Sample ID and provenance

Sample ID: SP58_Jor

Lithology: Chert

Collection: LusoLit

Outcrop: Jordana

Unit/facies: Upper Jurassic

Thinsection: Yes

Macroscopic description

- COLOR

The color distribution is Mix diffuse. Main colors are gray (2.5Y 6/1 and 10YR 5/1) and light brownish gray (10YR 6/2).

- FABRIC

The nodules of the sample have varying characteristics: 1) luster ranges from Shiny to Medium; 2) the translucency varies from Opaque to Translucent (very restricted facies); 3) the feel can be Smooth and Semi-smooth. The grain is fine for all chert facies in the sample. The structure is Uneven, with a Gradual and Abrupt variation. Patterns are Shaded, Spots (50-99%) and Lines (1-49%). Spots are Broad mottling, Speckling and Flecks, with an Uneven distribution. Lines are Horizontal Bands of Solid type.

- INCLUSIONS AND FOSSIL CONTENT

Oxide grain concentrations seem to be present, although they are uncommon.

Tiny, shiny minerals are present in the cortex and in the chert, and can be seen by naked eye.

There is the presence of circular silicifications, some very dark, which may be related to the presence of oxides.

Fossil content is very frequent and varied - unidentifiable fossils can range from small to medium, white to yellow.

- CORTEX

Whenever present between the chert and the encasing rock, the cortex is Thin and with a Sharp transition. Sometimes the transition between the chert and the encasing rock is Abrupt without any alteration surface. The nodules range from small to large and are circular or irregular. When tested with dilute hydrochloric acid (HCL 10%), the reaction was Strong. The parent rock may be a Limestone.

- QUALITY

  The fracture is Conchoidal and the surface has Fractures and Cleavage plains. The quality ranges from Good to Medium depending on the nodule and the area of the nodule.

- OBSERVATION

  -

Outcrop description

- OUTCROP CHARACTERISTICS

Type of outcrop: Primary

Visibility: Good

Accessibility: Easy

State of site: Bad

- CHERT NODULES/BEDS DESCRIPTION

Type of chert nodule: Nodule

Sample variability: Homogeneous

Frequency: Sporadic

Nodule description: Irregular, around 5cm width

- SHORT DESCRIPTION

The cherts can be found in large boulders in an unused field by recently constructed houses. The outcrop is in dismantlement, although some boulders seem to be *in situ*, half showing from the earth. The nodules are sporadic, irregular, and small with widths of ~5cm.

Petrography analysis form

❖ TEXTURAL COMPOSITION

Texture: Mudstone, Packstone

Microstructure: Massive

❖ COMPOSITION

ORTHOCHEM	Type	%	Description
MiC quartz (gr)	SE	98	-
Chalcedony (fb)	SE	1	Replacing fossils, sometimes with several generations.
MG quartz (gr)	ES	<1	Loose grains in the sample or rarely replacing fossils.
Dolomite	SE	1	Loose grains in the sample.
Muscovite	AC	<1	Located in the parent rock area.

ALLOCHEM	Freq	Description
Oxide grains	Very frequent	-
Oxide patina	Common	-

BIOCLASTS	Freq	Description

Unidentifiable fossils (ghosts)	Common	Fossils which are poorly preserved and cannot be classified.
Bivalve shell fragment	Uncommon	Large, poorly preserved shell fragments.

- OTHER TEXTURAL CHARACTERISTICS

Total porosity (%): <1

Porosity type: -

Other sedimentary structures: -

Observations

- In general, the sample is a mudstone. However, there are some areas where the concentration of fossils is high, and the texture is similar to a packstone. This explains the use of two texture types above.
- The fossil represented in photo SP58_Jor_005 may be a fragment of a larger foraminifer.
- The fossils represented in photo SP58_Jor_009 may be a fragment of a Calpionellid.

Analysis information

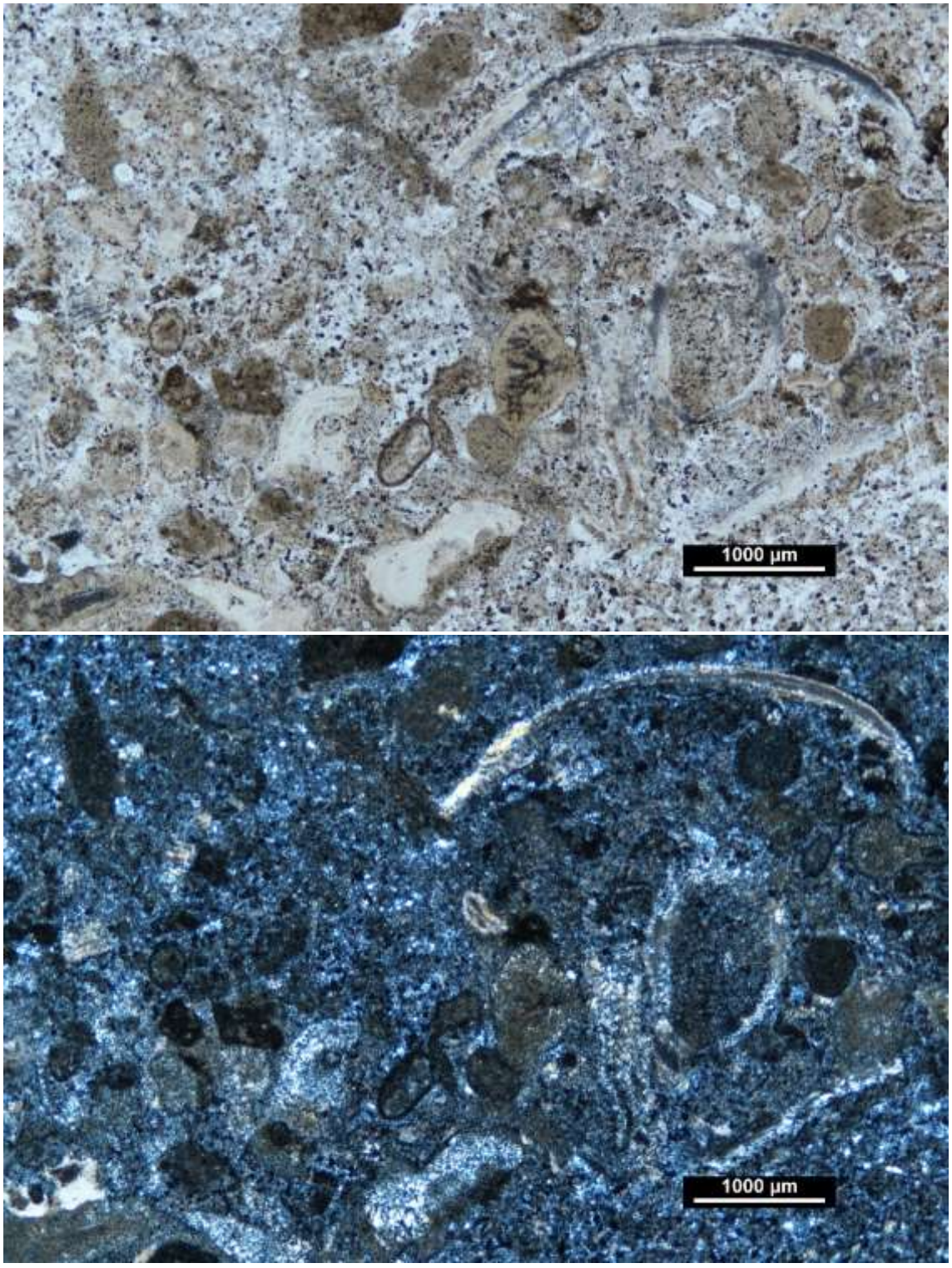
- ANALYST: JB
- DATE: 06.04.2022
- EQUIPMENT: Nikon DS-Ri2

Photos

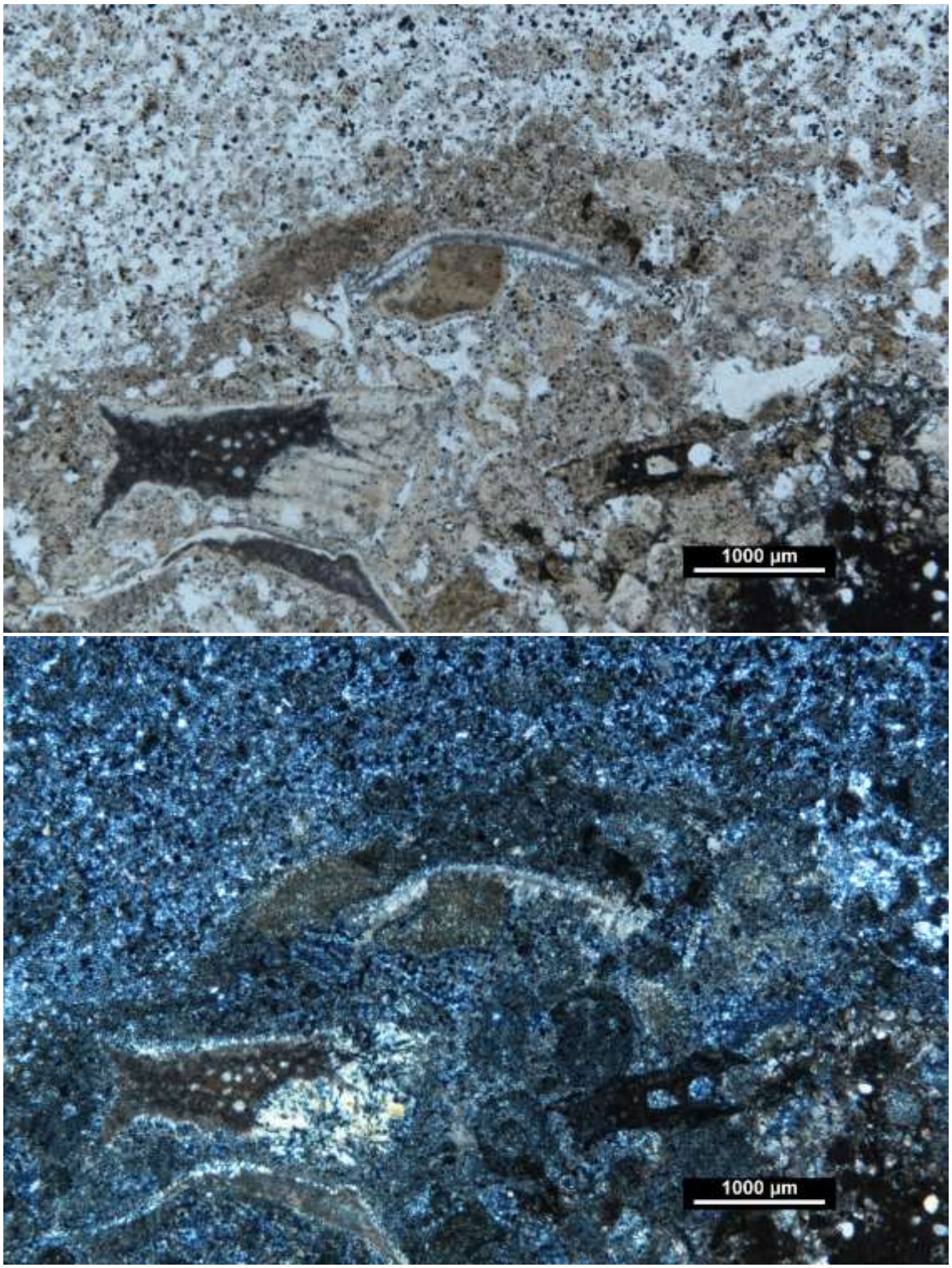
Photo ID	Aug.	Description
SP58_001	2x	General view of the thin section. A large bivalve shell fragment is visible at the top.
SP58_002	2x	General view of the thin section. Many fossils replaced by chalcedony are visible. At the

		bottom, the dark fossil may be a fragment of a larger foraminifer.
SP58_003	2x	Contact between the parent rock with a packstone texture and the chert.
SP58_004	10x	Detail of unidentifiable fossils. They are composed by several generations of quartz: 1) 1st generation at the edge; 2) 2nd generation filling the inside. A large quartz crystal can be seen inside one of the fossils.
SP58_005	4x	Detail of two fossils (unidentifiable above, possible foraminifer below). Both show different generations of replacement by chalcedony.
SP58_006	4x	Detail of two unidentifiable fossils replaced by chalcedony.
SP58_007	4x	Parent rock packstone texture. A large bivalve shell fragment replaced by chalcedony is represented, cut by a fracture filled with quartz.
SP58_008	10x	Detail of an unidentifiable fossil.
SP58_009	10x	Detail of several unidentifiable fossils, replaced by several generations of chalcedony. The fossil at the bottom right may be a poorly preserved Calpionellid.

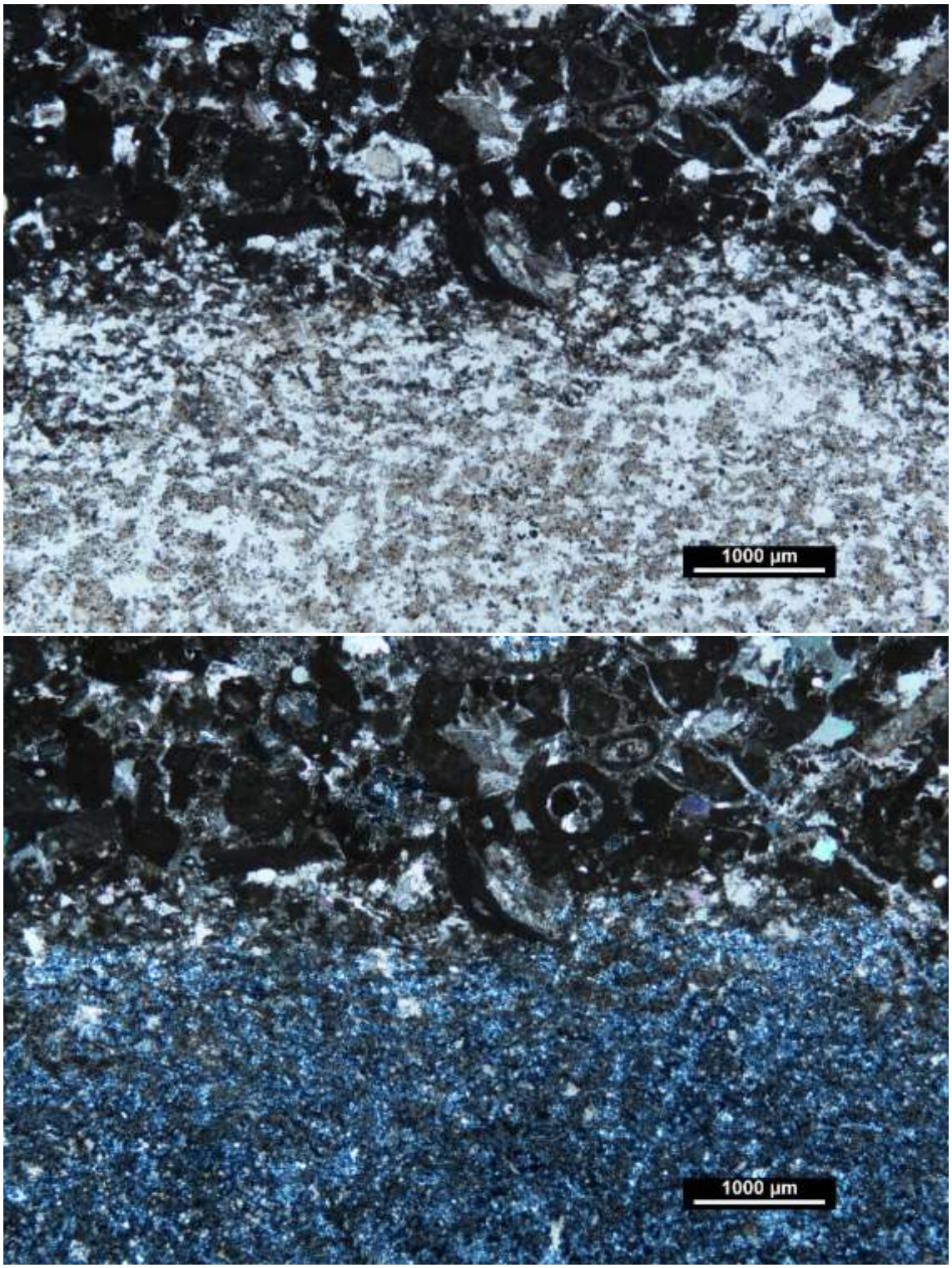
Petrography photos



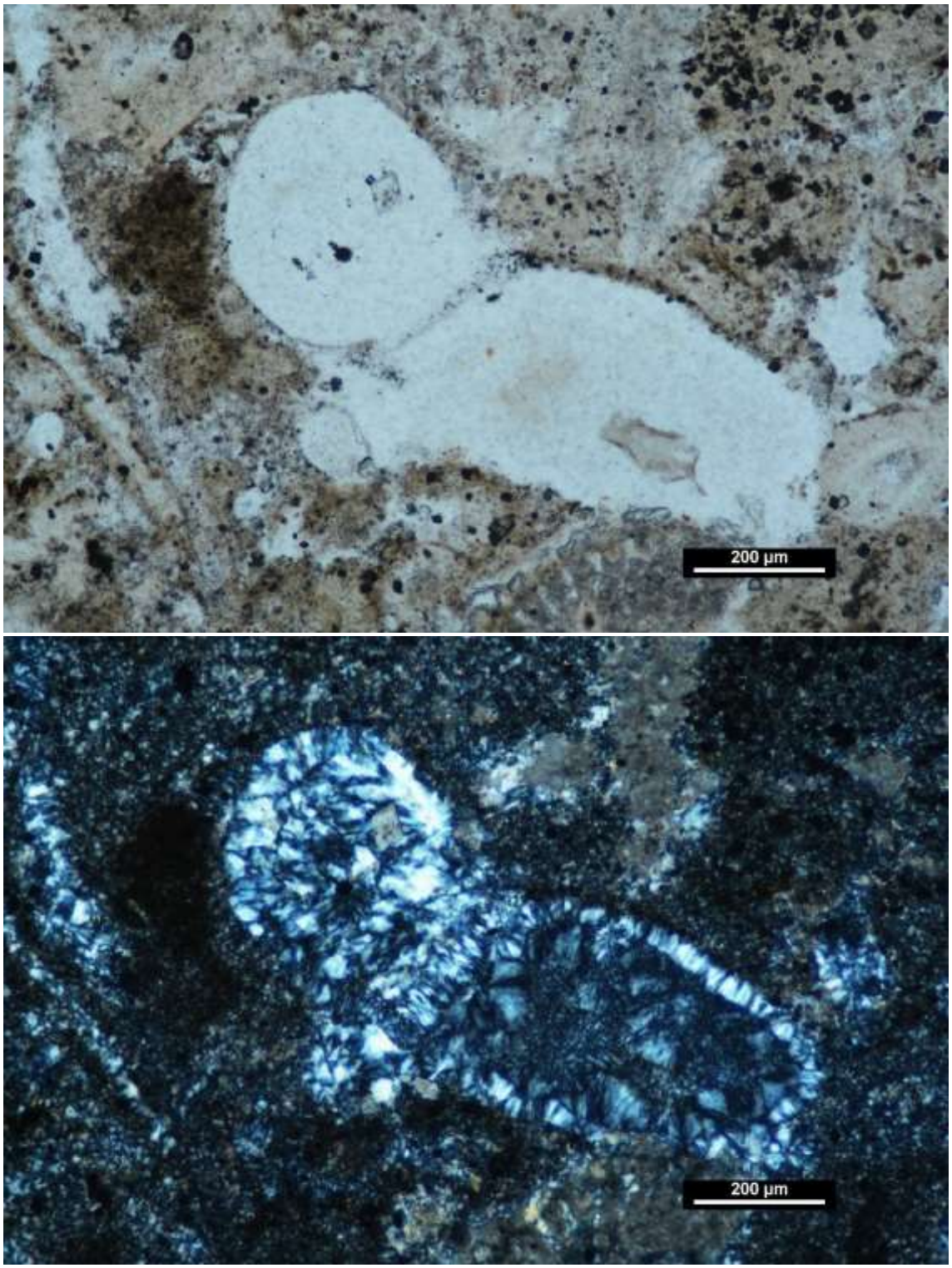
SP58_Jor_001 (PPL and XPL)



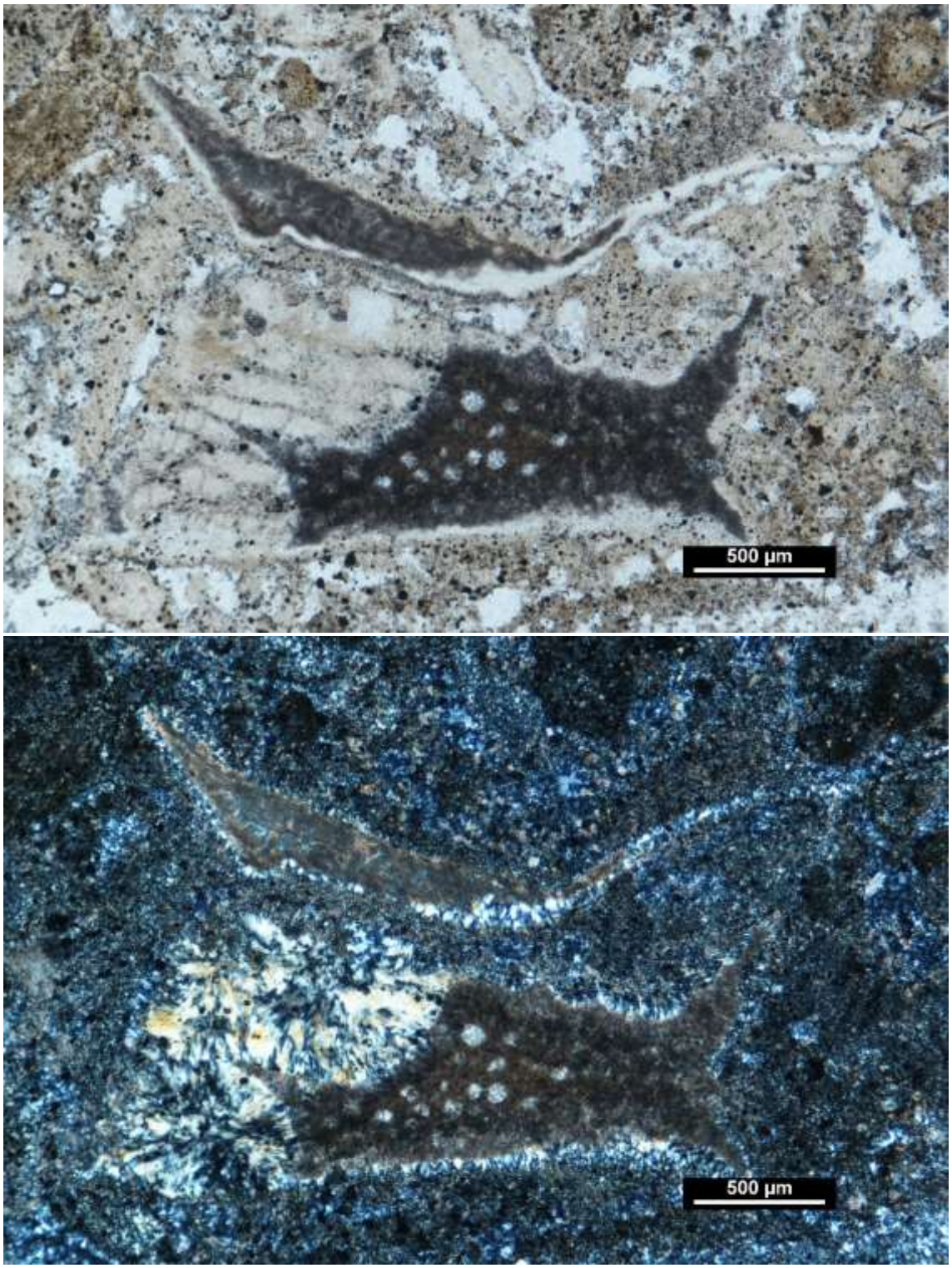
SP58_Jor_002 (PPL and XPL)



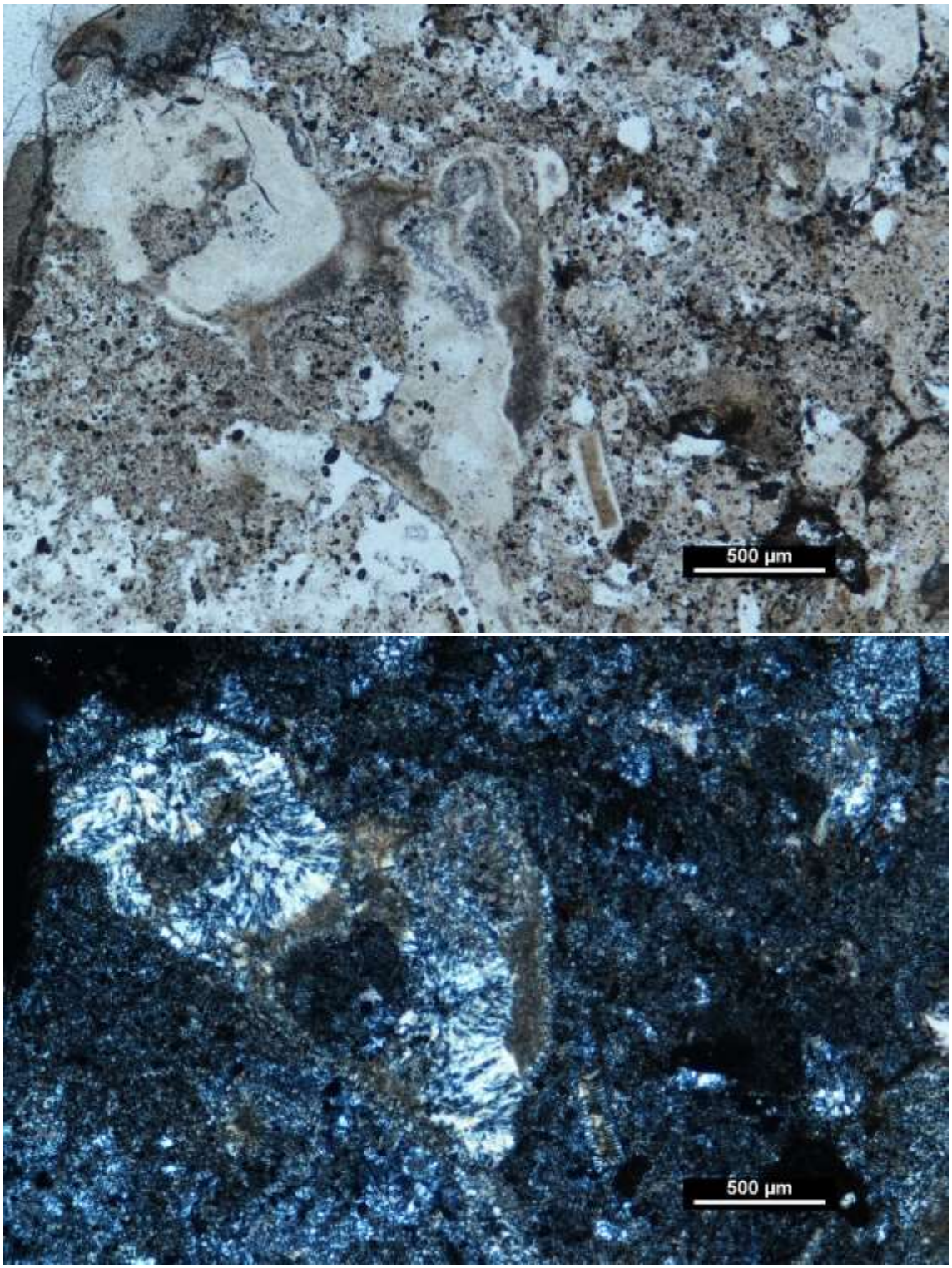
SP58_Jor_003 (PPL and XPL)



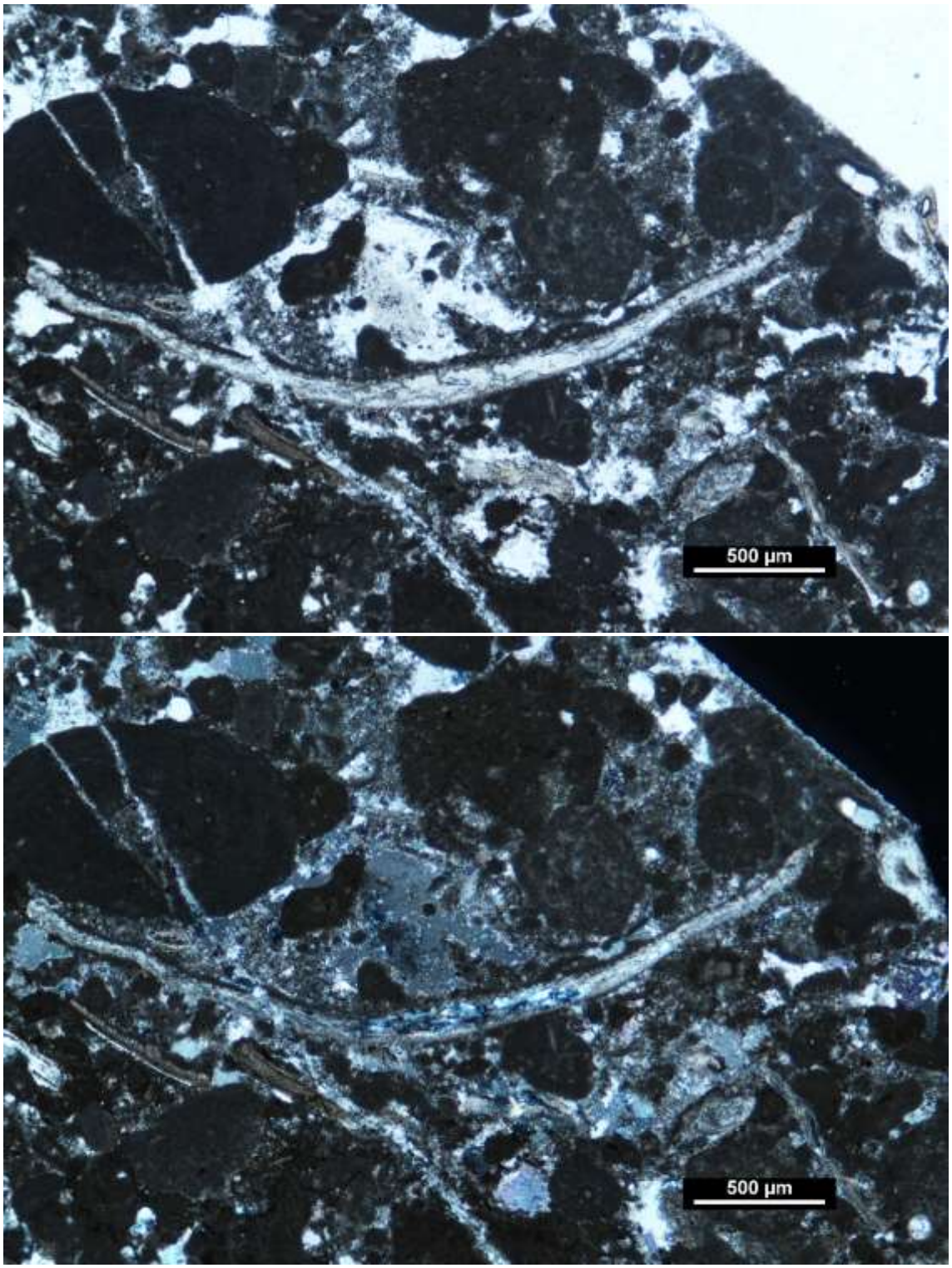
SP58_Jor_004 (PPL and XPL)



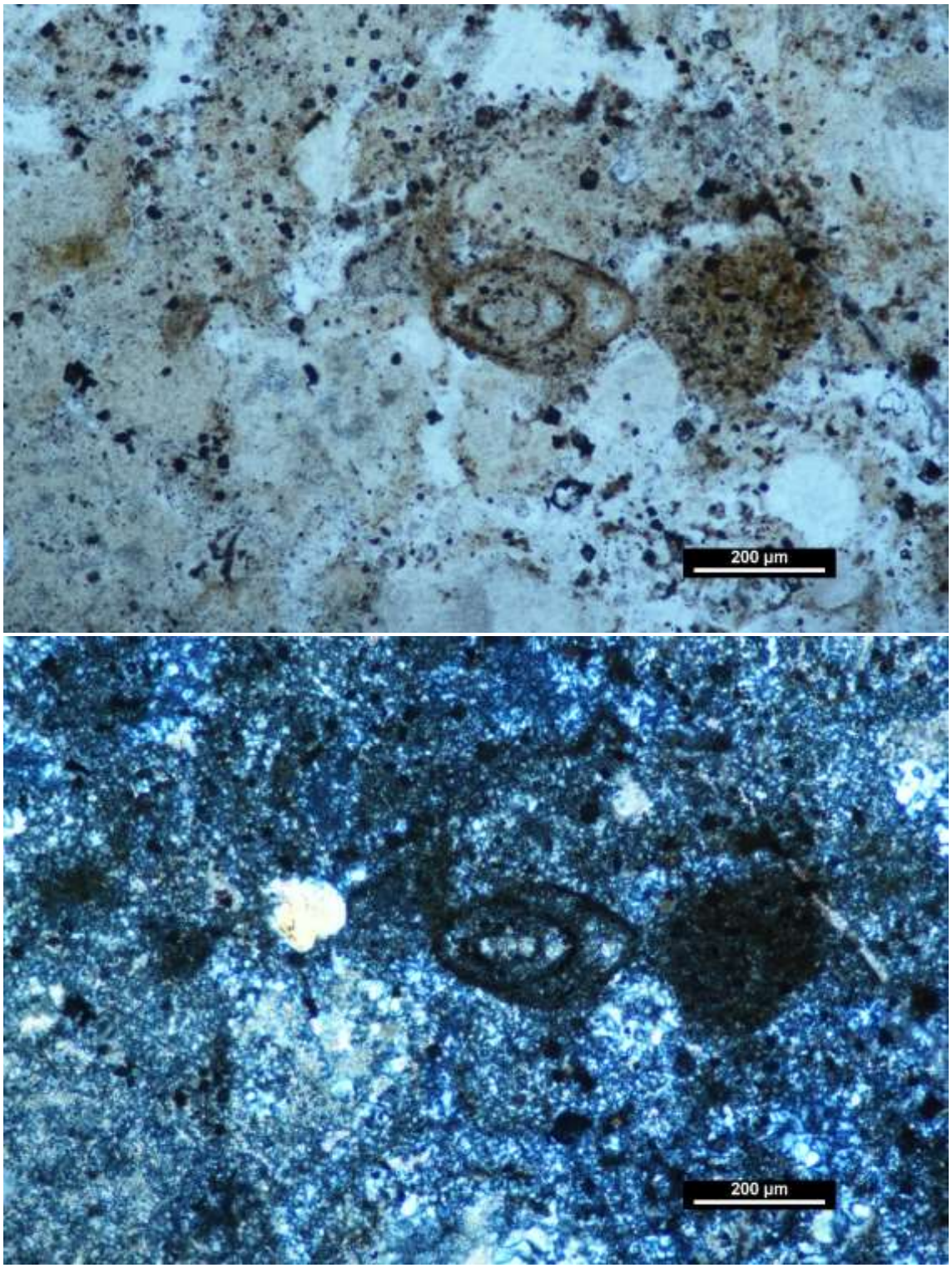
SP58_Jor_005 (PPL and XPL)



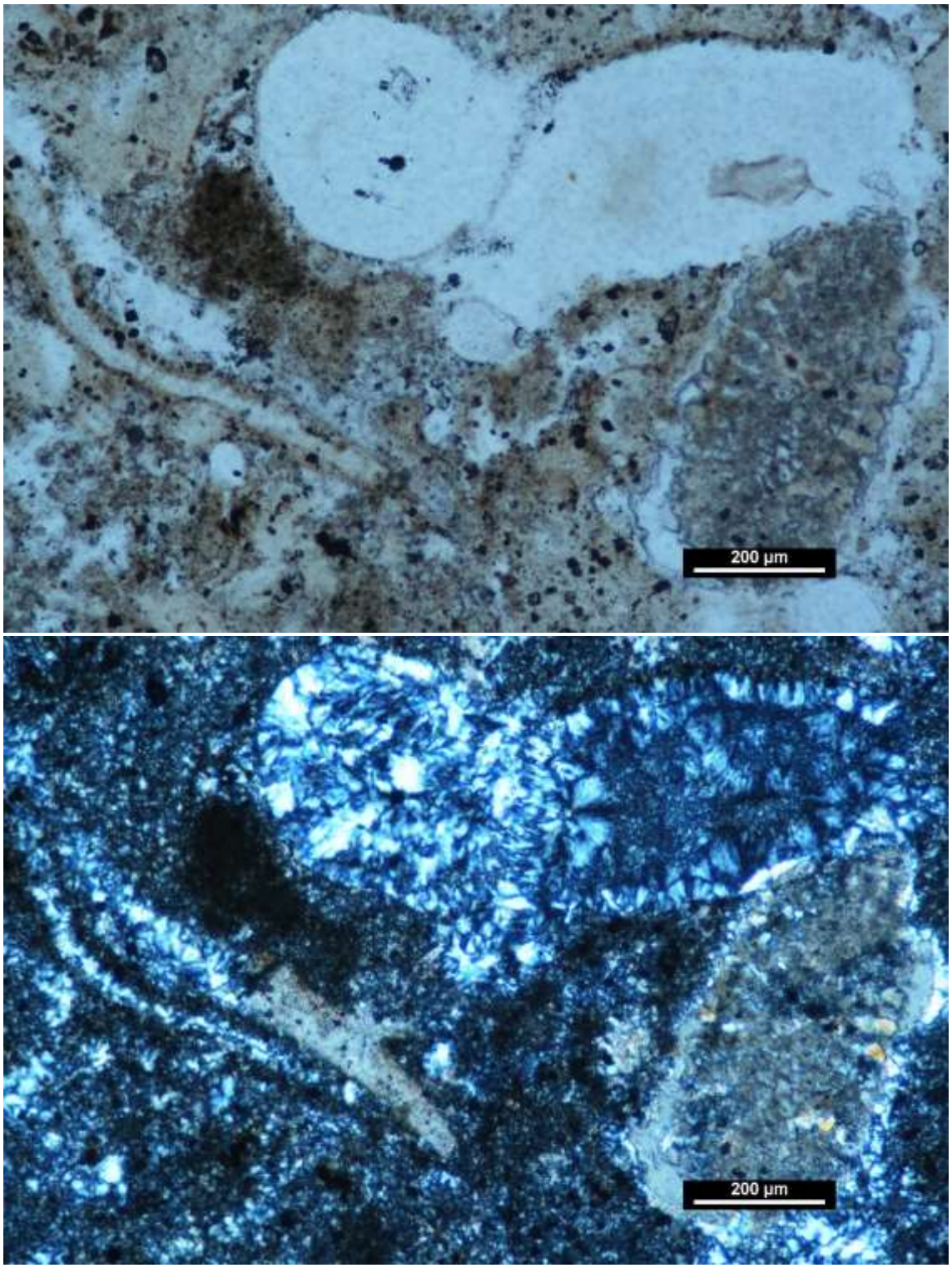
SP58_Jor_006 (PPL and XPL)



SP58_Jor_007 (PPL and XPL)

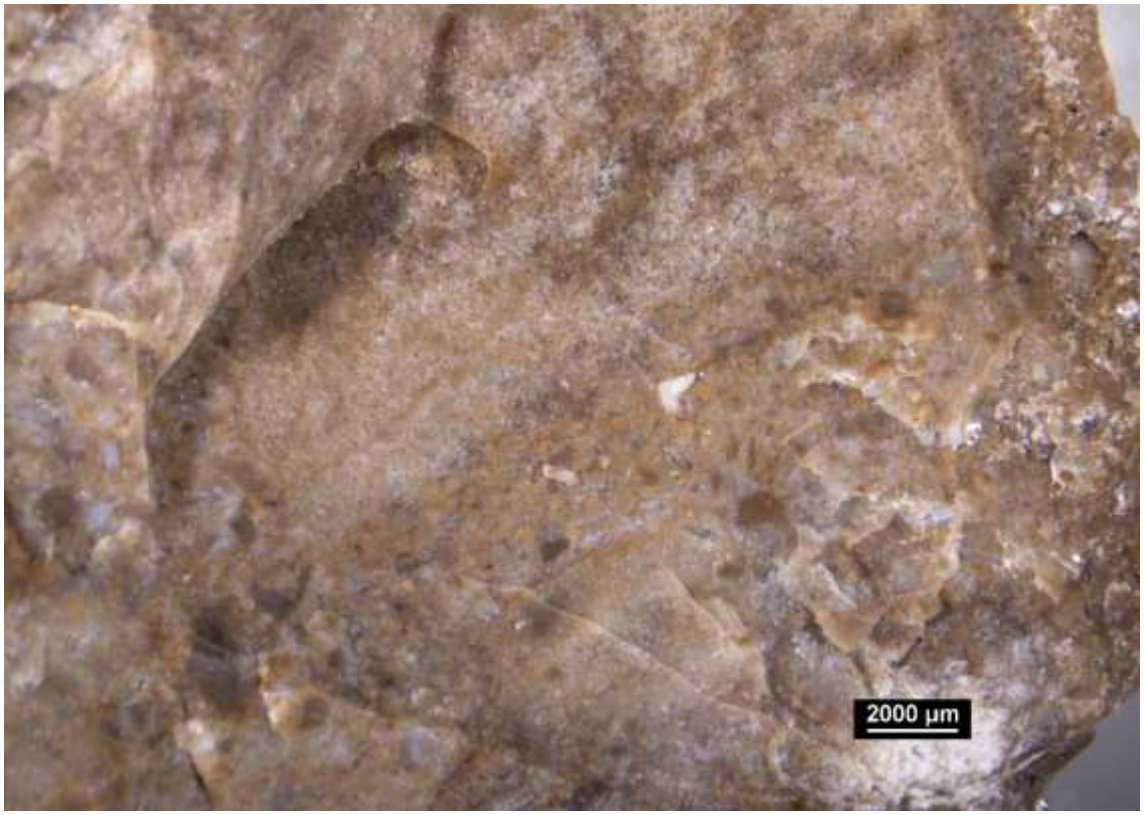


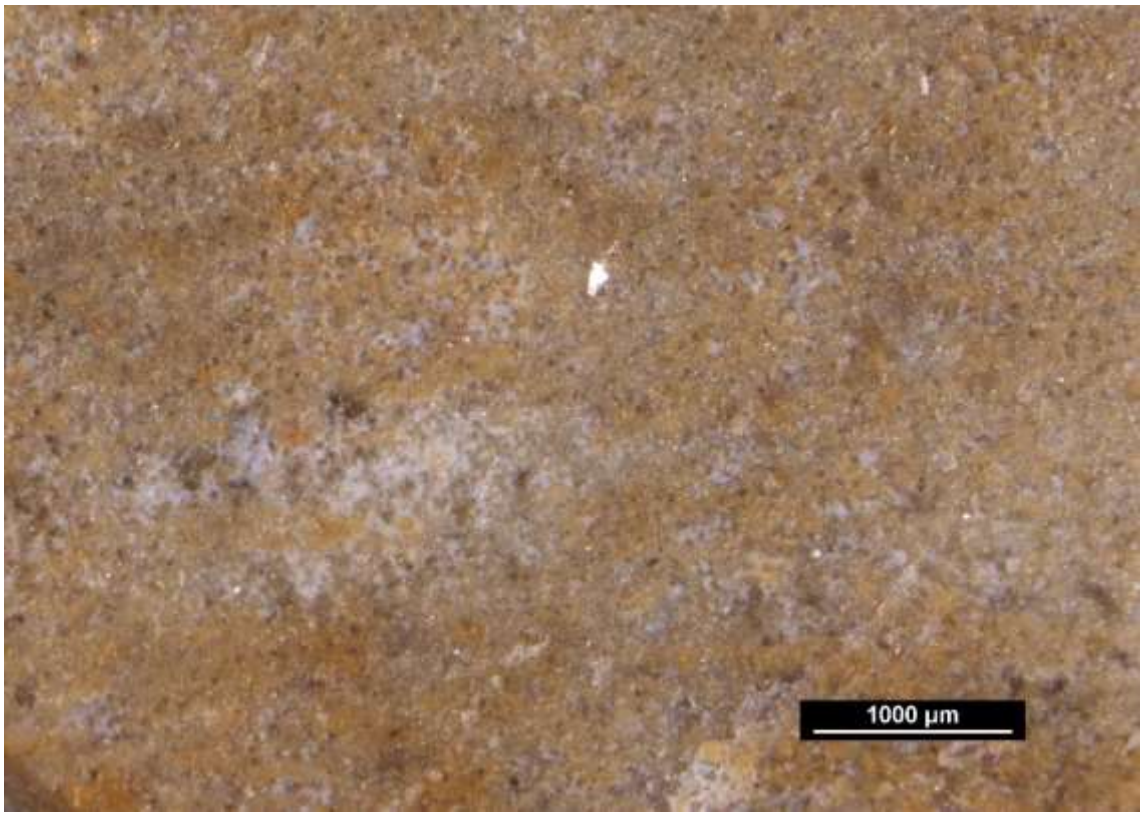
SP58_Jor_008 (PPL and XPL)

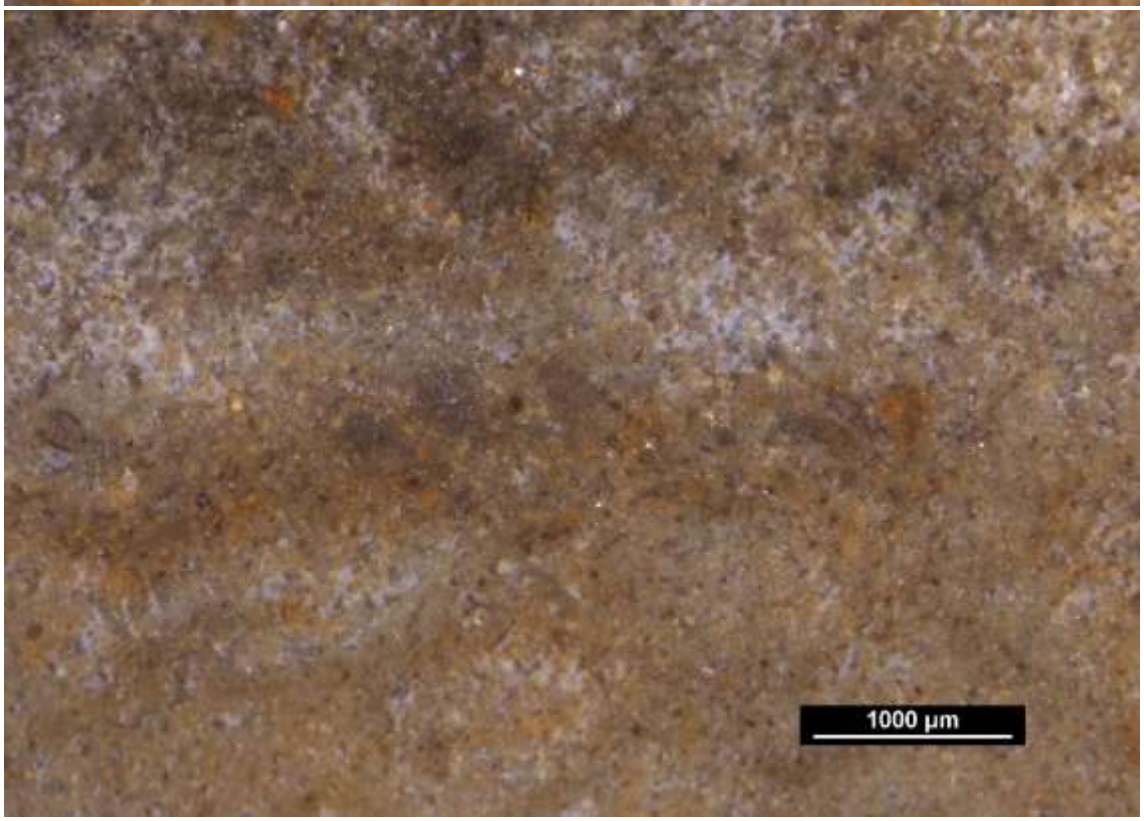


SP58_Jor_009 (PPL and XPL)

Macroscopic photos




1000 µm

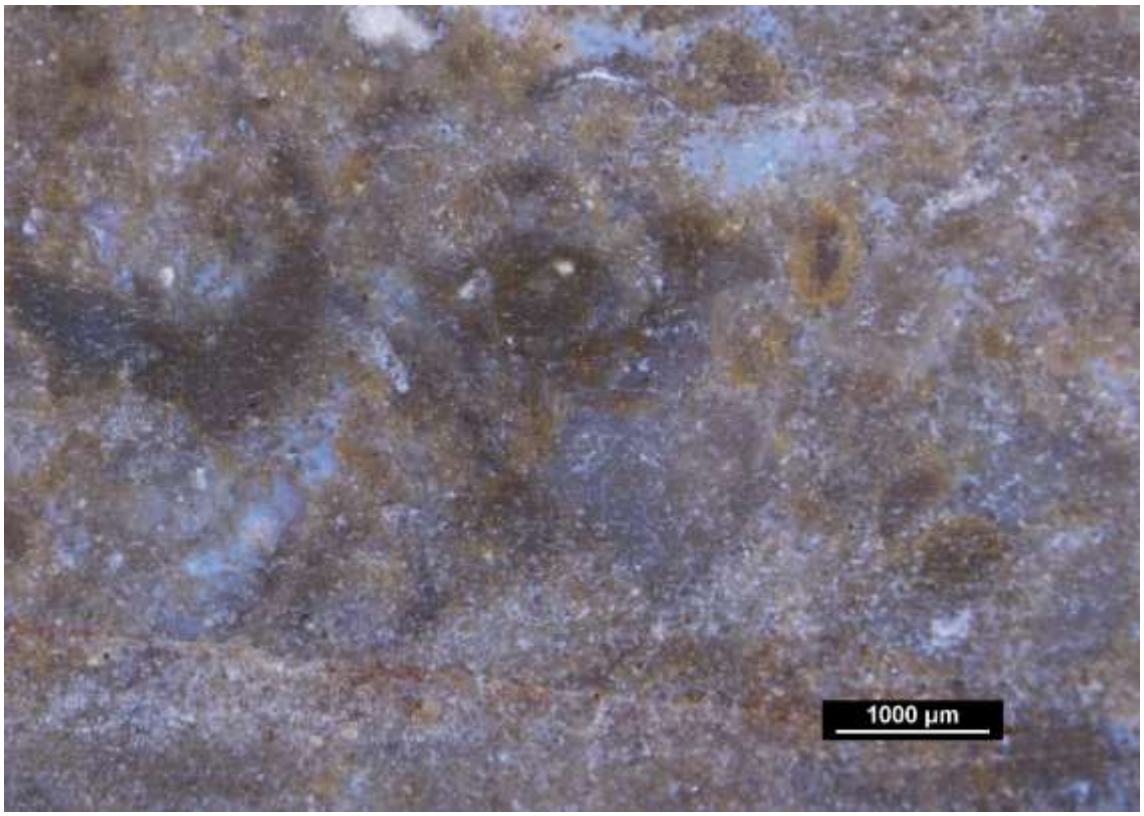

1000 µm

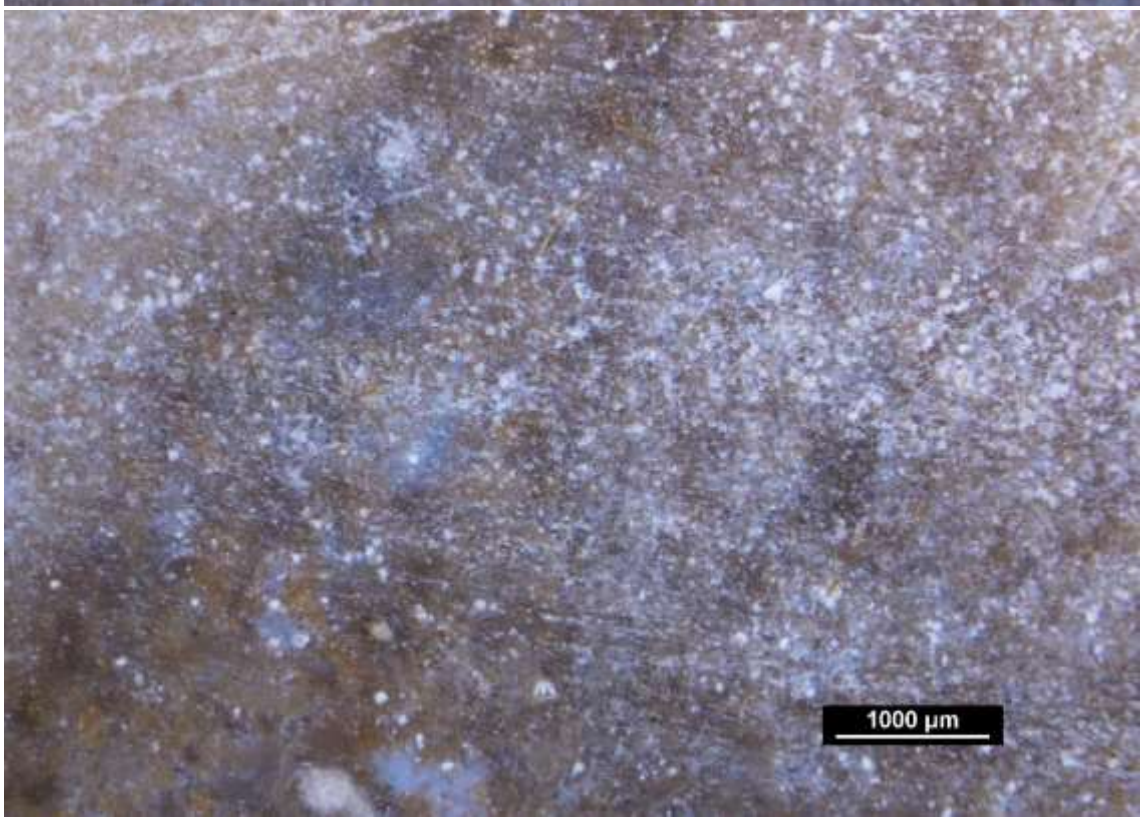

1000 µm


1000 µm


1000 µm


5000 µm


1000 µm


1000 µm