BELT BUCKLE - CU ALLOY - MEDIEVAL TIMES - FRANCE

Artefact name Belt buckle

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Url /artefacts/1444/

The object



Credit Materia Viva, J.Touzeau.

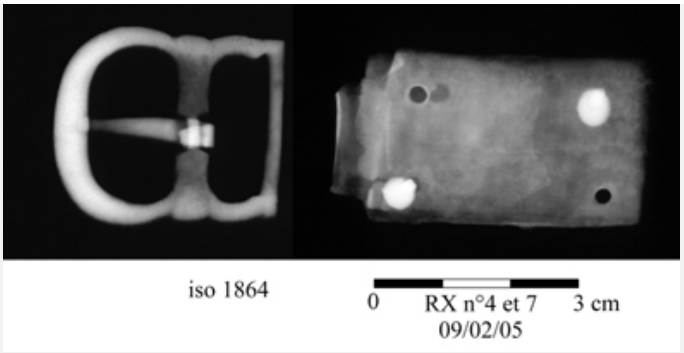
Fig. 1: Belt buckle before restoration with brown and green corrosion products, from Saint-Jean cemetery, Toulouse, Midi-Pyrénées, France,



Credit Materia Viva, J.Touzeau.

Fig. 2: Part of the belt buckle after restoration, from Saint-Jean cemetery, Toulouse, Midi-Pyrénées, France,

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Credit Materia Viva, C.Gargam.

Fig. 3: X-ray radiography of the belt buckle showing different densities between the buckle (massive), the plate (sheet) and two massives rivets,

Description and visual observation

Description of the artefact	Complete belt buckle covered with green and brown/reddish corrosion products.
Type of artefact	clothing element
Origin	Saint-Jean cemetery, Toulouse, Midi-Pyrénées, France
Recovering date	Excavation 2003
Chronology category	Medieval times
chronology tpq	1100 A.D.
chronology taq	1300 A.D.
Chronology comment	
Burial conditions / environment	Soil
Artefact location	Musée Saint-Raymond, Toulouse
Owner	Musée Saint-Raymond, Toulouse
Inv. number	ISO 1864, SEP 1243
Recorded conservation data	Mechanical removal of the corrosion products and protection with resin paraloid B72 in acetone.

Complementary information

None.

Study area(s)

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Credit Materia Viva, J.Touzeau.

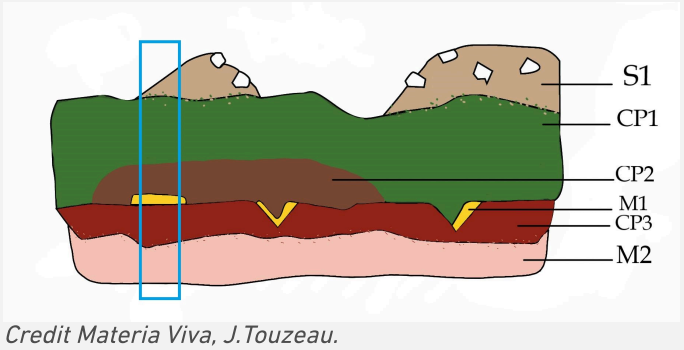
Fig. 4: The red square indicates the location of the analysed area by binocular observation. Picture showing restoration in progress,

Binocular observation and representation of the corrosion structure

The schematic representation below gives an overview of the corrosion structure encountered on the buckle from a first visual macroscopic observation.

Strata	Type of stratum	Principal characteristics
S1	Sediment	light brown sediment with inclusions of silica grains
CP1	Corrosion product	powdery, porous medium green corrosion product
CP2	Corrosion product	discontinuous, cohesive, brown corrosion product
M1	Metal	discontinuous fine layer of gold
CP3	Corrosion product	continuous layer of compact red corrosion product
M2	Metal	compact metal

Table 1: Description of the principal characteristics of the strata as observed under binocular and described according to Bertholon's method. Gilded incisions are between CP2 and CP3.



Credit Materia Viva, J.Touzeau.

Fig. 5: Stratigraphic representation of the corrosion structure of the belt buckle by macroscopic and binocular observation with indication of the corrosion structure used to buils the MiCorr stratigraphy of Fig. 6 (blue rectangle),

MiCorr stratigraphy(ies) – Bi

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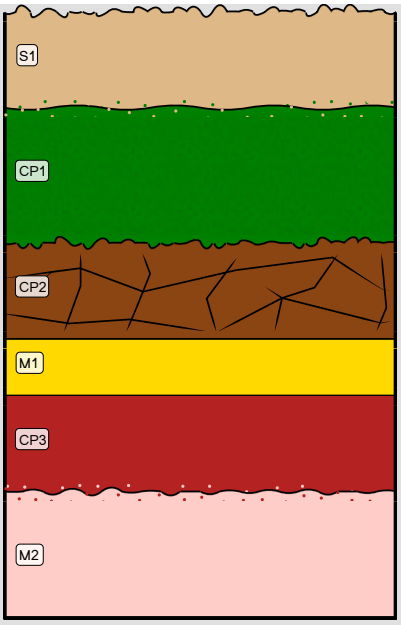


Fig. 6: Stratigraphic representation of the corrosion structure of the belt buckle observed macroscopically under binocular microscope using the MiCorr application with reference to Fig. 5. The characteristics of the strata are only accessible by clicking on the drawing that redirects you to the search tool by stratigraphy representation, credit Materia Viva J.Touzeau.

Sample(s)

Description of sample	None.
Alloy	Cu Alloy
Technology	Unknown
Lab number of sample	None
Sample location	None
Responsible institution	None
Date and aim of sampling	None

Complementary information

None.

Analyses and results

None.

Non invasive analysis

None.

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Metal

The metal is a copper-based alloy.

Microstructure	None
First metal element	Cu
Other metal elements	

Complementary information

None.

Corrosion layers

The metal is covered with thick brown and green corrosion products.

Corrosion form	None
Corrosion type	None

Complementary information

None.

MiCorr stratigraphy(ies) – CS

Synthesis of the binocular / cross-section examination of the corrosion structure

None.

Conclusion

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Usually, belt buckles were made of a copper-based alloy whose surface was entirely covered with gold, but wear due to burial and the development of corrosion led to partial preservation of the gold, only in the incised areas and under the rivet (as it was protected from abrasion). Binocular observation therefore shows these areas where the gold has been preserved and demonstrates that the original surface must have been between CP2 and M1 or between CP3 and CP2 when the gold disappeared.

References

Reference on objet and sample

1. Barrère, M. and Rey-Delqué, M., Archéologie et vie quotidienne au XIIIe-XIVe siècles en Midi-Pyrénées, exhibition catalogue, Toulouse, Musée des Augustins, 1990, p. 208-215.

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