

Capo Caccia (road cut): Urgonian, *Munieria* breccia and associated bauxite at the base of the transgressive Late Cretaceous limestones

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LOCALITY Western border of the road from Tramariglio to Capo Caccia, 300 m southwest of Torre del Bullo, opposite a small parking place.

Age Barremian-Santonian.

LOCATION
Capo Caccia peninsula.

HISTORICAL OUTLINE

Pecorini (1965) described the transition between Early and Late Cretaceous in this locality. On the surface of the Urgonian (dated as upper Barremian or lower Aptian) he observed pockets filled with bauxite. At the base of the Late Cretaceous (dated as Turonian-Senonian) he found a breccia of dark-grey limestone pebbles containing *Munieria baconica*, *Planorbis* and *Valvata*.

The first biostratigraphical analysis of this outcrop was published by Cherchi & Schroeder (1985b). Later on, the series was redescribed by Carannante *et al.* (1995a).

LITHOLOGY AND PALAEOBIOLOGICAL CONTENT

The studied deposits can be subdivided as follows (from bottom to top):

1. Pre-bauxite substratum limestone made up of massive, light-grey to beige bioclastic grainstones of Urgonian facies with slightly opaque, originally aragonite marine cements. Among the bioclasts, corals, hydrozoans, chaetetids, pelecypods, echinoids, benthic foraminifera (Orbitolinidae rich assemblages) and green algae are particularly abundant. The bioclasts show frequently bioeroded margins. In the uppermost intervals, a silty matrix may be present. The dissolution of originally aragonite shells and the occurrence of clear calcite cement are detectable.

The rich microflora and –fauna of the uppermost 10 m of the series contain the following taxa:

Algae (det. F. Barattolo in Cherchi & Schroeder, 1995b):

Heteroporella (?) *paucicalcareo* Conrad, *Praturlonella danilovae* (Radoicic), *Salpingoporella genevensis* (Conrad), *Salpingoporella muehlbergii* (Lorenz).

Foraminifera (Cherchi & Schroeder, 1985b):

Earlandia (?) *conradi* Arnaud-Vanneau, *Glomospira urgoniana* Arnaud-Vanneau, *Rheophax* (?) *giganteus* Arnaud-Vanneau, *Arenobulimina* sp., *Nezzazatinella macovei*

Neagu, *Pseudolituonella gavonensis* Foury, *Choffatella decipiens* Schlumberger, *Praereticulinella cuvillieri* Deloffre & Hamaoui, *Paracoskinolina maynci* (Chevalier), “*Paracoskinolina*” *hispanica* Peybernès, *Paleodictyoconus cuvillieri* Foury, “*Orbitolinopsis*” *flandrini* Moullade, *Orbitolinopsis debelmasi* Moullade & Thieuloy, *Orbitolinopsis subkilianii* Dieni *et al.*, *Montseciella algherensis* Cherchi & Schroeder, *Valserina* sp., *Eygalerina turbinata* Foury, *Cuneolina hensoni* Dalbiez, *Cuneolina* aff. *laurentii* Sartoni & Crescenti, *Nummoloculina* sp., *Quinqueloculina histri* Neagu, *Derventina filipescu* Neagu, *Nautiloculina cretacea* Peybernès, *Nautiloculina bronnimanni* Arnaud-Vanneau & Peybernès, *Trocholina* sp..

2. A fracture network, with superimposed karst phenomena, is observed at the top of the Urganian limestones. Reduced whitish pellettiferous bauxite and angular Urganian fragments fill this cavity system.

3. The Urganian limestones are disconformably overlain by transgressive Upper Cretaceous limestones beginning with a discontinuous level of breccia (up to 1 m thick). The elements of this breccia are mainly blackish angular calcareous clasts and reworked bauxite fragments. The black fragments contain fresh-water gastropods, abundant charophytes (*Munieria grambasti sarda* Gušić and/or thin-shelled miliolids. All these elements are embedded in a mud-silty matrix with larger miliolids and *Dicyclina* sp.. In adjacent areas (Punta del Frara), along the sea coast, black lacustrine-brackish to schizohaline limestones, rich in fresh-water gastropods and charophytes (*Munieria grambasti sarda* Gušić), crop out still preserved in lens-shaped bodies, up to 7 m thick, resting on eroded, dolomitized Jurassic limestones (Bathonian in age) and on their bauxite cover, underlying, through a bioeroded and fissured hard-ground, the Coniacian rudist limestones (Cherchi *et al.*, 1981).

4. Senonian stratified bioclastic, grey to beige or blue-greyish limestones follow. Approx. 5 m above the base of these limestones a sample has yielded the following foraminifera (Cherchi & Schroeder, 1985b):

Flabelllocyclolina laevigata Gendrot, *Martiguesia cyclamminiformis* Gendrot, “*Choffatella*” *rugoretis* Gendrot, *Orbitolinopsis senonicus* Gendrot, *Dictyopsella kiliani* Schlumberger, *Cuneolina conica* d’Orbigny, *Dicyclina schlumbergeri* Munier-Chalmas, *Rotalia reicheli* Hottinger.

On the base of rudist and foraminifera assemblages these limestones result to be Coniacian in age (Philip *et al.*, 1978; Cherchi & Schroeder, 1985b) for about 25 m. In this interval a sharp change in the lithofacies occur (Carannante *et al.*, 1995b): after about 5 m of wackestones, rich in benthic foraminifera (large miliolids, *Dicyclina*, *Cuneolina*), green algae, echinoids, pelecypod fragments and a few corals, grainstones and rare packstones, with a silty matrix, trend to prevail. In these latter, coralline red algae (*Sporolithon*) and bryozoans can be episodically very abundant. The following Santonian limestones are made up essentially of bioclastic grainstones and locally show cross lamination. Echinoid fragments and benthic foraminifera (which still include very large miliolids and *Lamarmorella sarda* Cherchi & Schroeder) increase; bryozoans and red algae, which may form small rhodoliths, become dominant while the green algae totally disappear. In the upper part of this sequence, nearly 45 m above the base of the Cretaceous limestones, a level containing very large radiolitids occurs. The rudists, up to 15 cm in diameter, are embedded in a matrix of bioclastic grainstones (rudist floatstones).

Calcarenites situated approx. 20 m above the base of the Late Cretaceous have yielded the following larger foraminifera (Cherchi & Schroeder, 1985b):