

# OCCURRENCE OF *LYCHNOTHYRIS* VÖRÖS, 1983 AND *HESPERITHYRIS* DUBAR, 1942 (LIASSIC BRACHIOPODS) IN SALZKAMMERGUT (UPPER AUSTRIA)

## EIN VORKOMMEN VON *LYCHNOTHYRIS* VÖRÖS, 1983 UND *HESPERITHYRIS* DUBAR, 1942 (LIASSISCHE BRACHIOPODEN) IM OBERÖSTERREICHISCHEN SALZKAMMERGUT

Miloš Siblík

### ABSTRACT

Old literary data were revised and the occurrence of *Lychnothyris rotzoana* (Schauroth) and *Hesperithyris* ex gr. *renierii* (Catullo) was proved and documented. Both species are southern (Mediterranean) elements, unknown from the Northern Calcareous Alps except in the vicinity of Hallstatt.

### ZUSAMMENFASSUNG

Alte Literaturdaten über das Vorkommen der mittelliassischen Brachiopoden-Arten *Lychnothyris rotzoana* (Schauroth) und *Hesperithyris* ex gr. *renierii* (Catullo) am Hallstätter Salzberg, die typisch für die mediterrane Faunenprovinz sind, wurden überprüft und konnten bestätigt werden. Bisher ist kein weiteres Vorkommen dieser Brachiopoden-Taxa in den Nördlichen Kalkalpen bekannt.

### I. INTRODUCTION

During the revisional study of the Jurassic brachiopod fauna of the Hallstatt - Dachstein area, I found very surprising information in a short note by Zittel (1877) and later in a detailed paper by Spengler on the Plassen and the Salzberg (1919). They both reported on the occurrence of two rare terebratulid species *Terebratula Renierii* and *Terebratula Rotzoana* in the vicinity of Hallstatt. Spengler (1919) localized their occurrences in red limestones and marls at the locality "Zwischen den Kögeln" ("zwischen Sommeraukogel und Steinbergkogel") (1919, p. 355), and that of *Terebratula Renierii* also at the SE bottom of the Plassen (p. 377). Both mentioned that the species are very characteristic Middle Liassic brachiopods of clearly southern affinity, known from the "graue Kalke von Südtirol", and Zittel's and Spengler's faunal lists are the only records of these 2 species from the territory of the Northern Calcareous Alps. They have not been discovered there since, and they also have not been found during our recent several years of collecting in the Dachstein - Plassen area. Their occurrence is limited to Southern Alps, Apennines, Sicily, Hungary and ?Portugal, *Hesperithyris* ex gr. *renierii* and other costate terebratulids are known also from Morocco (Dubar, 1942).

This contribution is thus based on the museum material only. During my thorough search of material which was once at Spengler's disposal, 8 specimens of both species were tracked down in the collections of the Geologische Bundesanstalt (coll. Spengler, 1918) and in the Naturhistorisches Museum (coll. Kittl, 1903), both in Vienna. The specimens are not very well preserved and some of them are partially damaged. They are internal moulds with remains of shell, and are isolated from the marly limestone.

Zittel (1877), who was the first to report on both of these terebratulids from Hallstatt (he introduced *Terebratula renierii* under its synonymic (?) name "*fimbriaeformis*", however), recognized correctly based on the Hallstatt material the Middle Liassic age of both species. They had been earlier considered as Middle Jurassic forms (e.g. by Benecke, 1866). The same localities in the Hallstatt vicinity, where "*Renierii*" and "*Rotzoana*" were found, yielded, according to Spengler (1919), another characteristic species "*Terebratula (Pygope) Erbaensis* Suess". This terebratulid [correctly *Securithyris adnethensis* (Suess)] is also well known from the Southern Alps and is a typical fossil of the Middle Liassic - Pliensbachian. It occurs at various localities in Austria too (Adnet, Kratzalpe, Schafberg, Steinplatte etc.).

RNDr. Miloš Siblík, Institute of Geology, Academy of Sciences of the Czech Republic, Rozvojová 135, 165 00 Praha 6 – Suchbátka (e-mail: siblik@gli.cas.cz)

## II. PALAEOONTOLOGICAL DESCRIPTION

### ***Lychnothyris* Vörös, 1983**

(type-species: *Terebratula Rotzoana* Schauroth, 1865)

*Lychnothyris rotzoana* (Schauroth, 1865)

(Fig. A)

1865 *Terebratula Rotzoana* n., n. sp. - Schauroth, p. 125, Pl. 2, Fig. 6.

1890 *Terebratula Rotzoana* Schauroth - Tausch, p. 5, Pl. 2, Figs. 7-8, 10 (cum syn.).

1983 *Lychnothyris rotzoana* (Schauroth) - Vörös, Figs. 5, 12.

**Material:** 4 specimens. They are deposited in the Naturhistorisches Museum, Vienna (coll. Kittl 1903: 2 specimens from "Sommeraukogel bei Hallstatt") and in the Geologische Bundesanstalt, Vienna (coll. Spengler 1918: 2 specimens labelled "*Terebratula Renieri*" from "Dammhöhe am Plassen"). The figured specimen is the biggest, and has dimensions 35.0 x 28.7 x 23.0 mm.

**Description:** Nothing is to be added to thorough descriptions by Schauroth and Tausch. Our figured specimen has strongly biconvex shell, massive, strongly incurved beak, large elliptical pedicle opening, very low uniplication and concentric ornamentation in the anterior parts of both valves. Other specimens are fragmentary and are not discussed further herein.

**Remarks:** Schauroth's figures do not offer an adequate image of the original specimen, an anterior view is missing. According to Schauroth (1865), *Terebratula Rotzoana* differs from *Terebratula fimbriaeformis* (= *renierii*) only in smooth valves, and could be thus considered its smooth variant. Transition variants are missing according to Schauroth, but Tausch ascertained such variants later in his larger material (1890, Pl. 3, Figs. 1-2). Vörös (1983) established a new genus *Lychnothyris* for *Terebratula Rotzoana* Schauroth and considered *Hesperothyris* Dubar the only genus closely connected with it. According to him, most of external and internal features of the mentioned genera are similar, the only difference is a strong plication in *Hesperothyris*, while *Lychnothyris* is smooth. He reported (1997) both „*renierii*“ and „*rotzoana*“ also from the Carixian and Domerian of the Bakony Mts. in Hungary.

### ***Hesperithyris* Dubar, 1942**

(type-species *Terebratula renierii* var. *sinuosa* Dubar, 1942)

*Hesperithyris* ex gr. *renierii* (Catullo, 1827)

(Fig. B)

1827 *Terebratula Renierii* - Catullo, p. 167, Pl. 5, Figs. i, l.

1865 *Terebratula fimbriaeformis* n., n. sp. - Schauroth, p. 124, Pl. 2, Fig. 5.

1880 *Terebratula Renieri* Cat. - Canavari, p. 17, Pl. 2, Figs. 9-10.

1890 *Terebratula Renieri* Cat. - Tausch, p. 7, Pl. 2, Figs. 9, 11-13, Pl. 3, Fig. 3, ?Figs. 1-2 (cum syn.).

1942 *Hesperithyris Renierii* var. *fimbriaeformis* Schaur. - Dubar, p. 81, Pl. 9, Fig. 9.

? 1966 „*Terebratula*“ *renierii* Cat. - Cantaluppi, p. 117, Pl. 17, Fig. 11 (cum syn.).

1997 *Hesperithyris renierii* (Catullo) - Vörös, p. 103, Fig. 23.

**Material:** 4 specimens. They are deposited in the collections of the Naturhistorisches Museum in Vienna (coll. Kittl 1903: 2 specimens from "Sommeraukogel bei Hallstatt"), and in the Geologische Bundesanstalt in Vienna (coll. Spengler 1918: 1 specimen from "Zwischen Sommeraukogel und Steinbergkogel" and 1 specimen from "Dammhöhe am Plassen"). The biggest specimen measures 26.0 x 26.5 x 17.0 mm, the figured one 21.3 x 20.6 x 14.5 mm.

**Description:** All studied specimens from Salzkammergut are slightly damaged, have massive beaks (missing on figured specimen) and 6 – 9 blunt ribs on valves. Detailed descriptions and discussions were given already by Canavari (1880) and Tausch (1890) and nothing is to be added to them.

**Remarks:** Unusually large range of variability of "*renierii*" as shown in literature makes the specific determination of the Austrian material uneasy. Schauroth's "*fimbriaeformis*" would seem to me most appropriate for specimens from Hallstatt, which are smaller and have weaker costation on the anterior parts of valves in comparison with typical, strongly ribbed "*renierii*" reported from some Italian localities and Morocco. However, scanty Austrian material can not help to disentangle this uneasy problem. It seems to me reasonable to treat this Austrian material as *Hesperithyris* ex gr. *renierii* at present. New detailed studies of both external and internal

morphology based on large material of the “*renierii*” group will hopefully clarify relationships among particular species, and will elucidate affinity between *Hesperithyris* Dubar, and *Merophricus* Cooper, and possibly even *Lychnothyris* Vörös. The taxon under consideration bears certain resemblances to several partially costate terebratulids described from the Liassic of Morocco by Dubar (1942), which were later included by Cooper (1983) in his new genus *Merophricus* (type-species *M. dubari* Cooper). Another costate terebratulid had already been described in 1874 by Böckh from the Sinemurian of the Bakony Mts. in Hungary as *Terebratula Fötterlei* n. sp. This species was ascribed recently to ?*Merophricus* by Mancenido in his review of Liassic brachiopods from Greece (1993). However, Mancenido’s specimens come from the Middle Liassic of Greece and show much stronger, incurved beaks and ribs if compared to Böckh’s original specimen (1874, Pl. 3, Fig.3). Mañenido (1993) also discussed briefly some other very variable plicated terebratulid species and genera. In the list of multiplied terebratulids of uncertain affinities “*Terebratula*” *pacheia* Uhlig, 1869 and “*Terebratula*” *synophrys* Uhlig, 1869 should also be included.

#### Explanations to the Figure (Photos by J. Brožek, Prague)

A - above: *Lychnothyris rotzoana* (Schauroth, 1865).

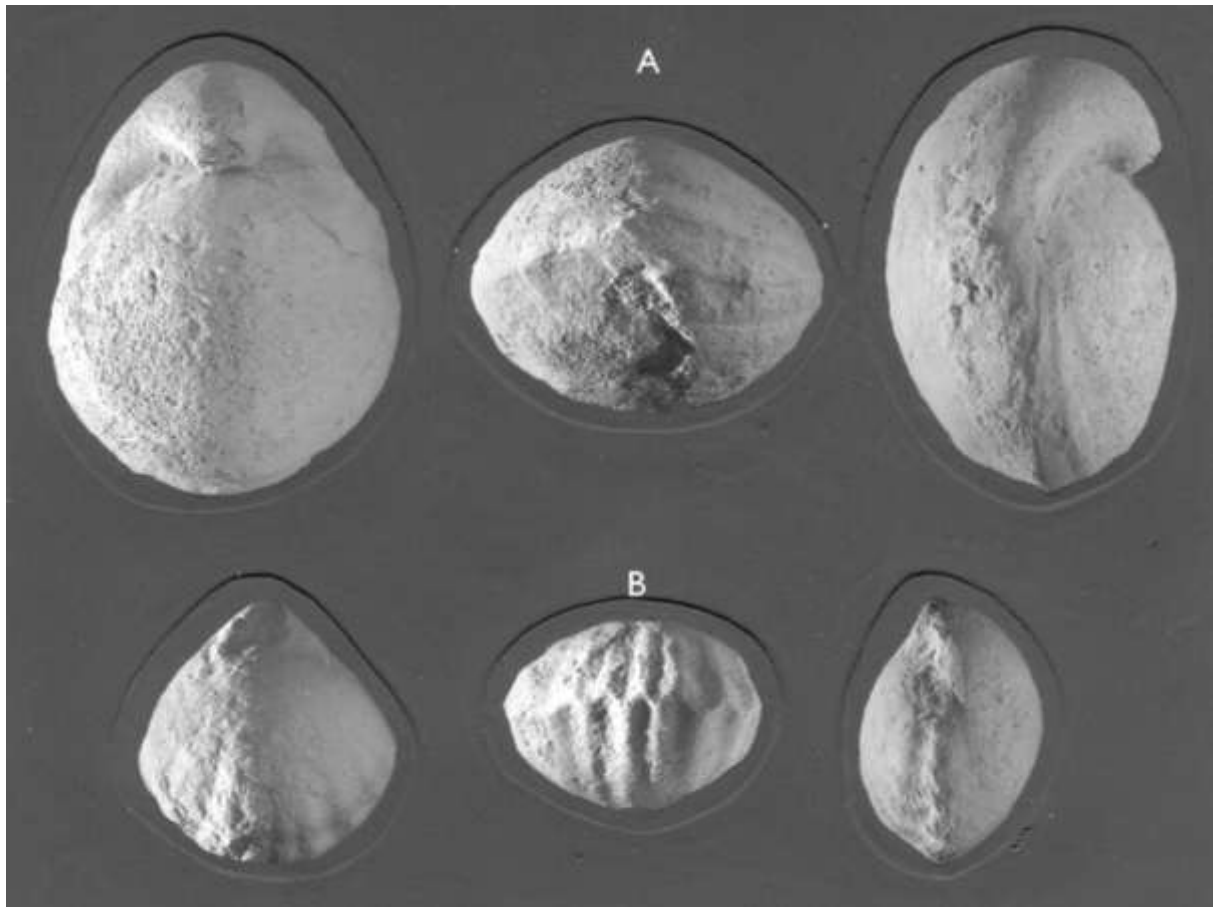
Naturhistorisches Museum, Wien (coll. Kittl 1903 - “Sommeraukogel bei Hallstatt – Lias).

Magnification x 1.5.

B - bottom: *Hesperithyris* ex gr. *renierii* (Catullo, 1827).

Naturhistorisches Museum, Wien (coll. Kittl 1903 - “Sommeraukogel bei Hallstatt, Lias β “).

Magnification x 1..5.



## CONCLUSION

The study confirmed the occurrence of *Lychnothyris rotzoana* and *Hesperithyris ex gr. renierii*, which was reported in the older papers by Zittel (1877) and Spengler (1919) from the vicinity of Hallstatt. Both these taxa are stratigraphically important southern elements, and their local occurrence near Hallstatt is the only one in the domain of the Northern Calcareous Alps. Because the scanty Austrian material does not allow me to report on their external and internal characters in more detail, further comments on mutual relations or generic attributions are not possible at present.

**Acknowledgments:** This contribution was made possible thanks to the grant no. 205/00/0944 of the Grant Agency of the Czech Republic (Research Program of the Institute of Geology, ASCR CEZ: Z3 013 912), and was supported also by the Czech-Austrian project KONTAKT no. 2003-2. Short stay in Vienna was financed by the Austrian Academy of Sciences. Dr. H. Summesberger (Naturhistorisches Museum, Wien) and Dr. F. Stojaspal (Geologische Bundesanstalt, Wien) allowed access to the collections in their care and borrowed specimens for study.

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