

Catalogue of the Triassic and Lower Jurassic Brachiopod Holotypes of Alexander BITTNER in the Collections of the Geological Survey of Austria

MILOŠ SIBLÍK*)

1 Text-Figure, 4 Plates

Brachiopoda
Mesozoic
Eastern Alps
Type Specimens
Paleontological collection

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Katalog der Brachiopoden-Holotypen von Alexander BITTNER aus der Trias und dem Unter-Jura in den Sammlungen der Geologischen Bundesanstalt

Zusammenfassung

Die vorliegende Arbeit ist ein Bestandsverzeichnis der 44 an der Geologischen Bundesanstalt in Wien aufbewahrten Brachiopoden-Holotypen von Alexander BITTNER (1850–1902) aus der Trias und dem Unter-Jura.

Abstract

This paper gives an inventory of the 44 Triassic and Lower Jurassic brachiopod holotypes established by Alexander BITTNER (1850–1902) and currently deposited in the collections of the Geological Survey of Austria, in Vienna.

Introduction

This catalogue is the first part of a planned catalogue of all Mesozoic brachiopod holotypes deposited in the collections of the Geological Survey in Vienna, including the Triassic and Lower Jurassic holotypes of species established by Alexander BITTNER (1888, 1890, 1892, 1894, 1896, 1903). The bulk of BITTNER's type material of the Alpine Mesozoic brachiopods was deposited in Vienna: the greater part in the Geological Survey (Geologische Bundesanstalt) and a smaller part in the paleontological collection of the Natural History Museum. This paper deals with species which are all based on one specimen only; that is, they are holotypes by monotypy, each being a holotypus monotypicus.

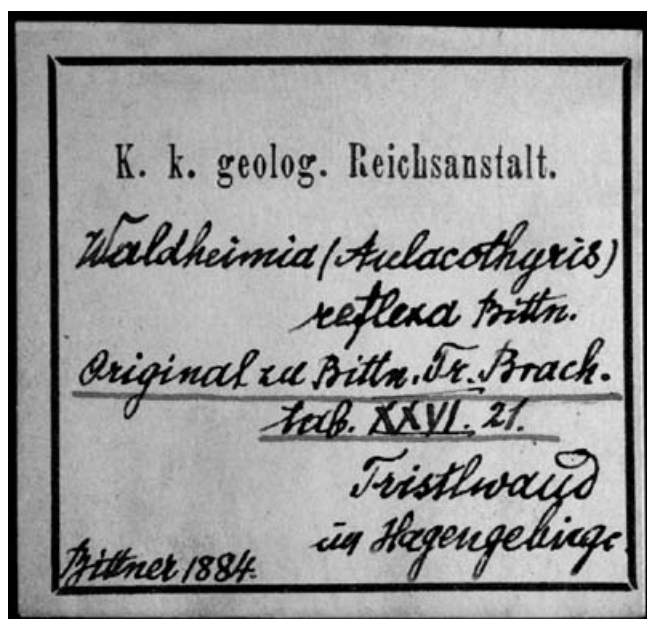
After World War II, the major part of the brachiopod material was identified and the nearly complete original type

collection put in order (SIEBER, 1981). This collection was used as fundamental material for the catalogue of the Austrian Triassic brachiopod fauna (SIBLÍK, 1988, 2001).

The holotypes have been initially divided into Triassic or Lower Jurassic ones and then sorted by the year of publication, within which they have been listed by their inventory numbers. The description has been divided as follows: the original name given in the publication of BITTNER, the reference to the plate and figure in the present catalogue, the inventory number, name of the collector if known, stratigraphic level, type locality, number of plate and figure in the original publication, remarks, and the valid name according to present knowledge (this last was mostly adopted from SIBLÍK, 1988).

Missing holotypes are listed at the end of the catalogue.

*) MILOŠ SIBLÍK: Institute of Geology v. v. i. of the Czech Academy of Sciences, Prague. Na Klauďance 16, CZ-14700 Praha 4, Siblík@gli.cas.cz



Text-Fig. 1.
BITTNER's original handwriting is preserved at some labels in the brachiopod collection.

List of Type Specimens

Triassic

BITTNER, A. (1890): Brachiopoden der alpinen Trias. – Abhandlungen der k. k. Geologischen Reichsanstalt, 14.

Rhynchonella teutonica BITTNER, 1890 (Pl. 1, Fig. 1)

Coll. no.: GBA 1890/002/0026.

Leg.: BITTNER, 1881.

Type level: Middle Triassic.

Type locality: Road from Fantoni to Caili near Recoaro, Italy.

Type figure: BITTNER, A., 1890: p. 49, Pl. 31, Fig. 26.

Remark: Generic attribution by DAGYS, 1974.

***Volirhynchia teutonica* (BITTNER).**

Terebratula laricimontana BITTNER, 1890 (Pl. 1, Fig. 2)

Coll. no.: GBA 1890/002/0031.

Leg.: FUGGER, 1888.

Type level: Middle Triassic, Schreyeralm Beds.

Type locality: Lärcheck near Berchtesgaden, Bavaria, Germany.

Type figure: BITTNER, A., 1890: p. 39, Pl. 33, Fig. 21.

***“Terebratula” laricimontana* BITTNER.**

Rhynchonella productifrons BITTNER, 1890 (Pl. 1, Fig. 3)

Coll. no.: GBA 1890/002/0037.

Type level: Middle Triassic, Schreyeralm Beds.

Type locality: Schreyeralm near Hallstatt, Upper Austria, Austria.

Type figure: BITTNER, A., 1890: p. 41, Pl. 31, Fig. 18.

Remark: Generic attribution by DAGYS, 1974.

***Volirhynchia productifrons* (BITTNER).**

Rhynchonella cimbrica BITTNER, 1890 (Pl. 1, Fig. 4)

Coll. no.: GBA 1890/002/0052.

Leg.: BITTNER, 1881.

Type level: Middle Triassic.

Type locality: Val Asnicar near Recoaro, Italy.

Type figure: BITTNER, A., 1890: p. 48, Pl. 31, Fig. 24.

Remark: The species most probably belongs to *Volirhynchia* DAGYS, 1974.

***“Rhynchonella” cimbrica* BITTNER.**

Thecidium gryphaeatum BITTNER, 1890 (Pl. 1, Fig. 5)

Coll. no.: GBA 1890/002/0082.

Type level: Triassic, San Cassiano Formation.

Type locality: St. Cassian, Italy.

Type figure: BITTNER, A., 1890: p. 68, Pl. 1, Fig. 17.

Remark: Generic attribution obscure.

***“Thecidea” gryphaeata* (BITTNER).**

Spiriferina tyrolensis BITTNER, 1890 (Pl. 1, Fig. 6)

Coll. no.: GBA 1890/002/0089.

Donation: KLIPSTEIN.

Type level: Triassic, San Cassiano Formation.

Type locality: St. Cassian, Italy.

Type figure: BITTNER, A., 1890: p. 75, Pl. 2, Fig. 5.

***“Spiriferina” tyrolensis* BITTNER.**

Spiriferina badiotica BITTNER, 1890 (Pl. 1, Fig. 7)

Coll. no.: GBA 1890/002/0090.

Type level: Triassic, San Cassiano Formation.

Type locality: St. Cassian, Italy.

Type figure: BITTNER, A., 1890: p. 75, Pl. 2, Fig. 3.

***“Spiriferina” badiotica* BITTNER.**

Spiriferina impressula BITTNER, 1890 (Pl. 1, Fig. 8)

Coll. no.: GBA 1890/002/0092.

Type level: Triassic, San Cassiano Formation.

Type locality: St. Cassian, Italy.

Type figure: BITTNER, A., 1890: p. 76, Pl. 40, Fig. 23.

Remark: Generic attribution according to DAGYS, 1974.

***Sinuocosta (?) impressula* (BITTNER).**

***Retzia ladina* BITTNER, 1890**

(Pl. 1, Fig. 9)

Coll. no.: GBA 1890/002/0108.

Type level: Triassic, San Cassiano Formation.

Type locality: St. Cassian, Italy.

Type figure: BITTNER, A., 1890: p. 92, Pl. 3, Fig. 1.

***“Retzia” ladina* BITTNER.**

***Rhynchonella Blaasii* BITTNER, 1890**

(Pl. 2, Fig. 2)

Coll. no.: GBA 1890/002/0120.

Type level: Triassic, San Cassiano Formation.

Type locality: St. Cassian, Italy.

Type figure: BITTNER, A., 1890: p. 104, Pl. 3, Fig. 24.

Remark: Generic attribution according to DAGYS, 1974.

***Veghirhynchia (?) blaasi* (BITTNER).**

***Amphiclina scitula* BITTNER, 1890**

(Pl. 1, Fig. 10)

Coll. no.: GBA 1890/002/0131.

Type level: Triassic.

Type locality: “Falzaregostraße” W of Cortina d’Ampezzo, Italy.

Type figure: BITTNER, A., 1890: p. 119, Pl. 30, Fig. 19.

***Amphiclina scitula* BITTNER.**

***Amphiclina aptera* BITTNER, 1890**

(Pl. 1, Fig. 12)

Coll. no.: GBA 1890/002/0137.

Type level: Triassic.

Type locality: Sela above Podmelec (Podmeuz), SE of Tolmin (Tolmein), Slovenia.

Type figure: BITTNER, A., 1890: p. 122, Pl. 30, Fig. 20.

***Amphiclina aptera* BITTNER.**

***Amphiclina coarctata* BITTNER, 1890**

(Pl. 1, Fig. 11)

Coll. no.: GBA 1890/002/0189.

Leg.: BITTNER, 1887.

Type level: Triassic, *Cardita* Beds.

Type locality: Lieglergraben SE of Gußwerk, Styria, Austria.

Type figure: BITTNER, A., 1890: p. 149, Pl. 30, Fig. 18.

***Amphiclina coarctata* BITTNER.**

***Rhynchonella salinaria* BITTNER, 1890**

(Pl. 2, Fig. 3)

Coll. no.: GBA 1890/002/0239.

Type level: Upper Triassic, Zlambach Beds.

Type locality: Zlambach, Bachwirth, Upper Austria, Austria.

Type figure: BITTNER, A., 1890: p. 169, Pl. 37, Fig. 30.

***“Rhynchonella” salinaria* BITTNER.**

***Waldheimia (Aulacothyris) dualina* BITTNER, 1890**

(Pl. 2, Fig. 1)

Coll. no.: GBA 1890/002/0260.

Type level: Triassic, Hallstatt Limestone, Beds with *Cochloceras fischeri*.

Type locality: Steinbergkogel, Hallstatt, Upper Austria, Austria.

Type figure: BITTNER, A., 1890: p. 200, Pl. 5, Fig. 18.

***Aulacothyris dualina* BITTNER.**

? *Nucleatula styriaca* BITTNER, 1890

(Pl. 2, Fig. 5)

Coll. no.: GBA 1890/002/0271.

Leg.: BITTNER, 1885.

Type level: Triassic, Hallstatt Limestone, “*Subbullatus*” Beds.

Type locality: Bergstein near Landl/Enns, Styria, Austria.

Type figure: BITTNER, A., 1890: p. 210, Pl. 7, Fig. 8.

***Nucleatula styriaca* BITTNER.**

***Terebratula (Propygope) Hagar* BITTNER, 1890**

(Pl. 2, Fig. 4)

Coll. no.: GBA 1890/002/0272/1.

Leg.: BITTNER, 1887.

Type level: Upper Triassic, Hallstatt Limestone.

Type locality: Neun Kögerln, SE of Gußwerk-Mariazell, Styria, Austria.

Type figure: BITTNER, A., 1890: p. 210, Pl. 5, Fig. 24.

Remark: Genoholotype (BITTNER, 1890).

***Propygope hagar* BITTNER.**

***Rhynchonella intermixta* BITTNER, 1890**

(Pl. 2, Fig. 6)

Coll. no.: GBA 1890/002/0290.

Leg.: BITTNER, 1877.

Type level: Upper Triassic.

Type locality: Mühltal, Lower Austria, Austria.

Type figure: BITTNER, A., 1890: p. 225, Pl. 13, Fig. 10.

***Austriellula intermixta* (BITTNER).**

***Rhynchonella Mojsisovicsii* BITTNER, 1890**

(Pl. 2, Fig. 7)

Coll. no.: GBA 1890/002/0292.

Type level: Upper Triassic, Hallstatt Limestone.

Type locality: Steinbergkogel, Hallstatt, Upper Austria, Austria.

Type figure: BITTNER, A., 1890: p. 226, Pl. 13, Fig. 8.

***“Rhynchonella” mojsisovicsi* BITTNER.**

***Amphiclina ambigua* BITTNER, 1890**

(Pl. 2, Fig. 10)

Coll. no.: GBA 1890/002/0316.

Type level: Upper Triassic, “Weisser Crinoidenkalk”.

Type locality: Steinbergkogel, Hallstatt, Upper Austria, Austria.

Type figure: BITTNER, A., 1890: p. 238, Pl. 16, Fig. 20.

***Amphiclina ambigua* BITTNER.**

***Amphiclina unguina* BITTNER, 1890**

(Pl. 2, Fig. 9)

Coll. no.: GBA 1890/002/0317.

Leg.: GEYER.

Type level: Upper Triassic, Hallstatt Limestone.

Type locality: Lieglergraben below Tonion, near Gußwerk, Styria, Austria.

Type figure: BITTNER, A., 1890: p. 238, Pl. 30, Fig. 21.

***Amphiclina unguina* BITTNER.**

***Amphiclinodonta magna* BITTNER, 1890**

(Pl. 3, Fig. 6)

Coll. no.: GBA 1890/002/0322.

Leg.: BITTNER, 1877.

Type level: Upper Triassic.

Type locality: Klausserriegel, Dürrenbach near Waldegg, Piesting Valley, Lower Austria, Austria.

Type figure: BITTNER, A., 1890: p. 242, Pl. 16, Fig. 23.

***Amphiclinodonta magna* BITTNER.**

***Spirigera Cislensis* BITTNER, 1890**

(Pl. 3, Fig. 6)

Coll. no.: GBA 1890/002/0334.

Leg.: VACEK.

Type level: Triassic, "Cisl Dolomite".

Type locality: Monte Cisl, Neumarkt/Etsch (Egna, Trentino), Italy.

Type figure: BITTNER, A., 1890: p. 255, Pl. 29, Fig. 32, 33 (Fig. 33 is the external mould of Fig. 32).

Remark: The original specimen – pedicle valve – was described and figured by POLIFKA erroneously under *Rhynchonella quadriplecta* MÜNST. (1886: p. 604, Pl. 8, Fig. 14). After its further isolation from the rock, the complete specimen with both valves revealed "spirigerid" characters (see notice 2 in: BITTNER, 1890 at the bottom of page 103).

***Tetractinella cislensis* (BITTNER).**

***Terebratula Sturi* var. *juvavica* BITTNER, 1890**

(Pl. 3, Fig. 4)

Coll. no.: GBA 1890/002/0337.

Leg.: BITTNER, 1882.

Type level: Upper Triassic, Dachstein Limestone.

Type locality: Putzenköpfl N of Dürrenberg, Hallein, Salzburg, Austria.

Type figure: BITTNER, A., 1890: p. 257, Pl. 28, Fig. 1.

***"Terebratula" sturi juvavica* BITTNER.**

***Waldheimia (Aulacothyris ?) patricia* BITTNER, 1890**

(Pl. 3, Fig. 3)

Coll. no.: GBA 1890/002/0339.

Leg.: BITTNER, 1884.

Type level: Upper Triassic, Dachstein Limestone.

Type locality: Putzenköpfl N of Dürrenberg, Hallein, Salzburg, Austria.

Type figure: BITTNER, A., 1890, p. 258, Pl. 26, Fig. 20.

***Aulacothyropsis patricia* (BITTNER).**

***Waldheimia (Aulacothyris) reflexa* BITTNER, 1890**

(Pl. 2, Fig. 8)

Coll. no.: GBA 1890/002/0340.

Leg.: BITTNER, 1884.

Type level: Upper Triassic, Dachstein Limestone.

Type locality: Tristlwand, Hagengebirge, Salzburg, Austria.

Type figure: BITTNER, A., 1890: p. 258, Pl. 26, Fig. 21.

Remark: Genoholotype of *Aulacothyropsis* DAGYS, 1959.

***Aulacothyropsis reflexa* (BITTNER).**

? *Waldheimia festiva* BITTNER, 1890

(Pl. 3, Fig. 1)

Coll. no.: GBA 1890/002/0342.

Leg.: BITTNER, 1884.

Type level: Upper Triassic, Dachstein Limestone.

Type locality: Putzenköpfl N of Dürrenberg, Hallein, Salzburg, Austria.

Type figure: BITTNER, A., 1890: p. 259, Pl. 26, Fig. 22.

Remark: The specimen is named ?*Waldheimia (Aulacothyris) festiva* in the explanation to Plate 26. In the description of the species (p. 259) one more specimen is included, coming from Oberseeland (Zgornje Jezersko) in Slovenia. However, it was introduced by BITTNER, 1890: p. 137 as ?*Waldheimia (Aulacothyris) cfr. festiva*.

***Ornatothyrella festiva* (BITTNER).**

***Rhynchonella Lillii* BITTNER, 1890**

(Pl. 3, Fig. 5)

Coll. no.: GBA 1890/002/0349.

Leg.: BITTNER, 1882.

Type level: Upper Triassic, Dachstein Limestone.

Type locality: Putzenköpfl N of Dürrenberg, Hallein, Salzburg, Austria.

Type figure: BITTNER, A., 1890: p. 262, Pl. 27, Fig. 23.

***"Rhynchonella" lillii* BITTNER.**

***Rhynchonella sprete* BITTNER, 1890**

(Pl. 3, Fig. 8)

Coll. no.: GBA 1890/002/0358.

Type level: Upper Triassic.

Type locality: Hohe Wand, Frankenhof, Lower Austria, Austria.

Type figure: BITTNER, A., 1890: p. 266, Pl. 27, Fig. 27.

Remark: DAGYS (1963) connected this species with *Septaliphoria* LEIDHOLD.

***"Rhynchonella" sprete* BITTNER.**

***Rhynchonella uncinulina* BITTNER, 1890**
(Pl. 3, Fig. 9)

Coll. no.: GBA 1890/002/0362.

Type level: Upper Triassic, Dachstein Limestone.

Type locality: Putzenköpfl N of Dürrenberg, Hallein, Salzburg, Austria.

Type figure: BITTNER, A., 1890: p. 267, Pl. 24, Fig. 20.

***“Rhynchonella” uncinulina* BITTNER.**

***Rhynchonella pusillula* BITTNER, 1890**
(Pl. 4, Fig. 2)

Coll. no.: GBA 1890/002/0364.

Leg.: BITTNER, 1887.

Type level: Upper Triassic.

Type locality: Tonionalpe, Lechnergraben near Gußwerk, Styria, Austria.

Type figure: BITTNER, A., 1890: p. 268, Pl. 24, Fig. 18.

Remark: SULSER (1993) mentioned this species as *Norella* ? *pusillula*.

***“Rhynchonella” pusillula* BITTNER.**

***Retzia latiuscula* BITTNER, 1890**
(Pl. 4, Fig. 3)

Coll. no.: GBA 1890/002/0381.

Leg.: BITTNER, 1877.

Type level: Upper Triassic.

Type locality: Brunner Eben, Wr. Neustadt, Lower Austria, Austria.

Type figure: BITTNER, A., 1890: p. 275, Pl. 29, Fig. 16.

***“Retzia” latiuscula* BITTNER.**

BITTNER, A. (1892): Brachiopoden der alpinen Trias. Nachtrag I. – Abhandlungen der k. k. Geologischen Reichsanstalt, 17/2.

***Rhynchonella vulnerata* BITTNER, 1892**
(Pl. 4, Fig. 1)

Coll. no.: GBA 1892/001/0085.

Leg.: BITTNER, 1891.

Type level: Triassic, “Korallenkalke der Raxalpe”.

Type locality: Preinerwand, Raxalpe, Lower Austria, Austria.

Type figure: BITTNER, A., 1892: p. 32, Pl. 4, Fig. 34.

***“Rhynchonella” vulnerata* BITTNER.**

***Waldheimia (Aulacothyris) integrella* BITTNER, 1892**
(Pl. 4, Fig. 4)

Coll. no.: GBA 1892/001/0095.

Type level: Triassic, “Korallenkalke des Schneeberges”.

Type locality: Kuhschneeberg, Schneeberg, Lower Austria, Austria.

Type figure: BITTNER, A., 1892: p. 35, Pl. 2, Fig. 24.

***Aulacothyris integrella* BITTNER.**

BITTNER, A. (1896): Neue Brachiopoden und eine neue Halobia der Trias von Balia in Kleinasien. – Jahrbuch der k. k. Geologischen Reichsanstalt, 45/2–3 (1895).

***Rhynchonella Baliana* BITTNER, 1896**
(Pl. 3, Fig. 10)

Coll. no.: GBA 1896/003/0003

Leg.: MANZAVINOS.

Type level: Triassic.

Type locality: Memisch-Oglou near Balia-Maaden, Turkey.

Type figure: BITTNER, A., 1896: p. 251, Pl. 11, Fig. 4.

***Caucasorhynchia* (?) *baliana* (BITTNER) according to DAGYS, 1963 and SULSER, 1993.**

BITTNER, A. (1903): Brachiopoden und Lamelli-branchiaten aus der Trias von Bosnien, Dalmatien und Venetien. – Jahrbuch der k. k. Geologischen Reichsanstalt, 52 (1902).

***Aulacothyris praevaliana* BITTNER, 1903**
(Pl. 3, Fig. 7)

Coll. no.: GBA 2008/115/0005.

Type level: Middle Triassic, Muschelkalk, “Helle Crinoidenkalke”.

Type locality: Počmin, Spizza, South Dalmatia, Montenegro.

Type figure: BITTNER, A., 1903: p. 500, Pl. 19, Fig. 5.

***Aulacothyris praevaliana* BITTNER.**

***Aulacothyris simulatrix* BITTNER, 1903**
(Pl. 4, Fig. 5)

Coll. no.: GBA 2008/115/0007.

Type level: Middle Triassic, Muschelkalk.

Type locality: Grkova voda Valley, South Dalmatia, Montenegro.

Type figure: BITTNER, A., 1903: p. 525, Pl. 19, Fig. 18.

***Aulacothyris simulatrix* BITTNER.**

***Aulacothyris Geyeri* BITTNER, 1903**
(Pl. 4, Fig. 8)

Coll. no.: GBA 2008/115/0008.

Type level: Triassic.

Type locality: Monte Cucco near Paluzza, Friaul, Italy.

Type figure: BITTNER, A., 1903: p. 528, Pl. 19, Fig. 19.

***Aulacothyris geyeri* BITTNER.**

***Waldheimia planoconvexa* BITTNER, 1903**
(Pl. 4, Fig. 6)

Coll. no.: GBA 2008/115/0013.

Type level: Middle Triassic, Muschelkalk.

Type locality: Monte Cucco near Paluzza, Friaul, Italy.

Type figure: BITTNER, A., 1903: p. 530, Pl. 21, Fig. 7.

***Aulacothyris planoconvexa* (BITTNER).**

***Rhynchonella Bukowskii* BITTNER, 1903**
(Pl. 4, Fig. 7)

Coll. no.: GBA 2008/115/0019.

Leg.: BUKOWSKI.

Type level: Middle Triassic, Muschelkalk.

Type locality: between Stanišić and Grkova voda Valley, Budva, South Dalmatia, Montenegro.

Type figure: BITTNER, A., 1903: p. 524, Pl. 21, Fig. 18.

***“Rhynchonella” bukowskii* BITTNER.**

***Spirigera (Anisactinella)*
matutina var. *euplecta* BITTNER, 1903**
(Pl. 4, Fig. 9)

Coll. no.: GBA 2008/115/0031.

Leg.: BUKOWSKI.

Type level: Middle Triassic, Muschelkalk.

Type locality: between Stanišić and Grkova voda Valley, Budva, South Dalmatia, Montenegro.

Type figure: BITTNER, A., 1903: p. 523, Pl. 24, Fig. 20.

***Anisactinella matutina euplecta* BITTNER.**

Lower Jurassic

**BITTNER, A. (1888): Über Koninckiniden des alpinen
Lias. – Jahrbuch der k. k. Geologischen
Reichsanstalt, 37/2.**

***Koninckina styriaca* BITTNER, 1888**
(Pl. 4, Fig. 10)

Coll. no.: GBA 1888/01/0002.

Leg.: BITTNER, 1884.

Type level: Lower Jurassic.

Type locality: Gams near Landl/Enns, Styria, Austria (“An-
nerlbauerkogel, links vom Ausgange der sogenannten
‘Noth’ bei Gams unweit Landl a. d. Enns”).

Type figure: BITTNER, A., 1888: p. 286, Pl. 14, Fig. 6.

Remark: Generic affiliation according to VÖRÖS (2003).

***Koninckodonta styriaca* (BITTNER).**

***Amphiclinina (Amphiclinodonta) liasina* BITTNER, 1888**
(Pl. 4, Fig. 11)

Coll. no.: GBA 1888/001/0003.

Leg.: BITTNER, 1883.

Type level: Lower Jurassic, Sinemurian, Hierlatz Lime-
stone.

Type locality: Kratzalm (Gratzalpe, Kratzalpe) SW of
Golling/Salzach, Salzburg, Austria.

Type figure: BITTNER, A., 1888: p. 288, Pl. 14, Fig. 7.

Remark: Genoholotype of *Amphiclinodonta* BITTNER, 1888.
Specimen strongly damaged.

***Amphiclinodonta liasina* BITTNER.**

**BITTNER, A. (1894): Neue Koninckiniden des alpinen
Lias. – Jahrbuch der k. k. Geologischen
Reichsanstalt, 43/1.**

***Koninckina (Koninckodonta) Geyeri* BITTNER, 1894**
(Pl. 4, Fig. 12)

Coll. no.: GBA 1894/003/0005.

Type level: Lower Jurassic, Sinemurian, Hierlatz Lime-
stone.

Type locality: Schafberg, N of Wolfgangsee, Upper Aus-
tria, Austria.

Type figure: BITTNER, A., 1894: p. 140, Pl., 4, Fig. 10.

***Koninckodonta geyeri* BITTNER.**

**Holotypes described by BITTNER and previously
held in the collection of the Geological Survey,
but now missing.**

***Rhynchonella Hecuba* BITTNER, 1890**

Type level: Upper Triassic, Zlambach Beds.

Type locality: Lupitsch near Bad Aussee, Styria, Austria.

Type figure: BITTNER, A., 1890: p. 169, Pl. 40, Fig. 28.

***“Rhynchonella” hecuba* BITTNER.**

? *Koninckella norica* BITTNER, 1890

Type level: Upper Triassic, Hallstatt Limestone.

Type locality: Steinbergkogel near Hallstatt, Upper Aus-
tria, Austria.

Type figure: BITTNER, A., 1890: p. 237, Pl. 16, Fig. 18.

***Koninckella norica* BITTNER.**

? *Koninckella sellaris* BITTNER, 1890

Type level: Upper Triassic, Dachstein Limestone.

Type locality: Tristlwand, Hagengebirge, Salzburg, Austria.

Type figure: BITTNER, A., 1890: p. 269, Pl. 29, Fig. 21.

Remark: The specimen is missing, the box with label and
number GBA 1890/002/0367 only.

***Koninckella (?) sellaris* BITTNER.**

***Amphiclinodonta lepidula* BITTNER, 1890**

Type level: Upper Triassic, Hallstatt Limestone.

Type locality: Sandling, Salzkammergut, Austria.

Type figure: BITTNER, A., 1890: p. 241, Pl. 40, Fig. 12.

***Amphiclinodonta lepidula* BITTNER.**

***Amphiclinodonta Manzavinii* BITTNER, 1896**

Type level: Upper Triassic.

Type locality: Kyzyl-Tepe near Balia-Maaden, Turkey.

Type figure: BITTNER, A., 1896: p. 252, Pl. 11, Fig. 7.

***Amphiclinodonta manzavinii* BITTNER.**

(?) *Spirigera trisulcata* BITTNER, 1890

Leg.: TELLER.

Type level: Upper Triassic, *Cardita* Beds.

Type locality: between Mežica and Crna (Miess and Schwarzenbach), Slovenia.

Type figure: BITTNER, A., 1890: p. 141, Pl. 37, Fig. 29.

***Euractinella trisulcata* (BITTNER).**

***Aulacothyris redunca* BITTNER, 1903**

Leg.: GEYER.

Type level: Middle Triassic, Muschelkalk.

Type locality: Monte Cucco near Paluzza, Friaul, Italy.

Type figure: BITTNER, A., 1903: p. 529, Pl. 19, Fig. 26.

***Aulacothyris redunca* BITTNER.**

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<i>ambigua</i>	p. 303	<i>magna</i>	p. 304
<i>aptera</i>	p. 303	<i>manzavinii</i>	p. 306
<i>badiotica</i>	p. 302	<i>matutina</i>	p. 306
<i>baliana</i>	p. 305	<i>mojsisovicsi</i>	p. 303
<i>blaasi</i>	p. 303	<i>norica</i>	p. 306
<i>bukowskii</i>	p. 306	<i>patricia</i>	p. 304
<i>cimbrica</i>	p. 302	<i>planoconvexa</i>	p. 305
<i>cislonensis</i>	p. 304	<i>praevaliana</i>	p. 305
<i>coarctata</i>	p. 303	<i>productifrons</i>	p. 302
<i>dualina</i>	p. 303	<i>pusillula</i>	p. 305
<i>euplecta</i>	p. 306	<i>redunca</i>	p. 307
<i>festiva</i>	p. 304	<i>reflexa</i>	p. 304
<i>geyeri</i> (<i>Aulacothyris</i>)	p. 305	<i>salinaria</i>	p. 303
<i>geyeri</i> (<i>Koninckodonta</i>)	p. 306	<i>scitula</i>	p. 303
<i>gryphaeata</i>	p. 302	<i>sellaris</i>	p. 306
<i>hagar</i>	p. 303	<i>simulatrix</i>	p. 305
<i>hecuba</i>	p. 306	<i>spretta</i>	p. 304
<i>impressula</i>	p. 303	<i>sturi</i>	p. 304
<i>integrella</i>	p. 305	<i>styriaca</i> (<i>Koninckodonta</i>)	p. 306
<i>intermixta</i>	p. 303	<i>styriaca</i> (<i>Nucleatula</i>)	p. 303
<i>juvavica</i>	p. 304	<i>teutonica</i>	p. 302
<i>ladina</i>	p. 303	<i>trisulcata</i>	p. 307
<i>laricimontana</i>	p. 302	<i>tyrolensis</i>	p. 302
<i>latiuscula</i>	p. 305	<i>uncinulina</i>	p. 305
<i>lepidula</i>	p. 306	<i>ungulina</i>	p. 304
<i>liasina</i>	p. 306	<i>vulnerata</i>	p. 305
<i>lillii</i>	p. 304		

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Plate 1

- Fig. 1abc: *Volirhynchia teutonica* (BITTNER).
GBA 1890/002/0026.
x 2.
- Fig. 2abc: "*Terebratula*" *laricimontana* BITTNER.
GBA 1890/002/0031.
x 2.5.
- Fig. 3ab: *Volirhynchia productifrons* (BITTNER).
GBA 1890/002/0037.
x 2.
- Fig. 4abc: "*Rhynchonella*" *cimbrica* BITTNER.
GBA 1890/002/0052.
x 2.5.
- Fig. 5abc: "*Thecidea*" *gryphaeata* (BITTNER).
GBA 1890/002/0082.
x 5.
- Fig. 6abc: "*Spiriferina*" *tyrolensis* BITTNER.
GBA 1890/002/0089.
x 2.5.
- Fig. 7abc: "*Spiriferina*" *badiotica* BITTNER.
GBA 1890/002/0090.
x 6.
- Fig. 8abc: *Sinuocosta* (?) *impressula* (BITTNER).
GBA 1890/002/0092.
x 8.
- Fig. 9abc: "*Retzia*" *ladina* BITTNER.
GBA 1890/002/0108.
x 2.5.
- Fig. 10ab: *Amphiclina scitula* BITTNER.
GBA 1890/002/0131.
x 2.5.
- Fig. 11ab: *Amphiclina coarctata* BITTNER.
GBA 1890/002/0189.
x 2.5.
- Fig. 12ab: *Amphiclina aptera* BITTNER.
GBA 1890/002/0137.
x 3.

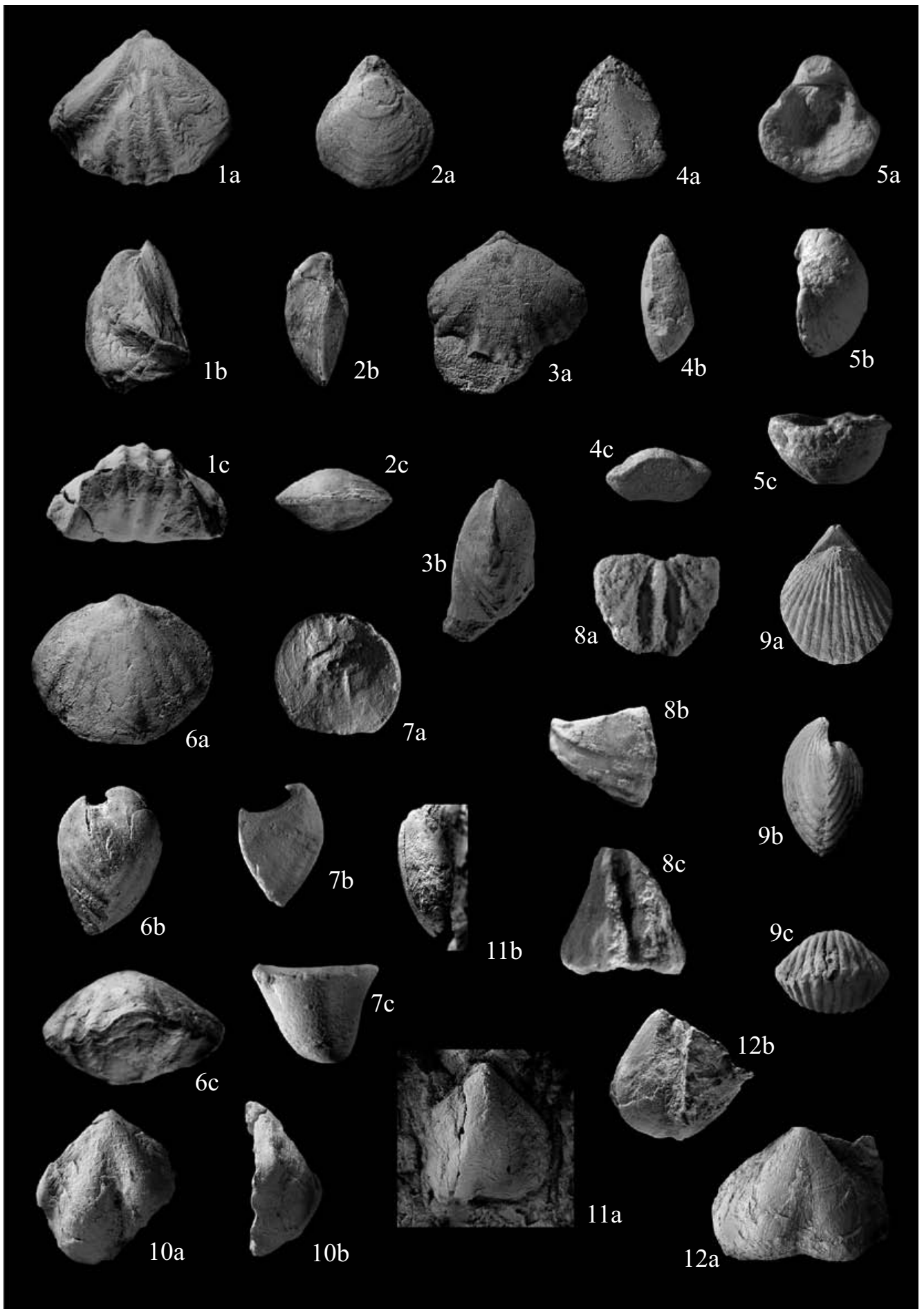


Plate 2

- Fig. 1abc: *Aulacothyris dualina* BITTNER.
GBA 1890/002/0260.
x 4.
- Fig. 2abc: *Veghirhynchia* (?) *blaasi* (BITTNER).
GBA 1890/002/0120.
x 3.
- Fig. 3abc: "*Rhynchonella*" *salinaria* BITTNER.
GBA 1890/002/0239.
x 3.
- Fig. 4abc: *Propygope hagar* BITTNER.
GBA 1890/002/0272/1.
x 3.
- Fig. 5abc: *Nucleatula styriaca* BITTNER.
GBA 1890/002/0271.
x 3.
- Fig. 6abc: *Austriellula intermixta* (BITTNER).
GBA 1890/002/0290.
x 2.
- Fig. 7abc: "*Rhynchonella*" *mojsisovicsi* BITTNER.
GBA 1890/002/0292.
x 2.
- Fig. 8abc: *Aulacothyropsis reflexa* (BITTNER).
GBA 1890/002/0340.
x 2.
- Fig. 9abc: *Amphiclina unguina* BITTNER.
GBA 1890/002/0317.
x 3.
- Fig. 10abc: *Amphiclina ambigua* BITTNER.
GBA 1890/002/0316.
x 4.

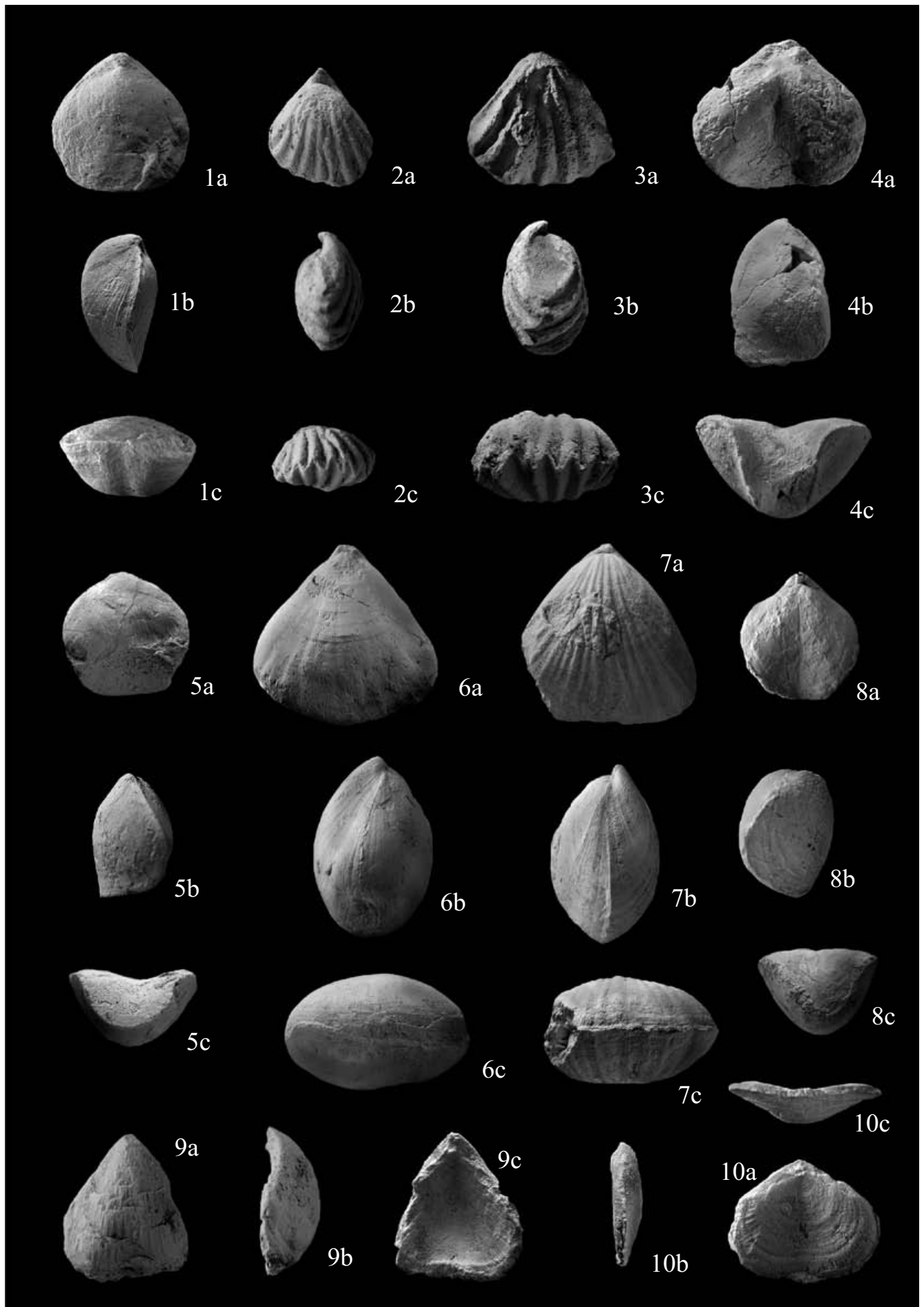


Plate 3

- Fig. 1abc: *Ornatothyrella festiva* (BITTNER).
GBA 1890/002/0342.
x 2.
- Fig. 2ab: *Amphiclinodonta magna* BITTNER.
GBA 1890/002/0322.
x 2.
- Fig. 3abc: *Aulacothyropsis patricia* (BITTNER).
GBA 1890/002/0339.
x 2.
- Fig. 4abc: "*Terebratula*" *sturi juvavica* BITTNER.
GBA 1890/002/0337.
x 2.
- Fig. 5abc: "*Rhynchonella*" *lillii* BITTNER.
GBA 1890/002/0349.
x 2.
- Fig. 6abc: *Tetractinella cislensis* (BITTNER).
GBA 1890/002/0334.
x 4.
- Fig. 7abc: *Aulacothyris praevaliana* BITTNER.
GBA 2008/115/0005.
x 4.
- Fig. 8abc: "*Rhynchonella*" *spreti* BITTNER.
GBA 1890/002/0358.
x 2.
- Fig. 9abc: "*Rhynchonella*" *uncinulina* BITTNER.
GBA 1890/002/0362.
x 2.
- Fig. 10abc: *Caucasorhynchia* (?) *baliana* (BITTNER).
GBA 1896/003/0003.
x 2.

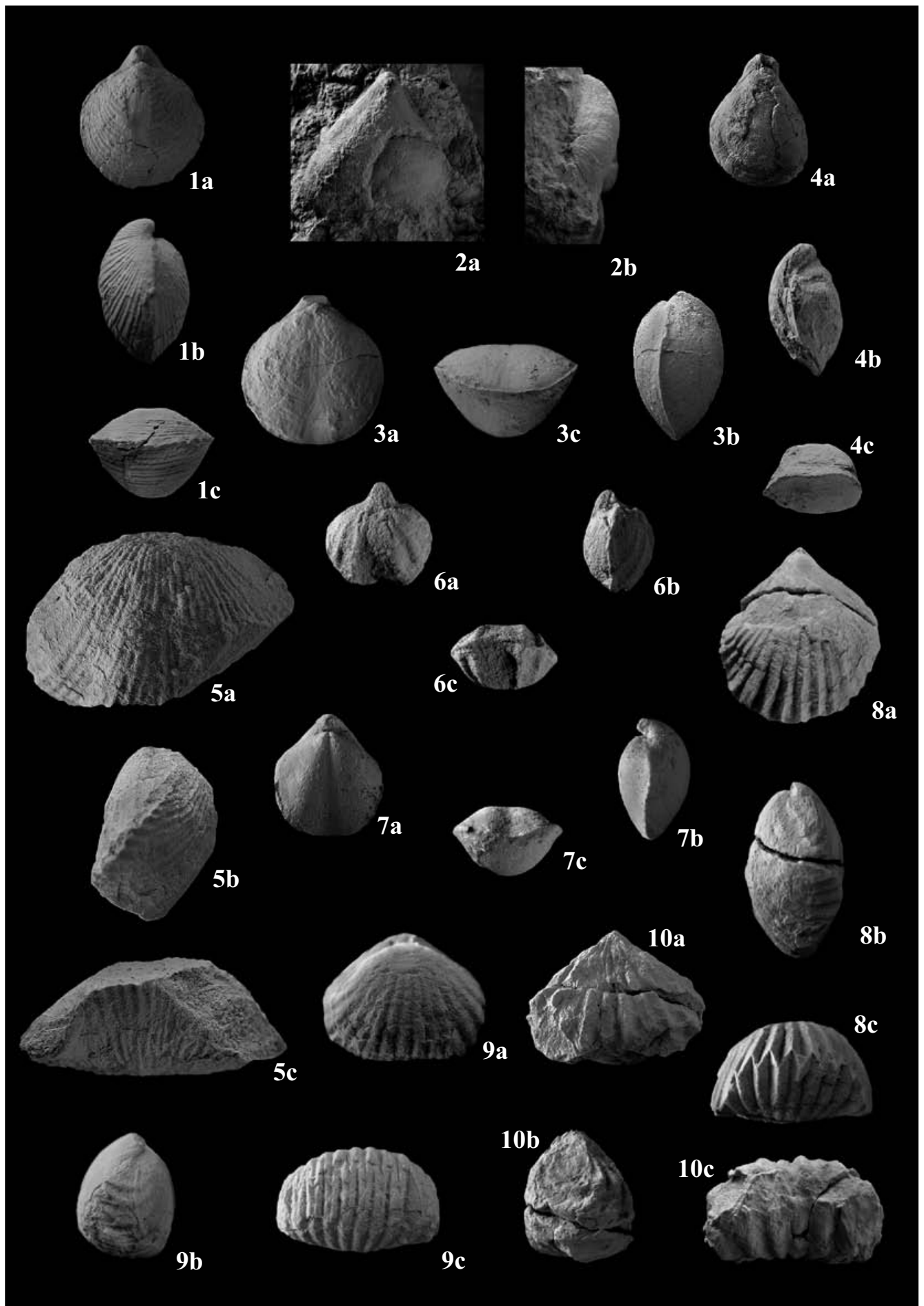
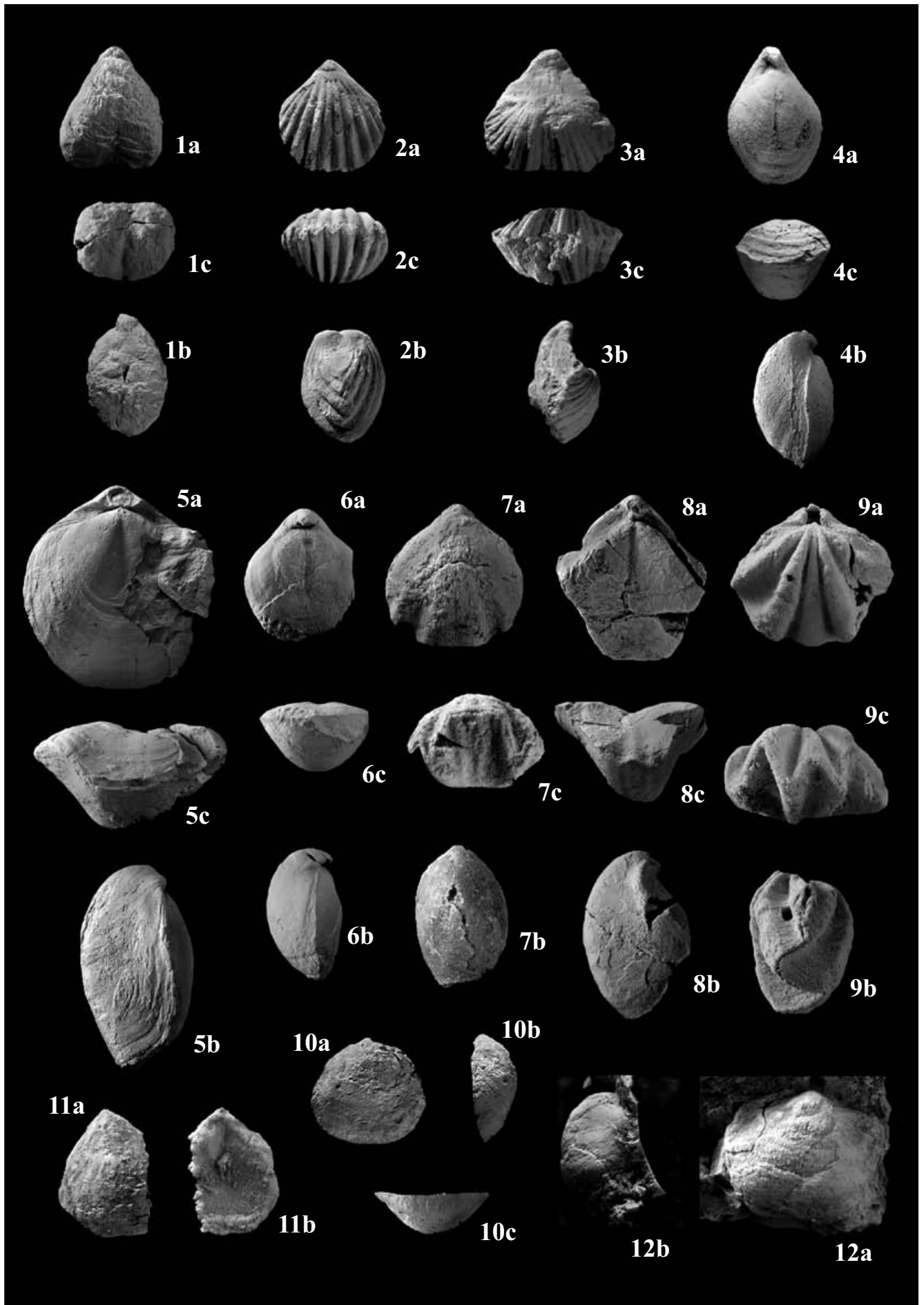


Plate 4

- Fig. 1abc: *"Rhynchonella" vulnerata* BITTNER.
GBA 1892/001/0085.
x 3.
- Fig. 2abc: *"Rhynchonella" pusillula* BITTNER.
GBA 1890/002/0364.
x 4.
- Fig. 3abc: *"Retzia" latiuscula* BITTNER.
GBA 1890/002/0381.
x 6.
- Fig. 4abc: *Aulacothyris integrella* BITTNER.
GBA 1892/001/0095.
x 3.
- Fig. 5abc: *Aulacothyris simulatrix* BITTNER.
GBA 2008/115/0007.
x 2.
- Fig. 6abc: *Aulacothyris planoconvexa* BITTNER.
GBA 2008/115/0013.
x 2.
- Fig. 7abc: *"Rhynchonella" bukowskii* BITTNER.
GBA 2008/115/0019.
x 5.
- Fig. 8abc: *Aulacothyris geyeri* BITTNER.
GBA 2008/115/0008.
x 2.
- Fig. 9abc: *Anisactinella matutina euplecta* BITTNER.
GBA 2008/115/0031.
x 4.
- Fig. 10abc: *Koninckodonta styriaca* (BITTNER).
GBA 1888/01/0002.
x 3.
- Fig. 11ab: *Amphiclinodonta liasina* BITTNER.
GBA 1888/001/0003.
x 4.
- Fig. 12ab: *Koninckodonta geyeri* BITTNER.
GBA 1894/003/0005.
x 3.



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