

SEVEN TYPES OF RING CONSTRUCTION IN THE GREEK LATE BRONZE AGE*

It is with great pleasure I dedicate this skeletal article to my friend and colleague Henri van Effenterre. His acute power of observation, systematic arrangement of material, and iconoclastic questions continue to inspire and delight me.

Fingerrings of the Late Bronze Age in Greece have often been the subject of iconographic discussions but their method of construction has usually been ignored. Sakellarakis' recent paper at the 1978 Marburg Symposium discussed one method of producing one piece rings from tripartite moulds. Most other rings, however, are of two to seven pieces, and their construction must have been more complex.

This article presents, without much discussion, seven basic methods of ring construction and catalogues the rings of each type. Provenience and context dates support any conclusion about when and where these methods were used. Hoop profiles are also typed (fig. 6, p. 88). Two notes are appended about the few extant stone matrices for decorated rings.

I. One piece, single cast rings made of lead (Sakellarakis fig. 28). Hoop Type 1a or 2a. A prototype with a circular bezel (HMm 143) depicting a woman comes from Sphoungaras (MM III-LM I context: *Anthropological Publications of the University of Pennsylvania Museum* 3,

*Cloisonné rings and gold seals are not included in this discussion.

Besides the usual abbreviations the following are also used:

ANM = Athens National Museum.

HM = Herakleion Museum; HMm = metal; HMs = sealings.

SAKELLARAKIS, "Matrizen zur Herstellung kretisch-mykenischer Siegelringe," *CMS Beiheft* 1, pp. 167-179.

Roman numerals followed by Arabic (e.g., I 91) refer to *CMS* volumes and entries therein (e.g., *CMS*, vol. I, entry 91).

Sealings from Knossos are referred to by both HMs number and the numbers assigned by M. A. V. GILL, *BSA* 60 (1965), 58-98.

Since most rings carry cult scenes these have not been described.

Rings that are preceded by an asterisk (e.g., *HMm 1034) have been examined by the author with the generous permission of the museum director or their excavator.

1912, 69-70 fig. 44). Another ring, *AGDS I* Munich 35, is said to be of silver and cast in one piece (Yule, *Early Cretan Seals*, p. 77), but a rim around the bezel suggests Type VI.

ANM 2733 from Mycenae. Unfinished (Sakellarakis, fig. 28).

?ANM 7346 from the Midea Tholos (LH III A:1 context). Bull left.

V 266 from Armenoi T. 43 (LM III B:1 context). Sphinx left.

V 267 from Armenoi T. 43 (LM III B:1 context). Bull-leaping left.

V 614 from Olympia, New Museum T. 0, Cist 6 (LH III B[-C?] context). Lines.

Conclusion: Mainland, probably LH II-III A, based on style (see the forthcoming series on Masters and Workshops in Kadmos).

II. Two piece rings of bronze or copper (fig. 1): bezel secured to the hoop by rivets through the hoop's flattened ends. Since none of the extant rings is gilded, even I 253 from the undisturbed Vapheio Cist, and since the sealings all reveal the rivets clearly, it is possible that Type II rings were never gilded (*pace* Hastings, *AJA* 9, 1905, 279-280, s.n. 16).

*I 253 from the Vapheio Cist (LH IIA context). Lion attacking a bull. Dark green steatite bezel set against a copper backing. Type 1a hoop.

HMs 283 (the clay 'signet') and 277-282 and CS 41S and 42S (the sealings) from Knossos (Q22, R1, R51, and R54) and KZ3, a sealing from Kato Zakro. The signet is in intaglio, the seated woman on the left, the sealings in relief with the seated woman on the right. Sakellarakis (p. 172, n. 25) is correct: the circles top and bottom in these impressions were created by the rivets that secured the original ring's hoop to the bezel.

HmM 970 from Avgo (*AJA* 9, 1905, 277-287, no. 16). Type 6? hoop.

From Hogarth's House, Knossos (LM IB context; *ArchReports* 1958, 18-19, fig. 30; *GGFR* 391 mistakenly has the hoop inserted into the bezel). Type 2a hoop.

AT 128, 130?, 135, and 137, sealings all from Ayia Triada (LM IB context).

Conclusion: Cretan, LM I.

III. Solid (alloyed?) gold rings in two pieces (fig. 2): a thin, usually flat circular or elliptical bezel and Type 1a or 2a hoop. The pieces were cast separately and the flattened ends of the hoop soldered to the back of the bezel at the rim. The designs are engraved, sometimes with an obsidian burin, after the bezel was cast.

A. Circular bezels:

VII 68. Two agrimia copulating.

*HMm 1017 from Archanes Tholos B (LM III A:1 context; *Praktika* 1967, pl. 137a). Woman and griffin. The solder is visible.

HmM 530 from Mavrospelio T. 9E.1 (MM end - LM I context; *BSA* 28, 1926-7, 269, fig. 37, pls. 18 and 19). Spiral inscription in Linear A. Bossed bezel.

B. Elliptical bezels:

I 17 from the Mycenae Treasure (LH I context?).

I 18 from the Mycenae Treasure (LH I context?). Animal faces.

I 390 from Perati T. 1 (LH III B:2-C:1 context). Two horses?

I 391 from Perati T. 1 (LH III B:2-C:1 context). Probably a lion or griffin attacking a bull.

- *HMm 424 from Isopata T. 1 (LM IB - II context; *Archaeologia* 65, 1913, 6-13, fig. 16).
Type 1c hoop.
- ?HMm 990 from Archanes Tholos A (LM III A:1 context; *ILN* 26, March 1966, pp. 32-33, fig. 8). Figure-8 shields and Sacred Knots. Hoop type unknown.
- Ring from Mochlos T. 1 (LM IB context; *Mochlos* p. 91). Type 3d hoop.
- CS 250 from Knossos. Type 1d hoop.

Conclusion: Cretan (Knossos?) first (MM III-LM I: Mochlos and Isopata rings), then the Argolid (LH I-III A), and back to Crete, probably Knossos (LM II-III A:1: Archanes and Kalyvia rings).



Fig. 3. — Type IV.



Fig. 4. — Type VI.



Fig. 5. — Type VII.

V. Four piece rings (variant of Type IV) of alloyed gold. The pieces are all very thin. The hoop is inserted shallowly behind the bezel and the space around it is plugged. The interior is hollow and filled with sand or powder.

Type 1d hoop:

- *HMm 1034 from Sellopoulo T. 4 (LM III A:1 context; *BSA* 69, 1974, 223 J8).
Hollow interior filled with green powder.

Type 3a hoop:

- I 59 from Mycenae T. 25.
I 90 from Mycenae T. 58.
I 155 from Mycenae T. 520.
V 728 from Mega Monasteri T. Γ (LH III A-B context).

Type 3b hoop:

- ?HMm 980 from Zafer Papoura Pit Cave 7 (LM III A:1; *Archaeologia* 59, pt. 2, 1905, 25-27, fig. 21). Sphinx couchant right.

Type 5 hoop:

- V 173 from Athens Agora T. 8 (LH III A:1 context).
HMm 1002, 1003, and one other, all from Archanes Tholos A (LM III A:1 context; *ILN* 26, March 1966, pp. 32-33, fig. 8). Figure-8 shields.
From Isopata T. 6 (LM III A:1 context; *Archaeologia* 65, 1913, 30-33, fig. 41).

Type 7 hoop (between Types 3a and 5):

- I 180 from Tiryns.

Conclusion: all LB 3 A:1. Type 1c and 5 hoops are Knossian; Type 3a hoop is Argolidic.

VI. Four piece rings with plated bezels (fig. 4): a gold leaf over a flat bronze core, trapezoidal in section, set in a gold cup into whose back are inserted the ends of the hoop. Most rings have the Type 4 hoop consisting of a bronze core plated in two pieces: a pan securing a cover. The bronze bezel cores are all too corroded to know whether they were cast along with the design from the core; if they were not, the bezel leaf would have received the design from a stone mould like V 422 (cf. *BSA* 74, 1979, 265-6). Both the style of the modeling and the compositions take their inspiration from sealstones. Three, possibly four, prototypes for Type VI rings exist: HMm 1789 from Sphoungaras with a circular rock crystal bezel (*Anthropological Publications of the University of Pennsylvania Museum* 3, 1912, 69-70, fig. 43b), the elliptical rock crystal bezel IV 58 D, and a gold bezel cup and Type 5 hoop found in a LM I A larnax at Pyrgos (*PM* II, 75, fig. 34b). *AGDS* I Munich 35 (see above, Type I) may belong to this type.

ANM 7304 from the Midea Tholos. Gold cup with silver bezel. Bull-leaping?

ANM 8803 from Perati T. Σ51. Bezel (cloisonné or filled with paste?) missing.

ANM 7743 from Koukaki. Gold bezel cup.

*V 198. Bull couchant right, leashed to a shrine. Type 4 hoop with central ridge grooved.

*HMm 1035 from Sellopoulo T. 4 (LM III A:1 context; *BSA* 69, 1974, 195-257 J7). Griffin couchant left. Bezel core and leaf only; reverse shows the leaf overlapping and soldered to the back of the core.

From Kalyvia T. 9 (LM III A:1 context; *MonAntichi* 14, 1901, 501-666, fig. 11). Bull runs right. Bezel core and leaf only.

From Kalyvia T. 9 (LM III A:1 context; *ibid.*, fig. 12). Griffin couchant right. Bezel core and leaf only.

Conclusion: probably Cretan, probably LM III A:1.

VII. Bimetallic rings (fig. 5): the bezel consists of a metal core to which is riveted two metal plates, one at the top, the other at the bottom. All have the Type 4 hoop, the ends of whose metal core are riveted also to the bezel's core; the pan is one piece with the finger bed. The bezel core is reported to be of bronze (I *200 and *201), iron (I 91), iron over bronze (HMm 48), and silver (I 108). The extant rings demonstrate that pure gold was used for either top (I 108 and *200) or bottom (I 91 and *201) bezel plates and for the hoop cover (*I 201). Alloyed gold was used for the hoop pan and finger bed, but it apparently corrodes relatively more quickly since only one ring preserves it (*I 201); it may therefore have been the material used for the other of the two bezel plates.

I 91 from Mycenae T. 58. Two bulls right.

I 108 from Mycenae T. 71. Scalloped division between bezel plates.

*I 200 from Asine T. 1 (LH III A:2 context). Bull-leaping. The rivets for the gold top plate are visible on the reverse of the bezel core and on the gold plate itself (at the leaper's right ankle [visible also in impression] and between the bull's head and the plant in front of it).

*I 201 from Asine T. 1 (LH III A:2 context). Bull-leaping(?) left. The marks of two rivets can be seen in the gold bezel plate, one at the bull's rear thigh (the rivet



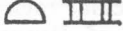

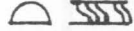













HOOP TYPE	RING TYPES						
	I	II	III	IV	V	VI	VII
1a 	×	×	×	×			
1b 				×			
1c 				×	×		
1d 				×	×		
1e 				×			
1f 				×			
2a 	×	×	×	×			
2b 				×			
2c 				×			
3a 				×	×		
3b 				×	×		
3c 				×			
3d 				×			
3e 				×			
4 						×	×
5 					×		
6 		?	×				
7 					×		

Fig. 6.

that secures the plate to the bezel core) and the other below the center (the rivet that secures the bronze core of the hoop to the bronze core of the bezel).

I 313, a sealing from Pylos Palace (LH III B:2-C:1 context).

Hm 48 from Kalyvia T. 10 (LM III A:2 context; *MonAntichi* 14, 1904, 534, fig. 55).

Figure-8 shields.

Conclusion: probably Mainland (Argolid?) and LH II-III A, based on style (see the forthcoming series on Masters and Workshops in *Kadmos*). If HMs 377i and ii (Va), no No. 46 (ME), and CS 51S, all circular sealings from Knossos (see Gill, *Die kretisch-mykenische Glyptik und ihre gegenwärtige Probleme* 34-36, fig. 3), represent such a bimetallic ring with a circular bezel, that ring might have been a prototype for Type VII.

Extant matrices for rings of Types III (elliptical bezels) — V.

The matrix HM 1559, the matrix from Enkomi now in the British Museum, and the matrix ANM 2736 from Mycenae (Sakellarakis fig. 2, 4, and 5 respectively) are all bezel matrices and have two mortises, set in opposite corners; the hoop and finger bed matrices all have mortises flanking the finger bed (Sakellarakis fig. 8-27). It would seem then that the three bezel matrices mentioned would not have been combined with one of the hoop and finger bed matrices but would rather have received a simple top matrix that would have produced the back of the bezel. It is probable therefore that those three bezel matrices were involved in the production of rings Types III (elliptical bezels) — V.

Relief rings?

The two-bezel matrix V 422 from Eleusis T. Ηπ3 has its designs in intaglio; the centered scratch marks vertical to the bezels were probably channels for a wire or needle used in extracting the gold bezel plates. The intaglio designs suggest that the gold bezel plates were quite thin and that they were laid in the matrix and rubbed; the intaglio design produced on the upper surface of the plate would then have served as the face of a ring of Type VI (*BSA* 74, 1979, 264f.). The four mortises, however, suggest the plates were cast, and, if so, the result would have been rings of Type III (elliptical bezels) - V but with their bezels in relief.

The clay 'signet' (HMs 283) from the Lapidary's Workshop at Knossos has its design in intaglio and was apparently impressed by a ring of Type II (the marks of the rivets are visible) whose bezel was in relief. Such a relief ring was incapable of impressing the preserved sealings; only the clay 'signet' could have done that (*pace* Younger, *BSA* 74, 1979, 266).

John G. YOUNGER.
Durham

Résumé : SEPT TYPES DE FABRICATION DE BAGUES À L'ÂGE DU BRONZE RÉCENT.

Il est souvent traité de l'iconographie des bagues du Bronze Récent, mais on ignore généralement les méthodes de fabrication qui étaient alors utilisées.

Cet article présente, sans les discuter outre mesure, sept modes essentiels de fabrication allant du moulage d'une seule pièce à l'assemblage plus ou moins complexe de l'anneau et du châton (lui-même décomposable en plusieurs éléments) par rivetage, soudure, ou encore par insertion et scellement. Il dresse un catalogue des bagues de chaque type et aboutit ainsi à un classement géographique et chronologique.

Nous disposons aussi d'un tableau figurant des profils d'anneaux.

En appendice l'auteur évoque les rares matrices de pierres conservées, en particulier pour des bagues décorées en relief.