XIII Congreso Internacional de Numismática

Madrid - 2003

Actas - Proceedings - Actes

I

Editado por

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in memoriam

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Madrid, 2005

DIRECCIÓN GENERAL DE BELLAS ARTES Y BIENES CULTURALES

SUBDIRECCIÓN GENERAL DE MUSEOS ESTATALES

INTERNATIONAL NUMISMATIC COMMISSION INTERNATIONALE DE NUMISMATIQUE

MUSEOS ESTATALES

Museo Arqueológico Nacional

Diseño y
maquetación: Walter Ospina Romero

INTERNATIONAL
NUMISMATIC
COMMISSION
INTERNATIONALE
DE NUMISMATIQUE

MINISTERIO DE CULTURA

Edita:

Subdirección General
de Publicaciones, Información y Documentación

NIPO: 551-05-053-4 NIPO: 551-09-139-X (Publicación electrónica)
ISBN: 84-8181-238-2 (Volumen I)
84-8181-265-X (Obra completa)
Depósito legal: M. 39.309-2005

Imprime: IMPRESOS Y REVISTAS, S. A. (IMPRESA)

Michael Nick

75 kilogrammes of Celtic small coin - Recent research on the „Potinklumpen“ from Zurich[1]

The so-called „Potinklumpen“ was discovered during construction work behind the „Alte Börse“ in the „Bahnhofstrasse“ in Zurich in 1890[2]. Actually there was not only one clump found, but an ensemble of objects consisting of two nuggets of smelted potin coins, as well as some fragments and a few single coins (fig. 1). The larger nugget weighs 59,2 kg and the smaller 14,9 kg[3]. Since their discovery initial research did not take place until the 1970's, when K. Castelin was compiling a Celtic coins catalogue for the „Schweizerisches Landesmuseum“ at Zurich[4]. Castelin categorised the known coin types, while A. Voûte analysed the metal alloy and the density. Using the determined mass he calculated that the clumps consisted of about 17.200 to 18.000 potin coins. Subsequently K. Castelin carried out an initial interpretation[5]. He assumed a burning house causing the coins to melt. In connection with the publication of the excavations on the „Üetliberg“ near Zurich in 1991 W. Fasnacht and P. Northover carried out further metal analysis[6]. Within the last few years the „Stadtarchäologie Zürich“ used the exhibition „Kelten in Zürich“ in 2001 as an opportunity to have a critical look at the matter[7]. This time under the point of view of the discovery site. D. Wild proposes that in the La Tène period the Lake Zurich water-level was substantially higher than it is now and therefore the objects must have laid in water. Even if this was not so, one must presume that the discovery site, lying in the triangle between the lake and the rivers „Sihl“ and „Limmat“, was extremely endangered by floods.

From the city of Zurich itself there are a few isolated finds besides that of the „Potinklumpen“[8] , that can be attributed to late La Tène, however settlement features from this time were absent until excavations in the old town carried out in the 1980's and 90's[9]. The „Institut für Ur- und Frühgeschichte und Archäologie der Römischen Provinzen“ from Berne university, as well as the „Stadtarchäologie Zürich“ and the „Zürcher Kantonsarchäologie“, took impetus from this to apply for project funds from the „Schweizerischer Nationalfonds“ to carry out the excavation reports and analysis of the „Potinklumpen“. Within a team at the „Schweizerisches Landesmuseum Zürich“ the author was responsible for the research of the nuggets[10].

The analysis was based on aspects of the smelting process as well as composition and dating of the clumps. On the surface of the larger nugget are alternating layers of charcoal and coins visible. By using an endoscope which was inserted into some of the numerous holes on both clumps, it was possible to establish that the objects are completely riddled with charcoal. The recovered charcoal was 98% oak, stemming from the trunk or larger branches. There were no indications of low quality wood, rather it was wood with a higher combustion temperature. Added to this is the aspect that the tree rings from the samples did not belong to a single sequence, it is therefore to be presumed that the wood did not originate from a timber source or from a chest.

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1. Many thanks to Coinneach McCabe (Unversity of Freiburg im Breisgau) for helping with the translation of this article.
2. *Anzeiger für Schweizerische Altertumskunde,* 23, 1890, p. 358f.
3. Castelin, K.: *Keltische Münzen. Katalog der Sammlung des Schweizerischen Landesmuseums Zürich, Vol. 2: Kommentar,* Stäfa, 1985, p. 139.
4. Id., p. 139f.
5. Castelin, K.: Die Stammeskasse der Helvetier (Zum Zürcher Potinklumpen), *Money Trend,* 11, Nr. 7/8, 1979, p. 10-11 and 34.
6. Bauer, I. et al.: *Üetliberg, Uto-Kulm. Ausgrabungen 1980-1989.* Vol. 1, Zürcher Denkmalpflege, Archäologische Monographien 9, Zürich, 1991, p. 242 tab. 3.
7. Balmer, M. and Wild, D. and Martin-Kilcher, S.: *Kelten in Zürich. Der Ursprung der Stadt Zürich in neuem Licht,* Zürich, 2001, p. 17.
8. Nick, M.: Zur Besiedlung Zürichs in der älteren Spätlatènezeit – Der Potinklumpen, die Limmatfunde und der Üetliberg. In: Kaenel, G. and Martin-Kilcher, S.: *Siedlungen, Baustrukturen und Funde im 1. Jh. v. Chr. zwischen oberer Donau und mittlerer Rhone.* Kolloquium Zürich, 17th to 18th of January 2003 (in press).
9. Balmer et al. (note 7), p. 22ff.
10. I have to thank Philippe Della Casa, Walter Fasnacht, Katharina Schmidt-Ott, Alexander Voûte and especially Hortensia von Roten, who coordinated the project at the „Schweizerisches Landesmuseum“.

The larger nugget has a relatively flat top and bottom. The other sides of the clump are generally irregular in form, apart from one side which is strikingly flat. The area around this even side has been completely melted. This has been verified by neutron radiography, which also revealed here two areas of maximum density, indicating the use of tuyeres. Combining the results of the neutron radiography with the shape of the clump, it can be proposed that the smelting was carried out in a trough, with three open sides. The fourth side, of the trough, can be conceived as a back-plate where the already mentioned tuyeres were situated. On the top surface of the larger nugget, there was evidence of a series of holes, indicating that someone had tested the extend of the melting process. Due to this, the notion that a burning house caused the coins to melt can be refuted[11]. Finally a metallographic survey yielded the evidence that the objects cooled off slowly and were not quenched by water.

The clumps were not completely melted and it is still possible to recognise some of the coins. These belong to the Zurich potin type as well as the Sequani groups A1 and A2. The neutron radiography confirms the previous thought that the nuggets consist of a uniform composition of non-ferrous heavy metals. No precious metals could be identified.

The chronology of the Sequani potin types has already been discussed by the author[12]. The coins of type A1/1 (fig. 2), which is the most common Sequani type here, are to be dated from the second half of the second to the beginning of the first century B.C. Also present in the ensemble is one coin of A2 type, this is chronologically ordered to a time from the end of the second to the middle of the first century B.C.

The potin coins of the Zurich type (fig. 3) mostly come from similar early archaeological contexts, such as the Sequani A1/1[13], thus both types can be dated as being approximately contemporary. On the basis of their chronology and the fact that the coin spectrum is very limited, one can conclude a chronology of about 100 B.C. for the melting of the clumps. This is supported by a radiocarbon date of 125 ± 50 B.C.(cal.), from the charcoal[14].

While the distribution of the Sequani group A2 is very widespread encompassing the upper Rhine valley, western Switzerland and eastern France[15], type A1/1 is limited to centres of the upper Rhine valley, as well as northern Switzerland and shows a diffusion to south-western Germany[16]. Examples of group A2 are scarce in the Lake Zurich region, in contrast to this, potin coins of Sequani type A1/1 are more frequent there.

The coins of Zurich type however show a very defined area of circulation[17]. It is principally limited to around Lake Zurich, where the Üetliberg with its 20 examples protrudes as the site where this type is most common. These circumstances as well as the geographical proximity to the site where the nuggets were found, give reason for assuming the production of this type on the Üetliberg. From this area the coins spread out to Lake Neuchâtel and Berne, where reclusively 20 examples were found, as well as found, as well as to the pass of Grand Saint Bernhard and the Aosta valley. There is also a further distribution of isolated finds in south-western Germany, Lake Constance, Bavaria and Stradonice (Czech Republic).

The described areas of distribution show very clearly that the coin types melted in the clumps are from local origin. Thus the interpretation of re-melting foreign coins put forward by P. Northover and W. Fasnacht must be rejected[18].

That what is being dealt with here are local coins is supported by the coin spectrum of the early late-La Tène settlement on the Üetliberg, which is situated at the south-western periphery of Zurich. The excavations at the site yielded 56 Celtic coins[19]. One coin can be classed as a plated imitation of the stater of Philipp II. The remaining 55 pieces are exclusively cast potin. The types reflect the spectrum of the

11. Castelin (note 5).
12. M. Nick, *Die keltischen Münzen vom Typ „Sequanerpotin". Eine Studie zur Typologie, Chronologie und geographischen Zuweisung eines ostgallischen Münztyps,* Freiburger Beiträge zur Archäologie und Geschichte des ersten Jahrtausends Vol. 2, Rahden/Westf., 2000, p. 33ff.
13. Nick, M.: *Gabe, Opfer, Zahlungsmittel – Zu den Strukturen keltischen Münzgebrauchs in Mitteleuropa,* Vol. 1, unpubl. doctoral thesis, Freiburg i. Brsg., 2001, p. 125f.
14. The preparation of the sample was made at the „Radiokarbonlabor des Geographischen Institutes der Universität Zürich (GIUZ)". The subsequent dating by accelerator mass spectrometry was carried out on the „Tandem-Beschleuniger" of the „Institut für Teilchenphysik" of the ETH-Hönggerberg.
15. Nick (note 12), maps 5-10 and 16.
16. Id., map 1.
17. Nick (note 13), p. 448 map 31.
18. In: Bauer et al. (note 6), p. 240f.
19. Bauer, I. et al.: *Üetliberg, Uto-Kulm. Ausgrabungen 1980-1989,* Vol. 2, Zürcher Denkmalpflege, Archäologische Monographien 9, Zürich, 1991, pl. 79-82.

clumps, because 20 of the identifiable 36 coins account for the Zurich type and 16 for the Sequani group A1.

If one envisages the size of crucibles common in the La Tène-period it seems quite clear that the „Potinklumpen“ represent an enormous amount of smelted metal, which would have been extremely difficult to handle. It would only really make sense to produce ingots of around 75 kg. The condition in which we find the nuggets today would argue for an interruption of that process for reasons that are not obvious to us.

It is also to be considered how copper alloy ingots looked like in this time. In fact we know a multitude of standardised iron ingots of bar- and double-pyramidal shape with weights of several kilogrammes[20]. But in contrast to this the record of late-La Tène bronze ingots is very scarce. Moreover they only weigh a few hundred grammes. Standardised bronze ingots of several kilogrammes have not yet been found, thus an interpretation of the nuggets as raw material for an ingot can be excluded. But even if this was the case, there would still remain the question for which purpose a non-ferrous heavy metal alloy like this could have been used for. The results of the metal analysis show tin values of between 16% to 26%, which is too high for a regular bronze alloy[21]. So what could have been the use of the metal, other than for casting coins?

As the record of numerous sanctuaries in northern France illustrates, coins of copper alloys were a favoured object for sacrifice[22]. With regards to the site where the nuggets were found, which possibly laid under water in the late La Tène period, and to the antique written sources describing the Celtic custom of sacrificing silver and gold in sacred lakes[23], a religious practice relating to the deposition of the clumps can not be excluded.

A find from Bregenz (Austria) dating to the middle of the first century A.D. could possibly add to this interpretation[24]. It consists of about 80 unused brass fibulae and about 22-24 made of iron, which were melted down with the remains of a vessel. The smelting of brass with iron makes no technical sense. This find includes remains of mortar and wood, a fact, which led M. Konrad to the conclusion that it could have been walled up (perhaps in a Roman temple) as a type of sacrifice. It is possible that all of the artefacts were individually sacrificed, following this, collected together, melted and deposited. This would then pose the question: was the „Potinklumpen” deposited in similar circumstances?

20. Kurz, G.: *Keltische Hort- und Gewässerfunde in Mitteleuropa. Deponierungen der Latènezeit,* Materialhefte zur Archäologie in Baden-Württemberg, 33, Stuttgart, 1995, p. 16ff.
21. Bauer et al. (note 6), p. 242 tab. 3.
22. Delestrée, L.-P.: *Monnayages et peuples gaulois du Nord-Ouest,* Paris, 1996.
23. Strabo 4, 1, 13 C 188.
24. Konrad, M.: Ein Fibel-Depotfund aus Bregenz (Brigantium) – Weihefund in einem Tempel?, *Germania, 72/1,* 1994, p. 217-229.

Fig. 1

Fig. 2

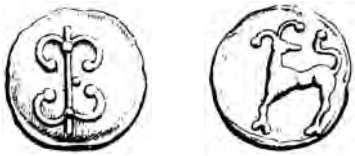

Fig. 3

List of figures (legends)

Fig. 1: The two „Potinklumpen" from Zurich and some fragments and coins, which were found together with the clumps. The larger nugget is about 45 cm long. Photo: Schweizerisches Landesmuseum Zürich.

Fig. 2: Potin coin of type Sequani A1/1 (after Nick 2000 [note 12] pl. 1). Scale 1:1.

Fig. 3: Potin coin of Zurich type (after H. de la Tour, Atlas de monnaies gauloises [Paris 1892] [Repr. Maastricht 1991] pl. XXXVIII, 9361). Scale 1:1.