BRONZE ARTIFACTS AND THE RISE OF COMPLEX SOCIETY IN BALI

By

I WAYAN ARDIKA

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Declaration

Except where otherwise indicated

this thesis is my own work.

I WAYAN ARDIKA

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Abstract

The main purpose of this study is to determine the classification, distribution and social functions of metal objects from sarcophagus burials in Bali. Questions of chronology and the sources of raw materials for early metallurgy in Bali are also examined.

The metal artifacts which have been analysed in this study are preserved in the Central Museum, Jakarta; in the Museum Bali, Denpasar; in the collection of the Directorate of History and National Heritage, Gianyar; and in the collection of Archaeological Research in Denpasar.

Most of the metal objects from sarcophagus burials in Bali can be classified as ornament. These include bracelets, finger rings, finger protectors, arm protectors, wire necklace units, waist belts, ear rings, chains and pentagonal plates. Several artifacts can also be classified as tools or implements, including axes of crescent-bladed and heart-bladed types.

These bracelets, pentagonal plates and axes of crescent-bladed and heart-bladed types have been found not only in the sarcophagus burial sites but also in the necropolis and settlement sites at Gilimanuk. Based on the distributions of those artifacts it seems that exchange between the inhabitants of the inland and people of the coastal sites may have occurred during the Early Metal period in Bali.

The appearance of metal working in Bali, which lacked raw materials both of tin and copper, also indicates long distance trade. Both raw materials may have been derived from islands west of Bali; tin may have been obtained from Bangka, Belitung and adjacent areas, and copper exists in Sumatra and Java.

A comparative study with other island Southeast Asian sites which have been dated indicates that early metallurgy in Bali may have developed at the first half of the first millennium AD.

Metal objects from sarcophagus burials in Bali might have had high status value as social symbols. Those who had access to metal objects might thus have

held high rank in the society. The occurrence of early metal working in Bali may also relate to an economic surplus dependent on wet rice cultivation.

The condition of Balinese society during the Early Metal period was a crucial factor behind subsequent state formation in Bali.

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Chapter 1
INTRODUCTION

1.1. Backgroumd

Since 1921, Balinese sarcophagi have been attracting the attention of archaeologists. Interest was aroused in this year by P. de Kat Angelino when he reported a small sarcophagus kept in the temple of Pura Penataran in the village of Tanggahan Peken, Bangli. He considered the sarcophagus to be a stone pig trough, although the villagers believed it to be a copy of the ship of the goddesss *Ida Ratu Mas Meketel* who lives on the beaches of Lake Batur (Heekeren 1955: 3; 1958: 54). This sarcophagus has two knobs on the front and two on the back. It was found empty and without a lid.

Four years later, in January 1925, E. Evertsen found two large sarcophagi near the village of Manuaba, east of Tegallalang. These were located in a rice field and lay about 150 metres apart. The function of sarcophagi in Bali was still obscure at this time, but Nieuwencamp first suggested that these so-called troughs were prehistoric graves, like other specimens already discovered in Java and elsewhere (Heekeren 1955: 4).

In addition to these sarcophagi, three pieces of a stone casting mould for a bronze drum were discovered in the *Pura Desa* of Manuaba by K.C. Crucq in 1932. Later, Soejono discovered another smaller piece of the same mould at the same site (Kempers 1977: 28, 38. pl. 21). The stone mould from Manuaba was carved with a human face ornament similar to that on the famous Pejeng *moko*, and the region of Manuaba might therefore have been an important location for metalworking during the palaeometallic period .

The function of the sarcophagi was finally made clear in 1928 when a small specimen was discovered in the rice fields of Lebah Sangga near Busungbiu, in Buleleng regency in north Bali. The sarcophagus was still undisturbed and contained an adult human skeleton in flexed position lying on its back. It also contained an oxidized bronze fragment (Heekeren 1955: 6). Unfortunately, no photographs were

taken by Korn who was the first to give a description of the site, although Mooijen later published more details and added drawings and a photograph. Nevertheless, the find was very important from an archaeological point of view because it demonstrated that the sarcophagi functioned as prehistoric graves. According to the inhabitants of Busungbiu four other sarcophagi were also found, and these contained copper/bronze rings and a spearhead.

Dr Korn also investigated another find of four sarcophagi at the village of Angantiga near Petang in 1930 (Heekeren 1955: 6; 1958: 55; Soejono 1977: 46, table 2). His report was published in *De Locomotief*, 120, again without a detailed description of the objects discovered during the excavation, although these included a number of rings of various sizes, bracelets, a spiralled finger protector, and some double-spiral necklace ornaments. In addition to these metal objects, stone axes also occurred in the sarcophagi indicating that stone was still used after the introduction of metal to Bali.

In 1931 Van Stein Callenfels undertook excavations at Petang, and possibly also at Beng, in Gianyar regency. He never published a report about his excavation at Petang, but Van Heekeren later found some of his photographs (Heekeren 1958: 56, pl.20-21). The excavation at Beng can be traced in the catalogue of the Jakarta Museum, under the numbers 1447-1455 (Hoop 1941: 196, 246, 258-9; Heekeren 1955: 7; 1958: 56). Several cupreous objects were found at Beng, including eight small sized crescent-bladed axes, three bell-shaped pendants, anklets, finger rings, small U-shaped tweezers, and spiral ornaments. Van Stein Callenfels might also have conducted an excavation at Ked, but again no report on these activities was ever published. On the basis of certain types of cupreous objects found in sarcophagi, such as finger protectors, and axes of the crescent-bladed type he suggested that Bali was influenced by a metal working tradition which came from the Philippines (Soejono 1977: 28-29, 38).

Another interesting sarcopagus of small type came to light near Pujungan in 1950. It was found by labourers during the repair of the road connecting Buleleng and Tabanan. The sarcophagus was robbed by the workmen but several funerary gifts are still preserved by the village head. These consist of three necklaces each composed of 30-40 double-spiral necklace units, three simple flat cupreous bracelets and some beads. One of the beads is made of carnelian, and two others are of pale blue glass (Heekeren 1955: 8, pl.8).

Several other sarcophagi found during the three decades between 1920 and 1950 also contained interesting cupreous objects. However, all were found accidentally and

investigated by unsystematic archaeological methods. Therefore, knowledge about these finds is restricted.

Investigations of sarcophagi in Bali have been intensified since 1954, when Van Heekeren excavated two specimens at Nongan, in Karangasem regency, using systematic archaeological methods. He found that the sarcophagi had been disturbed, but both were drawn and photographed. Van Heekeren also recorded the stratigraphy of the site, and soil samples were taken and analysed. This was the first time such systematic methods had been applied to sarcophagus research in Bali. Only the western of the two sarcophagi at Nongan contained funeral gifts, and the other was empty. The grave goods consisted of small fragments of cupreous wire, two carnelian beads and two fragments of iron. Outside the sarcophagus were found several undescribed potsherds and a fragment of copper or bronze. However, no human remains were discovered.

On the basis of the collected data, Van Heekeren in 1958 classified Balinese sarcophagi into two groups; small, between 0.9 and 1.2 metres long, and large, measuring more than 2.5 metres in length. No specimens between 1.2 and 2.5 metres in length had been found at that time. He also stressed that the funerary gifts found in the sarcophagi might yield important information, and suggested that Bali had been influenced by Dongson cultural elements, as expressed in the necklaces of cupreous double-spirals at Petang, Beng and Pujungan. Beside these double-spiral units, carnelian beads were also found commonly in sites of the Dongson culture. However, he also suggested that some new elements were developed in Bali itself, for example the peculiar ceremonial axes of the crescent-bladed type which have never been found elsewhere (Heekeren 1955: 12-15).

In 1960, R.P Soejono undertook the systematic excavation of a sarcophagus at Cacang, during his period as head of the Branch Office of the Archaeological Service at Gianyar. This sarcophagus had no knob and measured 161 cm in length, intermediate between all previously discovered specimens. Soejono therefore classifed the sarcophagus as type B, or medium. A human skeleton was found in it, in flexed position on its back. The funerary gifts included four carnelian beads, a fragment of a bronze double-spiral units, and seven bronze axes of the crescent-shaped type. The metal objects from Cacang have been analysed and shown to be of true bronze with a high percentage of tin (Soejono 1977: 22, 52-59, table.1).

To date, only two sarcophagus sites in Bali have been excavated systematically, namely Nongan and Cacang, and all other sarcophagi have been found accidentally and disturbed. However, the cupreous artifacts and other metal

objects discovered during rescue excavations of sarcophagi are still important for this study. One such rescue site is Margatengah, where five sarcophagi were discovered in an excavation carried out by M.M. Sukarto and his staff in 1975. One of these sarcophagi was found undisturbed and produced many cupreous objects, including finger protectors, arm protectors, and a number of small axes of the crescent-bladed type. Several beads of glass, carnelian and gold were also found. The human skeleton in this sarcophagus (sarcophagus E) was again in a position similar to the specimens from Busungbiu and Cacang described above (Soejono 1977: 70-74, pl. 65-72).

Rescue excavation at Tigawasa, particularly of the sarcophagus Tigawasa A, also produced several interesting cupreous objects; bracelets, pentagonal plates, earrings, chains, and also several glass beads. Sarcophagus B was disturbed, but several cupreous fragments and also human bone were found in it (Soejono 1977: 75-77). In addition to these objects, two specimens of cupreous "shovels" of the heart-shaped type were discovered during excavation in 1982 by staff of the Branch Office of the Indonesian Archaeological Research Centre, Denpasar.

Another interesting find is an oval-bladed axe reported from a sarcophagus at Keramas, in the regency of Gianyar. Its shape is very unusual for Bali and also for other areas (Soejono 1977: 78, pl. 130-132).

Up to 1976, 87 sarcophagi had been found in Bali. All of these were studied by R.P Soejono for his doctoral research. On the basis of measurements, shape of cross-section and type of knob, Soejono classified the sarcophagi into three size categories, each with sub-types, variants and sub-variants. The size categories were small (A), medium (B) and large (C) (Soejono 1977: 81-86). 74 specimens could be categorized as type A, 7 as type B, and only 6 as type C. It is worth noting that cupreous artifacts have only been found to date in sarcophagi of type A and B; none have yet been found in sarcophagi of type C because all were disturbed. Between 1976 and 1986 another 28 sarcophagi came to light in Bali. Therefore, the total discovered is now 115 (Oka 1986a : 90) but no study has yet been carried out on the artifacts found in them.

In addition to sarcophagus burial sites, Gilimanuk is an important settlement and necropolis site which was contemporary with the sarcophagus burial tradition in Bali. This site was discovered accidentally by Soejono in February 1961 when he was conducting an excavation at Cekik, about 5 km south of Gilimanuk (Soejono 1963; 1979: 185). This site cover about 2 ha, and since 1963 has been excavated intensively. It has 4 archaeological layers; layer III seems to have been a habitation layer, and burials have been found in layer IV (the basal layer).

The burial goods from Gilimanuk consist of metal objects, beads and pottery. In terms of form and metal compositions, they are similar to those found in sarcophagus burials in Bali, and include axes of crescent-bladed type, pentagonal plates, and ornaments such as bracelets and gold foil eye covers. Besides the metal objects, thousands of beads made of shell, stone, glass and gold have also been discovered in Gilimanuk. Based on the distributions of beads and the similarity of the metal objects between Gilimanuk and the sarcophagus burial sites, Soejono has suggested that there was an exchange system between the inhabitants of Gilimanuk and the people of inland sites in Bali during the Early Metal period, about the first half of the first millennium AD (Soejono 1977: 239, 249, 273).

1.2. The Aim and Scope of the Present Study

This thesis is a study of the copper and bronze artifacts found in the sarcophagi in Bali. As Van Heekeren (1958) pointed out, some of these objects have many varieties and occur with wide distributions in several sites. In Chapter II I attempt to classify these objects and to describe the distribution of each type. Through such a study we may hope to find interrelationships between sites and regions.

In focussing on cupreous artifacts in Bali, several problems necessarily arise. These problems include the dating of the objects, the source of the raw materials, whether the objects were made in Bali or traded in from other islands or regions of Southeast Asia, and their social functions. All these problems will be discussed in Chapter III.

Concerning the dating of cupreous artifacts from sarcophagi in Bali, one can undertake a comparative study with other sites which have been dated, for instance Gilimanuk, Pejaten and Leang Buidane. These sites have all produced cupreous artifacts and belong to the first millennium AD (Soejono 1977; Sutayasa 1979: 68; Bellwood 1976: 278; 1985: 307). Although no Balinese sarcophagus assemblage has yet been dated, such comparisons will be very useful for establishing a tentative chronology.

As far as the early metallurgy in Bali is concerned, it should be noted that the island lacks copper and tin (Bemmelen 1949). Soejono (1977: 25) believes that copper was obtained from Timor and tin from Flores. However, another possibility for Bali is that copper and tin were obtained from regions in the west, particularly Bangka for tin, and Sumatra and Java for copper. Several Early Metal sites have been discovered in Sumatra and Java, including the Pasemah sites in South Sumatra

(Hoop 1932), Buni and Pejaten in West Java, Plawangan in Central Java, and Besuki in East Java.

Many types of metal objects from sarcophagus burials in Bali are very distinctive. Specific and unusual forms include axes with crescent and heart-shaped blades, double-spiral wire necklace units, arm protectors, finger protectors and pentagonal plates. These objects have never been discovered in sites outside Bali. Therefore, they would appear to have been made locally, although moulds for casting them have never been found. However, several fragments of a stone mould for casting a *moko* have been discovered in Manuaba.

The occurrence of distinctive metal objects in Bali, which lacks sources of both copper and tin, might relate to a need for such artefacts to serve as status symbols. As Soejono (1977: 144) has pointed out, only certain individuals in the society could have been buried in sarcophagi, and it seem logical to assume that the ones so favoured were of high status. In other words, a ranked or chiefdom level of social organization might already have developed in Bali during the Early Metal period, if not before. It is also interesting to note that most of the sarcophagus burials in Bali are located in the areas where wet rice cultivation occurs today (see maps figs. 4.1 and 4.2). Wet rice cultivation might thus have been creating an economic surplus during the Early Metal period in Bali.

In Chapter IV I will discuss question of early state formation in Bali. This development seems to have been partly the result of a long process of Indianization, although it is not clear whether Indian influences arrived directly from India, or indirectly through Java or Sumatra. Inter-island trade and contacts with other regions might also have stimulated the process. It should be noted, however, that the emergence of an early state in Bali was quite late compared with other regions of western Indonesia. For instance, the polity of Sriwijaya in South Sumatra originated in the 7th century (Kedukan Bukit inscription dated AD 683), Taruma in West Java developed around the 5th century , Mataram in Central Java in the 8th century (the inscription of Canggal, dated AD 732) and Kanjuruhan in East Java also in the 8th century (Dinaya inscription, dated AD 760) (Coedes 1968; Hall 1985).

The inscription of Sukawana A I dated to AD 882 (Goris 1954a: 53) is the oldest inscription in the Old Balinese language yet discovered in Bali. However, several Nagari inscriptions in Sanskrit and hundreds of Buddhist formulas on clay tablets have also been discovered in the island (Stutterheim 1929). The same formulae are depicted on Candi Kalasan in Central Java, a monument dated to

about 778 AD (Bosch 1961). If the Buddhist formulae found in Bali are contemporary with those depicted on Kalasan, then some aspects of Indian culture might have reached Bali in the 8th century AD, or probably earlier.

As already suggested, during the Early Metal period, around the first half of the first millennium AD a ranked or chiefdom level of social organization had already developed in Bali. It seems to me that many aspects of this indigenous social structure continued on into the early state period. These aspects are reflected in several terms for functionaries, including the titles *Ratu*, *Dinganga*, *Makarun*, *Ser*, *Kabayan*, and *Panundun*. These terms are not derived from Sanskrit words, but are local Austronesian terms. As Bosch (1961) once pointed out, Indianization in Indonesia was a "fecundation" of existing Indonesian cultural elements.

In Chapter V I attempt to conclude this study, and make some suggestions for future research.

Chapter 2

CLASSIFICATION AND DISTRIBUTIONS OF ARTIFACTS OF CUPREOUS METAL IN BALI

Cupreous objects from prehistoric sites in Bali are varied in form and often have wide distributions with occurrences in many sites. On the bases of shape, size and inferred use they can be grouped hierarchically into classes, subclasses and types, although such a classification must at present be without the benefit of any detailed chemical analysis of the objects. This study attempts to reconstruct the history and distribution of each class or type of artifact both within Bali and, if relevant, outside. Such a study might also yield interesting information concerning local invention or diffusion from other regions. Cupreous artifacts from Bali can be classified and described as in the following section.

2.1. Bracelets

Bracelets seem to be the most popular artifacts discovered from sarcophagus burials in Bali; at least 23 out of the 46 sarcophagus sites which have been discovered produced bracelets as burial goods (Soejono 1977: table.4), and they have also been discovered in burial contexts at Gilimanuk (Soejono 1977: 182, pl. 148). In this study only 54 specimens have been measured, being those preserved in the office of the Directorate of History and National Heritage at Bedulu, Gianyar, and in the Branch Office of Archaeological Research at Denpasar.

In terms of cross-sectional shape, these bracelets can be divided into two sub-classes; flat-sided and round, each with many types in terms of thickness and diameter. Thicknesses range between 2.8 mm and 15 mm, and diameters between 30 mm and 120 mm. It is worth noting that the round-sectioned bracelets can be also divided into two sub-types; hollow and solid. The hollow type usually has a large diameter.

In terms of diameter, the bracelets can be divided into three types; small, with diameters less than 50 mm (26%); medium, 50 mm to 100 mm (67%); and large, with diameters more than 100 mm (7%). These figure indicate that medium

diameter bracelets are most common as burial goods in Bali (see figure 2.2). However, the significance of diameter variation is still not clear with respect to sex, age and status of the owner. All specimens measured are undecorated, except the one from Pujungan which was reported to have a decoration of incised parallel lines (Heekeren 1955: 8).

2.2. Finger Protectors

Finger protectors have been discovered at two sites, namely Angantiga and Margatengah (Hoop 1941: 247; Heekeren 1955: 7; 1958: 55; Soejono 1977: 74). At Angantiga they were found in position on the finger bones. These objects are very distinctive, and have never been discovered in other regions outside Bali. The protectors are made of spiralled wire, and covered the whole finger. One may assume that the inhabitants of both sites might have followed similar customs in treating their deceased, and the two are only about 10 km apart.

2.3. Arm Protectors

These objects have been reported from two sites; Margatengah and Tamanbali. The arm protectors at Margatengah were discovered in sarcophagi B and E. They were placed on both forearms, as they were also in Tamanbali sarcophagus A (Soejono 1977: 73, pl. 65-67). These artifacts look like a number of joined bracelets, the diameter of which decrease from about 80 mm at the proximal end to about 50 mm at the distal or wrist end. The longest specimen from sarcophagus E at Margatengah is about 120 mm in length, and two other specimens are about 80 mm long, with the metal being 3 mm thick. A similar arm shield has also been reported from a burial site at Lang Vac, Vietnam (Thong 1974: 33, 36).

2.4. Necklaces

Double-spiral wire units made of copper or bronze wire, often found linked together by wire rings, have been found over a wide distribution in many sarcophagus burials in Bali. It is possible that they served as necklace units. The sites include Angantiga, Beng, Pujungan, Cacang and Margatengah. The most interesting finds are three combinations (probably necklaces) from Pujungan which are 69, 89 and 99 cm long. Each is composed of 30-40 spiralled units. The largest spirals are placed in the middle of each chain, and these have diameters of 9.2 mm, becoming smaller towards the ends (Heekeren 1955: 14). The problem arises of whether these artifacts were manufactured in Bali or imported from outside. It appears that they were made locally, although the basic idea might have been

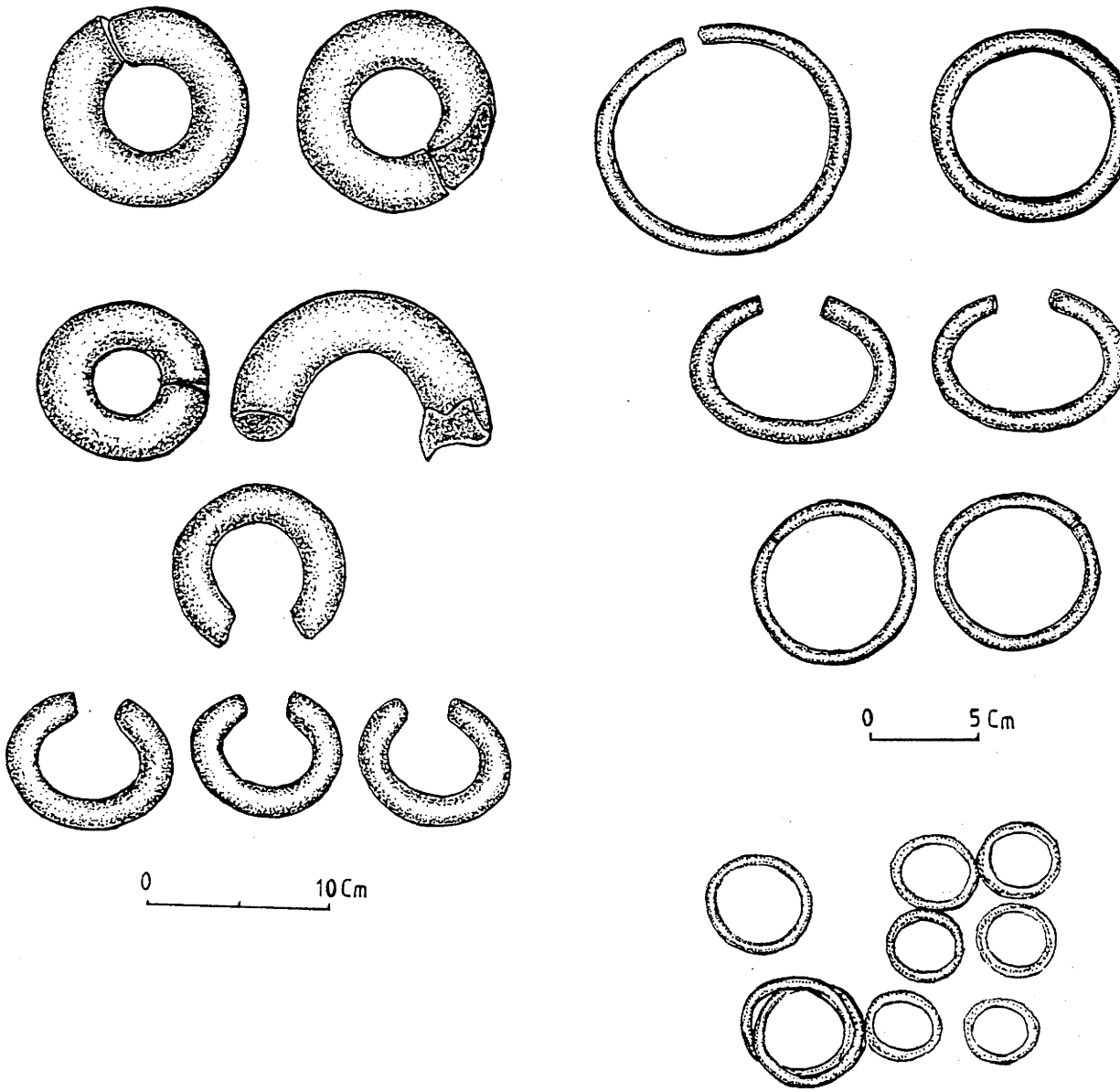

Figure 2-1: Bracelets

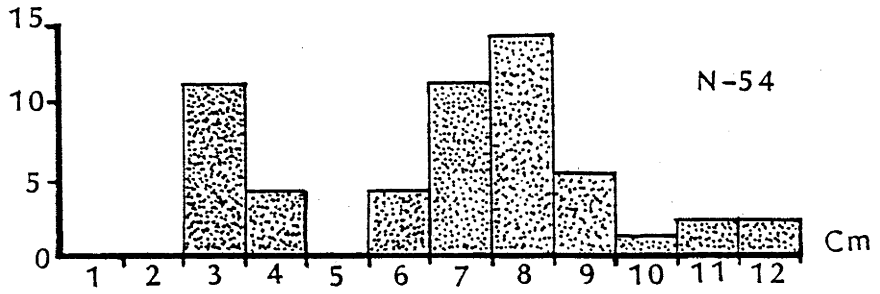

Figure 2-2: Histogram of diameters of bracelet sample

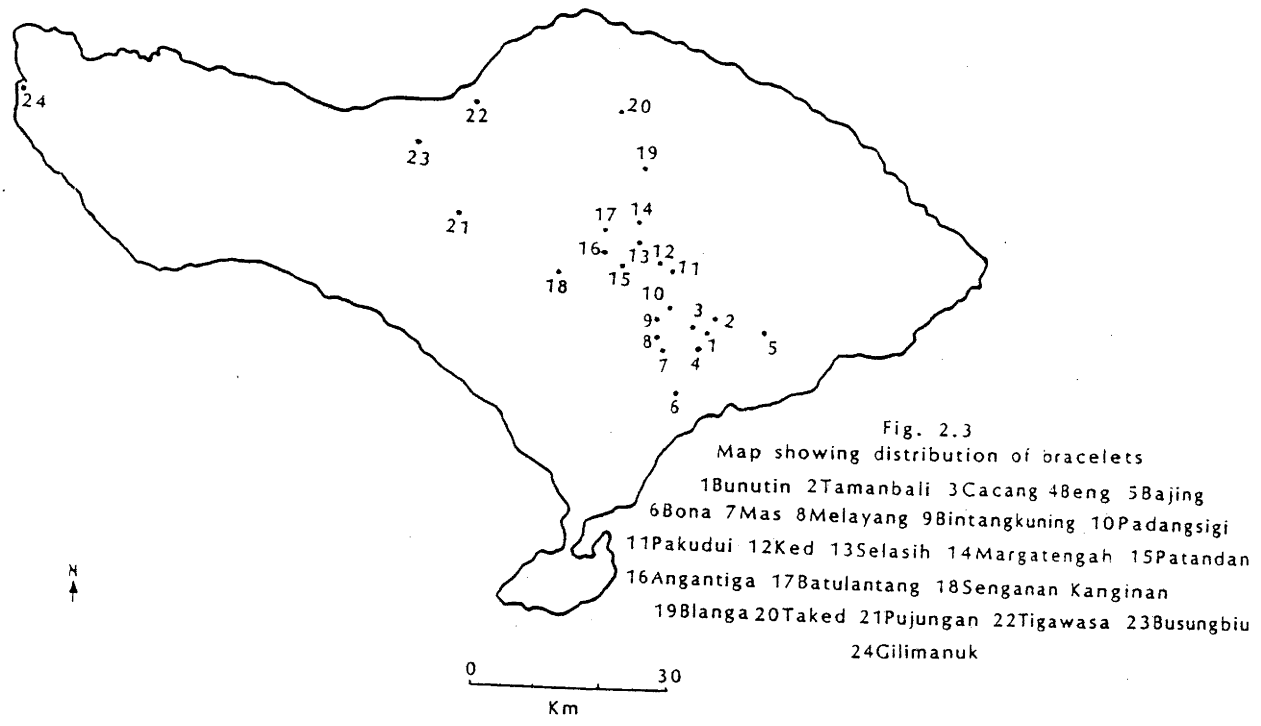

Figure 2-3: Map showing distribution of bracelets

transmitted from a Dongson source. Up to now these artifacts have only been discovered in sarcophagus burials, and never at Gilimanuk.

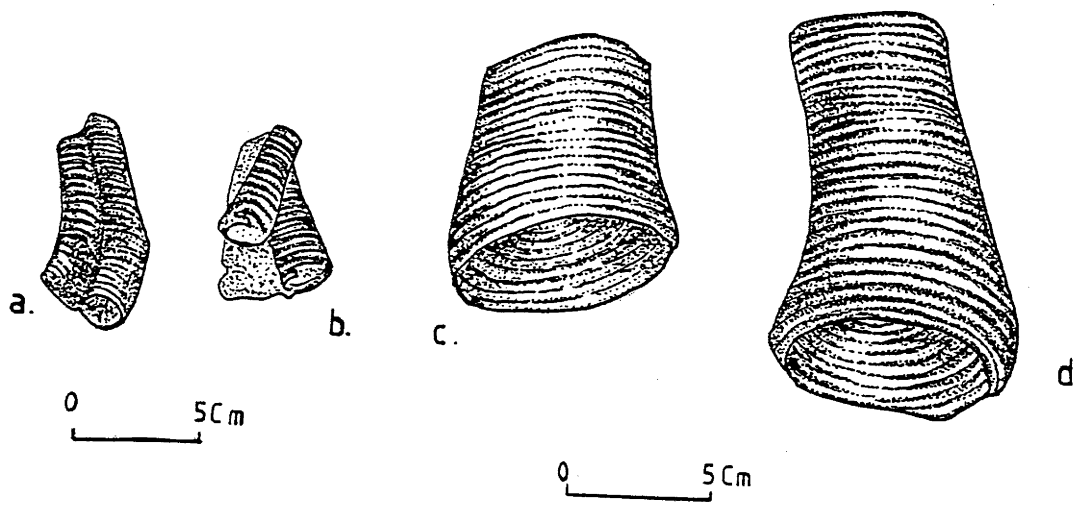

Figure 2-4: a.b Finger protectors c.d Arm protectors

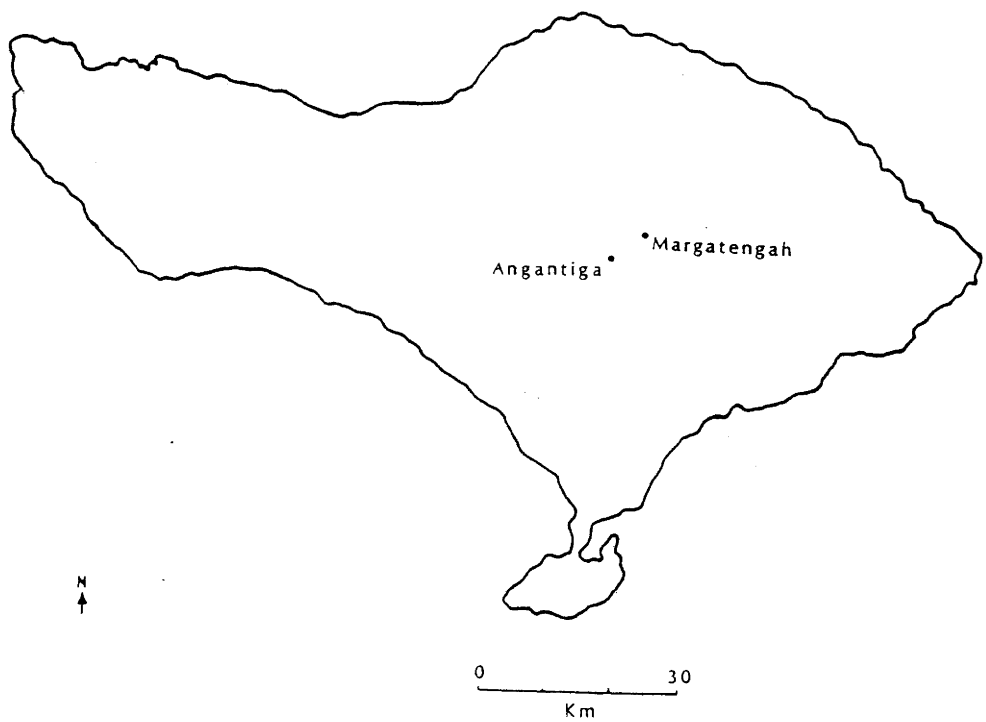

Figure 2-5: Map showing distribution of finger protectors

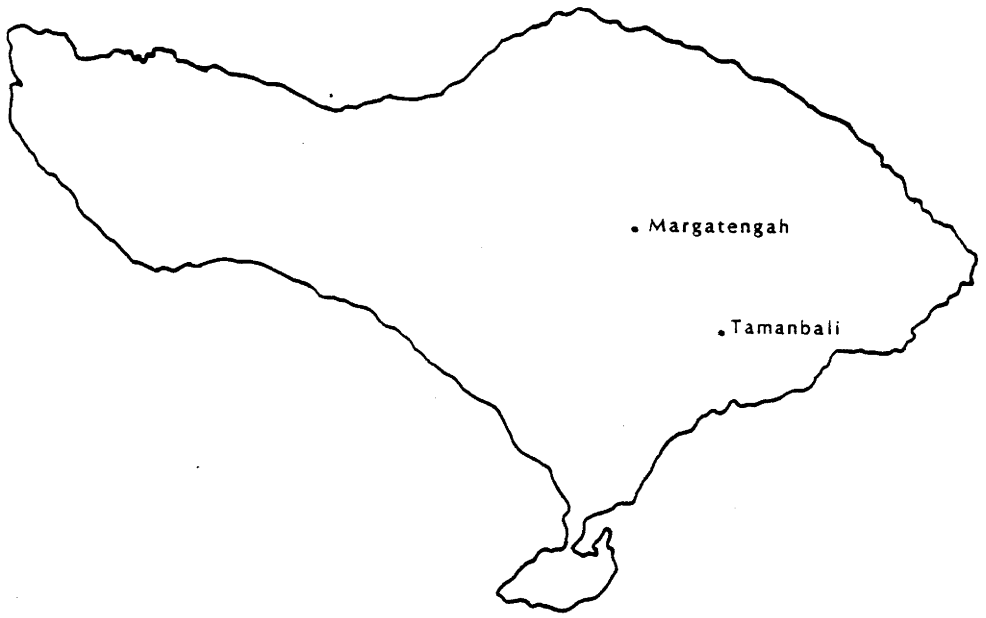

Figure 2-6: Map showing distribution of arm protectors

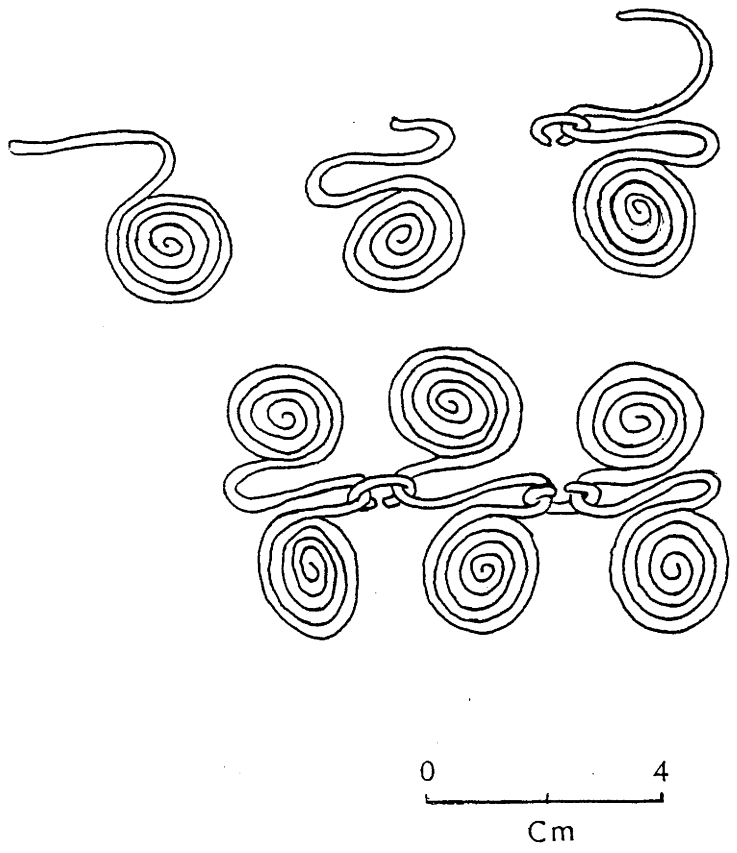

Figure 2-7: Fragment of double-spiral wire necklace units

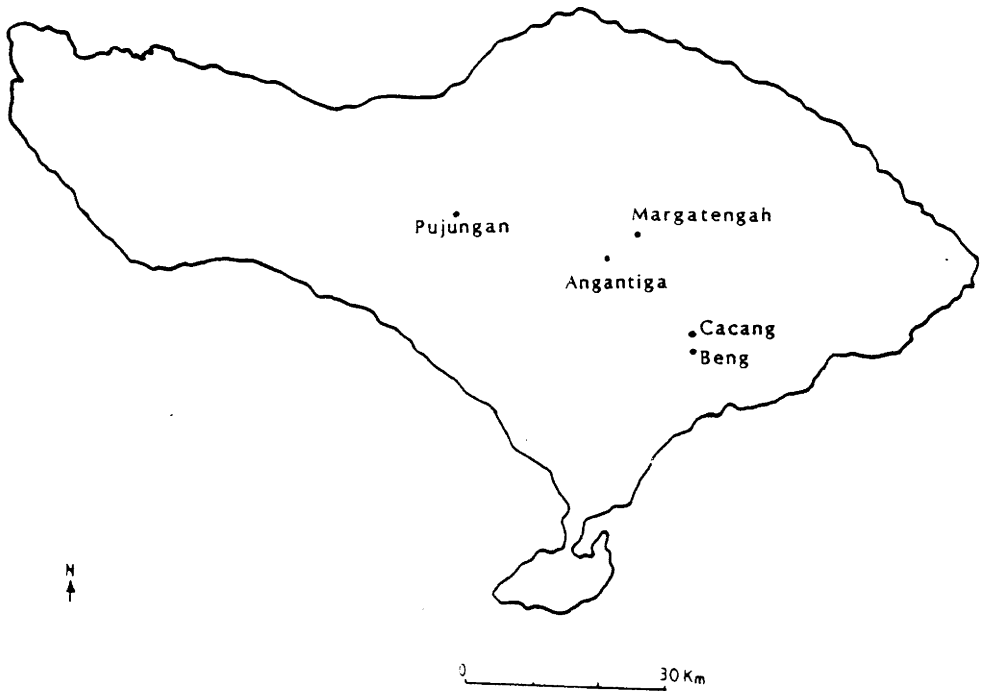

Figure 2-8: Map showing distribution of double-spiral wire necklace units

2.5. Waist Belts

Wire belts enclosed in a spiralled wrapping of copper or bronze wire have been found around the waists of the deceased in the Margatengah sarcophagi B and E (Soejono 1977: 73, pl.65,66 and 68). Other specimens occur at Tigawasa, Tamanabali (Soejono, 1977: table 4) and Sanding. The specimen from Sanding is about 50 cm in length. The wire is 2.8 mm thick, and the spirals are 10 mm in diameter. It is preserved at the Branch Office of Archaeological Research in Denpasar

2.6. Ear Rings

Three pairs of ear rings have been unearthed at Tigawasa. Two pairs are round in cross section, and the third is rather flat. The diameters are about 16 mm, and they are 4 mm thick. Three other pendants in the Central Museum in Jakarta were found at Beng. These objects are bell-shaped, each with a ring at its top, and an open bottom. Height of these artifacts are between 60 and 68 mm, and diameters between 18 and 20 mm (Hoop 1941:258; Heekeren 1955: 7). A similar specimen is preserved in the Museum Bali Denpasar under catalogue number 1249, but its origin is unknown.

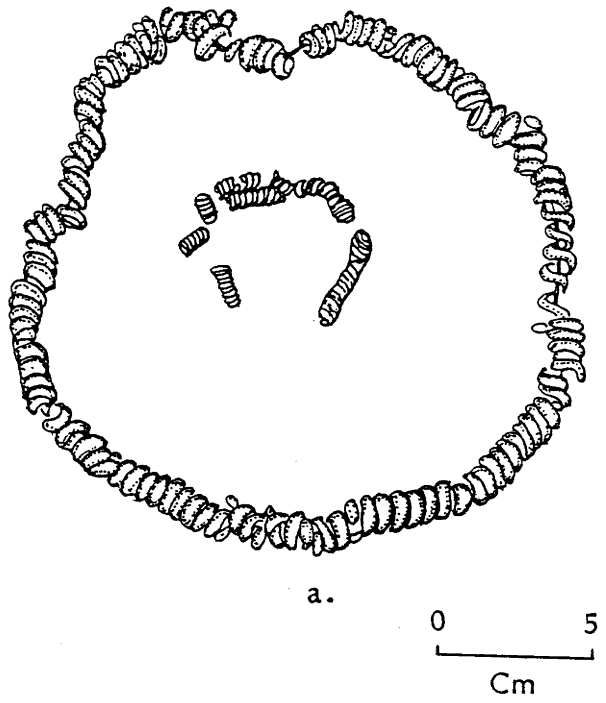

Figure 2-9: Waist belt

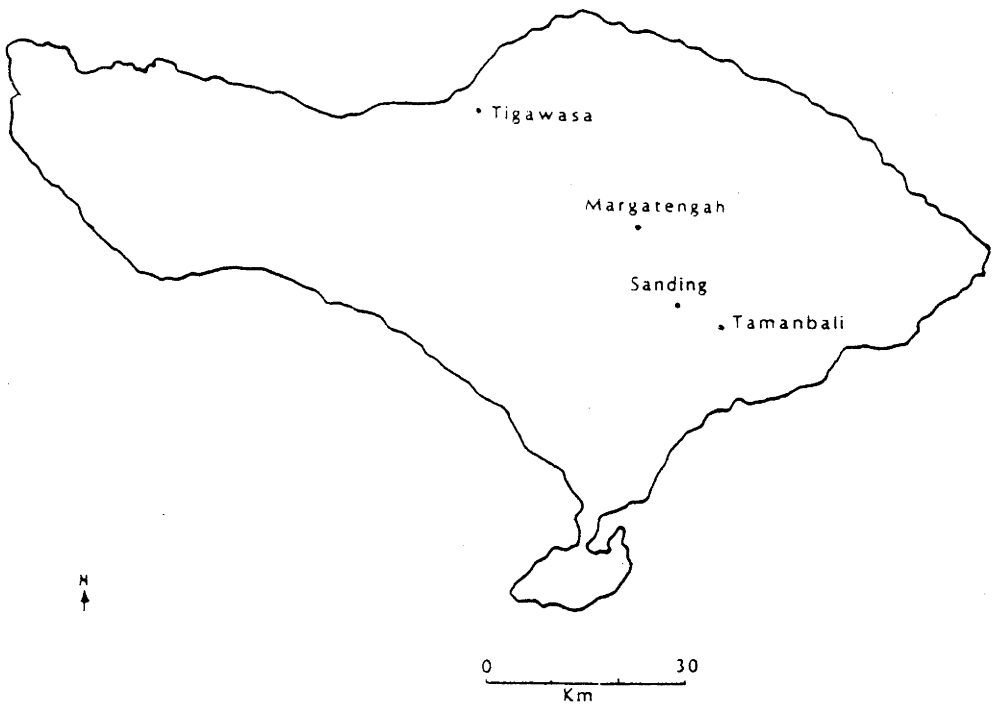

Figure 2-10: Map showing distribution of waist belts

2.7. Finger Rings

Finger rings have been found at Beng (Heekeren 1955:7), Tamanbali (Sutaba 1974: 134) and Sanding (Padangsigi). Ten specimens from Sanding are still preserved in the Museum Arca at Bedulu, Gianyar. Diameters are from 20 to 28 mm, and the rings are 3 mm thick. This collection has the catalogue number 225.

2.8. Pentagonal Plates

Only two specimens have been discovered in sarcophagus burials, both from Tigawasa. These are flat and about 2 mm thick, 50 mm wide and 48 mm long. Several specimens have also been discovered at Gilimanuk, usually placed on the backs of corpses (Soejono 1977, 182, pl.164). Based on their distribution these objects might have been most popular in north-western Bali.

2.9. Chains

Small linked chains of copper or bronze rings have been discovered in many sites including Tamanbali (Sutaba 1974: 134), Sanding and Antapan. The lengths of three specimens from Antapan are 50 mm, 78 mm and 100 mm; with links being 5 mm in diameter and 2 mm thick.

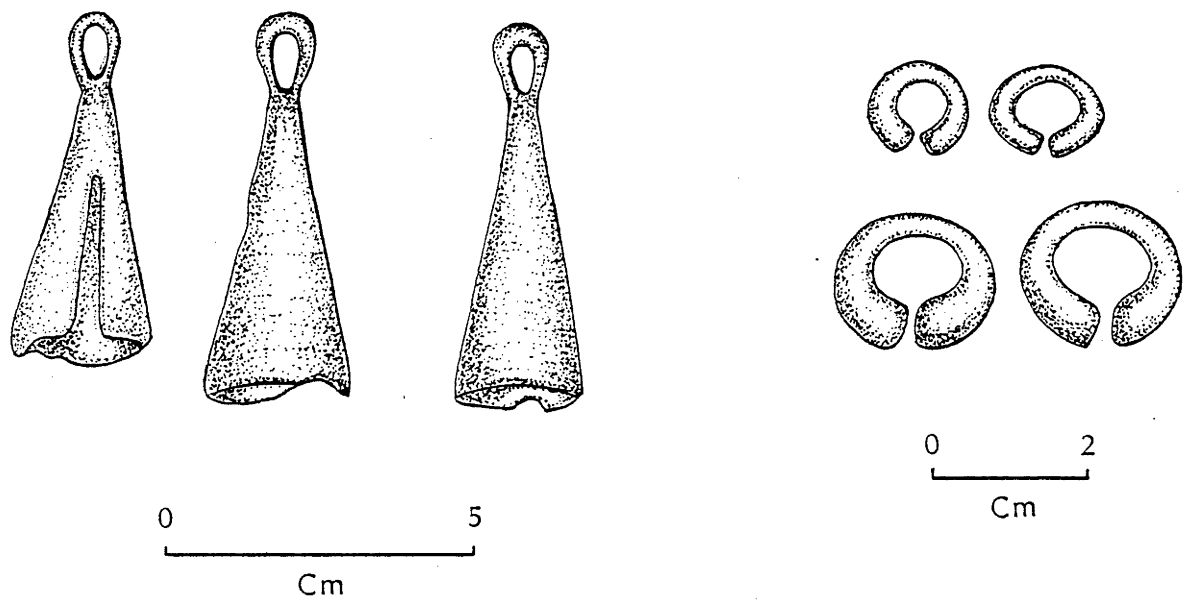

Figure 2-11: Ear rings

Several fragments from Sanding had links 3 mm in diameter and 1.2 mm thick, as did one specimen from Tamanbali.

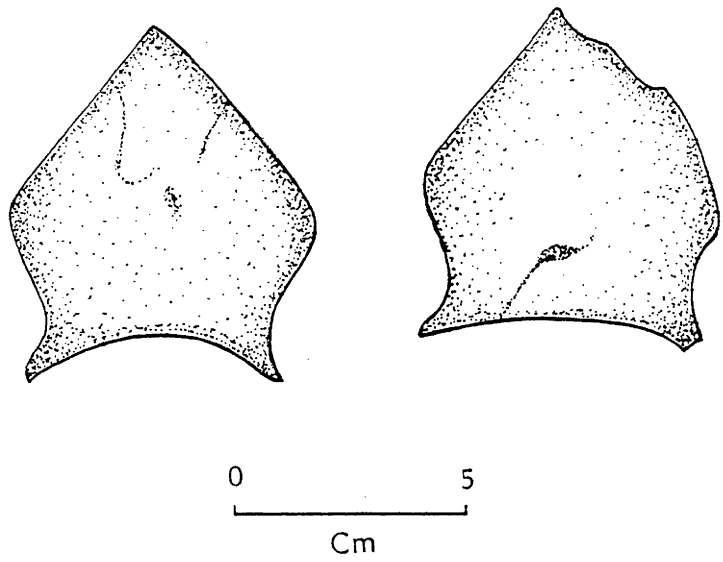

Figure 2-12: Pentagonal plates

2.10. Gold Foil Eye Covers

Interesting finds were revealed in a sarcophagus burial at Pangkungliplip, Jembrana regency, western Bali. Soejono supposed that these objects were placed over the eyes of the deceased, a custom which also occurred at Gilimanuk (Soejono 1977: 63, pl. 150). Similar eye covers have also been discovered at Oton on Panay Island in the Philippines and at Santubong in Sarawak (O'Connor and Harrison 1971: 72-73).

2.11. Axes

Several artifacts from sarcophagi in Bali have been categorized as axes, although this term might not be always appropriate. This is because their shapes and sizes are sometimes very peculiar, and therefore their functions are still not clear. Soejono has classified bronze axes in Indonesia into eight types. Two of these types occur only in Bali, namely types V and VI (Soejono 1972: 5). In this study Soejono's classification will continue to be used. Several sarcophagi have produced axes but only a few of these can still be traced. These axes can be classified as follows:

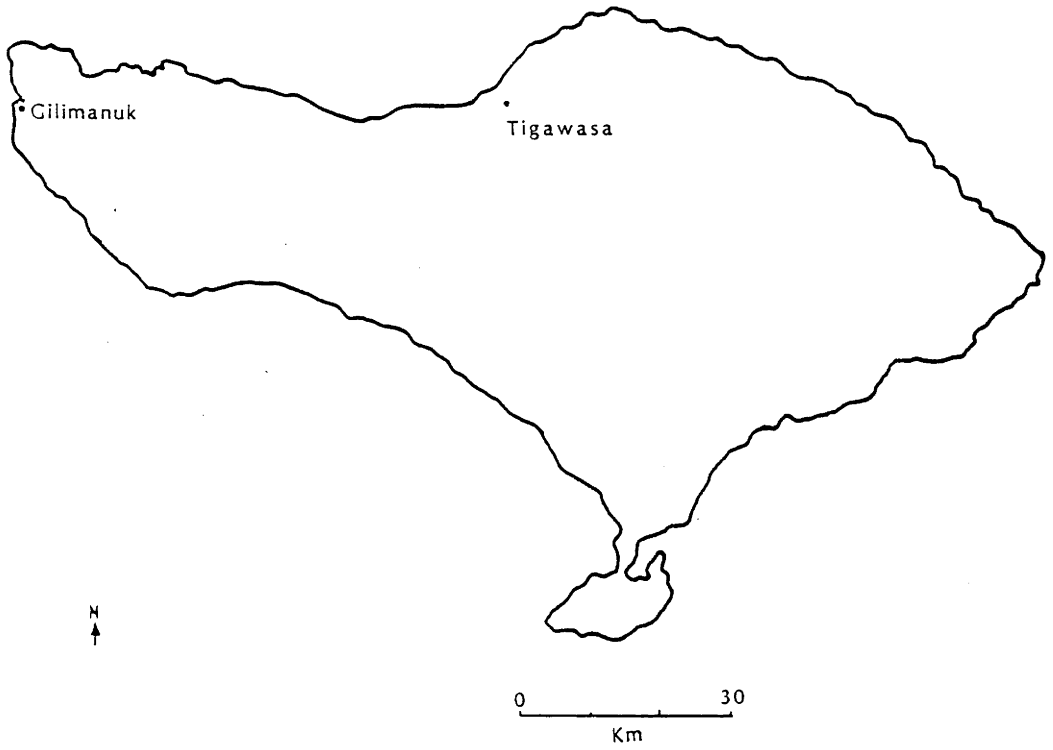

Figure 2-13: Map showing distribution of pentagonal plates

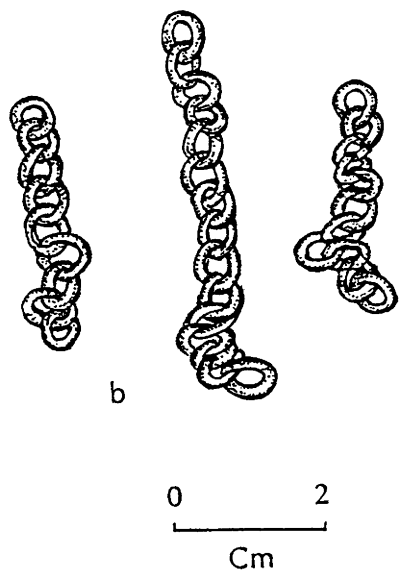

Figure 2-14: Chain

2.11.1. Type I

Only one specimen has been found, in a sarcophagus at Keramas. It is oval shaped, 200 mm in length, 140 mm in width, and about 18 mm thick. Another specimen is preserved in the Museum Bali, Denpasar under catalogue number 1452, but its origin is unknown.

2.11.2. Type V.B

This type was very popular in Bali, and Soejono referred to it as the crescent-bladed type. Several specimens are small in size. Blade widths range from 52 mm to 62 mm and shaft lengths from 45 mm to 87 mm. The blades of the specimens from Margatengah appear to encompass many varieties, and several have quadrangular blade shapes (Soejono 1977: pl. 70). Many specimens, with several varieties of blade shape, were also discovered at Gilimanuk (Fadila 1983: 120-124).

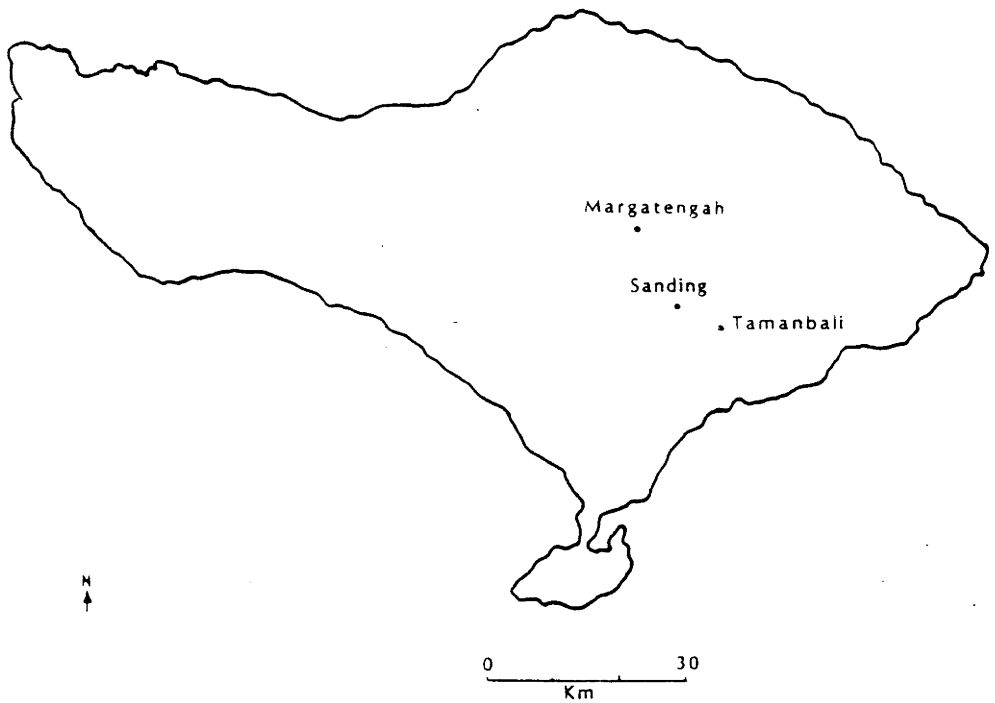

Figure 2-15: Map showing distribution of chains

This type has been discovered in several sarcophagus sites including Beng, Cacang, Tamanbali and Margatengah. 91% of the axes discovered in sarcophagi in Bali can be classified into this type. There are 200 stray finds of this type of axe from Klusa, in Payangan district, Gianyar regency, still preserved in the Museum Bali, Denpasar (see figure 2.21 and 2.22).

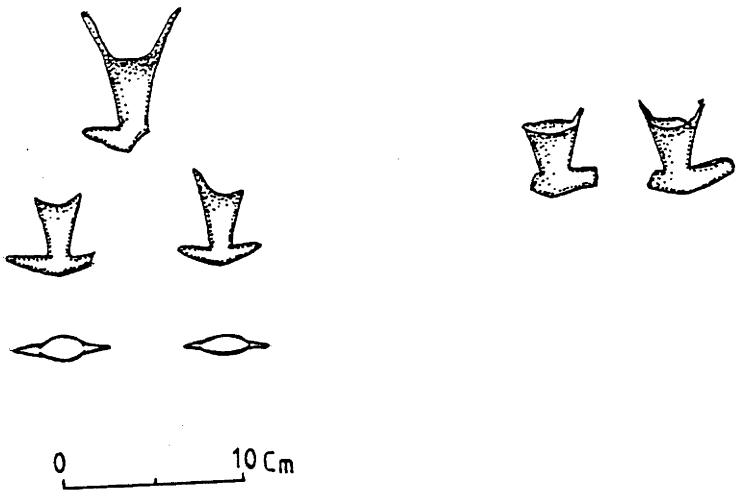

Figure 2-16: Axes of crescent-bladed type

2.11.3. Type VI

This type is also termed the heart-bladed type. Two specimens were discovered at Tigawasa, but their sizes are rather small. Their blades are flat, about 3 mm thick, 70 mm wide, and 75 mm long. The shafts have sockets about 35 mm in diameter at their tops, 20 mm towards their blades, and 70 mm in length. Many varieties of this type were found at Gilimanuk, used as burial goods (Soejono 1977: pl. 162-163).

In terms of their burial contexts most of these Balinese objects of cupreous metal can be classified as ornaments and tools, none are certainly weapons. They could be reflections of the status of deceased persons.

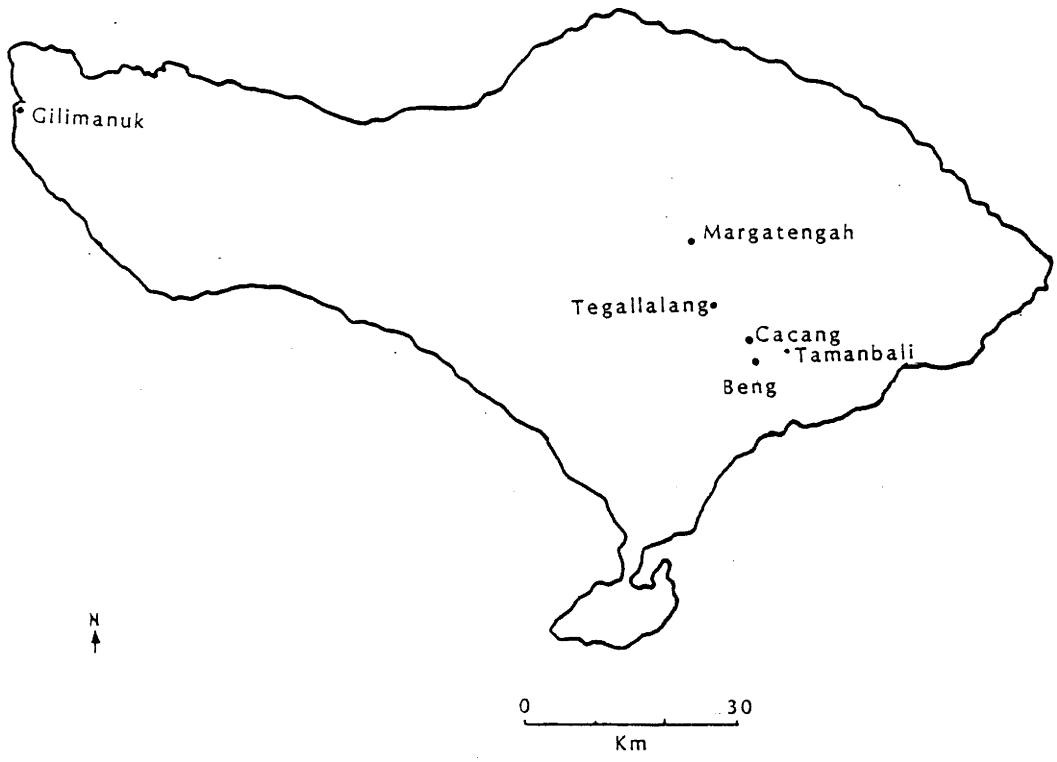

Figure 2-17: Map showing distribution of axes of crescent-bladed type

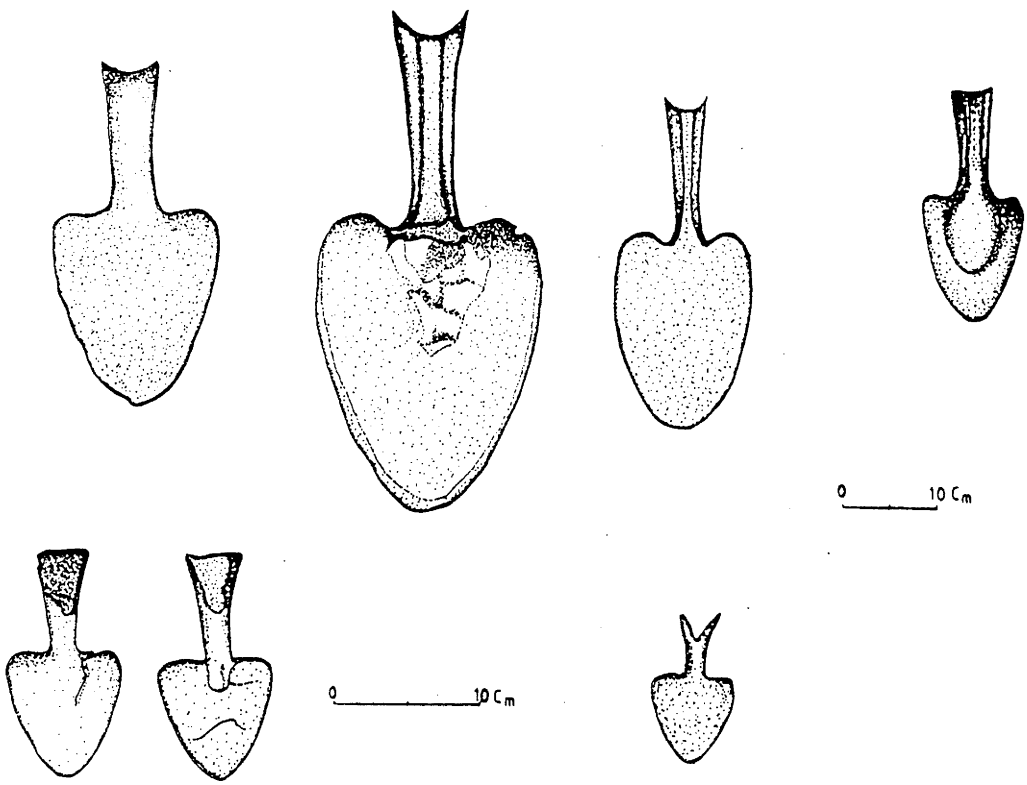

Figure 2-18: Axes of heart-bladed type

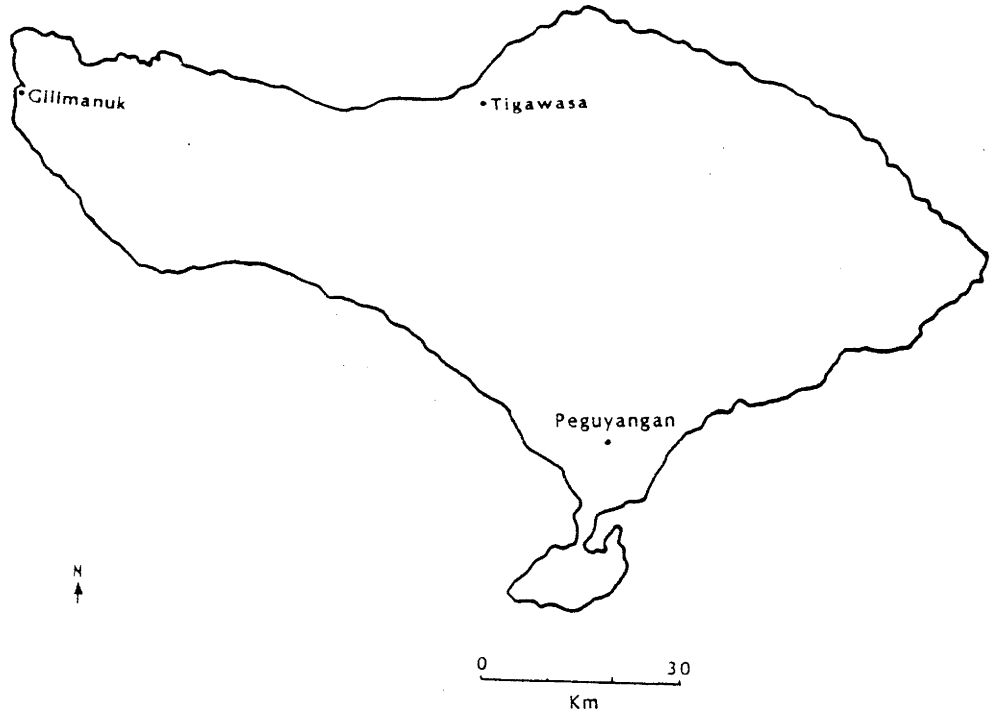

Figure 2-19: Map showing distribution of axes of heart-bladed type

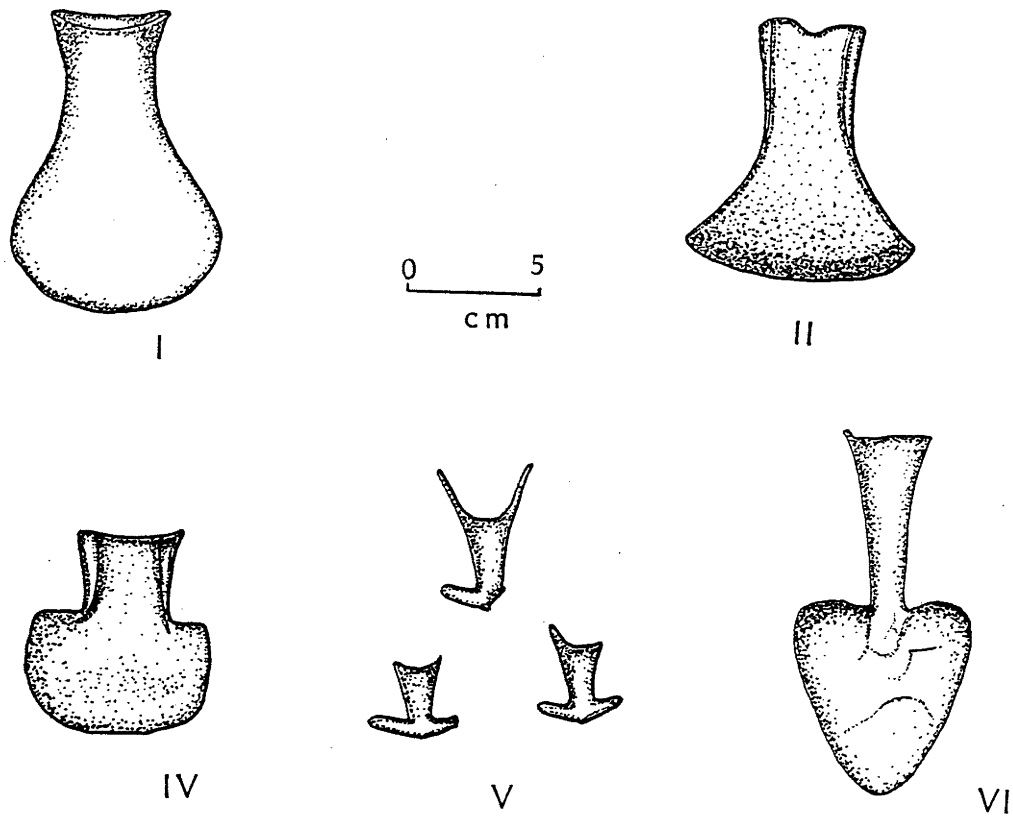

Figure 2-20: Axe types I. II. IV. V. VI

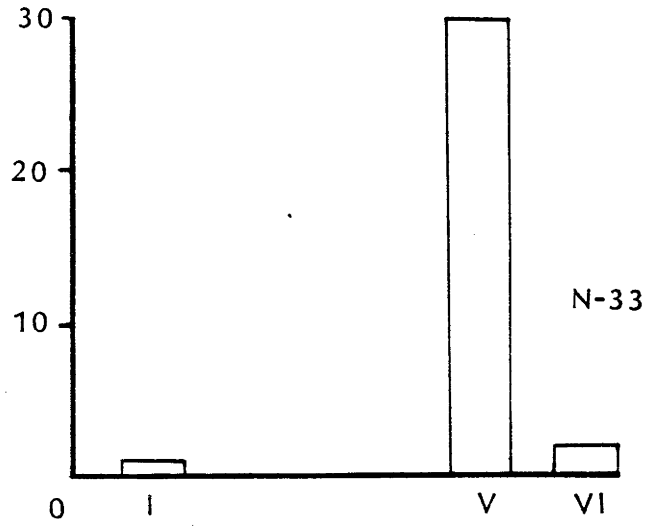

Figure 2-21: Occurrences of axe types in Balinese sarcophagi

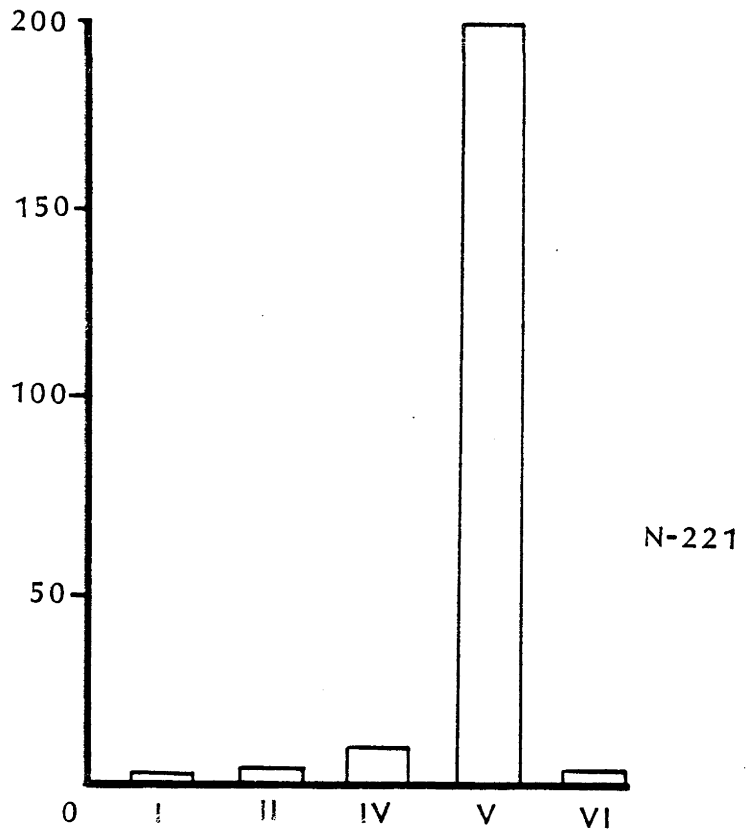

Figure 2-22: Histogram of axes from stray finds in Bali

Chapter 3
CONSIDERATIONS ON CUPREOUS ARTIFACTS

3.1. Interrelationships between Early Metal Period Sites in Bali and Other Regions in Indonesia

According to the distributions of the artifacts described in the preceding chapter, several classes may be seen to occur in clusters. For instance, axes of the crescent-bladed type and fragments of double-spiral wire units have been found at Margatengah, Cacang, Beng and Tamanbali. These sites may therefore be considered to be interrelated, although the frequencies of the artifacts found in them are varied.

The small axes of the crescent-bladed type have been discovered not only in sarcophagus burial sites around Manuaba, but also in the non-sarcophagus necropolis site at Gilimanuk. Manuaba and Gilimanuk are located about 120 km apart, and the question arises of where these artifacts were manufactured; at Manuaba, Gilimanuk, or elsewhere? This question cannot be answered satisfactorily because no casting moulds for these objects have been discovered in Bali. However, several authors believe them to have been manufactured in Bali (Heekeren 1955; Soejono 1972), and they might have been manufactured in or near Manuaba, where fragments of a stone casting mould for a moko have already been discovered.

In addition to the axes of the crescent-bladed type, several specimens of axes of the heart-bladed type have also been discovered at Gilimanuk (Soejono 1977: pl. 162-163). This type is not common in sarcophagus burial sites, except for the two specimens from Tigawasa in north-western Bali. Two additional specimens of this type are also preserved in the Jakarta Central Museum under catalogue numbers 1462 and 4546. Specimen 1462 came from Pondok, Peguyangan, 5 km north of Denpasar, but the find-place of the other specimen is unknown (Hoop 1941: 196-197). There is also a fragment of a tympanum, preserved in the Jakarta Central Museum under catalogue number 1459, derived from the same Pondok site (Hoop 1941: 231; Kempers 1977: 28). Pondok Peguyangan, therefore, seems to have been an important site during the Early Metal period in Bali. Another axe of the heart-bladed type is preserved in the Museum Bali, in Denpasar under catalogue number 2626, but its origin is not known.

Wherever these artifacts were manufactured, it is interesting to note that there were interrelationships in terms of burial goods between Gilimanuk and the sarcophagus burial sites; for instance, gold foil eye covers occur at Gilimanuk and Pangkungliplip, both sites located in Jembrana regency, and axes of the heart-bladed type, as well as pentagonal plates, occur at Gilimanuk and Tigawasa. In other words, the inhabitants of Gilimanuk may have shared a tradition with their sarcophagus-using neighbours in treating their deceased.

Composition analyses also indicate that some cupreous artifacts from Gilimanuk are similar in metal content to specimens from sarcophagus burial sites (table 1).

NO	Site	Artifact	Cu	Sn	Pb	Fe	%
1	Bebitra	moko	75.50	14.51	6.09	1.21	
2	Cacang	axe	38.09	34.94	5.39	1.82	
3	Cacang	axe	35.67	16.11	7.71	0.36	
4	Cacang	bracelet	79.75	11.11	0.55	0.10	
5	Gilimanuk	axe	35.41	6.92	4.41	0.73	
6	Gilimanuk	axe	34.56	14.92	6.34	1.25	
7	Tamanbali	axe	51.42	17.05	3.03	0.71	

Table 1. Composition analyses of selected artifacts from Gilimanuk and sarcophagus burials in Bali (Soejono 1977: 22–23) (Additional elements for those samples which total less than 100% have not been reported).

It is interesting to note that metal objects from Bali contain high percentages of tin (6.92-34.94%) and lead (0.55-7.71%). This implies that ancient metal- working in Bali was relatively advanced, and compositions of copper (Cu), tin (Sn), and lead (Pb) can be categorized as ternary alloys.

Based on these data, the appearance of copper and tin in Bali raises the question of where the Balinese obtained their raw materials. It is known that copper and tin ores do not exist in Bali (Bemmelen 1949; Marschall 1968) (see fig.3.1), so these materials must have been obtained ultimately from outside regions. Even today, Balinese metalworkers still buy their metals from Surabaya, in East Java, or recycle other objects.

Copper exists in several Southeast Asian islands, including Sumatra, Java, Timor, Sulawesi and New Guinea (Bemmelen 1949: 47-55). Tin occurs much more rarely, but is mined in Bangka, Belitung, Singkep, Riau and other adjacent regions (Bemmelen 1949: 92-104). Several authors believe that copper was also obtained from Timor and tin from Flores (Marschall 1968; Soejono 1977: 254), but van Bemmelen does not mention tin from the latter island.

Beside natural resources, several Early Metal sites have also been discovered in Sumatra and Java, including those in the Pasemah region (South Sumatra), Buni

Figure 3-1:

Map showing distribution of tin, copper and iron

△ Tin

◇ Copper

▲ Iron

(West Java), Plawangan (Central Java) and Besuki (East Java). On the mainland of Southeast Asia there are also many contemporary Early Metal sites, particularly those of the Dongson culture in Vietnam. Many scholars believe that Dongson elements influenced early metallurgy in other islands of Southeast Asia, as well as in Bali (Heine Geldern 1945: 143; Heekeren 1958: 96). Contacts between these regions might have occurred, involving not only a spread of ideas but also a trade in raw materials. If Bali did need to obtain raw materials from other islands or the Asian mainland then these materials might have entered the island through Gilimanuk or other coastal sites, prior to being exchanged to inland sites.

In terms of cultural relationships, Soejono believes there was an exchange system between the inhabitants of Gilimanuk and the people who manufactured metal in the inland sites. He proposed that finished cupreous artifacts flowed from the inland sites to Gilimanuk, and beads and possibly raw materials moved from Gilimanuk in the other direction (Soejono 1977: 239, 246, 273).

Beads have been discovered in Gilimanuk throughout layer III (the habitation layer) and also in burial contexts in layer IV (Soejono 1977; Ratna Indraningsih 1983: 120; 1985: 136). On the other hand, beads are very rare in sarcophagus burial sites. The beads found in Bali are of different materials, colours, shapes and sizes. In terms of materials, those from Gilimanuk are made of shell, stone (especially carnelian), glass, and gold; glass beads seem to have been the most popular. Bead shapes include globular, oblate, barrel shaped, cylindrical, ellipsoid, annular, lozenge-shaped, rectangular, 8 and 12 facetted, and segmented. Colours are red, blue, green, yellow, orange, black, and white (Soejono 1977; Ratna Indraningsih 1985: 137).

A number of "mutisala" beads from Gilimanuk have been analysed and shown to be similar in composition to other specimens from Plawangan (north Central Java), and Tegurwangi (South Sumatra) (Ratna Indraningsih 1983: 124). Comparative studies have also been carried out on glass beads from South Sumatra and other sites, including Kampong Sungai Lang, in Selangor; Kuala Selinsing, Perak (both sites in Malaysia), Oc-eo (Vietnam), and Arikamedu (India). These beads have similar compositions and seem to form a uniform group (Lamb 1965: 98-100). This implies that the "mutisala" beads from Gilimanuk might be derived from the same source as the other specimens from Southeast Asia. Several authors believe that the origins of the "mutisala" beads are to be found in South India, particularly Arikamedu (Hoop 1932: 132-139; Arkell 1936; Sleen 1958: 208; Lamb 1965: 94). However, evidence for the manufacture of "mutisala" beads has also been discovered at Pangkalan Bujang in Malaysia, and Lamb has argued that "mutisala" could have

been manufactured here using raw materials imported from South India. In addition, glass fragments and lumps of beads have been found at Gilimanuk (Ratna Indraningsih 1985: 138), but it is not clear whether this implies that beads were manufactured locally.

As already noted, carnelian beads also occurred at Gilimanuk, as well as in several sarcophagus burial sites in Bali. Some of these beads perhaps came from Cambay in Gujarat, north of Bombay (Arkell 1936; Hoop 1932; Sleen 1958; Lamb 1965: 92). The distribution of Indian beads covers very wide areas, not only in Asia but also in Africa (Arkell 1936; Sleen 1958; 204, fig.1). Recent archaeological research in Indonesia has yielded a number of glass and stone beads in several prehistoric sites, including the caves of Leang Buidane in the Talaud Islands, (Bellwood 1976), Leang Bua on Flores, and Camplong in West Timor (Ratna Indraningsih 1985: 134-5, fig.1).

Beside beads, several vessels believed to be southern or eastern Indian rouletted ware have also been discovered in sites of the Buni pottery complex in northwest Java. Rouletted ware occurred at Arikamedu and other sites in southern and eastern India dated to the first and second centuries AD (Walker and Santoso 1980: 228-235; 1984: 376-82), and the appearances of beads and rouletted ware in Indonesia may indicate the beginnings of contact with India during the early first millennium AD.

As far as Indonesia-Indian trade contacts are concerned, it is interesting to speculate upon what sorts of items attracted Indian traders to Indonesia and other regions of Southeast Asia. Many scholars believe that gold, spices, drugs, forest products, animal products and exotic birds were important motives for original Indian interest in the region (Leur 1967: 90; Wolters 1974: 63). These items were mentioned in contemporary Indian texts; the Jataka mentioned Suvarnabhumi or the Gold Land, and the Ramayana mentioned Suvarnadvipa or the Gold Island. The Ramayana also mentioned Yavadvipa, but whether this referred to the island of Java is not clear (Bambang Sumadio 1977: 4). Sandalwood was mentioned in the Ramayana, and this may have come from Timor or Sumba (Wolters 1974: 65, 280). The Raghuvamsa compiled by Kalidasa mentioned lavanga (cloves) from *dvipantara*; according to Wolters (1974: 66) the term *dvipantara* referred to the Indonesian archipelago.

Based on items such as sandalwood and cloves which were derived from islands located east of Bali, it may be that Gilimanuk was an important site located on a trade route between eastern and western Indonesia. Indian beads and other items

might have been traded into several coastal sites from the western part of Indonesia to Timor (e.g the Camplong cave), and sandalwood and cloves were perhaps taken back in return. This hypothesis could also be examined archaeologically through future research.

Beads might thus have been exchanged from Gilimanuk and other coastal sites to inland sites in Bali. As already mentioned, however, beads are not very common in sarcophagus burial sites in Bali. Those which have produced them include Pujungan, where 2 specimens of pale blue glass and one of carnelian were discovered (Heekeren 1955: 8); Nongan, with 2 carnelian beads (Heekeren 1955: 12); and Cacang which produced 4 carnelian beads, one being 29 mm in diameter and others 15 mm (Soejono 1977: 58).

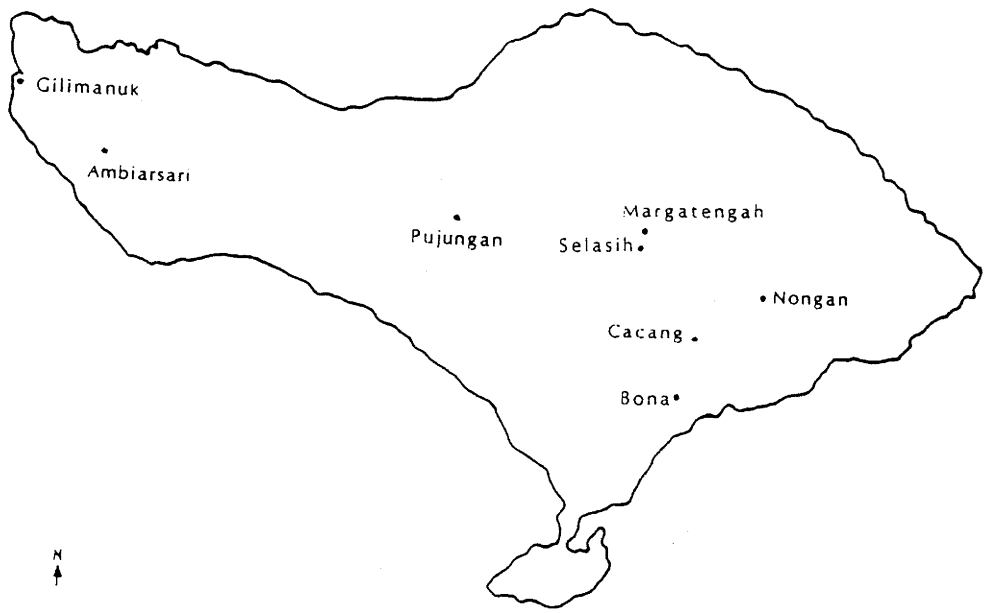

Figure 3-2: Map showing distribution of carnelian beads

Carnelian beads have also been discovered in sarcophagi A and E at Margatengah, and glass beads in sarcophagi D and E. Gold beads were also discovered in sarcophagus E. Unfortunately, these beads have not been reported in detail (Soejono 1977: 72-75, table 4). Sarcophagus A from Tigawasa also produced glass beads, and one blue glass bead was found while dumping soil. In addition, carnelian beads have been reported from other sarcophagus sites such as Ambiarsari C, Bona and Selasih, but without detailed information being recorded (Soejono 1977: table 4). In terms of varieties and frequencies of beads, sarcophagus E from Margatengah yielded more than others.

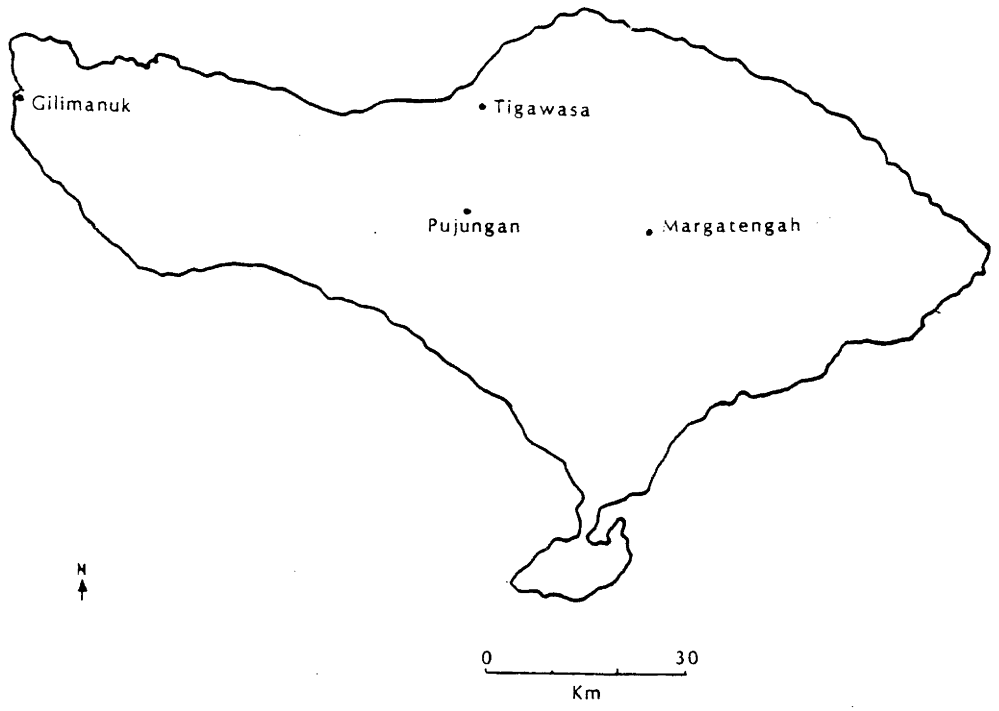

Figure 3-3: Map showing distribution of glass beads

Based on distribution, carnelian beads seem to be more common than glass beads in sarcophagus burial sites in Bali. They even reached Nongan which is located about 150 km from Gilimanuk (see fig.3.2).

The scarcity of beads in sarcophagus sites in Bali might indicate a high value for these objects. Ethnographic data indicate that beads were used recently for many purposes. In several islands, including Borneo, Sulawesi, Sumba, Flores, Timor and New Guinea, beads were used not only as ornaments but also as currency (Heekeren 1958: 40). The eyespot beads were used for treating eye diseases among the Dayak. The same beads are regarded as charms of considerable potency by Tibetans (Lamb 1965: 121).

Outside Bali, several palaeometallic sites have produced glass and carnelian beads, including Tegurwangi and Tlagamukmin in South Sumatra (Hoop 1932: 133-139; Ratna Indraningsih 1985: 134-135); Buni and Pasir Angin in West Java (Sutayasa 1972; 1979; Ratna Indraningsih 1985); Kajar 2, Gunung Kidul (Hoop 1935) and Plawangan (Sukendar and Awe 1981) in Central Java; Kidangan/Kawengan (Suryanto 1985) and Besuki (Heekeren 1958) in East Java; Gunung Piring in Lombok (Gunadi 1978); Melolo in Sumba (Heekeren 1956); Leang Buidane in the Talaud Islands (Bellwood 1976, 1984); Leang Bua in Flores; and Camplong cave in Timor (Ratna Indraningsih 1985). These wide occurrences of beads in the Indonesian archipelago might one day be able to indicate the trade routes and processes of early Indian contacts.

Following on from the notion that an exchange system might have existed in the Early Metal period between Gilimanuk and inland sites in Bali, other problems arise concerning the mechanisms and networks involved. In order to answer these questions we should examine the characteristics of archaeological materials, the distances between sites, and the distributions of artifact classes.

In terms of the former, metal artifacts and beads can be categorized as luxury goods, and therefore they might imply that a ranked society already existed in Bali. If this was so, then ruling elites might have maintained exchange systems with other regions in order to obtain these goods. This assumption is supported by the distribution of some of the artifacts themselves; for instance the axes of crescent-bladed type and the double-spiral wire units occurred around Manuaba and Gilimanuk, but not in other sites. These distributions might indicate the existence of persons of relatively high rank in these two locations.

Another interesting point to note is that the distance between Gilimanuk and Manuaba is about 120 km, and problems of transport necessarily arise. Although this distance is quite far, however, the quantity of cupreous artifacts is considerable at both ends, but falls off in between, away from the presumed Manuaba supply zone. This implies that there was directional exchange between Manuaba and Gilimanuk; metal objects might have been exchanged directly to Gilimanuk, and only secondarily to intermediate sites. In Renfrew's terminology (1975: 41-42) this type of exchange can be categorized as "home base reciprocity" or "down the line trade". This situation may indicate the emergence of central places and perhaps middleman traders (Renfrew 1976: 148). The data may also indicate the existence of status hierarchies (Renfrew 1977: 77).

Therefore, on the basis of materials, distributions of artifacts, and the distance between Gilimanuk and the inland sites it may be hypothesised that exchange networks between these sites were to some extent centralized and dominated by ruling elites.

3.2. Chronology

Chronology provides an important framework for the delineation of cultural history, and particularly that of the Early Metal period in Bali. Without knowledge of the temporal and spatial distributions of cultural remains, it is impossible to verify the existence of contact, trade, migration, influence, and even the local development of cultural features.

As already mentioned in the previous section, the dating of sarcophagus burials in Bali is very poor. In this section I will attempt to propose a tentative chronology, through comparative studies of other sites which have produced bronze and iron objects, as well as glass and stone beads. Such sites include Gilimanuk, in Bali, Pejaten and Pasir Angin/Leuwiliang in West Java, and Leang Buidane in the Talaud Islands of northeastern Indonesia. In addition, a comparative study will also be undertaken on other relevant sites in Southeast Asia.

Gilimanuk is the only site in Bali to have been dated by the radiocarbon method, although the results are rather controversial. Several samples of charcoal from Gilimanuk have been analyzed; one from sector XX at about 50-60 cm depth gave a date of 1650 $\pm$ 55 BP (GrN 7126); another from sector XXI at about 150 cm depth gave 1850 $\pm$ 55 BP (GrN 7128), and the third from sector XXII gave a result of 1800 $\pm$ 85 BP (GrN 7132)(Soejono, 1977: 280, 350). These samples are believed to represent the habitation layer in the Gilimanuk site. Another sample, however, gave an unacceptable date of 7020 $\pm$ 165 BP (GrN IV 7129). This came from the same habitation layer, which produced bronze and iron objects of an advanced stage of technology (Soejono 1984: 74).

If these samples are read at face value, therefore, Gilimanuk should be dated to between 5000 BC and AD 500. However, an appearance of bronze and iron metallurgy as early as 5000 BC is quite unacceptable; the appearance of iron tools in Greece occurred not earlier than 1000 BC, and in Mesopotamia around 900 BC (Waldbaum 1980: 82; Snodgrass 1980: 368). In India, the first appearance of iron was also in the first millennium BC, and iron artifacts were common in the early urban centres of the Gangetic doab by about 500 BC or later (Agrawal 1984: 249). The Iron Age in Vietnam perhaps began around 600 - 500 BC, although iron metallurgy might have been practiced here slightly earlier. Many iron artifacts have been reported from sites and burials of the Dongson culture, including hoes, spades, axes, knives, and vessels (Pham Minh Huyen 1984: 176). In China, iron metallurgy possibly appeared at about the same time as in Vietnam (Chang 1968: 313-316). In Ban Na Di, northeastern Thailand, iron metallurgy might have also been practiced in the first millennium BC (Higham 1986: 3-11). On the basis of the dates listed, therefore, it is hard to believe that Gilimanuk was occupied before the late first millennium BC.

Pejaten, like Gilimanuk, is another Early Metal site, located in the southern part of Jakarta. This site produced a large number of cord-marked sherds in association with several fragments of baked clay casting moulds for axes or knives,

and stone adzes. The charcoal samples for radiocarbon dating were taken from trenches II and VI at about 50-60 cm depth in association with the casting moulds and corded sherds. The sample from trench II gave a date of 2550 ± 200 BP (ANU 1520), and that from trench VI gave 1830 ± 250 BP (ANU 1519) (Sutayasa 1979 68). These dates thus place the site between 500 BC and AD 500. It is interesting to note that the Pejaten sherds are similar, in terms of decoration, with those of the Buni pottery complex. The decoration includes net impression, triangle impression, impressed concentric circles, and herringbone impressed patterns (Sutayasa 1979: 68). Some of these patterns also occur in the Gilimanuk pottery; for instance, net impression, triangle impression and herringbone impression (Soejono 1977: 180; Santoso 1985: 48-50, fig.2 & 3). This suggests some degree of contemporaneity for both of these sites.

Pasir Angin/Leuwiliang is also located in West Java, although its dates are still not clear. Several bronze and iron objects were discovered here, including a ceremonial bronze staff with geometric incised ornamentation, iron daggers and knives, and also gold ornaments. In addition, carnelian and glass beads, decorated and plain potsherds, and several fragments of polished stone adzes were also discovered. Charcoal samples gave dates of 4370 ± 1190 BP (ANU 1109) and 1050 ± 160 BP (ANU 1110), but the resolution of this dating problem is not yet clear. The site may have been used as a ceremonial offering place between about 1000 BC and AD 1000 (Sutayasa 1979: 69; Bellwood 1978: 224-225).

Archaeological research in Leang Buidane in the Talaud Islands has produced jar burials associated with offerings of pottery, beads, baked clay casting moulds, and metal artifacts (Bellwood 1976; 1978; 1985: 305-309). The large burial jars at Leang Buidane were either round or rectilinear in shape, and generally undecorated. Unfortunately, the relationships between the human bone found in Leang Buidane and the original positions of the pots are still not clear, since all the vessels had been broken in antiquity. However, it seems very likely that the jar burials were secondary, as in the Tabon caves (Bellwood 1976: 270). The human bones consisted of skulls, mandibles and limb bones, and pelvic bones and vertebrae appear to have been discarded or lost. Dental analysis indicates that the jar populations at Leang Buidane were Mongoloid (Bellwood 1985: 307), and human bones from the sarcophagus at Cacang, and from Gilimanuk, also show Mongoloid features (Jacob 1967: 903-910; Soejono 1977; 245), as do the human bones from Duyong cave, Palawan (Winters 1974: 28-35).

The appearance of beads in Leang Buidane, particularly of carnelian and agate,

is very important. 23 carnelian beads were discovered, and classified into two classes; facetted (11) and spherical (12). The facetted ones range in length from 9 to 22 mm. These beads are drilled very accurately from both ends, a well known characteristic of the class. The spherical carnelian beads range from 4 to 16 mm in diameter, but only three exceed 8 mm, and seven of the total of twelve spherical carnelians have diameters of only 4-5 mm. Bellwood believes that all the beads from Leang Buidane might have been imported from India, although fragments of carnelian beads which may come from a workshop have been found at Kuala Selinsing in Perak, West Malaysia (1976: 276).

Facetted carnelian beads have a very wide distribution, and have been found in several of the Early Metal period sites in Southeast Asia, including Sa Huynh, Hang Gon and Phu Hoa in Vietnam, in these instances in jar burial contexts which probably date between 700 BC and AD 1. They are also reported from Manunggul chamber B on Palawan, in an assemblage dated 190 $\pm$ 100 BC (Bellwood 1976: 277). Facetted carnelian beads were manufactured in India between perhaps 500 BC and AD 1500 (Dikshit 1952: 41). However, there is no historical evidence for Indian contacts with Indonesia prior to the first century AD, and the appearance of Indian beads in Island Southeast Asia may thus date to between AD 1 and AD 1500 (Bellwood 1976: 277).

In addition, three beads of etched black agate were also found at Leang Buidane. These are very similar to a bead from Taxila, dating from the first century AD (Bellwood 1976: 277, fig.10), and in northern India such beads may date back to about 400 BC (Dikshit 1952: 35). Spherical forms with similar etched patterns have also been reported from Manunggul chamber B , an Early Metal site in the Philippines (Fox 1970; Solheim 1964)

As already mentioned, metal artifacts and baked clay moulds were also discovered in Leang Buidane. The metal artifacts included a bronze cone and a copper socketed axe 65 mm long. The axe has a splayed and curved cutting edge, similar in general shape to the examples from the Tabon caves. Three fragments of casting valves of baked clay were also reported from Leang Buidane. One of the valves seems to be for a socketed axe similar but not identical to the one recovered. The other two valves are also fragmentary; one appears to be for a parallel-sided axe, the other for a tubular object (Bellwood 1976: 278). One radiocarbon date of AD 1440 $\pm$ 80 (ANU 1516) was obtained from charcoal collected from the top sealing layer in the cave, and this obviously postdates the assemblage. A thermoluminescence date for one of the baked clay casting moulds was also

calculated as 960 years BP. In addition, iron objects also occur in Leang Buidane, including a tang for a knife or spearhead, and two other small rodlike fragments. On the basis of these dates Bellwood places the Leang Buidane assemblage between 700 and 1500 AD, or earlier (1976: 278; 1985: 307).

Recent archaeological research in the Madai and Baturong regions in Sabah has also revealed a cultural assemblage of the Early Metal period, dated by radio carbon to the first millennium AD. Several sites have been reported, including Agop Atas and Pusu Samang Tas in the Madai massif, Hagop Bilo in the Baturong massif, and a cave called Pusu Lumut in the Tapadong massif on the Segama River (Harrisson 1971; Bellwood 1984: 50-52; 1985: 309-311).

Madai Cave 1 produced a large quantity of pottery comprising bowl and flask forms decorated with a burnished red slip or with complicated incised patterns (Bellwood 1984: 50, fig. 8). Paddle impression, both cross-carved and corded, also occurs. Based on form and decoration, Bellwood believes that the Madai pottery is paralleled by the pottery from Leang Buidane, and the jar burial sites in the Tabon caves of Palawan (Bellwood 1984; 1985: 309). The assemblages from Madai 1 can also be approximately cross-dated with jar burial assemblages from Hagop Bilo, Agop Sarapad (Madai 2), Pusu Samang Tas (Madai 4), and Pusu Lumut cave on the Segama River. The last two mentioned sites were excavated by Barbara Harrisson (Harrisson 1971: 94-95; Bellwood 1984: 52), and may be dated to the later first and early second millennium AD.

In addition, copper/bronze fragments, a forged iron tanged spearhead and a small iron knife were discovered at Madai 1. According to Dr Colin Brewer of Queensland University, the iron spearhead, which dates to AD 200, was manufactured from a low carbon steel (Bellwood 1984: 50).

Facetted carnelian beads were also discovered in Madai 1, although technically they are cruder than the Leang Buidane beads. This may imply that these beads were manufactured in Southeast Asia, rather than in India proper.

It should be noted that a copper or bronze axe and a part of a stone mould (possibly volcanic ash) were found in the jar burial cave of Pusu Lumut, in the Tapadong massif. The axe measures 46 x 37 mm, and has a curved cutting edge and a socket (Harrisson 1971: 210, fig. 44 & 45; Bellwood 1984: 52). The appearance of the mould indicates that metal artifacts might have been manufactured locally. Pusu Lumut cave also produced an iron spearhead as well as polished stone axes, which could indicate that stone tools were still used during the Early Metal phase, or they might have been buried as heirlooms.

As already noted, the assemblages from Agop Atas and Leang Buidane seem to parallel those of the Early Metal phase in the Philippines, particularly Kalanay and the Tabon caves. Unfortunately, only Manunggul Chamber B at Tabon cave has a relevant radiocarbon date in this case, of about 200 BC. This site produced glass bracelets, glass and carnelian beads, and also five acid-etched agate beads similar to the specimens from Buidane. Cupreous objects, including socketed axes, spearheads, a tanged and barbed arrowhead, and a possible barbed harpoon, have been found in other jar burial caves in the area. In addition, baked clay casting moulds, gold beads and jade lingling-o earrings have also been discovered (Bellwood 1985: 312). Fox believes that metallurgy appeared in the Tabon caves at about 500 BC, but Bellwood suspects that the Tabon caves jar burial sequence may be similar to the sequence from the Sabah site, and thus date mainly in the first millennium AD.

It is interesting to note that several of the Early Metal sites in Island Southeast Asia, for instance Pejaten, Buidane, Madai 1 (Agop Atas), Pusu Lumut and Tabon, have produced moulds for casting metal objects, particularly axes. Undoubtedly, axes and other metal objects were made locally, although raw materials were possibly imported from other regions. As already pointed out, several sarcophagus burials in Bali contained distinctive metal objects, including the crescent and heart-shaped axes as well as other peculiar ornaments. Unfortunately, no moulds for casting bronze axes have yet been found in Bali, but several fragments of a stone casting mould for a bronze *moko* have been discovered at Manuaba. This implies that metalworking occurred in Bali during the Early Metal period, contemporary with other regions in Island Southeast Asia.

Composition analyses of metal objects may also be important from a chronological viewpoint. Studies of Dongson drums indicate that the proportions of tin and lead in bronze alloys tended to increase over time (Hollmann & Spennemann 1985: 94), so that bronze objects with high proportions of tin and lead could be relatively young.

In terms of composition, the metal objects from Bali contain both tin (6.92-34.92%), and lead (0.55-7.71%) (Soejono 1977: 22-23). These high percentage ranges can be compared with those of older bronze objects from the Go Mun and Dongson phases in Vietnam, when both tin and lead were also used in smaller quantities in alloys. Several specimens from the Go Mun phase contain tin (0.3-3.72) and lead (1.00-11.15), and the proportions of tin (0.22-13.21) and lead (1.20-7.40) were similar during the Dongson phase (Huyen 1984: 176-178, appendix. 1). The Go Mun phase dates from the beginning of the first millennium BC, and is followed by

the Dongson phase. The classic Dongson phase began about 600-500 BC according to recent radiocarbon dates (Huyen 1984: 176; Bellwood 1985: 272), and was characterized by the appearance of bronze drums and iron objects.

Based on the appearance of bronze and iron objects as well as carnelian and glass beads, I suspect that the Early Metal phase in Bali may be contemporary with other Early Metal sites in Island Southeast Asia, and thus date to the first half of the first millennium AD, prior to 882 AD, when the first Old Balinese inscription appeared. The inscription of Sukawana A I is dated Saka 804, or AD 882, and is the oldest Old Balinese inscription found to date. It refers to several officials and a place called Singhamandawa, but does not give a ruler's name. In addition, six similar inscriptions dated to between AD 882 and 914 have also been found in Bali (Goris 1954a : 53-62; Bambang Sumadio 1977: 135-138).

3.3. The Question of Dongson Influence During The Early Metal Period in Bali

The Early Metal period in Bali might have been influenced by the Dongson culture in terms of artifact form and decoration, although local development must also have occurred. In this section, I attempt to determine if elements of the Dongson culture did reach Bali, and also to clarify local development during the Early Metal period.

In general, the metal objects of the Dongson culture can be divided into several categories which include musical instruments, ornaments, tools and weapons. Specific artifact classes of copper or bronze include drums, bells, situlae, "spittoons", bowls, bracelets, ankle and chest shield, belt and costume ornaments, bronze rings, fish hooks, knives, chisels, socketed hoes, socketed axes, socketed spear and arrow heads, swords, and daggers with anthropomorphic handles (Janse 1958; Thong 1974; Tan 1980; Chinh and Tien 1980; Huyen, 1984)

Among these metal goods the drums, socketed axes, and ornaments (especially bracelets and bronze rings), as well as the technique of lost wax casting might have been important elements which influenced and inspired the Early Metal period in Bali. Bronze kettle drums, especially the so-called Heger type I are a characteristic feature of the Dongson culture in Southeast Asia. Kettle drums of Heger type I have wide distributions in northern Vietnam, South China and other regions of the Southeast Asian Mainland, as well as Indonesia (Heekeren 1958: 16). In the latter country they have been discovered in several sites including (amongst others) Cibadak, Cirebon and Cianjur (West Java), Pekalongan, Banyumas, Semarang, Kedu

and Tanurejo (Central Java), Rengel and Lamongan (East Java), Sangeang island, and Selayar island (Heekeren 1958; Bintarti 1985: 64). In addition, copies of kettle drums of Heger type I have also been reported from Bima in Sumbawa, and a specimen is depicted on a stone carving at Batugajah in South Sumatra (Bintarti, 1985; Hoop 1932: 92, pl. 93 & 94).

It should be noted that kettle drums of Heger type I have never been found in Bali. However, bronze kettle drums of the so-called Pejeng *moko* type have been found in several places in Bali, and fragments of a stone mould for casting them have been found at Manuaba. The well-known Pejeng *moko* may be the largest one ever cast; its height is 185 cm and the tympanum has a diameter of about 160 cm. The tympanum protrudes over 25 cm on all sides so the diameter of the body is only 110 cm (Kempers 1977). The drum can be divided into three sections. Joining the upper and middle sections there is a human face design with round eyes, pointed nose, and earlobes with disk-shaped ornament. As already noted, similar face designs also occur on the fragments of the stone mould from Manuaba. Other ornaments, mostly geometrical, include a series of 11 sharp lines encircling the upper part of the mantle; and bands consisting of two double series of tiny triangles (saw-teeth) framing a single row of f-shaped figures (see figure 4.4) (Kempers 1977: 29-30).

In terms of form, the Pejeng *moko* cannot be classified into any Heger types. Other fragmentary *moko*, of this type but smaller, have been found in Pondok Peguyangan in Badung regency (Hoop 1941), Bebitra in Gianyar regency, Basangbe in Tabanan regency, Pacung (Tejakula) in Buleleng regency (Widia 1980b), Ban in Karangasem regency (Oka 1986b), and in a private collection in London also derived from Bali (Mc O'Connel 1986). In addition, a specimen of a stone *moko* has been reported from Carangsari village, in Badung regency (Widia 1980a).

The appearance of *moko* as well as stone moulds may indicate that a local development occurred in Bali out of the Dongson drum tradition. However, *moko* has never been found in burial contexts in Bali, unlike the occasional drums placed as grave goods in Dongson sites in Vietnam (Janse 1958: 21-25; Tan 1980: 134).

Moko are also very common outside Bali, particularly in Nusa Tenggara (Alor, Adonara and Flores). Based on decoration, Bintarti (1985) has classified them into four types. Type I *moko* are decorated with human faces similar to those on the Pejeng *moko*. Their tympana are usually decorated with eight-pointed stars in their centres, wavy lines with knots and loops, geometric designs and houses. This type has a wide distribution, including Bali, Alor, Flores, and Adonara. Type II *moko*

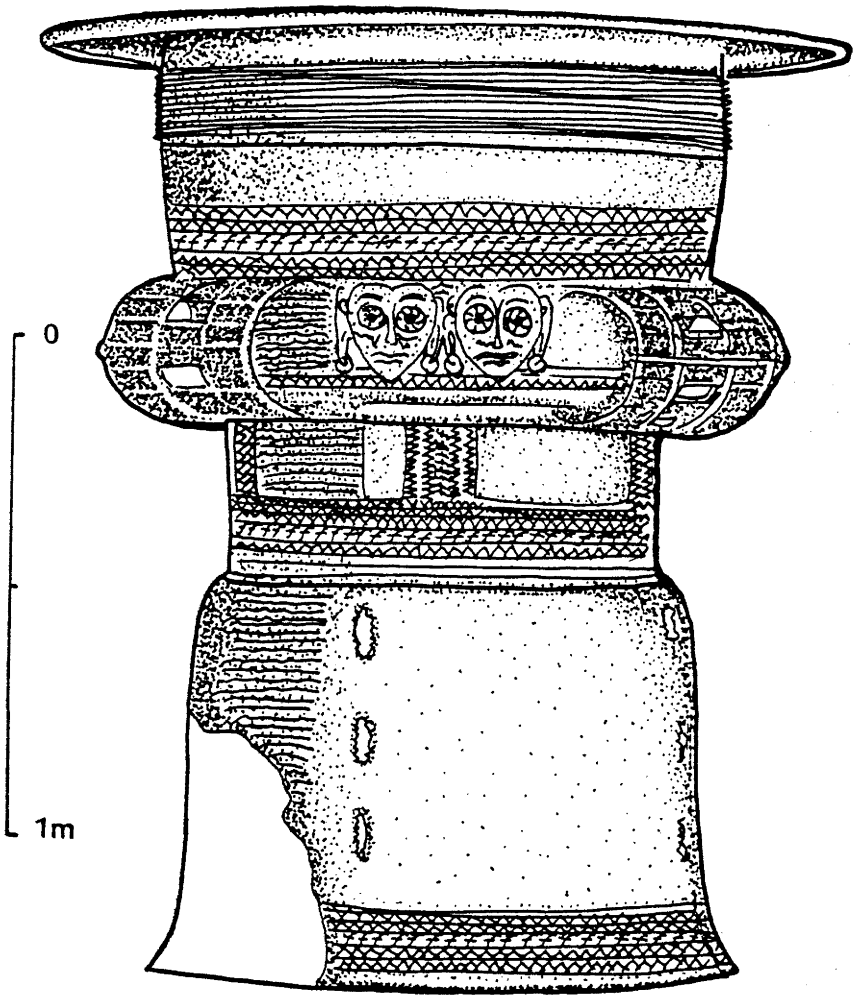

Figure 3-4: Pejeng moko. From Kempers, 1977

show some Hindu influence in terms of decoration, with motifs include *wayang*-like figures, monster (*kala*) heads, floral patterns and spirals. This type has been reported from Flores and Alor. Type III *moko* have European motifs including Zeus heads, lions, crowns, grape vines and grape leaves. These have also been discovered in Flores and Alor. Finally, the type IV *moko* are believed to date from before World War II, and have complicated decorative motifs including human figures, animals, floral, and geometric motifs.

It was mentioned earlier that socketed axes were common during the Dongson culture with many varieties of form. Especially distinctive forms include the asymmetrical and boot-shaped types (Janse 1958: pl. 28-31). It is interesting to note that socketed axes of bronze were also very common in northern Thailand and South China, as well as in Indonesia, but never occurred in South Asia (Heekeren 1958:97; Agrawal 1984: 265).

In Indonesia, socketed axes also have many variation in terms of form. Soejono (1970) has studied these objects and classified them into eight types. Based on Soejono's classification, there are two types which are found only in Bali; the type V (crescent-bladed) and the type VI (heart-bladed). As already noted, both types occur in sarcophagus burial contexts. It is interesting to note that the socketed axes of the crescent-bladed type are very small in size; blade widths range from 52 mm to 62 mm, and shaft lengths from only 45 mm to 87 mm. In other words, these objects could almost be classified as miniatures.

Burial goods, especially drums, in North Vietnam and Yunnan were also often manufactured in miniature (Janse 1958: 25; Rawson 1983: 9). Whether the Balinese crescent-bladed axes were made deliberately for a special purpose, however, is not clear.

Bronze ornaments, including bracelets, finger rings, arm protectors, finger protectors, double-spiral units and wire belts have been discovered in Bali. In terms of form they appear to be local developments, except for the bracelets, finger rings, and arm protectors. The arm protectors and finger protectors look like a number of conjoined bracelets or finger rings, and may originally have been inspired by the shapes of these items. It should be noted that weapons are very rare in sarcophagus burial sites in Bali compared with Dongson burial sites.

Although several of the Balinese objects described indicate certain elements of the Dongson culture, it is still impossible to state whether or not Bali was influenced directly by it. The appearance of metallurgy in Bali occurred at an

advanced technological stage; as it did elsewhere in the islands of Southeast Asia, and this suggests that initial development may have occurred following introduction from an outside source.

3.4. Sarcophagus Burial and Early Balinese Society

The artifacts considered in this thesis have been found as grave goods in association with mortuary practices. Using Binford's terminology, they can be categorized as sociotechnic artifacts in terms of their functions at the time of disposition, having a primary role in the social subsystem of the total cultural system (Binford 1972a: 24). As grave goods, their combined expression of wealth per burial may correspond with the social identity and social persona of the deceased. In addition, different types of social organization, because they allow for different types of social relationships, will evidence different sets of disposal treatment (Saxe 1970: 5, 12). Binford (1972b: 232) proposes three classes of cultural variation in burial practices; treatment of the body itself, design of the facility in which the body is placed for disposal, and different contribution to the burial furniture placed with the body.

Given these notions, in order to determine the social functions of the cupreous artifacts from Balinese sarcophagus burials, other variables including treatment of the dead, form and orientation of the sarcophagus, and the forms and quantities of the cupreous artifacts themselves should be clarified. Concerning the treatment of the dead, skeletons from sarcophagi have been reported mostly in flexed positions. The one from Angantiga was reported in a flexed position on its side; its knees were contracted to the waist, and the forearms parallel to the thighs (Heekeren 1955: pl.1). The skeleton from the sarcophagus at Singakerta was reported in the same position (Soejono 1977: 95). However, those from Busungbiu and Cacang were reported in rather different positions, lying on their backs with knees drawn up to their chins. Both had arms crossed on their chests. Another position has also been discovered in sarcophagus E at Margatengah, where the skeleton was in a flexed position on its back (Soejono 1977: 146).

It should also be noted that human bones have only been discovered in sarcophagi of type A (small) and type B (medium), but not in type C (large). In terms of size, sarcophagi types A and B are only appropriate for a corpse in a flexed position. On the other hand, sarcophagi of type C would be appropriate for a body in an extended position. Whether different positions of the deceased in sarcophagus burials indicate differences in age, sex, social identity, cause of death, or simply changes disposal treatment through time, is not clear.

Ethnographic data indicate that the flexed position is still common in many non-Indianized and non-Islamized regions of Indonesia, including Alfuru, Aru, Sumba, Kei and Irian Jaya. Soejono (1977: 146) believes that the flexed position might be related to the concept of rebirth. In addition, Binford (1972b: 218) proposes that the practice of flexing the body in the grave had two aims; to represent the position of the foetus *in utero* as a symbol of rebirth, and to prevent the spirit from returning to the survivors.

In terms of burial orientation, most sarcophagi in Bali have been found oriented towards the nearest mountain (Soejono 1977: 152, table 2). Mountains are also believed to be the final destination of the souls of the dead and the abode of the gods (Swellengrebel 1960; Goris 1960). This concept is still reflected in Balinese settlement today (Bagus 1965).

Several sarcophagi or slab graves in other regions of Indonesia have also been reported to be oriented towards mountains, including those at Cirebon, which have their heads toward Gunung Cerme (Hoop 1937: 277), and the slab graves at Tegurwangi in south Sumatra which point towards Gunung Dempo (Hoop 1932: 142). Ethnographic data also indicate that the concept of a mountain as the final destination for the souls of the dead occurs among Tenggerese in East Java, and in Sumba and Timor.

As already noted, the position of the body in the sarcophagus and the orientation of the sarcophagus itself might reflect concepts of rebirth or life after death and the destination of the spirit. In such circumstances, the functions of the metal objects which served as burial goods may be related to uses in the life after death.

As already noted in the preceding chapter, Balinese sarcophagi vary in terms of measurements, shapes of cross-sections, and the types of knobs. On the bases of these variables, Soejono classified the sarcophagi into three categories; small (A,80-140 cm), medium (B, 150-170 cm) and large (C, 200-268 cm). In terms of their weight, small sarcophagi weigh around 200 kg, medium 750 kg, and large 1200 kg (Soejono 1977: 81, 141.note 10).

Tainter (1978: 125) and Brown (1981: 28) have argued that the amount of energy expended in burial depends upon the social rank of the deceased; higher social rank corresponds to a greater amount of energy expenditure. The different size categories of Balinese sarcophagi might therefore also indicate different ranks or social statuses. In addition, different size categories of the sarcophagi possibly

reflect different age or sex categories. I would like to stress that several sarcophagi are very small in terms of size, being less than one metre long. These specimens include sarcophagus A from Celuk, sarcophagus C from Ambiarsari, and also the sarcophagus from Busungbiu (Soejono 1977: 145, table 2). In terms of size, these sarcophagi are only appropriate for the burial of an infant or child or dismembered bones. Unfortunately, none contained human bones. In addition, Van Heekeren also discovered a small sarcophagus in Besuki, eastern Java (1941: 9). If children were also buried alone in sarcophagi during the Early Metal period in Bali this could suggest that ascribed status based on descent was already present in the Balinese social system.

On the other hand, burials without sarcophagi have also been discovered from several sites, including Angantiga, Bona, Ubud (Soejono 1977: 44) and Keramas (Mahawiranata 1983: 74). In Keramas, three burials near to the sarcophagus were discovered with grave goods similar to those found in the sarcophagus itself. These burial are believed to have been contemporary with the sarcophagus tradition, and it thus seems that only certain individuals were buried in sarcophagi, particularly those who had high social statuses. Ethnographic data from Sumba and Timor also indicate similar circumstances. In Timor only members of a certain high-ranking lineage called *usif* are buried in a sarcophagus (Soejono 1977: 144).

Economic constraint is another factor in mortuary practices. Among the Ngaju Dayak, secondary burial can only be performed according to the economic condition of the survivors. A case study indicates that many deceased of the Ngaju Dayak do not receive secondary burial treatment because of a lack of property (Miles 1965: 174). Whether such circumstances also occurred in Bali during the Early Metal phase is still in question.

The sarcophagi themselves possibly reflect technological change during the Early Metal period in Bali, particularly the introduction of metallurgy. They were probably made by using bronze or iron tools, and they also reflect the availability of stone materials. I stress that stone supply is an important factor, because no sarcophagi have ever been discovered in the necropolis of Gilimanuk, where stone is absent.

On the basis of the distribution of the 115 sarcophagi found to date in Bali, Soejono has determined three areas of clustering; western Bali, including the villages of Ambiarsari and Pangkungliplip, in Negara regency; northwestern Bali, including the villages of Tigawasa, Busungbiu and Pohasem in Buleleng regency and southeastern Bali including the regencies of Tabanan, Badung, Gianyar, Klungkung,

Bangli and Karangasem (Soejono 1977: map 2). It should be noted that the distribution of sarcophagi in Bali tends to concentrate in the plain around the Pekerisan and Petanu rivers, where evidence of early inscriptions and other cultural remains of early Hindu-Buddhism have also been discovered (see fig. 4.1). In addition, the distribution of sarcophagus type C (large) is confined to a radius of about 10 km around Manuaba.

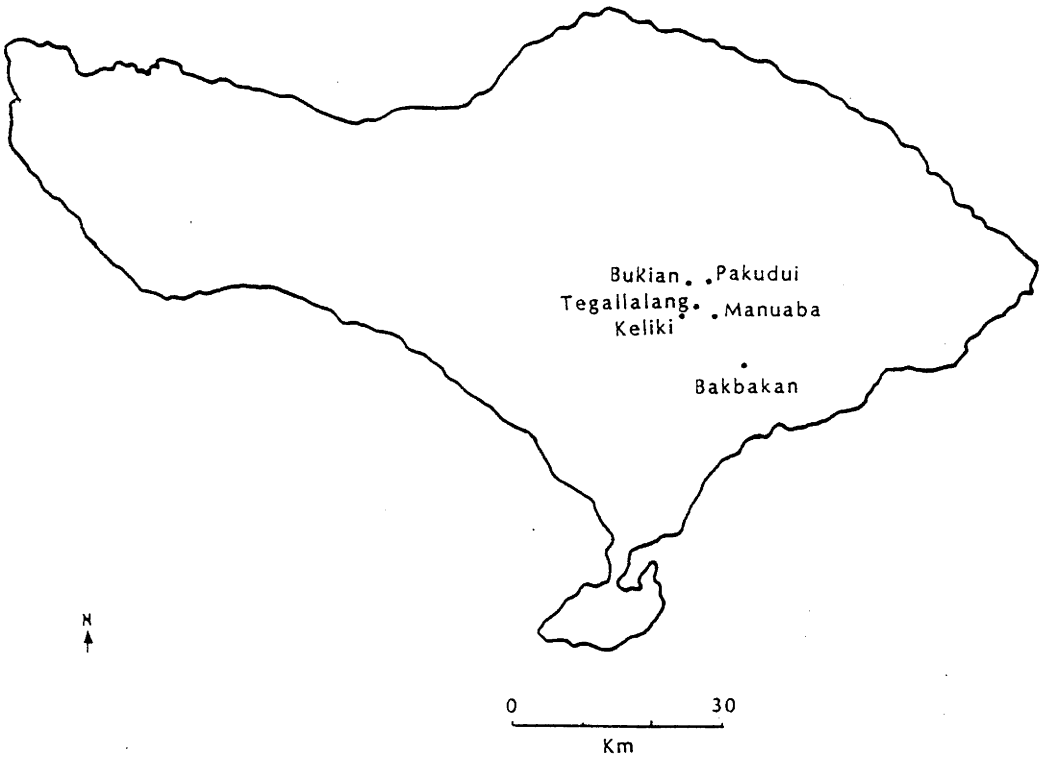

Figure 3-5: Map showing distribution of Sarcophagus Type C (large)

I suspect that the distribution of sarcophagus burials in Bali also reflects concentrations of population and settlement during the Early Metal period. During this period rank in the society might already have existed, and the characteristic settlement was probably of the village type. According to Fried (1967), villages in simple ranked societies tend to exist as largely independent, autonomous social systems, although they are articulated with a larger and usually cooperative network of kinship relationships. Society during the early Metal period in Bali can perhaps, therefore, be categorized as a simple chiefdom in Service's terminology (1975: 15-16).

Chapter 4
EARLY STATE AND STATECRAFT IN BALI

4.1. Early State Formation in Bali

It has been argued that a ranked society or chiefdom level of social organization might already have existed in Bali during the Early Metal period, around the first half of the first millennium AD. Social stratification was manifested in mortuary practice, particularly in the tradition of sarcophagus burial. It could be that only certain people of high rank in the society were buried in the sarcophagi , and likewise that only such persons had access to certain classes of artifacts, especially those of metal. The appearance of metallurgy in Bali, an island which lacked sources of both copper and tin, also indicates the occurrence of inter-island trade. In Steward's terminology (1973: 191-2), the metal-using pre-Hindu society of Bali could perhaps be categorized as Early Formative.

Ethnographic data and archaeological evidence indicate that chiefdom societies were in general theocratic, and often practiced ancestor worship (Steward 1973: 192; Service 1975: 150-168). It is interesting to note that stone images carved in a "Polynesian style" have been discovered at many sarcophagus and Early Metal sites, including Keramas (Mahawiranata 1982: 119-127), Peguyangan (Taro 1983), Celuk (Agung 1984), Pohasem (Sutaba 1986: 308.pl.1) and Depaa (Sutaba 1982: 25). It is often assumed that these stone images are contemporary with the sarcophagus burial tradition, although some might have been carved later during the Hindu period (Soejono 1977: 138, 169; Sutaba 1986: 300). Whether these stone images indicate ancestor worship, however, is not clear.

Several authors believe that warfare was relatively undeveloped in chiefdom societies (Steward 1973: 192; Service 1975: 271). This notion is supported in Bali by the scarcity of weapons in sarcophagus sites. On the other hand, several other classes of artifacts have been discovered in these sites, including double-spiral wire necklace units and small crescent-bladed axes. The wide distributions of these artifacts might indicate interrelationships between chiefs through gift-giving in peaceful conditions.

Rice cultivation by simple irrigation may have been the main economic basis during this phase, although adequate research on this subject has not yet been done. However, the earliest inscription in Bali (Sukawana AI), dated to AD 882, mentions both wet rice fields (*huma*) and dry rice fields (*parlak*), as well as cattle and buffalo. Rice is mentioned in the inscription of Bebetin AI dated to AD 896 as a contribution for the shrine of Hyang Api which was established by the ruler (Goris 1954a: 53, 249). These data indicate that rice cultivation, whether in wet or dry fields, was already practised prior to AD 882, possibly using a plough drawn by cattle or buffalo. Rice cultivation with organized irrigation may have created an expandable food supply, and such a circumstance could have been important for state formation in Bali (Naerssen 1977: 27).

The appearance of Old Balinese inscriptions, a result of the process of Indianization, can be seen as a major development in Balinese cultural history. Seven inscriptions dated between AD 882 and AD 914 have been discovered, but none mention a ruler's name. All these inscriptions are written in the Old Balinese script and language, although much Sanskrit vocabulary was still being used. However, after AD 994 Old Javanese replaced Old Balinese in the inscriptions (Goris 1954a: 88). The significance of this change would be an interesting subject for future research.

The earliest inscriptions in Old Balinese include Sukawana AI (AD 882), Bebetin AI (AD 896),Trunyan AI (AD 891), Trunyan B (AD 911), Bangli Pura Kehen A (without precise date), Gobleg, Pura Desa I (AD 914), and Angsari A (without precise date). All commemorate the establishment of freeholds under a ruler's order to support hermitages or shrines. In these establishments the role of the priest was very important, and some received the ruler's order directly, as for instance, in the inscription of Sukawana AI; *hetu syuruhku senapati Danda Kumpi Marodaya me bhiksu ciwakangcita, ciwanirmala, ciwaprajna, bangunen partapanan satra di katahan buru* (Goris 1954a: 53) (Translation: my order to *Senapati Danda* (functionary) Kumpi Marodaya and *Bhiksu* (priests or monks) Ciwakangcita, Ciwanirnamala and Ciwaprajna, (you) have to build a hermitage and hospice in the royal hunting ground (at Kintamani)). The inscription of Bebetin AI, dated AD 896, also records as follows; *hetu syuruhku nayakan praddhana kumpi ugra me bhiksu widya ruwana, bangunan jnganangan yang api* (Goris 1954a: 54,I.b.2). (Translation: my order to *Nayakan Pradhana* (functionary) Kumpi Ugra and *Bhiksu* (priests or monks) Widya Waruna you have to erect the shrine of Hyang Api (God of Fire?)). It was mentioned in the inscription of Bebetin AI that the shrine of Hyang Api was located in the village of Bharu (Goris 1954a: 54.Ib.2). The early

inscriptions also mention several other high functionaries, including *Sarwa*, *Dinganga*, *Nayakan Makarun*, and *Manuratang Ajna*. Among these functionaries only the *Manuratang Ajna* can be identified as a secretary or officer in charge of records of the ruler's orders. The functions of the other officials remain obscure.

Many craft specialists are also mentioned in these inscriptions, including boat and ship builders (*undagi lancang*), a specialist in stone working (*undagi batu*), a specialist in tunnel working (*undagi pangarung*), a dyer in blue (*mangnila*), a dyer in red (*mamangkudu*), a weaver (*mangiket*), a blacksmith (*pande besi*), a goldsmith (*pande mas*), and a coppersmith (*pande tembaga*). In addition, several artists are mentioned, including a musician or gamelan player (*pemukul*), a singer (*pagending*), a bamboo gamelan player (*pabunjing*), a drummer (*parpadaha*), a flautist (*parbangci*), a mask dancer (*partapukan*), and a shadow puppeteer (*parbwayang*) (Goris 1954a: 55, IIb.4.5). According to various inscriptions, craftsmen and artists had to pay taxes (*tikasan*) in order to maintain the hermitages and shrines which were established by the ruler. The appearance of such specialists indicates that society was becoming differentiated and a redistributive system was developing. With the emergence of a redistributive system, some central regulation or control is likely to have developed. According to Renfrew (1975: 27), the centre could then becomes a point of attraction for a larger territory and could act as an exchange node for goods made elsewhere.

Many kinds of coinage can be identified during this period, including *masa suwarna* (ma su), *masaka* (ma) *kupang* (ku) and *piling* (pi). According to Stutterheim 1 *suwarna* = 1 *tahil* = 16 *masaka* = 64 *kupang*. 1 *suwarna* = 0.038601 kg (gold) (INI, 1940: 17). In addition, Goris proposed that 1 *masaka* = 6 *piling*, therefore 1 *kupang* = 1,5 *piling* (1954b: 287). Those coinages might have had a prestige value, but the occurrence of coinage in the society should also indicate the existence of a market exchange system (Renfrew 1975: 53). As already noted, five out of the seven inscriptions mentioned above provide dates in the form of a Saka year and month, and also a three day cycle of market places, including *Wijayakranta*, *Wijayamanggala* and *Wijayapura*. Even today the three day market system still persists in Bali, namely *pasah*, *beteng*, and *kajeng*.

The name of several hermitages or shrines constructed between AD 882 and AD 914 can be determined, including the hermitage and hospice at the Kintamani hill (Sukawana AI), the *Hyang Api* shrine at Bharu (Bebetin AI), the *Bhatara Da Tonta* (statue) at Trunyan (Trunyan AI and Trunyan B), the shrine of *Hyang Karimama* at the village of Simpat Bunut (Bangli Pura Kehen A), and the shrine

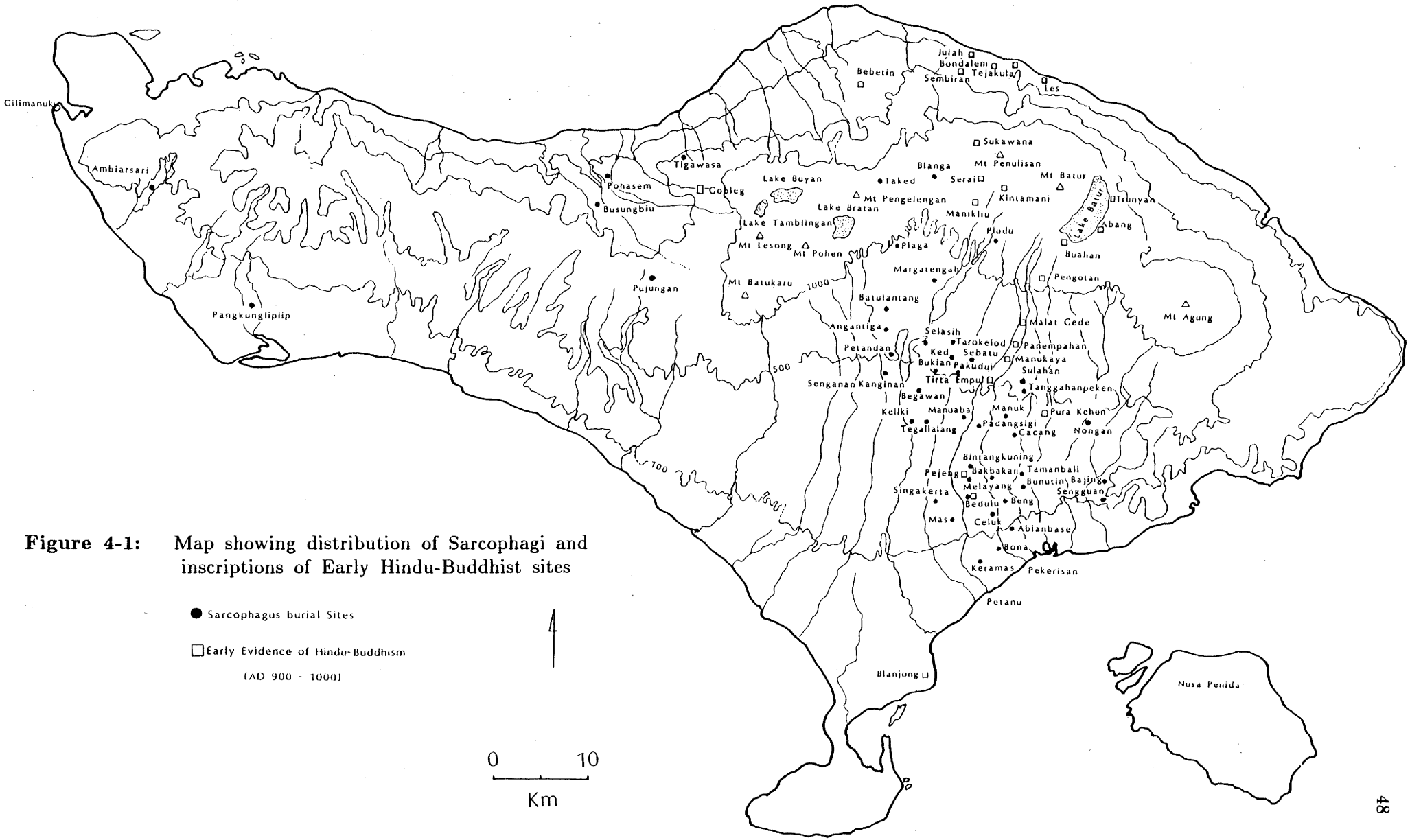

Figure 4-1: Map showing distribution of Sarcophagi and inscriptions of Early Hindu-Buddhist sites

● Sarcophagus burial Sites

□ Early Evidence of Hindu-Buddhism (AD 900 - 1000)

of *Ida Hyang di Bukittunggal* in the village of Air Tabar (Gobleg Pura Desa I) (Goris 1954a: 53-61). Among these, only the *Bhatara Da Tonta* still has visible remains. A four metre high statue is still kept in a *meru* (shrine) in the village of Trunyan near Lake Batur (Kempers 1977: 174, pl.116). The villagers call the statue *Dewa Ratu Gede Pancering Jagat*, or the God of the Centre of the World. It is interesting to note that the statue appears to be megalithic rather than Hinduistic in style.

On the basis of these data we can determine that centralized and specialized institutions of goverment already existed in Bali during the late 9th century AD. Priests seem to have played an important role in the development of writing and astronomy, as well as in religious activities, including ceremonies and the supervision of shrines. On the other hand, craftsmen, artists and traders had to pay taxes either to the ruler himself or for the maintenance of monuments or temples established by the ruler. Based on these circumstances I suggest that Balinese society in the late 9th century AD can be categorized as an Early State, although no ruler is mentioned explicitly by name in the inscriptions (Steward 1973: 194-5; Claessen and Skalnik 1978: 21-22; Haas 1982: 3; Lansing 1983: 415).

In Fried's terminology, the Early State in Bali can be categorized as a secondary state (Fried 1967: 231, 240-242); a product of contact between an advanced state and a society at the chiefdom level (Service 1975: 289, 302, 304). Yet prior to the appearance of Indian culture in Bali, it seems that social stratification, craftsmanship, long distance trade and ancestor worship already existed. The emergence of the Early State in Bali might thus be related to internal factors in Balinese society itself, factors such as economic conditions, population density and social organization.

Problems then arise as to how and why the process of Indianization occurred in Bali. It is not clear whether the influences were introduced directly from India, or indirectly through Java or Sumatra. Lansing (1983: 421) proposes that there is no evidence for any Indian visiting Bali, or any Balinese visiting India, between the 5th and 15th centuries AD. He characterizes the process of Indianization in Bali as a radiation of ideas, but he does not suggest how such ideas were transmitted.

Several hypotheses concerning the process of Indianization in Indonesia have been offered. The Ksatriya hypothesis postulates that the process occurred through direct Indian colonization. It has been suggested that a huge fleet of daring adventurers sailed out, crossed the Indian ocean and settled in Java. There they founded colonies, built fortresses and towns, and developed trade with their mother

country. Among the scholars who proposed this hypothesis were Mookerji, Berg and Moens. However, there is no supporting archaeological evidence, such as inscriptions, either in India or in Indonesia, which provides any proof for such a conquest (Bosch 1961: 5-8).

The Vaisya hypothesis offers an alternative explanation, that the process of Indianization was the result of a peaceful penetration of traders and merchants, the class of Vaisyas. After these traders settled in Indonesia they introduced Indian cultures through intermarriage with the local population. Krom is among those who have proposed this hypothesis (Bosch 1961: 8). However, van Leur (1968: 98-99) argues that no Hindu colonizations arose from such trading voyages, and he believes that the Indian traders who came to Indonesia were merely peddlers; such people would not have been competent in rituals or consecration ceremonies. They would not have been the disseminators of rationalistic, bureaucratic written scholarship and wisdom.

Van Leur therefore suggests that the process of Indianization was instigated by Brahmins who came to Indonesia because they were invited by local chiefs for religious purposes. For instance, they established *Vratyastoma*, the initiation ceremonies of native chiefs to the Ksatriya level (Coedes 1968: 24). Bosch adds that not only did Indian Brahmins come to Indonesia, but Indonesians also became involved in these ceremonies and some of them studied in India. Bosch's (1961: 12-14) theory is supported by an inscription from Nalanda in Bihar, dated to AD 860, which mentions a donation by a Sumatran prince named Balaputra to a monastery founded at Nalanda on behalf of his compatriots.

According to Bosch the process of Indianization in Indonesia was achieved through what he called the "clerk", or a definite class of individuals. Using Bosch's terminology the process was a "fecundation". In other words, Indian culture encouraged Indonesian cultural elements to develop into an independent organism in which foreign and local elements were mixed together into an indissoluble entity (Bosch 1961: 20-21).

It seems that the emergence of the state in Bali cannot be separated from other earlier developments in Indonesia. These include Kutai in Southeastern Borneo dated to around the early or mid-fifth century AD (Coedes 1968: 18, 52; Hall 1985: 105). Taruma in Western Java dated also to the early or mid-fifth century AD; Sriwijaya in South Sumatra dated to the late seventh century AD (the inscription of Kedukan Bukit AD 683); and Mataram in Central Java in the early eight century AD (the inscription of Canggal AD 732). In addition, the earliest evidence for the

early state in East Java is the AD 760 inscription of Dinaya, located in northwest Malang, Eastern Java. This inscription mentions the contruction of a sanctuary of Agastya by Gajayana, a son of Dewasimha. Both Gajayana and Dewasimha reigned over Kanjuruhan (Coedes 1968: 90; Hall 1985: 20-21). As already noted, the earliest Old Balinese inscription is dated AD 882, about 122 years later than the Dinaya inscription.

However, several Sanskrit inscriptions in Nagari script, as well as hundreds of small clay tablets of Buddhist formulae have also been discovered in Bali. Unfortunately, none of the inscriptions are dated, but the same formulae are also depicted in one example on Candi Kalasan in Central Java, which is dated to around the late 8th century AD (Bosch 1961: 179; Bambang Sumadio 1977: 134-135). If some of the Buddhist clay tablets found in Bali are contemporary with Candi Kalasan, then it may be that Buddhist or other Indian influences did reach Bali in the 8th century AD or prior to AD 882, when the oldest recovered Indianized inscription was produced.

The first ruler known from Balinese inscriptions is Cri Kesari Warmmadewa. Three inscriptions have been discovered which mention this person, at Blanjong-Sanur, Malat Gede and Panempahan. It is interesting to note that all these inscriptions emphasize that Kesari Warmmadewa had defeated his enemies.

The inscription of Blanjong is unique in that it is bilingual and uses two scripts. Side A is in the Old Balinese language using a Nagari script, and side B is in Sanskrit with a Kawi style script. According to Casparis, the Nagari script is related to the "kutila" type of contemporary Indian inscriptions, such as the Bagumra plates of the Rastrakuta king Indraraja III, dated AD 950, although some minor differences also exist. Based on the similarity between the inscription of Blanjong and the contemporary Indian inscription, Casparis (1975: 37) believes that there was direct influence from India to Bali.

On side A the dating of the inscription is depicted in chronogram style: *Caka bde Cara wahni murthiganite*. Damais interpreted these chronograms as Saka 835, or between January 29th and February 27th AD 914 (1952: 83). However, Sten Konow read them as *khecara wahni murti ganite*, that is Saka 839 (Stutterheim 1934: 128 note.1). In this case Damais's interpretation is preferable because he could determine the dating in more detail.

The Blanjong inscription recorded that Kesari Warmmadewa conquered his enemies at Gurun and Suwal. Stutterheim (1934: 130) and Van Eerde (Wheatly

1985: 257, note 48) argued that Gurun should be Nusa Penida, a small island east of Bali. However, Goris believed that Gurun was Lombok, and Suwal was interpreted as Ketewel beach south of Sukawati in Gianyar regency. Wherever the locations of Gurun and Suwal, Blanjong-Sanur seems to have been an important site in relation to Kesari's expansion. Preliminary research here indicates that Blanjong could be a multicomponent site dating between the 10th and 18th centuries AD. Archaeological remains include the Kesari inscription, potsherds, fragments of Chinese and Annamese ceramics, several Hinduistic images, and fragments of structures (Ardika 1981; 1984a: 19-21).

In the Blanjong inscription Stutterheim deciphered the word Singhadwala as a place name (possibly for Kesari's palace), but Damais deciphered it as Singharccala (BEFEO, facs.I, 1947-1950: 128, note 1). As already noted, five other earlier Old Balinese inscriptions also mentioned a place called Singhamandawa, but whether Singhamandawa was the same as Singharccala or Singhadwala is still not clear. On side B, in Kawi script, we do not have much information except for the full name of Kesari (Adiphatih Cri Kesari Warmma(dewa)) and the island of Bali (Walidwipa) (Goris 1954a: 65).

Two other Kesari inscriptions have been discovered in inland sites at Malat Gede and Panempahan (Sukarto 1977: 150-154). Both villages are located near Tampaksiring, in the area where sarcophagi and Early Hindu remains are very dense. The inscription of Malat Gede was made on a tuff pillar. It consists of four lines but almost 50% of the text is illegible. The first line bears the date of the inscription, namely Saka 835 (AD 914), in the month *phalguna* (8) during a dark moon. The second line mentions the king's name but it is not complete; Cri Ke(sari Warmmadewa?). The third line indicates an enemy (musuh) and the last line is worded: *kadya kadya maksa*. The meaning of these words is not clear but Sukarto translated them as 'forever and ever'; 'such as or for example'; or 'direction toward the mountain' (1977: 156).

The inscription of Panempahan is similar to that of Malat Gede. The first line also gives the date but, unfortunately, the year when the inscription was erected is illegible. Only the month is readable, namely *phalguna*, which is the same as that on the other two Kesari inscriptions at Blanjong and Malat Gede. The second line mentions the king's name, again not complete, as Cri Kaisari. The third line indicates the ruler's enemy, and the fourth line reads *kadya kadya maka tka di tunggala*. This can be translated as 'forever and ever will bring unity' (Sukarto 1977: 156).

Unlike the Blanjong inscription, neither of these inscriptions indicates who Kesari's enemies were. However, the most important observation is that Kesari Warmmadewa claimed to have defeated his enemies both in the inland and coastal areas, and possibly outside Bali as well. He commemorated his victory by establishing three stone pillars at Blanjong, Malat Gede, and Panempahan between 29th January and 27th February AD 914. These events might also have reinforced his legitimacy as the founder of the Warmmadewa dynasty in Bali, for his successors also bore the title Warmmadewa after their names, as for instance Tabanendra Warmmadewa (AD 955-967), Jayasingha Warmmadewa (AD 960), Cri Janasadhu Warmmadewa (AD 975), and Udayana Warmmadewa (AD 993-1011) (Goris 1954a: 74-94; Bambang Sumadio 1977: 140-144). It should be noted, however, that Sang Ratu Ugrasena, who reigned from AD 915 to 936, never used the title Warmmadewa, unlike his predecessor and his successor. The question of whether Ugrasena was a true member of the Warmmadewa dynasty is still not clearly answered (Ardika 1983).

As far as early state formation in Bali is concerned, the external and internal factors have to be considered. Several authors propose that many components induce state formation, including warfare, ecology, irrigation, technology, trade, population, and ideology or religion (Wheatley 1971; Claessen and Skalnik 1978, 1981).

Based on the Kesari inscriptions we can infer that conflict or warfare occurred in Bali prior to the establishment of the Warmmadewa dynasty. Conflict also occurred during the emergence of the Early State in other regions, for instance in Sriwijaya (South Sumatra), Taruma Negara (West Java), and Mataram (Central Java). For instance, the Kedukan Bukit inscription, found near Palembang and dated April 23, AD 682, indicates that *Dapunta Hyang* carried out an expedition to *Matayap*, which departed from *Minanga Tamwan*. This expedition consisted of two hundred sailors and two thousand troops. He arrived at *Matayap*, achieved victory, and then built Sriwijaya after conquering other regions (Coedes 1968: 82; Bambang Sumadio 1977: 52; Hall 1985: 78-83).

Three other inscriptions which suggest similar situations are those of Kota Kapur (Bangka) dated to AD 686, Karang Birahi in Jambi Hulu dated to AD 686, and Palas Pasemah in Southern Lampung dated also to around the end of the seventh century AD (Bambang Sumadio 1977: 54). Based on these inscriptions, it seems that Dapunta Hyang defeated his rivals around Jambi (Melayu), Palembang, and South Lampung in Sumatra, as well as on Bangka island, in order to establish his legitimacy and hegemony.

Purnawarman's inscriptions in West Java also tell us, implicitly, the same story. These include the inscriptions of Ciaruten, Pasir Koleangkak and Kebon Kopi. None of these are dated internally, but on the basis of palaeography it has been argued that they derive from the 5th century AD (Coedes, 1968: 53). Adjacent to these inscriptions were also depicted footprints.

The inscription of Ciaruten consists of four lines; it mentions that both the footprints engraved on it belong to Purnawarman, the king of Taruma, a strong and brave king. These footprints were associated with the footprints of Wisnu as a symbol of victory (Bambang Sumadio 1977: 38-39, Coedes 1968: 53-54, Hall 1985: 105). The Pasir Koleangkak inscription also states that its footprints were of Purnawarman the king of Taruma, who always defeated his enemies. The inscription of Kebon Kopi records that the footprints on the inscription were those of the elephant of the king of Taruma, a connection similar to that between the elephant Airawata and Indra as God of war.

The record of the emergence of the Early State in Central Java also offers a similar picture. The inscription of Canggal, dated to AD 732, was written in the Palawa script using the Sanskrit language. It commemorated the erection of a *lingga* at a place called *Kunjarakunja*, on the island of Java which was rich in rice and gold mines. The inscription states that the island of Java (Jawadwipa) was governed formerly by King Sanna. When he died the kingdom suffered as the people had lost their protector. Sanna was succeeded by his nephew Sanjaya, the son of Sannaha, Sanna's sister. The inscription also states that Sanjaya was a strong and brave king who conquered other regions and created prosperity for his people. It is interesting to note that a late text called the Ceritra Parahyangan recorded that Sanjaya conquered many regions, including Cambodia, Melayu (Sumatra), West Java, East Java, and Bali (Coedes 1968: 87-89; Bambang Sumadio 1977:78-79; Hall 1985:119). However, the significance of the Ceritra Parahyangan in relation to the emergence of the Early State in Bali in the 9th century AD is still not clear.

As already noted, conflict or warfare also occurred in Bali during the reign of Kesari Warmmadewa, and possibly also prior to that period. However, the warfare during Kesari Warmmadewa's reign can best be seen as indicative of political (status rivalry) rather than direct economic pressures. Kesari, who adopted aspects of Indian culture, had defeated his rivals in order to establish himself as the founder of the Warmmadewa dynasty in Bali. As mentioned in the inscription of Panempahan, after Kesari defeated his enemies he unified the island under his sovereignty (Sukarto 1977: 156). In this case, warfare can best be seen simply as a result rather than a

cause of state formation in Bali. As Cohen (1985: 282) pointed out that warfare by itself cannot make states. The control and the coordination of warfare and defense and the capacity to settle disputes are the more essential core features. War helps to make states, states make war, and therefore states are in part, and must always be, war machines.

In the case of the Amazon Valley, Carneiro (1970: 736-6; 1978: 205-210) pointed out that land shortage was the major causal factor behind the emergence of ranking: increasing pressure of human population on the land was accompanied by increasing conflict and warfare, until eventually the whole valley was unified under the strongest chiefdom. However, Webster (1975: 469) also cautions that environmental circumscription and increasing warfare are not the only factors to cause the evolution of the state.

As already noted, ecology is another factor which may stimulate state formation. Differences of soil fertility and climate can induce social inequality (Carneiro 1970; Wheatley 1971: 268; Claessen and Skalnik 1981: 471). If we look at the distribution of sarcophagus burials and the early evidence of Hindu-Buddhism in Bali, we find that most sites are located in the plain around the Pekerisan and Petanu rivers and in adjacent areas (see fig. 4.1). The good water supply here could have been an important factor for the establishment of wet rice cultivation, which led in turn to an economic surplus. Such a surplus, together with the related concentration of population, might have been a crucial factor behind early state formation in Bali.

Interior Bali might have been involved in inter-island trade since at least the first half of the first millennium AD. The appearance of Indian beads as well as raw materials for metal working, including copper and tin which are absent in Bali, might indicate such an involvement. Contact with foreign traders may have continued and increased during the period of the early state in Bali.

As an indication of this, the inscription of Sembiran, dated to AD 922, mentions that if the villagers of Julah (a coastal village in northeastern Buleleng regency in northern Bali; see fig.4.1) captured ships, vessels or small boats, they should be donated as a contribution for a shrine (*wrddhi*) (Goris 1954a: 67, IIIb.3; 1954b: 336). Goris also drew attention to interesting information from the inscription of Kintamani D (without precise date) *wong ring wintang ranu adagang mare les, paminggir, buhundalm, julah* (1954b: 254). (Translation; people from villages around lake (Batur) traded to Les, Paminggir, Buhundalem and Julah). The villages of Les, Buhundalem (Bondalem) and Julah are located in northeastern Bali,

in Buleleng regency (see fig.4.1). The village of Paminggir could also have been located in northeastern Buleleng, probably at Tejakula(?). Based on this information, I suggest that there were trade routes which connected the central plain of Bali and the coastal sites in northeastern Buleleng, presumably through Kintamani. This notion is also supported by the distribution of the early evidence of Hindu-Buddhism, particularly the Old Balinese inscriptions dated between 9th and 10th century AD (see map, fig.4.1).

If we accept the notion that contacts between Bali and foreign traders already existed prior to the early state period in Bali, the problem still remains to what extent these traders participatated in the process of Indianization. As Van Leur (1968) and Bosch (1961) pointed out, the role of the Brahmins was very important in the process of Indianization in Indonesia.

As far as population density during the pre-state period in Bali are concerned, our knowledge is very restricted. Only a few sarcophagi containing human bones have been reported and none of those have been analyzed, except for one specimen from Cacang (Soejono 1977). However, on the basis of the number of sarcophagi and our knowledge of mortuary practices, I suspect that an economic surplus might have occurred in Bali during the Early Metal or pre-state period. It has been argued that sarcophagus burial required significant inputs of time and energy, as well as burial goods. In other words, sarcophagus burials can only be performed if the survivors can afford them, if there are good economic conditions. Any economic surplus during this period possibly depended on rice cultivation, as even today rice cultivation is still the main economic basis of Balinese society. This notion is supported by the distribution of sarcophagus sites themselves; 41 (89%) out of the 46 sites which have been recorded are located in the area where wet rice cultivation occurs today (see maps fig. 4.1 & 4.2).

In relation to rice cultivation in Bali, there is the traditional organization of the irrigation system, called *subak*. It is interesting to note that the word *suwak* or *kasuwakan* was already recorded in the inscription of Klungkung A dated AD 1072: *sawah kadandan i kasuwakan rawas* (Stein Callenfels 1936: 160-162; Goris 1954a: 23). This could be translated *"sawah* (rice field) under the authority of the *Senapati Danda* (functionary) located in the *Subak* (irrigation system) of Rawas". (Phonologically the word *suwak* is synonymous with *subak*).

As Geertz (1980: 68) pointed out, the *subak* also played an important role in supporting Balinese states during the 19th century AD. These states were dependent on taxes paid by *subak* members according to the quantities of water

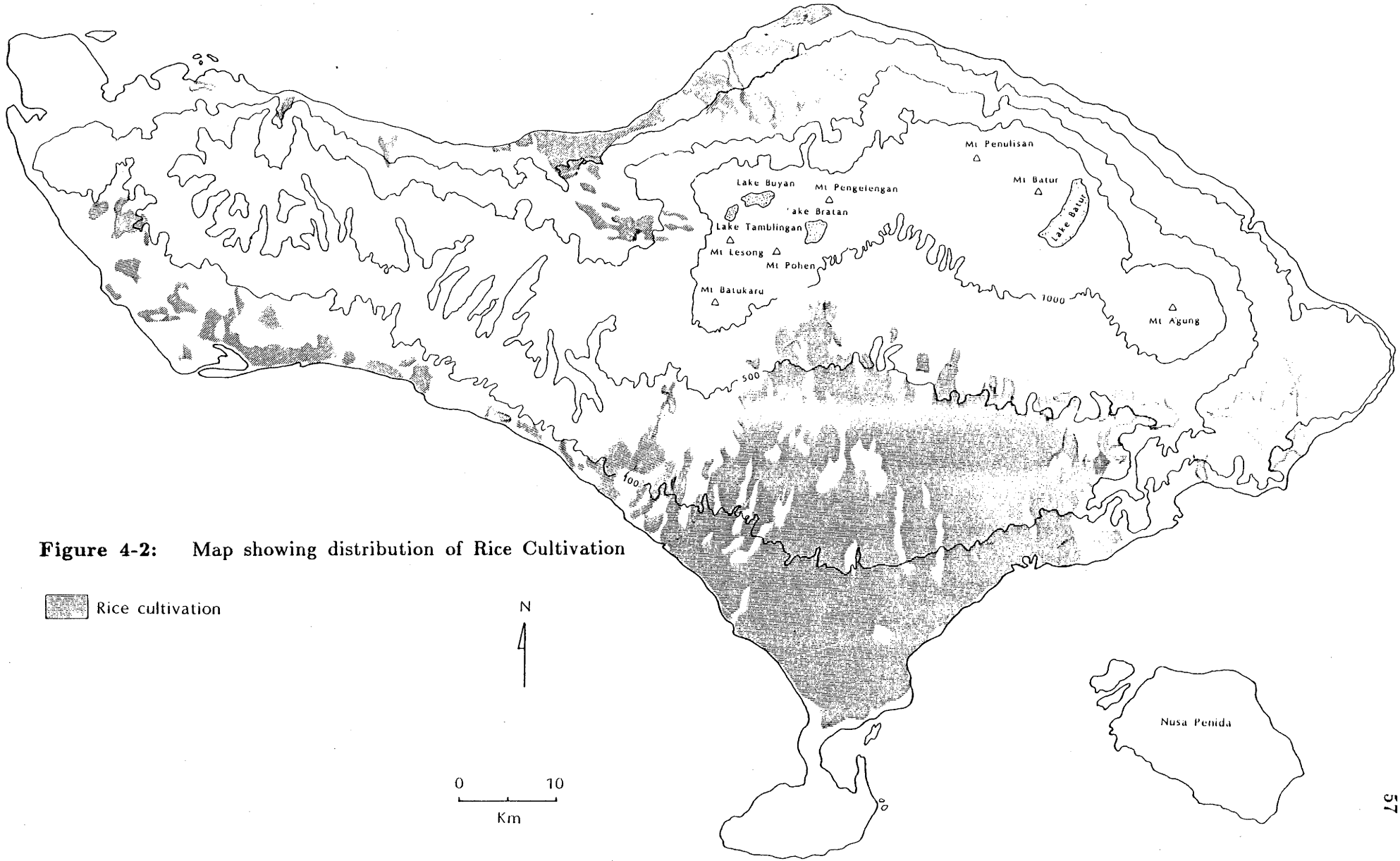

Figure 4-2: Map showing distribution of Rice Cultivation

Rice cultivation

used for irrigation. Under such conditions, the distribution of water could often be a major source of conflict or violence between *subak* members, or between *subaks* (Wittfogel 1967: 54; Geertz 1980: 84).

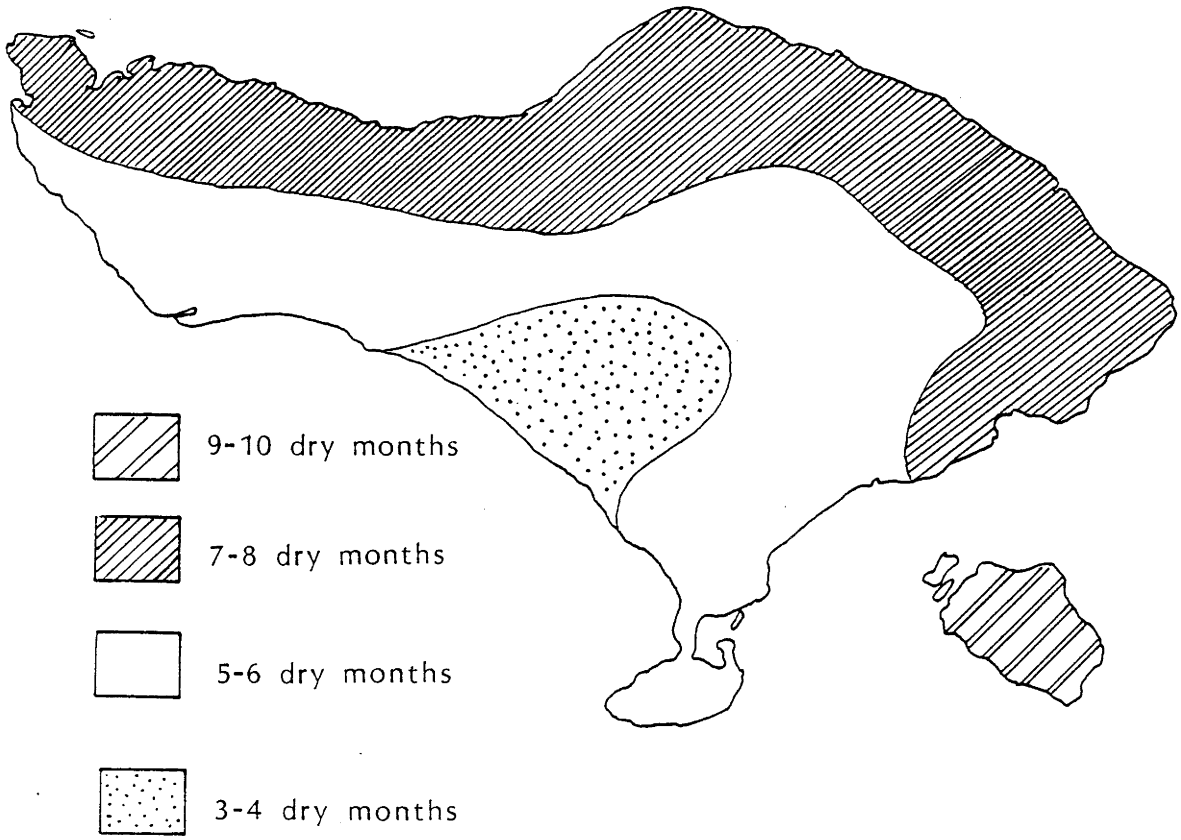

Figure 4-3: Map showing the distribution of the Dry Season in Bali

According to Geertz, such conflict could have extended relatively frequently into the higher reaches of the political system, and could even have developed into war between competing lords. Comparative studies indicate that irrigation systems in some hydraulic states were controlled by supreme political lords (Wittfogel 1967: 27; White 1959: 319), and such a situation may also have occurred in Bali during the early state period. It should be noted that the inscription of Manukaya dated to AD 960 mentions that *Sang Ratu Cri Chandrabhayasingha Warmmadewa* dammed the spring of Tirta Empul at Tampaksiring, because it was flooded annually. (Goris 1954a: 75-76). Unfortunately, most of the text of the inscription is illegible. Therefore, it is still not clear whether this waterwork was for irrigation purposes.

The question arises of whether the *subak* organization existed in Bali during the pre-state period. The answer may probably be yes, although such organizations were still undoubtedly very simple in terms of structure and membership. According to Gunawardana (1981: 133-154) rice cultivation with irrigation was an important factor behind state formation in Sri Lanka. In the middle of the third century BC, when the earliest inscriptions made their appearances, an agrarian economy based on small scale irrigation already existed in Sri Lanka. Most irrigated cultivation in Sri Lanka depended on the communal enterprise of village settlements, and on works constructed through the initiative of influential lineages and individuals (Gunawardana 1985: 226). However, Thapar (1981: 418) has also pointed out that the information on early irrigation in India suggests considerable decentralization. Irrigation works were frequently small scale, and none necessarily required state control for their construction.

Several authors believe that an economic surplus, based on irrigation agriculture, encouraged the development of states. Childe (1965: 115) argued that the development of agriculture caused a surplus of food which was then traded in order to obtain certain essential resources. The occurrence of a rich tradition of local metallurgy in Bali, which lacked copper and tin, might be indicative of such a process. According to Childe the development of trade networks was accompanied by a division of labor; on the one hand there were primary food producers and on the other there were administrators, soldiers, merchants, and craftsmen who procured, processed, and distributed the imported resources. In addition, Childe (1967: 98-99; see also Haas 1982: 40) also pointed out that in order to maintain sufficient surplus for export and to support import of essential resources, the farmer had to develop intensive systems of agriculture.

Like Childe, White (1959: 293-302) also proposed that one consequence of the development of agriculture and animal husbandry was increased food production, and this was also accompanied by population growth. As the density of population increased, social structure and specialization occurred in the society. In order to coordinate and integrate a large population size and density in a society which was separated by structural differentiation and functional specialization, a special political mechanism is needed, namely "the state church". However, Carneiro (1970: 734) believes that agriculture need not automatically create a food surplus, as has been shown in Amazonian Indian societies. He also adds that irrigation need not play a causal role in the emergence of the state, because there were states developed well prior to large scale irrigation. In other words, agriculture using an irrigation system is not the only variable which could stimulate state formation.

Many authors believe that ideology could have been a crucial factor in the evolution of sociopolitical organization (Wheatley 1971: 302-318; Abeles 1981: 1-13; Claessen and Skalnik 1981: 475-80; Rousseau 1985: 36-45; Claessen and Van de Velde 1985: 253). As the society developed cumulatively in scale and complexity, it required at the same time a set of ethical concepts to give purpose and direction to life. A case study in Sri Lanka has shown how ideology served to bind people together (Claessen and Skalnik 1981: 475). The same phenomenon might have occurred in Bali during the early state period. Service and tribute were often related to religious purposes; as already noted, the proceedings of tax and tribute from local people, craftsmen and artists were used to maintain hermitages and shrines established by the ruler. In some cases a Hindu or Buddhist ruler claimed himself as a divine king or as a manifestation of God in the World. Such a concept would clearly strengthen his power and authority in the society.

As far as state formation in Bali is concerned, it seems that multi-causal and long-term processes may have occurred. Although external influences reached Bali it is clear that indigenous development was also an important factor.

4.2. Early Statecraft in Bali

The emergence of the Early State in Bali was accompanied by the development of centralized and specialized institutions of government. In order to determine whether indigenous social structures still existed during the Early State period in Bali, in this section I attempt to identify and describe functionaries recorded in the inscriptions dated between AD 882 and 1011. During this period of 129 years, at least seven Balinese rulers can be identified, namely Kesari Warmmadewa (AD 914), Ugrasena (915-936), Tabanendra Warmmadewa and his wife Subhadrika Dharmmadewi (955-967), Jayasingha Warmmadewa (960), Janasadhu Warmmadewa (975), Wijaya Mahadewi (983) and Udayana Warmmadewa and his wife Gunapriyadharmmapatni (998-1011) (Goris 1954a: 63-99; 1965: 9-26; Ardika 1983: 9-12). Most of these rulers bore the title *sang ratu* before their names, except for Kesari Warmmadewa and Wijaya Mahadewi. As already noted, Kesari bore the title *Adhipatih* in the inscription of Blanjong, and was named without a title in the inscriptions of Malat Gede and Panempahan. *Adhipatih* is a Sanskrit word, literally meaning the supreme king. The female ruler Wijaya Mahadewi, on the other hand, was the first Balinese ruler known from inscriptions to bear the title *Cri Maharaja*, also a Sanskrit phrase meaning the great ruler (Goris 1954a: 79).

According to Damais (1947: 19-20), the title *Ratu* was an Indonesian word equivalent to the Sanskrit *Cri Maharaja*. However, Casparis (1956: 212-218) and

Van Naerssen (1977: 47. note 100) do not agree that the two were completely equivalent. It is interesting to note that the Central Javanese inscription of Kedu or Mantyasih, dated AD 907 mentioned Sanjaya as *Sang Ratu*, and his successors as *Cri Maharaja*. Van Naerssen (1977: 46-47) argues that the *Cri Maharaja* title was introduced by the Buddhist *guru* of the Sailendra dynasty and bestowed on the ruler Rakai Panangkaran in AD 778. Rakai Panangkaran was the first of Sanjaya's successors, according to the inscription of Kedu. Therefore Sanjaya, who was known from the Canggal inscription dated to AD 732 as a Saiwa follower, was called *Ratu* in the Kedu inscription. The title *Ratu* may be equivalent with *Datu*, as mentioned in the Telaga Batu inscription of Sriwijaya, meaning a chief (Casparis 1956; Hall 1985: 81).

If we accept *Ratu* as an indigenous title, it also indicates that aspect of the indigenous social structure continued during the process of Indianization in Indonesia, although some modifications must also have occurred. In the inscriptions dated between AD 882 and 1011 can also be identified several functionaries, such as *Senapati*, *Nayaka*, *Ser*, *Manuratang ajna*, and numerous priests or *bhiksu*. As far as the functions of these officials are concerned, our knowledge is very restricted. The problem is that most inscriptions provide only lists of officials and do not give further information. In addition, several terms in the inscriptions were already becoming obsolete at the time of usage, so it is hard to interpret them literally.

The *Senapati* seem to have been important officials during the Early State period in Bali. Literally, the term means an army officer or general. Goris (1948: 13) proposes that the *Senapati* was analogous to the *Punggawa* during the Gelgel period (14th-17th century AD). The *Punggawa* was a district-level official corresponding to the present day *Camat*. The *Punggawa* also acted as military commanders and had their own courts. It is not clear how far Goris's proposition is true, however, with respect to the functions of the *Senapati* during the Early State period in Bali.

Several *Senapati* can be identified from the inscriptions dated between AD 882 and 1011, namely *Sarbwa*, *Dinganga*, *Danda*, *Wrsabha*, *Dalembunut*, *Waranasi*, *Pinatih*, *Kuturan*, and *Maniringin* (Goris 1954a: 53-94). It should be noted that these *Senapati* titles did not always occur together in the inscriptions. For instance, the *Senapati Danda* was mentioned only once, namely in the inscription of Sukawana AI dated AD 882, and it never occurred again in later inscriptions. During the period between AD 882 and 967 only three *Senapatis* can be identified; namely *Sarbwa*, *Dinganga* and *Danda*. Around AD 975, during the period of

Janasadhu Warmmadewa, we find *Senapati Wrsabha.* In the inscription of Gobleg, Pura Desa II, dated to AD 983 the number of *Senapati* increased to include *Sarbwa*, *Dinganga*, *Wrsabha Dalembunut*, and *Waranasi* (Goris 1954a: 79). In addition, other distinctive functionaries also appeared during this period including *Makudur*, *Wadihati*, and *Pangurang.* These functionaries were common in Javanese incriptions, but whether their presence indicates Javanese influence over Bali is still not clear. However, only about 11 years after the Gobleg inscription the Old Javanese language replaced Old Balinese in the Balinese inscriptions (Goris 1954a: 83-86).

As far as Cri Wijaya Mahadewi is concerned, many arguments have been offered. Callenfels (1924: 30) believes that she was a princess from Sriwijaya who reigned in Bali. He interpreted the word Wijaya to be derived from Sriwijaya and argued that Sriwijaya conquered Bali during this period. However, this argument is hard to prove archaeologically. Moens and Damais argued that Cri Wijaya Mahadewi was Cri Isanatunggawijaya or Sindok's daughter, a princess from East Java (Bambang Sumadio 1977: 141). Whoever she was, the period during her reign seemed to be a transition prior to the dominance of the Old Javanese language in Balinese cultural history.

During the Udayana period (AD 998-1011), the number of *Senapati* increased further to include *Sarbwa*, *Dinganga*, *Wrsabha*, *Dalembunut*, *Waranasi*, *Pinatih Kuturan*, and *Maniringin* (Goris 1954a: 80-94; Ardika 1984b: 35). Based on these data it is clear that the number of *Senapatis* increased over time, as did the complexity of Balinese society.

The *Senapati Sarbwa* and *Dinganga* seem to have been important functionaries. They were recorded in several inscriptions dated to between AD 882 and 1011. *Sarbwa* is a Sanskrit word meaning "all" or "the whole thing". However, the functions of the *Senapati Sarbwa* in the government are still not clear. *Dinganga* is not a Sanskrit word, and Goris (1954b: 237) argued that it derived from the Buginese word *nganga*, meaning interrogation. Therefore, he proposed the *Senapati Dinganga* as the royal judge. However, the inscription of Sukawana AI, dated AD 882, mentioned the *Senapati Dinganga* and the *Senapati Danda* with different personal names; the *Senapati Dinganga* title was held by Prajuna and *Senapati Danda* by Kumpi Marodaya (Goris 1954a: 53). *Danda* is a Sanskrit word which literally means punishment or penalty. It seems, therefore, that the *Senapati Danda* was a royal judge, comparable with the *dandanayaka* in the inscription of Telaga Batu (Hall, 1985: 91). How far Goris's argument is true with respect to the

function of the *Senapati Dinganga* is still not clear. The functions of the other *Senapatis* are still obscure.

The *Nayaka* is another official who can be identified in Balinese inscriptions. Literally this term means 'leader', 'chief' or 'supervisor' (Goris 1954b: 278). In the inscriptions the term *Nayaka* was written with the possessive (n) as *Nayakan*. Several *Nayaka* were recorded between AD 882 and 1011, namely *Nayakan Makarun* (occurred in the inscriptions dated AD 882 and AD 1011), *Nayakan Buru* (AD 882, 966), *Nayakan Buru Manuk* (AD 896), *Nayakan Praddhana* (AD 896), *Nayakan Saksi* (AD 911), *Nayakan Candana* (AD 915), *Nayakan Leran* (AD 922), *Nayakan Pamadahi* (AD 924, 933), *Nayakan Hasba* (AD 933), *Nayakan Mas* (AD 933), *Nayakan Bantiran* and *Nayakan Sukawati* (in the undated inscription of Gobleg, Pura Batur A) (Goris 1954a: 53-94).

Among these, the *Nayakan Makarun* was often recorded in inscriptions dated between AD 882 and 1011. The title seem to have belonged to an important official like the *Senapatis Sarbwa* and *Dinganga*. The *Nayakan Makarun* was always recorded in inscriptions dating between AD 882 and 914 after the *Senapati Dinganga*, for instance: *yumu pakatahu sawwa dyah sanatkumara, dinganga cakra, nayakan makarun cagu, manuratang ajna widyangga, dakap, nilanawa* (Goris 1954a: 61) (translation; you have to know that the *Sarwwa* (Sarbwa) was Dyah Sanatkumara, the *Dinganga* was Cakra, the *Nayakan Makarun* was Cagu, and the *Manuratang ajna* (officials who were in charge of writing the ruler's orders) were Widyangga, Dakap, and Nilanawa). Whether this order of the officials indicated their statuses in the structure of the government is still not clear.

Goris (1954b: 272) compared the word *karun* with *kon* in Old Javanese meaning to order. According to Van der Tuuk (1899: 63), *karon* in Old Javanese meant "to gather" or "to unite". However, Poeger believed that the *Nayakan Makarun* was the head of an assembly (1963: 5. note 2) (Ardika 1983: 40). Our knowledge concerning the functions of the *Nayakan Makarun* is still slight.

Other *Nayakan* can be confidently identified, such as the *Nayakan Buru*, possibly an official who was in charge of the royal hunting-ground. The inscription of Serai AI (AD 936) mentioned that people who lived in the royal hunting-ground had to pay taxes to their leader, the (*Nayakan Buru*) who then transmitted the proceeds of taxation to the king (Goris 1954a: 70-71; Ardika 1983: 26-27).

The *Nayakan Hasba* was possibly an official who was in charge of horse breeding. *Hasba* literally means horse. It is interesting to note that the horse seems

seems to have been an important animal during the Early State period in Bali, perhaps for transport purposes. Therefore, there was a royal official who supervised horse breeding and who collected taxes for such activities. The *Nayakan Hasba* can be compared with the *Samgat Asba* of the Anak Wungsu period (AD 1044- 1077), and the *Samgat Juru Kuda* of the Jayapangus period (AD 1177-1181) (Bambang Sumadio 1977: 199. note. 313, 314).

The *Nayakan Pamadahi* may have been an official who supervised drum players, and the *Nayakan Mas* was perhaps a leader or supervisor of goldsmiths. As already noted, artists and crafstmen such as drum players and goldsmiths had to pay taxes, perhaps through their officials.

Based on this information, I suspect that the *Nayaka* was a royal official who supervised and collected taxes in every sector of specialization in the society.

The *Ser* or *sair* is another important royal official. According to Goris (1954b: 307), *Ser* is an Indonesian word meaning "supervisor". It is not yet clear what were the differences between the *Nayaka* and the *Ser*. Both officials as well as *Senapati* were usually mentioned in the inscriptions as witnesses of the royal favour such as tax free status. For instance in the inscription of Bwahan dated to AD 994 (Goris 1954a: 85); *kasaksyan tkapnira senapati ser nayaka ring pasamaksa palapknan makabehan* (translation: It has been witnessed by the honourable *Senapati*, *Ser*, and *Nayaka*, all together in the royal assembly).

Several *Ser* titles can be identified during this period, including *Ser Pasar* (AD 896, 922, 935), *Ser Danu* (AD 891, 994, 1011), *Ser Batwan* (AD 891), *Ser Panghurwan* (AD 891, 911), *Ser Tunggalan Lampuran* (Gobleg, Pura Desa I without precise date), *Ser Bantan* (AD 933, 935, 936), *Ser Krangan* (AD 977, 993) and *Ser sala* (AD 1011) (Goris 1954b: 307).

The *Ser Pasar* was possibly a royal officer who was in charge of the markets, which might have been very important from an economic as well as a political viewpoint, especially as a source of royal taxation from traders and merchants. In addition, the market was possibly also a place of contact between local and foreign traders. As already noted, three market places were recorded in the insceriptions during this period, namely *Wijayakranta*, *Wijayamanggala* and *Wijayapura*.

Beside the *Ser Pasar*, official of *Caksu* were also in charge of markets, for instance in the inscription of Gobleg, Pura Desa II; *caksu dikarana di Wijayapura tuha nogata*, *da caksu di wijayakranta tuha rajana* (Goris 1954a: 79) (translation:

the honourable *Caksu* at Wijayapura was Nogata and the honourable *Caksu* at Wijayakranta was Rajana).

The *Ser Danu* was perhaps a royal administrator who supervised a lake, particularly Lake Batur. This official was recorded in the inscriptions; Trunyan A I (AD 891), Bwahan A (AD 994) and Batur Pura Abang A (AD 1011) (Goris 1954a: 57, 85, 91). All these villages are located around Lake Batur. The existence of the *Ser Danu* may indicate that the natural resources of the lake were also controlled by a royal administrator.

Another interesting *Ser* title which should be noted is the *Ser Krangan*. According to inscriptions, this official seems to have been an officer who managed the estates of childless couples. In the AD 882 inscription of Sukawana the regulation of property for childless couples is described: For instance, if the husband died, two-thirds of the marital property would be taken by the villagers. If the wife died, one-third of the marital property would be taken. However, if both died, only 4 *masaka* would be kept for death ceremonies, and the rest was donated to the shrine of *Hyang Api* which was established by the ruler (Goris 1954a: 53).

As already noted, the *Manuratang Ajna* were important royal officers, and three of them are mentioned in the inscription of Gobleg, Pura Desa II (AD 983); *da manuratang ajna di hulu sumbul, da manuratang ajna di tngah ida kumpi kulupbok, da manuratang ajna pling tba ida kumpi tuha maranjaya* (Goris 1954a: 79) (translation: the honourable *Manuratang Ajnas*; the top was Sumbul, the middle was Ida Kumpi Kulupbok, and the lowest was Ida Kumpi Tuha Maranjaya). These individuals functioned possibly as royal secretaries.

Priests might have been the most important of the royal officials, who also acted as royal advisers. During the period of Udayana the priests of Siva, as well as Buddhist priests, were usually mentioned as the prominent persons in the royal assembly. For instance, according to the inscription of Sading A, dated AD 1001; *di kasaksyan ulih mpungku sogata mahaicwara, turut senapati ser nayaka di pakirakiran* (Goris 1954a: 87) (translation: it has been witnessed by my monks (Buddhist) and priests (Siva) as well as the *Senapati*, *Ser*, and *Nayaka* in the royal assembly).

Beside the royal administrators, we also find several functionaries at the village level. Those which can be identified include *Kabayan*, *Karaksayan*, *Manuratang*, *Panundun Pratikaya*, *Pamudi*, and *Banua Tuha* (Ardika 1983: 46-49; 1984b: 44-46). Among them, the *Kabayan* still exists in several mountain villages in Bali.

The functions of the *Kabayan* relate to ceremonies or religious matters (Goris 1960: 90-91). The *Manuratang* was probably the village secretary, the *Karaksayan* according to Goris was in charge of village security (1954b: 295), and *Banua Tuha* may have been a village head.

As Korn (1960) pointed out, Balinese villages seem to have been self-contained, wholly autonomous, "village republics". The existence of the village as a self-contained entity during the Early State period in Bali is indicated in the inscription of Bwahan B, dated AD 1025. This inscription mentions that the village heads of Bwahan met the ruler Cri Dharmawangsa Wardhana Marakata Pangkajasthanottunggadewa. They wanted to buy a piece of the royal hunting ground which lay adjacent to their village. The villagers lacked sufficient land for herding and collecting firewood, and eventually the king sold them the land which they wanted (Goris 1954a: 103-105; Ardika 1986: 29-30).

Based on these data, social organization during the Early State period in Bali was developing a considerable complexity. Centralization and specialization were already occurring, but the village still existed as a self-contained territorial unit during this period. In addition, aspects of indigenous Austronesian social structure seem to have continued in existence during this period, as reflected in many titles such as: *Ratu*, *Dinganga*, *Makarun*, *Ser*, *Kabayan* and *Panundun*.

Chapter 5
CONCLUSION AND FUTURE RESEARCH

5.1. Conclusion

As Heine-Geldern (1945) and Van Heekeren (1958) have shown Dongson cultural elements seem to have influenced and inspired early metallurgy throughout Southeast Asia, including Bali. The signs of Dongson influence include the lost wax technique, the drum tradition, socketed axes, bracelets, finger rings, arm shields or protectors, and belt ornaments. However, early metallurgy in Bali is also characterized by certain local developments, such as the *moko* tradition, the distinctive axes with crescent and heart-shaped blades, and ornaments such as finger protectors, and pentagonal plates. The occurrence of fragments of a stone mould for casting *moko* at Manuaba suggests that *moko* and possibly other objects were manufactured in Bali itself.

Comparison with other dated palaeometallic sites in Indonesia as well as in the islands of Southeast Asia suggests that the earliest metallurgy in Bali commenced during the first half of the first millennium AD. The development of metallurgy in Bali, which lacked local sources of copper and tin (Bemmelen 1949; Marschall 1968), indicates that inter-island trade involving Bali must already have existed during the first half of the first millennium AD. The appearance of Indian beads in many palaeometallic sites in Bali also supports this hypothesis. Bali may have obtained tin and copper from other islands in the west, possibly Sumatra, Bangka and Java. Tin is still mined in Bangka and copper might have been derived from Sumatra and Java, where other Early Metal sites exist.

Inter-island or long distance trade during this period could have been controlled by chiefs who needed luxury goods for ceremonies and social prestige. It is quite reasonable to argue that metal objects during the Early Metal period in Bali would have had a high value. As already noted, several distinctive metal objects were discovered in sarcophagus burials. These include finger protectors, arm protectors, double-spiral wire necklace units, and the axes of crescent-bladed type. Such objects may indicate the social identity and social persona of the deceased. It

has been argued that only certain people in the society, possibly chiefs, would have been buried in the sarcophagi. Therefore, a ranked or chiefdom level of social organization could already have been developed by the Early Metal period in Balinese society. Craftsmen and other specialists also existed in the society, although they may have worked at their specializations only part time.

The improvement of early metallurgy might have also affected the development of the irrigation system of wet rice cultivation in Bali. The existence of early metalworking and the sarcophagus burial tradition in Bali indicate some degree of surplus production. It seems that Balinese society during the Early Metal period was closely linked with rice cultivation, which would have required a system of irrigation organization, although this may still have been very simple in terms of structure and membership. Even today, rice cultivation with irrigation organizations (*subak*) is still the main economic basis of Balinese society.

As already noted, the evidence for sarcophagus burial in Bali coincides geographically with early evidence of Indian culture, particularly in the plain between the Pakerisan and Petanu rivers. It could be that Indianization in Bali was a continuous process during the Early Metal period. As Bosch (1961) has argued, Indianization in Indonesia can be characterized as a "fecundation", whereby Indian culture stimulated local culture elements to develop to a state level. As already discussed in the previous chapter, there are many variables which can induce state formation, including warfare, trade, technology, irrigation, population density, and ideology (Wheatley, 1971; Claessen and Skalnik, 1978, 1981). In relation to state formation in Bali, those variables might have occurred simultaneously as part of a long term process.

The appearance of Old Balinese inscriptions from AD 882 is a major development in Balinese culture history. Various inscriptions record features of social organization, economic and religious aspects of Balinese society during the early process of Indianization. Based on several inscriptions dated between the 9th and 11th centuries AD, it seems that many aspects of the indigenous social organization were still in existence during this period. Several terms for social functionaries, such as the titles *Ratu*, *Dinganga*, *Makarun*, and *Ser* were not derived from Sanskrit words, but were probably of local or Austronesian origin and reflect the traditional social system.

In general, early metallurgy and Indianization in Bali seem to have involved similar processes. Dongson and Indian cultural features were adjusted to local cultural elements, and eventually gave rise to many local developments in Balinese society.

5.2. Future Research

Given the notion that Dongson and Indian cultures influenced and inspired Balinese society during the first half of the first millennium AD, such influence must have been initiated through contacts between foreigners and the Balinese themselves. In such circumstances the role of coastal sites is very important, yet to date only Gilimanuk among coastal sites in Bali has been excavated intensively. Several other coastal sites may also have been important during the period of Early Indianization in Bali, including Blanjong (in southern Bali), Julah, Les, Bondalem, and Tejakula (in northeastern Bali). Future archaeological research in these sites could yield important information.

If we accept that Indianization was a continuous process in Bali starting from the Early Metal period, it should be interesting to investigate further the geographical correlation between Early Metal and Early Hindu or Buddhist sites in Bali. In addition, assuming rice cultivation to have been the main economic basis of Balinese society since the Early Metal period , it is important to plot distributions of archaeological sites in relation to rivers and their tributaries as well as arable land adjacent to them. Such a study could yield important information about social organization and subsistence.

References

ABBREVIATIONS

AP *Asian Perspectives.*

BEFEO *Bulletin de l'Ecole Francaise d' Extreme-Orient.* Paris, Hanoi, Saigon: Ecole Francaise d'Extreme-orient.

BIPPA *Bulletin of the Indo-Pacific Prehistory Association*

BPA *Berita Penelitian Arkeologi.* Jakarta: Pusat Penelitian Arkeologi Nasional.

INI *Inscripties van Nederlandsch-Indie Uitgegeven door het Koninklijk Bataviaasch Genootschap van Kunsten en Wetenschappen*, 1940.

JMBRAS *Journal of the Malaysian Branch of the Royal Asiatic Society.*

JRAI *Journal of the Royal Anthropological Institute of Great Britain and Ireland.*

JSEAS *Journal of Southeast Asian Studies.*

KBG *Koninklijk Bataviaasch Genootschap van Kunsten en Wetenschappen*

OV *Oudheidkundig Verslag van de Oudheidkundig Dienst in Nederlandsch-Indie.* Weltevreden. Albrecht Co 's- Hage, Martinus Nijhoff.

TBG *Tijdschrift voor Indisch Taal- Land- en Volkenkunde. Uitgegeven door het Koninklijk Bataviaasch Genootschap van Kunsten en Wetenschappen.*

VBG *Verhandelingen van het Koninklijk Bataviaasch Genootschap van Kunsten en Wetenschappen.*

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