

## LATE BRONZE AGE GRAVES WITH WEIGHING EQUIPMENT FROM EASTERN FRANCE

THE EXAMPLE OF MIGENNES »LE PETIT MOULIN« (DÉP. YONNE),  
BURIAL NO. 298

This article constitutes the first step towards the monographic publication of an exceptional Late Bronze Age (Bronze D) necropolis, excavated in 2004. The site is located in the municipality of Migennes (dép. Yonne), in the place called »Le Petit Moulin«, on the right bank of river Armançon, about 3 km north-east of its confluence with the Yonne (**fig. 1a**). Its altitude lies between 85 and 86 m above sea level. The excavation, which covered a surface of 1.8 ha, brought two groups of graves to light, about 50 m distant from each other (**fig. 1b**). The first group, located in the south-east of the excavated zone, contains 21 cremation and four inhumation burials. The second group, to the north-west of the first one, delivered 22 inhumations and ten cremation graves, as well as a tomb associating both practices (no. 256).

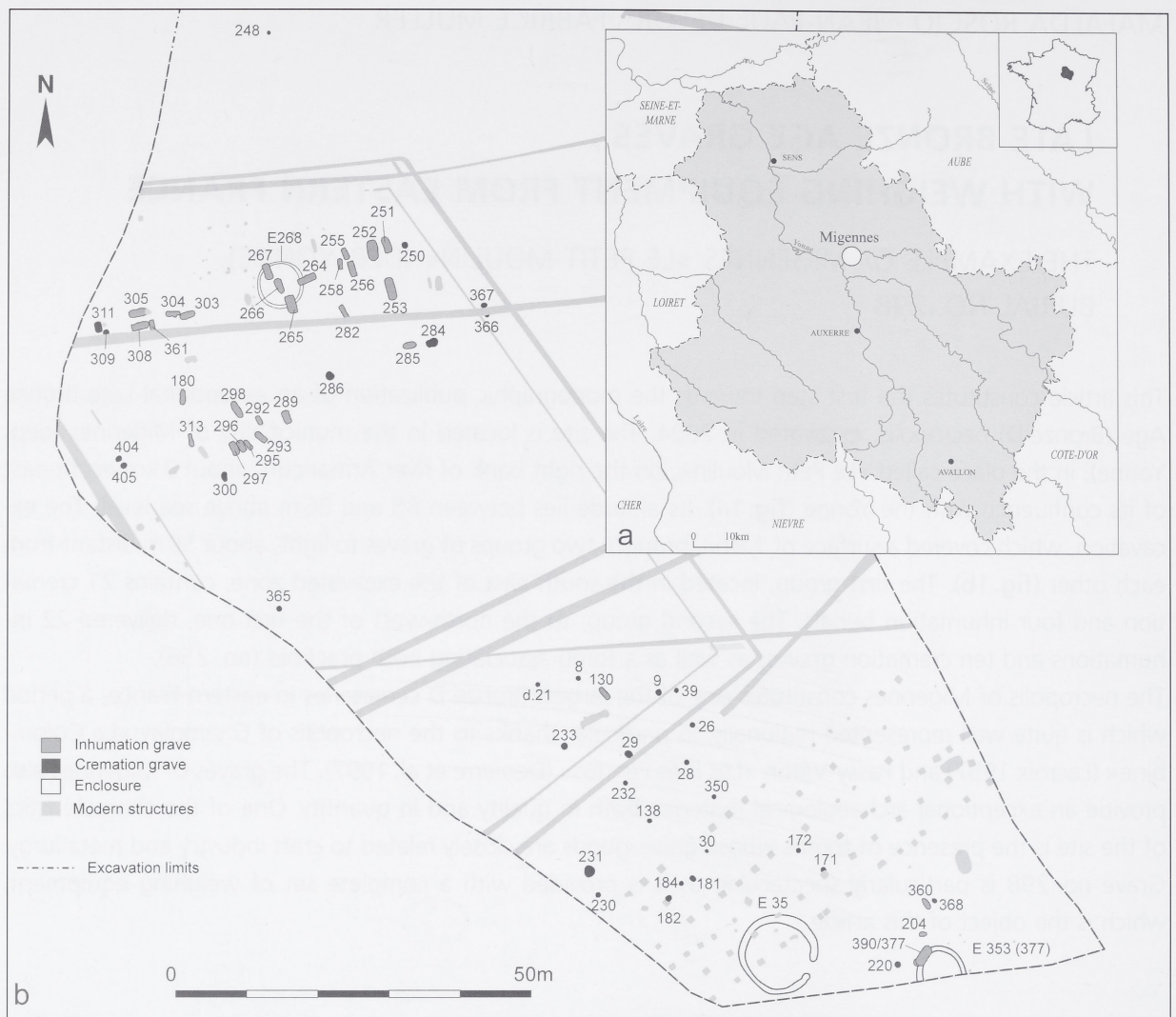
The necropolis of Migennes constitutes one of the largest Bronze D cemeteries in eastern France, a period which is quite well represented regionally, in particular thanks to the necropolis of Champlay »La Colombine« (Lacroix 1957) and Passy-Véron »Les Prés Pendus« (Depierre et al. 1997). The graves of Migennes also provide an exceptional archaeological material, both in quality and in quantity. One of the characteristics of the site is the presence of tombs whose grave-goods are closely related to craft industry and metallurgy. Grave no. 298 is particularly spectacular, as it is provided with a complete set of weighing equipment, which is the object of this article.

### BURIAL NO. 298: DESCRIPTION AND DATING

Grave no. 298 (**fig. 2a**) contained an inhumation. The body was laid on its right side, in an oval pit, 2 m long, 1 m wide and preserved to a depth of 40 cm. A limestone slab was placed behind the head of the deceased. A bronze razor was found in the first cervical vertebra zone (**fig. 3, 75**). Two sets of objects, each comprising a series of quite specific artefacts, were located one at the back and the other behind the thighs of the inhumation. A large pottery vessel (**fig. 3, 2**) was placed behind the ankles. Where the diameter is at its maximum, on the northern side, there is a fragment of a pig ulna (determination: P. Méniel; **fig. 3, 3**), and at the bottom, in the fill of the pottery vessel, there are three fragments of undetermined animal bones (no. 44-46, not illustrated). Lastly, in the southern end of the grave-pit, there was a fossil (**fig. 3, 5**) and a very fine sandstone grinding stone (**fig. 3, 1**), the latter was inclined towards a blackish zone, perhaps remnants of an organic deposit.

#### Set no. 1

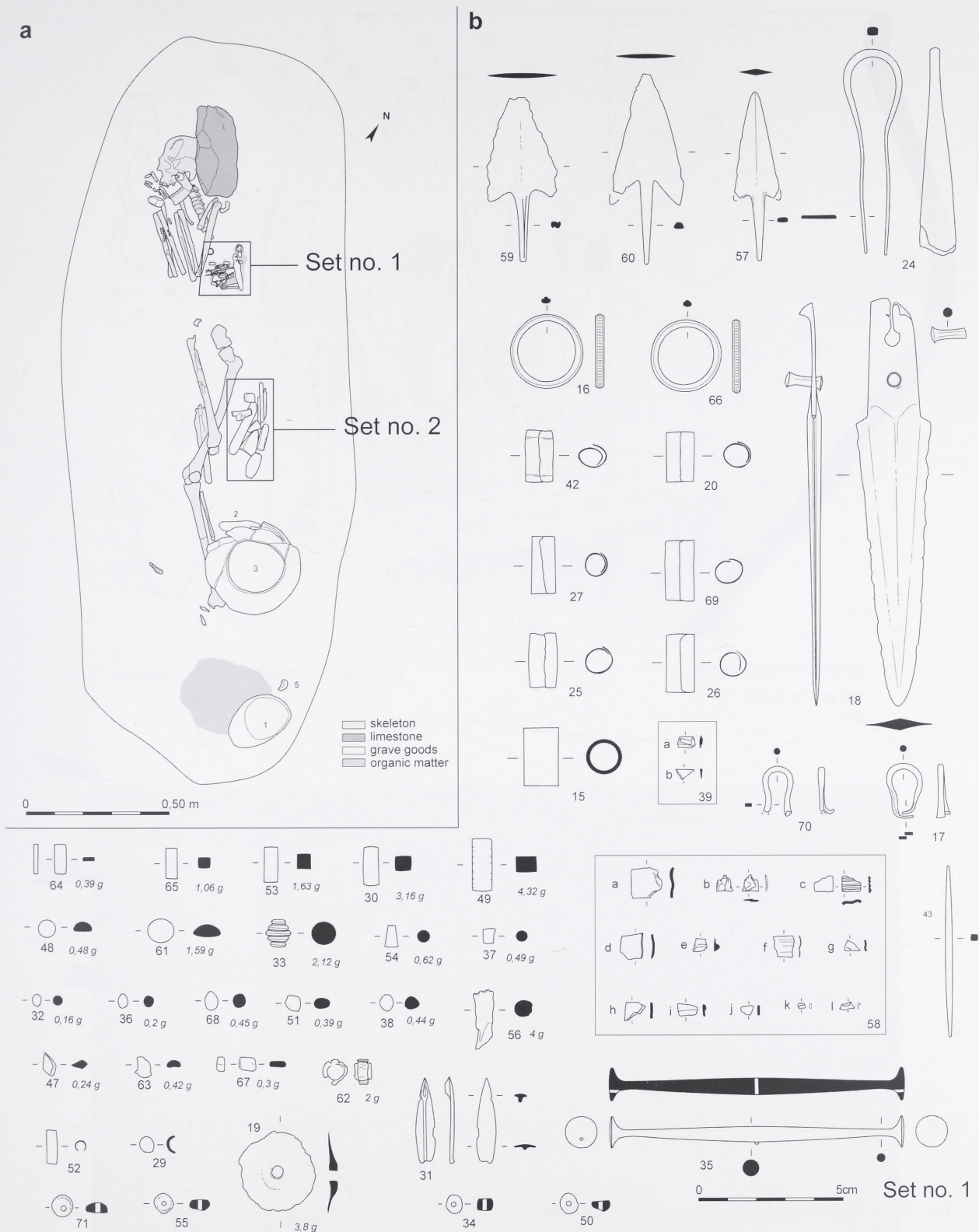
This set was found in the remains of a small perishable container, represented by a quadrangular darkish zone, approximately 15 cm in length. It delivered a complex combination of objects, which constitutes the focus of this article (**figs 2b, 4**):



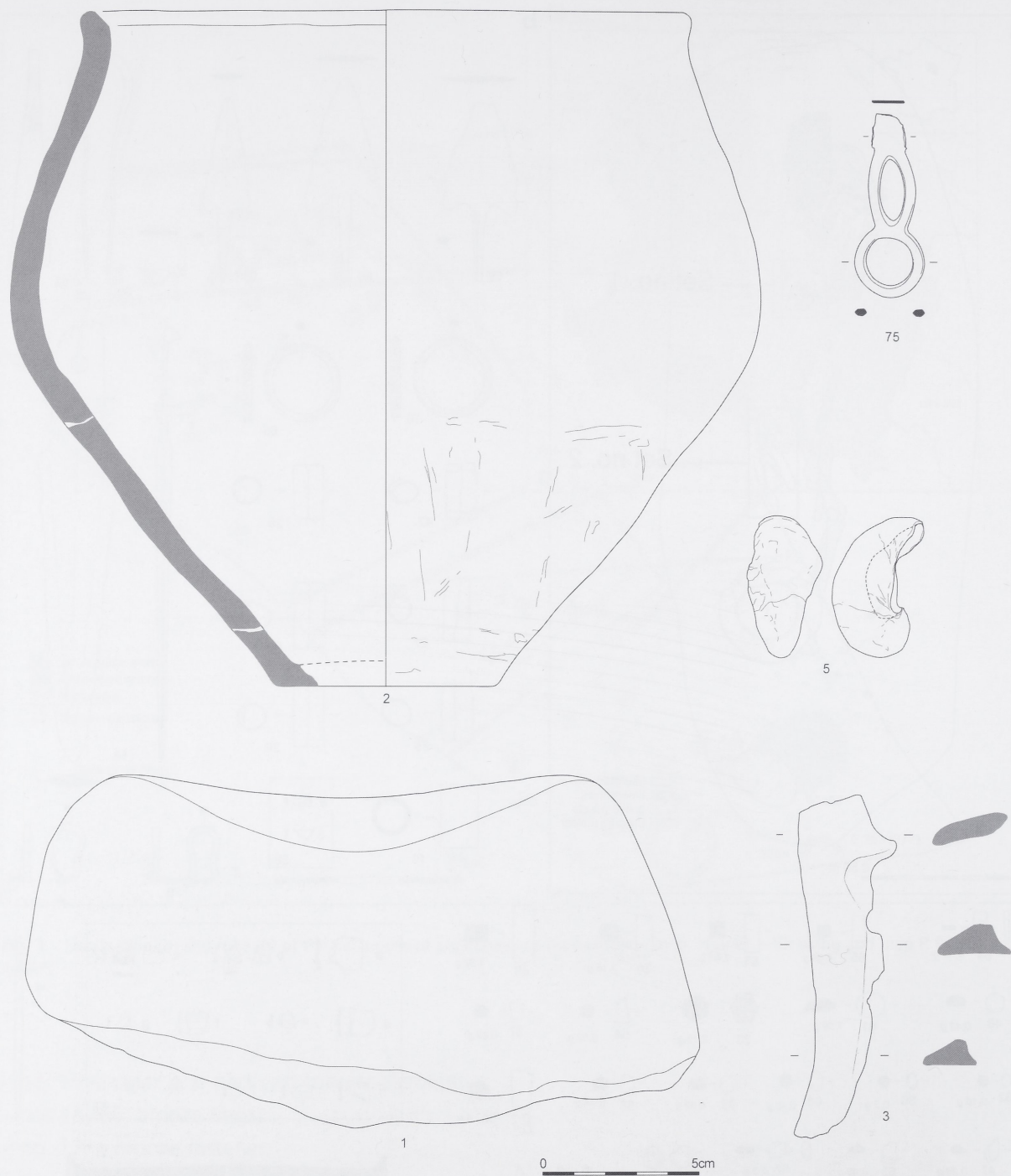
**Fig. 1** Localisation (a) and map (b) of the necropolis of Migennes «Le Petit Moulin» (départ. Yonne). – (Drawing and map P. Pihuit, INRAP).

- no. 15: a small one-part cast tubular element;
- nos 16, 66: bronze rings;
- no. 17: a bronze fastener;
- no. 18: a dagger with two rivets;
- no. 19: a small bronze disc (probably part of a collared pin);
- nos 20, 25-27, 69, 42: bronze sheet cylinders;
- nos 21-23, 28, 40 (not illustrated): non identifiable animal bones;
- no. 24: bronze tweezers;
- no. 29: a bronze knob (?);
- nos 30, 32-33, 36-38, 47-49, 51, 53-54, 56, 61-65, 67-68: bronze weights (except 56, 62, 67 made of lead?);
- no. 31: a small leaf-shaped bronze object with a median rib on the inner face;
- nos 34, 50, 55, 71: amber beads;





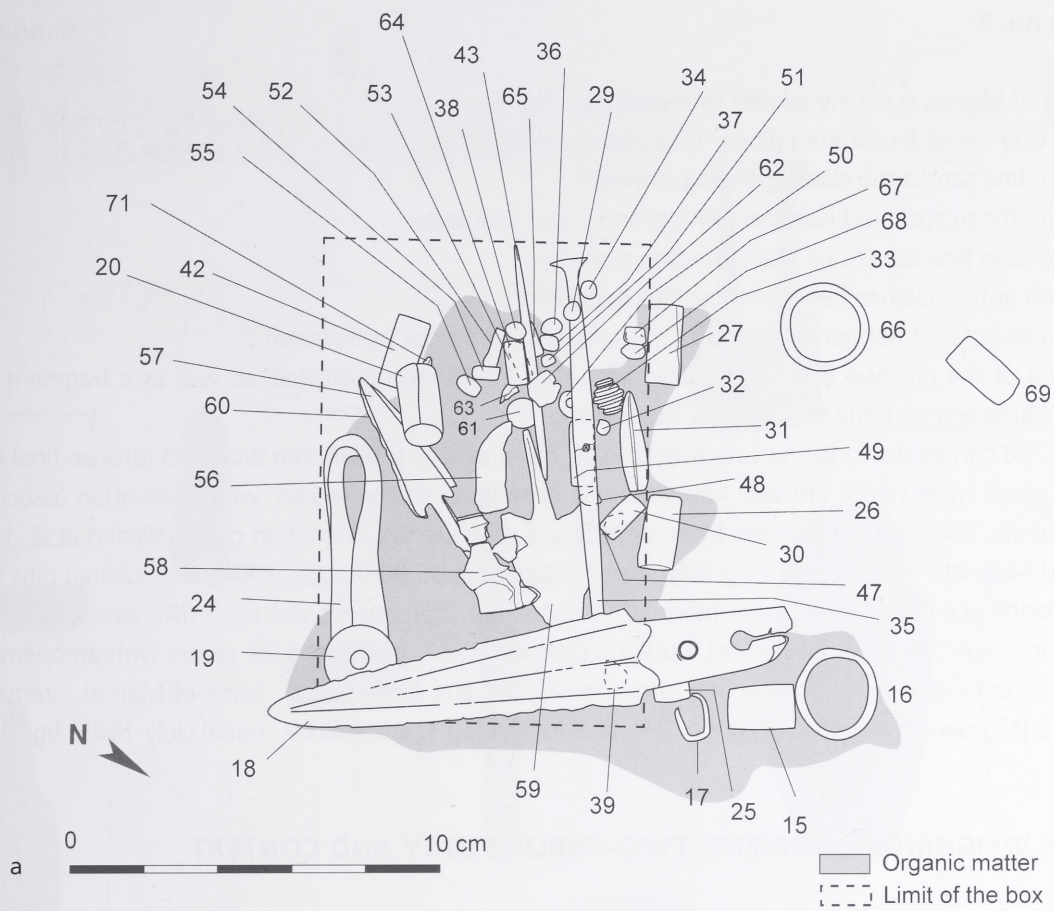
**Fig. 2** Migennes »Le Petit Moulin« (départ. Yonne): **a** Plan of inhumation no. 298. – **b** Objects from set no. 1. – (Drawings P. Pihuit, INRAP / M. Roscio, UMR 5594).



**Fig. 3** Migennes »Le Petit Moulin« (départ. Yonne): grave-goods from inhumation no. 298. – (Drawings P. Pihuit, INRAP / F. Muller).

- no. 35: a spindle-shaped balance beam made of antler;
- nos 39, 58: gold fragments (total weight: 3.41 g);
- no. 43: a bronze awl;
- no. 52: a bronze sheet cylinder;
- nos 57, 59-60: bronze arrowheads;
- no. 70: a bronze loop-shaped fastener.





**Fig. 4** Migennes »Le Petit Moulin« (départ. Yonne): detailed plan (a) and photograph (b) of set no. 1. – (Photo L. Staniaszek, INRAP; drawing F. Muller).



## Set no. 2

This group of objects is clearly related to metallurgy (fig. 5):

- no. 6: a very dense limestone cylinder (planishing anvil?);
- nos 7-10: fine sandstone slabs (grinding stones?);
- no. 11: a bronze socketed hammer, with pronounced shoulders;
- no. 12: a long fine sandstone slab (grinding stone?);
- no. 13: an antler balance beam with ocellus decoration;
- no. 14: a rough cast dagger blade (burrs not taken off, tang not perforated).

In the filling of the pit, two flint chips were found (nos 72-73, not illustrated) as well as a fragment of a non-identifiable animal bone (no. 74, not illustrated).

Grave no. 298 can be dated to the Late Bronze Age, more exactly to Reinecke Bronze D (Bronze final I-IIa), thanks to some types which are well known in the cemeteries of the region, which are often associated with rilled ware: compare the daggers from Monéteau Saint-Quentin, cremation grave (Nicolas et al. 1975, fig. 7), and Saulsotte »Bois Pot de Vin« (départ. Aube), burial no. 93.90 (Rottier 2004); the collared pins from Misy-sur-Yonne »Le Bois des Refuges« (départ. Seine-et-Marne), cremation grave no. 1 (Mordant et al. 1977, fig. 27), and Is-sur-Tille (départ. Côte-d'Or), burial(?) (Sandars 1957, pl. 9); and the razors with an openwork handle and terminal ring from Marolles-sur-Seine »Gours aux Lions« (départ. Seine-et-Marne), cremation grave no. 5 (Mordant / Mordant 1970, fig. 31), and Monéteau »La Métairie«, burial (Joly 1965, fig. 21).

## THE WEIGHING EQUIPMENT: TYPO-CHRONOLOGY AND CONTEXT

### The balance beams

The balance beams are made of antler (determination: N. Provenzano) and form two different types. The first one, very small (101mm in length), consists of a spindle-shaped rod perforated in the middle, with ends terminating in small perforated discs, 11mm in diameter (fig. 2b, 35). The central perforation still contains the remains of a small bronze loop, probably for suspension. The second type of beam, larger, is rectangular in shape (141 × 13.5 × 7 mm). Both sides bear ocellus ornamentation (figs 5, 13; 6). The rectangular bar is perforated at both ends and in the middle, perpendicular to its axis, in order to receive small bronze wire suspension loops, to hold the balance pans and the balance beam itself.

If these small weighing instruments seem rare, even exceptional, it is because they have only been recognized very recently (Peake / Séguier 2000). Most of the specimens attested in France come from the valley of Yonne, in Late Bronze Age funerary contexts, and most belong to the spindle-shaped type (fig. 7a): Marolles-sur-Seine »La Croix de la Mission« (Peake / Delattre / Pihuit 1999, fig. 10, 1) and »Gours-aux-Lions« (Mordant / Mordant 1970, fig. 31, 16), Monéteau »La Métairie« (Joly 1965, fig. 21, 3), Passy-Véron »Les Prés Pendus« (Depierre et al. 1997, fig. 8B, 13) and Etigny »Le Brassot« (Muller 1999, fig. 18, 28). A last spindle-shaped beam was recently recognised in the urn of the cremation grave from Haguenau-Oberfeld (départ. Bas-Rhin), tumulus no. 57 (Schaeffer 1926, figs 26-27). This grave was excavated in the 19<sup>th</sup> century by Xavier Nessel, but the bones are still preserved in the Musée historique de Haguenau. Other specimens, very similar to those of the Yonne region, are known from the atlantic area. One of them, not identified yet as such, comes from locus B543 at the site of Sorel-Moussel »Fort-Harrouard« (départ. Eure-et-Loir) (Mohen / Bailloud 1987, pl. 85, 8), dated to the Urnfield period (Ha A2-B1). However, it is to be noted that parts of the material from this locus can be attributed to the Middle Bronze Age (armrings with longitudinal



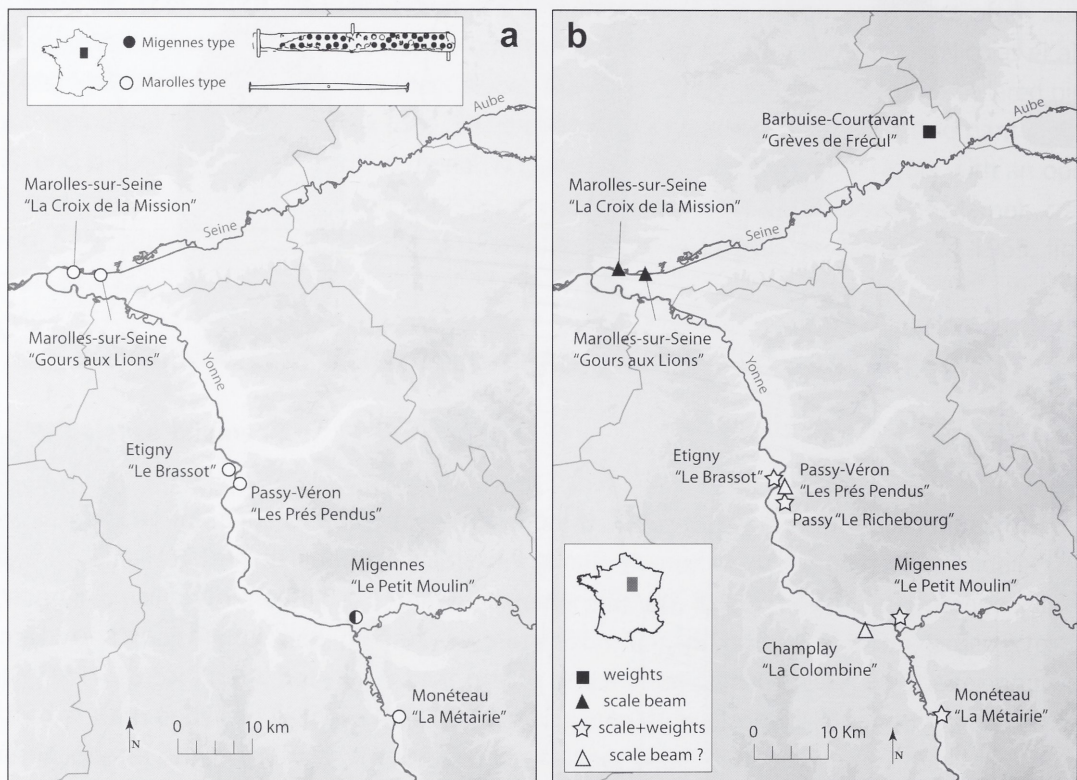
Set no. 2



**Fig. 5** Migennes »Le Petit Moulin« (départ. Yonne): grave-goods from inhumation no. 298 (set no. 2). – (Drawings P. Pihuit, INRAP / M. Roscio, UMR 5594).



**Fig. 6** Migennes »Le Petit Moulin« (départ. Yonne). Scale beams from inhumation grave no. 298: **1** »Marolles type«. – **2** »Migennes type«. – (Photos L. de Cargouët, INRAP).

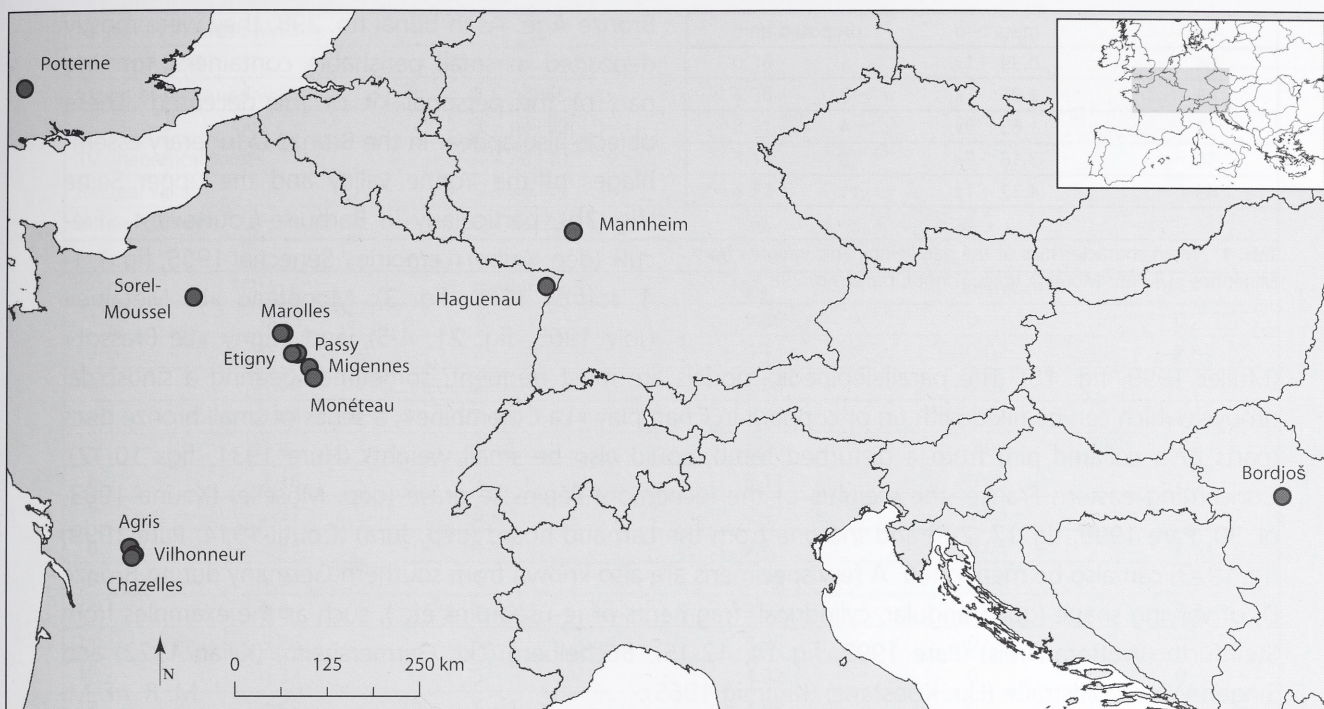


**Fig. 7** **a** Distribution map of antler scale beams in south-eastern Parisian Basin. – **b** Distribution map of weighing equipments (scales and weights) in south-eastern Parisian Basin.

grooves, palstave axe). Two other beams are known from the department Charente, one coming from the principal chamber of the »Grotte des Perrats«, in Agris (Peake / Séguier / Gomez de Soto 1999, fig. 1, 2), in association with abundant finds of the Duffaits culture (end of the Middle Bronze Age/beginning of the Late Bronze Age), the second one having been collected without context, during speleological research in the »Grotte de la Cave Chaude«, in Vilhonneur (Peake / Séguier / Gomez de Soto 1999, fig. 1, 3). This latter balance beam is particularly large, with a length of 173 mm.

On a European scale (fig. 8), a specimen must also be mentioned from the South of England, from the site of Potterne, Wiltshire (Lawson 2000, fig. 97, 98). It was found in the earliest levels of occupation, dated to





**Fig. 8** Distribution map of Western European Late Bronze Age antler/bone scale beams. – (Map after SRTM, ESRI World Basemap Data, Roscio, Dijon 2009).

the 12<sup>th</sup> century, in association with ceramics of Deverel-Rimbury style. Another one comes from a settlement pit in the site of Mannheim-Wallstadt, associated with Bronze D pottery vessels (Görner 2003, fig. 71, 3). A last specimen comes from Serbia, from the site of Bordjoš (prov. Vojvodina), north-west of Belgrade (Medović 1995, fig. 4). This beam, made of bone (antler?), is spindle-shaped, with a central perforation like the specimens of Yonne, but without the small terminal discs. Its close association with a whole series of weights confirms the function of the object, dated to Ha A1.

Parallels for the second, bar-shaped type are much less common. The best analogies come from the department Charente, from the site of Chazelles »Grotte du Quéroy«, layer B, dated to the final Urnfield period (Bronze final IIIb), and from the Duffaits Cave, in la Rochette (Gomez de Soto / Kérouanton 1991, fig. 16, 18, 18). These objects are described as »perforated bars made of bone with ocellus decoration« (ibidem 354). It would be necessary to have a visual examination to better judge their similarity with the specimens of Migennes.

### The weights

The shapes of the weights are varied: Five specimens are parallelepipedic (nos 30, 49, 53, 64-65), two are hemispherical (nos 48, 61), one is truncated (no. 54); a last specimen consists of a truncated pin head (no. 33). A pin head (no. 19) and a whole set of small more or less regular bronze fragments may be added to this series, because of their proximity with the others (nos 32-33, 36-38, 47, 51, 56, 62-63, 67-68) (fig. 4).

Christopher Pare published a synthetic review of Bronze Age weights in Central Europe (1999). They are known from eastern France to the Carpathian Basin, almost all coming from funerary contexts of the Late



no.	mass	proposed unit
64	0.39	1
65	1.06	3
53	1.63	4
30	3.16	8
49	4.32	11

**Tab. 1** Main characteristics of the parallelepipedic weights from Migennes »Le Petit Moulin« (dép. Yonne), burial no. 298.

(Muller 1999, fig. 18). The parallelepipedic models are most frequent, sometimes bearing a sinusoidal groove (which can be filled with tin or copper). In Champlay »La Colombine«, a series of small bronze discs (parts of a collared pin) from a disturbed tomb, could also be small weights (Hure 1931, figs 10-12). Concerning eastern France, the weights of the Richemont-Pépinville grave (dép. Moselle) (Keune 1903, pl. 30; Pare 1999, fig. 17, 2-8) and the one from the Larnaud hoard (dép. Jura) (Coutil 1914; Pare 1999, fig. 19, 3) can also be mentioned. A few specimens are also known from southern Germany during Bronze D, of varying shape (quadrangular, cylindrical, fragments of re-used pins etc.), such as the examples from Steinfurth (Wetteraukreis) (Pare 1999, fig. 14, 12-15), Büchelberg (Lkr. Germersheim) (Kilian 1972) and Singen-Widerholdstraße (Lkr. Konstanz) (Kimmig 1965).

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## WEIGHING INSTRUMENTS: FUNCTIONAL APPROACH

In order to test the functionality of Migennes' weights, only the regular, parallelepipedic-shaped weights are taken into account. This series of weights (**tab. 1**) does not constitute, at first sight, a logical succession, because of the modules 1, 3, 4, 8 and 11, which are not multiples. Ernest Napoli, an engineer, agreed to help analyze this problem. He approached it in a different way. He assumed that a series ending in 11 has no sense, and that the last value could only be 12. In this case, the weight which is used as the basic module is not 0.39 but 0.36 g (4.32/12) and the series becomes 1, 3, 4.5, 6, 9 and 12 (**tab. 2**). Setting aside for the moment the weight which corresponds to 4.5 units, this series represents the series of first multiples of the number 3. Weighing is carried out by taking a weight (x) and subtracting or adding to it module 1 ( $x - 1$ ,  $x + 1$ ). Then, the other weights can be added gradually, in ascending or descending order. The degree of precision is striking: except from the first (weight no. 64), the weight combinations only deviate from the theoretical values by a few hundredths of a gram.

A balance accepts weights in the opposite plate to which the object is placed, but also besides this object. This means that it is possible to add weights but also to withdraw them. Thus, two units will be obtained by placing the weight of a unit with the object (on the first plate), and the weight of three units on the other plate. This process can be used for all the degrees of the series, therefore providing all the values for 31 possible measurements; the last one corresponds to the addition of all the available weights,  $5 + 4 + 3 + 2 + 1$  units. This maximum mass is rather modest, since it reaches only 11 g, but it obviously proves that this balance had a specific use: to weigh tiny quantities.

Concerning the weight of 4.5 units, it could allow on its own to make 36 additional measurements, if we suppose that it supplies the intermediate half units. Finally, these six weights could make it possible to take 67 different measurements.

The weighing equipments from the Yonne valley suggest the possible existence of rather elaborate weighing methods during the Late Bronze Age in the north-alpine area.

J.-P. D.

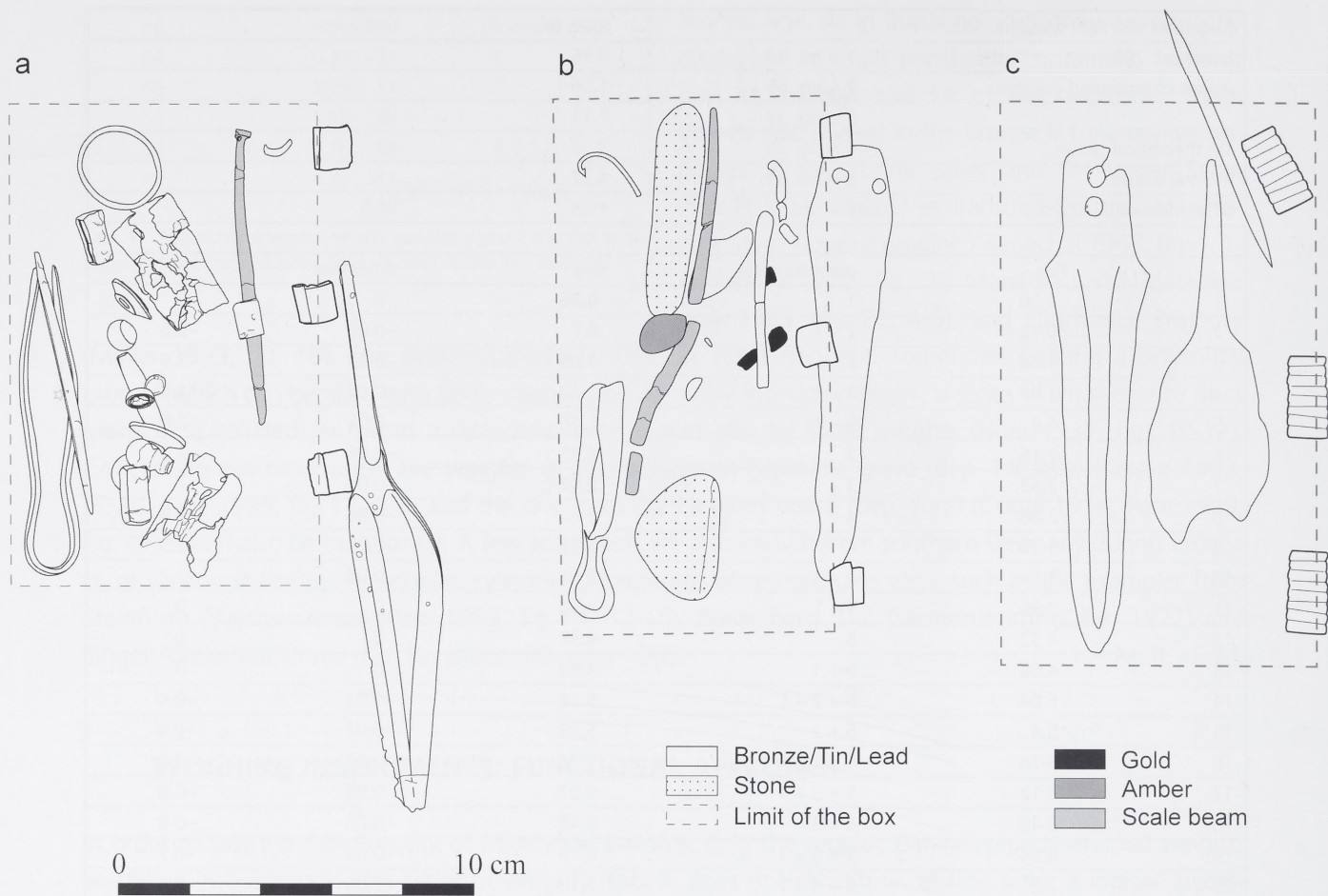


Migennes »Le Petit Moulin«		mass (g)	unit		
burial no. 298	1 = no. 64	0.36	x1		
extent of measured weights	2 = no. 65	1.06	x3		
	3 = no. 33	2.11	x6		
TV: theoretical values	4 = no. 30	3.16	x9		
RV: real values	5 = no. 49	4.32	x12		
difference = RV – TV	6 = no. 53	1.63	x4.5		
	TVg	combinations	RVg	difference	%
1	0.36	1	<b>0.36</b>	0	0
2	0.72	2 – 1	0.7	–0.02	–2.8
3	1.08	2	<b>1.06</b>	–0.02	–1.9
4	1.44	2 + 1	1.42	–0.02	–1.4
5	1.8	3 – 1	1.75	–0.05	–2.8
6	2.16	3	<b>2.11</b>	–0.05	–2.3
7	2.52	3 + 1	2.47	–0.05	–2
8	2.88	4 – 1	2.8	–0.08	–2.8
9	3.24	4	<b>3.16</b>	–0.08	–2.5
10	3.6	4 + 1	3.52	–0.08	–2.2
11	3.96	5 – 1	3.96	0	0
12	4.32	5	<b>4.32</b>	0	0
13	4.68	5 + 1	4.68	0	0
14	5.04	5 + 2 – 1	5.02	–0.02	–0.4
15	5.4	5 + 2	5.38	–0.02	–0.4
16	5.76	5 + 2 + 1	5.74	–0.02	–0.3
17	6.12	5 + 3 + 1	6.07	–0.05	–0.8
18	6.48	5 + 3	6.43	–0.05	–0.8
19	6.84	5 + 3 + 1	6.79	–0.05	–0.7
20	7.2	5 + 4 – 1	7.12	–0.08	–1.1
21	7.56	5 + 4	7.48	–0.08	–1.1
22	7.92	5 + 4 + 1	7.84	–0.08	–1
23	8.28	5 + 4 + 2 – 1	8.18	–0.1	–1.2
24	8.64	5 + 4 + 2	8.54	–0.1	–1.2
25	9	5 + 4 + 2 + 1	8.9	–0.1	–1.1
26	9.36	5 + 4 + 3 – 1	9.23	–0.13	–1.4
27	9.72	5 + 4 + 3	9.59	–0.13	–1.3
28	10.08	5 + 4 + 3 + 1	9.95	–0.13	–1.3
29	10.44	5 + 4 + 3 + 2 – 1	10.29	–0.15	–1.4
30	10.8	5 + 4 + 3 + 2	10.65	–0.15	–1.4
31	11.16	5 + 4 + 3 + 2 + 1	11.01	–0.15	–1.3

**Tab. 2** Total extents of possible measurements thanks to weights nos 64-65, 33, 53, 49 and 30 from Migennes »Le Petit Moulin« (dép. Yonne), burial no. 298.

## BOXES FOR WEIGHING EQUIPMENT: COMPLEX ASSEMBLAGES

The deposition of »boxes« containing weighing equipment in graves during the Late Bronze Age is a well-attested (though marginal) phenomenon in the valleys of the Yonne and upper Seine. Indeed, of nearly 380 known tombs<sup>1</sup>, hardly a dozen of them are reliably known to have contained balance beams or weights (including four in Migennes, two in Barbuise-Courtavant and two in Marolles-sur-Seine). Such equipment



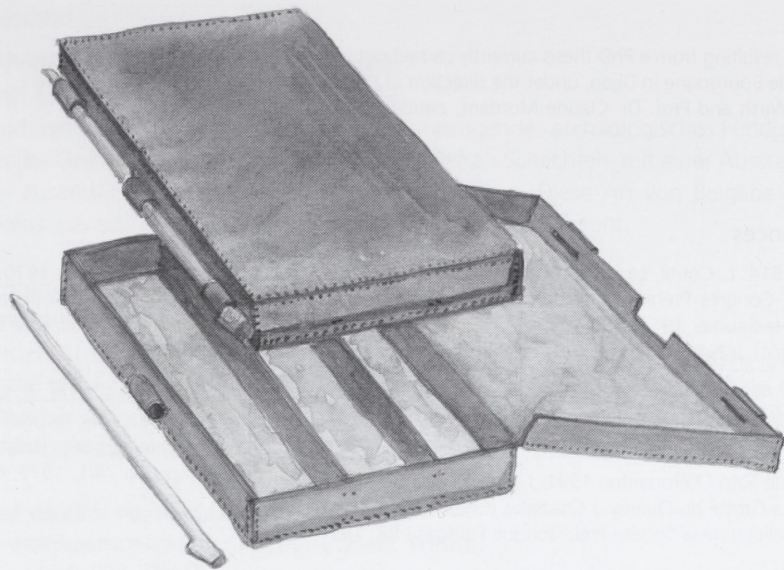
**Fig. 9** Detailed plan of »boxes« from Late Bronze Age graves of Parisian Basin: **a** Etigny »Le Brassot«, inhumation grave no. 90. – **b** Marolles-sur-Seine »Les Gours aux Lions«, cremation grave no. 5. – **c** Passy »Le Richebourg«, inhumation grave no. 7. – (a after Muller 1999; b after Mordant / Mordant 1970; c after Thevenot 1985).

appears both in inhumation and in cremation graves, although in cremations burning practices can cause the disappearance of the smallest or the most fragile objects. The absence of systematic anthropological studies, due to the early date of the discoveries and/or the poor conditions of preservation of the skeletal material, prevents a sexual attribution of grave-goods. However, it is to be noted that weighing equipment occurs almost exclusively in adults' tombs.

The contents of these boxes are quite standardized, despite some variations in detail. In addition to the weighing instruments, one frequently finds:

- a razor and a dagger: Marolles-sur-Seine »Les Gours aux Lions«, cremation no. 5 (Mordant / Mordant 1970, fig. 31, 9. 11); Passy »Richebourg«, inhumation no. 7 (Thevenot 1985, fig. 39, 9-10); Etigny »Le Brassot«, inhumation no. 90 (Muller 1999, fig. 18, 22. 26).
- small varied items (awl, fishing hooks, tweezers, arrowheads etc.): Barbuise-Courtavant »Grèves de Frécul«, inhumation no. 7 (hooks: Lemoine / Sénéchal 1965, pl. 3; fig. 1, 7-8); Passy »Richebourg«, inhumation no. 7 (awl: Thevenot 1985, fig. 39, 5); Etigny »Le Brassot«, inhumation no. 90 (tweezers: Muller 1999, fig. 18, 25).





**Fig. 10** Reconstitution of the »box« from Migennes »Le Petit Moulin« (dép. Yonne), burial no. 298, and its closing system. – (Drawing J.-P. Delor).

- fragments of precious or semi-precious substances (gold, amber): Marolles-sur-Seine »Les Gours aux Lions«, inhumation no. 27 (gold: Mordant / Mordant 1970, fig. 17, 15); Marolles-sur-Seine »Les Gours aux Lions«, cremation no. 5 (gold, amber: Mordant / Mordant 1970, figs 31, 21-22; 18).
- stone tools (»touchstone«, grinding stone): Marolles-sur-Seine »Les Gours aux Lions«, inhumation no. 27 (grinding stones: Mordant / Mordant 1970, fig. 17, 10-11); Passy-Véron »Les Prés Pendus«, inhumation no. 18 (»touchstone«: Depierre et al. 1997, fig. 8, 17).

Another constant among these complex assemblies are the groups of three cylinders made from rolled up bronze sheet, laid out in line (fig. 9). Initially interpreted as hinges, these tubes could in fact be what remains from the closing system of a box, through which it was possible to slip a rod (Peake / Séguier 2000, fig. 6; fig. 10); in the same way, the rings which are often found in these assemblages, could be interpreted as hanging devices.

These »personal boxes« also appear in particularly well-provided tombs: They often contained exceptional grave-goods, in quality as well as in quantity (armament, tools, vessel etc.). In this way, inhumation no. 298 from Migennes is quite representative and constitutes one of the most spectacular examples in France. Indeed, until now, no other such complete set of metallurgist's tools (planishing hammer, »anvil«, grinding stones etc.) has been discovered in a Late Bronze Age grave. Ch. Pare's study demonstrated the vast geographical extent of this depositional practice (from eastern Central France to the Czech Republic) from Bronze D to Ha A1 (BFI-IIa), i.e. from the 14<sup>th</sup> to the 12<sup>th</sup> century BC (Pare 1999, fig. 31). These tombs also contain high-status grave-goods (weapons, but also, further in the east, metallic vessels, harnessing or wagon components). It also has to be noted that in Migennes a sword grave (Rixheim type) was excavated, with a spindle-shaped balance beam and two cylindrical weights (grave no. 251).

The weights of Migennes and Etigny, which form functional sets, were based on a well-established number system. Such objects therefore attest the existence of individuals who controlled the weights and measures, as well as the exchange of precious substances. This fact raises the question of the »balance carriers'« status: craftsmen (goldsmiths? metallurgists?), doctors? The combination of these »personal boxes« with other prestigious grave-goods, especially weapons, shows that these individuals belonged to the socio-economic elite.

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## Note

1) Data resulting from a PhD thesis currently carried out at Université de Bourgogne in Dijon, under the direction of Prof. Dr. Stefan Wirth and Prof. Dr. Claude Mordant, entitled: »Structures

sociales et dynamiques culturelles aux XIV<sup>e</sup>-XIII<sup>e</sup> s. av. n. ère en Europe occidentale«.

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*Zusammenfassung / Abstract / Résumé*

**Spätbronzezeitliche Gräber mit Wiegeausstattung aus Ostfrankreich:  
das Beispiel aus Migennes »Le Petit Moulin« (départ. Yonne), Grab 298**

Die Nekropole von Migennes (Burgund) mit ihren 60 Bestattungen liefert herausragendes archäologisches Fundgut für die Spätbronzezeit (Stufe Bz D). Eines der Gräber (Grab 298) beinhaltete eine kleine »Schachtel« mit einer Ausstattung zum Wiegen (Balken und Gewichte) zusammen mit Geräten zur Bronzebearbeitung. Diese Art von Beigabe ist im südöstlichen Bereich des Pariser Beckens aus einigen Gräbern mit besonderem Zubehör bekannt.

**Late Bronze Age graves with weighing equipment from eastern France:  
the example of Migennes »Le Petit Moulin« (départ. Yonne), burial no. 298**

The necropolis of Migennes (Burgundy) consisting of 60 graves, yields exceptional archaeological material from the Late Bronze Age (Bronze D). One of the graves (burial no. 298) provided a small »box« with a set of weighing equipment inside (balance beam and weights), in association with metallurgists tools. This kind of deposit is well-known in the south-eastern Parisian Basin, within privileged burials.

**Tombes à balances du Bronze Final de l'Est de la France:  
l'exemple de la tombe no. 298 de Migennes »Le Petit Moulin« (départ. Yonne)**

La nécropole de Migennes (Bourgogne) a livré une soixantaine de tombes et un mobilier archéologique exceptionnel attribuable au Bronze final initial (Bronze D). L'une de ces tombes (no. 298) était dotée d'un petit »coffret« avec un nécessaire de pesée fonctionnel (fléau et poids), associé à des outils de métallurgiste. Ce type de dépôt est bien attesté dans le sud-est du Bassin parisien, au sein de sépultures privilégiées.

*Schlüsselwörter / Keywords / Mots clés*

Frankreich / späte Bronzezeit / Urnenfelderkultur / Grab / Waage / Gewicht / Bronzeschmied  
France / Late Bronze Age / urnfield culture / burial / weighing scale / weight / bronze smith  
France / Bronze final / civilisation des champs d'urnes / sépulture / balance / poids / bronzier

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