A small, but interesting new ammonite fauna from the Western Lessinian Alps (preliminary note)

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ABSTRACT

A short overview is given on a recently discovered ammonite fauna from a neptunic dyke of the western Lessinian Alps. The age is Lower Kimmeridgian to Tithonian. The fauna contains many elements described by Zittel in the last century as well as new elements.

KEY WORDS

Upper Jurassic Ammonites, Kimmeridgian-Tithonian, Northern Italy, Province of Verona.

INTRODUCTION

The studies presented here are dedicated to the memory of R. Piccini and A. Zittel, who described similar ammonites from the Central Appenines and Poland in the last century. The new locality is situated in the vicinity of the commune Sant'Anna d'Alfaede (northern part of the western Lessinian mountains). It will be published in detail, when the collecting, which is still going on, has been finished. The following report is based for part 1 on notes in Italian language provided by A. Benetti to A. Zeiss who translated them and added also some supplements, especially to fig. 1, while part 2 has been prepared by A. Zeiss.

THE SECTION

The locality has been discovered by L. Ambrosio in 1986, who collected a large part of the ammonites and prepared them. Later, further fossils have been collected by us, in honour of the discoverer the locality has been named 'Ambrosi'. The outcrop contains in one bed a very well-preserved ammonite fauna, and also some bivalves, gastropods, belemnites and aptichs. The very good preservation of the ammonites, of which many have still their 'pseudoshells' and which show full-body preservation, is due to the fact that they are imbedded in a micritic limestone.

This micritic limestone is forming a lentil (see fig. 1). Horizontal extension cannot be observed well, as in the eastern side it is passing under the road niveau, while on the other side the section is disturbed (not shown in fig. 1). The lentil has a maximum thickness of 0.85 m, and a minimum of 0.20 m. in the east. The lentil seems to represent a neptonic dyke, but further studies are necessary to give a more precise evidence. It is overlain by a typical Ammonitico Rosso Facies (4.40 m) and Biancone (more than 2 m). In this part of the section only bad-preserved ammonites (not determinable), rare belemnites and aptychi, very rare bivalves and brachiopods (with two species of Pygope and Glossothyris bouei) have been found.

The Ammonitico Rosso contains in the lowermost bed nodules of manganese and stromatolites, while the uppermost bed is built up by typical nodular facies of red...
and white colour; this upper bed is separated from the middle part consists of yellow to reddish limestones. As the exact position of the fossils mentioned above is not clear, the age of these beds can be assumed as to be of Upper Jurassic age, but Middle Jurassic cannot be excluded. Further studies are necessary to clear up the exact biostratigraphy of these layers.

The bed, in which the ammonites have been found, lies below the Rosso Ammonitico normal-bedded sequence. It is formed by a brick-red micrite with yellowish spots and showing a pseudostratification. To the top some intraclasts and pellets included in the micritic cement can be observed, partly substituted by pyrite or glauconite. Apart from some rare amygdals no other fossil remains have been found in these upper parts of the lentil bed. The middle part consists of compact micrite and contains some geodes decorated with crystals of pure calcite, no fossils are occurring. At the base of the bed, about 5 cm. above the lower boundary, nearly two thirds of the ammonites (30 specimens and 3 gastropods) have been collected. Very small nodules of pyrite (dimension of some mm.) in discontinuous distribution are present, and where such "noduletti" are present in big numbers the ammonites are missing or of very bad preservation. The perfect preservation of the ammonites with their intact pseudoshells (recrystallized shells) indicates that they had not suffered from transport, post-mortem. The interior of the shells, empty, decorated or replenished by crystals of calcite demonstrates that the sedimentation was continuous and the lithification early. Especially at the base of this fossil bed also some other smaller lentils can be separated; they are formed by a mixture of remains of sea-urchin spines, crinoids and some ammonites, all cemented in a micritic matrix together with big crystals of calcite, either pure or turbid. The colour is yellow or greenish and veils of a greenish claystone are visible somewhere. One specimen, which is of high interest, as it has not been collected. Very small nodules of pyrite (dimension of some mm.) in discontinuous distribution are present, and where such "noduletti" are present in big numbers the ammonites are missing or of very bad preservation. The perfect preservation of the ammonites with their intact pseudoshells (recrystallized shells) indicates that they had not suffered from transport, post-mortem. The interior of the shells, empty, decorated or replenished by crystals of calcite demonstrates that the sedimentation was continuous and the lithification early. Especially at the base of this fossil bed also some other smaller lentils can be separated; they are formed by a mixture of remains of sea-urchin spines, crinoids and some ammonites, all cemented in a micritic matrix together with big crystals of calcite, either pure or turbid. The colour is yellow or greenish and veils of a greenish claystone are visible somewhere. One specimen, which is of high interest, as it has not been collected. Some further specimens, especially perisphinctids, come also from this fossil bed, but will be studied later.

In the 'Encrinite' lentils the following species of Lower and Middle Tithonian ammonites (Hybonotum-Fallauxi Zone) have been collected:

- Hybonoticeras (Hybonoticeras) sp. n. (trophephonotum-jaubarti group) (Pl. 1 Fig. 28-29)
- Hybonoticeras (Hybonotella) n. sp., cf. gracillimum Hoelder (Pl. 1 Fig. 3)
- Taramelliceras n.sp., cf. succedens (Oppel) (Pl. 1 Fig. 36-37).
- Sensiformiceras darwini (Neumayr) (Pl. 1 Fig. 39-40)
- Sensiformiceras birkenmajeri Kutek & Wierzbowski (Pl. 1 Fig. 23-24)
- Taramelliceras (Panastrebites) waageni (Zittel) (Pl. 1 Fig. 6)
- Aspidoceras neoburgense (Oppel) (Pl. 1 Fig. 30)
- Aspidoceras cyclotum (Oppel)
- Aspidoceras leiosoma (Oppel)
- Lytoceras aff. lytyolum (Quenstedt)
- Ptychophylloceras ptycoicium (Oppel)
- Sensiformiceras semiforme (Oppel) (Pl. 1 Fig. 1-2)
- Cystoticeras collegiale (Oppel) (Pl. 1 Fig. 16)
- Sensiformiceras fallauxi (Oppel) (Pl. 1 Fig. 27).

In the 'Encrinite' lentils the following species of Lower and Middle Tithonian age (Hybonotum to Fallauxi Zone) have been collected:

- Hybonoticeras mundulatum (Oppel) (Pl. 1 Fig. 31)
- Hybonoticeras mundulatum tristriatum Hoelder (Pl. 1 Fig. 38)
- Simocamnseroceras aff. adversum (Oppel) (Pl. 1 Fig. 4-5)
- Sensiformiceras fallauxi (Oppel) (Pl. 1 Fig. 23-26)
- Richterella richteri (Oppel) (Pl. 1 Fig. 17-18)
- Richterella (?) sp. (Pl. 1 Fig. 19-20)
- Glocbiceras tenuiferum (Oppel) (Pl. 1 Fig. 32-33)
- Pseudolissoceras sp. (Oppel) (Pl. 1 Fig. 31)
- Ptychophylloceras ptycoicium (Oppel)
- Cystoticeras collegiale (Oppel)
- Pseudolissoceras sp. (Oppel) (Pl. 1 Fig. 9-10)
- Pseudolissoceras aff. serrum (Oppel) (Pl. 1 Fig. 34-35)
- Aculoides rivicincincte (Zeuschner)
- Sensiformiceras birkenmajeri Kutek & Wierzbowski

Some further specimens, especially perisphinctids, come also from this fossil bed, but will be studied later. One specimen, which is of high interest, as it has not been found in Italy (except Sicily) until now should be mentioned here separately:

Sutneria platynota (Reinecke), a very well preserved typical & specimen in the collection of Attilio Benetti in Cam poisolano, which will be studied later in detail with the other specimens of Sutneria (Fig. 2).

The AMMONITE FAUNA

In the micrites of the Ammonite bed the following species could be determined:

a) Lower Kimmeridgian ammonites (Platynota-Divisum Zone)

- Glocbiceras fusul (Oppel) (Pl. 1 Fig. 7-8 and 21-22)
- Sutneria sp. juv., cf. platynota (Reinecke) (Pl. 1 Fig. 14-15)
- Nebrodites macerrimus (Quenstedt) (Pl. 1 Fig. 13)

b) Middle Kimmeridgian Ammonites (Acanthicun-Eudosum Zone)

- Sutneria aff. lorioli Zeiss (Pl. 1 Fig. 11-12)
This reminds of another species, *Semiformiceras darwini* (Neumayr), which apparently has not been found again in Italy since its first description from the "Sette Comuni" in 1873.

There seems to be not much difference in the faunal composition of the two facies of the ammonite bed; mainly we have to state that in the micritic facies Kimmeridgian and Tithonian ammonites are present, while the "Enrinite" has delivered until now only Tithonian ones; but Lower Bajocian genera *Stephanoceras* and *Emictia*, ca. 1.10-1.15 m above the neptunite dyke, - on the other hand one of the authors (A.B.) collected an ammonite only 0.30 cm above the lentil which is very similar to the Lower Tithonian *Doropolostitides tripliatacus*. As already mentioned above further studies are necessary to clear up the detailed stratigraphy of the beds here included in the Rosso Ammonitico formation. It should be added finally that the so-called "Calcaria a Skirroceras del Capirello" do not much differ in lithofacies from the Rosso Ammonitico.

**REFERENCES**


Plate 1

Fig. 1-2: Semicolaris semiornata (Oppel), ML.
Fig. 3: Hybonotoceras sp. nov., cf. gracilimum Hoelder, E.
Fig. 4-5: Simoxomoceras adversum (Oppel), 1,5 x, E.
Fig. 6: Tanameliceras (Parasphenites) usagilis (Zitted, ML.
Fig. 7-8: Glochiceras fialar (Oppel), ML.
Fig. 9-10: Pandinichnus f. steinmanni (Haupt) 1,5 x, E.
Fig. 11-12: Suteria aff. horali Zeiss, ML.
Fig. 13: Neoboriles macrorhinos (Quensel), ML.
Fig. 14-15: Suteria sp. (gular/pleurostern-group), 2x, ML.
Fig. 16: Cytiosiceras collegiale (Oppel), ML.
Fig. 17-18: Richterella richteri (Oppel), E.
Fig. 19-20: Richterella (t) sp., 1,5 x, E.
Fig. 21-22: Glochiceras fialar (Oppel), ML.
Fig. 23-24: Semicolaris barkeri Kutek & Wierzbowski, ML.
Fig. 25-26: Semicolaris fallax (Oppel), E.
Fig. 27: Semicolaris fallax (Oppel), ML.
Fig. 28-29: Hybonotoceras nov. sp. (parapelmognathus-group), ML.
Fig. 30: Aspidoceras neoburgense (Oppel), ML.
Fig. 31: Hybonotoceras (Hybonotella) mandshurum (Oppel), E.
Fig. 32-33: Lytoceras aff. municipale (Oppel), 1,5 x, ML.
Fig. 34-35: Phylioceras aff. tener (Oppel), E.
Fig. 36-37: Tanameliceras n. sp., cf. succedens (Oppel), ML.
Fig. 38: Hybonotoceras mandshurum ziriautum Hoelder, 1,5 x, E.
Fig. 39-40: Semicolaris dunsanyi (Newberry), ML.

(All Figures in natural size, if not otherwise indicated: ML = Micritic layer, E = ‘Encrinite’)