Togo

Recent Early Iron Age research in Bassar, Togo

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An archaeological expedition was organized to survey and excavate the large Early Iron Age site at Dekpassanware in north central Togo. The field research took place from January 17th through July 12th, 2002. Major field activities included the following: (1) the collection of 116 pottery surface collections to help determine the size of the site and its core area; (2) the use of a gradiometer to help detect subsurface features and artifact concentrations, including caches of iron tools and blacksmith workshop areas; (3) the excavation of over 50 m^3 of cultural deposits in industrial and residential areas to obtain information on the spatial organization of the iron industry and its associated settlement and to obtain samples of representative cultural artifacts, dietary remains, as well as iron tools and other objects for eventual metallurgical analyses; (4) the collection of ethnographic and ethnoarchaeological data on blacksmithing from blacksmiths and from the 18th to early 20th century smithing sites of Bitchabe, Bidjobebe, and Bidjomambe; (5) the collection of samples of smithing tools and iron objects produced by this recent industry with the goal of doing comparative metallurgical analyses of these objects with those obtained at Dekpassanware which were initially thought to date to ca. the 8th century A.D., but which turned out to be 1000 years older.

The expedition was led by Dr. Philip de Barros. He was assisted by one of his Palomar archaeology students, Chris Brandt, who served as field director. The project also helped to train seven Togolese university archaeology students. These students participated for periods of three weeks to three months in the excavations and learned survey and excavation techniques, including basic information about GPS and GIS. A cadre of local Bassar and Lamba farmers, farmer-masons, and farmer-carpenters and two other university students from Bassar also participated. The results of the expedition were most encouraging. The gradiometer results were somewhat disappointing. They located primarily underground slag concentrations, laterite zones with remnant magnetism, and possibly a burial pit, but no caches of iron tools or blacksmith workshops. But the actual excavations were extremely rewarding. The surface collections revealed the site was twice as large as originally thought, measuring about 30 hectares (74 acres) with a core area of 15 hectares (32 acres).

The excavations encountered 6 to 7 feet (180-210 cm) of cultural deposits, with two to three different occupation layers. A communal burial area yielded partially intact human remains with grave goods, i.e., iron bracelets or ornaments on the ankles and forearms, and even on the neck of one individual. Two major rubbish dumps yielded extensive animal bone remains (dietary information), charcoal (for radiocarbon dating), pottery (for thermoluminescence [TL] dating), and burnt wattle and daub (house remains). The charcoal allowed us to date the Early Iron Age occupation at the site which turned out to be quite a surprise. A total of 8 stratigraphically consistent dates in association with iron slag, iron ore and/ tuyeres, strongly indicate ironworking between ca. 400 B.C. and A.D. 100 or 1000 years older than expected (Table 1). These dates show Dekpassanware to be among some of the oldest Early Iron Age sites in West Africa, and certainly a surprise for an area that is only 240 miles from the coast. The site is underlain by a pre-Iron Age occupation dating to ca. 800-400 B.C., based on three radiocarbon dates. A Later Iron Age occupation dating to ca. A.D. 1300-1600 is documented by one radiocarbon date from the 2002 season and a dated ceramic seriation sequence which includes a second radiocarbon date from Dekpassanware (de Barros 1986:114, Table 1, Beta-5352).

Burnt house remains associated with this time period indicate that the present-day adobe-style houses are a more recent development and that 2000 years ago, structures appear to have been made from a wood frame plastered with mud (wattle and daub). This is similar to houses associated with the Kintampo

Table 1: Calibrated charcoal radiocarbon dates from Dekpassanwar

Lab No. Beta-	Conventional C14 date	Calibrated C14 date (2 sigma)	Unit	10-cm level	Associated Ironworking Debris
173469	2320 ± 60 BP	BC 520-350 and BC 310-210	23	6	Ore lumps
173470	2030 ± 80 BP	BC 340-320 and BC 210-AD 130	23	9	Slag
169559	2300 ± 60 BP	BC 420-200	23	10	
173471	2580 ± 60 BP	BC 830-740 and BC 710-530	23	14	
169562	2150 ± 70 BP	BC 380-10	36	8	Slag and ore lump
173472	2110 ± 90 BP	BC 380-AD 70	36	10	Slag
173473	2210 ± 40 BP	BC 380-170	36	12	(Level 11 has slag and ore)
169563	2520 ± 80 BP	BC 820-400	36	13	
173474	2310 ± 80 BP	BC 750-700 and BC 540-190	36	14	
169560	2260 ± 50 BP	BC 400-190	24	17	
173468	2150 ± 80 BP	BC 390-AD 20	29	8	Slag and tuyere fragments
169561	640 ± 40 BP	AD 1280-1410	32	5	Slag and furnace remains
5352	330 ± 50 BP	AD 1470-1615 (1 sigma)	NA	Composite sample	Slag and furnace remains

Culture in nearby Ghana which is pre-Iron Age (ca. 1500 B.C.)

The archaeological studies also revealed that four different industrial zones are associated with Dekpassanware with two others only a couple of hundred meters away. One of the industrial zones contains clear evidence of nine iron bloom crushing mortars and at least two large stone anvils. The other stone anvils used at the site are believed to have been smaller and portable. Evidence for two or three such anvils was obtained by looking for evidence of microspatter and hammer scales, small debris associated with forging activities.

Mark Hauser, a graduate of Syracuse University, will soon be working in conjunction with David Killick at the University of Arizona to compare the metallurgical samples from 2000-2500 (Dekpassanware) and 200 years ago (Bitchabe) from the Bassar region to see if iron technology has changed significantly over time. The field evidence of the slag and furnace remains suggests that the large and tall (up to 12 or 13 ft) induced draft furnaces documented from the late 13th century onward were not in use 2000 years ago. The paucity of actual furnace remains at Dekpassanware suggests some type of small furnace that used bellows. James Feathers at the University of Washington, will be determine a series of thermoluminescent pottery dates to complement the charcoal dates already obtained. Attempts to date the skeletal material using radiocarbon dating failed because of the absence of organic collagen that appears to have been leached out over a 2000 year period. The author plans to return to Bassar within the next year or two to continue his research. He will also be assisting two Togolese graduate students who will be doing their advanced degree research on materials obtained from the site.

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