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Editorial

Em 2015 comemoraram-se os 120 anos da criação da revista *O Arqueólogo Português* pelo fundador do atual Museu Nacional de Arqueologia, o Doutor José Leite de Vasconcelos. Então, como agora, uma edição da Imprensa Nacional-Casa da Moeda. Foi um ano de comemoração e de novo rumo para uma publicação centenária que sempre se afirmou e projetou como um repositório científico da Arqueologia portuguesa e não só. Foram integralmente disponibilizadas *on-line* as diferentes séries da revista na página institucional e digital da Direção-Geral do Património Cultural e cujo *link* de acesso também se encontra publicitado na página *web* do Museu.

Reatada em 2011 a parceria com a INCM, que esteve na origem da série 5, teve já lugar este ano o lançamento do volume 3 relativo a 2013 e apresenta-se a publicação de um volume duplo 4/5 (2014/2015) já com o sistema de arbitragem por pares (*peer review*) implementado.

A adoção deste sistema, é sabido, cria uma dinâmica editorial que compreensivelmente em muitos casos atrasa a publicação dos artigos submetidos pelos autores. Foi esse o caso de *O Arqueólogo Português*, mas foi um risco assumido pela direção da revista e que contou com o apoio e ativa colaboração de todos os membros do Conselho Editorial, na definição dos procedimentos a seguir e na elaboração de uma base de dados de avaliadores (*referees*) a contactar. O modelo por nós seguido de «dupla avaliação cega» (*double blind peer review*) é o que se encontra em vigor em várias conceituadas revistas peninsulares de arqueologia. Esta experiência iniciada com este volume, que agora se edita, foi um verdadeiro sucesso, e nunca é demais sublinhar o empenhamento de todos, Conselho Editorial e avaliadores que sempre prontamente nos apoiaram e incentivaram nesta nova tarefa que, cremos, irá garantir na contemporaneidade a manutenção da

Medicine, surgery, pharmacy, toilet and other health care tools from the Roman city of Balsa (Tavira, Portugal) from the 1st to the 3rd century AD¹

Instrumentos de medicina, cirurgia, farmácia, higiene e outros cuidados de saúde provenientes da cidade romana de Balsa (Tavira, Portugal) entre os séculos I e III d. C.

MARIA DO SAMEIRO BARROSO*

ABSTRACT

José Leite de Vasconcelos (1858-1941), the founder of the Lisbon National Museum of Archaeology, was a physician and a pioneer researcher in Archaeology and other scientific disciplines. His multidisciplinary works include the study of the first surgical instruments from the Roman period found in Portuguese territory. He described the medical and surgical findings from Torre d'Ares, the ancient city of Balsa, in Algarve, southern Portugal, in his books *Religiões da Lusitania* (1913) and *Medicina dos Lusitanos* (1925). In this book he collected most of the information available on the Lusitanian medicine. Later researches on surgical, medical, pharmacy and health care tools brought new insights on the instruments

¹ This article summarizes the results of my research and my presentations of the objects of this collection at the International Ancient Medicine Meeting «Approaches to Ancient Medicine», Cardiff, 23-24, August, 2010: «The Case of the Surgeon from Torre De Ares». Toilet objects have been added because they were sometimes confused with medical-surgical instruments and presented at the «Arbeitskreis Alte Medizin Einunddreißigstes Treffen», Mainz, 9-10 Juli, 2012: «Medizin, Apotheke, Patientenversorgung und hygienische Gewohnheiten in den 2./3. Jh. n. Ch., in der Stadt Balsa (Algarve)». These conferences did not include the publications of the proceedings. For this article, only the works published until 2008 were considered. Later works such as the Master Thesis by Joana Gomes, *Os materiais médico-cirúrgicos de época romana do Museu Nacional de Arqueologia*, História, Arqueologia, Faculdade de Letras, Universidade de Lisboa, 2010 and the PhD Dissertation by Carlos Pereira, *As necrópoles romanas do Algarve. Acerca dos espaços da morte no Extremo Sul da Lusitânia*, História, Arqueologia, Faculdade de Letras, Universidade de Lisboa, 2014 to which I came across later were not included.

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of Balsa. The medical-surgical tools and the grooming and patient care devices state elevated social patterns in medicine, surgery and health related practices.

Keywords: Ancient medicine – Surgery – Pharmacy – Toilet – Archaeology

RESUMO

José Leite de Vasconcelos (1858-1914), fundador do Museu Nacional de Arqueologia, foi médico e investigador, pioneiro no estudo da arqueologia e de outras áreas científicas. Os seus trabalhos multidisciplinares incluem o estudo dos primeiros instrumentos cirúrgicos da época romana, descobertos em Portugal, tendo descrito os objetos de uso médico e cirúrgico de Torre d'Ares, antiga cidade de Balsa, no Algarve, sul de Portugal, nos seus livros *Religiões da Lusitania* (1913) e *Medicina dos Lusitanos* (1925). Neste livro, recolheu a maior parte da informação que então existia sobre a medicina dos lusitanos. Estudos posteriores sobre instrumentos médico-cirúrgicos e de farmácia e higiene forneceram novos dados sobre os instrumentos. Tanto os objetos de uso médico-cirúrgico como os de farmácia, *toilette* e de cuidados a doentes indicam padrões sociais elevados nas áreas relacionadas com a saúde.

Palavras-chave: Medicina antiga – Cirurgia – Farmácia – *Toilette* – Arqueologia

The Graeco-Roman physicians established the basis of Western rational medicine and created an accurate and sophisticated surgical *instrumentarium*, an important legacy, since surgery is closely interwoven with the development of surgical instruments (Kirkup, 2006, p. 1). Many Graeco-Roman surgical tools still resemble the instruments we use in our medical practice. An ancient vaginal *speculum* or a tooth *forceps* are quite familiar to us. The ancient authors often mentioned the instruments but they seldom described them. No instrument catalogue has come to us. Led by the reading of the most outstanding medical works, the medical and surgical practices appear to have been dictated by similar procedures through the whole Roman world. The similarity of the surgical tools also conveys the idea of a practice guided by the same rules. The instruments display some kind of *air de famille*, whatever their provenience in the Graeco-Roman world (Milne, 1907, p. 18). As Antje Krug's has stated: «Considering the medical instruments in the Roman Empire between Lusitania and Syria, it surprises how similar they are, how equal in appearance and in technical standards. The scalpel handles from Munigua in the Baetica demonstrate the same professional standards as those from Bingen, Pompeii or Greece. The artisans of workshops from all over the Roman Empire were familiar with the demands of the doctors who worked according to the 'rules of the art'» (Krug, 2011, p. 354).

The medicines were prepared by the doctors as Pliny the Elder (23-79 AD) stated:

«Nowadays whenever they come on books of prescriptions, wanting to make trial of the ingredients in the prescriptions at the expense of their unhappy patients, they rely on the fashionable druggists' shops which spoil everything with fraudulent adulterations, and for a long time they have

been buying plasters and eye-salves readymade; and thus is deteriorated rubbish of commodities and the fraud of the druggists' trade put on show» (Pliny, Book XXXIV, Chapter XXV, in Rackam, 1952, p. 204). 207

The great encyclopaedist provides us a remarkable knowledge on medicines and on the medicine of the time, practiced in very adverse conditions. The surgical tools were usually simple and effective, adapted to their functions (Milne, 1907, p. 17). But the instruments were often artistically ornamented. Since the discovery of microorganisms in the 19th century by Louis Pasteur (1822-1895), it is obvious that the fine decors were harmful, because they attracted the germs and infected the surgical wounds. The ancient physicians could not be aware of that danger. In spite of the lack of effective pain killers and knowledge on antiseptics and antibiotics, they dared to accomplish very bold and effective surgeries. Most of them have only been improved from the 16th century onwards.

Very few medical instruments came into our time since the establishment of the Hippocratic medicine in the 5th century BC until the Hellenistic period. Most surgical instruments that survived are dated from the 1st century BC until the 4th century AD and have been found throughout the whole Roman Empire. Along with the medical texts, they illustrate the practice of surgery. In his book on surgical instruments, John Stuart Milne (1871-1913) tried to define the function of the instruments according to the descriptions of surgical procedures by ancient authors (Milne, 1907). Ralph Jackson, Curator of the British Museum, also published a remarkable study on the surgical tools referred to by Celsus' *De Medicine* (Jackson, 1994, p. 161-210).

In the Iberian Peninsula, no written records have survived during the Roman period. The inscriptions of physicians and medical instruments are the only traces. José Leite de Vasconcelos (1858-1941) (fig. 1) complained that the inscriptions told us nothing about the clinical capabilities of these ancient colleagues (Vasconcelos, 2008, p. 56). In his book, he conveyed the drawing of 22 instruments and he described them briefly, according to their typology, questioning the use of some rare specimens (fig. 2, 3) (Vasconcelos, 1925, p. 21-22).

The findings had been discovered by Estácio da Veiga (1828-1891), also a pioneer archaeologist from Algarve. In 1877, he had excavated a large cemetery with tombs from the 1st and 2nd centuries AD inscrip-

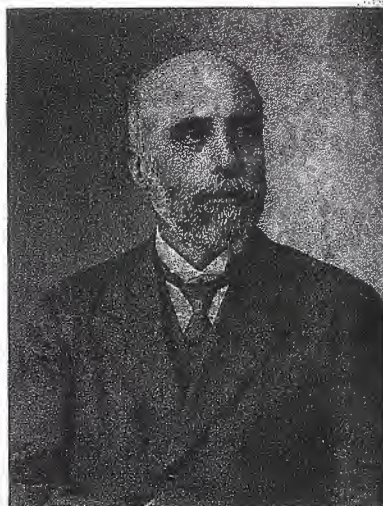


Fig. 1 – José Leite de Vasconcelos. Arquivo Fotográfico do Museu Nacional de Arqueologia.

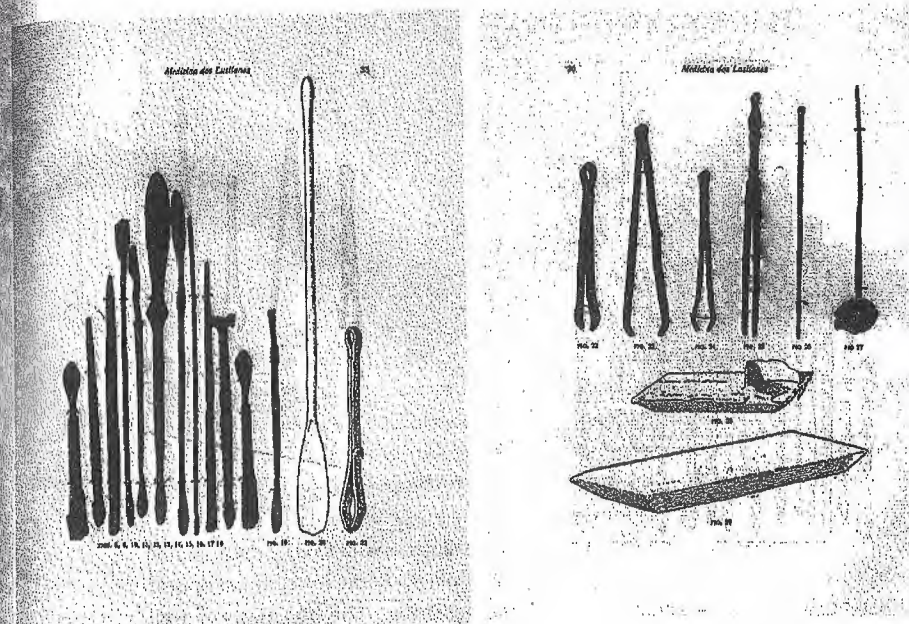


Fig. 2, 3 – Drawing from the first edition, 1925.

tions, coins and other findings allowed the identification of this place as the site of Balsa of pre-Roman origin, near the present town of Tavira (Algarve), in the farms of Torre de Ares and Antas (Veiga, 1866, p. 18-24). The instruments are therefore generally dated from the 1st and 2nd century AD.

Balsa, together with Ossonoba, are the best known Roman places in Algarve. Balsa was mentioned by the Portuguese pioneer archaeologist, André de Resende (c. 1500-1573), in 1593 (Pereira, 2014, vol. I, p. 73). The identification of Balsa with Torre d'Ares and not with the city of Tavira has been established by the Portuguese archaeologist Catarina Viegas who provided a map of the place (Viegas, 2011, p. 27) (fig. 4).

Estácio da Veiga gathered extensive materials from this archaeological site, placed in the Archaeological Museum of Algarve. In 1894, these findings were donated to the Lisbon National Museum of Archaeology by his family.

The collection was originally composed of 30 instruments found in the necropolis of Balsa. It was dated from the 1st to the 3rd century AD. No inscription of a doctor or surgeon has been found. Medical, surgical, pharmacological and minor toilet objects were also found as it often happens in other medical funerary contexts.

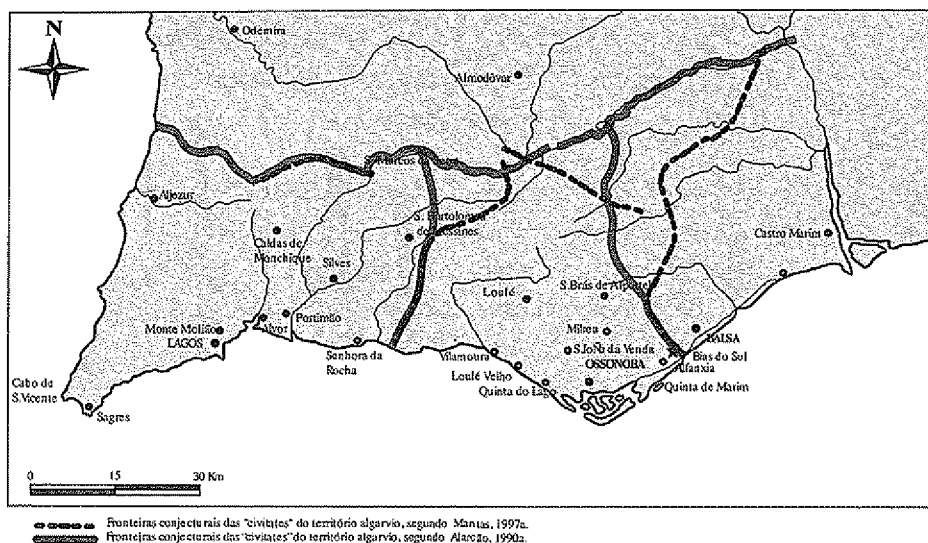


Fig. 4 – Limites das *civitates* do Algarve romano, adaptado por Catarina Viegas (2011, p. 27).

It is not known whether the material was collected from one or more tombs or even from the same necropolis (Pereira, 2014, p. 79). Some instruments appear to have belonged to a unique doctor's *armamentarium*. The material was well preserved as it is usual when materials are collected from tombs (Pereira, 2014, p. 170). Many Roman doctor's instruments have been preserved in tombs.

Medical and surgical instruments have also been preserved by natural catastrophes, such as Vesuvius eruption in 79 in Pompey. In April, 1771, began the study of Roman instruments with 40 pieces found in the House of the Surgeon (Künzl, 2002, p. 58).

Other instruments have been preserved and found in tombs of doctors and surgeons. In 1854, in Reims, France, a tomb of an oculist doctor, Gaius Firminus Severus, has been discovered together with his working tools. Some coins from the time of the emperors Antoninus Pius (Emperor from 138-161 AD) and Marc Aurelius (Emperor from 161-180 AD) pointed the dating to the 2nd century AD. The tomb had remained intact for seventeen centuries. According to the use of the Roman time, his relatives had buried his most valuable objects with him. The wealth and elegance of the instruments was striking. Some piercing tools displayed beautiful silver damascene decoration. The tomb had belonged to a successful wealthy doctor. Instruments from a surgical instruments workshop were also found (Deneffe, 1896, p. 11-13). This means that the doctor Gaius Firminus Severus had his own artisan working for him.

Usually the deceased were proud of their professions and were buried with their working instruments (Kenrick, 1858, p. 29). The tombs of doctors are the most frequently found (Matthäus, 1987, p. 10). This funerary rite was extremely

useful for our study of ancient Roman medical-surgical instruments.

Although the provenance of the Balsa's instruments is not known, in 1926, Virgílio Correia photographed the collection (with 23 pieces) and called it «The Case of the Surgeon from Torre d'Ares» (Correia, 1926, p. 289). In 1983, Ernst Künzl mentioned the preliminary investigation of the collection with two dozen instruments (1983, p. 100).

Maria Luísa Veiga dos Santos, a great grand-daughter of Estácio da Veiga, published some instruments in her Dissertation in 1971. In 1990, she published a study of 17 instruments with very detailed descriptions. A set of surgical instruments figures in a new picture along with the description of some objects and some cosmetic and patient care tools, in the catalogue, *Tavira, território e poder* (2003). The medical, surgical, pharmaceutical and grooming materials from Balsa were also published by the Director of the Campo Arqueológico de Tavira (Silva, 2007). The photograph for the new edition of *Medicina dos Lusitanos*, figured in the 2003 catalogue, presented 19 (Vasconcelos, 2008, p. 75, fig. 4a). 15 had been described in the first edition of Vasconcelos' book. Tables I and II display the instruments figured in both editions.

Nr.	Instrument	Material	INV. Number
Fig. 8	Scalpel handle	Copper alloy/Silver	983.288.412
Fig. 9	Handle	Copper alloy/Silver	983.288.18
Fig. 10	Perforated tool	Copper alloy	983.288.29
Fig. 11	Spatula-probe	Copper alloy	983.288.413
Fig. 12	Spoon-probe	Copper alloy	983.288.406
Fig. 13	Fish spatula-probe	Copper alloy	983.288.403
Fig. 14	Spoon-probe	Copper alloy	983.288.410
Fig. 15	Probe	Copper alloy	983.288.15
Fig. 16	Probe	Copper alloy	983.288.14
Fig. 17	Handle (bifurcated hook?)	Copper alloy/Silver	983.288.20
Fig. 20	Spatula-probe	Copper alloy	983.288.422
Fig. 21	Tweezers (1 jaw missing)	Copper alloy	983.288.32
Fig. 22	Tweezers	Copper alloy	983.288.7
Fig. 23	Tweezers	Copper alloy	983.288.411
Fig. 24	Tweezers	Copper alloy	983.288.408
Fig. 25	Tweezers	Copper alloy	983.288.407
Fig. 26	Ear probe	Copper alloy	983.288.21
Fig. 27	Spoon	Copper alloy/Silver	983.288.409
Fig. 28	Medicine box lid	Copper alloy	983.288.128
Fig. 29	Mixing palette	Slate	983.288.421

Table I – Set of instruments (Vasconcelos, 1925, p. 21-22, fig. 8-29).

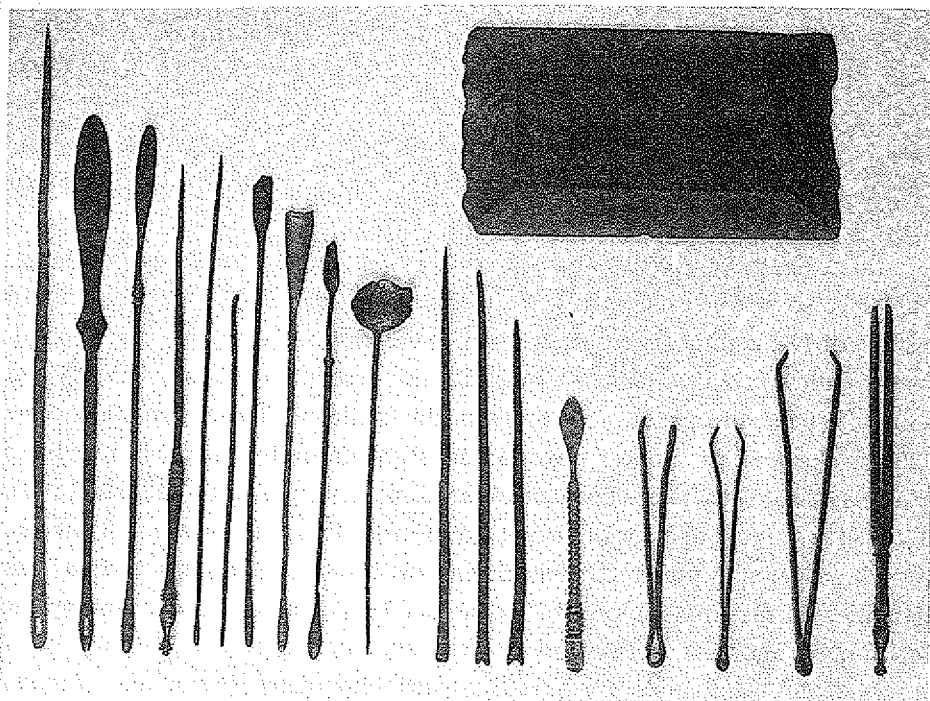


Fig. 4a – Vasconcelos, 2008, p. 75.

Nr.	Material	M. L. 1925	M. L. 2008	INV. Number
1 – Scalpel handle	Copper alloy/ Silver	Fig. 8	Nr. 5	983.288.412
2 – Spatula – probe	Copper alloy	Fig. 20		983.288.422
3 – Spatula – probe	Copper alloy	Fig. 11	Nr. 12	983.288.405
4 – Fish spatula – probe	Copper alloy	Fig. 13	Nr. 17	983.288.403
5 – Spatula – probe	Copper alloy	Fig. 10	Nr. 14	983.288.410
6 – Spoon – probe	Copper alloy	Fig. 12	Nr. 10	983.288.406
8 – Needle	Copper		Nr. 18	983.288.402
9 – Spoon	Copper alloy/Silver	Fig. 27	Nr. 9	983.288.409
10 – Probe	Copper alloy		Nr. 15	983.288.29
11 – Bifurcated hook (?) ¹	Copper alloy			983.274.18
12 – Tweezers	Copper alloy	Fig. 25	Nr. 1	983.288.407
13 – Tweezers	Copper alloy	Fig. 23	Nr. 2	983.288.411
14 – Tweezers	Copper alloy	Fig. 24	Nr. 3	983.288.408
15 – Tweezers	Copper alloy	Fig. 22	Nr. 4	983.288.7
16 – Fragmented palette	Green marble			14891
17 – Palette	Slate	Fig. 29	Nr. 19	983.288.421

Table III – Instruments described by Maria Luísa Veiga Santos, 1990.

After a careful review of the metal objects from Torre d'Ares, 10 further instruments were identified. The ensemble is composed of 40 objects of the following materials: copper alloy and silver: 7; copper alloy: 29; copper: 1; stone: 3. Most are copper alloy instruments. Possibly, like in other archaeological places, the large amount of instruments of iron and steel did not resist to the corrosion and were lost.

The instruments, that will be briefly described, were classified according to their typology. In the sharp and piercing instruments, scalpels, probes, hooks, spatulas, spoons and needles are included. The extraction objects include the tweezers. Cylindrical boxes for storing and transportation of instruments, a rectangular box to store medicines and stone palettes to prepare medicines belong to another group of this collection. Tables III and IV convey a brief survey of the whole ensemble. Table IV contains 23 complete and clearly identified instruments. Table V contains 17 pieces of fragmented and broken or problematic pieces.

² This instrument, possibly identified with a bifurcated hook is a decorated bifid nail-cleaner with a suspension loop. It belongs to Estácio da Veiga's excavations from Mértola and it was presented along with the surgical instruments from Balsa. These nail-cleaners were usually part of a set composed of tweezers with a folding top for wire-loop suspension, an ear-scoop and a nail-cleaner. These tools were suspended from a bar set into a D-shaped loop with expanded and perforated terminals. For parallels and further reading, see H. Eckart and N. Crummy, 2008, p. 134 and p. 167-168.

Nr. Instrument	Material	M. L. 1925	INV. Number
1 – Tweezers	Copper alloy	Fig. 25	983.288.407
2 – Tweezers	Copper alloy	Fig. 23	983.288.411
3 – Tweezers	Copper alloy	Fig. 24	983.288.408
4 – Tweezers	Copper alloy	Fig. 22	983.288.7
5 – Scalpel handle	Copper alloy/ Silver	Fig. 8	983.288.412
6 – Fragment	Copper alloy (needle?)		983.288.4
7 – Fragment	Copper alloy (needle?)		983.288.5
8 – Fragment	Copper alloy (needle?)		983.288.29
9 – Spoon	Copper alloy/Silver	Fig. 27	983.288.409
10 – Spoon – probe	Copper alloy	Fig. 14	983.288.410
11 – Spatula – probe	Copper alloy		983.288.405
12 – Spatula – probe	Copper alloy	Fig. 11	983.288.413
13 – Ear – probe	Copper alloy	Fig. 26	983.288.21
14 – Probe	Copper alloy	Fig. 16	983.288.15
15 – Probe	Copper alloy		983.288.29
16 – Spatula – probe	Copper alloy	Fig. 12	983.288.406
17 – Fish spatula – probe	Copper alloy	Fig. 13	983.288.403
18 – Needle	Copper		983.288.402
19 – Palette	Slate	Fig. 29	983.288.421

Table II – Set of instruments (from left to right) (Vasconcelos, 2008, p. 75).

Nr.	Instrument	Material	INV. Number
1.	Scalpel handle	Copper alloy/Silver	983.288.412
2.	Scalpel/handle	Copper alloy/silver	983.288.377
3.	Needle	Copper	983.288.402
4.	Probe	Copper alloy	983.288.404
5.	Probe	Copper alloy	983.288.15
6.	Ear-probe	Copper alloy	983.288.21
7.	Spatula-probe	Copper alloy	983.288.413
8.	Spatula-probe	Copper alloy	983.288.405
9.	Spatula-probe	Copper alloy	983.288.422
10.	Fish spatula-probe	Copper alloy	983.288.403
11.	Spoon-probe	Copper alloy	983.288.410
12.	Spoon-probe	Copper alloy	983.288.406
13.	Spoon	Copper alloy/silver	983.288.409
14.	Spoon	Copper alloy	983.288.17
15.	Spoon	Copper alloy	983.288.370
16.	Tweezers	Copper alloy/silver	983.288.27
17.	Tweezers	Copper alloy	983.288.407
18.	Tweezers	Copper alloy	983.288.411
19.	Tweezers	Copper alloy	983.288.408
20.	Cylindrical box	Copper alloy	983.1046.1
21.	Medicine box lid	Copper alloy	983.288.128
22.	Palette	Slate	983.288.421
23.	Palette	Brownish marble	14785

Table IV – Complete instruments.

1.	Handle (bifurcated hook?)	Copper alloy/Silver	983.288.20
2.	Probe handle (?)	Copper alloy/silver	983.288.25
3.	Handle	Copper alloy/silver	983.288.18
4.	Eyed probe (?)	Copper alloy	983.288.29
5.	Broken needle (?)	Copper alloy	983.288.4
6.	Fragmented tool	Copper alloy	983.288.5
7.	Broken (needle ?)	Copper alloy	983.288.6
8.	Broken (probe?)	Copper alloy	983.288.14
9.	Spatula/spoon-probe	Copper alloy	983.288.19
10.	Tweezers (br. jaw)	Copper alloy	983.288.33
11.	Tweezers	Copper alloy	983.288.7
12.	Tweezers	Copper alloy	983.288.24
13.	Tweezers (1 jaw)	Copper alloy	983.288.32
14.	Vulsella	Copper alloy	983.288.82
15.	Smashed cyl. box	Copper alloy	983.288.388
16.	Cylindrical box lid	Copper alloy	983.288.384
17.	Fragmented palette	Green marble	14891

Table V – Fragments, broken and problematic tools.

Other health care related objects and grooming tools, selected for this article, include 1 pharmacy balance, 1 bone *pyxis*, a bronze unguentary, 3 glass unguentary bottles, 3, glass stirring rods, 1 mirror, 2 metal amulets (*bullae*), 6 glass amulets and 1 *askos* (a pottery device to feed patients or children).

CATALOGUE

SCALPEL/DISSECTOR (*SCALPELLUS*)

Most scalpels, like the two handles of this collection, had an iron blade that disappeared. They were provided with a slot where a replaceable blade was inserted, the other end terminated in a leaf-shaped spatula (Milne, 1907, p. 24).

1. Handle scalpel/dissector. Rectangular handle with silver spiral damascene decoration. The blade is missing. Parallels can be found with the furnished cables from the second century BC (Künzl, 2002, p. 44, fig. 57). The rarity of the damascene decorated handles has been reported (Santos, 1990, p. 116). Milne also stated the rarity of damascene decoration amongst the instruments from Pompeii (1907, p. 17-18). Deneffe reported the silver damascene decoration of the piercing tools from the tomb of the oculist doctor, Caius Firminus Gaius (Deneffe, 1896, p. 12).

(Copper alloy/silver, L. 9, 2 cm, Inv. 983.288.412) (fig. 5)



Fig. 5 – Scalpel/dissector (Inv. 983.288.412).

Ref.: Deneffe, 1896, p. 12; Milne, 1907, p. 24; Santos, 1990, p. 116, est. t, 1; Vasconcelos, 1905, p. 187, fig. 1; 1925, p. 21; Künzl, 2002, p. 44, fig. 57; Maia et al., coord., 2003, p. 265-268. Silva., 2007; Vasconcelos, 2008, fig. 8, n.º 5, p. 75.

2. Handle scalpel, as 421. (Copper alloy/silver, L. 9,2 cm, Inv. 983.288.377) (fig. 6)

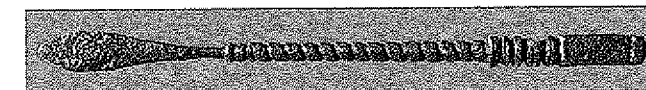


Fig. 6 – Scalpel/dissector (Inv. 983.288.377).

NEEDLE (*ACUS*)

The surgical needles had several shapes and sizes and a sharp tip. Sometimes, they were provided with a handle. However, we have very few descriptions of the

needles that were used. Round and long needles, made of copper alloy, ivory or bone were usually used to sew bandages (Milne, 1907, p. 74). The sewing needles are usually longer than suture needles which are usually shorter, sharper, and often curved, suitable to surgical suture.

3. Long thick needle. Copper was occasionally used in the manufacture of surgical instruments, especially containers (Milne, 1907, p. 14-17).

(Copper, L. 21,3 cm, Inv. 983.288.402) (fig. 7)



Fig. 7 – Copper needle (Inv. 983 288 402).

Ref.: Milne, 1907, pp. 14-17; Santos, 1990, p. 120, fig. II, 8; Maia et al., coord., 2003, p. 265-268; Silva, 2007; Vasconcelos, 2008, p. 75, n.º 18.

PROBE (*SPECILLUM*)

Probes are very common instruments used for penetration and exploring of wounds.

4. Stylus-probe (*stilus*) with a long copper alloy decorated rod of circular section, with a decorated handle, with finial of the baluster type, moulded rings, striation on handle and shaft. It is a tool of high precision, ending in a sharp point which seems to be complete.

(Copper alloy, L. 16.4, D. 0,6 cm, Inv. 983.288.404) (fig. 8)



Fig. 8 – Stylus-probe (Inv. 983 288 404).

Ref.: Santos, 1971, p. 277, fig. 106; Santos, 1990, p. 121, fig. II, 10; Silva, 2007; Maia et al., coord., 2003, p. 265-268; Vasconcelos, 2008, p. 75, n.º 15.

5. Rod of metal, pointed at one end, the other end terminates in an olivary enlargement, spiral decoration on the shaft, probably for small cavities use. Aulus Cornelius Celsus (25 BC – 50 AD), who collected most information on medicine and surgery after the *Hippocratic Corpus*, mentioned the use of a probe wrapped round with wool, dipped in hot oil to apply to the tooth to alleviate tooth aches (Celsus, vi. 9. 2-5, in Spencer, 1977, p. 249). Milne described screw probes used to penetrate into small cavities, such as the ear or a carious tooth in which the screw end would be used to wrap some wool soaked in drugs (Milne, 1907, p. 68, XX)

(L. 16.3 cm, Inv. 983.288.15) (fig. 9)



Fig. 9 – Probe (Inv. 983 288 15).

Ref: Vasconcelos, 1925, p. 21, fig. 15; Santos, 1971, p. 106; Celsus, vi. 9. 2-5, 1977, p. 249; Maia et al., coord., 2003, p. 265-268; Vasconcelos, 2008, p. 75, n.º 14.

EAR PROBE (*ORICULARIUM SPECILLUM, AURISCALPIUM*)

Ear probes were very common and multifunctional instruments. Milne summarized their use, according to the description of several ancient authors. Celsus called it *oricularium specillum* and Scribonius Largus called it *auriscalpium*. It is a small circular scoop on one end and it has a sharp probe on the other. Two of the most ancient outstanding doctors: Claudius Galen, the Prince of Medicine (130-200 AD), and Paul of Aegina (625-690 AD), the last great Byzantine compiler and physician, mentioned its use to extract foreign bodies from the external auditory canal. Celsus mentioned its use to extract *cerumen* from the external auditory canal and in urinary surgery, to extract stone from the urinary *meatus*. Aëtios of Amida (502-575 AD), also an outstanding Byzantine physician and medical writer, mentioned its use for the same purpose. Paul of Aegina mentioned it to compress the proximal end of a vein that would be punctured in phlebotomy, a very usual therapy, by that time. Aëtios of Amida also mentioned its use as a curette to drain the interior of a chalazion (a swelling caused by inflammation of the eyelid Meibomian glands). He also mentioned other uses in ocular surgery, such as the application of medical liquid and semi-solid medicines with the sharp end. He called it the *averso specillo*. Celsus also talked of using the ear probe to separate the eyelids in *ancyloblepharon* (adherence of the eyelids by inflammatory or traumatic or burning injury). Galen mentioned the use of the tip probe, dipped in liquid medicines in the treatment of anal fistulas. Paul of Aegina mentioned its use to extract fragments of arms, like arrows (Milne, 1907, p. 63-67).

6. Ear probe with decorated helical rod, ending in a sharp tip. There is a similar probe without decoration in the collection of Ephesus (Künzl, 1983, p. 50, fig. 18, 11). J. L. Vasconcelos ascribed its use to eye medicine as a cautery or as a spatula to apply topics (1925, p. 21). Paul of Aegina has actually described the use of a double-headed *specillum*, an ear-probe or other small heated instrument on the in *anabrochismus* (eye operation) to cauterize the hair follicles after plucking out the hairs which pricked the eye (Adams, VI, XIV, p. 270).

(Copper alloy, L. 11,8 cm, Inv. 983.288.21) (fig. 10)



Fig. 10 – Ear-probe (Inv. 983 288 21).

Ref.: Adams, 1846, VI, XIV, p. 270; Milne, 1907, p. 63-67; Künzl, 1983, p. 50, fig. 18, 11; Vasconcelos, 1925, p. 22, fig. 26; Maia et al., coord., 2003, p. 265-268; Vasconcelos, 2008, p. 75, n.º 13.

SPATULA-PROBE (*SPATHOMELE*)

A spatula-probe is a long rod with one extremity ending in olive form and the other extremity ending in a spatula. These instruments are mostly used in pharmacy to prepare medicines. The olive-shaped tip was used to mix liquids in a container and the spatula to spread them in the affected areas (Milne, 1907, p. 58).

7. Slightly concave, triangular shaped spatula-probe.
(Copper alloy, L. 14,8 cm, Inv. 983.288.405) (fig. 11)



Fig. 11 – Spatula-probe (Inv. 983 288 405).

Ref.: Milne, 1907, p. 58; Santos, 1990, p. 118, est. II, 7; Maia et al., coord., 2003, p. 265-268; Silva, 2007; Vasconcelos, 2008, p. 75, n.º 11.

8. Spatula-probe, oval type.
(Copper alloy, L. 17.2 cm, D. 0,42 cm, Inv. 983.288.422) (fig. 12)



Fig. 12 – Spatula-probe (983 288 422).

Ref. Santos, 1971, p. 277, fig. 106; Santos, 1990, p. 118, fig. 1, 2; Vasconcelos, 1925, p. 21, fig. 22.

9. «Fish» type spatula with perforated probe. It is a complete instrument and it seems to be very rare. Parallels for this type of spatula are available on Bliquez (Bliquez, 1994, p. 139, n. 126-126). However, the *spatulae* figured in Bliquez terminate in an olivary enlargement and this spatula terminates in a perforated probe. It could have been used to pass a thread of wool under a nerves, arteries, veins, tendons or muscles. Milne has shown images of eyed probes,

mentioned by Paul of Aegina in the extraction of nasal polyps, but they are thinner and smaller (Adams, 1846, p. 77-78, Pl. XVII). These are similar to a probe from the Iberian Peninsula, but it is not pierced (Melendo, 1988, p. 296, CX, n.º 8)

(Copper alloy, L. 1,3 cm, Inv. 983.288.403) (fig. 13)



Fig. 13 – Fish spatula- probe (Inv. 983 288 403).

Ref.: Adams, 1846, p. 77-78, Pl XVII; Melendo, 1988, p. 296, CX, n.º 8; Bliquez, 1994, p. 139, n.º 126-126; Santos, 1990, p. 118, fig. 1, 4; Silva, 2007; Vasconcelos, 1925, p. 21, n.º 13.

SPOON-PROBES (*CYATHISCOMELE*)

Spoon-probes are very similar to spatula-probes. The spatula is replaced by a spoon. Sometimes, the concavity of the spoon is not very deep and it is difficult to distinguish between a spatula and a spoon. These instruments are commonly used in cosmetics and surgery. Some of them may have been used as curettes in gynaecologic surgery (Krug, 1985, p. 95).

10. Oblong spoon-probe, with four moulded rings on shaft, terminating in an olivary enlargement (see parallel on Bliquez, 1994, p. 145, n.º 149).
(Copper alloy, L. 17,7 cm, Inv. 983.288.410) (Fig. 14)



Fig. 14 – Spoon-probe (983 288 410).

Ref.: Santos, 1971, p. 277, fig. 106; 1990, p. 118, fig. 1, 5; Silva, 2007; Vasconcelos, 1913, p. 189, fig. III; Vasconcelos, 1925, p. 21, fig. 14; Krug, 1985, p. 95; Bliquez, 1994, p. 145, n.º 149; AA.VV, 2003, p. 265-268; Vasconcelos, 2008, p. 75, n.º 10.

11. Deep ovular spoon-probe, moulded rings toward midshaft and sharp edges. One edge of the spoon is broken. It could have been used as a curette (see parallel on Bliquez, 1994, p. 153, n.º 180).
(Copper alloy, L. 13,5 cm, W. 0,7 cm, Inv. 983.288.406) (fig. 15)



Fig. 15 – Spoon-probe (Inv. 983 288 406).

Ref.: Santos, 1971, p. 106, p. 277, fig. 106; Santos, 1990, p. 119, fig. 1, 6; Bliquez, 1994, p. 153, n.º 180; Silva, 2007; Vasconcelos, 1925, p. 21, fig. 12.

12. Oblong spoon-probe, flattened at the top. One edge of the spoon is broken. (Copper alloy, L. 13,5 cm, Inv. 983.288.413) (fig. 16)

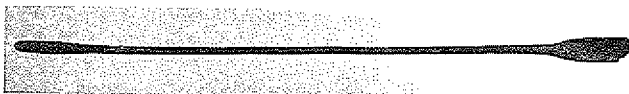


Fig. 16 – Spoon-probe (Inv. 983 288 413).

Ref.: Santos, 1971, p. 277, fig. 106; Maia et al., coord., 2003, p. 265-268; Silva, 2007; Vasconcelos, 2008, p. 75, n.º 12.

SPOONS (*LIGULAE*)

The spoons were widely used for medical and cosmetic purposes.

13. Spoon formed by a round bowl lined with silver, with a spout for liquid drainage, the shaft ends in a point. It would have been used drain liquids or to instil eye drops between the eyelids (Vasconcelos, 1925, p. 21) (see parallel on Künzl, 1983, p. 77, n.º 27).

(Copper alloy/silver, L. 12,5 cm, Inv. 983.288.409) (fig. 17)



Fig. 17 – Spoon (Inv. 983 288 409).

Ref.: Vasconcelos, 1925, p. 22, fig. 27; Santos, 1971, p. 277, fig. 106; Künzl, 1983, p. 77, n.º 27; Santos, 1990, 121, fig. II, 9; Silva, Maia et al., coord., 2003, p. 265-268; Silva, 2007; Vasconcelos, 2008, p. 75, n.º 9.

14. Pharmacy instrument for measurement of drugs, also used to heat medicines, and for removal of unguents from the containers. It has a parallel in a spoon from Ephesus (Künzl, 1983, p. 50, n.º 13).

(Copper alloy, L. 14 cm, D. 2,83 cm, Inv. 983.288.17) (fig. 18)



Fig. 18 – Spoon (Inv. 983 288 17).

Ref.: Künzl, 1983, p. 50, n.º 13.

15. Round spoon ending in a tip where a handle was possibly inserted. Milne included a similar spoon among spatula shaped tongue depressors (Milne, 1907, p. 79, figure XX, n.º 6). There is a similar spoon from the Iberian Peninsula (Melendo, 1988, p. 294, LXXXIX, 4).

(Copper alloy, L. 10,6 cm, D. 54 cm, Inv. 983.288.370) (fig. 19). Unpublished.

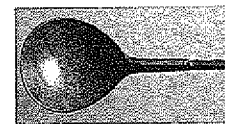


Fig. 19 – Spoon (Inv. 983 288 370).

Ref.: Milne, 1907, p. 79, figure XX, n.º 6; Melendo, 1988, p. 294, LXXXIX, 4.

TWEEZERS (*FORCEPS* OR *VULSELLA*, *VOLSELLA*)

Tweezers were used as medical and toilet instruments. The *forceps* were larger than the surgical clamps which can also be viewed for hair removal. Depilation was widely used in surgical *trichosis*, an inflammation of the eyelids which causes growth of eyelashes inside the eyelid, causing irritation of the conjunctiva. The use of *epilation forceps* for this purpose was mentioned by Paul of Aegina (Adams, 1846, VI, XIV, p. 270). The *forceps* were used, in general, to hold tumours, before excision. There were smaller clips, *vulsella* or *volsella*. They were used to hold anatomical structures during surgical interventions. Lithotomy forceps for women are mentioned by Aëtius of Amida. The same author, quoting a text of Aspasia, a woman doctor about whom nothing is known except for the texts cited by Aëtius in his XVI volume on gynaecology and obstetrics, mentioned the use of the *vulsella* to hold the hernial sac of female inguinal hernia (Ricci, 1950, p. 105-106).

16. Tweezers (*forceps*), one piece, straight legs meet in a silver baluster-like finial with two straight, incurved legs. The tip of the right leg is broken. A parallel can be found on Bliquez, (1994, p. 175, n.º 256).

(Copper alloy/silver, L. 10,9, Inv. 983.288.27) (fig. 20)

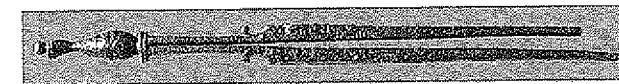


Fig. 20 – Tweezers (Inv. 983 288 27).

Ref.: Bliquez (1994, p. 175, n.º 256).

17. Tweezers (*forceps*), as 27. The tips are straight and intact. See two parallels on Künzl, (2002, p. 43, n.º 56).

(Copper alloy, L. 12,4 cm, Inv. 983.288.407) (fig. 21)



Fig. 21 – Tweezers (Inv. 983 288 407).

Ref.: Santos, 1971, p. 277, fig. 106, Santos, 1990, p. 123, fig. II, 12; Vasconcelos, 1925, p. 22, fig. 25, Maia et al., coord., 2003, p. 265-268; Silva, 2007; Vasconcelos, 2008, p. 75, n.º 1.

18. Tweezers, one piece arrangement consisting of a loop and descending straight legs, with incurved unserrated jaws (see parallel on Bliquez, 1994, p. 180, n. 278).

(Copper alloy, L. 11,2 cm, Inv. 983.288.408) (fig. 22)

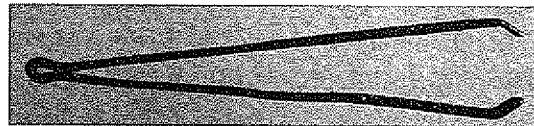


Fig. 22 – Tweezers (Inv. 983 288 408).

Ref.: Santos, 1971, p. 106; Santos, 1990, p. 123, fig. III, 13; Bliquez, 1994, p. 180, n.º 278; Maia et al., coord., 2003, p. 265-268; Silva, 2007; Vasconcelos, 1925, p. 22, fig. 24; Vasconcelos, 2008, p. 75, n.º 3.

19. Tweezers, as 408, smaller size.

(Copper alloy, L. 8,3 cm, Inv. 983.288.411) (fig. 23)



Fig. 23 – Tweezers (Inv. 983 288 411).

Ref.: Vasconcelos, 1925, p. 22, fig. 23; Santos, 1971, p. 277, fig. 106; Santos, 1990, p. 123, fig. III, 15; Maia et al., coord., 2003, p. 265-268; Silva, 2007; Vasconcelos, 2008, p. 75, n.º 21.

CYLINDRICAL PROBE CASE (*SPECILLOTHECA*)

20. Cylindrical case for transport and storage of surgical instruments. These cases are often found. Parallels can be found in Vernad, France (*Gallia Belgica*) (Künzl, 1983, p. 69, n.º 2), and in the Iberian Peninsula (Melendo, 1988, p. 249, figure LXXXIX).

(Copper alloy, L. 12.4, D. 1,8 cm, Inv. 983.1046.1) (fig. 24)

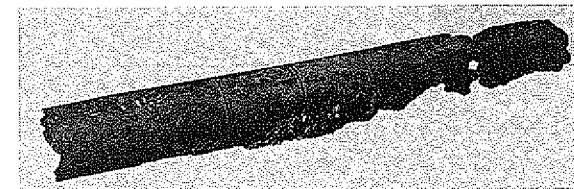


Fig. 24 – Cylindrical probe case (Inv. 983 288 411).

SURGEON PALETTE

21. A rectangular slate-plate, with four bevelled edges, was used by the surgeon to prepare his medicines. There are parallels in Vernad, France (*Gallia Belgica*) (Künzl 1983, p. 69, n.º 1) or Italy (Künzl, 1983, p. 105, fig. 84).

(L. 12,4 cm, Inv. 983.288.421) (fig. 25)

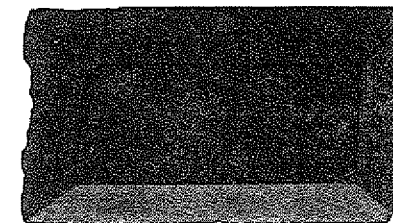


Fig. 25 – Surgeon palette (Inv. 983 288 421).

Ref.: Vasconcelos, 1925, p. 22, fig. 29; Santos, 1971, p. 277, fig. 106; Künzl, 1983, p. 69, n.º 1; Künzl, 1983, p. 105, fig. 84; Santos, 1990, p. 124, fig. IV, 17; Maia et al., coord., 2003, p. 265-268; Silva, 2007; Vasconcelos, 2008, p. 75, n.º 19.

22. A lid fits the palette, forming a box with the slate plate. The lid has a fragmented cylindrical compartment to mix medicines. The lid and the fitting stone plate form a shallow box.

(Copper alloy, L. 12,8 cm, W. 7,9 cm, H. 1,6 cm, Inv. 983.288.122) (fig. 26)

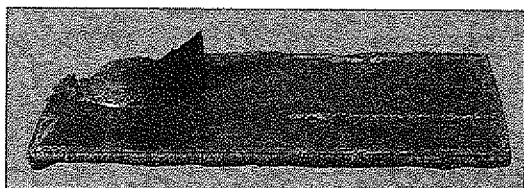


Fig. 26 – Palette lid (Inv. 983 288 122).

Ref.: Vasconcelos, 1925, p. 22, fig. 28.

23. Mixing palette.

(Brownish marble, L. 7,6 cm, W. 5,7 cm, H. 1 cm, Inv. 14 891) (fig. 27)

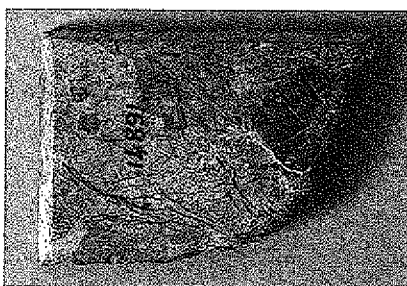


Fig. 27 – Mixing palette (Inv. 14 891).

The following pieces, broken, fragmented or problematic, are under investigation:

Three handles with the same scalpel handle spiral silver damascene decoration possibly belonged to a very sophisticated set of a wealthy surgeon.

1. A handle, consisting of a rod with spiral silver damascene decoration and an elongated olive upper end, possibly belonged to a bifurcated hook (See Milne, 1907, fig. XXII, n.º 5).

(Copper alloy/Silver, L. 11,3 cm, Inv. 983.288.20) (fig. 28)



Fig. 28 – Hook handle (?) (Inv. 983 288 20)

Ref.: Milne, 1907, fig. XXII, n.º 5; Vasconcelos, 1925, p. 21, fig. 17.

2. Handle with similar design.

(Copper alloy/Silver, L. 10,7 cm, Inv. 983.288.18) (fig. 29)

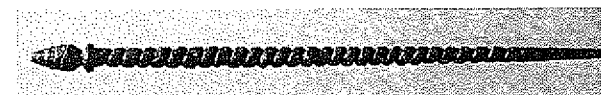


Fig. 29 – Handle (Inv. 983 288 18).

Ref.: Vasconcelos, 1925, p. 21, fig. 9.

3. As 18, handle of broken probe (?).

(Copper alloy/Silver, L. 11,3 cm, Inv. 983.288.25) (fig. 30)



Fig. 30 – Probe handle (?) (Inv. 983 288 25).

4. Piercing tool consisting of two flat faces, topped by a small hole, terminating in a piercing point [Flat probe (?). Nail-cleaners belonging to a toilet set, also composed by a small tweezers and an ear-scoop look similar but are not longer than 5 cm long (Eckart and Crummy, 2008, p. 175)].

(Copper alloy, L. 13,3 cm, Inv. 983.288.29) (fig. 31)



Fig. 31 – Perforated piercing tool (Inv. 983 288 29).

Ref.: Vasconcelos, 1925, p. 21, fig. 10; Eckart and Crummy, 2008, p. 175.

5. Broken cylindrical needle (?). A possible parallel of a complete needle can be found in a needle from Vindonissa (Krause, 2010, Tafel 23, 2).

(Copper alloy, L. 13,2 cm, Inv. 983.288.4) (fig. 32)



Fig. 32 – Cylindrical needle (?) (Inv. 983 288 4).

Ref.: Maia et al., coord., 2003, p. 265-268; Vasconcelos, 2008, p. 75, n.º 6; Krause, 2010, Tafel 23, 2.

6. Broken cylindrical needle (?).
(Copper alloy, L. 11,6 cm, Inv. 983.288.5) (fig. 33)



Fig. 33 – Cylindrical needle (?) (Inv. 983 288 5).

Ref.: Maia et al., coord., 2003, p. 265-268; Vasconcelos, 2008, p. 75, n.º 7.

7. Fragment, decorated rod, both extremities are broken.
(Copper alloy, L. 9,2 cm, Inv. 983.288.6) (fig. 34)



Fig. 34 – Fragment (Inv. 983 288 6).

8. Broken flat probe (?).
(Copper alloy, L. 13,9 cm, Inv. 983.288.14) (fig. 35)



Fig. 35 – Fragmented needle/probe (?) (Inv. 983 288 14).

Ref.: Maia et al., coord., 2003, p. 265-268; Vasconcelos, 2008, p. 75, n.º 8.

9. Probe terminating in olivary enlargement. A broken spatula or spoon is missing.
(Copper alloy, L. 10,2, Inv. 983.288.19) (fig. 36)



Fig. 36 – Broken spatula/spoon-probe (Inv. 983 288 19).

Ref.: Vasconcelos, 1925, p. 22, fig. 25.

10. Tweezers, straight leg of one piece arrangement piece, broken incurved jaws.
See parallel on Bliquez, 1994, p. 180. n.º 282).
(Copper alloy, L. 8,3 cm, Inv. 983.288.7) (fig. 37)



Fig. 37 – Tweezers (Inv. 983 288 7).

Ref.: Santos, 1971, p. 277, fig. 106; Santos, 1990, p. 123, fig. III, 15; Bliquez, 1994, p. 180. n.º 282.

11. As 408, half broken right jaw.
(Copper alloy, L. 8.3 cm, Inv. 983.288.33) (fig. 38)



Fig. 38 – Tweezers (Inv. 983 288 33).

12. Fragment of tweezers, one straight thin flat rectangular leg.
(Copper alloy, L. 6,8 cm, Inv. 983.288.24) (fig. 39)



Fig. 39 – Tweezers (983 288 24).

13. Fragment of tweezers, one rectangular leg of one piece arrangement, topped by a loop.
(Copper alloy, L. 5.78 cm, Inv. 983.288.32) (fig. 40)



Fig. 40 – Tweezers (Inv. 983 288 32).

14. Smashed surgical clip of a one piece arrangement, curved metal wire, with two small incurved jaws. A sliding loop is missing (See parallel of a complete piece on Künzl, 1998b, p. 79, fig. 4b).

(Copper alloy) L. 3,52 cm, Inv. 983.288.82) (fig. 41)

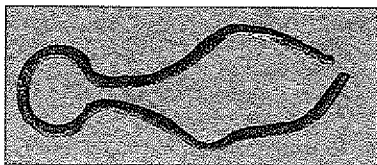


Fig. 41 – Surgical clip (Inv. 983 288 82).

15. Smashed cylindrical probe-case.

(Copper alloy, L. 4,75 cm, D. 1,61 cm, Inv. 983.288.388) (fig. 42)

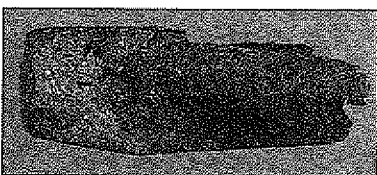


Fig. 42 – Smashed cylindrical probe-case (Inv. 983 288 388).

16. Cylindrical probe-case lid.

(Copper alloy, L. 2,5 cm D. 1, 5 cm, Inv. 983.288.384) (fig. 43)

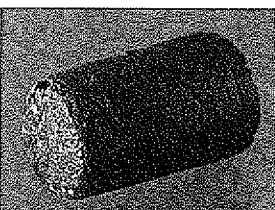


Fig. 43 – Cylindrical probe-case lid (Inv. 983 288 384).

17. Fragmented rectangular palette.

(Green marble, L. 7,6 cm, W. 5,7 cm, H. 1 cm, Inv. 14 891) (fig. 44)

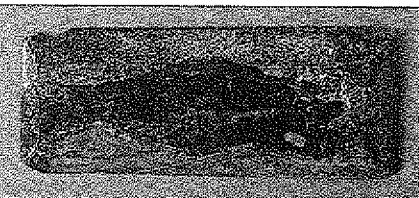


Fig. 44 – Fragmented rectangular palette (Inv. 14 891).

Ref.: Santos, 1990, p. 124, fig. III, 16.

The following pieces are pharmacy objects and cosmetic recipient and tools:

1. Pharmacy balance (*Statera*), with two weighting scales. There were different weighting scales during the Roman period. Greek measures were still used. Galen dedicates chapters VII to XI to this matter (Galen, 19). Chapter X is quoted from Cleopatra, presumably a woman doctor who also wrote on cosmetics and skin diseases (Galen, in Kühn, 1821-1833, Book 19, VII-XI).

(Copper alloy. L. 19,5 cm, H. 10, Inv. 983.288.9) (fig. 45)

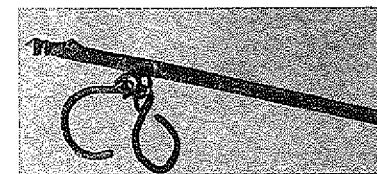


Fig. 45 – Pharmacy balance (Inv. 983 288 9).

Ref.: Galen in Kühn, 1821-1833, Book 19, VII-XI; Aragão, 1896, p. 55-56; Santos, 1971, p. 276, fig. 105; Silva, 2007.

Some glass, pottery or metal vessels include exotic flasks. They usually contained substances associated with grooming. Small lidded cosmetic containers would be in metal or bone. Unguent bottles usually had long narrow necks and tubular, conical or discoid bodies. They contained cosmetic or perfumes. Stirring rods were used to mix oil-based cosmetics and to grind and mix cosmetics or medicines (Eckart and Crummy, 2008, p. 37-38).

2. Unguent recipient in the shape of a faun or of the god Mercury. The pointed ears suggest the bust of a young faun, covered by the nebris. The ears are topped by two rings that J. L. Vasconcelos supposed to mean the wings of the god Mercury (1920, p. 285). The area surrounding the right eye is damaged (fig. 46).

(Bronze, 2nd century AD, H. 148 cm, Inv. 17888)



Fig. 46 – Bronze unguentary in the shape of a faun or of the god Mercury.

Ref.: Vasconcelos, 1915, p. 115; Vasconcelos, 1920, p. 285, fig. 13; Correia, 1928, p. 243; Viana, Formosinho e Ferreira, 1952, p. 138; Maia et al., coord., 2003, p. 272, fig. 112; Silva, 2007.

3. *Pyxis*. Missing lid.

(Bone, H. 2,6 cm, D. 3,3 cm, Inv. 16854) (fig. 47)

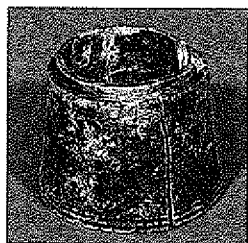


Fig. 47 – Bone pyxide (Inv. 16854).

4. *Anforetta*. Unguentary (partially restored).

(Dark blue, light blue glass, H. 12,7 cm D. 4 cm, 1st century AD, Inv.14714) (fig. 48)



Fig. 48 – Anforetta (Inv. 14714).

Ref.: Alarcão, 1976, p. 55-68, n.º 9; Silva, e Raposo, 2009, p. 84, fig. 11.22; Silva, 2007.

5. Unguent/Parfum bottle, conical body, Isings 82/As (fig. 49).

(Yellow/brown glass, H. 17 cm, D. 6,9 cm, 1st/4th century AD, Inv. 17404).



Fig. 49 – Unguent/Perfume bottle (Inv. 17404).

Ref.: Nolen, J., 1994, vi 80; Silva e Raposo, 2009, p. 80, fig. 11.12

6. Unguent/Perfume bottle, conical body, Isings C.

(Green glass, H. 14,8 cm, D. 6,3, second half of the 1st century AD, Inv. 14054) (fig. 50)

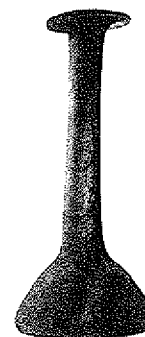


Fig. 50 – Unguent/Perfume bottle (Inv. 14054).

Ref.: Silva, 2007.

7. Unguent/Perfume bottle, discoid body, Isings 82 B2.

(Blue glass, H. 10,4 cm, D. 4 cm, 1st/3rd century AD, Inv. 14059) (fig. 51)

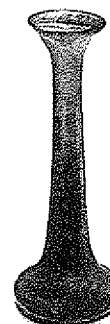


Fig. 51 – Unguent/Perfume bottle (Inv. 14059).

Ref.: Alarcão, 1970, p. 55-68, n.º 43; Silva e Raposo, 2009, p. 81, fig. 11.15.

8. Unguent/Perfume bottle, discoid body, Isings 82 B2.
(White glass, H. 18,7 cm, D. 9,6 cm, 1st/3rd century AD, Inv. 14053) (fig. 52)

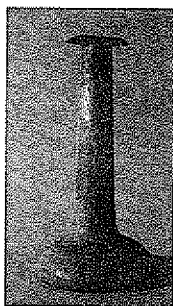


Fig. 52 – Unguent/Perfume bottle (Inv. 14053).

Ref.: Nolen, J., 1994, p. 193, fig. VI-66.

9. Stirring rod, long and narrow shaft with spiral decoration. It terminates in a small scoop, Isings 79.
(White/yellow glass, L 19,5 cm, Th. 0,33 cm, 1st/2nd century AD, Inv. 14812) (fig. 53)

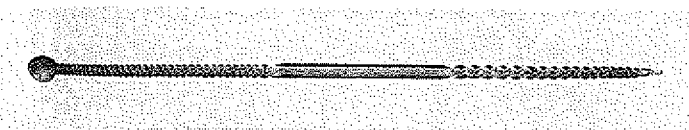


Fig. 53 – Stirring rod (Inv. 14812).

Ref.: Alarcão, 1970, p. 55-68, fig. 54; Santos, 1971, p. 274; Nolen, J., 1994, vi-109; Silva e Raposo, 2009, p. 88, fig. 11.29.

10. Stirring rod, long and narrow spiral shaft, ending in a disc shaped protrusion on both ends, Isings 79.
(Yellow glass, L. 18,3 cm, Th. 0,7 cm, 1st/2nd century AD, Inv. 14814) (fig. 54)

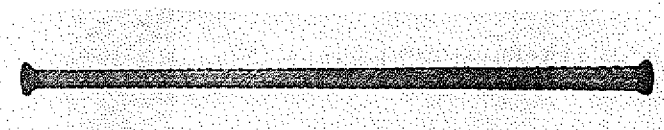


Fig. 54 – Stirring rod (Inv. 14814).

Ref. Alarcão, 1970, n.º 55; Santos, 1971, p. 274; Nolen, J., 1994, vi-111; Silva e Raposo, 2009, p. 89, fig. 11.30.

11. Stirring rod, spiral decoration, ending with a loop, the other end terminates in a disc shaped protrusion, like an ear-spoon, Isings 79, 1st century AD.
(Blue-green Glass, L. 14 cm, Inv. 14139) (fig. 55)



Fig. 55 – Stirring rod (Inv. 14839).

Ref.: Santos, 1971, p. 274; Silva e Raposo, 2009, p. 88, fig. 11.32.

12. Round hand mirror with a baluster handle, decorated with a border of circular holes around the rim, it has been restored. This kind of mirrors was common in the 1st/and 2nd century AD (Eckart and Crummy, 2008, p. 32).
(Copper and tin, L. 16 cm, D. 16 cm, Inv. 15451) (fig. 56)

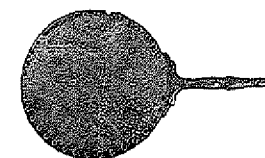


Fig. 56 – Mirror (Inv. 15451).

Ref.: Aragão, 1896, p. 56-57; Santos, 1971, p. 304, fig. 122.

13. Ceramic vessel (*Askos*) in the shape of a bird with funnel and spout for liquid feeding of patients or children.
(*Terra sigillata*, H. 86 cm, end of 1st middle second century AD, Inv. 14976) (fig. 57)

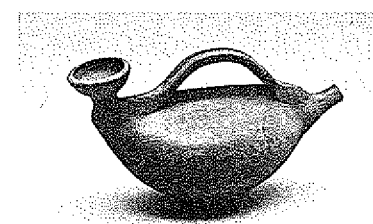


Fig. 57 – Askos (Inv. 14976)

Ref.: Santos, 1971, p. 267, fig. 88; Silva, 2007; Vasconcelos, 1925, p. 22; 2008, p. 76; Maia et al., coord., 2003, p. 291, fig. 154.

Other health related objects of apotropaic use, are a glass metal *bullae* and glass charms.

14. A *bullae* consists of two small halves, forming a small medal, carrying incantations inside. Children wore them around the neck or wrists from the ninth day after birth until puberty, when they got the *toga virilis* and could also be used by the adults.

(Bronze, H. 4,2 cm, 1st/4th century AD, Inv. 983.288.89) (fig. 58)

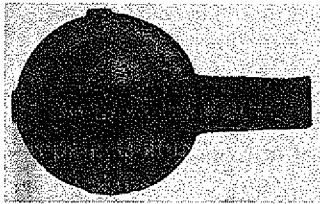


Fig. 58 – *Bulla* (Inv. 983 288 89).

Ref.: Vasconcelos, 1913, p. 526; Santos, 1971, p. 273, fig. 103, 106; Ribeiro, 2002, p. 487.

15. An amulet in the form of a pitcher, topped by a glass loop to carry around the neck, hanging from a necklace. They were possibly original from the Middle East and had a strong Christian connotation

(Black-blue glass, H: 2,1 cm; L. 1,6 cm, 3rd/4th century AD, Inv. 999.102. 4) (fig. 59).



Fig. 59 – Charms in form of pitcher (Inv. 999 102, 2 e 3).

Ref.: Cruz, 2007a, n.º 41; Nolen, J., 1994, p. 182, 197, n.º vi-127, fig. 41; Ribeiro, 2002, p. 488, fig. 168; Silva and Raposo, 2009, p. 96, fig. 12.11.1.

16. Amulet in form of a jar. Used as the previous.

(Black-blue glass, H: 3 cm; L: 1,3 cm, 3rd/4th century AD, Inv. 999.102.3) (fig. 60).



Fig. 60 – Charms in form of a jar (Inv. 999 102, 3-4).

Ref.: Alarcão, 1970, p. 258, n.º 53, fig. vii; Nolen, J., 1994, p. 182 e 197, n.º vi-128, fig. 53; Ribeiro, 2002, p. 488, fig. 169; Silva and Raposo, 2009, p. 96, fig. 12.11.2.

17. Amulet in a long and cylindrical form, with two triangular suspension elements. They were amulets containing a *phylacterium* (small papyrus or parchment scroll) where a magic and apotropaic spell was written, possibly originating in the Middle East.

(Black-blue glass, 1,4 cm; H: 3,7 cm; 3rd century AD, Inv. 999.102.2) (fig. 61)



Fig. 61 – Cylindric charms (Inv. 999 102 2, 5).

Ref.: Nolen, J., 1994, p. 182, 197; Ribeiro, 2002, p. 488, fig. 170; Cruz, 2007, n.º 4. 2.1; fig 53; Silva and Raposo, 2009, p. 96, fig. 12.11.3.

CONCLUSION

Most objects from the Balsa medical-surgical *instrumentarium* are ordinary tools and have parallels in collections from different provinces of the Roman world. Others are less common. I found no parallel for the fish shaped spatula ending in a perforated probe. The silver damascene decorated objects are rare pieces that state the high social pattern of his owner. The other pharmacy and health care devices of which the pottery *askos* is an exemple, also state very good patterns of life and patient assistance. Although some rare instruments, such as vaginal speculae, embriotomy or lythotomy tools, were not found, we may presume that these surgeries might have been practiced. The medicine and surgery practiced in Balsa are supposed to have followed the *lege artis* of the Roman doctors and surgeons. No trephining instrument was found, in Balsa, nor in the

Roman Lusitania, as far as I know, but a trephined skull from Troia states the practice of this surgical procedure (Figueiredo, 2002).

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