

COLLYRIA SEALS IN THE ROMAN EMPIRE

PEČATI ZA KOLIRIJE U RIMSKOM CARSTVU

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SUMMARY

Roman seals associated with collyria (Latin expression for eye drops /washes and lotions for eye maintenance) provide valuable information about eye care in the antiquity. These small, usually stone-made pieces bore engravings with the names of eye doctors and also the collyria used to treat an eye disease. The collyria seals have been found all over the Roman empire and Celtic territories in particular and were usually associated with military camps. In Hispania (Iberian Peninsula), only three collyria seals have been found. These findings speak about eye care in this ancient Roman province as well as about of the life of the time. This article takes a look at the utility and social significance of the collyria seals and seeks to give an insight in the ophthalmological practice of in the Roman Empire.

Key words: Collyria seal, Roman Empire, ancient ophthalmology, Hispania, collyrium

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INTRODUCTION

Over the past four centuries archaeologists discovered several small stone pieces with prescriptions by eye doctors, known as collyria (Latin name for ointments, suppositories, or medicinal liquids) [1] seals or stamps. The discoveries were made at different sites all over the territory that once belonged to the ancient Roman Empire (Fig. 1).

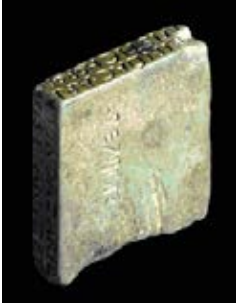


Figure 1. Collyria seal found in Kenchester (Herefordshire) © (Trustees of the British Museum).

Slika 1. Pečat za kolirij pronađen u Kenchesteru (Herefordshire) © (Trustees of the British Museum)

The shape of these pieces, usually made of steatite, shale or serpentine, is mainly square or rectangular. The narrowest face of these seals is engraved with the name of the eye doctor who made the specific remedy, the basic components constituting such medicines, and the ocular diseases targeted, in either one or two lines. Occasionally, additional information, such as the administration route or even eulogies to the eye doctor's ability, are engraved. The name of the practitioner is often written in common Latin [2].

The first collyria seal was found in 1606 near Mandeure (France), and the first compilation was published in 1778 by Richard Gaugh. Those findings led to controversial interpretations fuelled by very limited information contained in ancient medical books [3]. The vast majority of collyria seals were found in the areas once occupied by Celts and often within the context of military camps [4].

Much speculation has been raised as to the function of these pieces. They have been interpreted as amulets or advertisement elements [5]. However, there is little doubt about the main function of the inverted engravings, which was to label medicaments and vessels like amphorae. This hypothesis was already considered by the French priest Le Beuf in 1729, based on the well-known Roman custom of labelling not only vessels but also products such as bread [6]. Le Beuf's theory was confirmed in 1854 by the discovery of stamped remains of collyria sticks inside a tomb near Reims (France). The numismatic findings from archaeological sites where the seals were found help to date these seals to between mid 2nd and late 5th century [3], which

might explain the absence of literary references in the works of Pliny, Celsus and Galen.

MORPHOLOGICAL AND EPIGRAPHIC CHARACTERISTICS

Voinot catalogued 314 seals for collyria to date [7]. A large number of them were made of soft stone that could be easily engraved. Materials such as steatite facilitated stamping on wet surfaces. Less common were the seals made of serpentine, schist, jasper, or nephrite. To date, the finding of only one seal made of porphyry and another one made of marble have been reported. Likewise, a seal made of bronze was discovered in Noviomagus (Nijmegen, Holland) in 1993, the only one of its kind. The reason why more metallic seals have not been found is probably the deterioration of metals in contact with the acidic substances of the collyria [3]. Most of these pieces are square or rectangular in shape, with dimensions ranging between 3 and 6 cm in length, 1 to 5 cm in width, and 1 cm in thickness. Some, however, are triangular two are circular, one pentagonal, and one [found in Colonia Norba Caesarina (Cáceres, Spain)] hexagonal.

The characters engraved on the narrower side of the seal are Roman capital letters, except for five seals which are in Greek alphabet. This is surprising, since most of the names that appear on the seals belong to doctors of Greek origin. One reason may be to make prescriptions understood by common people [8]. Decorations such as garlands, geometric shapes, intersecting or parallel incisions, anthropomorphic drawings, animal pictures, and even an amphora in the seal of Ara Genuae (Vieux, France) decorate the wider side of the seals. Occasionally, engravers would leave their signature and the date of engraving. Inscriptions in non-reversed letters have also been found on either of the wider seal faces to clarify the reverse writings on the narrow, stamping face [3].

Some seals have a hole that probably served for hanging them or use them as an adornment or amulet with magical powers. Some seals also have a hollow or a small depression on one side, presumably to be used as a mortar [3].

THE CONTROVERSY REGARDING THE GEOGRAPHICAL LOCATION OF COLLYRIA SEALS

Most collyria seals were found in the Northwest Territories of the Roman Empire, characterised by a strong Celtic influence [7]. The old provinces of

Gallia Narbonensis, Aquitania, Gallia Lugdunensis, Belgica, Britannia and Germania account for 92% of seals whose origin has been verified. In the remaining provinces of the Empire and even in the Italic Roman territory, the number of seals found is anecdotal. Deneffe [9] explains this difference as an idiosyncrasy of the Celtic people, whose shrewd sense for business saw an advertising advantage in these seals. Furthermore, the sealing tradition seems to have been strong in the Northwest Territories for other products as well [10]. Nielsen [3] believes that there was a relationship between the seals and military camps, as the archaeological findings were often close to military establishments. According to Birley [11] and Allason-Jones [12], eye diseases were frequent among soldiers, usually as a result of vitamin deficiency, long marches, and the effects of dust and smoke. Fernandez-Nieto [13] emphasised the usefulness of the seals for military doctors, as they facilitated record keeping of the production to ensure sufficient quantities for distribution. Eye doctors could easily indicate the best remedy to use for every specific case by just using the seals.

Boon [10] disputed this thesis because military contingents were located in many other areas, including some with harsh environmental conditions that favoured the spreading of eye diseases even to a greater extent such as Egypt and Syria, and yet no collyria seals were found there. He pointed to the findings of collyria seals in shrines and other sacred places, such as the Temple of Sulis-Minerva in the town of Bath and Martis Nodenti at Lydney Park (Gloucestershire, UK).

The concentration of seal findings in the areas with a strong Celtic influence suggests that the phenomenon has the origin in these territories, and not in the metropolis or in Romanised areas, where the findings are scarce and anecdotal. In addition, scientific terminology and spelling errors are frequent [8], which was less likely to occur in large cities such as Rome (Rome, Italy), Tarraco (Tarragona, Spain), or Lugdunum (Lyon, France). We believe that people who prescribed or dispensed the collyria had to be military doctors, probably non-specialists, of Celtic origin, strongly influenced by ancestral traditions. The seals had a two-fold function: the practical, obviously, and (self-)protective, as amulets. It is very likely that collyria seals were not viewed from the same perspective back then as they are today. The exclusive association between the seals and “rational” or “scientific” practices is essentially modern. Ideas about health and disease, and by extension, about all those objects related to medicine, unquestionably varied between the territories of such a heterogeneous Empire as the Roman [14]. The historical

objects related to medicine and health, including the collyria seals, are not to be reduced to their practical application, as they also had a social and/or symbolic connotation.

THE COLLYRIA SEALS IN HISPANIA

THE SEAL FROM COLONIA NORBA CAESARINA (CÁCERES, SPAIN)

This unique, hexagonal, 74x66x9 mm piece made of shale was discovered near the Rio Salor in 1934 (Fig. 2). Before 1990, this piece was in the possession of R. Montagud Gallery in Paris and of a private collector in London, and was catalogued as the “Gnostic amulet” [7].

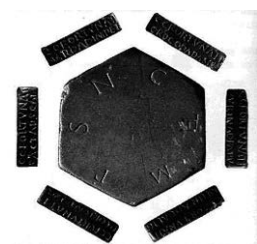


Figure 2. Collyria seal from Colonia Caesarina Norba (Cáceres, Spain) (Courtesy of Éditions Monique Mergoil. Montagnac, France).

Slika 2. Pečat za kolirij iz rimske kolonije Caesarina Norba (Cáceres, Spain) (ljubaznošću Éditions Monique Mergoil. Montagnac, Francuska)

All the six 9-mm thick sides of this piece are engraved with inscriptions shown in Table 1. The initials corresponding to the names of the collyria (M P S N C T) are engraved on the widest side.

Table 1.- Inscriptions on the six narrow sides of the seal found in Cáceres (Colonia Norba Caesarina). The slash indicates a new line in the inscription; the letters within parentheses complete the abbreviated word for which the abbreviation is known, and the letters in square brackets indicate our reconstruction of a word or part of a word to give sense to the text

Tablica 1. Gravure na šest užih lica pečata pronađenog u Cáceresu (rimska kolonija Norba Caesarina). Kosa crta ukazuje na prelazak na novi red; slova u obliku zagradama dovršavaju riječ koja je skraćena poznatom kraticom, a riječi u uglatim zagradama su rekonstrukcije riječi ili dijela riječi prema tumačenju autora

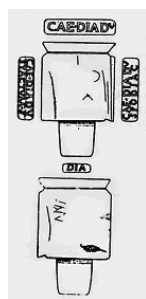
Face	Latin Inscription	Translation
1	C [c] (FORTVNATI) // MELIN (um) AD CALIG (inem)	Fortunatus' collyrium called Melinum to treat Caligo (poor or blurred vision)
2	C C (FORTVNATI) / PSORIC(um) AD CLAR (itatem)	Fortunatus' collyrium called Psoricum to achieve or preserve Claritatem (visual clarity)

Face	Latin Inscription	Translation
3	C C (FORTVNATI) / STACT(um) AD SCAB (rities)	Fortunatus' collyrium called Stactum to treat Scabrities (itching, roughness, and inflammation of the eyelid skin)
4	C C (FORTVNATI) / NARD(inum) AD IMPET (um)	Fortunatus' collyrium called Nardinum to treat Impetum (mild inflammation along the eyelid)
5	C C (FORTVNATI) / CROCOD (es) AD ASP [r] (itudinem)	Fortunatus' collyrium called Crocodes to treat Aspritudo (roughness and inflammation of the ocular surface)
6	C C (FORTVNATI) / THVRIN (um) AD PAPV (las)	Fortunatus' collyrium called Thurinum to treat Papulas (eyelid skin lesions)

THE SEAL OF TARRACO (TARRAGONA, SPAIN)

It is catalogued and named as the “seal of Madrid” [8], perhaps because it belonged to Mr Eusebio Valdeperas' Madrid collection, even though Valdeperas himself lived in Tarragona. We were informed by Del Castillo that its origin is unknown, regardless of the effort he and priest Fidel Fita made to find it. Not knowing the nature of the piece, Valdeperas had it investigated by Mr Zobel, who in 1881, sent a drawing over to Dr Hübner, who finally resolved the issue by claiming that it was a collyria seal. Its current location is not known, although Voinot [7] hypothesized that it might be in the Archaeological Museum of Madrid.

Like the seal from Cáceres, it also has a peculiar shape, because it has an addition to the typical parallelepiped (Fig. 3). Its dimensions are 40x24x5 mm,



and the material is quite likely shale because of its greenish colour. The seal displays the name of the eye doctor, Celio

Figure 3. Collyria seal from Tarraco (Tarragona, Spain) (Courtesy of Éditions Monique Mergoil. Montagnac, France).

Slika 3. Pečat za kolirij iz rimskoga Tarraca (sadašnja Tarragona, Španjolska) (ljubaznošću Éditions Monique Mergoil. Montagnac, Francuska).

Diadumeno. The name Caelius was very common in Roman Hispania, just as the second name Diadumeno, of Greek origin, judging by the many sepulchral inscriptions in Hispania. XY et al. [8] suggest that Celio Diadumeno may have been an eye doctor from Gaul, who arrived to Tarraco during Constantine, taking advantage of the fact that both territories belonged to the same prefecture at the time. This man died in Tarraco, where he was buried with his seal. Table 2 lists the inscriptions on the seal's narrow sides.

Table 2.- Inscriptions appearing on the narrow sides of the stamp found in Tarraco. The slash indicates a new line in the inscription; the letters within parentheses complete the abbreviated word for which the abbreviation is known, and the letters in square brackets indicate our reconstruction of a word or part of a word to give sense to the text.

Tablica 2. Gravure na užim površinama pečata pronađenog u Tarragoni. Kosa crta ukazuje na prelazak na novi red; slova u oblim zagradama dovršavaju riječ koja je skraćena poznatom kraticom, a riječi u uglatim zagradama su rekonstrukcije riječi ili dijela riječi prema tumačenju autora

Face	Latin Inscription	Translation
1	CAE () DIADV (meni) / STACTVM	Collyrium Stactum from Caelius Diadumenus
2	CAE () DIADV (meni) / SPODIAC (um	Collyrium Spodiaceum from Caelius Diadumenus
3	CAE () DIADV (meni)	Caelius Diadumeni
4	DIA (dumeni)	Diadumeni

THE SEAL OF CAUCA (COCA, SEGOVIA, SPAIN)

This collyria seal is the most recent discovery in the Iberian Peninsula. Discovered in 1974, it is dated to the turn of the 3rd century [15]. It was found by chance among the ruins of the ancient Cauca and is currently kept in the Museum of Segovia (Spain). Before that, it belonged to the private collection of Jesús Hedo in Arévalo (Ávila, Spain) (Fig. 4). It is made of quartzite and its dimensions are 40x20x8 mm. It has a rectangular shape with inscriptions only on its longer narrow sides (Table 3).



Figure 4. Collyria seal from Cauca (Coca, Segovia, Spain) (Courtesy of Éditions Monique Mergoil. Montagnac, France).

Slika 4. Pečat za kolirij iz Cauca (Coca, Segovia, Španjolska) (ljubaznošću Éditions Monique Mergoil. Montagnac, Francuska).

Table 3. Inscriptions appearing on the longer sides of the seal found in Cauca. The slash indicates a new line in the inscription; the letters within parentheses complete the abbreviated word for which the abbreviation is known, and the letters in square brackets indicate our reconstruction of a word or part of a word to give sense to the text

Tablica 3. Gravure na dužim površinama pečata pronađenog u Cauci. Kosa crta ukazuje na prelazak na novi red; slova u oblim zagradama dovršavaju riječ koja je skraćena poznatom kraticom, a riječi u uglatim zagradama su rekonstrukcije riječi ili dijela riječi prema tumačenju autora

Face	Latin Inscription	Translation
1	CORNELI ALCIMI TVR / INVM AT CHEMOSIM / ET AT SVPPVRATIONES	Collyrium Turinum from Cornelius Alcimus to treat Chemosim (eyelid malposition, pterygium) and Suppurationes (discharge in acute conjunctivitis).
2	AL [ci] MI ICA / RIVM AT CLARITA / TEM ET AT SVFFVS (ionem).	Collyrium Icarium from Cornelius Alcimus to achieve Claritatem and to treat Suffusionem (cataracts).

The name of the eye doctor Alcimus appearing on the seal is of Greek origin. Fernandez-Nieto [13] suggests that Alcimus may have been a freeman enlisted in the army in the hope of gaining some wealth. He may have resided in Cauca for a time or was stationed at a nearby military garrison. It is also possible that he had never visited the town and that the seal brought over by a physician working for Alcimo, who was the chief doctor of a legion.

Table 4 lists the names of collyria engraved on the seals discovered on the Iberian Peninsula, their origin, composition, and main indications.

Table 4.- Name/s of collyria on the seals found on the Iberian Peninsula, their origin, composition, and main indications.

Tablica 4. Nazivi kolirija na pečatima pronađenima na Iberijskome poluotoku, njihovo podrijetlo i glavne indikacije za koje su propisani

Name/s of collyria	Origin	composition (main ingredients)	indications
MELINUM (Collyrium Mellinum, Mellynum Acre, Mellynum Delacrimatorium, Mellynum Opobalsatum)	From Greek μήλινος / the colour of quince	Apple juice	Ad caliginem (against poor or blurred vision)
PSORICUM (Diapsoricum)	From Greek ψωρικός	Copper and iron metallic salts mixed with vinegar	Ad claritatem (to preserve clarity of vision)
STACTUM (Collyrium Stactum, Collyrium Stactum Crocodes, Stactum Chelidonum, Stactum Opobalsatum)	From Greek στατχη	Acacia, aes ustum, aloe, cadmia, croceum, haematites, lepidum, opium, piper, sal fossilis, gummi, rain water	Ad recentes caligines et coeptas suffusiones oculorum (new cases of blurred vision and cataracts)
NARDINUM (Collyrium Nardinum, Nardinum Lene)	From Greek ναρδινος	Spikenard and olive oil	Ad impetum (acute conjunctivitis and blepharitis)
CROCODES (Collyrium Crocodes, Collyrium Stactum Crocodes, Crocodes Dialepidos, Dialepidos Crocodes, Crocodes Diamisus, Diamisus Crocodes, Crocodes Diamysios, Crocodes Diaopobalsamum, Crocodes Dihynv, Crocodes Paccianum, Crocodes Regium T(ri) P(unctum), Crocodes Sarcofagum, Diasmyrnes Crocodes, Horaeon Crocodes, Mixtum Crocodes, Terentianus Crocodes, Turinum Crocodes)	From Latin Crocus	Saffron	Ad aspritudinem (against roughness; it is probably referred to trachoma and other diseases with similar morphology)

Name/s of collyria	Origin	composition (main ingredients)	indications
THURINUM (Turinum, Collyrium Turinum, Turinum Crocodes)	From Latin Thurium (Φούριον) location of Magna Greece or thus (incense)	Incense	Ad chemosis et suppuraciones (lid malposition, eye traumatism, pterigium, acute conjunctivitis)
SPODIACUM	From Greek σποδιακός	Slag	Ad caliginem et ad aspritudinem (to treat blurry vision and ocular roughness)
ICARIUM	From Icarus, isle in Greece	Wine from acrid grapes	Ad claritatem et ad suffusionem (to preserve clear vision and against cataracts)

CONCLUSIONS

Considering that the greatest number of Roman collyria seals have been found in territories with a strong Celtic influence and that the discoveries coincide with military camps of the 2nd century, it seems that they were rather specific for doctors working in the Roman army and may have root in Celtic traditions. Clearly, this is just a hypothesis and future research may bring new answers.

REFERENCES

1. Murube del Castillo J. Collyrium: where does this Word come from? *Ocul Surf* 2007; 5(4): 264-8.
2. James RR. Roman oculist-stamps in Britain. *Br J Ophthalmol* 1926;10(3):114-31.
3. Nielsen H. Ancient ophthalmological agents. *Acta Historica Scientiarum Naturalium et Medicinalium* 1974;31:9-116.
4. Marmion V. The Roman oculist stamps. *Bulletin de la Societe Belge d'Ophthalmologie* 1995;259: 215-7.
5. Hirschberg J. *The History of Ophthalmology, Vol. 1: Antiquity* (Blodi FC, trans) Bonn. Verlag JP Wayernborgh.1982.

6. Lillo Carpio P. Contribución al estudio de los sellos de panadero. *Memorias de Historia Antigua* 1981;5:187-94.
7. Voinot J. Les cachets à collyres dans le monde romain (Vol. Monographies Instrumentum 7) Montagnac: Monique Mergoil, 1999.
8. Del Castillo Cuartiellera R. La Oftalmología en tiempos de los romanos Masnou-Barcelona: Laboratorios del Norte de España, 1956.
9. Deneffe V. Les oculistes gallo-romains au IIIe siècle. Gante. Baillière et fils, 1896.
10. Boon GC, Potters. Occulists and eye-troubles. *Britannia*, 1983(14):1-12.
11. Birley AR., A case of eye disease (Lippitudo) on the Roman frontier in Britain. *Doc Ophthalmol* 1992;81(1):111-9.
12. Allason-Jones L. Health Care in the Roman North, *Britannia* 1999;30:133-46.
13. Fernández Nieto FJ., Sobre un reciente signaculum ocularii hispánico. In: Melena J (ed.), *Symbolae Ludovico Mitxelena Septuagenario Oblatae. Pars Prior Vitoria Gasteiz: Paleohispanicae*, 1985, p.p. 607-611.
14. Baker P. Roman Medical Instruments: archaeological interpretations of their possible "non-functional" uses. *Soc Hist Med* 2004;17:3-21.
15. Mañanes T. Un sello de oculista romano en Coca (Segovia). *Durius* 1974(2): 393-6.

SAŽETAK

Rimski pečati kojima su se pečatili koliriji (lat. collyrium – kapi, losioni, voda za oči) daju vrijedan uvid u postupke njege i liječenja očiju u antička vremena. U ove su se male kamene pečate obično gravirala imena očnih liječnika i naziv kolirija koji se rabio za pojedinu očnu bolest. Pečati za kolirije pronađeni su posvuda u Rimskom Carstvu, a ponajviše na okupiranim keltskim teritorijima i to u vojnim logorima. U Hispaniji (na Iberijskom poluotoku) pronađena su tek tri takva pečata. Ovi nam nalazi govore o njezi očiju u ovoj staroj rimskoj provinciji i o životu u to doba.

Cilj je članka razmotriti korisnost i društvenu važnost pečata za kolirije i pružiti čitatelju uvid u oftalmološku praksu u Rimskom Carstvu.

Ključne riječi: pečat za kolirij, Rimsko Carstvo, antička oftalmologija, Hispania, collyrium