

TALLIES, TOKENS & COUNTERS

From the Mediterranean to India

EDITED BY
Anna Maria D'Onofrio



Università degli Studi di Napoli
"L'Orientale"
2007

UNIVERSITÀ DEGLI STUDI DI NAPOLI
“L’ORIENTALE”

DIPARTIMENTO DI STUDI DEL MONDO CLASSICO E DEL MEDITERRANEO ANTICO

TALLIES, TOKENS & COUNTERS

From the Mediterranean to India

Proceedings of the Meeting Held at
the Università degli Studi di Napoli “L’Orientale”
Naples 31st May 2004

Edited by
ANNA MARIA D’ONOFRIO



Napoli 2007

Cover illustration

Pottery discs from the Athenian Agora Excavations (photo American School of Classical Studies at Athens: Agora Excavations), and Chalcolithic and Iron Age counters of various shapes from Gotihawa (IsIAO Archaeological Mission in Nepal).

Photomontage by Gennaro Veneroso.

Published with the funds of scientific research of the Dipartimento di Studi del Mondo Classico e del Mediterraneo Antico, U.N.O.

Printed by

IL TORCOLIERE Officine Grafico-Editoriali d'Ateneo
Università degli Studi di Napoli "L'Orientale"
Napoli 2007

ISBN 978-88-95044-13-2

CONTENTS

List of Contributors	VII
List of Illustrations	IX
Abbreviations	XIII
Acknowledgements	XV
1. Tallies, Tokens & Counters: An Introduction <i>Anna Maria D'Onofrio</i>	1
2. Computation Systems and Graphic Recording in Ancient Mesopotamia: Tokens and Proto-Cuneiform Writing <i>Simonetta Graziani</i>	9
3. Tokens in Prehistoric Syria-Palestine: Some Problems of Method <i>Silvana Di Paolo</i>	25
4. Counters and 'Tokens' at Zawaydah (Petrie's 'South Town') <i>Rosanna Pirelli</i>	39
5. Tokens, Pottery Discs, and Other Administrative Devices: Two Case Studies between Nubia and Ethiopia <i>Andrea Manzo</i>	51
6. Tokens and Counters in the Ganges Valley from the Late Chalcolithic Period to the Early Centuries AD <i>Giovanni Verardi</i>	63
7. A Forgotten Category of Archaeological Materials: Pottery Discs in the Iranian Area <i>Bruno Genito</i>	77
8. A Preliminary Survey of Evidence for Counters and Tokens in the Aegean and Hellenic World <i>Anna Maria D'Onofrio</i>	85
9. Summing up <i>Giovanni Verardi</i>	105
10. The ArcheoZone Project: A Section Dedicated to Tokens & Co. <i>Cinzia Perlingieri</i>	111
Colour Plates	117

A FORGOTTEN CATEGORY OF ARCHAEOLOGICAL MATERIALS: POTTERY DISCS IN THE IRANIAN AREA

BRUNO GENITO

Introduction

It was for me a great pleasure to participate to the meeting very well organized by Anna Maria D'Onofrio the 31st may in 2004, entitled 'Tokens', which saw the participation also of S. Di Paolo, S. Graziani, A. Manzo, R. Pirelli, G. Verardi. To my memory that session constituted a very rare occasion where an archaeological scientific debate was jointly discussed by differing members of the Classic, African and Asiatic Departments at the Università degli Studi di Napoli "L'Orientale". The very old case of the meeting held at Ischia, in 1977 entitled 'La Mort, les morts dans les sociétés anciennes' (Gnoli et Vernant 1982), though particularly important for the time, was certainly an exception in the last twenty eight years. The occasion was really great because was clear our direct related interest to a class of objects like tokens or perforated pottery discs (a very common artefact widespread all over the ancient world, from Eurasia to China, from Mediterranean to New World and within different chronological contexts), elsewhere completely neglected.

Tokens

The main ground to be emphasized dealing with such small clay objects concerns their identification, referred in time to as tokens, beads, fragments of figurine, unidentified discs or 'miscellaneous' objects in the excavation reports. A number of different point of views as religious, socio-economic perspective were many times put forward to the related discussion. These finds, nevertheless, can deal with the context they are found and both theoretical from philologists or linguistics and, on the other hand, archaeological sources have to be considered in their own role¹.

Tokens, the most complex objects of the type, thanks to the studies and analyses of Schmandt-Besserat (1992, 1992 a), have rightly been supposed to have functions of counters. They constitute a handy way to manage the overview of the economy, and therefore became a powerful instrument to create social structure in the earliest societies in the Near East. Unfortunately because

¹ In my paper I have decided to follow the important and very clear text of Nilhamn (2002: 1-59), whose observations are very much emphasizing the question of the definition of such category of clay objects. Being so neglected as these types of objects actually were, it is fundamental to start any discussion with clear premises and a very well based methodological approach.

of their simple aspect, scholars and archaeologists have neglected very much those objects for years. One of the interpretations proposed is that tokens were the antecedents of writing and written communication. Even more they are said to be the first step towards a mathematical science. Shape, size and manufacture of these tiny clay objects did not vary much during time or through the different regions. Normal dimensions are 1–3 cm, the ones referred as 'larger' are often 3–5 cm. It is not clear if moulds were used but no mass production has been ever recorded. The most common material is clay and they are one of the earliest clay objects found in the Near East. Unfortunately these 'miscellaneous objects' including tokens and pottery discs have not been published to any large extent, and also rare are publications mentioning them as separate group of finds. Until recently all kinds of clay or small stone objects were referred to the groups of 'other clay object, unidentified small find or miscellaneous'. Therefore one has to distinguish the different meanings of 'excavated clay objects', 'reported objects' and finally the 'published material'. It depends very much on the archaeologist if the clay or stone object should be regarded as important enough to be edited. Discs are also one of the most common objects, sometimes pierced, sometimes 'decorated' and in some cases, both. As with cones, when reading find reports one see that they are sometimes represented as tokens and some times given an own category '(pierced) discs'.

Tokens have been very much used in Syria, Iran, and southern Mesopotamia. But due to insufficient archaeological activity and the scarce attention of the archaeologists, one is unfortunately lacking a lot of information about the contexts and the finds themselves. The studies up to now are missing some important points and have been made from socio-economic perspective and therefore exclude other ideas or interpretations. Schmandt-Besserat looks upon all these small clay objects as tokens and put them in neat socio-economic setting. Using the context and the associations with other finds, however, one will give us a broader spectrum of possible ideas. The assumption of these objects being part of figurine, toys, decorative elements, religious or cultic devices, beads or more domestic artefacts have not been studied until now.

Tokens, the most studied and analysed objects of this category, have been more or less distributed according to their chronology in different phases of production:

I. the spread of the plain tokens corresponds to the development of the agricultural activity between 8000 and 7500 BC, of the domestication of the plants (grain) and of the accumulation of the harvest products; they are characterised by geometric shapes;

II. the multiplication of types and sub-types of the complex tokens (4400–3100 BC, Uruk XVII–IVa) determines a large repertory of geometric shapes including also more naturalistic forms. The fourth millennium BC corresponds to the formation of the early proto-state social structures and, in some cases, to the urban development. It is probable that these two big changes did not constitute pure consequences of the birth of agriculture and towns, but were determined, instead, by the new social-political elites;

III. the plain tokens (3700–2600 BC) were often secured by envelopes and complex tokens by bullae' (Schmandt-Besserat 1992: 110).

The last stage of the development of their evolution was the combination of two systems of enveloping with bullae and containers.

Pottery Discs

Pottery discs are also most common and another category close to them in look and size are the 'spindle whorls' because of their similarity to wheel-shaped clay or stone weights used on spindles elsewhere. While some of these may have been used as weights on spindles for spinning threads or cordage, many of them are not suitable for this purpose and must have served some other function. The discs are generally made from a broken piece of pottery. The sherd is roughed out to form a disc and then the edges are rubbed smooth on a stone or abrasive material. The disc is then drilled and perforated through the centre to produce a flat washer-type bead or artefact. While many specimens have a central perforation that is well centred, many examples have the hole offside so that the disc would be unbalanced for service as a flywheel on the spindle. In addition, the discs often have two or more perforations, sometimes as many as ten or more. There is also considerable variation in the diameter of the perforation as well as in the diameter of the disc. Some of the multi perforated specimens may have served as strainers, which are known examples of pottery water bottles in which similar perforated sherd discs with several perforations have been incorporated into the bottles at the juncture of the bottleneck with the globular portion of the bottle; obviously these discs serve as a strainer or protective device for the contents. The presence of strainers in bottles, however, is very rare and there are hundreds of bottles which do not have this device present. In addition, many of the perforated discs, especially those with multiple holes, are to be found on sites where the bottle form was not used. Some specimens have an unusually large central perforation and may have functioned as a jar cover. It is likely that the perforated pottery discs may have served various purposes with different cultural groups or even within the same population.

An ethno-archaeological perspective could suggest the association of the objects with production economy or more abstract functions. This is an interesting question from the point of view of a modern anthropological archaeology; the objects keep different symbolic value depending on the viewer, who often tries to identify them from a well-known context, i.e. household, child upbringing, agriculture, finance matters. They can be seen as pendants and some sort of jewellery or with some ritual or religious meaning. It is therefore very important that the object must be studied from the context where it has been found and also compared with other similar contexts. One may believe that some of the small clay objects were tokens and in fact had a measurement of power or wealth. The reason why this theory has been put forward is due to the fact that tokens have been found among other prestigious objects in graves. One could interpret this presence as a status symbol. It also gives one the idea to speculate if counting was a privilege of the elite. Plain tokens remained in the agricultural communities and could then imply a rank society meanwhile complex tokens refer to a state

formation. These small finds often have been disregarded and seen as no help studying the ancient society, or at least not in the way the written sources, lithic, ceramic and of course architectural finds have been able to do. In the last decades one of the main archaeological aim has been on focusing on the different aspects of the society; this has been done from many different angles, as gender studies, structuralism, post-processualism, positivism, etc. One has taken out one field and looked upon the finds from that view instead of using the finds as the magnifier on the rest of the material. Perhaps the context has been of such interest that finds have been forgotten. Very rarely the finds have been able to tell the researcher their story. Well this is however not completely true because in the earliest days of archaeology the finds indeed did tell stories, often a fabulous story about a glorious past. But unfortunately it was always the objects that had a economic or aesthetic value, as gold, jewellery, beautiful vessels and so on that give this opportunity and then not always in good and truthfully way. The small objects that could not be interpreted or those lacking economical or 'public' value in a museum, were discarded or ended up in boxes deep down in basements of museums or depots. When the 'New Archaeology' entered the scene in the middle of the twentieth century, the aversion against finds came as an counteraction to the old fashion 'material focused' aim. This included also the things never studied. In the seventies however some of the neglected objects came into the hands of different types of scholars. They started to see connections with other material and regions. Very often, and one may speculate why, they gave the objects a place in a complex society, with ritual or economic 'primitive' values. The reason why these aspects were left forward could be interesting to study. One may suggest that no person want to present material without any value, i.e. a value that can be understood by us today. To say that the object studied was just a product of a child's play, was certainly a way to get the colleagues to think one was wasting the time.

The finds in Iran

Whilst a rather large amount of tokens is documented in the most known archaeological excavations in the 'Iranian area'², very scarce is the related documentation about the pottery discs. We want to submit to the attention the very particular cases of some interesting remains collected in Margiana and Isfahan, where the Italian Archaeological Mission in Turkmenistan and Iran was working and respectively directed by Prof. M. Tosi during 1989–2002 and Prof. U. Scerrato during 1972–1977. The case of the following pottery-discs is quite particular because they give evidence of a large continuity in the use of such items in very distant chronological and geographic grounds.

² The area comprises Turkmenistan with the major sites of Anau, D_ejtun and the Iranian plateau with the major sites of Bampur, Belt Cave, Chagha Sefid, Chogha Bonut, Choga Mish, Dalma Tepe, Deh Luran, Geoy Tepe, Haji Firuz, Jaffarabad, Malyan, Seh Gabi, Sharafabad, Sialk, Sorkh-i-Dom, Susa, Tall-i Bakun, Tal-i Iblis, Tepe Guran, Tepe Hissar, Tepe Sarab, Tepe Yahya, Tulai, Zagheh, Arpachiyah, Choga Mami, Gird Ali Agha, Gany Dareh, Tepe Asiab. Schmandt-Besserat counted 2,612 (1992: 40) tokens chronologically distributed from the eighth to the fourth millennium BC.

The topographical work effected in South-Turkmenistan between 1989 and 2002 by the Italian/Russian/Turkmenian joint Archaeological Mission was aimed at realising an Archaeological Map of the Murghab delta in the Merv oasis³ (A. Gubaev, G. Košelenko, and M. Tosi 1998). In this area one is in front of a large topographic work whereas more than 1200 sites were identified (Cerasetti 2002; Genito 1998, 1998 a; Cattani and Genito 1998; Genito 2003: 409–22; Genito 2005: 318–21). A consistent group of these sites belong to the Iron and Late Iron Age, whose chronology, based only on a large-scale field survey and on extended trenches at Tahirbaj 1 (Cattani 1998) (Pl. 9.1–2), is ranging between the eleventh to the fourth century BC. These artefacts, mostly coming from that period, are clear evidence of the widespread diffusion of a simple counting system also in the old Iranian area, though are not coming from excavation. Though most of these pottery discs come from a surface collection, they were mainly clearly associated with the typical indicators of productive activities, pottery and iron slags, out-worked stone objects etc. Of course this is not a secure evidence of any attribution, but certainly it gives a concrete element enable to help the interpretation.

It is not very clear the socio-political situation of the Merv oasis during the Iron Age, though in the Achaemenid time (sixth–fourth centuries BC) there is historical evidence of an administrative control of the dynasty (see the Bisutun inscription). The only administrative archaeological evidence, up to now evidenced in the area, is, instead, the clay sealing in neo-Babylonian style found on the site n. 237 (Collon 1998), representing a long-bearded and headed standing man (Fig. 7.1).



Fig. 7.1 – Site 215. Sketch of clay sealing from the Achaemenid period.

³ The project entitled 'Archaeological map of the Murghab delta', initiated in 1990 on a suggestion by G.A. Koshelenko and R.M. Munchaev of the Institute of Archaeology of the Soviet Academy Sciences, as a co-operative effort of Italian, Russian and Turkmenian specialists. Between 1990 and 2003 significant resources, mainly provided by the Italian Institute for Middle and Far Eastern Studies (IsMEO) now Is.I.A.O., the National Council for Researches (CNR), I.U.O., Naples, and a large spectrum of specialists and technicians of different nationalities and skills, created a vast archive of data by intensive ground reconnaissance, low altitude flights and adopting state-of-the-art technologies for image processing and field recording.

The case of the Friday Mosque in Isfahan, instead, where it is, now, active a new project⁴, is quite different, though also very important; the very late archaeological context where those items have been found, testify to their particular meaning. The project at the Masgid-i Juma of Isfahan is aimed at providing a gradual transformation of the whole set of the original data and information (written, graphic, photographic etc.) in a digital archive. In the meantime it will also set up techniques and methods of data elaboration, with the help of special different electronic cards or fiches, where to put the intrinsic and extrinsic aspects of all the different classes of finds (pottery, glass, stucco etc.).

Such a work, both for its heterogeneity has required a very detailed and accurate analysis on the basis of the quantity and quality of the data at disposal, partially kept in Italy (in Is.IA.O *Centro Scavi* and in the deposits of the *Museo Nazionale d'Arte Orientale* in Rome).

During the activities in the Friday Mosque (1972–1977) it was possible to identify chronological and stratigraphic sequences on archaeological basis and to collect differing types of documentation. Considering the particular nature and importance of the monument, different steps of the work have been considered as prioritary for a major rational organisational plan. From this point of view the realisation of a digital archive does not give any negative impact to the quality and quantity of the old documentation, though conspicuous it may be, because its updating could be easily enriched adding and not substituting the information already collected.

Up to now the basic set of the materials is constituted by ca. 500,000 fragments of pottery (400,000 unglazed and 100,000 glazed), 100 wall painting, 3,000 glass, 1,000 stucco fragments and 1000 differing others architectonic decorations and wooden, metal and beads fragments.

The pottery discs collected and documented, clearly reveal the generalised use of those counting systems, even in a definite monetary historical context as the late Timurid and Safawid times (fourteenth–seventeenth centuries AD) actually were (Pl. 9.3, b-c).

REFERENCES

- Cattani, M. (1998) 'Excavations at Takhirbai-depe (thr-1) (1992–1993). Preliminary Notes', in Gubaev, A., G. Košelenko, and M. Tosi (eds.) (1998): 97–104.
 Cattani, M. and B. Genito (1998) 'The Pottery Chronological Seriation of the Murghab Delta from the End of the Bronze Age to the Achaemenid Period:

⁴ The joint Iranian/Italian project is entitled A.D.A.M.J.I. (Archaeological Digital Archive, Masgid-e Juma, Isfahan) and is directed by the author, from the Italian side and by Prof. Fariba Saiedi Anaraki from the Iranian. It is jointly financed by Ministry of Foreign Affairs, Is.I.A.O., and U.N.O., and it is aimed at realising the general archive of the materials collected during the excavation there effected during the seventies of last century.

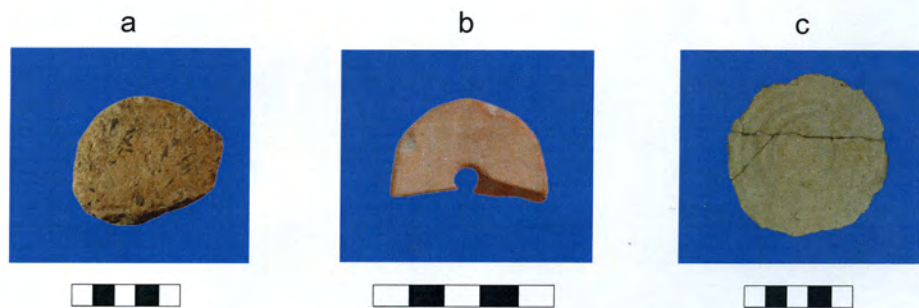
- A Preliminary Note', in Gubaev, A., G. Košelenko, and M. Tosi (eds.) (1998): 75–88.
- Cerasetti, B. (2002) *Fluttuazioni fluviali e storia del popolamento sul delta endoreico del fiume Murghab (Turkmenistan), dal neolitico al consolidamento dello Stato Seleucide*, unpublished Ph D Dissertation in 'Archeologia e Storia, Rapporti tra Oriente e Occidente' – XII ciclo, U.N.O., Naples.
- Collon, D. (1998) 'A Clay sealing from site 237', in Gubaev, A., G. Košelenko, and M. Tosi (eds.) (1998): 137–140.
- Genito, B. (1998) 'The Iron Age in Merv Oasis', in Gubaev, A., G. Košelenko, and M. Tosi (eds.) (1998): 89–96.
- Genito, B. (1998a) 'Trial-Trench at Site no. 215', with an appendix by R. Castelli, P. Mozzi, in Gubaev, A., G. Košelenko, and M. Tosi (eds.) (1998): 125–34.
- Genito, B. (1998b) 'The Achaemenids in the History of Central Asia', in Gubaev, A., G. Košelenko, and M. Tosi (eds.), *The Archaeological Map of the Murghab Delta. Preliminary Reports 1990–95, Reports and Memoirs Series Minor*, III, Rome: 149–58.
- Genito, B. (2003) 'Al di là dei confini degli imperi iranici e oltre.....', in Fontana, M. V., B. Genito (eds.), *Scritti in onore di Umberto Scerrato per il suo settantacinquesimo compleanno*, Napoli: 403–30.
- Genito, B. (2005) 'The Archaeology of the Median period: an outline and a research perspective', *The Iron Age in the Iranian World (17th–20th November 2003)* Ghent, Ghent University and the Royal Museums for Art and History, Brussels, *Iranica Antiqua*, Ghent, 40: 315–40.
- Gnoli, G. et Vernant, J. P. (1982) *La Mort, les morts dans les sociétés anciennes*, Cambridge UK.
- Gubaev, A., G. Košelenko, and M. Tosi (eds.) (1998) *The Archaeological Map of the Murghab Delta. Preliminary Reports 1990–95, Reports and Memoirs Series Minor*, III. Rome.
- Nilhamn, B. (2002) 'Tokens of Identity? – Small Clay Objects in Near Eastern Archaeology', C-paper in archaeology, *Department of Archaeology and ancient History*, Uppsala University: 1–59.



Pl. 9.1 – a. Pottery sherd of painted Yaz I horizon (Iron Age, tenth–ninth century BC) reused as a pottery disc, from site 173; b. Pottery perforated discs from Margiana, Iron and Late Age sites 106–107.

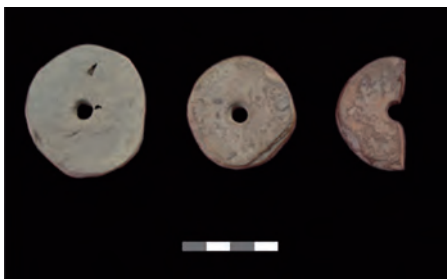


Pl. 9.2 – a, b. Pottery perforated discs from Margiana, Iron and Late Age sites 109, 189.



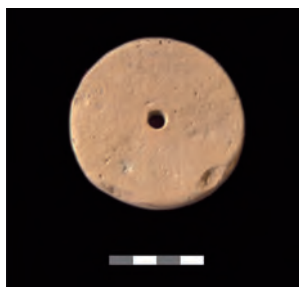
Pl. 9.3 – a. Merv Oasis Site 237; b, c. Pottery discs from the Friday Mosque in Isfahan (middle Islamic levels, fourteenth–seventeenth centuries).

*COLOR FIGURES - A forgotten category of archaeological materials:
pottery disks in the Iranian area*

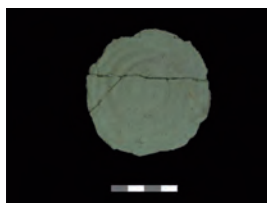
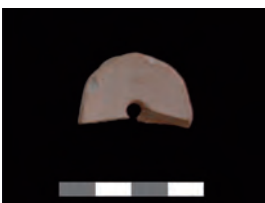


Tav. I. Pottery sherd of painted Yaz I horizon (Iron Age, 10th-9th century BCE) re-used as a pottery disc, from site no. 173.

Tav. IIa. Pottery perforated discs from Margiana, Iron and Late Age sites nos. 106-107 and 108



Tav. IIb. Pottery perforated discs from Margiana, Iron and Late Age sites nos. 109, 189



Tav. IIIa. Merv oasis Site 237; **Tav. IIIb.** Pottery discs from the Friday Mosque in Isfahan (middle Islamic levels, 14th-17th centuries).