

## Code sheet for Metal **Bangles** Database, Ban Chiang Project

All measurements are in centimeters unless otherwise noted.

**Serial\_number** = unique numerical designator for each artifact

**Artifact\_ID**: excavation abbreviation followed by the small find number/bag number.

For example, BC 0603/0471 = Ban Chiang 1974 excavation; small find number=603; bag number = 471

**Site** = site where material was recovered

BAN CHIANG BC = 1974 excavation at Ban Chiang by Penn/Thai Fine Arts Department. Excavation abbreviation = BC.

BAN CHIANG BCES = 1975 excavation at Ban Chiang by Penn/Thai Fine Arts Department. Excavation abbreviation = BCES.

BAN PHAK TOP = 1975 excavation by Penn (William Schauffler). Excavation abbreviation = BPT.

BAN TONG = 1975 excavation by Penn (William Schauffler). Excavation abbreviation = BT.

DON KLANG = 1975 excavation by Penn (William Schauffler). Excavation abbreviation = DK.

**Small\_find\_number** = small find number assigned in the field or lab

**Bag\_number** = artifact bag number assigned in the field

**Artifact\_class** = small find class

BANGLE = a curved rod of variable cross-section, the curve being such that the object could have fit around a human body part. This class includes bracelets, anklets, necklaces, and finger rings.

**Material** = the material of which the artifact is made

Cu-base = copper-base metal

Fe = iron

Bimetallic = copper-base metal and iron

### Provenience

**Period** = regional period

LP-Protohistoric

LP = Late Period

MP-LP = Middle to Late Period

MP = Middle Period

EP-MP = Early to Middle Period

EP = Early Period

**Subperiod** = the division of the Early Period  
upper

lower

**Burial\_phase** = varies by site

Ban Chiang BC and Ban Chiang BCES

X

IX

VIII

VIIIb

VIIa

VI

Vc

Vb

Va

IVc

IVb

IVa

IIIb

IIIa

IIc

IIb

IIa

I

Ban Tong

2

1

Don Klang

4

3

**Context** = the kind of deposit from which the artifact was recovered during the excavation.

White defines four general categories of context for artifacts found in these four sites: (1) deliberately placed in burials; artifacts are called grave goods; (2) near skeletons or in grave fill, but not necessarily grave goods; artifacts are called burial-associated materials; (3) in features of various sorts; and (4) in the general soil matrix.

grave good

burial-associated

feature

feature pdb = possible disturbed burial

general soil matrix

**Level** = cultural level by excavation locale

<b>BC</b>	<b>BCES</b>	<b>BPT</b>	<b>BT</b>	<b>DK</b>
13	04D	12	09	05
12	04C	11	08B	04B
11	04B	10	08A	04A
10	04A	09	07B	03C

09	03I	08B	07A	03B
08	03H	08A	06	03A
07	03G	07	05	02/03
06	03F	06	04	02C
05	03E	05	03	02B
04	03D	04	03/02	02A
03	03C	03	02B	02/01
02	03B	02	02A	01C
01	03A	01	01	01B
	02H			01A
	02G			
	02F			
	02E			
	02D			
	02C			
	02B			
	02A			
	01A			

**Square** = excavation square

**Quadrant** = quadrant of excavation square (Sections are also noted in this field.)

Ban Chiang BC and BCES

None  
 ALL QUADS  
 NEQ  
 NEQ SEQ  
 NEQ NWQ  
 NWQ  
 NWQ NEQ  
 NWQ SWQ  
 SEQ  
 SEQ SWQ  
 SWQ

Ban Phak Top

None  
 SWQ  
 SEQ  
 NWQ  
 NEQ  
 North section

Ban Tong

None  
 SWQ

SEQ  
NWQ  
NEQ SEQ  
NEQ

Don Klang  
WQ  
SQ WQ  
NQ SQ EQ  
NQ EQ  
NQ  
EQ

**Layer** = excavation layer

**Burial\_number** = site/locale followed by assigned burial number

**Burial\_association** = vertical relationship of grave good to skeleton

Unclear  
Beside skeleton  
Beneath skeleton  
Above skeleton  
Worn by deceased  
Found mixed with bones

**Location** = horizontal relationship of grave good to skeleton.

Left  
Right  
Center  
Beyond head  
Beyond feet

**Body\_part** = the part of the body upon which or near which the artifact was found

**Feature\_number** = feature number, assigned in the field

**Feature\_type** = feature type/description

cache  
cache of mixed objects  
cache—pot  
  
clump  
clump of shell  
mixed artifact clump  
  
clusters  
cluster of animal bone  
cluster of miscellaneous human bone  
mixed artifact cluster (with crucible)  
sherd cluster

discrete finds

discrete human bone  
discrete small find  
laterite lump  
stone

disturbance  
disturbance—mixed  
insect disturbance

ditch

hearth

pits  
large pit  
medium pit  
small pit

possible disturbed burial

post hole

scatters  
scatter of mixed objects  
scatter of sherds and bone

soil  
sediment feature  
soil feature

### **Artifact Status**

**Completeness** = how much of the artifact is present

unknown  
intact  
whole, reconstructed  
greater than half  
less than half  
fragmentary  
unclear

**Corrosion\_level** = degree of corrosion; assessment was initially made in the late 1970s and was partially updated in 2001. Left blank if no information was available.

not applicable  
cannot tell  
no metal present = appears to be completely corroded  
may be metal present = corroded but there is reason to believe that some metal may be present  
metal present

**Conserved** = whether the artifact in 1978 was assessed and conserved by Tamsen Fuller, a Museum conservator

yes

no

**Lab\_number** = lab number assigned by conservator

**Sampled** = whether the artifact was sampled or examined metallographically

blank = not sampled

sampled = sample was cut but not examined, usually because sample was completely corroded

metallography = cut, mounted, and examined metallographically. Elemental and Microhardness tests may also have been performed.

**Elemental** = whether an elemental analysis was performed on the artifact

yes

blank = no

**Hardness** = the Vickers microhardness results for five tests. Only the range of results for each artifact is presented here. More details are in the separate Hardness Ranges database. If no hardness test was performed then the space is blank.

### Artifact Description

**Cross section type** = the typology of the Ban Chiang bangles is based on the shape of the cross section, designated by a capital letter, and the kind of closure (see below), designated by a number. In a few cases (Types A, B, G, and N) the cross section type is defined by both the shape and the diameter of the cross section, i.e. Type A and Type B both have round cross sections, but Type B bangles are also larger ( $\geq 0.7$  cm) than the slender Type A bangles. The cross section shapes given here are those found on the metal bangles excavated from Ban Chiang, Ban Phak Top, Ban Tong, and Don Klang. Except for Type K discussed below, and in bangles affected by corrosion, the cross section along the shaft of the bangles is generally uniform in shape and dimension, excluding adornos. See the attached bangle typology chart.

The combined type designation is a capital letter followed by the closure type number, i.e. A-2 would designate a bangle less than 0.7 cm in diameter, with a round cross section, and with a C-shape—the ends of the bangle do not quite meet.

A = round cross section  $<0.7$  cm thick (slender bangle). (A few bangles have been classified as A even though their cross sections measure more than 0.6 cm. These are bangles whose cross sections have been swollen by corrosion; in the judgment of the recorders, these bangles were, from the size of the uncorroded portion, originally smaller in cross section.)

B = round cross section  $\geq 0.7$  cm thick without corrosion.

C = flattened cross section oriented perpendicular to the wrist, creating a shaft configuration in the shape of a flattened ring, with rounded inside and outside edges.

D = flattened rounded wedge-shaped cross section, with widest part either on the outside edge or the inner edge. Examples show a shallow vertical ridge along the outside or inside edge.

E = T-shaped cross section that combines a band parallel and next to the wrist with a flattened ring protruding from the band perpendicular to the wrist. Also called a T-flange bangle.

F = crescent cross section; concave of crescent on inside surface facing the skin.

G = band-like, flat or flattened oval cross section oriented vertically; height of bangle is less than the interior diameter (cf Type N).

H = rectangular or square cross section

I = triangular cross section. Lacks the raised ridges found on Type D.

J = D-shaped cross-section, flat side along the inside surface against skin.

K = scalloped bangles, with irregularly D-shaped cross sections; scallops are on outside and top or bottom surfaces and flat side is on the opposite surface perpendicular to wrist or ankle; may be worn in sets.

L = round, hollow cross section, formed by wrapping a band of metal in a tight spiral pattern.

M = V-shaped cross section, with apex of the V on the outside surface.

N = flat, thin, cross-section oriented vertically, resembling a cuff. Top to bottom height is equal to or greater than the interior diameter (cf Type G).

O = irregular cross section of indeterminate shape, either from design or from corrosion.

Unknown = A few bangle fragments are so corroded or small that no clear cross section could be seen.

**Closure\_type** = subtypes are based on the kind of shaft closure; that is, whether the bangle is closed in a solid ring, has a gap between two ends so that the shape resembles a C, has slightly overlapping ends, or has ends that overlap to such an extent that the bangle or ring is a spiral.

0 = unable to determine (fragmentary)

1 = closed circle

2 = C-shaped

3 = ends overlap

4 = spiral

**Number\_of\_pieces** = the number of pieces that comprised the artifact in the 1970s, at first recording

**Weight\_gm** = total weight of piece or pieces in grams. Measurement was made in the late 1970s before analysis.

**Chord\_length** = chord length of artifact. This measurement is taken when less than one-half of the bangle is preserved.



**Outer\_diameter** = outer diameter of bangles. This measurement is taken when more than one-half of the bangle is preserved.

**Inner\_diameter** = inside diameter. A pot diameter chart is used to take this measurement. A value of zero means that it was impossible to determine the inner diameter.

**Shaft\_height** = the measurement between the top of the shaft and the bottom when the bangle is lying flat

**Shaft\_width** = the measurement between the inner edge of the shaft and the outer edge when the bangle is lying flat

**Surface\_treatment** = surface treatment/decoration (see attached figure):

02 = uncertain

03 = smooth (no obvious decoration)

12 = knobs and grooves running parallel to circumference

13 = notched along external circumference

15 = diagonal grooves

17 = scalloped along outer circumference

18 = flat bar wrapped into a tight spiral (see Type L)

**Comments**

## Bangle Types

A. shaft has round cross section, with diameter < 4 cm.



B. shaft has round cross section, with diameter  $\geq 4$  cm



C. shaft has flattened, discoid cross section



D. wedge-shaped cross section, with slight ridge on either interior or exterior edge



E. T-shaped cross section



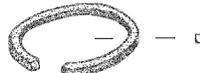
F. crescent cross section; concave of crescent is on inside surface facing the skin.



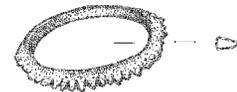
G. band-like, flat or flattened oval cross section oriented vertically, height of bangle is less than the interior diameter.



H. rectangular or square cross section



I. triangular cross section, lacking the raised ridges found on Type D.



J. D-shaped cross-section, flat side along the inside surface against skin.



K. scalloped bangles, with irregularly D-shaped cross sections; scallops are on outside and top or bottom surfaces and flat side is on the opposite surface perpendicular to wrist or ankle; may be worn in sets.



L. round, hollow cross section, formed by wrapping a band of metal in a tight spiral pattern.



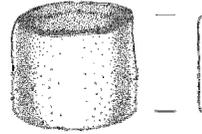
M. V-shaped cross

section, with apex of the V on the outside

surface.



N. flat, thin, cross section oriented vertically, resembling a cuff. Top to bottom height is equal to or greater than the interior diameter.

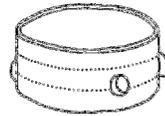


O. irregular cross section of indeterminate shape, either from design or from corrosion.

Unknown, so corroded or small that no clear cross section can be seen.

### Bangle decorations

Knobs and grooves running parallel to circumference.



13=notched along outer circumference



15=incised diagonal grooves



17=scalloped along outer circumference

