheng, Bali. (Pl. 15 D).

Among the collection of the Revd. Th. Verhoeven on the Island of Flores we saw a beautiful Dongson dagger. It was an heirloom belonging to a family from Badjawa in Flores. It was the first dagger of this type found in Indonesia and up to the present no other has been discovered.[58] It is not impossible that the dagger was imported from Indo-China. (Fig. 17). This specimen is closely connected with two daggers found at Dong So'n.[59]

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[57] van der Hoop, 1941, p. 253.
Notulen Bataviaasch Genootschap, 1873, p. 96.

[58] Verhoeven und Heine Geldern, 1954.

[59] Janse, 1947, Pl. 136a.

II. MEGALITHIC CULTURES

The megalithic monuments of South East Asia are widely separated. Live megalithic cultures are still found in Assam, West Burma (the Khasi, Naga and Tschin tribes), on the Islands of Nias, Flores, Sumba and Mid-Celebes (the Sa'dan Toradja). Prehistoric megaliths are known to exist chiefly in Laos,[60] Tonkin, Indonesia, and in Oceania, right up to East Polynesia. In Indonesia they have been found in Sumatra, Java, Borneo, Celebes, Bali and Sumbawa. None has ever been reported from the Nicobar Islands, Mentawai, Enggano, or from large areas of Borneo and the Philippines. It appears that originally there were two separate megalithic cultures, which spread across Indonesia in wave fashion at various times, becoming intermingled in places. We shall call them the "older" and the "younger" megalithic cultures. The first proved to be of considerably greater vitality than the second, and it is the first which has survived in various places up to present day.

1. The "older" culture: dolmens used as sacrificial altars or as memorials; menhirs, obelisks of wood or stone, sometimes in rows or circles, the intervening space often being used as a place of assembly or for dancing; stone seats consisting of a horizontal stone and one or more vertical ones as back supports and intended for the use of prominent living people and the souls of the dead; festivities centre around the sacrifice of cattle, because only he who has made such sacrifice when alive shall, when he dies, be allowed to enter into the realm of the dead unpunished and unscathed, protected as he will be against the dangers of the hereafter by the magical powers of the buffaloes liberated during the sacrifice; forked sacrificial poles of wood and occasionally stone ones, to which buffaloes about to be sacrificed were tied; paved roads and platforms; round dwellings; the burying of the dead near the

[60] Colani, 1935a.

dwellings so that in death they may remain linked with the ground on which they lived. The geographical distribution of megaliths of these types has led Heine Geldern to suppose that they are an intrinsic part of the Neolithic Quadrangular Adze Culture. However, the fact that up to now no megalith of a neolithic age has been found either in Indo-China or in Indonesia pleads against this supposition. The same author believes that the origin of this megalithic culture is to be searched for in the Mediterranean, and that in the countries to which it spread indigenous rites were incorporated.

Heine Geldern [61] writes about the older culture as follows:

"..... the megaliths are connected with special notions concerning life after death; that the majority are erected in the course of rites destined to protect the soul from the dangers believed to threaten it in the underworld or on its way there, and to assure eternal life either to the persons who erect the monuments as their own memorials while alive, or to those to whom they are erected after their death; that at the same time the megaliths are destined to serve as a link between the dead and the living and to enable the latter to participate in the wisdom of the dead; that they are thought to perpetuate the magic qualities of the persons who had erected them or to whom they had been erected, thereby furthering the fertility of men, livestock and crops and promoting the wealth of future generations."

2. The "younger" megalithic culture, which has absorbed many Dongson cultural elements, is characterized by dolmens, stone sarcophagi and stone-cists used as graves; stone statues of ancestors in a rather static style; the art of weaving; menhir-statuettes; beads of glass, carnelian; entombments in flexed and stretched position with more than one corpse in the same grave; bronze and iron tools and ornaments with a strong Dongson flavour; decoration of stone graves with images in low relief of women with arms stretched upwards and legs outwards. The origin of this kind of megalith is probably in the north. In South East Asia they are chiefly known in Indo-China, Malacca, Java, Sumatra, Borneo, Celebes and Japan.

We now discuss the megalithic antiquities island by island, which will reveal important local variations.

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[61] Heine Geldern, 1928; 1929; 1945, p. 149.

a. Java.

As early as 1898 H. E. Steinmetz [62] published a summary, excellent for the time, of the megalithic antiquities around Bondowoso. It was chiefly concerned with stone sarcophagi and dolmen-like graves, decorated occasionally with human and animal figures and geometrical designs, done either in low relief or engraved in the stone. Almost all graves had been plundered at an earlier date.

J. B. Hubenet [63] reported in 1903 that a dolmen-like grave had been exposed during the construction of a railway between Kalisat and Banjuwangi. It had small vertical stones, surrounding a human skeleton, and supporting a large cover-stone of more than two metres length and one metre at its largest width. All stones were monoliths in rough and uncut condition. The grave contained the bones and teeth of a human being and 72 fine beads. At the side of the dolmen lay a hollowed-out stone, tapered downwards, the hollow being 15 cm. both in diameter and depth; probably it was used as a mortar for the husking of some kind of grain.

Another dolmen was unearthed by B. de Haan [64] in 1921, during construction of the road between Garahan and Mrawan, three kilometres from the Pasar Alas station. It was covered by a 50 cm. layer of humus, under which was an 18 cm. layer of volcanic sand from an eruption of the Raung Volcano, and finally 20 cm. of loose earth. This dolmen, which was placed in an east-west direction, appeared to be another example of a dolmen of the simplest type. There was no floor and the cover-stone was a natural, unhewn slab. In front of the grave was a circle made of oblong river-stones. 1½ metres from the front of the cover-stone was a long, flat stone resting on its side. All these stones were on a level with the bottom of the cover-stone as it rested on its supporting stones. The cover-supporting stones were placed so as to form a closed vault which contained: 43 human molars, 5 canines and 6 incisors, and some 79 beads of various sizes. The entrance of the grave was in the west, and it was closed off by a piece of stone. Uufortunately the human bones pulverized when touched, but from the number of teeth it appears that there were at least three corpses. A small golden ring was also discovered in this grave, its end somewhat thickened and pushed together. The beads differed greatly in

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[62] Steinmetz, 1898.
[63] Hubenet, 1903.
[64] de Haan, 1921.

size and colour; the largest was 45 mm. in diameter, whereas the smallest ones, *mutisalah* of *terra cotta* colour, were only about 3 mm. in diameter. The large beads were yellow and green, dark-blue with white eyes, plain yellow, plain green, and red- and golden-yellow. They were egg-shaped, flattened top and bottom, with cylindrical open cores. (Pl. 13 outer two strings). A chemical analysis of three beads was made at Bandung (see p. 41).

From 1929 to 1932 the author of this book was engaged in the study of the megalithic antiquities of the easternmost part of Java.[65] First of all he looked for the remains already described by Steinmetz, and found nearly all of them. The principal ones are:

Krètèk; a sarcophagus whose front is decorated with figures in low relief. They are a four-legged animal with uplifted tail, a bird of prey with its claw lifted up, three small human figures and two large ones, one of them upside down. (Pl. 17). The top of the sarcophagus shows clearly the frame to take the cover, which however is missing. A little to one side lies the cover of a second sarcophagus, and its front bears incised designs of ovals, cross fashion.

Kemuningan; this village and Krètèk are both situated on the southern slopes of the Besèr Mountain. At Kemuningan were found four fragments of a sarcophagus. On one of them are incised a couple of human figures with small pointed beards and large round eyes; their elbows are touching.

Tungulangin; four fragments of sarcophagi with incised geometrical patterns such as concentric circles, half circles, isosceles triangles and *kawung* motives.

Nangkäan; in the garden of the forester on the main road near Bondowoso a sarcophagus lies on its side with its stone cover nearby. This cover has a window in front in the shape of a trapezium with two equal sides. The sarcophagus was discovered during the construction of the bridge and it was opened in 1880, when according to eye witnesses it was found to contain the skeleton of a human being, later identified by W. S. Cramer as that of a woman. Twenty metres away, on a hill in the ricefields, is a second sarcophagus, the most beautiful and largest ever found in Besuki. It lies half buried in the ground with its cover at the side. Its orientation is east-west, with the head toward the east. The cover has a length of 245 cm. (inside, 195 cm.) and at the bottom is again a kind of window in the shape of

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[65] van Heekeren, 1931.

a trapezium with equal sides, the parallel sides being 42 cm. and 52 cm. respectively and the other two 50 cm. Round the opening one can clearly see the framework into which a locking plate may have fitted. The sarcophagus is oblong in shape and very deep, the cover convex on top and concave underneath. Sarcophagus and cover are hewn of one single piece of stone.

Pakisan-Tlagasarih; near the two villages are a number of dolmen-like graves which seem to be a transition from the dolmen proper to the sarcophagus. The cover-stone is hewn in the shape of a sarcophagus cover, but it is solid and not hollowed out on the under side. Steinmetz mentions several groups of such graves, one of them with a cover-stone in the shape of a half coconut. This cover has in low relief the effigy of a woman with arms stretched upwards and legs spread out, the face with a wide mouth, thick lips, a broad nose, and elongated pierced ears. Two similar images were discovered by the author in the same neighbourhood, one on a dolmen-like grave on the front of the cover-stone [66] and another on the cover-stone of a megalithic grave in the *waruga* style. (Pl. 16). This was the first *waruga* discovered in Java but many more have been found in the Minahassa district of North Celebes, adorned with the same kind of effigy.[67] More recent discoveries of several damaged sarcophagi in the Ringgit Mountains on the slopes near Panarukan on the north coast have been reported to the author; all these had been pillaged.

Pakauman; this is a most important and rich centre of megalithic antiquities of great variety, discovered by the author of this book, lying on the road from Djember to Bondowoso. The territory contains sarcophagi, dolmens, and hybrid dolmen graves. In addition it contains a large stone statue (Pl. 19) connected with ancestor worship, and a number of upright cylindrical stones 1½ metres high, with two half spherical protuberances on top. The population called these stones *batu kenong*. They were always found arranged in rectangles except where the population had thrown them aside. Probably they served as part of the foundation of a building, perhaps a house or a temple.

The author returned to this terrain in 1938, when by means of excavations a thorough study was made under the expert guidance of W. J. A. Willems. The results are contained in a detailed report, with many photographs, drawing and maps.[68] First, all megaliths above

[66] van Heekeren, 1931, Photographs 2, 4, 5; Figures 1, 2, 4.
[67] Bertling, 1931/32.
[68] Willems, 1940.

ground were charted, then two dolmen-like graves were excavated (Fig. 19) and a further two excavations were made within the rectangular spaces surrounded by *batu kenong*. (Fig. 18). The dolmen-like graves were then restored as far as possible to their original state. (Pl. 18). We shall now quote the summary of Willems' report:

"..... Out of a total number of 94 registered remains near the village of Pakauman, first of all two dolmen-like tombs were excavated. They are called *pandhusa* or *makam tjina* by the population. Tomb 1 had a square floor of stone slabs and walls made of big upright stones, some of which show protuberances. It was covered by a huge monolith in the shape of a hat. Before excavation only the top of this monolith was visible. The entrance is at the eastern side. In front of the entrance a pathway was originally open by means of two walls of river-stones, lined on the inside with stone slabs. Proof that the excavated megalith was originally used as a tomb was supplied by the presence of remnants of human bones. The practice of burial in this tomb must have been continued up to the ninth century A.D. since inside were also found potsherds of Chinese porcelain dating from that century. Further excavation revealed a few crowns of human teeth and teeth of some kind of domestic horned cattle; a large number of potsherds, many of which are cord-marked, and beads of glass and earthenware, the finest specimen being perforated from both sides. Outside the tomb an iron chisel was excavated. Repairs of both tombs were carried out as far as possible. In the immediate neighbourhood some groups of stone corbels were found, called *batu kenong* by the population. One of these groups was excavated, yielding numerous small potsherds, beads of glass and earthenware, a small iron bracelet and five bark beaters. Undoubtedly these groups of stone corbels were part of the structure of some sort of building but there are no indications whatsoever as to its exact form. A megalithic image, lying broken nearby and probably connected with ancestor worship, was repaired and re-erected".[69]

It appeared impossible to reconstruct a complete vessel from the thousands of small cord-marked potsherds, but in my opinion the vessels were small bowls of simple spherical shape. From other sherds Willems was able to reconstruct a dish and a footed beaker, probably

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[69] Willems, 1940, p. 41.

used as an incense burner.[70] It appears that the utility pottery articles were made by hand, whereas other sherds indicated the use of a potter's wheel. In addition to the cord-marked sherds there were others of fine slipware decorated with wavy and zigzag lines, engraved designs and occasionally line motives in colours of red and black.

No bronze objects were found but there were iron ones, as, for instance, a chisel which has been used for the chiseling of the stones of the first excavated megalithic monument at Pakauman, a few sickle-shaped knives of a type which was also found in the stone-cists in the Southern Mountains, and a small bracelet. The beads were of thoroughly baked earthenware and of glass in colours of sea-green, translucent light-green, blue, cobalt-blue and yellow, and there were numerous small red-brown *mutisalah*'s. Most conspicuous were some small melon-shaped beads of baked clay.

Remains of domestic cattle were found in the graves, which may point to sacrificial slaughter of cattle; a well-known ritual of the megalithic tribes. The stone ancestor-statue, 1.60 metres high, which was found, is of a steatopygous, heavily built human effigy with a massive head, without indication of a face.

Statues similar to this one have been found at Sukasari, Kamal (two specimens) and Kalianjar (two specimens). These statues end at the bottom in cone shapes, with the top of the cone pointing downwards, and they are thus fixed in the ground; we might call them menhir-statuettes. In my opinion they are definitely related to the megalithic remains and are part of the megalithic culture. The sex of the human effigies can only be determined with certainty of two statues, the one at Kalianjar and the other at Kamal, both being female.

The knowledge acquired so far has made it clear that at one time (a few centuries A.D.) there was a lively megalithic culture in full swing in the most eastern part of Java. Numerous remains are distributed all over this part of the island, from the sea in the south to the northern sea coast. In the south are found the simple dolmens without floor; in the north the stone sarcophagi and between the two are various transitional stages between dolmen and sarcophagus with flooring. It is a remarkable fact that these megaliths seem to have a closer connection with those of the Lesser Sunda Islands than with the ones in the rest of Java. The population often calls the megaliths

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[70] Willems, 1940, Photographs 46, 47.

makam tjina or Chinese graves. I have not found that they either fear or venerate these antiquities.

The stone-cist graves found in Java near Wonosari in the Southern Mountains are probably of the same period. They were reported by J. L. Moens in 1934 and were examined that same year by A. N. J. van der Hoop [71]. The stone-cist graves are found north and west of Wonosari, just below the surface of the ground. At Kadjar was a specimen lying in north-south direction. The flooring consisted of a large flat slab, the longer side walls of two vertical slabs, and the end walls at the head and feet of smaller vertical slabs. Small stone pillars served as additional supports of the cist. The length of the grave was 1.90 metres, the width 63 cm. and the depth 80 cm. It appeared that inside, no less than 35 human skeletons were crammed together, and it is not surprising that all skeletons except the top one had fallen apart. The top skeleton was lying on its back, the hands resting on the pelvis; others had their arms stretched along their sides. The skeletons near the top lay head southwards, whereas the bottom ones lay with their heads towards the north. A host of gifts accompanied the dead: numerous iron tools such as axes and sickle-shaped knives, small bronze rings (found in fragments) and many hundreds of *mutisalah*'s, of glass (in blue, sea-green, yellow, blue with white lines), and three only of carnelian with hexagonal cross-section. A small earthenware bowl in the shape of half a coconut was found. A few pieces of coarse fabric were attached to some of the iron objects. One skeleton had a broken iron sword in its left hand (131 × 30 × 10 mm.). In the neighbourhood of this grave were other stone-cist graves, which were damaged, and also a few menhir-statuettes and some twenty menhirs.

At Bleberan an undamaged stone-cist grave was found with its cover still on, containing three skeletons lying on their backs with their heads towards the north. Three iron objects were lying on the chest of the topmost skeleton. A few brass rings, an iron knife and some beads were also found. The metal of one of the rings was found to contain 94.4 % copper, 1 % tin, 1.6 % sulphur and 0.3 % gold.

In the neighbourhood of Tjepu also, stone-cist graves were found, but unfortunately no serious studies have been undertaken there yet. This is the more regrettable as Willems, who visited the place in 1940, reported finds of undisturbed graves, most promising for excavation.

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[71] van der Hoop, 1935.

Some circular piles of stones round a well dug in the rock bottom were also found.[72]

In 1936, finally, F. Buning reported stone-cist graves near Tjeribon, with east-west orientation. It had already been opened by the population, who told of alleged finds inside the grave of three stone axes (?) and an earthenware jar.[73]

In addition to sarcophagi, dolmen-like graves and stone-cist graves, Java has megalithic antiquities of a different character. There are terraces and pyramids, which appear to be graves, and dolmens used as seats and as sacrificial altars. We shall now relate the little that is known about these:

E. W. van Orsoy de Flines [74] gives a short description of some stone spirit-seats which are near Semarang. On a plateau in the Lasem Mountains, above the village of Tjerdjam in North Middle Java, he saw a circle of twenty of these spirit-seats. They consisted of a thick horizontal stone serving as the seat, and an upright one (70 cm. high) for support of the back. The diameter of the circle is 25 m. In the centre are a group of trees and eight roughly hewn heads of animals and monsters. A further careful investigation on the spot would be well worth while.

There exists a little known dispatch by a missionary, J. Wilson, who in 1802, near Tjeribon (Serang Lemo), saw a terrace sanctuary with flat menhirs of trachyte slabs and a little further on another small terrace with ancestor-images in coarse stone.

Another terrace is to be found in the Yang Mountains near the Argapurah Volcano. It is surrounded by a low wall, and a staircase leads to it, crossing over the wall. This terrace bears a second one, which has an altar-shaped rise with large menhirs of trachyte slabs.[75]

South of Banten in West Java, there are also small terraces and pyramids of unknown age, and some ancestor-statues.[76]

All these terraces, and more particularly the pyramids, are very like the *maeri* of Tahiti.

There are some little-known but most remarkable megalithic remains, spread over a wide area at the foot of the Welirang Volcano

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[72] OV, 1940, p. 19.
The population attributes these relics to the Kalangs.
[73] van der Hoop, 1937.
[74] de Flines, 1949, p. 428—29.
[75] de Jong, 1937.
[76] van Tricht, 1929.

near Patjet (Modjokerto). The first person to draw attention to these megaliths was E. A. Dünnwald, who described them in a report (1938), which is now at the Office of the Archaeological Service at Djakarta. The author of this book, together with Soejono and Basoeki, made a two day exploratory journey to this territory in 1955. On this terrain blocks of stone lie widely scattered. These stones have rows of 4 or 5 cup-shaped holes and two holes at each end, a formation which has much in common with that of the so-called *dakon* game, well-known in Java. Good specimens of such stones can be found at Keniman tengah, Djeruk, Kemiri and Slawi. In the same region are found stone mortars with a cup-shaped hollow, said to be used for the husking of grain.

Near the village of Siri (Djeruk), on the main road from Patjet to Modjokerto, is a terrace sanctuary with five terraces; on the third one a large dolmen and a stone mortar.

A most remarkable grave sanctuary was discovered by us at Keniman tengah. In the centre was a pile of stone 2.50 m. square, which appeared to be a grave lying in the direction north-south. The head and feet were indicated by two upright stones. Beside this grave was a smaller one. Tradition has it that the larger grave was that of a certain Saridjah, and the smaller one that of his brother. It is an interesting fact that on top of the smaller grave there lies a miniature dolmen, consisting of a horizontal slab of stone supported by three upright stones (65 cm. long, 40 cm. wide and 30 cm. high). There is no doubt that this is a so-called spirit-seat. A second one is near the entrance of the grave complex. The name of the cemetery is significantly Punḍen ḍempok, which means sacred seat.

The museum at Djakarta possesses a beautiful flat stone with rounded corners, 175 cm. long, 57 cm. wide and 23.5 cm. high.[77] It has been described by van der Hoop. The stone has a shape similar to that of the ordinary *dakon* game but it is much larger. On its surface are various cup-shaped holes, the smallest about 5 cm., the largest 12 cm. in diameter, and all 6 cm. deep. Their arrangement on the surface is irregular except in the centre, where there is a group of 10 holes of equal size, arranged in two rows of four and one at each end. Again, just as in the *dakon* game. The stone was found south of Blitar.

According to Krom, Stutterheim and Heine Geldern, the builders of the prehistoric terraces created a style which was to survive for a

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[77] van der Hoop, 1941, p. 315, nr. 2915.

great many centuries. The pyramidal temples of the 14th and 15th centuries, for instance those at Sukah and Tjeta, still show their kinship with these ancient relics.

b. Bali.

This island contains a fair number of megalithic remains, consisting of sarcophagi and many stone vats. We shall give a chronological summary with descriptions:

1921: P. de Kat Angelino reported a small sarcophagus in the Pura Penataran in the village of Tanggahan-Pekan, Bangli. Its cover is missing. It is said that of old the sarcophagus was lying in the ricefields, but a terrible epidemic of some eye disease broke out, infecting all and sundry, and the sarcophagus was shifted to the temple. It is supposed to be a copy of the ship of the goddess Ida Ratu Mas Meketel, who lives on the beaches of Lake Batur. This small coffin is 97 cm. long and its greatest breadth is 58 cm. It has two typical protuberances front and back, in common with most sarcophagi on Bali, and with a megalithic grave monument at Pakauman in Java.[78]

1925: E. Evertsen discovered two large sarcophagi near the village of Manuabe, east of Tegalalang. Both graves have a north-south orientation, and they lie 150 metres apart. The first one is 2.59 metres long and 0.90 metres wide. It has eight of the typical protuberances in pairs on the long sides and on the cover. The second sarcophagus resembles the first but it is somewhat smaller and is tapered, the width of the north end being 90 cm. and of the south 75 cm.

We should like to remind the reader that at Manuabe there was also found a stone mould for the casting of bronze drums of the Pedjeng type. This suggests a possible connection between the sarcophagus and the Pedjeng type of drum.[79]

A third, large sarcophagus lies in the Pura Gunung Kawi west

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[78] van Heekeren, 1955a, p. 3—15.
de Kat Angelino, 1921/22, p. 281—85.
Moojen, 1928/29.

[79] Nieuwenkamp, 1908, p. 90—93.
Moojen, 1928/29, p. 109.

of Tegalalang.[80] The lid is missing. The overall measurements are 2.37 metres long, 0.88 metres wide and 0.65 metres high.

1928: An unopened sarcophagus of the smaller type was discovered along the road from Buleleng to Tabanan in North Bali in a cemetery, amidst the ricefields of Lebah Sangga near Busungbiju. It was made of soft tuff and its dimensions were 1.10 metres long and 0.80 metres wide and high. On one of the short sides both cover and coffin had two knobs, and on the opposite side one knob. Inside was found a human skeleton in crouching position, and so, for the first time, the purpose of these sarcophagi became clear. Unfortunately, the skeleton pulverized when removal was attempted because the necessary preliminary hardening of the bones had been inexpertly omitted. There is no mention of any finds in the grave. The inhabitants of Busunbiju were however able to tell of previous finds consisting of a spear-head and bronze rings from four sarcophagi opened earlier.

1930: On September 16th, during road construction near Petang, close to Den Passar, various sarcophagi of the smaller type were unearthed, in an ancient cemetery. A large number of potsherds and a long-necked jar were found near it. Korn went there to investigate, but found that three of the sarcophagi had already been smashed and robbed. The fourth contained a skeleton, again in crouching position, and efforts to remove it resulted once more in pulverization. These sarcophagi were of about the same size as that of Busungbiju, and knobs which were similar but differently placed, i.e. two in front and two at the back. Several metal objects were found in the coffins, such as bronze rings of various sizes, large hollow ankle-bracelets with a diameter of 12 cm., some typical spiral-shaped finger-stalls, and fragments of necklaces, made of double spirals fixed together with little rings. There were also some stone axes and spear-heads, but the present whereabouts of these is unknown. The spiral-shaped finger-stalls were examined microscopically at a later date, and proved to certain fragments of finger bones.[81]

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[80] Goris and Dronkers, 1952, Photograph 111.
Moojen, 1928/29.

[81] Korn, V. E. 1928: Lijkbezorging in Bali. De Locomotief, 120.
OV, 1930, p. 50.

1931: P. V. van Stein Callenfels also seems to have been digging at Petang, and perhaps at Bheng, Gianjar. His excavations produced at least one human skeleton and various funeral gifts made of metal, among them some remarkable tiny bronze hoes, which are too fragile ever to have been used. Unfortunately, van Stein Callenfels made no report of his activities, but we found some of his photographs. (Pl. 20 & 21).

1950: Another sarcophagus of small type was brought to light during repairs to the Buleleng road near Pudjungan. The labourers broke it open and removed the funeral gifts, many of which are now in the possession of the head of the village of Pudjungan. Dronkers [82] published a photograph of this sarcophagus, from which it appears that it has two knobs at the front and the back of coffin and cover. In 1954 we were allowed to have a look at the funeral gifts. There were necklaces consisting of 30—40 tangential spirals of bronze and bronze rings, 69 cm., 89 cm., and 99 cm. in diameter respectively, the last one engraved with striations. In addition there were some beads, one of carnelian (22.9 × 23.6 mm.) and two of light-blue glass, 7.8 and 7.5 mm. long respectively.

Along the banks of Lake Bratan and on the slopes of the surrounding mountains are stone troughs without covers, each about one metre long and half a metre deep, found in groups of uneven numbers of pairs. It is difficult to decide whether or not these troughs are a kind of sarcophagus; they appear to be, but the characteristic knobs on the outer side are absent.[83] Nothing is known of the contents of these troughs.

1954: News reached us from J. C. Krijgsman that a stone sarcophagus had been discovered at Petian, east of Nongan, but that this sarcophagus had probably been pillaged. Nevertheless, the author decided to go and carry out an excavation, together with Messrs. Basoeki and Soejono. It appeared that there were two small sarcophagi of a soft tuff, close together and parallel in north-east south-west direction. It soon became evident that coffins and covers were identical in every way. A cover was simply a coffin

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[82] Goris and Dronkers, 1952, Photograph 112.
[83] Stutterheim, 1935.

turned upside down. Coffins and covers had a knob front and back, so that each complete sarcophagus had four knobs. The length of these sarcophagi were respectively 105 cm. and 101 cm., their maximum heigt 130 cm. and their width 78 cm. on the northern side and 66 cm. on the southern side. There were no traces of skeletons, but no doubt these burials were in crouching position. The side view of the sarcophagi was like a circle flattened top and bottom, the front view like two isosceles triangles, bases together.[84] As expected, the coffins had been plundered, and finds were scarce. None were found in the eastern one, but in the other we found: a small piece of bronze wire, probably from a double-spiral, two round beads of carnelian 13.7 × 14.1 mm. and 12.9 × 12.9 mm. respectively, and two fragments of an iron spear-head or knife. Some plain potsherds of a small and a large globular bowl were found near the sarcophagi.

The foregoing has shown us the existence of two main groups of sarcophagi:

a. Small ones, in which the dead were entombed in crouching (flexed) position. Funeral gifts of weapons, ornaments and tools were added to the graves, suggesting a belief in immortality, and the cult of ancestor-worship.

b. Large ones of more than 2½ metres, in which the dead were probably entombed in a straight position, and most likely more than one in a coffin. The three specimens of this kind that were found had all been plundered and we do not know whether there were any funeral gifts.

Both groups of sarcophagi were hewn out of stone, the small ones of tuff, the large ones of breccia. All have the characteristic protuberances or knobs, either on their long or on their short sides. The meaning of these knobs is as yet unknown; they may have served simply as handles. In the small sarcophagi the metal funeral gifts were, with one exception, of bronze. At Pudjungan, Bheng and Petang were found long bronze necklaces of tangential spirals, one of the typical

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[84] van Heekeren, 1955a.

designs of the Dongson Culture. In contrast with these more refined objects, the earthenware found was of a rather poor quality, and not very characteristic. Plain globular bowls, as found at Nongan, occur all over Indonesia, and several Dajak tribes use them as funeral gifts today.

The co-existence of stone and bronze weapons and tools, as at Petang, is not exceptional in the Far East. It occurs, for instance, at the classical centre of Dong So'n. It may safely be assumed that small craftsmen continued to use stone at a time when the use of iron and bronze was the privilege of the wealthy and influential. We may refer here to our earlier suggestion that the bronze drums of Pedjeng type were contemporaneous with the sarcophagi and probably belonged to one and the same cultural period, a few hundred years A.D.[85]

Finally, a few words about the stone spirit-seats found in front of garden walls and at road crossings, chiefly in the neighbourhood of Klungkung. They are constructed of large river-stones, one large horizontal one for the seat, and behind it a vertical one as back support. Occasionally they are found in rows. The population still uses them for repose, the more so as they are often placed under large shady trees. The tradition that women are not allowed to sit on these spirit-seats may well be a modern expression of a surviving feature of an ancient cult. We cannot date the stone seats, but they were certainly not contemporary with the sarcophagi. It is not unlikely that the Surya seats of the Balinese temples are a development of the spirit-seats; no Surya seats have been found in Java.

c. Sumbawa.

Near the village of Batutring on Western Sumbawa are four large sarcophagi of stone, decorated with human and animal figures, partly in low relief and partly engraved. An effigy often found is the one already mentioned of a woman with upstretched arms. The shape of these sarcophagi and the decoration correspond entirely to those of Besuki in Java. At the time of discovery the graves had already been plundered. The covers were found at a distance near some stone-cists hewn out of the rocky soil. Unfortunately nothing is known of the original contents of these sarcophagi.[86]

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[85] van Heekeren, 1955a, Figures 3, 4, 5, 6.
[86] Kuperus, 1937, p. 129—30.

d. Celebes.

The megalithic antiquities about to be described are situated in an area of Central Celebes flanked by the Gulf of Tomini in the north-east, the valley of Palu in the north-west, and the Gulf of Bone in the south. They are concentrated chiefly in the districts of Napu, Besoha and Bada, and are less densely distributed in the districts Mohapi, Kantewu and Gimpu. Most if not all these antiquities have been pillaged by the population, so that we know nothing of the former contents of any of the graves.

A striking feature of these megaliths are the enormous cylindrical stone vats, sometimes with an equally large discus-shaped stone cover lying nearby. Then there are large stone sculptures, so-called menhir-statues, urns and urnfields, and stone mortars. At Napu and Mohapi the shape of the stone vats approaches that of sarcophagi.

From an early date these antiquities attracted the attention of travellers and explorers from the west, who afterwards reported on their finds in more or less detail. Among them were Kiliaan, Kruyt, Schuyt, ten Kate, Grubauer, Raven and Walter Kaudern.[87] Of all these, Kaudern gives the most detailed descriptions.

1. *Stone Vats*: Among the most conspicuous of these antiquities are the enormous stone vats, cylindrical or barrel-shaped. There is no doubt that they served as graves, probably as multiple graves, with the dead in crouching position. Occasionally large discus-shaped covers, sometimes more than two metres in diameter, were found close to the vats. On only one occasion, at Bada, was a cover found still on a vat, but even there it had been shifted sufficiently to make possible the removal of the contents. When Raven tried to dig into the contents of several of these vats he found only mud and loose earth, but on one occasion he met with ashes and sherds of pottery. The inhabitants of Mid-Celebes call these stone vats *kalamba*, and the covers *tuatena*.

[87] Kruyt, A. C. 1908a: De berglandschappen Napoe en Besoa in Midden-Celebes. TNAG, 25, 1271—1344.
Kruyt, A. C. 1908b: Nadere gegevens betreffende de oudheden aangetroffen in het Landschap Besoa (Midden-Celebes) TBG, 50, p. 549—51.
Kruyt, A. C. 1909: Het landschap Bada in Midden-Celebes. TNAG, 26, p. 349—80.
Kruyt, 1932.
Kruyt, 1938, De West-Toradjas op Midden-Celebes, Amsterdam, Vol. I, p. 467—83.
Grubauer, 1913.
Raven, 1926; 1933.
Kaudern, 1938.

They show little interest in these vats, and have nothing of importance to relate about them, but they seem to regard some of the vats as having a vague aura of holiness. (Pl. 22 & 23).

In the district of Napu are 12 long, elliptical, shallow stone vats, some decorated with engraved effigies of human faces, human beings with their arms stretched upwards, and a few animals among which some lizards can be recognized. Both Kruyt (1932) and Kaudern (1938) have published good illustrations. The majority of the stone vats are in the district of Besoha (or Behoa) where not less than 54 of them can be found. Twenty of these lie concentrated at the foot of a hill at Padapokea, where there are also three stone statues. Some of the troughs are in groups, other just scattered about. One vat is decorated with a row of eight human faces, another is engraved with four similar ones. One of the covers depicts a row of monkeys. A cover which was found broken but was successfully restored by Kaudern appeared to be engraved with eight heart-shaped figures and around them a circle of four-leaved flowers, alternating with hook-shaped double lines. These vats have walls 15—30 cm. thick.

Round some of the vats were found large quantities of potsherds which were obviously fragments of funeral furniture, broken and thrown away by ransackers. In the district of Bada were found 35 *kalamba* and a discus-shaped cover of granite with sloping rim. On a plain in the district, Kaudern saw three of these, placed in a row in north-south direction, with a small deviation towards the west, and a little further on there were others, scattered at random over the plain. One of them was somewhat different in shape and it appeared that the inside was divided into two separate chambers by a thin wall. No covers were found on this plain. In the same territory there is thought to be a group of tumuli, which has not yet been excavated. Kruyt mentions more stone vats at Pipikoro (4), Womo (1) and Jaentu (2).

Kaudern rightly remarks on the similarity of the troughs with those found near Lake Toba in North Sumatra; at Lake Toba however the covers have on top a statuette of a human being. The megaliths, which are most suitable for a comparative study, are of course those of Haut Laos, and they are fully described by Madeleine Colani.[88]

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[88] In Hia Pan and to some extent in other provinces of Laos have been found groups of menhirs of 1—3½ metres in height, stone vats and earthenware urns. There were also gravetombs, hewn out of the rocky soil, often covered with large stones, discus-shaped and up to two metres in diameter. Most

They belong to the Bronze-Iron Age and have been influenced by the Dongson Culture. It is interesting to note that there is great similarity between the vats of Haut Laos and those of Celebes, but that in the intervening regions no vats similar to either are to be found, except perhaps at Lake Toba in Sumatra. From this fact we may conclude that megalithic monuments show endless variation in shape and material, dependent on prevailing local conditions of soil and general environment.

2. *Stone Statues and Menhir-Statuettes:* Large stone human statues are as characteristic of the megalithic culture as stone vats, and the two are often found together. Statues representing human beings look in all directions without apparent rule. Their modelling is sometimes frontal only, sometimes in the round. Three times as many male as female statues have been found. The sex of the figures is always clearly and even emphatically expressed, but on both male and female statues the breasts are indicated by the nipples only. A striking feature is the two knobs at the side of the head indicating the ears; the nose ends squarely and the bridge of the nose continues along a curve to the eyebrows, whereas the mouth is not indicated, except on one specimen found at Bada. The statues are often larger than life-size, although some do not exceed a height of one metre, and they are planted some 20—30 cm. into the ground. The eyes are round, protruding or slanting. Kruyt attempted to attach racial characteristics to the various statues, which is to be considered as premature, to say the least.

At Besoha there are six known statues. One of them of female sex stands near the five stone vats. The largest statue in the district measures 1.75 m.; the smallest one metre. At Padapokea are three statues near a concentration of some twenty *kalamba.* In the Bada district thirteen statues were counted, which were very similar to those at Napu, where there were twelve, and to those at Besoha. According to Kruyt there are two more at Leboni. It is supposed that these statues are ancestor-statues. (Pl. 24 & 25).

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graves have been plundered, but in the necropolis of Som Kong Phon there were three which still contained human bones and teeth, showing signs of charring. Digging near the menhirs soon brought to light a small bronze vase, decorated with curl designs, fragments of bronze bracelets, potsherds and a few fragments of iron, all at a depth of only a few decimetres. Urns of earthenware and megaliths were found side by side in this territory as so often in Indonesia. This leads to the belief, already expressed by Heine Geldern, that stone vats are merely megalithic equivalents of earthenware urns.

3. *Stone Mortars*: These are found at Kulawi, Tawaeli, Poana, Besoha, Bada and Tawulia. Mortars were used for the purpose of husking grain. They are found frequently in other parts of Indonesia. Some are roughly finished, as those near Kulawi, others found chiefly at Tawulia are more carefully made and are round.

In the Minahassa, north of the area just mentioned, are megalithic graves of a completely different appearance. They are cubical tombs, covered with a high roof-shaped cover-stone called *waruga* or *timbukar* by the population. In past times, each family had such a tomb in its garden near the home. Each successive member of the family who died was entombed in crouching position on top of the previous one. Each time the cover was removed for the purpose and the corpse deposited, after which the cover was replaced and the seams closed up with clay. These graves have varying dimensions, the largest being more than two metres high.

Waruga's are found all over the Minahassa, with the exception of the Ratahan district in the south-west. They are hewn from a single piece of tuff or sandstone. The troughs, and more particularly the covers, are often decorated with designs of tendrils, curls, serpents, and usually with human effigies with arms stretched upwards and legs pulled up and outspread. These figures are done in low relief, but father north, for instance at Tonsea, much more care is taken with these decorations, and occasionally they are done in the round.

The modern *waruga*'s show influences of the Dutch East India Company, and have decorations of human beings wearing knee breeches or hats, carrying fire-arms, smoking-pipes etc. In the 19th century these tombs were still in use.[89]

A live megalithic culture is found among the Sa'dan Toradja, who still erect menhirs in rows or circles by way of memorial stones, and among whom the sacrificial slaughter of buffaloes is even today the central feature at funeral festivities. In past ages this cult must have reached much farther southwards, since at Sengkang, for instance, there are menhirs more than three metres high. (Pl. 26).

Above Sompoh, on the border of the districts of Soppeng and Wadjo, we found mortars with one or more bowl-shaped holes in the surface. Close to them was a rectangular stone menhir of a height of some two metres. We counted twenty upright stones round a square

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[89] Bertling, 1931/32.

of 5 × 5 metres. Not far away was an urnfield with urns of Chinese manufacture, and in the urns were found charred human bones.

It is interesting to find that even the Moslem graves in South Celebes occasionally show influences of the megalithic culture. Those at Ralla (Tanete, Bèrru) are good examples of this; they have menhirs of up to three metres high.

e. Borneo.

Despite its size this island contains very few megalithic antiquities. A. M. Sierevelt mentions a number of dolmens in the Apo Kajan territory in East Borneo, on an island in the Kajan River near its tributary the Long Sungar and at Data Genojan on its right bank; also some stone sarcophagi near the Long Danum and Long Kedjanan Rivers, and cube-shaped rock graves near the River Long Pura. Above one of these rock graves he found the effigy of a human face with ear decorations and a wide mouth, rudely hewn out of the surface of the rock. Another dolmen was reported to have been found on the right bank of the River Kajan near the hamlet of Data Genojan.[90]

In the neighbourhood of Kutei, near the Mahakam River, four menhirs were reported. The population used these standing stones as sacrificial altars. The stones have Hindu inscriptions which, however, need not necessarily be contemporary.

f. Sumatra.

The extraordinary stone statues of the Pasemah Plateau, an upland between the Barisan and the Gumai Mountains, from which rises the 3150 metres high Dempo Volcano, have been known for over a hundred years.[91] They were first mentioned in 1850 by Second Lieutenant L. Ullmann and in later years there followed a succession of brief reports on the subject by Tombrink (1870), Forbes (1885), Engelhard (1891), Krom (1914), Hoven (1927) and Westenenk (1922).[92]

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[90] Sierevelt, 1929.

[91] van der Hoop, 1932, p. 118.

[92] Ullmann, L. 1850: Hindoe-beelden in de Binnenlanden van Palembang. Indisch Archief: Tijdschrift voor de Indiën, p. 493—94.
Tombrink, E. P. 1870: Hindoe-Monumenten in de Bovenlanden van Palembang, als bron van geschiedkundig onderzoek. TBG, 19, 1—45.
Forbes, Henry O. 1885: A Naturalist's Wanderings in the Eastern Archipelago.
Engelhard, H. E. D. 1891: Letter to the Bataviaasch Genootschap concerning

The majority of these reporters mistook these antiquities for Hindu remains, and J. C. van Eerde was first in drawing attention to the presence of dolmens and the megalithic character of the antiquities when he visited the Pasemah Plateau in 1929.

A thorough investigation was undertaken by van der Hoop from April to October of 1931, covering the region between Telok Betong in the south, and Djambi in the north. This study revealed that the centre of this megalithic culture had to be sought in the Pasemah and Upper Lematang, although specimens were also to be found at Ulu Komering. Van der Hoop's carefully edited and richly illustrated dissertation [93] was an encouragement to others to try to collect further data and as a result many new and important discoveries were made in the succeeding years.

Before summarizing and discussing the various megalithic antiquities, we should like to mention an important legend relating to them. We shall quote van der Hoop's version.[94]

"..... Quite common also is the indication "Batu Lidah Pait". Throughout the whole of South Sumatra the legend is common, that a certain Serunting wandered about in this district in former days. This Serunting was endowed with magic power, on account of which he received the title of *sakti*. He possessed the power of turning people, animals and objects into stone, to which power Serunting Sakti owed his surname of Lidah Pait or Pait Lidah. (Lidah = tongue; Pait = bitter).

The legend of Lidah Pait is repeatedly mentioned by Westenenk,[95] among other writers. During our visit to South Sumatra we found that the tale was still very common among the population. All the old images were declared to be the work of Serunting Sakti; one of the images at Tinggihari, for example, was regarded as a petrified princess, and was therefore called *batu putri*. The story goes that the princess once met Lidah Pait. He asked her where she was going, but

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the images Pageralam I and Tanjungara I. Notulen Bataviaasch Genootschap, 29, p. 37—8.
Hoven, W. 1927: De Pasĕmah en haar verwantschaps-, huwelijks- en erfrecht.
Krom, N. J. 1914: Voorloopige lijst van Oudheden in de Buitenbezittingen. OV, 1914, Bijlage T.
Westenenk, 1922.

[93] van der Hoop, 1932.

[94] van der Hoop, 1932, p. 4—5.

[95] Westenenk, 1921.

she was too proud to answer, upon which she was immediately turned into stone. An oblong stone which lies beside the image is regarded as the petrified basket of the woman. The stone image of a bull at Geramat is also the work of Lidah Pait. In the village of Tanjungara we had the pleasure of conversing with Mesioah, an old man who had seen the invasion of the Hollanders in 1866, and who was reputed by the population to be 115 years old. This man told us that the dolmen Tanjungara 2, the cover-stone of which is more or less hollow on the top was nothing but a pan, converted into stone by Lidah Pait. The legend of Lidah Pait is also known in Djambi and in the Lampongs. Further, we were told that Lidah Pait met his end owing to meeting Mata Ampat. Mata Ampat had four eyes, two in front and two behind. (Mata = eye; Ampat = four). Mata Ampat succeeded in inducing Serunting Sakti to lay a wager with him. Each in turn would lie flat on his stomach under a palm tree while the other would climb the tree and throw a large branch. First, Mata Ampat lay down under the tree but as he had eyes at the back of his head, he saw the branch falling and sprang aside in time. Lidah Pait, however, naturally did not see the branch coming. It struck him on the head, so that he died. Mata Ampat was curious to know whether the tongue of Serunting was really bitter. He touched the tongue of the wizard with his finger, which he then put into his mouth and tasted, with the result that he died immediately."

The megalithic antiquities of South Sumatra consist chiefly of menhirs, dolmens, stone troughs, stone mortars, terrace-graves, stone-cist graves, stone ancestor-statues in a static style, and stone statues of humans and animals in a more dynamic style.

We shall now give an enumeration:

1. Menhirs:

These are rough stones, usually untouched by tools, put in erect position by human hands in honour of wealthy living persons or of the dead. The stones are found singly or in squares, circles or rectangles. The circle formation has been found only at Udjanmas, where there are four stones placed in a somewhat irregular circle, near a stone vat. Single menhirs have been found at:

Tegurwangi; many specimens were 1½ metres high, close to dolmens, stone-cists and stone statues.

Karangdalam; one menhir 1.60 metres high, standing on a small terrace amidst small pitted stones.

Tinggihari; one specimen 3.75 metres high lying on the ground. When Tombrink saw it, it was already leaning over. The menhir is partly sculptured in relief with effigies of a human being and a crocodile.
Mingkik; near a double-terrace there is a small specimen 0.40 metres high and a row of five still smaller ones.
Gunung Dempo Estate; there are four specimens.
Pematangbange; there is one specimen 1.35 metres high. It has a decoration in relief of a man, seated, who tries to push away the head of a snake biting his forehead, whilst a second man, standing upright, attempts to free himself from strangulation by the same snake.
Batuberak; a fine specimen, partly sculptured.

Menhirs in formation were found at:
Kebonagung; twice two specimens of 1.40 metres high, and enclosing a rectangle of 6.30 × 4.50 metres.
Tanjungsakti; twice two specimens enclosing a 3 × 4 metres rectangle and twice three others round a 7.50 × 7.50 metres square.
Tanjungmenang; twice two specimens of one metre high round a 3 × 3.50 metres rectangle in east-west orientation, and another twice two specimens round a 3 × 3 metres square.
Lesungbatu; twice two specimens enclosing a 3.70 × 3.20 metres rectangle.
Gunungmegang; twice two specimens enclosing a 3.70 × 3.20 metres rectangle.
Lubuhan; twice two specimens enclosing a 3 × 3 metres square.
Tanjungbringin; twice two specimens enclosing a rectangle of 3.70 × 3.20 metres. The menhirs are one metre high.
Talang Padang Estate (Lampongs); Alignments. A concentration of 42 menhirs aligned in four rows in east-west direction. They stand at a distance of 2 to 4 metres in the rows, which are 6 to 8 metres apart.

2. Dolmens.

These usually consist of a flat horizontal stone, resting on one or more vertical ones. This construction is still in use, or at any rate has been until recently in Assam, Nias, Sumba and Flores, where it is never used as a grave, but serves as memorial and (or) as sacrificial altar. The geographical distribution of dolmens is wider than of the Pasemah stone statues. They are found at:
Tanjungmenang; three specimens lying east west.
Pematang; a specimen which has collapsed, with a cover-stone

1.70 metres long on small upright supporting stones; nearby are stone statues.

Nanding; a collapsed specimen, cover-stone and three smaller ones.

Pematangbange; a fine specimen. A 1.40 metres cover-stone resting on four upright stones, orientation north-south.

Tanjungara; an enormous dolmen, cover-stone 1.95 metres long, measuring 10 metres in circumference, on four upright stones. Near it traces of several collapsed dolmens.

Padjarbulan; one specimen, cover-stone on three upright stones; near it are remains of dolmens and of *lesung batu*.

Pulaupangung; a large specimen with a cover-stone of 12.70 metres in circumference. Three supporting stones are visible. At three metres distance is a stone statue.

Gunungmegang; a small dolmen with a very flat cover-stone, resting on three supporting stones.

Batutjawang; a grand specimen, according to van der Hoop the finest he ever saw. This dolmen has a large flat cover-stone of 3 × 3 metres, 0.70 metres thick, resting on four roughly shaped upright stones.

Tegurwangi; three specimens with flat cover-stones, and their supporting stones sunk in the ground. Also one specimen consisting of four upright stones carrying a cover-stone. Van der Hoop opened it, hoping in vain to find human bones or funeral furniture. Lastly, a low dolmen with flat cover-stone was found. This area is a very rich centre of stone-cist graves and of stone statues.

Tanjungsakti; a dolmen and traces of several others which have collapsed.

Pagerdewa; a dolmen with a 2.3 × 3.0 metres cover-stone on two vertical stones.

Batuberak; (Ranau district). One specimen with a cover-stone 1.70 metres long, one small specimen with a cover-stone 1.20 metres long, and, near a menhir, another dolmen with very flat cover-stone of 2.44 × 2.38 metres, six vertical supporting stones being visible. Local tradition has it that this spot was the offering centre of a fertility ritual, and that in olden days a young girl was sacrificed here once a year. No stone statues of Pasemah type occur as far as this territory.

3. Stone Troughs.

These are oblong in shape with round corners. They were probably used for preserving after death the skulls of the prominent, a custom

which is also in use at Nias. No covers have been found. Twelve of these troughs have been discovered in the following places:
Tebatgunung; a trough, and beside it a sculpture of a human figure lying down, the whole hewn out of a single piece of stone.
Pageralam; a specimen 104 × 18 × 18 cm. Again there is a human effigy along one of the longer sides, embracing the trough. It is sculptured in a style similar to that of the dynamic stone statues in the territory. The faces have the same coarse expression, are prognathous, and have protruding eyes and elongated ears. Furthermore, there are two unadorned stone troughs, 58 × 22 × 13 cm. and 60 × 20 × 10 cm. respectively. Finally, a trough which has a knob shaped like a human head.
Padjarbulan: two unadorned specimens.
Pulaupangung; a broken specimen with at one end a protuberance in the shape of a human head.
Gunungmegang; four specimens, one a round one, of 40 cm. diameter. Two oblong specimens, both measuring 73 × 25 × 9 cm. All troughs were found in the proximity of other megalithic remains.

4. Stone Mortars.

These are called *lesung batu* by the population, and it is thought that they were used for the husking of some kind of grain. As they are always found in the proximity of megalithic monuments, it is most likely that they are associated with the megalithic culture. Van der Hoop described these mortars as follows: [96]

"..... These stones generally have a flattened upper surface, around which runs an upright border. In this upper surface one or more hollows have been made, each with a diameter of about 15 cm., and as deep. Where there is more than one hollow, the upper surface of the stone is divided by upright borders into as many sections as there are hollows. Only in one case, the upper surface of the stone was not made flat. On one specimen this stone has been worked into the shape of a buffalo's head. Sometimes immense blocks of stone have been used in making the *lesung batu*".

Stone mortars have been found in the following places:
Tanjungsirih; one specimen, almost round in shape, having a diameter of 1.30 metres; the upper surface is divided into four sections with a hollow in each.

[96] van der Hoop, 1932, p. 102.

Geramat; one very large specimen with six divisions with a hollow in each.
Tebingtinggi; one specimen with a 1.20 × 1.30 metres upper surface, having two sections with hollow.
Pageralam; one specimen 1.15 metres long, hewn in the shape of a buffalo head, the top in one section with one hollow.
Tanjungara; one specimen with three sections with one hollow each.
Padjarbulan; four specimens; one has its surface divided into four sections the rims of which are sculptured so as to represent snakes entangled with one another. The second has one section the other two have three sections, all with a hollow of about 15 cm. in diameter and depth.
Gunungmegang; two specimens with one section each and one with four sections.

5. Terrace-Graves.

These are graves used for more than one corpse. They consist of one or more terraces built of earth, supported round the edges by vertical walls, constructed with river-stones. They have a random orientation. Such terraces occur frequently in Polynesia, and I have personally seen several in South Celebes.

In South Sumatra they appear in the following places:
Karangdalam; a small terrace paved with flat stones, most of which have small hollows. On this terrace stands a rudely hewn menhir of 1.60 metres height.
Mingkik; a double terrace or pyramid, constructed of earth, the steep walls made of river-stones. The lower terrace is 1.50 metres high and has an area of 7.50 × 8.50 metres. The upper terrace is 60 to 70 cm. high with an area of 4 × 3.50 metres. On the upper terrace is a square pile of river-stones with two upright stones at the end.
Pelangkenidai; a square-shaped terrace of earth. One side has a wall of river-stones; the other is invisible as it is covered by bamboo trees. At the front of the terrace is a moat. The terrace is 7.5 × 6 metres and on top is a square pile of stones, 2.25 × 2.50 metres in section, and 0.75 metres high.
Kebonagung; a terrace-shaped grave of later date with four grave stones decorated with leaf motives, various arabesques and a bird. The furthermost stone has human images in a primitive style. Round a central figure, sitting with slightly raised legs, wearing a head-cloth

and with a kris in his girdle, stand five smaller figures armed with krisses and lances.

6. Stone-Cist Graves.

These are rectangular graves, constructed from thin slabs of stone and a floor of the same material. Their orientation is always east-west. Many stone-cists are probably still lying buried at Tanjungara and particularly at Tegurwangi, so that these places still offer fertile field for further exploration.

Stone-cist graves have been found at:

Tanjungara; one specimen of which only the two cover-stones were visible. Van der Hoop suggests that there are more graves in the neighbourhood.

Tegurwangi; this territory is very rich in megalithic relics such as menhirs, single and in alignments, and dolmens, and there is also a group of four stone statues. During the digging of a ditch, five stone-cist graves were found.

Stone-cist I was opened by C. J. Batenburg, who found inside a number of yellow beads and a heavily oxidized iron lance-head.

Stone-cist II; only three small cover slabs were visible. The cist is probably heavily damaged.

Stone-cist III; this was the largest and the finest of the five. It lay 25 cm. below ground level and had three cover-stones, the largest of which was 2.50 metres long. The spaces between the covers were carefully filled with small stones. This stone-cist was opened and excavated by van der Hoop.

After removing the cover-stone he found the inside dimension to be 2.35 $\times$ 1.37 $\times$ 1.30 metres. Each of the longer sides consisted of two large stone slabs, the western side of one slab and the eastern of a large slab and a smaller one, the latter being movable and serving as a kind of door. A stone slab of half the height of the walls ran across the bottom of the cist, connecting its longer sides and forming a kind of small separate compartment. The flooring was made of three stone slabs. The general construction of the grave gave evidence of great technical skill. The stone-cist was filled with earth and sand, except for the lower twenty centimetres, where the following objects were found: 4 stone-red cylindrical beads, 38 stone-red disc-shaped beads, a golden nail with round head and blunt point, a green transparent bead in the shape of two hexagonal pyramids joined base to base, a

yellow-grey bead of egg shape with flattened ends, two dark-blue beads and a small bronze fragment. In addition 63 small cylindrical, round or disc-shaped beads in stone-red and yellow colours, lying together in a heap, the smallest being not more than one millimetre in size.

No traces of human skeletons were found, everything organic having probably been absorbed in the damp soil.

Several beads from this and another stone-cist, to be mentioned later, were analysed in the Geological and Mineralogical Institute at Utrecht. The results [97] were as follows:

"Yellow beads: The slide is in reflected light chrome-yellow, in translucent light opaque-grey with violet spots and flames; many fragments of quartz and feldspath as inclusions in the mass. Obviously the beads have been melted from quartz-feldspath-sand with the addition of lead oxide.

Qualitative analysis: SiO_2, Pb, K, Ca, Al, Fe.

Quantitative analysis:

SiO_2	26.4 %
PbO	33.0
CaO	3.1
$Fe_2O_3 + Al_2O_3$	10.3
rest alkali	28.0

$PbO : Na_2O : SiO_2 = 1 : 3 : 3$

Stone-red beads: The slide is in reflected light stone-red, in translucent light opaque-blue, perforated like a sponge by colourless spots. The beads contain inclusions of quartz and feldspath.

Qualitative analysis: SiO_2, Fe, K, Na, a little SiO_4, a little Al, and traces of Mn.

Quantitative analysis:

SiO_2	36.0 %
Fe_2O_3	46.0
rest alkali	18.0

$SiO_2 : Fe_2O_3 : Na_2O = 2.09 : 1.3 : 1$

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[97] van der Hoop, 1932, p. 170—71.

Dark-blue beads: Azure-blue, rather homogeneously coloured glass. The number of beads was insufficient for a chemical analysis.
Blue-green beads: Under the microscope the glass mass showed thin radial opaque lines.
Qualitative analysis: SiO_2, Pb, K, a little Na, Ca, Fe, Al.
Quantitative analysis:

SiO_2	31.4 %
PbO	32.7
K_2O	30.3
CaO	3.7
$Fe_2O_3 + Al_2O_3$	2.6

$Pb : SiO_2 : K_2O = 1 : 2.81 : 1.78$

One light olive-green bead: Obviously a rather successful imitation of beryl. Surface dead, a result of weathering. Shape: double-sided pyramid, the points blunted by a flat plane.
One light brownish-yellow bead: Consisting of a nucleus of darker colour and, sharply distinguished from it, a lighter crust.

On the inside of the eastern wall was discovered a drawing in stone-red, black and yellow. Unfortunately, large portions of the drawing are in bad condition, and some parts have completely disappeared. The subject was most probably a helmeted warrior, riding on or perhaps fighting with a buffalo.
Stone-cist IV; this specimen lies only 40 metres east of the previous one. It also was opened and examined by van der Hoop. Three large stone slabs and some smaller stones covered the cist, which was constructed in the same way as the previous one, without, however, possessing the small separate inner compartment. Its inside dimensions were 2 metres long and 1.20 metres wide. The north wall consisted of two stone slabs, the east and south walls of one slab each, and the west one of a large thick slab and a small thin one.

The floor consisted of one large slab and the corners were filled with small ones. The bottom layer of earth, some 10—30 cm. thick, contained 29 large and 1372 small beads. The large beads were similar to those found in the previous stone-cist. The colours were yellow, stone-red, dark-blue and light-green. The small ones, the smallest of which was 1 × 1½ mm., were mostly yellow and stone-red. In addition to these beads, other objects were found:

A fragment of a bronze plate decorated with two rows of curls, separated by a row of small knobs, and many other bronze fragments,

one with knobs, another with a small ring and several others which could no longer be identified. Finally there were eight potsherds.
Stone-cist V; in an oblique direction from the previous cist were the remains of still another one, the main part of which is still buried in the ground.
Udjanmas: C. W. P. de Bie found a stone-cist there, of which he made a drawing.[98] Inside was found a rectangular bronze plate measuring 20.6 × 13 cm. The grave was afterwards dismantled by the local inhabitants who took away the stone for their personal use.
Tjawang: Westenenk was the first to report the finding of a stone-cist, 2 metres long and 1.30 metres wide, with side walls of a height of 1.20 metres. The remains of the second cist are lying in the middle of the village. The cist measures 2.00 × 0.55 metres.[99]

Van der Hoop had ended his archaeological studies of the Island of Sumatra when de Bie [100] discovered a most important double stone-cist grave at Tanjungara. It had two parallel chambers side by side, with a common dividing wall. All walls were covered on the inside with paintings of great artistic value. The pictures were 150 × 150 cm. in size, and the colours were white, black, red, yellow and grey. Unfortunately de Bie was not able to make a careful study of all the pictures, but he did publish reproductions of two of them. (Fig. 20 & 21). In these we observe stylized images which look both human and animal; the hands show three fingers only. There is, among other things, a stylized head of a buffalo with horns. A set of concentric circles may represent an eye.

We are of the opinion that the origin of the stone-cist graves is to be found farter north, and in particular in China.

7. Stone Statues.

The stone statues are among the most interesting features of the megalithic culture of the Pasemah Plateau. They are large statues, sculptured in a "strongly dynamic agitated" style, to quote Heine Geldern's description. They have been found near graves, dolmens and menhirs as single specimens or in groups of two and occasionally more.

At first these statues give the impression of being entirely free sculptures in the round. This is somewhat deceptive, for closer

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[98] van der Hoop, 1932, Figures 175, 176.
[99] Westenenk, 1922, Photographs 23.
[100] de Bie, 1932.

examination reveals that complete freedom of sculpture has not been attained and that certain limitations were imposed on the sculptor by the material at his disposal. It becomes clear that he first selected a block of stone the shape of which most nearly resembled the image he had conceived in his mind. He then carved the entire surface of the stone, using a combination of low relief, high relief and sculpture in the round, so as to attain his objective as nearly as he could. However, some compromise was unavoidable in view of the restrictions imposed on him by the shape of the rock.

On the whole, the sculptures are of high quality. Several, however, are badly corroded and many details are lost. The majority of the statues represent helmeted warriors with large, round, bulging eyes, deep-rooted, short and broad noses, wide mouths with thick lips, strong broad jaws, somewhat prognathous; in short, rather negroid in appearance. The warriors wear a girdle, carrying a straight, short, broad double-edged sword, and a straight tunic. Their legs are completely covered by a series of rings, similar to rings on their wrists and they wear necklaces made of large, round facetted beads. There are also groups of two or three people on elephants or buffaloes; sometimes a child is carried along. On occasion the men seem to be fighting an elephant. We also know of a group representing two men fighting a snake and two mating tigers, the lower one clawing at a human being. A striking feature of these sculptures is that parts of the body are often quite out of proportion, perhaps chiefly because of the natural shape of the stone selected for the statue. In a mixed group the elephants or buffaloes are often the size of dogs when compared with the human beings. It is also interesting to observe that the sculptors have given more attention to those parts that were considered most important. The heads, for instance, whether of human beings, buffaloes or elephants, are often finished with minute detail, whereas other parts of the body are done in a perfunctory manner and sometimes on a smaller scale, or are left out altogether. Frequently economy of space was required, and an animal was made to turn its head completely to make it shorter, and heads of humans and animals were shown in profile instead of frontally.

One of van der Hoop's most important discoveries is associated with these sculptures. He observed that the warrior on a statue at Batugadjah carried on his shoulders, suspended by a cord, a kettle drum of the Heger I type. The connection of this kind of statue with the Dongson Culture, was now proved.

Heine Geldern drew attention to the great stylistic similarity of the Pasemah statues with the reliefs and some sculptures of the Early Han Dynasty of China (for instance the image erected in 117 B.C. on the grave of General Huo K'iu-Ping in the Shensi province).

We shall now give a short geographical enumeration of the statues:

Karangindah; a warrior riding an elephant. The elephant's head is turned right round so as to appear in front of the rider's chest. The head and front legs of the elephant are sculptured with great precision, but the rest of the body is hardly recognizable. The rider carries a short straight sword on the left hip in a wide girdle, he has two bracelets on his left wrist, and his chest is decorated with long plates.

Lahat; a kneeling figure without a head, dressed in a tunic with girdle. It came originally from the village of Djati.

Tanjungsirih; two squatting figures, one behind the other, in much corroded condition. Rings on arms and legs are still visible. The height is 1.65 metres. A helmeted warrior, partly sunk into the ground, wearing a necklace of beads; the statue is 1.70 metres high. Another helmeted warrior dressed in a tunic, riding a buffalo. His left hand holds a child and the right grips one of the buffalo's horns. He wears a necklace of large beads, and the child wears a wide bangle decorated with zigzag motives.

Tinggihari; a damaged male figure sitting down, dressed in a tunic, wearing a necklace and a band round his head. The statue is 1.80 metres high. A second one is of a helmeted warrior sitting next to a buffalo, gripping its horns . A third is a helmeted warrior sitting down, his helmet with two perforated protuberances on the top. His leg is completely covered with nine rings. His legs are drawn up high. He is dressed in a tunic and girdle. Nearby lies a damaged head of a warrior with helmet.

Padang; a plump squatting figure in a tunic, wearing bangles and a necklace of three rows of beads. A damaged squatting figure with tunic and girdle. The rump only of a warrior wearing a tunic.

Pageralam; two mating tigers with their jaws open, the lower one clawing the head of a male figure which is trying to defend itself with both hands. The group was discovered by H. W. Vonk. Nearby is a *lesung batu.*

Tebatsibintur; a damaged statue of a man riding a buffalo. A second statue is nearly buried in the ground.

Tanjungmenang; a damaged statue of a helmeted warrior. The head of a child is visible in front of the warrior's body.

Tanjungtebat; a human figure in tunic and girdle, and a child. The statue is 1.60 metres high.
Pematang; a group of statues. The first a man on a buffalo, accompanied by a child, 1.50 metres high. The second, another man and child riding on a buffalo, the child holding the buffalo's tail. The third, a helmeted warrior, riding a buffalo and adorned with a necklace of large beads, bracelets, a girdle and rings round his legs. Its height 1.93 metres. The fourth statue of a man in a tunic and girdle, with rings round wrists and legs, and a child. The fifth statue is badly damaged and the sixth is of two persons. (Pl. 27 & 28).
Airdingin; a damaged statue of a squatting man with a buffalo.
Geramat; a man with rings round arms and legs, riding a buffalo.
Tanjungbringin; two human figures on a buffalo, a child lying face downwards between them. All three wear necklaces. The height of the statue is 1.45 metres.
Nanding; a male figure holding a child with both hands.
Tebingtinggi; a large, badly damaged statue, representing three men who seem to be wrestling with one another. A sword can be seen on the back of one of them. The height of the statue is 1.35 metres, and its circumference is 6.50 metres. The second statue represents a warrior with a sword, riding a buffalo, height 1.35 metres.
Pageralam; several statues found in the neighbourhood have been brought together here by Batenburg, Junius and Hoven. They are: a large squatting man dressed in a jacket or tunic, having a child on his back, 1,30 metres high. This was originally at Tanjungara. From Gunungmegang came a statue of a man in a draped suit and girdle riding a buffalo, his right hand gripping the buffalo's forehead. It is 0.95 metres high. The third statue is a large beautiful sculptured head of a helmeted warrior, one of the finest sculptures of the Pasemah. (Pl. 29). The height of the head is 1.12 metres. The fourth and fifth statues are a head of a warrior and another head respectively 0.9 and 0.5 metres high. These last three statues of heads came from Pematang. From Gunungmegang came the sixth statue, a man riding an elephant. It gives the impression of being a completely free sculpture in the round, but a closer inspection shows that this is not entirely so. The height is 0.90 metres. The seventh, damaged statue of a head from Pematang is 0.80 metres high.
Batugadjah; a most interesting statue of a large egg-shaped stone of 2.17 metres in length, the whole surface of which has been used for a composition in low and high sculptural relief. The main body of the

stone represents an elephant, and the stone's natural shape has been most ingeniously used for the purpose. (Pl. 30). The head and the trunk of the elephant are finely sculptured. On both sides of the elephant stand warriors, done in low relief. The one on the left is kneeling and holding the elephant's ear. He is helmeted and looks backwards. He has a heavy ring round his neck and seven rings enclose each of his legs. He wears a girdle which carries a broad straight sword with a long hilt.

On his shoulders hangs by a piece of cord a kettle drum of the type Heger I. The second warrior resembles the first, but has no sword. He wears a heavy bangle on his right wrist, and his legs are enclosed in ten rings. The elephant seems to give birth to a legendary beast, a combination of elephant and wild boar. The statue is now in the Museum at Padang.

Pulaupangung; a man with two children, riding an elephant. The man is helmeted, wears a tunic and has bracelets on his wrists. The head, trunk and eyes of the elephant are well sculptured. The statue is 1.45 metres high. A second sculpture is of a badly damaged head with the well-known martial appearance. It is only 15 cm. high.

Gunungmegang; a man fighting an elephant, which is lying on its back. He has a sword hanging on the left hip in his girdle; height 1.55 metres. A dolmen lies against this statue. Close by, and for the most part under water, is another statue of a man with an elephant.

Tegurwangi; four crude and badly weathered sculptures, formerly lying in a ravine, have been placed side by side. They are respectively 1.35, 1.35, 1.50 and 1.60 metres high, and represent warriors on elephants.

Airpurah; Vonk made an important discovery in 1934 at Airpurah of a sculptured stone lying down on the bank of a small river. It appeared that the stone had been sculptured in relief on one side only. The representation may be read as follows: On the left a warrior is walking to the right, pulling along with his right hand a buffalo having a ring through its nose. The warrior is similar in appearance to those of the previously mentioned statues. On the other side of the picture is a similar warrior, facing the first one, gripping the horn of the buffalo with his left hand. In between these two men one can clearly distinguish a kettle drum of the type Heger I. (Pl. 31). Underneath the drum is the head of a dog with bared teeth.

Outside the territory of the Pasemah, a number of rather crude statues have been found in the Lampongs, corresponding in style to

the ancestor-statues of East and West Java. At Baturedja was found a human figure, sitting down; 50 cm. height. At Pagerdewa a figure with large eyes; at Muara Komering a small statue of a figure sitting down, with bent up knees and arms crossed, of 82 cm. height, and finally at Ranau, a crude statue 50 cm. high of a figure standing with legs apart, unmistakably of male sex.

Vonk also found a large stone statue at Lesungbatu. It represents a man carrying a child on his back, standing in front of a buffalo. He has a helmet on his head and is dressed in a long tunic reaching just above the knee. He wears a girdle round his waist.[101]

On the Island of Samosir in Lake Toba in North Sumatra there existed until recently a live megalithic culture dating back to prehistoric times. F. M. Schnitger [102] is of the opinion that the most ancient relics on the island date back at least a thousand years and perhaps even as far as the beginning of the Christian era. We shall give a short account of his findings.

The villages on the island are surrounded by high walls, on which grow closely knit thorny bamboos. Only two narrow entrances are provided in the walls, and these are closed at night. In the old days there were three castes: the Radjahs, founders of the village and their descendants who possessed the largest number of buffaloes; the free people and prominent statesmen who were married to the daughters of the Radjahs and might become Radjahs themselves by founding a new village; and the slaves.

On Samosir, as in most territories in the Far East with a megalithic culture, a close connection may be assumed between the cult of sacrificial offerings of buffaloes and rice-growing.

The megaliths at Samosir consist chiefly of:

1. Beautifully sculptured and richly adorned rice-troughs of stone, standing on four or five stones in front of the houses.
2. Dolmens with flat cover-stones, sometimes found next to the troughs. On the southern slopes of the Pusuh Volcano, dolmens are arranged in circles and are used as seats for the chiefs. Occasionally they are employed for sacrificing buffaloes.
3. Stone sarcophagi and stone urns. These sarcophagi are adorned with a monster's head in front and a female figure at the back, and on the cover-stone is sometimes a stone statue of a human figure

[101] Vonk, 1934.
[102] Schnitger, 1939a, p. 132—44.

in sitting position. Sarcophagi and urns contain the skulls of the dead. The heads are first buried for about a year, and are then placed in the sarcophagus with funeral ceremony. There are sarcophagi contaning more than ten skulls, and in one were found the complete skeletons of a man and a woman. For the purpose of making these sarcophagi large blocks of stone are sought in the mountains. These are then roughly hewn into shape and transported to the valley on a wooden sledge, running on rollers made of tree trunks. This work takes over a hundred men and may last for several months. Stone sarcophagi have also been found in the Southern Batak lands.

A live megalithic culture is still to be found in the Island of Nias. It is closely related to the culture of the Naga tribe in Assam. The study of this subject, however, is best left to the ethnologists.

Schnitger [103] mentions deserted villages in the jungle of the south-eastern part of the island, containing many finely sculptured megalithic monuments, such as stone terraces, stone-cists containing human skulls and Chinese porcelain, decorated memorial columns, ithyphallic ancestor-statues in wood and stone, and stone seats having the head of a mythical animal on one side and its tail on the other. The focus of the megalithic cult seems to have consisted of festivities in honour of tribal chiefs and other outstanding tribesmen, promotions to a higher rank, and funeral and wedding feasts. On occasions of this kind, sacrifices of slaves and of hundreds of pigs were no unusual occurrence.

[103] Schnitger, 1939a, p. 145—64.

III. URN CEMETERIES

The burial of the dead in earthenware vessels, with or without the addition of funeral furniture, must have been a widespread habit in prehistoric times in Indonesia and surrounding territories, such as Tonkin, Laos, North Cachar, Japan, the Philippines, Formosa and Korea. It is interesting to note that urns have often been found close to megaliths and the idea that these two cultural elements may be associated with one another is therefore not unreasonable.

Up to the present we have insufficient data to achieve a proper insight into the distribution of such urnfields in Indonesia. The matter is further complicated by the fact that at least three different methods of burial in urns have been found. We shall return to this subject at the end of this paragraph. First we shall try to give a short summary of the known urnfields, treating each island separately.

a. Java.

The first traces of urn-burials in Java were found by the schoolmaster Munir in December 1954 at Anjar Lor, a village in North Banten, West Java. They were discovered two hundred metres inland from the coast and two metres above flood level. After a heavy rainstorm the schoolmaster noticed a ring-shaped mark in the soil in front of his house and when he started digging, the ring appeared to be the top edge of a large urn nearly one metre high. Inside he found a human skeleton and various gifts of earthenware. Only five metres away he discovered a second urn, which he also excavated, finding at the bottom another skeleton in a poor state of preservation. This second urn he left partly intact in its original place and filled it with sand. By request skeletons and funeral furniture were sent to the office of the Archaeological Service at Djakarta. No expert study of the skeletons has yet been made, so we shall confine ourselves to some general remarks about them.

The first skeleton was probably of a male person; the skull was

thick and the lower jaw very heavy. The second, being considerably more delicate, belonged probably to a woman. Both skulls had in common a *wajang*-like profile, the nose and forehead forming a straight line, without appreciable nose-bridge, similar to the classic Greek profile. Most likely this phenomenon should be ascribed to some kind of artificial deformation during childhood.

The funeral furniture consisted of the following objects: 1 jar, 292 mm. high and 215 mm. wide, made of polished dark-brown earthenware on a circular base.
1 dish, 179 mm. high, 271.5 mm. diameter, made of polished dark-brown earthenware. Round the base were 8 panels alternatively decorated with linear motives and unadorned.
1 dish like the previous one in shape and of the same material but somewhat smaller.
1 simple globular bowl of yellow-brown earthenware, 95 mm. high and 142 mm. wide. In the centre a row of fingernail imprints.
There were no metal objects in the urn.

The present author, assisted by Mr Basoeki, carried out a systematic excavation in this area. It became clear that the situation was not very suitable for the purpose, as digging was only possible between the houses, and as during the second world war the Japanese had dug hiding places there. In consequence the results were disappointing. The sequence of our finds was as follows:

Sector I: a concentration of large and small plain potsherds, probably belonging to an urn. In the midst of them two parts of a human mandible, which fitted together; part of an upper jaw and some skull fragments. Formerly a house had been built at this place; holes made by stakes were still visible.

Sector II: a number of plain potsherds and one round carnelian bead, red-brown, 14,5 mm. in diameter.

Sector III: Entirely disturbed by a modern refuse pit.

Sector IV: Urn B, which had been emptied by Munir, was found in this sector. The lower portion of the urn survived only because it had been buried in a hard-pan. It was cracked, but not compressed. The upper part had collapsed.
On April 2nd, the urn was removed with great care. It had been restored in the Djakarta Museum as far

as possible. As has already been mentioned, a crushed human skeleton was found in this urn, but there was no grave-furniture.

Sector V—VII: Plain potsherds only.

Sector VIII: An extended burial of an adult in south-north direction, buried in a hard-pan; feet pointing to the north, heelbones upwards, proving that the body was buried face downwards. Only the lower half of the skeleton was present; the other parts were destroyed by the digging of a Japanese shelter. Several human bones were found scattered in this section. One potsherd with impressed mat-design was unearthed, as well as two bone fragments of a goat with engraved parallel lines.

Sector IX—XI: Plain potsherds only.

The results of these excavations may have been disappointing, but the importance of the Anjar site remains, as here the existence of urn-burials in Java was proved for the first time.[104]

The urns were found immediately under the surface of the ground, no grave-mounds having been constructed over them. They were made of plain common earthenware. The dead were placed in the urns singly, in flexed position. The funeral gifts were fine polished earthenware but there were no ornaments or weapons. Probably the most eminent members of the community only were interred in urns, whereas the common man was buried in the earth. A possible illustration thereof is given by the discovery in the ground of a skeleton of a man lying face downwards in an extended position, the skeleton having the same degree of preservation as those found in the urns. This proto-historic tradition of burying men face downwards and women lying on their backs is still in use in Bali, near Lake Batur, in Upper Bangli and in East Buleleng.[105]

The urns were almost circular, with a diameter of 75 cm. The funeral gifts were probably manufactured with the aid of a rotating disc or "tournette" and they were decorated in a simple and conventional style. No traces of influence of the Dongson Culture have been found at Anjar, but as we have no knowledge of Anjar metal

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[104] van Heekeren, 1956b.

[105] van Stein Callenfels, 1940, p. 230—32.

objects, which might have carried such traces (none being found among the funeral furniture) our judgment cannot be final.

No definite conclusions can be drawn as to the age of this graveyard, but we venture to believe that it does not date back further than about the second or third century A.D.

In the same territory where the urns were found, a bronze kettle drum of type Heger IV was also discovered. In the collection of E. W. van Orsoy de Flines there are some potsherds of the Han period, which come from Banten. There is litte doubt that undiscovered urnfields are still lying along Banten's coast and it is our hope that at some future date these will be excavated in a professional manner.

b. Sumatra.

The only person who has supplied information about urnfields discovered in this large island has been J. C. Noorlander [106]. It concerned a couple of earthenware grave-urns, which were found accidently by the population. In each was found a collection of remains of human bones and an empty brown-red beautifully polished jar. The shoulder and the neck of one of the jars were decorated with engraved meander and fish-bone motives, indicating influence of the Dongson Culture. (Pl. 32). The jars are 209 and 220 mm. high respectively. The urns were found at the village of Lesungbatu, Muara Danau, Tebingtinggi, South West Sumatra. The urns were destroyed by the finders, but the two jars are in the Museum at Djakarta. Most probably there are more urnfields in this territory.

c. Celebes.

In Central Celebes the presence of megalithic remains such as stone urns and stone statues has been reported, among others by Kaudern [107]; and in the same territory are also urnfields. Whether we may conclude that the urnfields belong to the megalithic culture or whether they are part of a separate culture, are questions which cannot be decided in the present state of our knowledge. Kaudern mentions that at Bada, close to a gigantic stone statue, the ground is covered with numerous small hillocks, which might well be tumuli. No further investigations into this matter have yet been made. At Pada he found a large broken

[106] OV, 1939, p. 13.
Heine Geldern, 1945, p. 148.
[107] Kaudern, 1938, § d, Chapter II.

urn made of earthenware, which has been repaired at a later date. It was 111 cm. high and had a circumference of 289 cm.; its walls had a thickness of only 0.7—1.0 cm. It is assumed that there is an urnfield on this terrain. At Jintu is a large stone statue lying face downwards on the ground. The valley there has a large number of hillocks about one metre high, which are sometimes more or less in rows. The possibility exists that these, too, are tumuli. Kaudern also mentions another hillock of more than human height, which looked like a tumulus. Kruyt finally reports the presence of urns at Leboni and in the Palau Valley, without however saying anything about their contents.

Further south W. J. A. Willems carried out methodical excavations from September 8th to 26th, 1938, near the deserted village of Sa'bang, 50 kilometres north of Paloppo on the Paloppo-Masamba road. The top layer produced potsherds of soft-baked earthenware, Chinese potsherds, stone bark-cloth beaters, stone mortars and iron spear-heads. Underneath this was a layer containing 10 large urns at a depth of 2—2½ metres below ground level. These urns were made of soft-baked earthenware and were broken in a multitude of small pieces, their contents having perished completely. Willems suspects that we are dealing with secondary burials, but of this there is no proof.[108]

In South Celebes, from Sengkang southwards, there was once a tradition, which lasted up to the influx of Islam in 1609—1611, that deceased rulers and other important persons were to be cremated and their calcinated ashes interred in urns of Chinese porcelain. Already in 1912 L. van Vuuren drew attention to this custom. He reported that near the village of Bukaka, buried under a tree lies an urn, containing the ashes of a ruler of Bone, called Tamupaga, and on a flat hill not far from there, in an urn under another tree, are the ashes of the third ruler of Bone, who succeeded to the throne in 1398. This hill contains many more urns of Chinese manufacture.

South of Sengkang, van Vuuren found another urn with human ashes and an ordinary Chinese plate covering the urn. These Chinese urns used for the ashes of the dead are called *balubu* by the population and they still play a part in important events, especially those at the beginning and the end of life on earth. *Balubu*'s are nowadays often found on Mohamedan mosques in South Celebes, right up to Masamba.

In 1947 the author was able to collect some additional material.

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[108] Willems, 1940a, p. 207—8.

Rectangular grave-mounds with many urns of Chinese porcelain were discovered at Lampokko and Sompoh. Many urns had been broken under the plough and a few only could be saved, together with their contents of calcinated human ashes. The porcelain sherds were examined by van Orsoy de Flines, who identified them as originating from Siam, Tonkin and South-East China, and dated them to the 14th and 15th centuries A.D.[109]

At Lampokko there is also the "Ritual Tumulus" which was excavated by the author by the quadrant method, but which produced nothing of great archaeological value. One small sherd of Chinese porcelain only, probably dating from the middle of the 16th century was found at the very bottom.[110]

The graveyard at Sompoh was close to a square of menhirs and to a few stone mortars.

d. Salajar.

In 1912 E. E. W. G. Schröder reported that at Tiletile in the south-western part of the island, three earthenware urns had been found by the population at a depth of 0.50 metres during some digging operations. These urns were 0.60 metres high and contained broken human bones and ornaments by way of funeral furniture. Only one of these urns could be saved although even this had been partially opened. Schröder found inside beads of semi-precious stone, a ring, three bracelets, an ear-ring of bronze and a few small golden leaves. The present whereabouts of these finds are unknown to me.[111]

e. Sumba.

From an early date the necropolis of Melolo, which is an extensive urnfield in the eastern part of the island, has drawn the attention of the curious and part of it was pillaged by marauders of Savunese origin and by unqualified and incompetent explorers. Only the diggings of E. R. K. Rodenwaldt and L. Onvlee have been to some purpose, and an excellent excavation has been carried out by W. J. A. Willems.

The first person to devote a few lines to this hoard was

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[109] OV, 1945, p. 54.
[110] van Heekeren, 1949, p. 85—8.
[111] Notulen Bataviaasch Genootschap, 1912, p. 107—8.

A. C. Kruyt,[112] who wrote in connection with some digging by D. K. Wielenga.[113]

In 1923 excavations were carried out by L. Dannenberger and Rodenwaldt.[114] Rodenwaldt divided his finds between the Museum at Djakarta and the Tropical Museum at Amsterdam. He also sent 34 of the skulls found to J. P. Kleiweg de Zwaan, who made a detailed study of them.[115]

In 1926 K. W. Dammerman did some excavation in this graveyard. After that date all unauthorized digging was forbidden.[116]

In 1936 permission was given to Onvlee for renewed research of the terrain. This learned scholar sent an extensive report of his findings to the Head of the Archaeological Service at Djakarta, presented the funeral furniture and other finds to the Museum at Djakarta, and sent the human remains for examination to C. A. R. D. Snell at Surabaja. (Pl. 34). The anthropometric study of this material is the subject of a separate publication.[117]

P. J. Lambooy also published a short article on Melolo [118] in which he mentions. among other discoveries, the lower jaw of a pig found in an urn, the only indication of animal sacrifices at Melolo.

In the months of August and September of 1939 Willems, prehistorian to the Archaeological Service, carried out a systematic excavation on the terrain. Unfortunately he left for Europe shortly after, but I have been able to use his diary, photographs, and drawings for a treatise on Melolo, containing all known facts about this urnfields.[119] My conclusions were as follows:

Melolo is an extensive urn cemetry. Only part of it has been explored so far and its boundaries in the south and west have not yet been clearly defined.

The area is about 20—25 m. in length. Numerous urns were recovered some 2 to 50 cm. below ground level with no apparent scheme of distribution. They were found singly, and sometimes in groups. The urns were of a low standard of workmanship. They were

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[112] Kruyt, A. C. 1922: De Soembaneezen. BKI, 78, p. 536.
[113] Wielenga, 1923: Notulen Bataviaasch Genootschap, p. 174; Bijlage IX, p. 250—51.
[114] OV, 1923, p. 12—3.
[115] Kleiweg de Zwaan, 1941.
[116] Dammerman, 1926.
[117] Snell, 1938.
[118] Lambooy, P. J. 1936: Opgravingen op Soemba. De Banier, 24, p. 188.
[119] van Heekeren, 1956a, p. 2—24.

round-bottomed; none had a flat base. The colours were red, grey and dark-brown. Many had collapsed and were completely crushed, sometimes mixed together in a confused mass. Comparatively few specimens were unearthed intact.

A large proportion of the broken urns could be restored, and this work was carried out by Willems. They were all globular jars, some with straight necks, and mouths of varying width, others with necks curving outwards to a lesser or greater degree. (Fig. 22 A). Only a few were adorned, simple incised line patterns being used, mostly meanders, wavy lines, and fingernail imprints. The height varied from 20 to 70 cm. The urns were found covered in various ways; by sherds, broken pots, and inverted jars, and sometimes by peculiar earthenware flasks or bottles placed inverted into the mouth of the urn. The urns contained human skeletal remains but never a complete skeleton, which points to the custom of secondary burial, the skull only, with or without mandible, sometimes with a few limb bones, being finally buried in an urn. Although the majority of urns contained one skull only, there were examples of two or three skulls in one urn, skulls of adults as well as of children. In this kind of multiple interment all the dead were probably buried simultaneously.

The funeral gifts found consisted of shell beads drilled on both sides, stone beads, shell bracelets and rings, quadrangular stone adzes and a unique pendant, skilfully carved out of shell, representing a pig's head. (Fig. 23).

Outstanding among the grave-goods were the highly polished earthenware flasks, red or dark-brown with long slender necks. (Fig. 22 B). They were decorated with incised line patterns, the lines filled in with a white paint and with designs such as strings of triangles, parallel dotted lines, meanders arranged in straight parallel rows, small circles and series of zigzag lines. The effect of white-on-red and white-on-dark-brown is most pleasing and this pottery is of high standard of workmanship. The necks of the jars had a single incised line-pattern of a human face, usually with round eyes, sometimes with oval or slit eyes. (Fig. 24). One jar had three faces.

Another jar was quite outstanding and different from all others. It is of dark-brown earthenware and the neck is shaped like a human figure with flattened torso and its short, outstretched arms only partly indicated. The head is covered with what seems to be a helmet. (Fig. 25).

In this urnfield there is hardly any evidence of sacrificial offerings;

only some shells mixed with ashes and a pig's mandible were found. A record was made of a considerable number of skulls found, from which it appeared that these urn-burial people were a meso-dolichocephalic group, apparently a mixture of Palaeo-Melanesian and Malayan races. Similar groups still live further to the east in the Indonesian Archipelago.

The presence of quadrangular adzes among the funeral gifts of the Melolo urn cemeteries and the absence of any metal objects might well be a temptation to date this cemetery to the Neolithic Age. Further careful study of the objects and particularly of their decoration, however, makes an assignment to the Bronze-Iron Age more convincing, and such dating has already been suggested by Willems and Heine Geldern. We should not lose sight of the fact that stone adzes played an important part throughout the Bronze-Iron Age in Indonesia. Such adzes have been recovered at the classical Dongson site as well as from Balinese stone sarcophagi.

An interesting discovery of a shuttle was made by Onvlee, which indicates that the art of weaving was known to the urn people of Melolo.

Only the most methodical investigation, like that of which Willems gave us so excellent an example, will enable us to determine the distribution in time and space of urn-burial customs in Indonesia. The scant data that are at present available for purposes of comparison justify a few general statements only.

From the material at our disposal it is evident that there were three or four different customs of urn-burial in Indonesia, all belonging to the Bronze-Iron Age. They can briefly be listed as follows:

1. Large urns in which human skeletons were interred singly in a squatting position, accompanied by funeral furniture, consisting of darkbrown earthenware, saucer-shaped cups on stands, flasks with long straight necks and crude globular pots without flat base. Decorations are of a simple and conventional nature. Example: Anjar, West Java.

2. Large urns with skulls and a few limb bones only, indicating a secondary burial system. Funeral gifts, consisting of outstandingly fine polished earthenware flasks with incised geometric patterns and human faces, the lines filled in with white paste, and globular

pots, shell rings, shell and stone beads and stone quadrangular adzes. Example: Melolo in East Sumba.

3. Large and small urns, mostly of Chinese origin, dating from 1300—1600 A.D., containing calcinated human bones, unaccompanied by any funeral gifts. This kind of urn-burial was in use to the advent of Islam. Examples: numerous in South Celebes (Bone, Soppeng and Wadjo).

PRINCIPAL ANTHROPOLOGICAL DATA OF THE SKULLS FROM MELOLO

(after Snell and Kleiweg de Zwaan)

	Max. Length	Glabello Inion L.	Max. Width	Min. Frontal Width	Max. Occip. Width	Height calvar.	Index cranialis
A.	177	168	131	85	101	100	74.0
B.	188	181	130	101	110	110	69.1
C.	183	171	131	88	99	111	71.6
D.	166	157	133	83	100	98	80.1
E.	184	172	139	96	—	108	75.5
F	183	175	—	90	105	106	—
G.	175	153	128	85	99	102	73.1
H.	181	164	133	91	103	111	73.5
I.	173	163	136	—	—	101	78.6
J.	170	149	136	—	101	113	80.0
K.	182	173	—	89	101	101	—
I	181	164	133	—	106	107	73.5
II	160	156	126	85	97	88	78.8
III	190	184	137	95	112	107	72.1
IV	178	173	140	87	105	98	78.7
V	183	171	138	93	—	102	75.4
VI	187	180	136	—	112	101	72.7
1.	178	163	133	94	102	109	74.72
2.	186	183	133	96	106	101	71.51
3.	185	181	140	—	114	108	75.68
4.	176	171	136	98	105	103	77.27
5.	175	174	125	—	101	97	71.43
6.	186	179	137	—	103	96	73.66
7.	182	182	140	95	113	106	76.92
8.	185	175	144	90	108	105	77.84
9.	180	179	133	92	100	96	73.89
10.	168	164	138	—	—	78	82.14
11.	188	189	136	96	109	97	72.34
12.	178	177	141	—	105	96	79.21
13.	175	169	145	97	107	100	82.86
14.	181	179	134	—	95	105	74.03
15.	180	178	138	—	106	87	76.67
16.	180	172	133	—	109	99	73.89
17.	180	—	141	—	—	—	78.33

	Max. Length	Glabello Inion L.	Max. Width	Min. Frontal Width	Max. Occip. Width	Height calvar.	Index cranialis
18.	178	169	132	96	111	104	74.16
19.	177	178	130	90	101	95	73.45
20.	181	170	138	89	104	106	76.24
21.	171	166	132	90	97	98	77.19
22.	173	—	130	82	104	100	75.14
23.	183	181	136	98	107	99	74.32
24.	169	159	133	84	—	95	78.70
25.	175	166	138	89	104	102	78.86
26.	174	166	133	90	103	96	76.44
27.	173	164	139	90	105	102	80.35
28.	177	165	133	—	105	96	75.14
29.	181	173	135	100	116	105	74.59
30.	183	181	139	—	107	104	75,96
31.	174	—	125	86	—	—	71.84
32.	179	172	137	—	106	105	76.54
33.	167	157	131	87	—	93	78.44
34.	182	178	137	95	107	103	75.27
average	178	171	135	91	105	101	75.7

IV. THE DONGSON CULTURE

1. *Dong So'n and the Dongson Culture.*

Knowledge of the Bronze-Iron Age of South East Asia has increased considerably through the excavations of the French at Dong So'n in the north of Annam. L. Finot and G. Coedès called the characteristic culture at Dong So'n the "Indonesian Culture". Heine Geldern coined the expression "Dongson Culture", and since then this name has been generally accepted. We shall give a more detailed description of the essentials of this culture and of its significance, as it has been of great importance to Indonesia, where its influence has been lasting.

The settlement of Dong So'n and its necropolis is situated on the right bank of the River Song Mā in the Province of Than-hoà, or Chiu-chen as it was formerly called. The site was discovered in 1924 and from 1925 to 1928 intermittent excavations were carried out under the auspices of *L'Ecole Française d'Extrême-Orient*, under the technical leadership of M. J. Pajot.

V. Goloubew devoted an extensive article to these excavations [120] and thereby gave a clearer picture of this culture of the Bronze-Iron Age than existed before.

Near the steep bank of the river, Pajot found traces of a rectangular pile-dwelling near which, at a small depth, were many simple graves, in which the dead had been buried in extended position with numerous funeral gifts. The forearm of one of the skeletons still carried a bracelet of greenish glass. Also found were traces of red ochre with which the dead had been sprinkled. Funeral gifts and other finds in the area consisted chiefly of some twenty bronze kettle drums, some of them miniature replicas from the graves. Other metal objects were: bronze double-edged swords, daggers, bronze socketed axes, fragments of bronze mirrors, bronze clasps of girdles, vases, beakers, spear-heads, a few bronze statuettes and bronze arrow-heads. The pottery was simple, made by hand, and in general indistinguishable from neolithic earthenware.

The finds date from the Late Chou and the Han dynasties, whereas

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[120] Goloubew, 1929.

some coins date from the period of the rebel Wang Mang, i.e. from 300 B.C. to 100 A.D.[121] Most metal objects were made of bronze but there were some implements and ornaments made of iron, and a few stone axes, some polished, a shouldered axe amongst them.[122] The bronze socketed axes often have an asymmetrical cutting edge. Two bronze axes have decoration of a similar type to that found on kettle drums. On both surfaces of one of them are human figures with feather head-dresses, one playing a mouth organ, the other holding castanets or clacks, and on the hollow shaft is a figure of an unidentifiable animal.

On the other axe we observe a half-moon-shaped ship with passengers, a theme so often met with on kettle drums of type Heger I. A humorous piece of free sculpture in the round is of two men, one sitting on the other's back and playing a mouth organ. A dagger, hilt and blade cast in one piece, has a hilt shaped like a man, standing with arms akimbo, with protruding eyes, his hair in a braid on the back and partly as a bun on his head, wearing ear-rings, breastplates and a kind of apron. It also appears that armour was known at the time, as a great number of small metal armour plates or scales of a suit of armour were found, of the type used in the Late Chou Period of China.

The bronze vases may be divided into two kinds: one having the shape of a truncated, inverted cone with two small handles on the neck, the other cylindrical, also with two handles. The decoration on these vases or beakers consists mainly of small circles, joined by oblique tangential lines.

The larger weapons, such as swords, were cast in multiple moulds. Fragments of such moulds have been found at Ban Gian, indicating that these arms were cast in the country and were not imported.

In 1935 R. T. O. Janse [123] resumed excavations at Dong So'n, but only a few pages on this subject have been published at yet; an article has however been promised. Janse also found another settlement with similar characteristics to the one at Dong So'n in the upper part of the Tonkin district, 15 miles from Pho-hi.

It is not yet known precisely when the first contacts between China and Indo-China took place, but Chinese chronicles give us valuable information on contacts made at later dates.[124]

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[121] Karlgren, 1942.

[122] Winstedt suggests that these stone axes may be copies of bronze axes.

[123] Olov Janse, 1951, p. XXXVIII—XL.

[124] Maspéro, 1918.
Olov Janse, 1951, p. XVIII.

So, for instance, they give us an insight into events round about Tonkin just before the start of the Christian era. We learn that during the Han Dynasty there was a principality called Nan-Yüe, stretching from Canton to the centre of Annam. This kingdom was conquered by the Chinese in 111 B.C. and subsequently divided into nine districts. One of these, Chiu-Chen, now called Than-hoà, lies in North Annam. At first the conquerors did not impose important changes and even maintained in power those former rulers who did not resist the new regime. Gradually, however, their grip tightened, particularly in the Tonkin region. This resulted in a revolt in 40 A.D., and the Chinese were temporarily driven out again. Three years later the well-known Chinese general Ma Yüan reconquered the territory, after having defeated the rebels on several occasions, finally chasing the remainder into the mountains. One of the armies then marched along the valley of the River of Song Mā in which Dong So'n is situated. The stories tell of two thousand junks and twenty thousand soldiers taking part in the campaign. It is not unlikely that on this occasion the ancient settlement of Dong So'n was destroyed. As a result of the campaign thousands lost their lives, many families were deported to China, and others fled to the mountains.

Chinese rule over the territory had started firmly and was to last for a long time. A fusion of the two races was bound to take place and the Annamites, in whom the Malayan strain remained dominant, are an example of this intermarriage.

The Chinese chronicles tell us of the country they conquered and of its inhabitants. Many of their stories have been confirmed by archaeological discovery. They tell us that the Chinese found a wild country, covered with woods and marshes, where there lived numerous wild animals, such as elephants, tigers, pythons and two different kinds of rhinoceros. The people went about naked (loincloth only?) and lived by hunting and fishing, using poisoned arrows of wood and bone and large bows. Preparation of the poison was a sworn secret.

They also knew a simple form of agriculture, using stone implements to till the soil, and they could smelt and cast bronze, of which they made arrow-heads and other things.

Some of the reports are not easy to interpret. They seem to indicate an existing hierarchy, a feudal system and small communities of one or more villages. The chewing of betel-nuts and of sirih leaves and the blackening of teeth were known.

2. *Heine Geldern's thesis on the Pontic migration and the origin of the Dongson Culture.*

Many scholars nowadays are in agreement that the Dongson Culture of South East Asia has been influenced to greater or lesser degree by the Bronze-Iron Cultures of South Eastern Europe. Heine Geldern, Etienne Patte, Victor Goloubew, Janse and Umehara are the protagonists in pointing out the relationship between the Dongson Culture and the Hallstatt Culture and and of the Caucasian Iron Age.[125]

Heine Geldern has devoted a special study to the subject,[126] and has evolved a theory which we shall describe in a condensed form. He starts from the great Western Migration which took place in the second half of the 9th and the first half of the 8th century B.C. in the eastern part of Central Europe and the Northern Balkan States round the Black or Pontic Sea.

These Western barbarians, consiisting of Thracians, Illyrians Cimmerians, Caucasians, and perhaps even Teuton of the Bronze Age and Early Iron Age, wandered through Central Asia eastwards as far as Kanshu. Here they divided into various branches. One of these pushed into North West China and conquered the capital Hao, in the valley of the River Wei ho in 771 B.C. Rebellious vassal-states of China joined in the campaign, as is confirmed by Chinese chronicles. The Chinese withdrew and created a new capital further east but the might of the Chou dynasty was broken forever.[127]

This is the period during which the Late Chou or Huai Valley style of art came into being, adding European and Caucasian ornamental styles to the already rich indigenous art of the territory. This mixture of styles can clearly be seen in the ornaments, weapons, etc. of the period.[128]

A second branch of the Western barbarians curved round to the Ordos country, continued into the territory lying between the Rivers

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[125] Heine Geldern, 1934; 1937; 1945; p. 142—45.
Patte, 1931, p. 34—7.
Goloubew, 1932, p. 140.
Umehara, 1935.
The only dissenter is Karlgren (1942), who considers the Dongson Culture to be a derivate of the Late Chou or Huai Culture of China.

[126] Heine Geldern, 1951; 1954, p. 348—52.

[127] Chinese chronicles affirm this and mention invasions by Western intruders reinforced by local malcontents and rebel vassal states.

[128] Heine Geldern, 1951, Figure 37.

of Hwangho and Yangtze, and went on to the coastal regions of Middle and South China. Some of the characteristic elements of their culture penetrated as far as Manchuria, Korea and Japan.

A third section, for our purpose the most important one, branched southwards and reached Yünnan and the north-eastern part of Indo-China. At that time the territory was inhabited by the Indonesians. These people had a monumental, rather static style of art, free from purely decorative elements. Under the influence of the Western interlopers, they absorbed various Western elements of style to such a degree that Western-type ornaments were copied almost without alteration. The result was the Dongson Culture, which shows much greater affinity to the Bronze Age in Europe than to Chinese Culture.

The origin of the Dongson Culture is therefore independent of the Late Chou Culture of China, although it has many features in common with the Chinese Culture for reasons that have been already explained.

The Dongson Culture has extended over the entire Indonesian Archipelago up to Western New Guinea.

As mentioned earlier, Indo-China and Indonesia have known neither a Copper Age nor a pure Bronze Age. In all excavations bronze and iron objects have been found side by side. It is evident that the origin and development of the Bronze-Iron Age must lie outside Indonesia. One of the "guiding" objects of the period is the bronze socketed axe. It has been found in Indo-China, Siberia and Europe, but never in India, so that the direction in which the type has "travelled" and its origin are fairly clear.

The chief implements, ornaments and trinkets of western origin to be found in the Dongson Culture are:

a. *Swords and daggers*: double-edged swords were unknown in China and Indonesia until they were introduced from the west. They are far from unknown in the urnfields of the Caucasus and in East Europe. Some Chinese daggers might well be miniature versions of these swords. The hilts of Dongson daggers are often shaped like a human figure, very similar to specimens found in Holstein and Denmark which date from the fifth period of the Scandinavian Bronze Age and also to specimens found in the Caucasus.
   The well-known iron Majapahit krisses from Java are developed from the Dongson dagger. Short broad swords are represented on statues of the Pasemah country of Sumatra and a Dongson dagger has recently been discovered on the Island of Flores.

b. *Socketed axes of bronze:* these are among the key implements of the Dongson Culture. In Europe socketed axes are common in the Urnfield Period and Hallstatt Culture. In the Far East they are known in a region extending from Siberia, through South China and Indo-China to the whole of Indonesia.

c. *Socketed spear-heads of bronze*: these are well known in Indonesia and have also been found in the Shan States of Burma. They have a mid-rib. They are derived from the spear-heads of the Bronze Age of Europe.

d. *Girdle-clasps*: these bronze objects are part of the culture of a people among whom the horseman played an important part. The clasps are invariably decorated with double-spiral designs, bordered with plait-string motives. At the ends are small rings on which are hung tiny bells. The origin of the clasps is to be found in the Caucasus. Two specimens were found during the excavations at Dong So'n and recently another turned up in Pradjekan in East Java.

e. *Bronze pendants of human shape*: these are known from the Caucasian Koban Culture. A stylish loop on the head of the human figure serves as a hook by which to hang the pendant, and these are often decorated in spiral designs. Recently a series of these pendants was found at Kuwo in West Sumatra.

f. *Spiral-ornamentation*: this method of decoration is characteristic of the Early Iron Age of the Caucasus and for the full Bronze Age of Europe. It appears at the end of the Neolithic in the Danubian Cultures and in the Ukraine. A succession of waves carried these designs through East Asia. Spirals and circlets joined by oblique tangents dominate the geometrical designs of the Dongson Culture, and are also found in the Late Chou Period of China.

g. *Cord-designs*: these are associated with the Early Iron Age of the Caucasus and made their appearance in the Far East initially in the Late Chou or Huai style and the Dongson Culture.

h. *Whirl-motive*: this is very prominent in the Scandinavian Late Bronze Age. It has also been found on a bronze axe in the Ordos

region, on a ceremonial axe in the Island of Roti and on a rock-painting on one of the Kai Islands.

i. *Meander-designs*: these are frequent in the Hallstatt Culture and on Greek vases. They also appear often on pottery from Samron-Seng in Cambodia and on pottery from Kalumpang (Central Celebes) and urns from South Sumatra and Sumba. The design is no doubt an ornament of the Dongson Culture. It is a favorite design on the oldest kettle drums.

j. *Circlets joined by oblique tangents*: This is a design that occurs frequently in the Hallstatt Culture, and more often still on Greek vases. It is one of the most frequent items of decoration of the Dongson Culture.

k. *Ladder-designs*: these originate in the Hallstatt Culture and are very frequent in the Dongson Culture, chiefly as marginal decoration on kettle drums. They are unknown in the Huai style of China.

l. *Hatched triangles*: their origin is the Greek geometric style and the Hallstatt Culture; they are also found in the Dongson Culture.

m. *Pseudo-granulation*: this process is used to give a finish to otherwise plain bands incorporated in designs. It is encountered in the Hallstatt Culture, the Huai style and the Dongson Culture.

n. *Processions of deer*: bands filled with deer processions occur frequently in Caucasian designs and we find them again on bronze axes in Indo-China, on some kettle drums and on the bronze vats of Pnom Penh in Cambodia and of Madura in Indonesia.

Finally we may mention a few studies on subjects which are closely related to ours. J. Kunst [129] contributes treatises on the similarity of music and the musical instruments of the Balkans, the Ukraine and Indonesia; Schuster made a comparative study of the symbolism of head-hunters in the Far East, and that of the Balkan countries [130] and R. O. Winstedt [131] demonstrated a parallel trend in the designs of the *ikat* shawls of Sumba and the Greek geometric style.

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[129] Kunst, 1953.
[130] Schuster, 1952b.
[131] Winstedt, R. O. 1944: A motif in Indonesian art. Journ. of the Royal Asiatic Society, p. 130—32.

ABBREVIATIONS

BEFEO	Bulletin de l'Ecole Française d'Extrême-Orient
BKI	Bijdragen Kon. Instituut v. Taal-, Land- en Volkenkunde
ESA	Eurasia Septentrionalis Antiqua
IAE	Internationales Archiv für Ethnographie
JMBRAS	Journal of the Malayan Branch of the Royal Asiatic Society
MFEA	Bulletin Museum of Far Eastern Antiquities, Stockholm
NION	Nederlandsch Indië Oud en Nieuw
OV	Oudheidkundig Verslag Oudheidkundige Dienst in Nederlandsch-Indië.
PEFEO	Publication de l'Ecole Française d'Extrême-Orient
TBG	Tijdschrift v. Indische Taal-, Land- en Volkenkunde Bataviaasch Genootschap v. Kunsten en Wetenschappen
TNAG	Tijdschrift van het Kon. Nederlandsch Aardrijkskundig Genootschap
RAA	Revue des Arts Asiatiques

REFERENCES AND SELECTED BIBLIOGRAPHY

Andersson, J. G. 1929: Der Weg über die Steppen.
— 1932: Hunting magic in the animal style. MFEA, 4, 221—317.
— 1933: Selected Ordos Bronzes. MFEA, 5, 143—54.
Arndt, P. P. 1932: Die Megalithenkultur der Nad'a (Flores). Anthropos, 11—63.
Balfour, H. 1901: A spear-head and socketed celt from the Shan States, Burma. Man, 1, 77.
Beck, H. C. 1937: Beads from slab-graves in Malaya. Bull. Raffles Mus., 1, 2.
Benedict, P. K. 1942: Thai, Kadai and Indonesian: A new alignment in Southeastern Asia. Am. Anthropologist, 44, 576—601.
Bertling, C. T. 1931/32: De Minahasische 'Waroega' en 'Hockerbestattung'. NION, 16, 33—51.
Bie, C. W. P. de 1932: Verslag van de ontgraving der steenen kamers in de doesoen Tandjoeng Ara, Pasemah-Hoogvlakte. TBG, 72, 626—35.
Bishop, Carl Whiting 1940: Beginnings of Civilization in Eastern Asia. Antiquity, 301—16.
Bont, G. K. H. de 1922/23: De batoe's larong (kist-steenen) in Boven-Djambi, onderafdeeling Bangko. NION, 7, 31—2.
Borovka, G. 1928: Scythian Art. London.
Bosch, F. D. K. 1922: Een bronzen vat van Kerintji. OV, Bijlage G., 65—6.
— 1926: Twee bronzen ruiterbeeldjes uit het Loemadjangsche. OV, Bijlage D., 77—80.
Braddell, R. 1935/36: An introduction to the study of ancient times in the Malay Peninsula and the Straits of Malacca. JMBRAS, 13, 2, 70—109; 14, 3, 10—71.
Bühler, A. 1951: Sumba-Expedition 1949. Teil I. Basel.
Bushell, W. 1924: Chinese Art. Victoria and Albert Museum. London.
Colani, M. 1932: Champs de jarres monolithiques et de pierres funéraires du Tran-Ninh (Haut-Laos). Praehistorica Asiae Orientalis, 103—28.
— 1935a: Mégalithes du Haut-Laos. 2 volumes. Paris.
— 1935b: Haches et bijoux. BEFEO, 313—62.
— 1936: Notes pré- et protohistoriques, province de Quang-binh. Bull. des Amies du Vieux Hué, 121—40.
— 1940a: Survivance d'un culte solaire. Proc. Third Congr. of Prehistorians, Singapore, 173—93.
— 1940b: Origine et évolution du couteau de moissonneur. Proc. Third Congr. of Prehistorians, Singapore, 194—9.

Collings, H. D. 1937: Recent finds of Iron Age sites in Southern Perak and Selangor. Bull. Raffles Mus., 75—93.
Dammerman, K. W. 1926: Een tocht naar Soemba. Indisch Comité voor Wetenschappelijke onderzoekingen, 60—4.
Dannenberger, F. L. 1920: Notulen Bataviaasch Genootschap, 174; Bijlage IX, 250—51.
Deydier, H. 1949: Note sur un tambour de bronze, conservé au Musée de Batavia. Bull. de la Société des Etudes Indochinoises, 3, 3—6.
Evans, I. H. N. 1928: On slab-built graves in Perak. Journ. Fed. Malay States Mus., 111—19.
— 1929: Notes on the relationship between Philippine Iron-Age antiquities and some from Perak. Journ. Fed. Malay States Mus., 189—96.
— 1931a: A further slab-built grave at Sungkai, Perak. Journ. Fed. Malay States Mus., 63—4.
— 1931b: An attempted classification of Iron Age implements. Journ. Fed. Malay States Mus., 71—6.
Fischer, H. W. 1916: Mittel Sumatra. Katalog des Ethnogr. Reichsmus., X.
Fischer, H. Th. 1937: Reispflücken und Reisschneiden in Indonesien. IAE, 34, 83—104.
— 1939: Das indonesische Reismesser ausserhalb Indonesiens. Paideuma, 1, 147—52.
Flines, E. W. van Orsoy de 1949: Hasin—Medang—Kuwu—Lang-pi-ya. TBG, 83, 424—29.
Foy, W. 1903: Über alte Bronzetrommeln aus Südostasien. Mitt. Anthrop. Ges., Wien, 33, 390—409.
Fuyita, Ryosakno 1952: Studies on the dolmens of F. E. Asia. Kokogakuzasshi.
Goloubew, V. 1923: Les Tambours magiques en Mongolie. BEFEO, 23, 407—9.
— 1929: l'Age du bronze au Tonkin et dans le Nord-Annam. BEFEO, 29, 1—46.
— 1932: Sur l'origine et la diffusion des tambours métalliques. Praehistorica Asiae Orientalis, 137—50.
— 1937: L'archéologie du Tonkin et des fouilles de Dong So'n. Hanoi.
— 1940: Le Tambour métallique de Hoàng-Ha. BEFEO, 40, 383—409.
Goris, R. and Dronkers, P. L. 1952: Bali. Cults and Customs.
Gray, Basil 1940: China or Dong So'n. Oriental Art, 2, 99—105.
Groot, J. J. M. de 1898: De antieke keteltrommen in den Oost-Indischen Archipel en op het vasteland van Zuid Oost Azië.
Grubauer, A. 1913: Unter Kopfjägern in Central-Celebes. Leipzig.
Guehler, U. 1944: Studie über alte Metalltrommeln. Journ. Thailand Res., 25, 17—71.

Haan, B. de 1921: Rapport over de werkzaamheden op Oost-Java. OV, 55—9.
Hancar, F. 1931: Einige Gürtelschlieszen aus dem Kaukasus. ESA, 6, 146—58.
— 1934: Zum Problem des 'kaukasischen' Tierstils. Wiener Beiträge zur Kunst und Kulturgeschichte Asiens, 9, 3—34.
— 1947: Hallstatt-Kaukasus. Mitt. Anthr. Ges., Wien, 152—67.
Hazeu, G. A. J. 1910: Eine Metalltrommel aus Java. IAE, 19, 82—5.
Heekeren, H. R. van 1931: Megalithische overblijfselen in Besoeki, Java. Djawa, 11, 1—18.
— 1949: Verslag van het onderzoek van een 'rituele' tumulus te Lampokko, Bone, Zuid-Celebes. OV, 85—8.
— 1953: Bronzen Keteltrommen. Orientatie, 46.
— 1954: De Praehistorische Verzameling. Lijst der Aanwinsten 1948—51. Jaarboek Bataviaasch Genootschap 1948—51, 35—58.
— 1955a: Proto-Historic sarcophagi on Bali. Bull. Arch. Serv. Indonesia, 2, 1—15.
— 1955b: Prehistoric Life in Indonesia, 47—58.
— 1956a: The urn cemetery at Melolo, East-Sumba. Bull. Arch. Serv. Indonesia, 3, 1—24.
— 1956b: Note on a Proto-Historic Urn-burial site at Anjar, Java. Anthropos, 194—200.
Heger, F. 1902: Alte Metalltrommeln aus Südost-Asien. Leipzig.
Heine Geldern, R. 1928: Die Megalithen Südostasiens und ihre Bedeutung für die Klärung der Megalithenfrage in Europa und Polynesien. Anthropos, 23, 276—315.
— 1929: Der Megalithenkomplex auf der Philippinen-Insel Luzon. Anthropos, 24, 317—21.
— 1932: Bedeutung und Herkunft der ältesten hinter-indischen Metalltrommeln. Asia Major, 8, 518—37.
— 1934: Vorgeschichtliche Grundlagen der kolonialindischen Kunst. Wiener Beitr. zur Kunst und Kulturgesch. Asiens, 8, 5—40.
— 1935a: Polynesier und Indogermanen. Zeitschr. für Rassenkunde, 2, 314—17.
— 1935b: The archaeology and art of Sumatra. In: E. M. Loeb: Sumatra, its history and people.
— 1937: L'art préboudique de la Chine et de l'Asie du Sud-Est et son influence en Océanie. RAA, 11, 177—206.
— 1945: Prehistoric Research in the Netherlands Indies. Science and Scientists in the Netherlands Indies. New York.
— 1947: The Drum named Makalamau. India Antiqua, 167—79.
— 1950: China, die Ostkaspische Kultur und die Herkunft der Schrift. Paideuma, 4, 51—92.
— 1951: Das Tocharerproblem und die Pontische Wanderung. Saeculum, 225—55.
— 1952: Some problems of migration in the Pacific. Wiener Beiträge zur Kulturgeschichte und Linguistik, 9, 313—62.

— 1954: Die Asiatische Herkunft der Südamerikanischen Metalltechnik. Paideuma, 5, 347—423.
Hirth, F. 1890: Ueber hinterindische Bronzetrommeln. T'oung-Pao, 1, 137—42.
— 1904: Chinesische Ansichten über Bronzetrommeln. Mitt. des Seminars für Orientalische Sprachen, 7, 200—57.
Hoëvell, G. W. W. C. van 1890a: De Kei-eilanden. TBG, 33, 102—59.
— 1890b: Leti-eilanden. TBG, 33, 200—32.
— 1904: Mitteilungen über die Kesseltrommel zu Bontobangun, Insel Saleyer. IAE, 16, 155—61.
Hoop, A. N. J. Th. à Th. van der 1932: Megalithic remains in South-Sumatra.
— 1935: Steenkistgraven in Goenoeng Kidoel. TBG, 75, 83—100.
— 1937: Een steenkistgraf bij Cheribon. TBG, 77, 277—79.
— 1938: De Praehistorie. In: Geschiedenis van Nederl.-Indië, Vol. 1, 7—111.
— 1940a: A prehistoric site near the Lake of Kerinchi (Sumatra). Proc. Third Congr. of Prehistorians, Singapore, 200—4.
— 1940b: Prehistoric glass beads in the Malay Archipelago. Proc. Third Congr. of Prehistorians, Singapore, 319.
— 1940c: Prehistoric bronzes in the Batavian Museum. Proc. Third Congr. of Prehistorians, Singapore, 320.
— 1941: Catalogus der Praehistorische Verzameling Bataviaasch Genootschap.
Hubenet, J. B. 1903: Letter addressed to the Bataviaasch Genootschap. Notulen Bataviaasch Genootschap, 55—8.
Huyser, J. G. 1931/32: Mokko's. NION, 16, 225—36; 279—86; 309—19; 337—52.
— 1942: Versieringstechniek van oude bronzen. Cult. Indië, 4, 149—58.
Izikowitz, K. G. 1951: Lamet, Hill Peasants in French Indo-China.
Janse, R. T. Olov 1930a: Quelques antiquités chinoises d'un charactère hallstattien. MFEA, 2, 177—83.
— 1930b: Notes sur quelques épées anciennes trouvées en Chine. MFEA, 2, 67—134.
— 1932: Tubes et boutons cruciformes trouvés en Eurasie. MFEA, 4, 187—209.
— 1935: l'Empire des steppes et les relations entre l'Europe et l'Extrême-Orient dans l'antiquité. RAA, 9, 9—26.
— 1951: Archaeological Research in Indo-China. Harvard Yenching Institute, 7, 1. Mass.
Jasper, J. E. en Mas Pirngadie 1927: De inlandsche kunstnijverheid in Nederlandsch Indië, 5. De bewerking van niet-edele metalen.
Jettmar, K. 1950: Archaeologische Spuren von Indogermanen in Zentral Asien. Paideuma, 5, 236—54.
Jong, J. A. de 1937: Megalithische oudheden op het Yang-Hoogland. TNAG, 54, 22—9; 215—8; 706—11.

Karlgren, B. 1936: Yin and Chou in Chinese bronzes. MFEA, 8, 9—156.
— 1937: New studies on Chinese bronzes: Ordos and Huai. MFEA, 9, 97—112.
— 1941: Huai and Han. MFEA, 13.
— 1942: The date of the Early Dongson Culture. MFEA, 14, 1—28.
— 1945: Some weapons and tools of the Yin dynasty. MFEA, 17, 101—44.
Kat Angelino, P. de 1921/22: Hindoe of Heiden. NION, 6, 281—85.
Kaudern, W. 1938: Megalithic finds in Central Celebes. Ethn. Studies Celebes, V. Göteborg.
Kellogg, R. J. 1927: Some indications of the eastward route of the Tocharians. Journal of the American Oriental Society, 356.
Kennedy, R., 1934: Bark-cloth in Indonesia. Journ. Polyn. Soc. 229—43.
Kenny, E. C. 1927: Chinese Gongs. Man, 27, 165—68.
Kiliaan, J. Th. E. 1908: Oudheden aangetroffen in het landschap Besoa (Midden-Celebes). TBG, 50, 407—10.
Kleiweg de Zwaan, J. P. 1941: Oude urn-schedels van Melolo (Oost-Soemba). TNAG, 58, 342—62.
Koenigswald, G. H. R. von 1951: Ueber sumatranische Schiffstücher und ihre Beziehung zur Kunst Ozeaniens. Südseestudien.
— 1956: Remarks on some prehistoric cultural contacts of the Indonesian region. Quaternaria, III, 61—8.
Kruyt, A. C. 1932: L'immigration préhistorique dans les pays des Toradjas occidentaux. Hommage du Serv. Arch. des Indes Néerl. Hanoi, 1—15.
Kunst, J. 1953: Kulturhistorische Beziehungen zwischen dem Balkan und Indonesien. Med. Kon. Inst. voor de Tropen, CIII.
Kuperus, G. 1937: Het cultuurlandschap van West-Soembawa. Groningen.
Kupper, H. 1948: Zur Kenntnis des prähistorischen Menschen auf West Java. Annalen des Naturhistorischen Museums, 56, 434—39.
Lévy, P. 1948: Origine de la forme des tambours du bronze type I. Dan Viet Nam.
— 1953: Recherches préhistoriques dans la région de Mlu Prei. Hanoi.
Linehan, W. 1928: Some discoveries on the Tembeling. JMBRAS, 6, 4, 66—76.
Loehr, M. 1951: Ordos daggers and knives. Artibus Asiae, 13, 14.
Loewenstein, Prince John 1953: "Tulung Mawas" re-examined. JMBRAS, 26, 1, 37—42.
Mansuy, H. 1902: Stations préhistoriques de Somron-Seng et de Longprao, (Cambodge). Hanoi.
— 1923: Contribution à l'étude de la préhistoire de l'Indochine III. Résultats de nouvelles recherches effectuées dans le gisement

préhistorique de Somron-Seng (Cambodge). Bull. Serv. Géol. Indochinoise, X.
Maspéro, H. 1918: Etudes d'histoire d'Annam. BEFEO, 18, 3, 1—36.
Meyer, A. B. 1884: Alterthümer aus dem Ostindischen Archipel und angrenzenden Gebieten. Königl. Ethn. Mus. zu Dresden, 4.
Meyer, A. B. und Foy, W. 1897: Bronzepauken aus Südost Asien. Königl. Ethn. Mus. zu Dresden.
Meyer, A. B. und Richter, O. 1902/3: Bronze-zeit in Celebes. Königl. Ethn. Mus. zu Dresden.
Moojen, P. A. J. 1928/29: Steenen doodkisten op Bali. NION, 13, 313—16.
Nieuwenhuis, A. W. 1904: Kunstperlen und ihre kulturelle Bedeutung. IAE, 16, 136—53.
Nieuwenkamp, W. O. J. 1908: De trom met de hoofden te Pedjeng op Bali. BKI, 61, 319—38.
— 1919: Mokko's. TNAG, 36, 220—27; 332—34.
— 1923/24: Een kort bezoek aan de eilanden Kisar, Leti en Roma. NION, 8, 99—107.
Oudheidkundig Verslag 1923: § 10, 12—13.
Parmentier, H. 1918: Anciens tambours de bronze. BEFEO, 18, 1, 1—30.
— 1924: Notes d'archéologie indochinoise VII. Dépôts de jarres à Sa-huynh (Quang-ngai, Annam). BEFEO, 24, 325—43.
— 1928: Vestiges mégalithiques à Xuân-lôc. BEFEO, 28, 479—85.
— 1932: Notes d'archéologie indochinoise IX. Nouveaux tambours de bronze. BEFEO, 32, 171—82.
Patte, E. 1931: Quelques points de comparaison fournis par la Chine protohistorique. BEFEO, 31, 25—38.
Perceval Jets, W. 1929: The Eumofopoulos Collection. Vol. 2. London.
Perry, W. J. 1918: The Megalithic Culture of Indonesia. Manchester.
— 1923: The Children of the Sun. London.
Przyluski, J. 1931: Notes sur l'âge du bronze en Indochine. RAA, 78—81; 229—31.
Quaritch Wales, H. G. 1953: The making of greater India. Londen.
Raven, H. C. 1926: The stone images and vats of Central-Celebes. Natural History, 26, 272—82.
— 1933: Huge stone jars of Central Celebes similar to those of northern Indo-China. Am. Anthropologist, 35, 545.
Riesenfeld, A. 1950: Some probable Bronze Age influences in Melanesian Culture. Far Eastern Quarterly, IX, 227—30.
Rothpletz, W. 1951: Alte Siedlungsplätze bei Bandung (Java) und die Entdeckung bronzezeitlicher Gussformen. Südseestudien, 77—126.
Rouffaer, G. P. 1899: Waar kwamen de raadselachtige moetisalah's (Aggri-kralen) in de Timor-groep oorspronkelijk vandaan? BKI, 50, 409—675.
— 1900: Een paar aanvullingen over bronzen keteltrommen in Nederlandsch-Indië. BKI, 51, 284—307.

— 1918: Keteltrommen (bronzen). Encyclopaedie van Nederlandsch-Indië, 2, 305—10.
Rumphius, G. E. 1705: D'Amboinsche Rariteitkamer. Amsterdam.
Sachs, C. 1940: The history of musical instruments. New York.
Sande, G. A. J. van der 1904: Kupferobjekte von Nord Neuguinea. IAE, 16, 247—48.
Saurin, E. 1951: Sur un moule de hache trouvé à Nhommalot (Laos). BEFEO, 45, 71—4.
Schmeltz, J. D. E. 1904: Einige vergleichende Bemerkungen über die Kesseltrommel von Saleyer. IAE, 16, 158—61.
Schnitger, F. M. 1939a: Forgotten kingdoms in Sumatra. Leiden.
— 1939b: Steenmonumenten van Noord-Sumatra. De Natuur, 59, 217—21.
— 1943: Die älteste Schiffsdarstellungen in Indonesien. Archiv für Anthropologie, 28, 141—45.
Schüller, C. W. 1936: Megalithische oudheden in de Palembangsche Bovenlanden en overheidszorg. TBG, 76, 391—97.
Schröder E. E. W. G. 1912: Notulen Bataviaasch Genootschap. 107—8.
— 1917: Nias. 2 vols. Leiden.
Schuster, C. 1951a: An ancient Chinese mirror design reflected in modern Melanesian art. Far Eastern Quarterly, XI, 51—66.
— 1951b: Joint-Marks. Med. Kon. Inst. voor de Tropen, XCIV.
— 1952a: A survival of the Eurasiatic Animal style in modern Alaskan Eskimo art. Proc. 29th Congr. of Americanists, 35—45.
— 1952b: Head-hunting symbolism on the Bronze Drums of the ancient Dongson Culture and in the modern Balkans. Actes du IV Congr. Intern. des Sciences Anthropologiques et Ethnologiques, II, 278—82.
Seligman, C. G. and Beck, H. C. 1938: Far Eastern glass: some western origins. MFEA, 10, 1—64.
Sheppard, M. C. 1936: 'Batu Hidop'-Megaliths in Malacca Territory. Bull. Raffles Mus., 1, 61—6.
Sierevelt, A. M. 1929: Rapport over oudheden van Apo Kajan, Borneo. OV, 162—64.
Simbriger, H. 1939: Gong und Gongspiele. IAE, 36.
Sirén, O. 1929: A history of Early Chinese Art, I.
Sleen, W. G. N. v. d. 1933/34: Antiquités mégalithiques dans le sud de Sumatra. NION. 18, 177—86.
Snell, C. A. R. D. 1938: Menschelijke skeletresten uit de Duinformatie van Java's Zuidkust nabij Poeger (Z.-Banjoewangi). Soerabaja.
— 1948: Human skulls from the Urnfield of Melolo, East-Sumba. Acta Neerl. Morph. Normalis et Path., VI, 3, 1—20.
Stein Callenfels, P. V. van 1938: The Age of Bronze Kettle Drums. Bull. Raffles Mus., 1, 150—53.
— 1940: An unusual mode of burial. Proc. Third Congr. of Prehistorians, Singapore, 230—32.
— 1948: Korte Gids voor de Prehistorische Verzameling. Batavia.

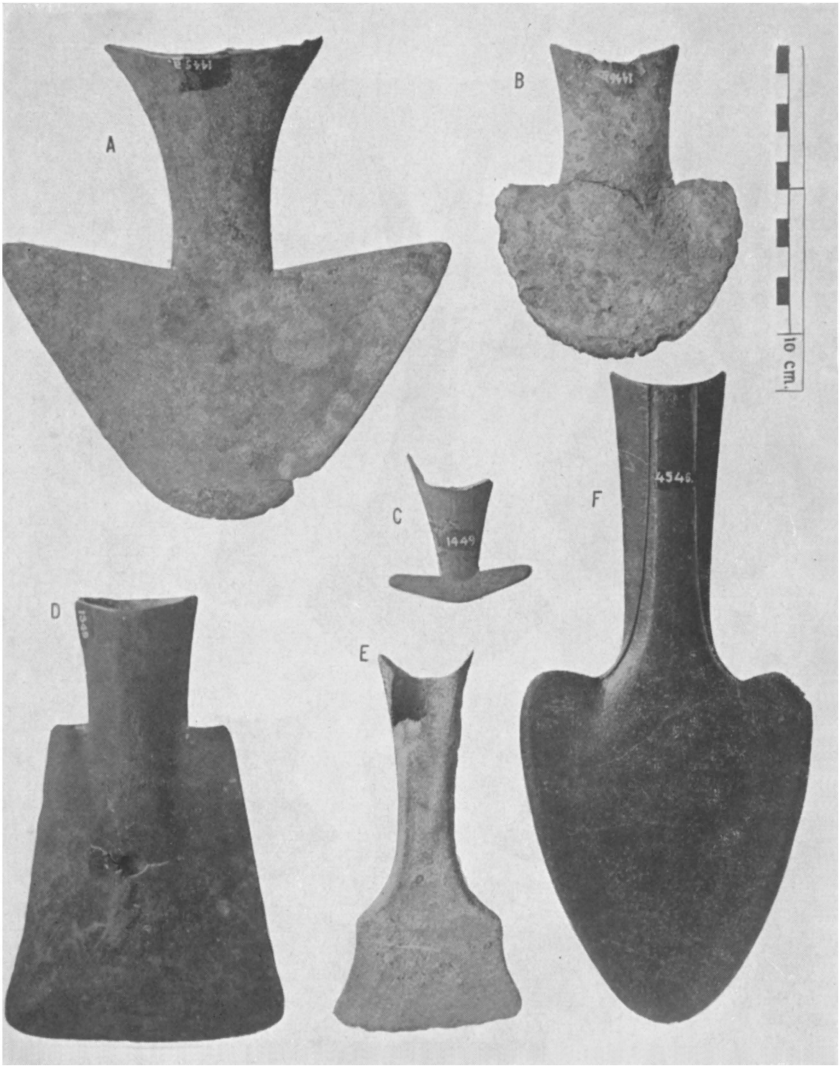
Steinmann, A. 1937: Les tissues à jonques du Sud de Sumatra. RAA, 11, 122—37.
— 1939: Das kultische Schiff in Indonesien. Jahrbuch für prähistorische und ethnographische Kunst, 13, 149—205.
— 1941: Een fragment van een keteltrom van het eiland Koer. Cult. Indië, 3, 157—61.
— 1942: Aanvulling op de beschrijving van het fragment van een keteltrom van het eiland Koer. Cult. Indië, 4, 24.
Steinmetz, H. E. 1898: Oudheidkundige beschrijving van de afdeeling Bandawasa (Residentie Bĕsoeki). TBG, 40, 1—60.
Stutterheim, W. F. 1923: Het zoogenaamde Lingga-heiligdom van den Argapoera op Java. Oostersch Genootschap: Verslag van het Derde Congres, 28—30.
— 1935: Oudheidkundige aanteekeningen 40, Megalithica op Bali. BKI, 92, 185—86.
— 1938: Note on a 'Neo-Megalith' in Old Batavia. Bull. Raffles Mus., 1, 147—49.
— 1939: Iets over prae-hinduistische bijzettingsgebruiken op Java. Meded. Kon Akad. v. Wetensch., afd. Letterkunde, dl. 2, no. 5.
Takeshi Kagamiyama 1955: Dolmens in Western Japan. Bull. of the Faculty of Literature, Kyushu University, 3, 1—73.
Tallgren, A. M. 1926: La Pontide préscytique après l'introduction des métaux. ESA, 2.
— 1930: Caucasian movements: the Kazbek treasure. ESA, 5, 109—82.
— 1937: The Arctic Bronze Age. ESA, 11, 1—46.
Tichelman, G. L. 1954/55a: Rotstekening van een bronzen bijltje. Tijdschr. Nieuw Guinea, 75—9.
— 1954/55b: Analogieën van het bronzen bijltje van Sentani. Tijdschr. Nieuw Guinea, 105—11.
Tichelman, G. L. en Voorhoeve, P. 1938: Steenplastiek in Simaloengoen. Medan.
Tillema, H. F. 1931/32: Doodenpalen, Tiwah en lijkverbranding op Borneo. NION, 16, 131—56.
Tricht, B. van 1929: Levende antiquiteiten in West Java. Djawa, 9, 43—120.
Tweedie, M. W. F. 1955: Prehistoric Malaya. Background to Malaya series, No. 6. Singapore.
Umehara, Sueji 1935: L'étude sur le miroir antérieur à la dynastie Han. Kyoto.
Verhoeven, T. und Heine Geldern, R. 1954: Bronzegeräte auf Flores. Anthropos, 49, 683—84.
Visser, H. F. E. 1917: Over ornamenteerkunst op Seran. Med. Kolon. Inst., IX, 93—104.
Vonk, H. W. 1934: De 'batoe tatahan' bij Air Poear (Pasemah-landen). TBG, 74, 296—300.

Voorhoeve, P. 1939a: Stenen beelden in Simaloengoen. Cult. Indië, 1, 362—66.
— 1939b: Stenen potten, reliëfs en grafstenen in Simaloengoen. Cult. Indië, 1, 395—97.
Vroklage, B. A. G. 1936: Das Schiff in den Megalithkulturen Südostasiens und der Südsee. Anthropos, 31, 712—57.
— 1939: Beeldhouwwerk uit de Manggarai (West-Flores). Cult. Indië, 1, 356—61; 389—94.
Westenenk, L. C. 1921: Uit het land van Bittertong (Zuid-Sumatra).
— 1922: De Hindoe-oudheden in de Pasemah-Hoogvlakte (Residentie Palembang). OV, 31—7.
Wielenga, D. K. 1923: Doodencultus op Soemba. De Macedoniër, 292—310.
Willems, W. J. A. 1938: Het onderzoek der megalithen te Pakaoeman bij Bondowoso. Rapport Oudh. Dienst, 3. Batavia.
— 1940a: Preliminary report on the excavation of an urn-burial ground at Sa'bang near Paloppo (Central-Celebes). Proc. Third Congr. of Prehistorians, Singapore, 207—8.
— 1940b: De necropool van Melolo (Oost-Soemba). Notulen Bataviaasch Genootschap, 68 (stencilled).
Winstedt, R. O. 1941: Slab-graves and iron implements. JMBRAS, 19, 93—8.
Wirz, P. 1952: Die Entlehnung eigenen und fremden Kulturgüter in Neuguinea. Ver. Naturf. Ges. Basel, 63, 187—214.
Worsaae, J. J. A. 1878/83: Des âges de pierre et de bronze dans l'Ancien et le Nouveau Monde. Mém. Soc. Roy. Antiquaires du Nord, 131—243.

PLATES



Pl. 1. Bronze socketed axes. B, C, E, H, J, with swallowtails.



Pl. 2. Bronze tools.

A. Socketed Hoe; 165 x 156 x 34 mm.: Bali.

B. Socketed Hoe; 108 x 85 x 18 mm.: Bali.

C. Votine axe; 55 x 50 x 13 mm.: Bali.

D. Socketed Hoe; 157 x 96 x 20 mm.: Celebes.

E. Hoe; 134 x 65 x 16 mm.: Kediri, Java.

F. Hoe; 223 x 100 x 20 mm.: Bali.



Pl. 3. Bronze ceremonial axe adorned with a bird of prey (in its claws another halbèrd) · Tuban Java.



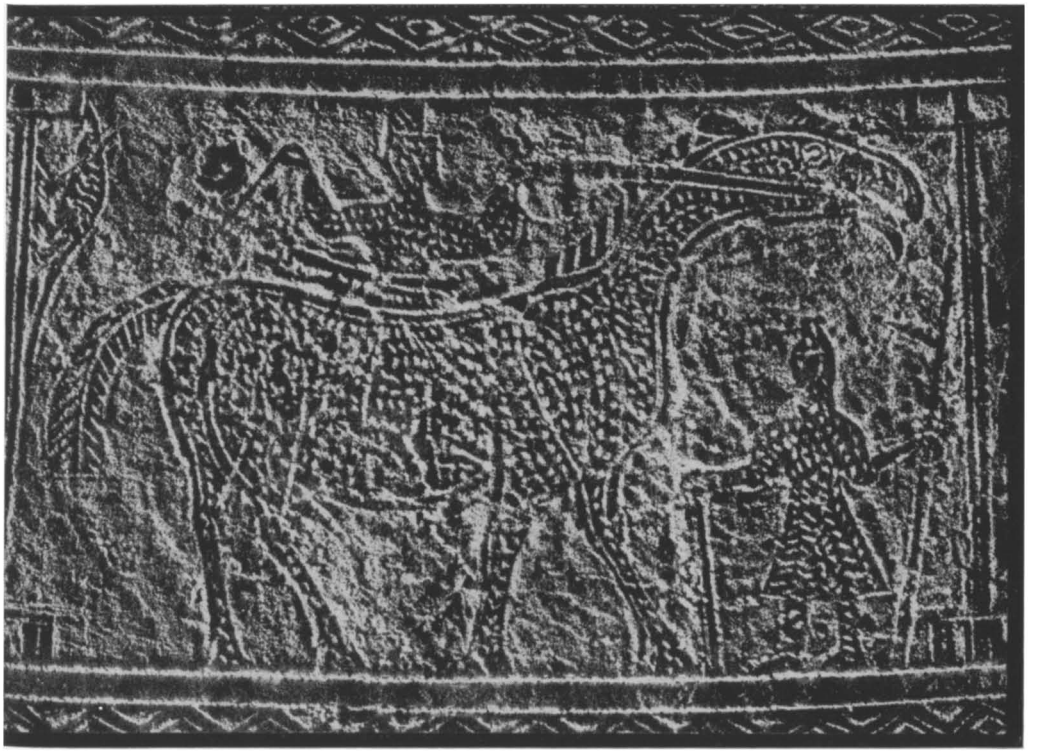
Pl. 4. Kettle drum type Heger I: Java.



Pl. 5. Miniature kettle drums probably used as funeral gift. Left: Tjibadak, Java. Right: Alor Island.



Pl. 6. Decorated tympan of the kettle drum named Makalamau: Sangeang Island, Sumbawa.



Pl. 7. Decorated body of the kettle drum named Makalamau: Sangeang Island, Sumbawa.



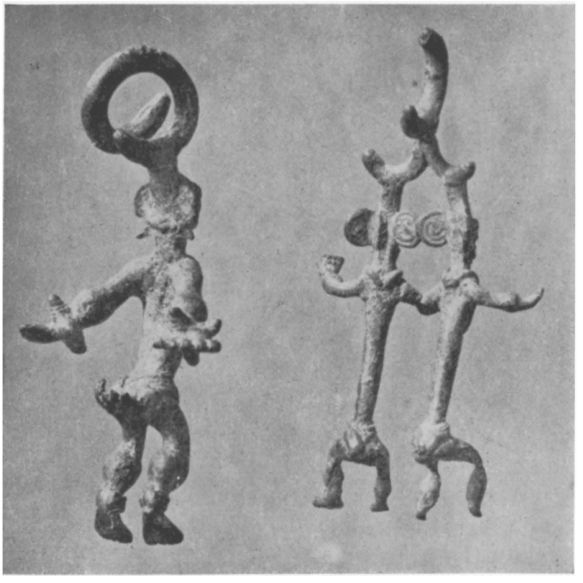
Pl. 8. Bronze vessel: Lake of Kerinchi, Sumatra.



a



b



c



d

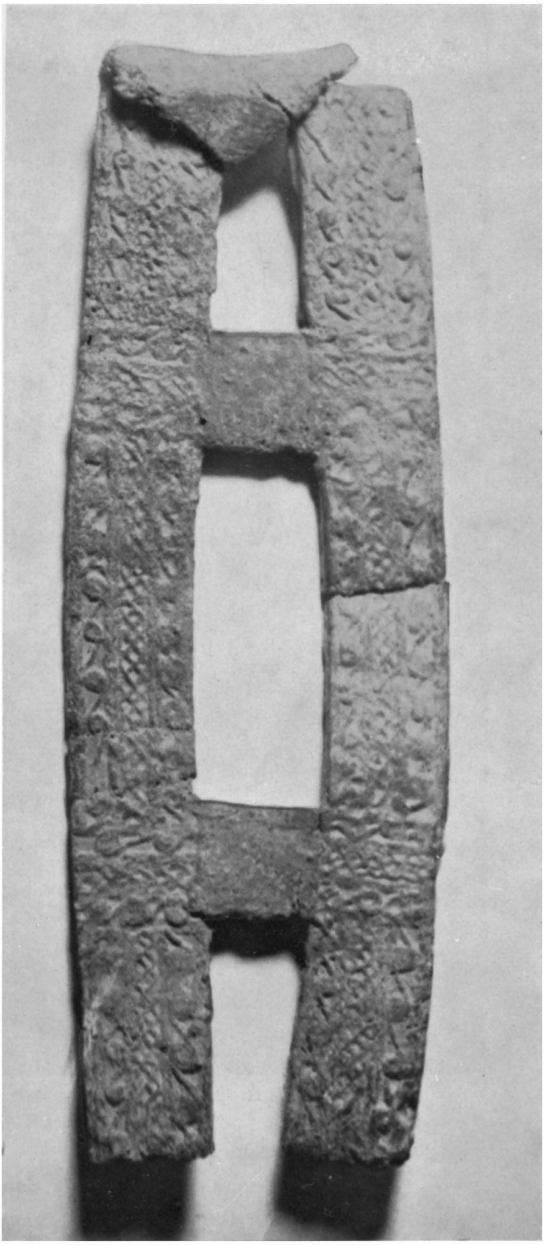
Pl. 9. Bronze figurines (dancers) and a bracelet: Bangkinang, Sumatra.



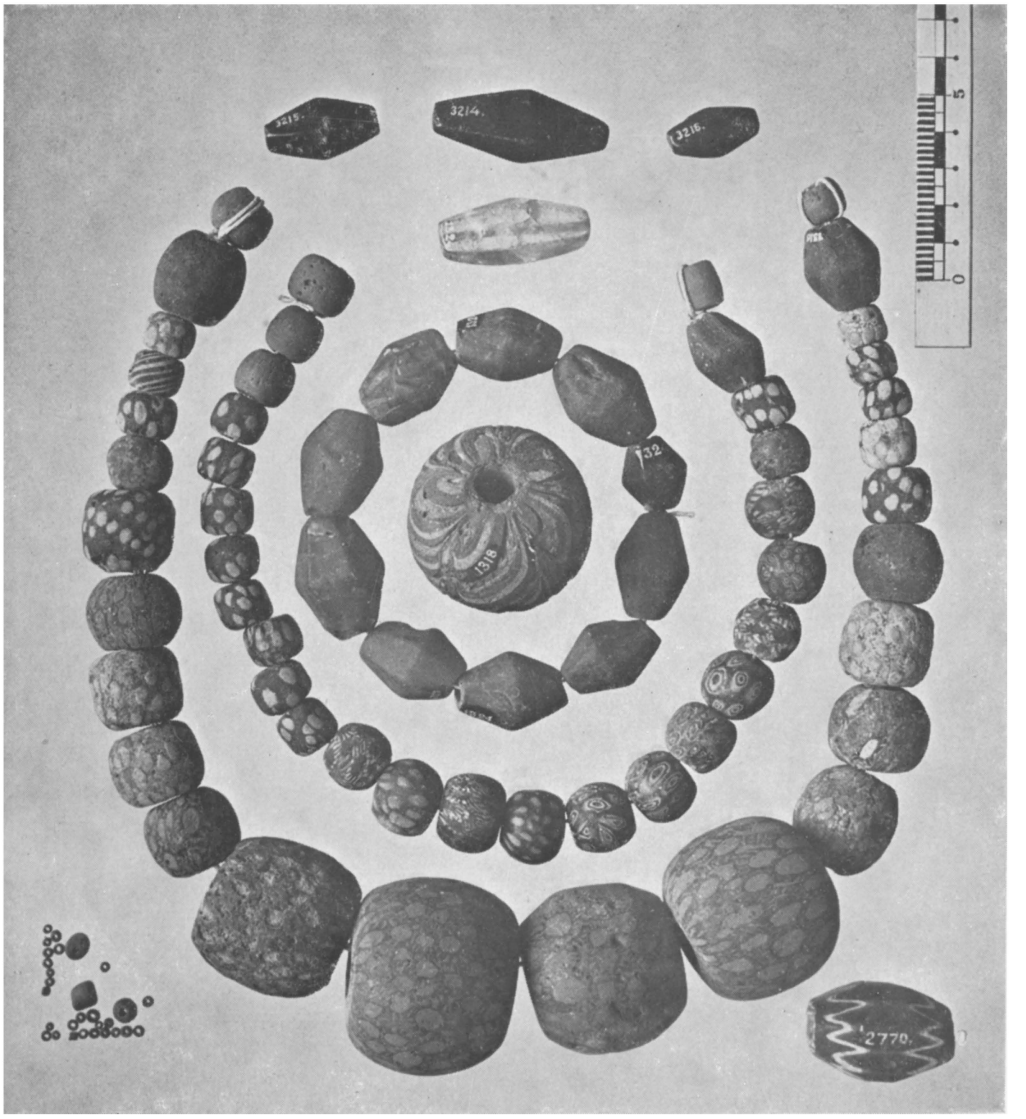
Pl. 10. A 'Tartar' archer mounted on a horse: Tiris, East Java.



Pl. 11. Dagger with bronze hilt and iron blade: Pradjekan, Java.



Pl. 12. Bronze belt's buckle: Pradjekan, Java.

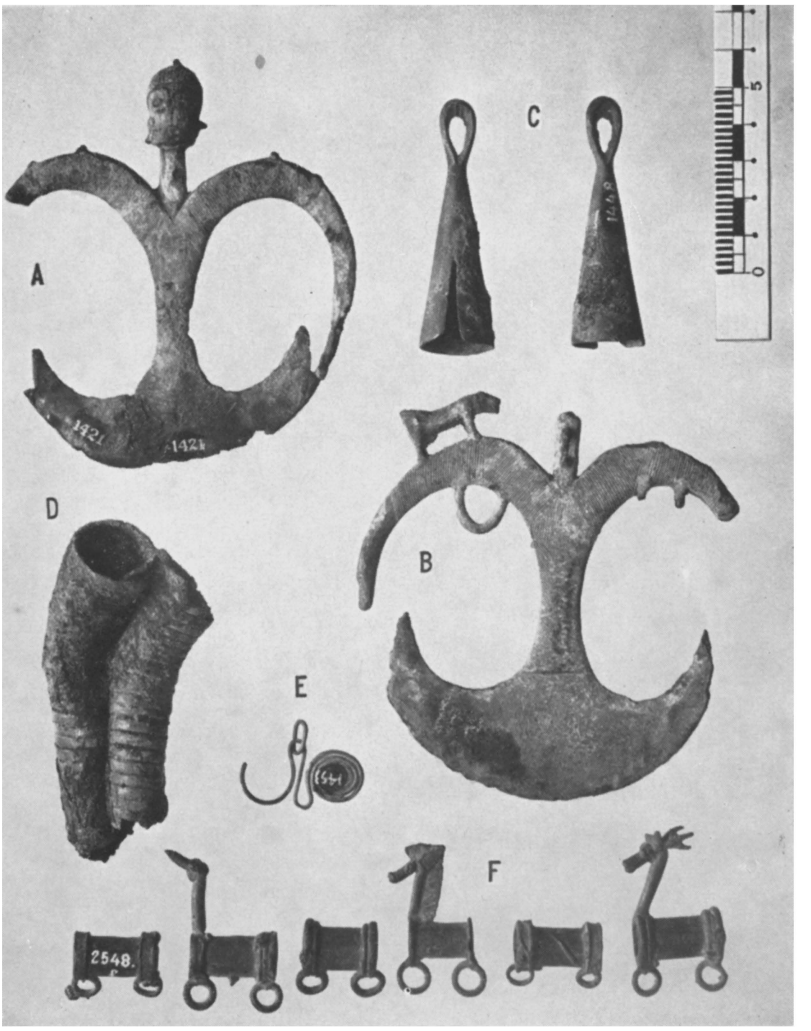


Pl. 13. Prehistoric beads.

The two outmost strings from a dolmen: Besuki, Java. The third string: Ulu Sungei, South East Borneo. The large bead in the centre: Kediri, Java. At the top three carnelian beads from Sangiran, Java. Under it one bead of quartz from Ulu Sungei, South East Borneo. Below left side a series of *mutisalahs* from a stone-cist: Pasemah, Sumatra. Below right side: South Sumatra.



Pl. 14. Bronze armour plate for the protection of the arm:
Lake of Kerinchi, Sumatra.



Pl. 15. Various bronze ornaments.

A-B Stylized human figurines as pendants: Bogor, Java. — C Bell-shaped pendants: sarcophagus, Bali. — D spiral-shaped finger-stall: sarcophagus Bali. — E. Fragment of a double-spiral forming part of a necklace: sarcophagus, Bali. F Necklace: South Malang.



Pl. 16. Megalithic grave (*waruga* style):
Tlagasarih, Besuki, Java.



Pl. 17. Sarcophagus with human and animal figures: Krètèk, Besuki, Java.



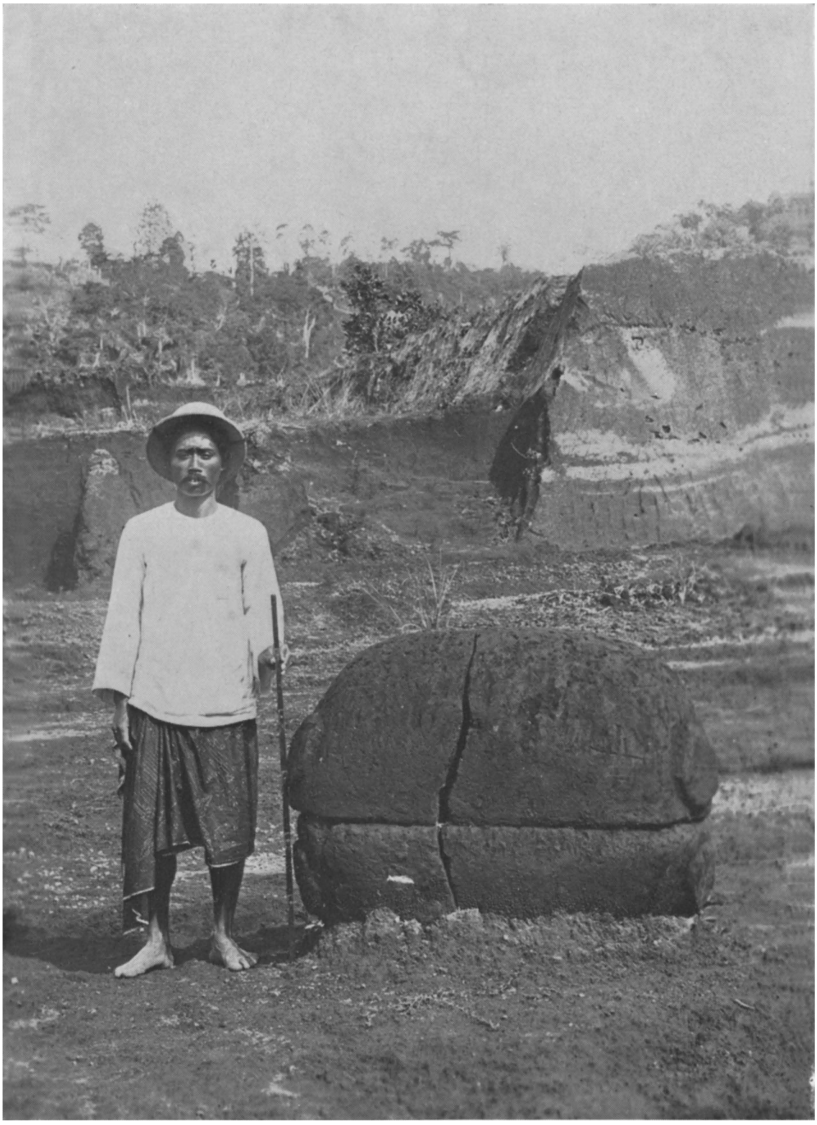
By courtesy of A. Christie.

Pl. 18. Megalithic grave (restored after excavation): Pakouman, Java.

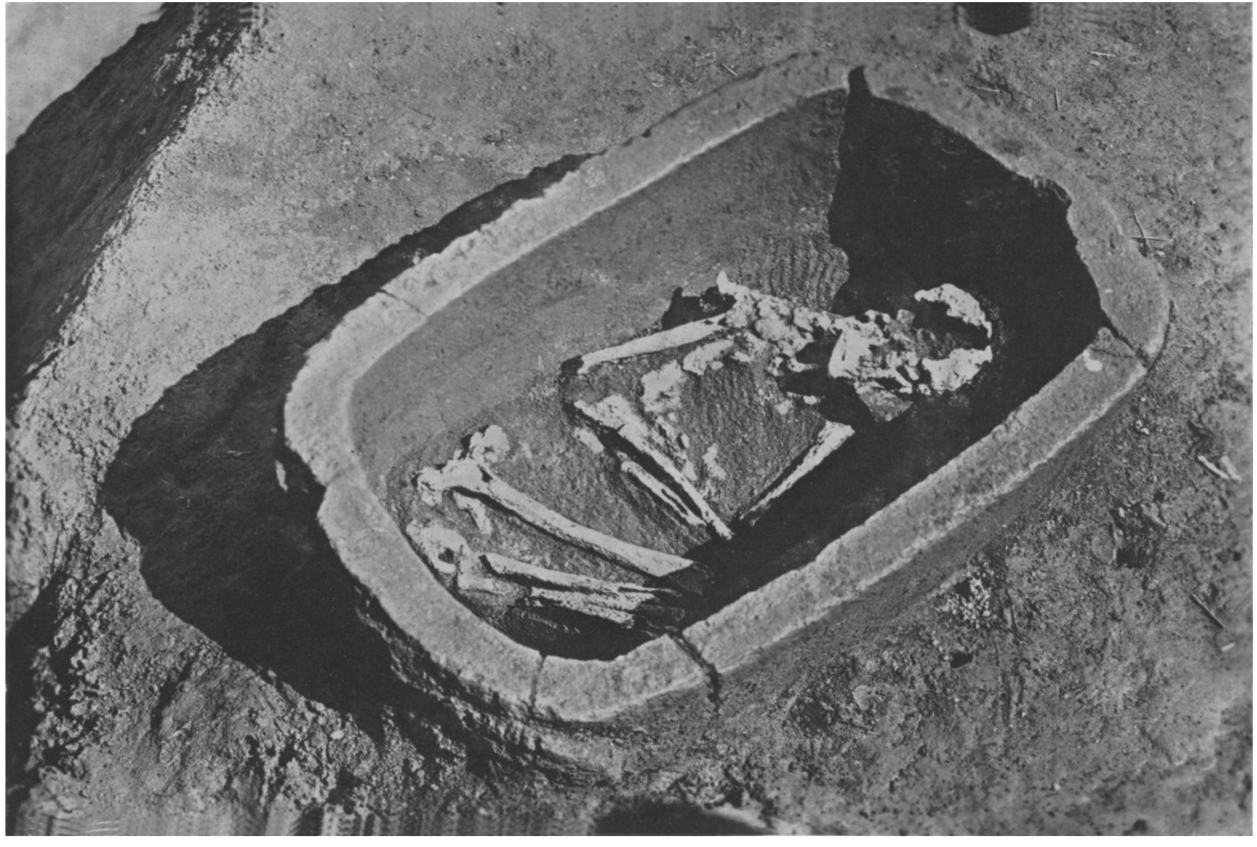


By courtesy of A. Christie.

Pl. 19. Stone steatopygous image: Pakouman, Java.



Pl. 20. Sarcophagus (small type): Petang, Bali.

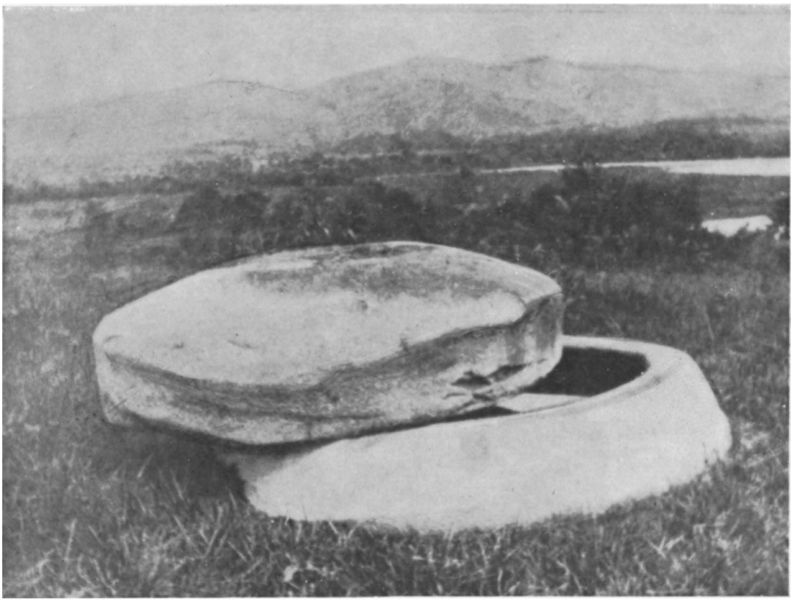


Pl. 21. Flexed burial in a small sarcophagus: Petang, Bali.



After W. Kaudern.

Pl. 22. Huge stone vat: Besoha, Celebes.



After W. Kaudern.

Pl. 23. Stone vat with lid: Bada, Celebes.



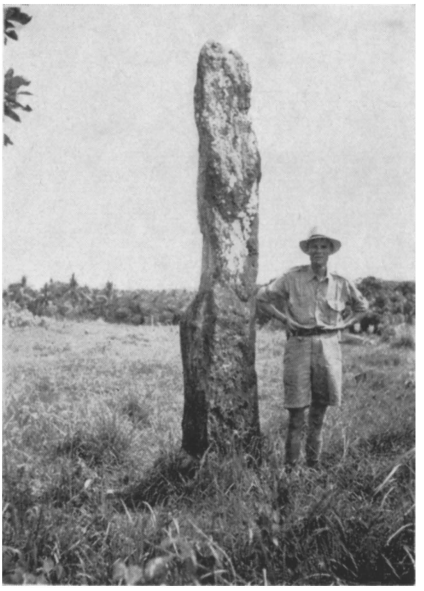
After W. Kaudern.

Pl. 24. Stone image: Bada, Celebes.



After W. Kaudern.

Pl. 25. Stone image: Besoha, Celebes.



Pl. 26. Menhir: Sengkang, South Celebes.



After A. N. J. van der Hoop.

Pl. 27 Warrior mounted on a buffalo: Pematang, Sumatra.



After A. N. J. van der Hoop.

Pl. 28. Same image, left side.



After A. N. J. van der Hoop.

Pl. 29. Head of a warrior: Pageralam, Sumatra.



Pl. 30. Warrior mounted on an elephant: Batugadjah, Sumatra.



After H. W. Vonk.

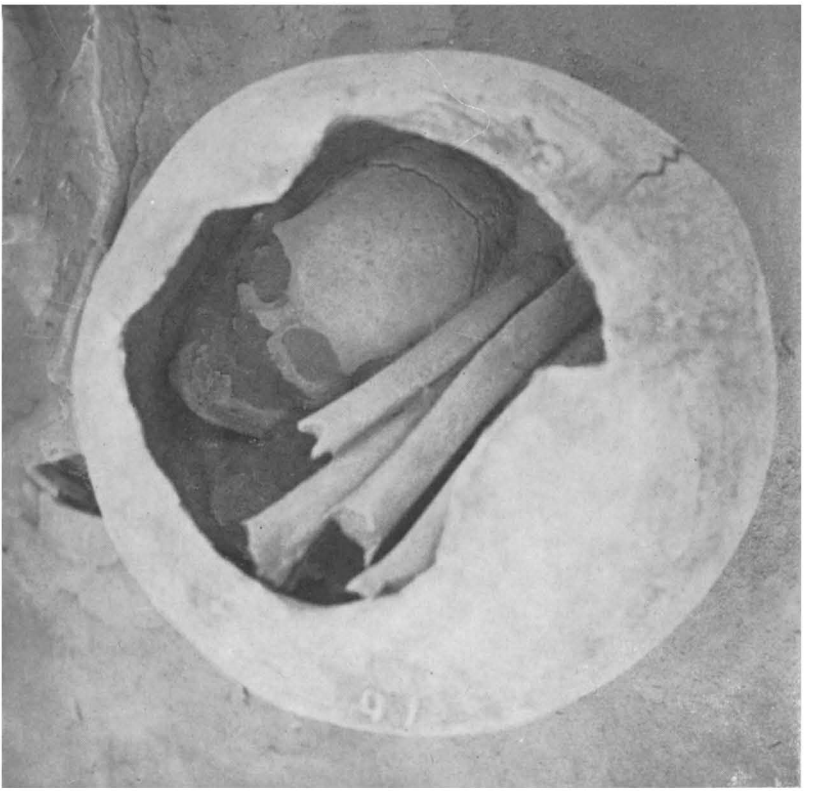
Pl. 31. Two warriors carrying a kettle drum: Airpurah, Sumatra.



Pl. 32. Funeral gift in urn: Tebingtinggi, Sumatra.



Pl. 33. Funeral gift in urn: Melolo Cemetery, East Sumba.



Pl. 34. Urn containing human skull and some limb bones: Melolo Cemetery, East Sumba.

FIGURES

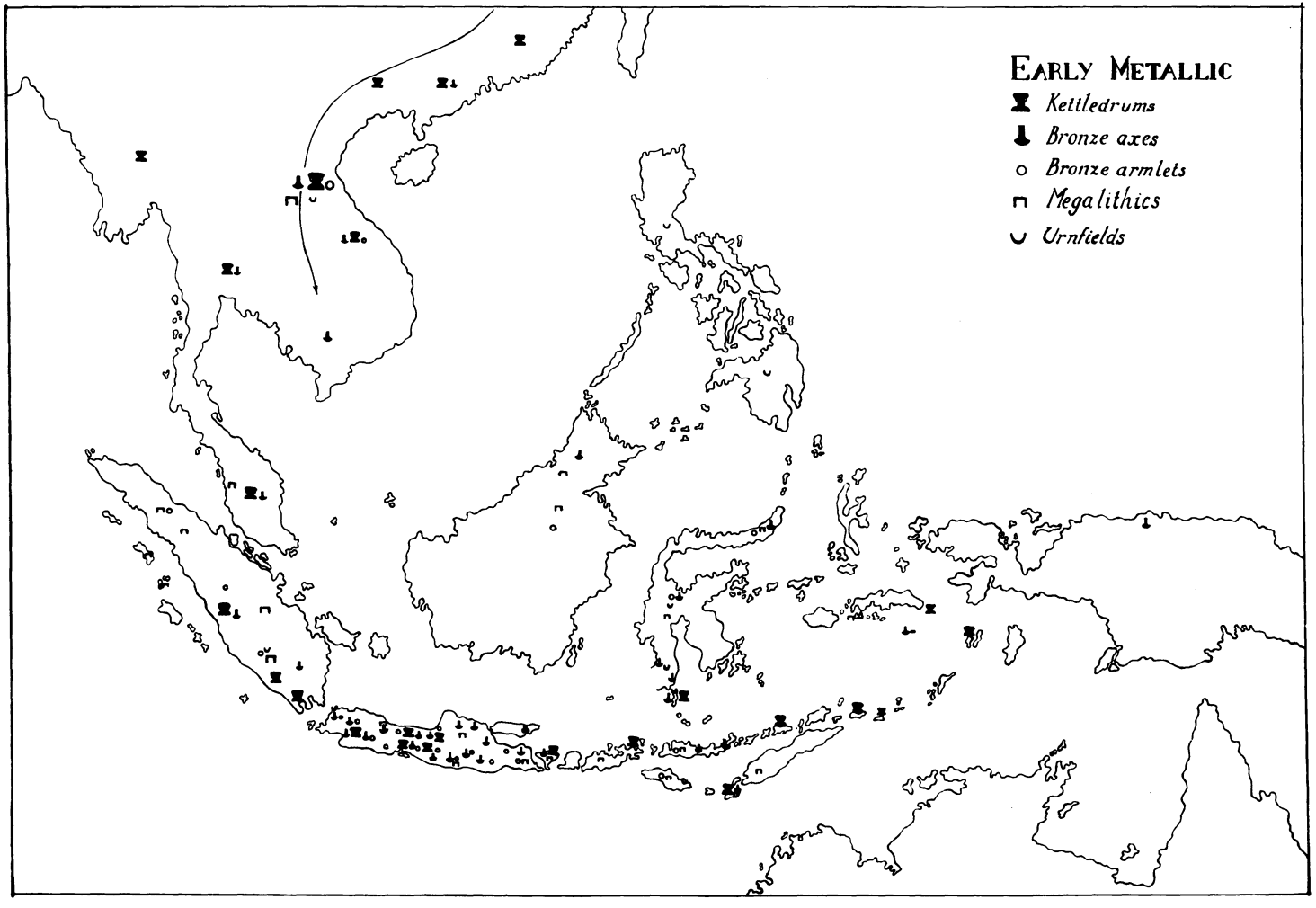


Fig. 1. Distribution Bronze-Iron Age elements.

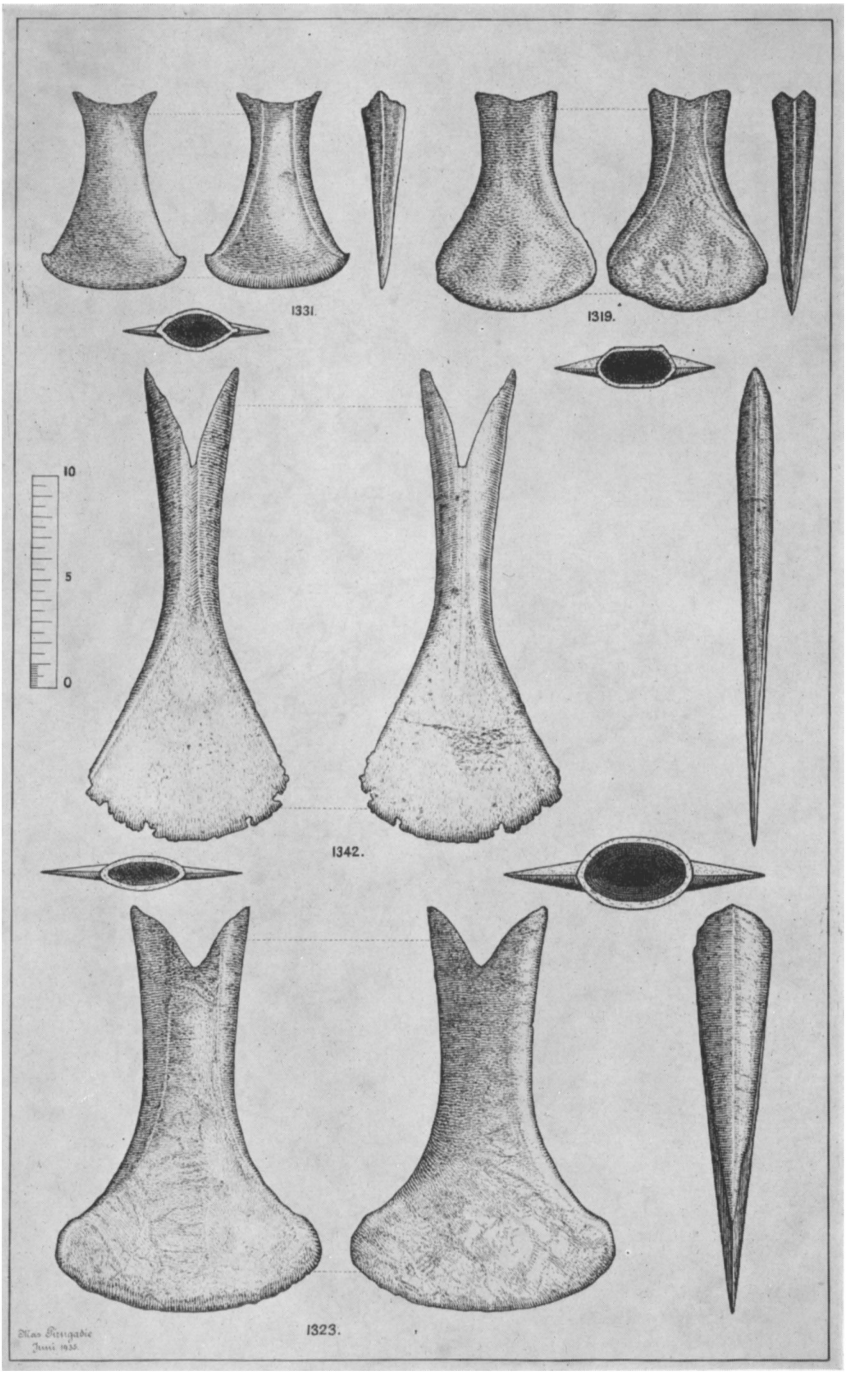


Fig. 2. Bronze socketed axes, some of them with swallowtails.

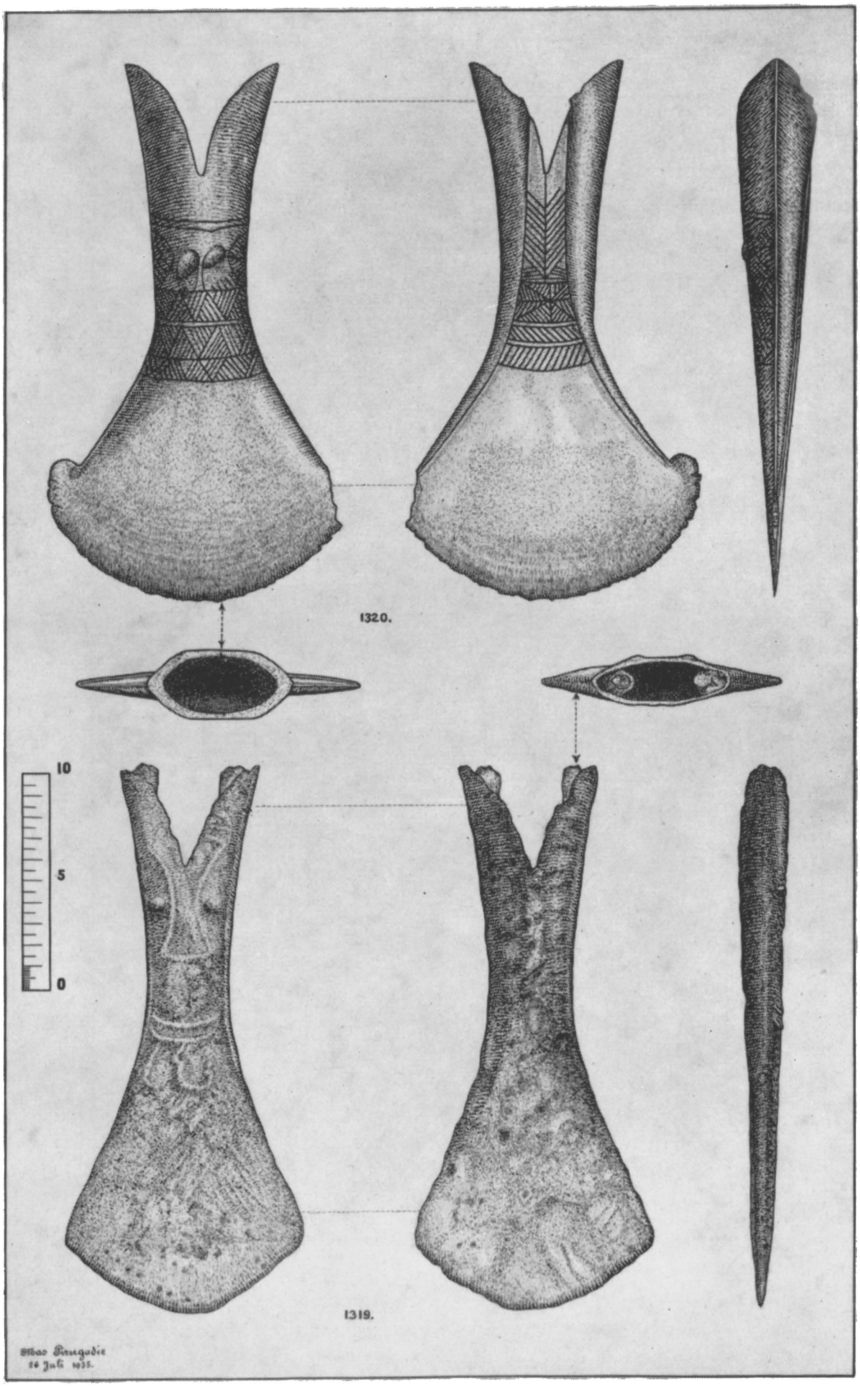


Fig. 3. Bronze swallowtailed socketed axes with ornaments.

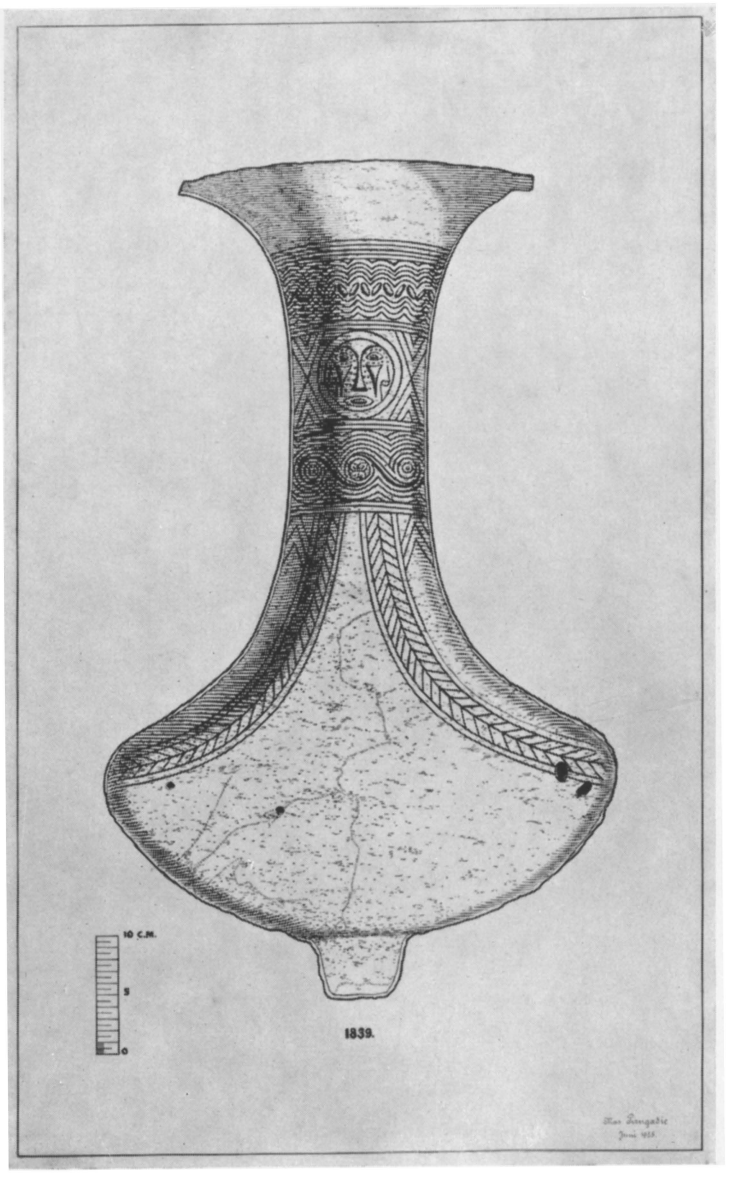


Fig. 4. Ornamented socketed axe; giant size: Macassar.

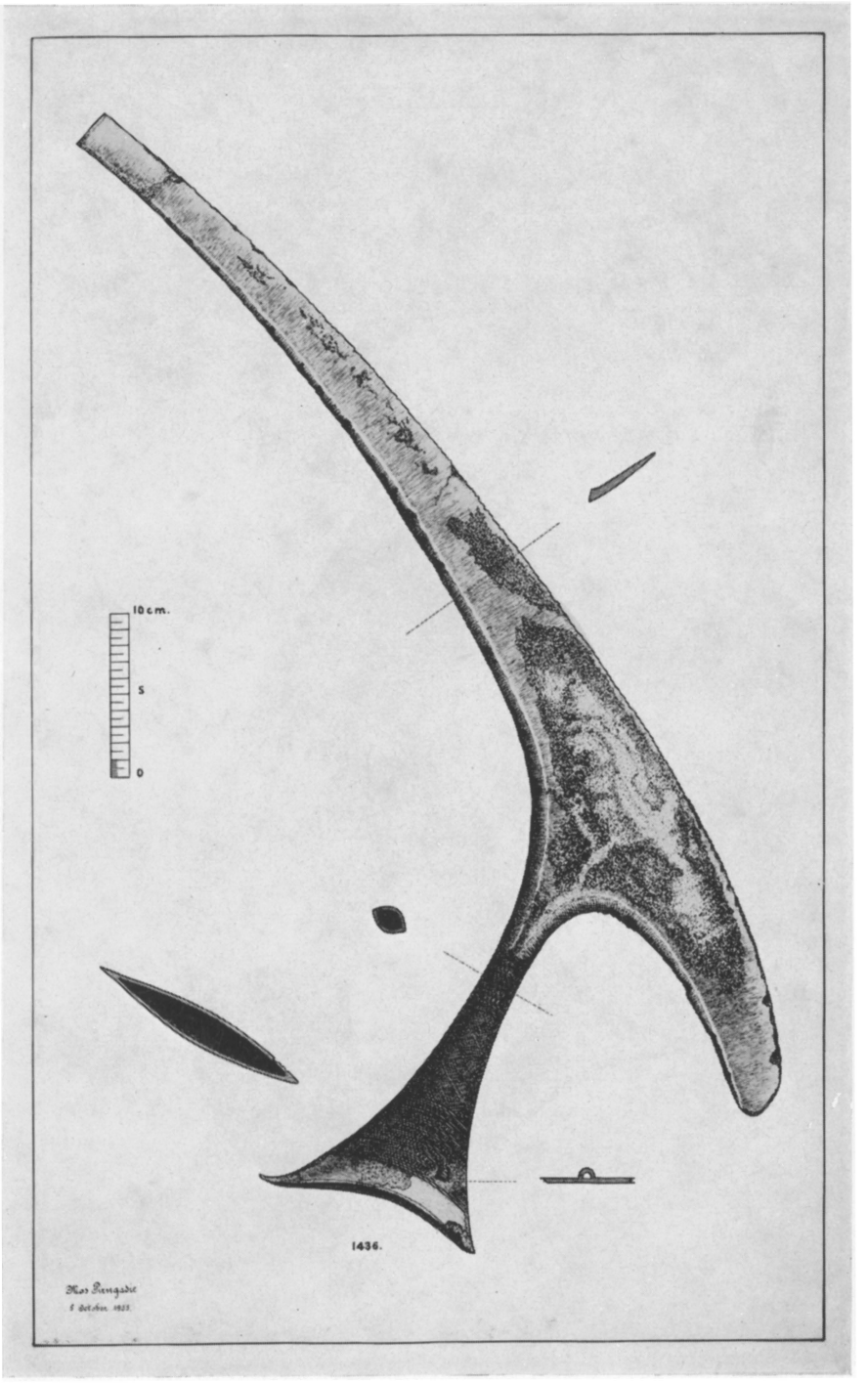


Fig. 5. Bronze ceremonial axe or halberd: Bandung, Java.

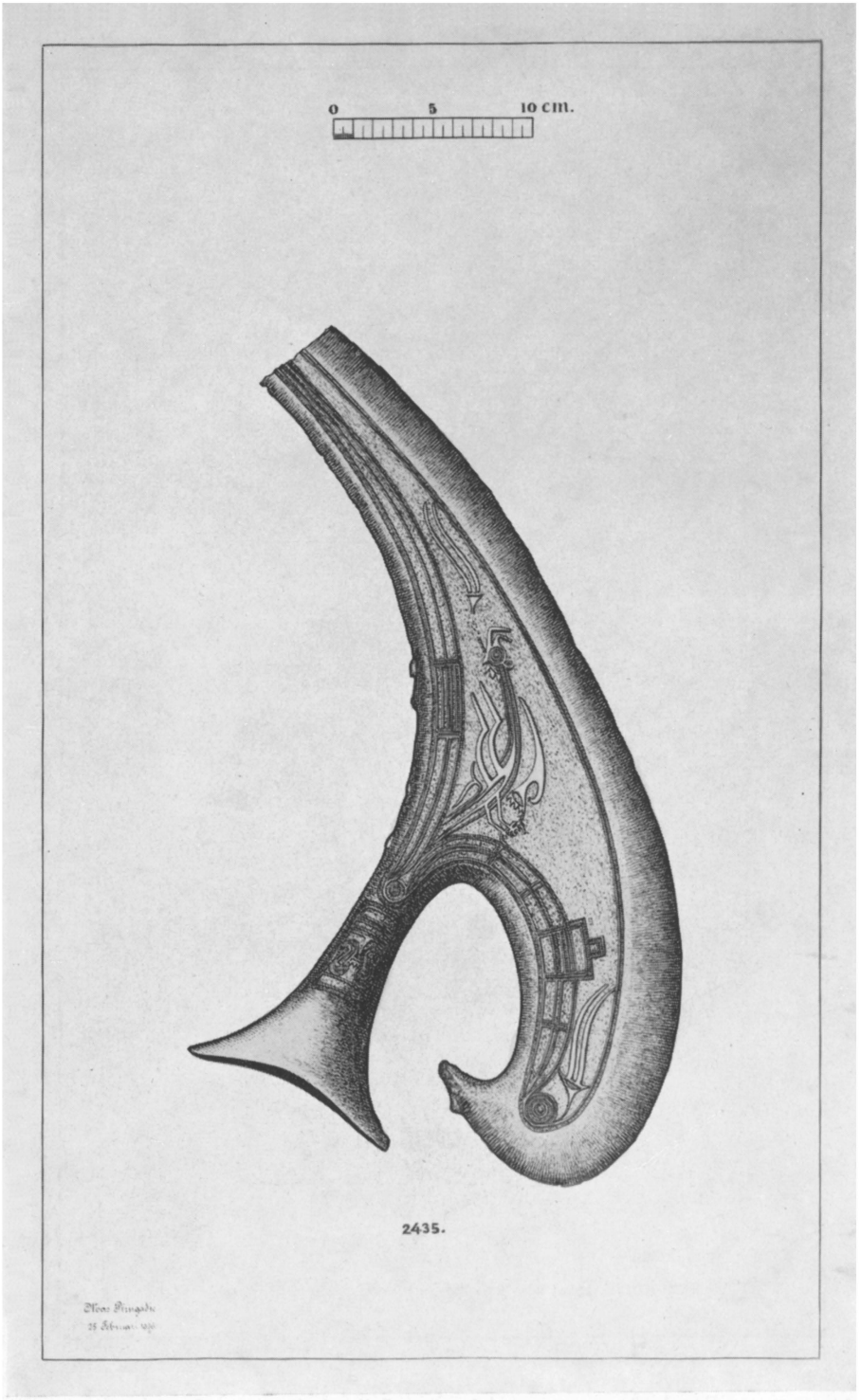


Fig. 6. Bronze ceremonial axe adorned with a bird of prey carrying a similar axe in its claws.

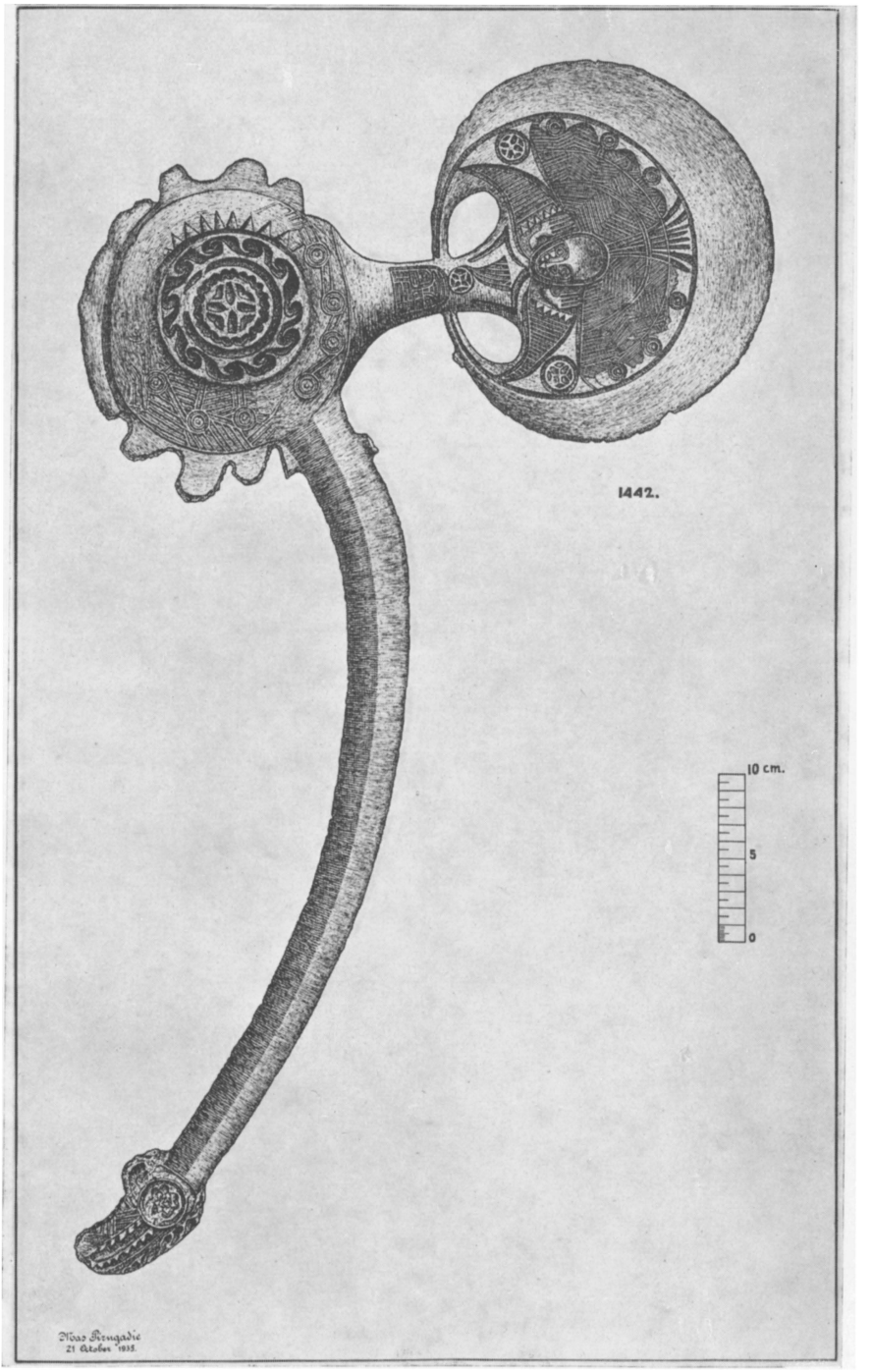
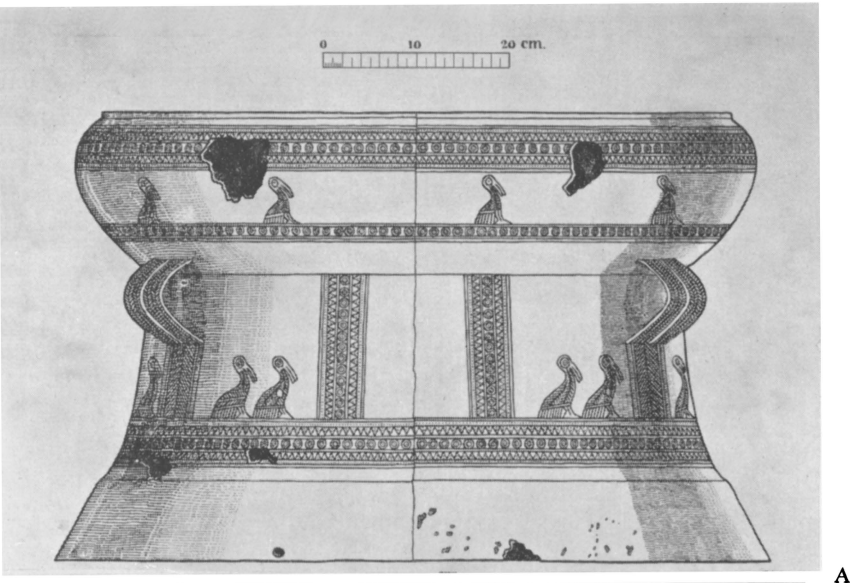
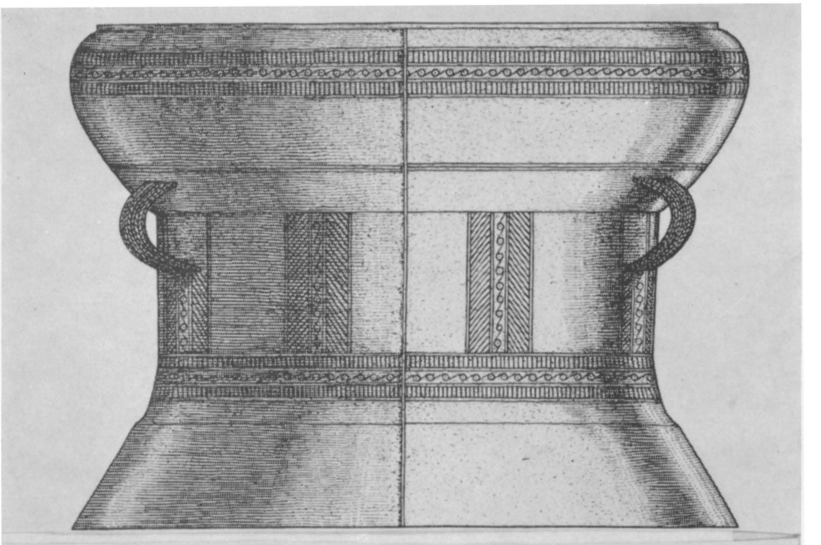


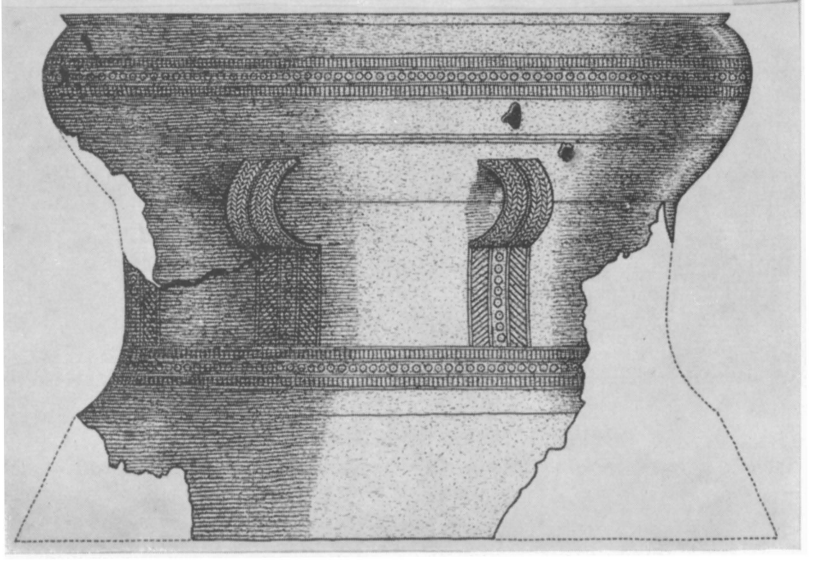
Fig. 7. Bronze ceremonial axe: Roti.



A.



B.



C.

Fig. 8. Kettle drums type Heger I. Above: Tjiandjur, Java. — middle: Semarang, Java. — below: Banjumas, Java.

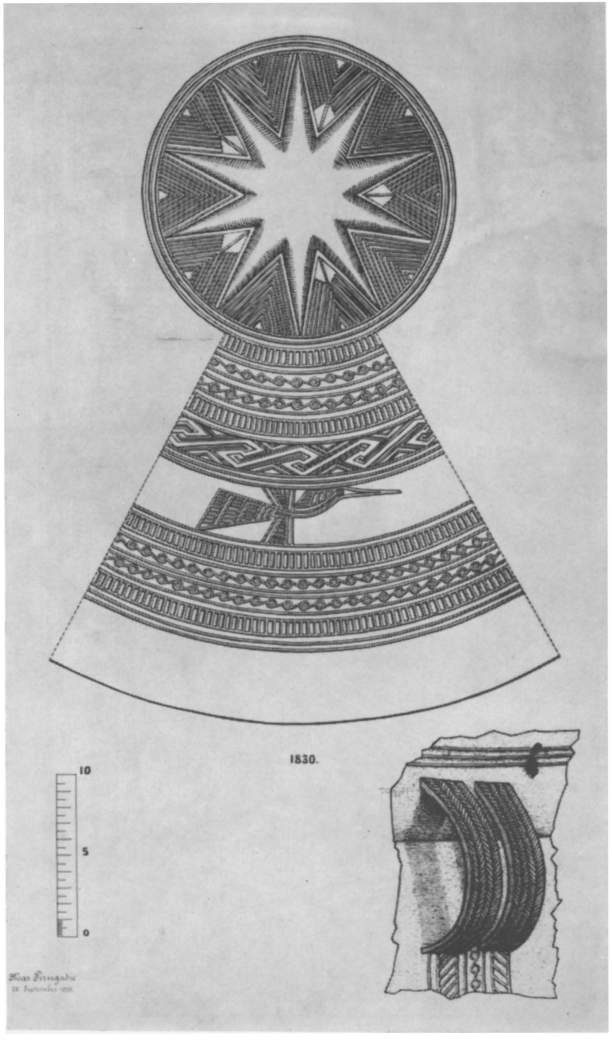


Fig. 9. Decorated tympan of a kettle drum: Banjumas, Java.

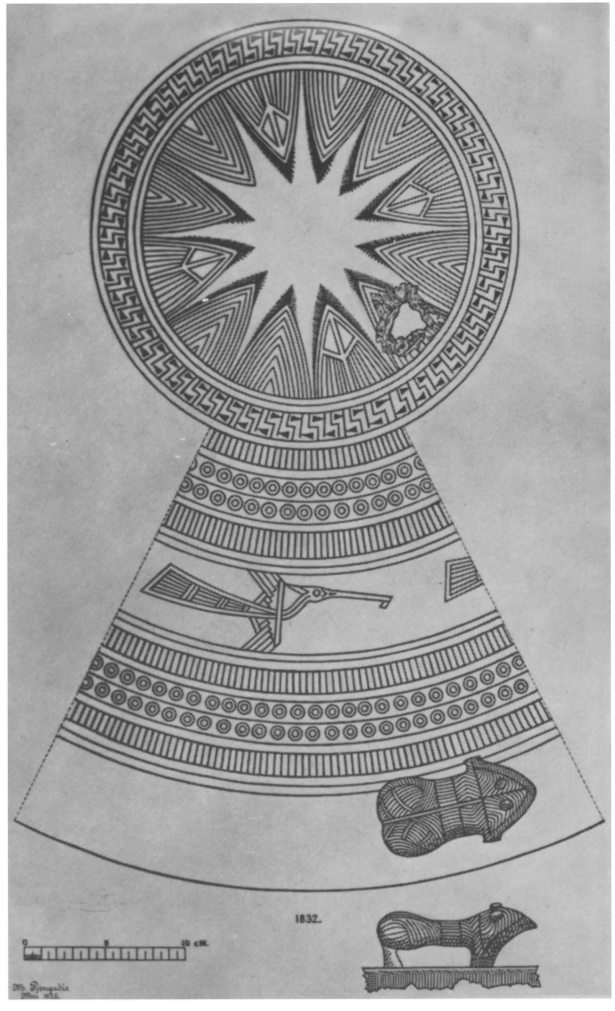


Fig. 10. Decorated tympan of a kettle drum: Semarang, Java.



Fig. 11. Mask ornament on the drum of Pedjeng, Bali.

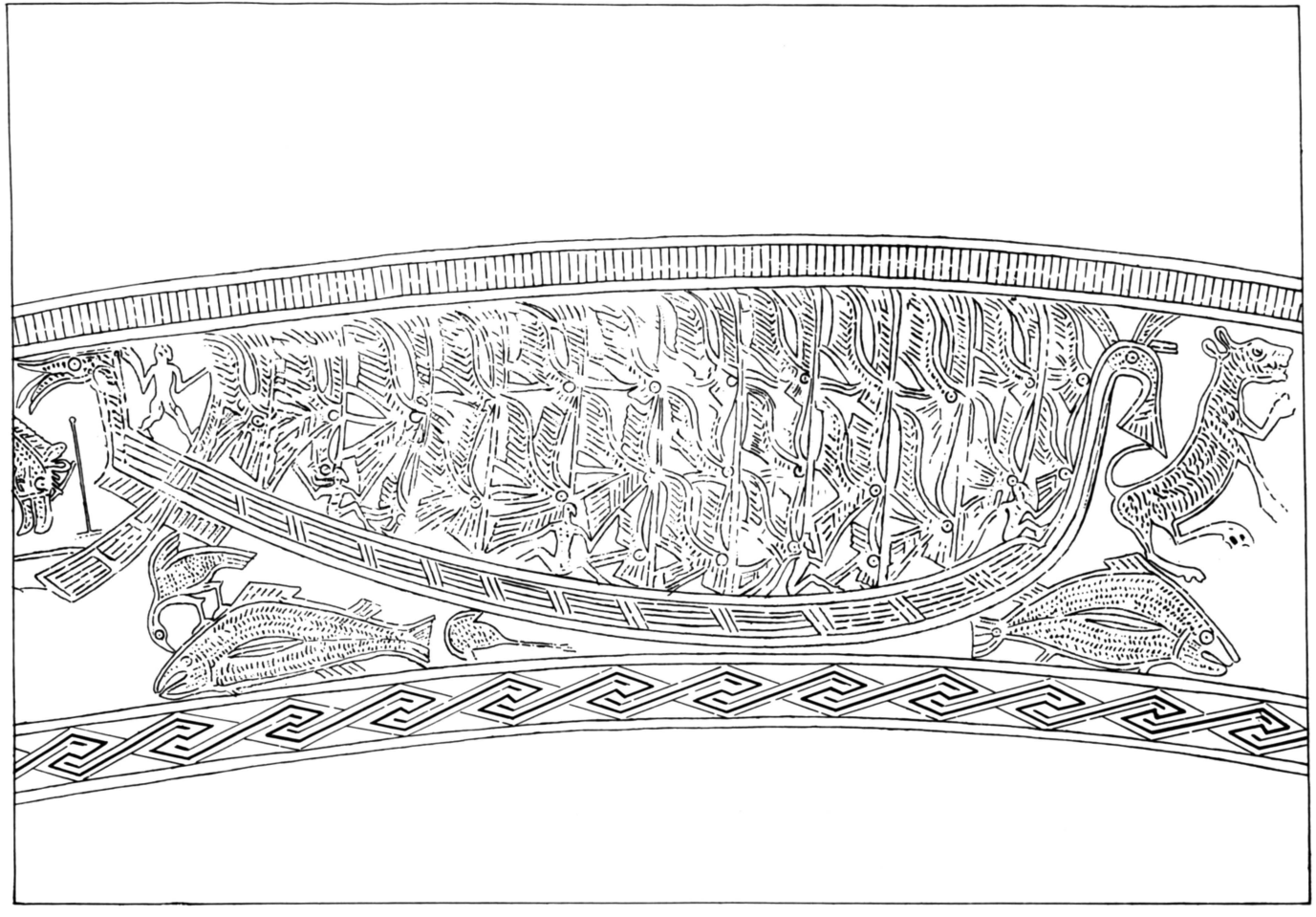


Fig. 12. Decorated upper portion of the body of a kettle drum: Sangeang Island, Sumbawa.

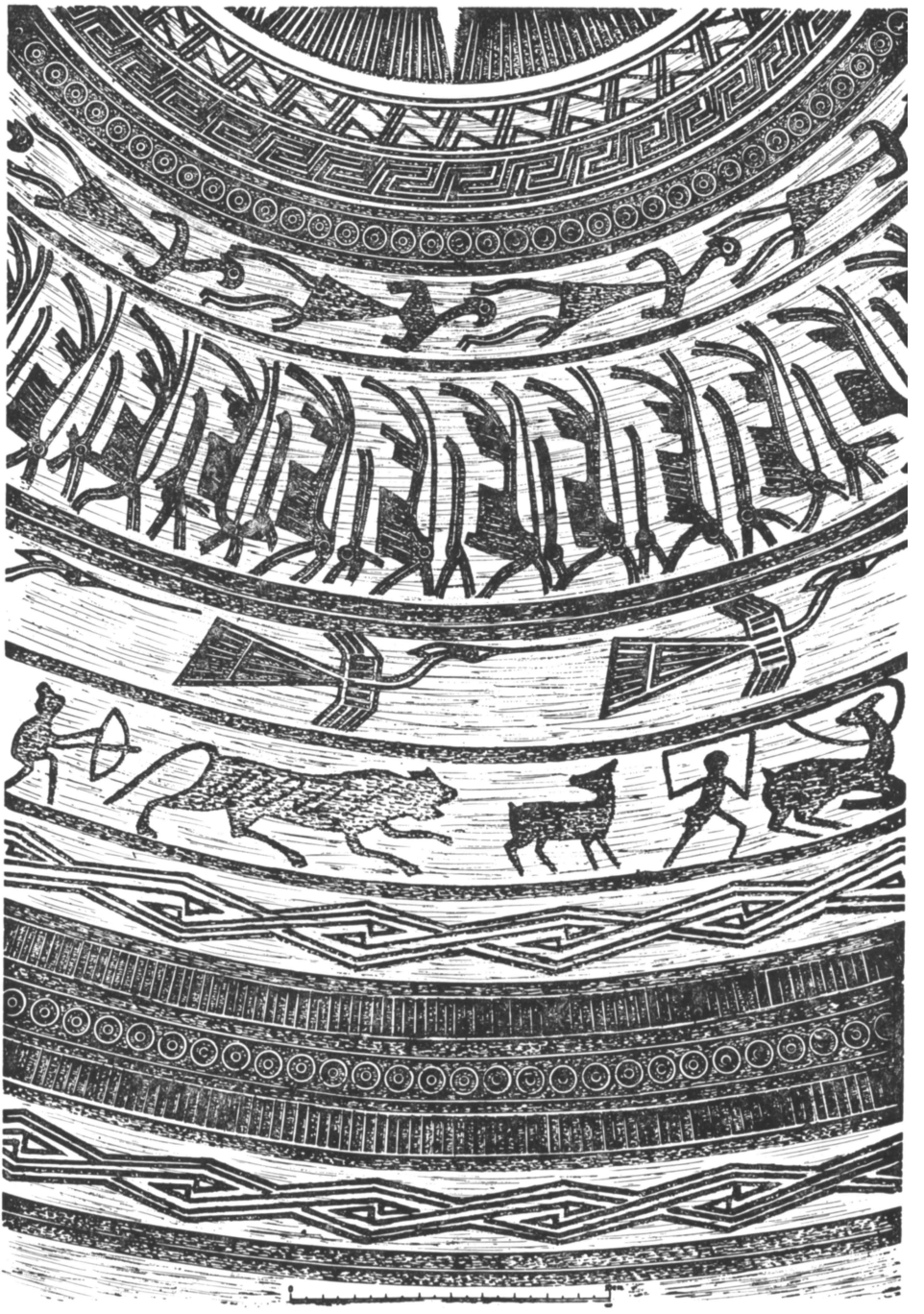


Fig. 13. Decorated tympan of a kettle drum: Kai Islands.

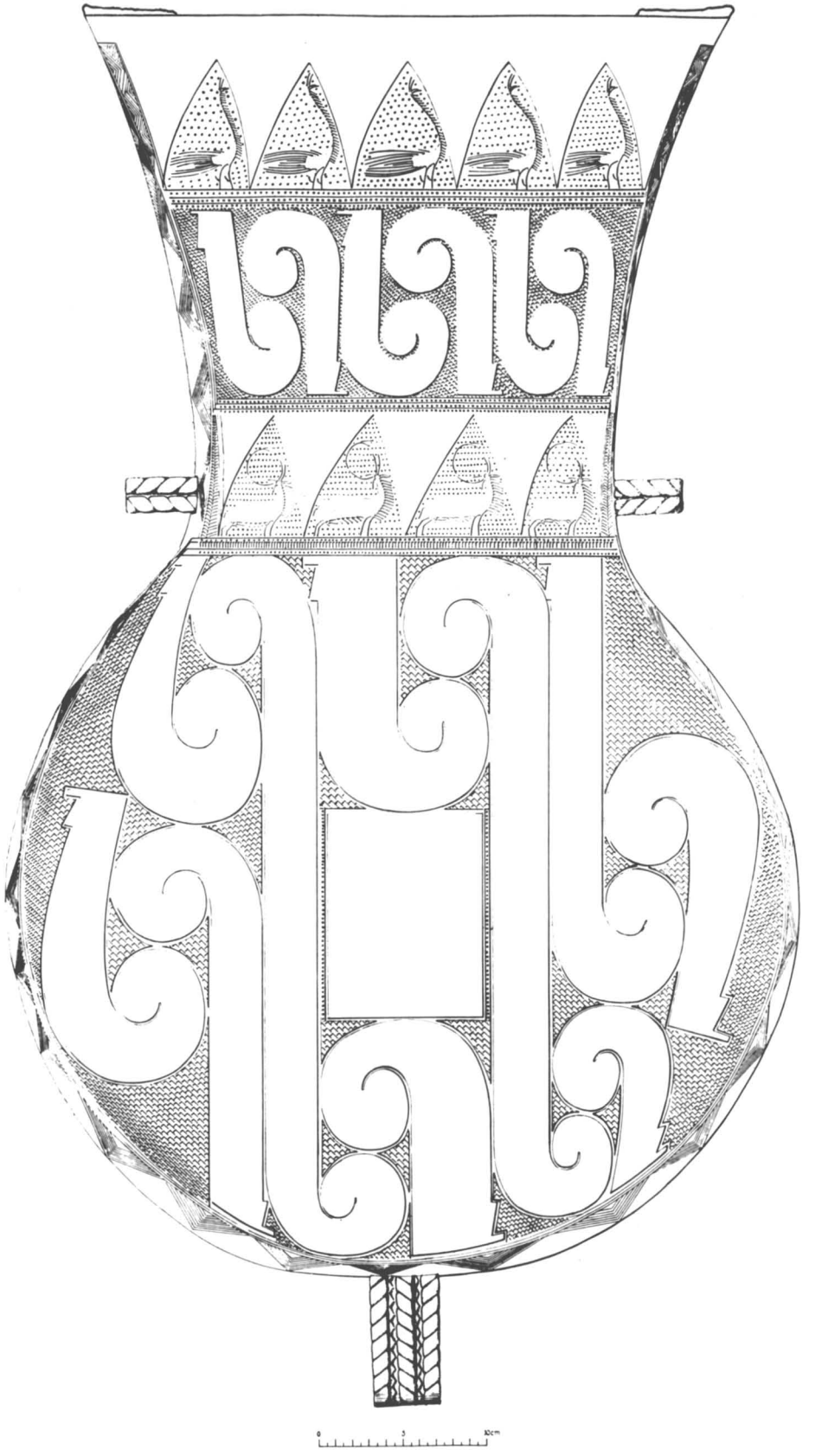


Fig. 14. Decorated vessel of bronze from Madura.

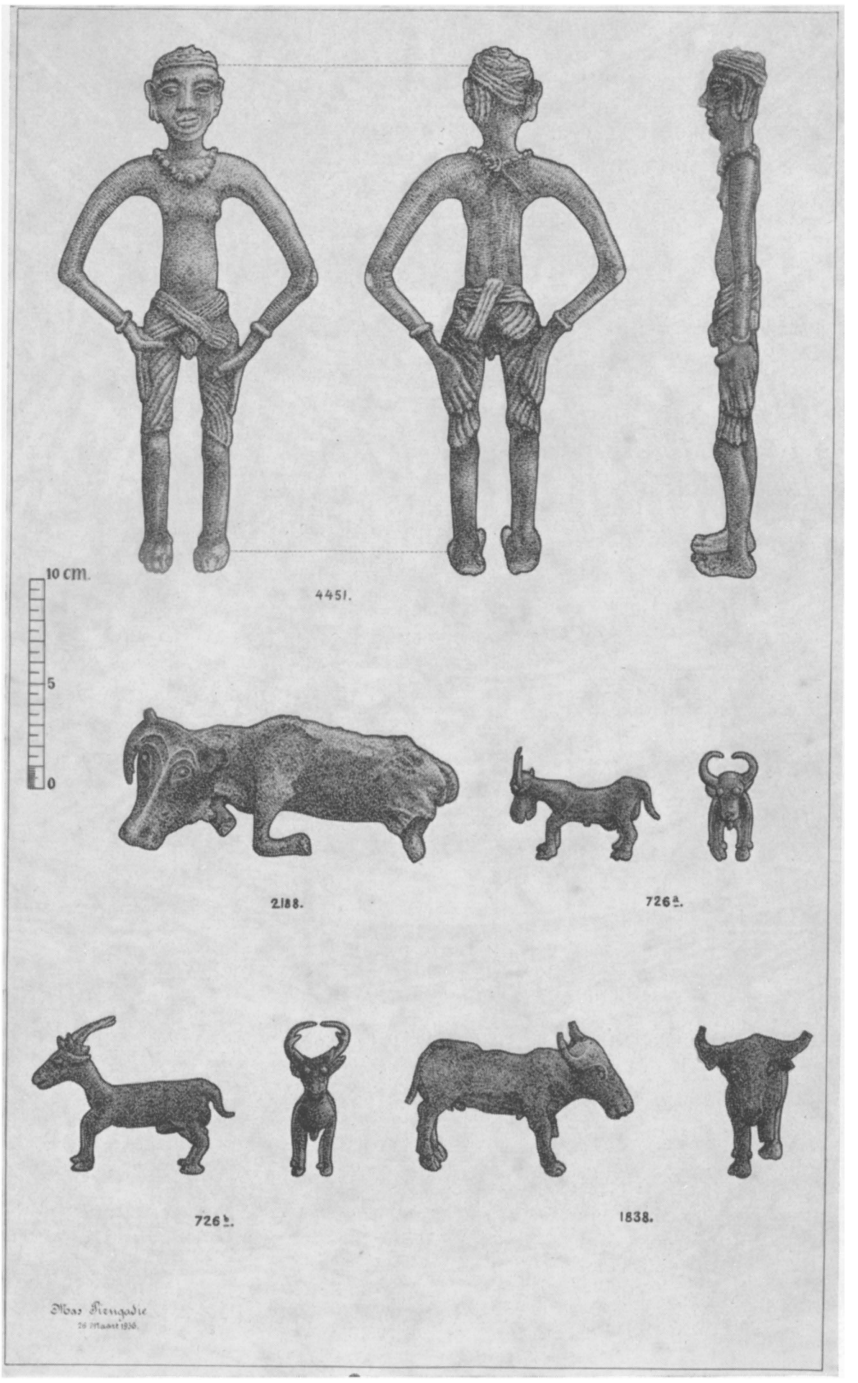


Fig. 15. (4451): Satus, Bogor, Java. — (2188): Limbangan, Priangan, Java. — (726): Karanganjar, Kedu, Java. — (1838): Limbangan, Priangan, Java.

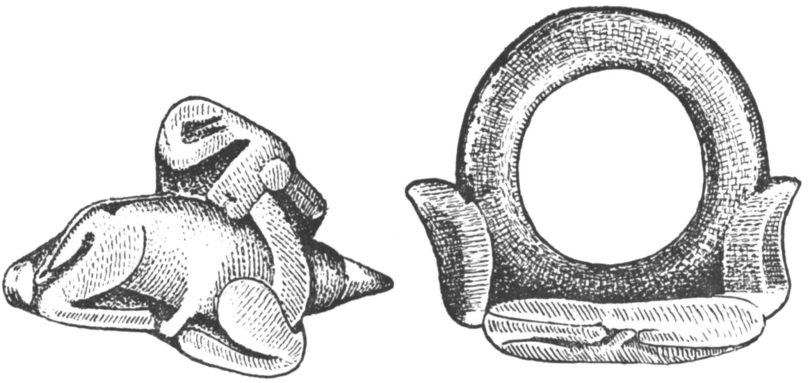
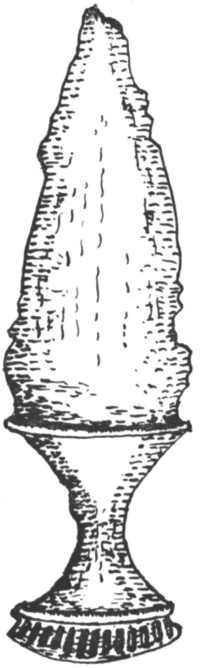


Fig. 16. Bronze ring (Ordos style): Kedu, Java. 1½ natural size.



After Th. Verhoeven.

Fig. 17. Bronze dagger (Dongson type): Badjawa, Flores.

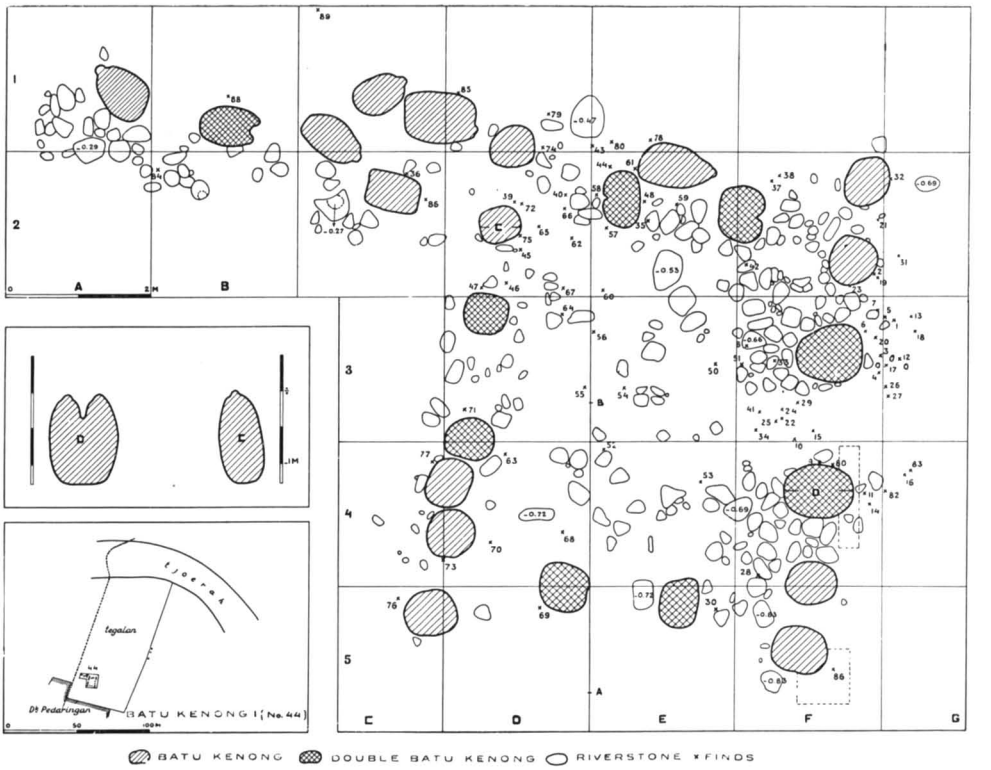


Fig. 18. Batu kenong I: Pakouman, East Java. (Excavation).

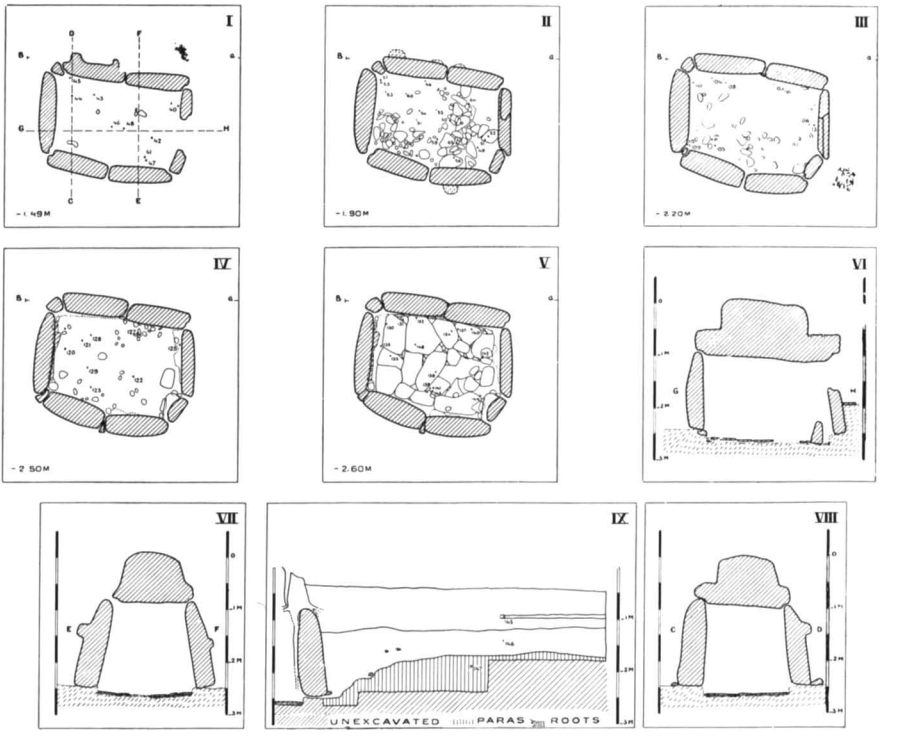


Fig. 19 Megalithic graves: Pakouman, East Java. (Excavation).



After C. W. P. de Bie.

Fig. 20. Wall-painting stone-cist: Tanjungara, Pasemah, Sumatra.



After C. W. P. de Bie.

Fig. 21. Wall-painting stone-cist: Tanjungara, Pasemah, Sumatra.

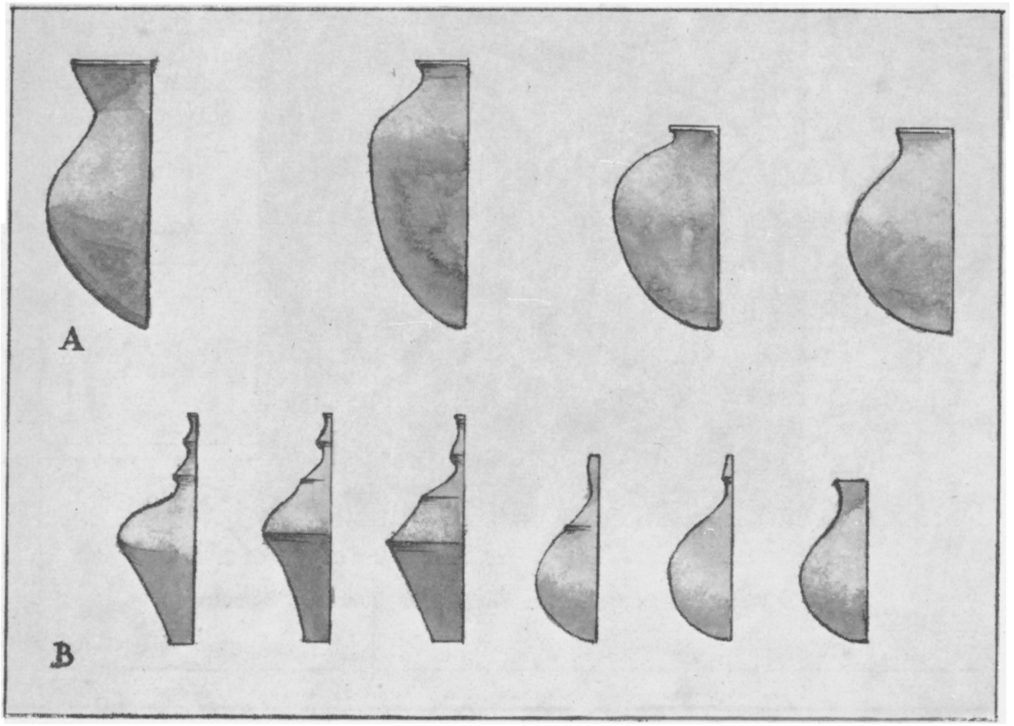


Fig. 22. Various profiles of jars (A) and flasks (B): Urn Cemetery, Melolo, East Sumba.

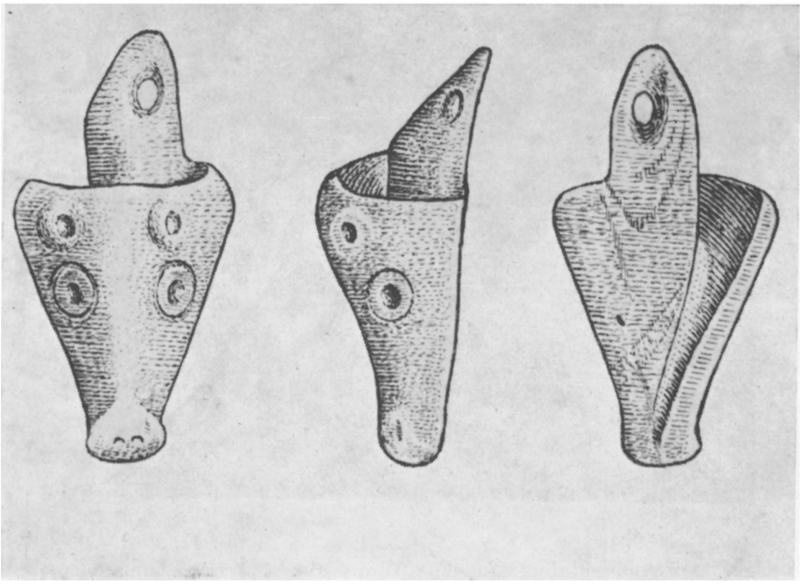


Fig. 23. Pendant made of shell: Urn Cemetery, Melolo, East Sumba.

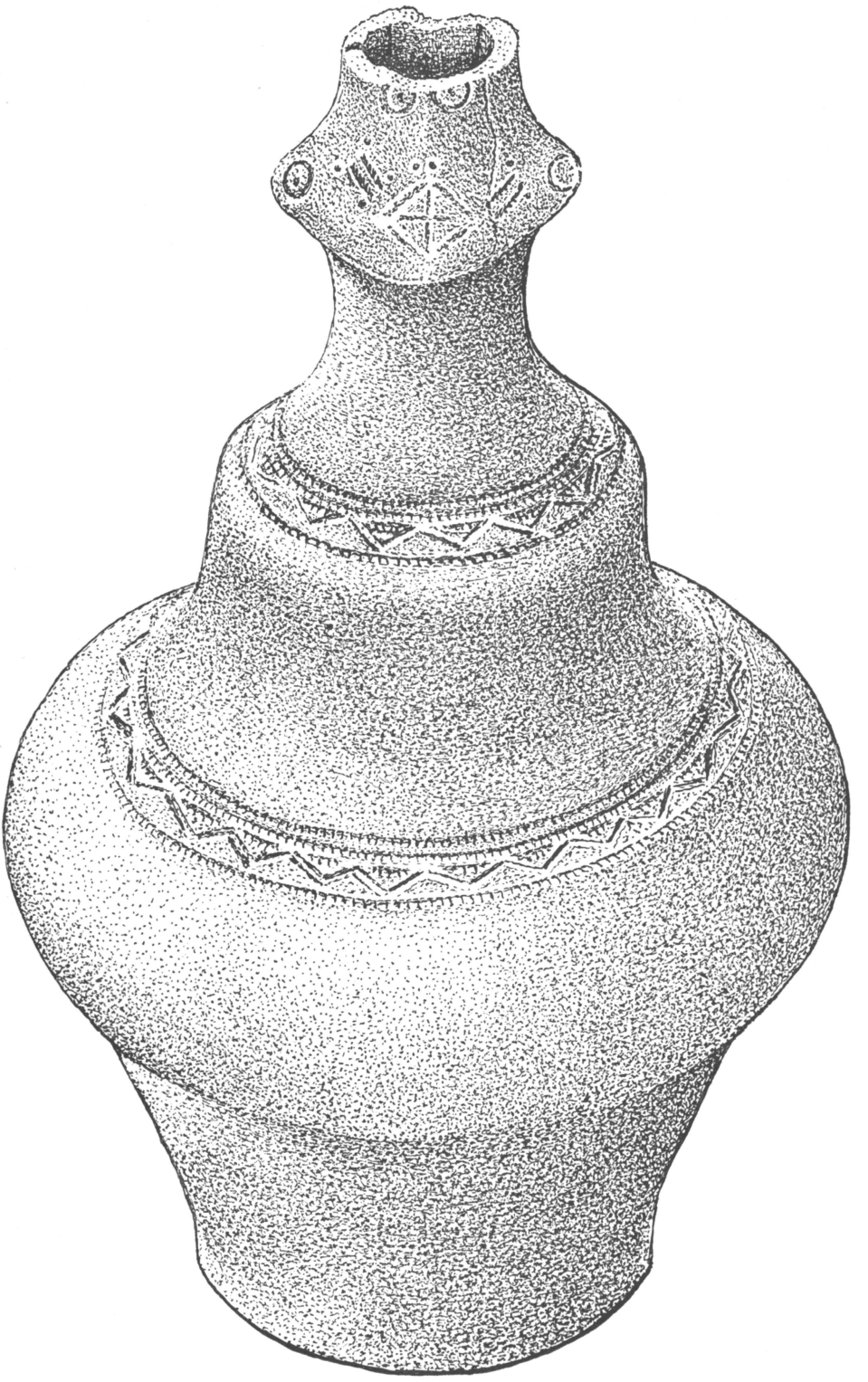


Fig.24. Earthenware flask with incised human face and geometric ornaments: Urn Cemetery, Melolo, East Sumba.

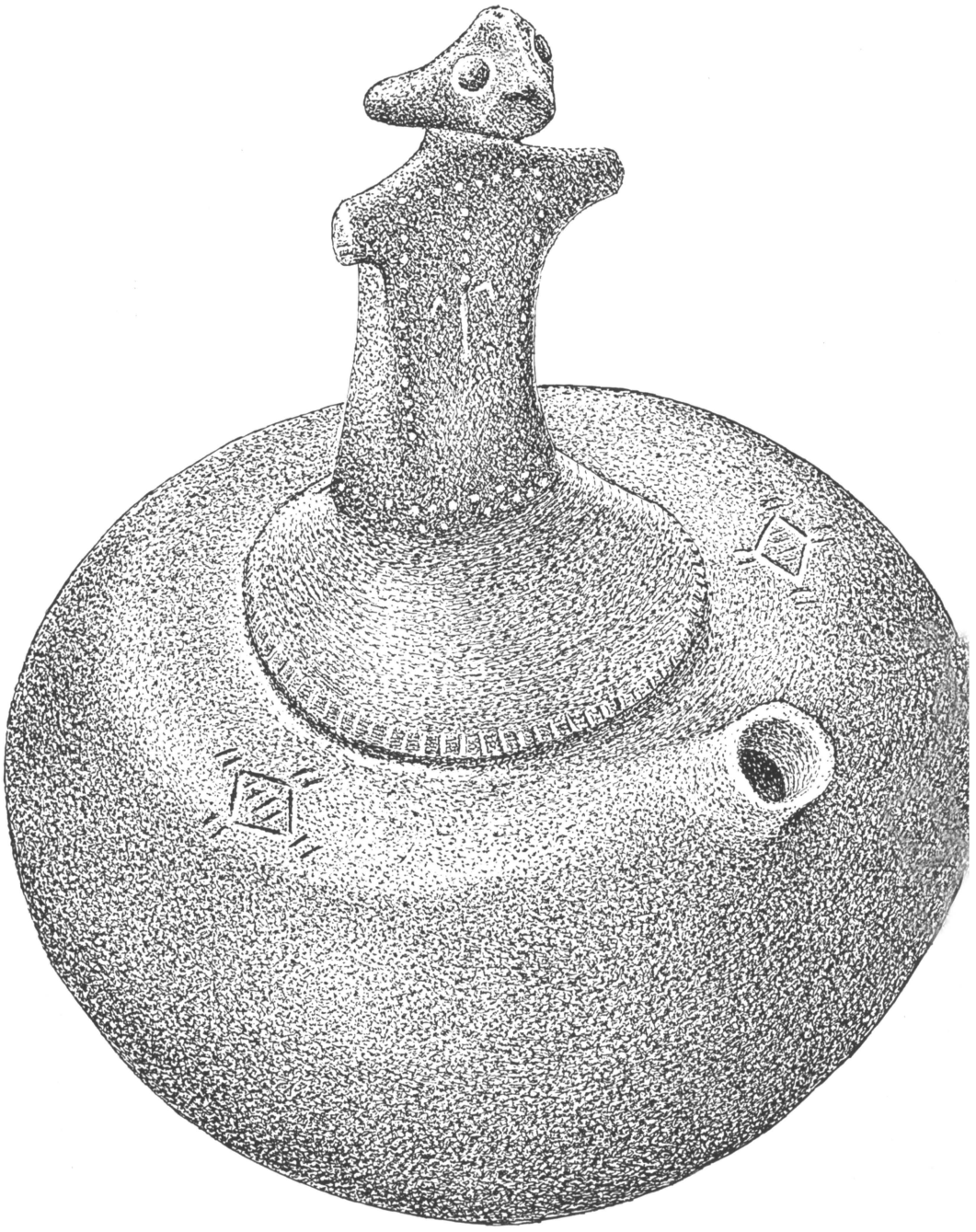


Fig. 25. Earthenware flask with human figurine and spout:
Urn Cemetery, Melolo. East Sumba.