

ARCHAEOLOGICAL RESEARCH AT BONDALEM, NORTHEASTERN BALI

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ABSTRACT

Bondalem is located about three kilometres to the east of Sembiran, in northeastern Bali. The village of Bondalem (previously known as Buhundalm) was mentioned in Balinese inscriptions dating from the tenth to twelfth centuries AD. Archaeological excavations were conducted in Bondalem in 1993, 1995 and 1997. Materials recovered include human burials, pottery, beads and metal objects. The archaeological materials from Bondalem are similar to those in Sembiran, and the two sites were probably contemporary. At present, the site of Bondalem is being heavily eroded by the sea, and rescue excavations are urgently needed.

INTRODUCTION

Archaeological discoveries at Sembiran have stimulated further research at Bondalem in northeastern Bali. One most important issue arising from the archaeological findings at Sembiran is whether inscriptional data can be verified archaeologically. This paper will attempt to explore the archaeological discoveries at Bondalem and its relation with other, contemporary sites in Bali as well as various sites in the Indonesian archipelago.

In 1993, the staff members of the Branch Office of the Archaeological Research Centre at Denpasar conducted survey and excavations at the village of Bondalem, which is located about three km to the east of Sembiran. The aim of this research was to confirm archaeologically the existence of the village of Bondalem which was known as *Buhundalm* from inscriptional data of the tenth century AD (Suantika *et al.* 1993). During this research, two trenches located close to the Sang Bingin Temple were excavated. Potsherds, glass beads, fragments of metal objects and animal bones were discovered in these trenches. In addition, potsherds and three human skeletons were found along the beach, most often during low tide. These findings were located between 0.5 and 9 m seaward of the present high-tide line.

Survey has also been conducted in the Kecamatan of Tejakula in 1995 by the staff members of the Archaeological Research Centre, Jakarta (Sudiono and Arfian 1995). The purpose of this survey was to investigate the relationship between environment and archaeological data in this region. Most of the archaeological data were discovered along the beach of the village of Bondalem. These included four human skeletons, a jar burial, potsherds, three bronze bracelets and a fragment of a bronze object. In addition, a stone statue in a megalithic style was also found in the village of Tejakula (Sudiono and Arfian 1995:17).

It seems that the original settlements or archaeological sites in this area might have been very much eroded by the sea. Based on these phenomena, the Department of Archaeology of Udayana University in cooperation with the Branch Office of the Archaeological Research Centre at Denpasar undertook archaeological excavation at the village of Bondalem in 1997 (Ardika *et al.* 1997b). During this research the 2 metre by 2 metre Bondalem III (BDM III) trench was excavated. It is located about 175 m to the east of Sang Bingin Temple (BDM I and II), and 6 m inland of the present shore line. The aims of this excavation were to identify the distributions of archaeological data and their relationship with the stratigraphy in this area. During this excavation, only seven potsherds were found in the trench of BDM III. In other words, the trench of BDM III might not have been located in the original settlement.

STRATIGRAPHY

Prior to the excavation program of 1997, there was no detailed information available on the stratigraphy of the site of Bondalem. During the excavation program of 1997, nine layers were recognized in the BDM III trench. The top layer is about 15 cm thick. Beneath this occurs layer 2, which is more compact than layer 1, about 20 cm thick, and dark reddish brown in colour. Layer 3 is between 70 and 80 cm thick and dark red in colour.

Layer 3a is only about 10 cm thick, and is a fine sandy layer, dark reddish brown in colour. Layer 4 is a soft layer almost 60 cm thick. It is reddish brown in colour. Layer 5 is between 10 and 20 cm thick, and reddish yellow in colour. Layer 6 is between 20 and 25 cm thick, and more compact than layer 5. Layer 7 is between 10 and 20 cm thick, and is a sandy layer. Layer 8 was the lowest layer excavated and is about 30 cm thick and dark reddish brown in colour. Ground water appeared in spit 28, about 2.90 m below the surface. Layer 8 also has many large rocks.

Only seven potsherds were discovered in the BDM III trench, and their distribution was as follows: two sherds from layer 3 (spit 7 and 8), one sherd from each of layers 5 and 6 (spits 17 and 22), and two sherds from layer 8 (spits 29 and 31).

Unlike the BDM III trench, the BDM I and II trenches produced large amounts of potsherds. These potsherds were found between spit 21 (2.25 m) and spit 31 (3.25 m) at the trenches of Bondalem I and II, which were excavated in 1993. Those excavations were stopped at spit 38 (3.95 m below the surface) of the BDM I trench, and spit 32 (3.35 m below the surface) of the BDM II trench, because at those levels no further archaeological material was recovered.

HUMAN SKELETONS

Most of the archaeological remains at Bondalem were found along the beach, particularly during low tide. Quite massive erosion proceeds today along the northeastern coast of Bali. The several other sites also eroded by the sea in northeastern Bali include Sembiran and Bangkah (Ardika 1991). The erosion rate along the coast of northeastern Bali is about one metre per year.

So far, seven human skeletons and one jar burial have been discovered along the beach at Bondalem during the surveys of 1993 and 1995 (Suantika *et al.* 1993; Sudiono and Arfian 1995). It is likely that both primary and secondary burials were practised in northeastern Bali. Five of these human skeletons were arranged in an extended position, one was in a flexed position, and the last one is not clear because it was too fragmentary (Suantika *et al.* 1993:25; Sudiono and Arfian 1995:12-13). The human skeletons at Bondalem were found between 2.10 and 3.35 m below the surface.

The orientation of these human burials at Bondalem was in a north-south direction. The head of these burials was placed at the south (toward the mountain) and their feet were at the north (toward the sea). A comparable orientation was very common in Bali, particularly during the Early Metal Period (Soejono 1977). Burial II at Sembiran VII is also oriented in a north-south direction, with the head placed to the south. Today it is believed that the mountain is the last destination of the soul of the dead. Therefore, the mountains are a holy place for ancestor

worship. However, it should be noted that burial I at Sembiran VII was oriented in an east-west direction, with the head to the east (Ardika 1991:41, Fig. 3.13).

POTTERY

The major finds at Bondalem were potsherds. More than 5000 potsherds were found in the trenches of BDM I and II during the excavation program in 1993. In addition, potsherds were also found scattered along the beach, particularly within a radius approximately 500 m from the places where human burials were found during the surveys of 1993 and 1995. So far, no detailed studies have been conducted of the potsherds from Bondalem. However, the reconstructed vessel forms from Bondalem have already been identified to include dishes, bowls, jars (*kendi*) and cooking pots (Suantika *et al.* 1993:28).

The potsherds from Bondalem are plain and decorated. The decorated techniques recognized in the pottery assemblages include incision, impression, notching on the lips, red slipping, and burnishing (Suantika *et al.* 1993:Figs 1-6). Based on vessel forms and decoration techniques, the pottery assemblage of Bondalem is very similar to the pottery assemblage from the early phase at Sembiran (cf. Ardika 1991:Chapter V).

BEADS

Five glass beads and one possible gold bead were discovered at Bondalem during the 1993 survey (Suantika *et al.* 1993:30). Three of these glass beads are red, and the other two are green in colour. It should be noted that red glass beads (*mutisalah*) were the most common ones at Sembiran (Ardika 1991:127). The beads from Bondalem were not found in association with burials.

METAL OBJECTS

Two fragments from bronze objects, possibly axes, were discovered at Bondalem during the surveys of 1993 and 1995 (Suantika *et al.* 1993:32; Sudiono and Arfian 1995:15). A fragment of a bracelet was also found during the 1995 survey at Bondalem. Those metal objects were discovered in association with potsherds along the beach. Metal objects from Bondalem are very much in a corroded condition.

An interesting fragment of a bronze axe was reported from the archaeological survey of 1995 (Sudiono and Arfian 1995:16, Photo 6). This object was discovered at the village of Pacung when the villagers were digging a well. The axe measures 8.2 cm in width, 10.3 cm in length, and is 3.5 cm thick at the handle and 0.2 cm thick at the edges.

STONE ARTIFACTS

Several stone artifacts were found during the surveys of Bondalem. These artifacts include a fragment of a stone bracelet and twelve stone flakes. The stone bracelet frag-

ment was discovered along the beach in association with human burials during the 1993 survey (Suantika *et al.* 1993:Fig. 10). The twelve stone flakes were also found in association with a human burial, during the 1995 survey (Sudiono and Arfian 1995:Photo 13). These indicate that stone artifacts were still being used at Bondalem during the Early Metal Period. A similar situation was also reported from a sarcophagus burial at Petang, Bali, which contained stone axes and spearheads in association with numerous bronze ornaments (Van Heekeren 1955:7).

DISCUSSION

The archaeological materials at Bondalem have been discovered mostly between 2.6 and 3.4 m below the surface. The same phenomenon also occurred in Sembiran trenches IV, VI/ VII, XII, XIII and XIV (Ardika 1991; Ardika *et al.* 1997a:194, Fig. 1). The stratigraphy at BDM III is also very similar to its counterpart at Sembiran. Overall, the cultural layers at Bondalem and Sembiran are very similar.

Aside from the stratigraphic point of view, the archaeological assemblage found at Bondalem is very similar to the assemblages from Sembiran and Gilimanuk in Bali, as well as from coastal sites in Java, such as Buni in West Java and Plawangan in Central Java. The archaeological assemblage found at Bondalem consists of potsherds, glass beads, fragments of metal objects (possibly bronze artifacts), a jar burial and human skeletons. The discoveries of glass beads and metal objects at Bondalem suggest that the site belongs to the Early Metal Period.

Observations on potsherds indicate some similarities in the pottery types and decorations between Bondalem and Sembiran, particularly the pottery assemblage in the early phase of Sembiran. The early Sembiran pottery (Ardika 1991:118-121) also shows some similarities to contemporary pottery assemblages, such as Gilimanuk in northwest Bali (Soejono 1962; Santoso 1985), Buni in West Java (Sutayasa 1972; Walker and Santoso 1977; Summerhayes 1979), Leang Buidane in the Talaud Islands (Bellwood 1976), the Madai-Baturong sites in Sabah (Bellwood 1988), and the Tabon (Fox 1970), Kalanay (Solheim 1959; 1964) and Sa-Huynh (Solheim 1959) complexes of the Philippines and Vietnam. In contrast to Sembiran, Indian rouletted ware has not yet been found at Bondalem.

CONCLUSION

Bondalem is another important archaeological site on the northeastern coast of Bali. In terms of archaeological assemblages, this site has produced potsherds, glass beads, fragments of metal objects, stone artifacts and human burials. Bondalem would have been contemporary with

other sites of the Early Metal Period in Island Southeast Asia and southern Vietnam. Owing to the erosion process and the potential of the site, archaeological research including rescue excavation needs to be carried out urgently at Bondalem in order to salvage as much information as possible from the site.

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