acta
geologica
polonica

Vol. 36, No. 4 Warszawa 1986

KRYSTYNA KOREJWO

Biostratigraphy of the Carboniferous deposits of the Świdnik blocks (Lublin Coal Basin)

ABSTRACT: The sequence of the Carboniferous deposits pierced by a series of boreholes within the Świdnik blocks near Lublin in eastern Poland (Lublin Coal Basin) begins with the Upper Viséan strata and continues to the Lower Westphalian. The goniatite content is used for biostratigraphic subdivision of these strata and it evidences the paralic conditions ranging until the Gastrioceras subcrenatum Zone of the lowermost Westphalian.

INTRODUCTION

The scope of the present paper is to announce the results of a detailed analysis of a series of boreholes, pierced by the *Oil Prospecting Enterprise* at Wołomin in 1970 — 1973, within a small tectonic unit of the so-called Świdnik blocks near Lublin, eastern Poland. Within the Lublin Coal Basin, this tectonic unit contains both Lower and Upper Carboniferous deposits, and it is composed of the two separated blocks. The northern block was pierced by seven boreholes situated near Świdnik, eastern outskirts of the town of Lublin (indicated in the text as *S2*, *S3*, *S4*, *S5*, *S6*, *S7*, and *S8*), whereas the southern block was reached by the other seven boreholes situated near the village of Minkowice, 15 kms ESE of Lublin (indicated in the text as *M1*, *M2*, *M3*, *M7*, *M8*, *M10*, and *M12*).

The results of detailed studies upon the cores obtained in these boreholes are presented separately in unpublished reports (KOREJWO 1981, 1982). In this paper presented are only the general data on the Carboniferous deposits, their paleontological content and stratigraphic subdivision (*see* Tables 1-4 and Plates 1-37).

The investigated Carboniferous deposits of the Świdnik blocks rest, with a stratigraphic gap, upon the Upper Devonian sequence which is

locally capped (boreholes *S3*, *M2*, *M3*, *M7*, and *M10*) with volcanic rocks (basalts and tuffs). In some boreholes the Carboniferous sequence is heavily tectonized (boreholes *S3*, *S8*, *M2*, *M8*) what makes a recognition of its stratigraphy either very arbitrary or impossible. At the top, the Carboniferous sequence is, due to Variscan tectonics and subsequent erosion, degraded to a variable extent and overlain by the Middle and Upper Jurassic strata.

The stratigraphic attribution of the borehole columns, based upon the faunal content (*see* Tables 2-4), is presented hereafter (Table 1), to make easy a recognition of the depth intervals at which the illustrated fossils (*see* Plates 1-37) have been collected.

LOWER CARBONIFEROUS (UPPER VISÉAN)

The oldest part of the Carboniferous sequence recognized in the Świdnik blocks is documented as the Upper Viséan. This is a series of marly limestones and limestones, commonly organodetrital, and intercalated by plant-bearing sandstones and siltstones and/or coaly shales.

BOREHOLE / AGE	S 4	S 6	S 2	S 7	S 5	S 8*	S 3*
WESTPHALIAN A	965.0	993.0	1032.0				
	1215.0	1246.0	1157.0				
NAMURIAN B+C				952.0			936.0
	1537.0	1496.0	1370.0		1013.0	983.5	
NAMURIAN A							
	1820.0	1772.0	1648.0	1280.0	1228.0	?	?
UPPER VISÉAN							
	2069.0	1995.0	1890.0	1580.0	1518.0	1919.0	1770.0
TOTAL THICKNESS	1104.0	1002.0	858.0	628.0	505.0	935.5	834.0
CORING	7 %	7.4%	9.5%	7 %	4.1%	16.3 %	43.5%

* disturbed profile, apparent thickness

Table 1

Stratigraphic subdivision of the borehole columns (depth in meters) in the northern *(above)* and southern *(below)* Świdnik blocks, Lublin Coal Basin

BOREHOLE / AGE	M 1	M 10	M 3	M 8*	M 2*	M 7	M 12
NAMURIAN B	942.0	924.0	923.5	912.5	912.5	902.0	920.0
	1050.0	1030.0	1010.0			1092.0	1046.0
NAMURIAN A				?	?		
	1415.0	1430.0	1472.0			1590.0	1380.0**
UPPER VISÉAN							
	1590.0	1580.2	1623.0	1850.5	1700.0	1746.0	
TOTAL THICKNESS	648.0	656.2	699.5	938.0	787.5	844.0	460.0
CORING	7%	27.8%	27.2%	15.2%	16.4%	25.7%	28.6%

* disturbed profile, apparent thickness; ** final depth of borehole

In some sections at the bottom of this series, there occur coarse-grained graywackes and gravelstones, and bands of siderite.

The marine fauna remains are quite common (Table 2), and represented primarily by brachiopods, *i.a.* of the genus *Gigantoproductus*. The trilobites are represented by *Linguaphillipsia* cf. *silesiaca* (SCUPIN), the species being widely distributed in the Upper Viséan strata of western and eastern Europe (HAHN & HAHN 1975).

The goniatites stated comprise such species as: *Sudeticeras splendens* (BISAT), *S.* cf. *newtonense* MOORE, and *Goniatites crenistria* (PHILLIPS). The first is an index form for the Upper Viséan (MOORE 1950, ŻAKOWA 1971); the second was established in the Upper Viséan strata of England (MOORE 1950), and subsequently noted in deposits of this very age in Poland (Lublin Trough, Miechów Trough, Holy Cross Mts; *see* KOREJWO 1974); the third is known in western Europe from the *Goα* Zone of the low-Upper Viséan (NICOLAUS 1963), and also recognized in Poland (Sudetes, Holy Cross Mts — *vide* ŻAKOWA 1966, 1970; Sudetic Foreland — *see* KOREJWO & TELLER 1967a).

Table 2

Upper Viséan fauna in the Świdnik blocks

Upper Viséan	Plicochonetes waldschmidti /Paeck./, Plicochonetes sp., Overtonia sp., Echinoconchus punctatus /Mart./, Linoproductus sp., Giganto-productus giganteus /Mart./, G. bisati /Paeck./, G. striatosulcatus /Schwetz./, G. cf. gigantoides /Paeck./, G. latissimus latissimus /Sow./, G. latissimus complicatus /Paeck./, G. latiprisous /Sar./, G. ex gr. latissimus /Sow./, Pugilis cf. pugilis /Phill./, Pugilis sp., Eomarginifera setosa /Phill./, E. cf. setosa /Phill./, E. lobata /Sow./, E. cf. nasuta /Paeck./, E. praecursor /Muir-Wood/, Spirifer bisulcatus calcaratus Mc Coy, S. bisulcatus cf. oyster-mouthensis Vaugh., S. ex gr. bisulcatus Sow., Neospirifer sp., Prospira sp., Brachythyris sp., Martinia glabra /Sow./, Phricodo-thyris monopustulosa Dem., Crurithyris urei /Flem./, Composita sp. Anthraconeilo oblongum /Hind/, A. laevirostrum /Portl./, Nuculopsis gibbosa /Flem./, N. cf. adontoides /Meek/, Palaeoneilo luciniforme /Phill./, Polidevcia attenuata /Flem./, P. sharmani /Ether./, P. gigantea Shulga, Ennirostra cf. coxi /Hajkr, Lukaš., Ruž. & Reh./, Edmondia unioniformis /Phill./, Sulcatopinna flabelliformis /Mart./, Streblopteria anisota /Phill./, S. cf. elliptica /Phill./, Streblo-chondria sp. Straparollus /Euomphalus/ catilliformis /de Kon./, Palaeostylus /Stephanozyga/ cf. rugiferus /Phill./, Microptychis sp. Dolorthoceras cf. striolatum /Meyer/, Kionoceras sp., ?Beyrichoce-ratoides sp., Sudeticeras splendens /Bis./, S. cf. newtonense Moore, Goniatites crenistria /Phill./ Linguaphillipsia cf. silesiaca /Scup./, Linguaphillipsia sp.

UPPER CARBONIFEROUS (SILESIAN)

The Upper Carboniferous (Silesian) deposits are better accessible in the northern block where both the Lower and Upper Namurian, as well as lower members of the Westphalian *A* are stated. In the southern block preserved are only deposits of the Namurian *A* and of the lower part of the Namurian *B*.

The Lower Namurian deposits are developed primarily as black-colored claystones with pyrite, and intercalated by siltstones and more rarely by sandstones with carbonized plants. In some places there also occur thin-bedded limestone inliers.

The Upper Namurian deposits are developed in their lower part as sandstones, commonly coarse-grained and locally gravelous, and containing either thin intercalations or redeposited pieces of coal. These sandstones are commonly replete with muscovite flakes, giving a silvery appearance to the rock which thus is easily recognizable as a correlation unit (PORZYCKI 1976, 1980). The higher part of the sequence is composed of medium- and fine-grained sandstones and siltstones, all with carbonized plant remains and small siderite nodules, and associated with

the seat-earths and thin layers of coaly shales. The limestone intercalations are rare, the same as claystones with either marine or non-marine fauna.

The low-Lower Westphalian succession is marine at the bottom and limnic higher up. Its lithology varies from siltstones with thin claystone intercalations in the lower part which is overlain by sandstones with thin coal intercalations, coal pieces and carbonized plant remains.

A remarkedly common fauna contained in these Upper Carboniferous deposits (Tables 3-4) yields good goniatite records which allow to recognize the biostratigraphic zonation of the sequence, especially of its Namurian part, to the same extent as previously stated both for western and eastern Europe (*see* KOREJWO 1969b, Charts 2-3; for details *see also* KOREJWO 1974; KOREJWO & TELLER 1967a, b, 1971; ŻELICHOWSKI 1972b; BOJKOWSKI 1979).

LOWER NAMURIAN (NAMURIAN *A*)

A common and diversified fauna, indicative of Lower Namurian age, is very similar to that of the other parts of the Lublin Coal Basin (*vide* KOREJWO 1969b, 1974) and of the Ostrava Beds in the Upper Silesia Coal Basin (*vide* BOJKOWSKI 1972, REHOR & REHOR 1972).

Of the trilobites, the presence is noted of *Paladin mucronatus* (Mc COY), which ranges from the Upper Viséan through the Lower Namurian both in western Europe (HAHN & HAHN 1975) and in the other parts of the Lublin Coal Basin (KOREJWO & TELLER 1972, KOREJWO 1974). Its record in the Cracow Upland, confined solely to the uppermost Viséan (OSMÓLSKA 1970), is certainly caused by the facies control.

The goniatites, represented by numerous species reported previously both from the Lublin and Upper Silesia coal basins (KOREJWO 1969a, b, 1974; ŻELICHOWSKI 1972b; BOJKOWSKI 1979), allow to recognize some biozones of the goniatite substages E_1, E_2, and H_1 of the Lower Namurian. Thus, *Eumorphoceras* cf. *pseudobilingue* BISAT is indicative of the E_1b Zone, *E. bisulcatum* GIRTY and *Cravenoceratoides edalense* (BISAT) of E_2a, *Ct. nitidus* (PHILLIPS) and *Ct.* cf. *stellarum* (BISAT) of E_2b, and finally *Homoceras beyrichianum* (KONINCK) of the H_1b Zone. The associated species are represented by *Anthracoceras paucilobum* (PHILLIPS) typical of the Lower Namurian, and by *Paradimorphoceras looneyi* (PHILLIPS) ranging to the Namurian *B*.

UPPER NAMURIAN (NAMURIAN *B* + *C*)

Although the marine strata are less common that in the Lower Namurian, their faunal content becomes important due to the presence of goniatites.

Table 3

Upper Carboniferous fauna in the southern Świdnik block

Namurian B	Echinaria sp. Avioulopecten cf. gentilis /Sow./, Curvirimula belgica /Hind/, Najadites sp. Reticuloceras nodosum Bis. & Huds., R. of. nodosum Bis. & Huds., R. of. eoreticulatum Bis., R. cf. stubblefieldi Bis. & Huds., R. cf. hodsoni Bouck., R. of. paucicrenulatum Bis. & Huds., R. adpressum Bis. & Huds., R. of. adpressum Bis. & Huds., Homoceratoides varicatus Schmidt, Homoceras magistrorum Hods., H. henkei Schmidt
Namurian A	Paraconularia sp. Rugosochonetes aureolus /Schwarzb./, Plicochonetes waldschmidti /Paeck./, Tornquistia polita /Mc Coy/, Eomarginifera setosa /Phill./, Antiquatonia sp. Anthraconeilo rotundatum Chern., A. oblongum /Hind/, A. laevirostrum /Portl./, Nuculopsis gibbosa /Flem./, Palaeoneilo ostraviense /Kleb./, Polidevoia attenuata /Flem./, P. gigantea Shulga, P. vasiceki Kump., Prantl & Ruž., Phestia cf. stilla /Mc Coy/, Septimyalina sublamellosa /Ether./, S. cf. dorlodoti /Dem./, Aviculopinna cf. carbonaria Dem., Posidonia corrugata /Ether./, Streblopteria purvesi /Dem./, Streblochondria condrustine /Dem./, Obliquipecten costatus Yates, Palaeolima cf. boltoni Dem., Schizodus obliquus /Mc Coy/, Janeia boelmi /Schmidt/, Grammysiopsis variabilis /Mc Coy/, Edmondia unioniformis Phill., E. cf. maccoyi Hind, E. cf. pentonensis Hind, Ennirostra augustai /Hajkr, Lukaš., Ruž. & Řeh./, Citothyris cf. sturi /Ruž. & Řeh./, Sanguinolites cf. clavatus /Ether./ Retispira silesiaca /Soup./ Tylonautilus cf. nodosocarinatus /Roem./, Homoceras beyrichianum /de Kon./, Cravenoceratoides nitidus /Phill./, Ct. edalense Bis., Eumorphoceras bisuloatum Girty, E. cf. pseudobilingue Bis., Anthracoceras paucilobum /Phill./, Paradimorphoceras looneyi /Phill./ Paladin muoronatus /Mc Coy/

Within the southern Świdnik block, well documented is the goniatite substage R_1 of the Namurian *B*. Such species as *Homoceras henkei* SCHMIDT, *H. magistrorum* HODSON, *Reticuloceras adpressum* BISAT & HUDSON and *R.* cf. *paucicrenulatum* BISAT & HUDSON indicate the R_1a Zone, whereas *Reticuloceras* cf. *hodsoni* BOUCKAERT, *R.* cf. *stubblefieldi* BISAT & HUDSON, *R.* cf. *eoreticulatum* BISAT and *R. nodosum* BISAT & HUDSON do the R_1b Zone. Some of these species were formerly reported in the Lublin Coal Basin (KOREJWO 1969a, b), the others are noted in Poland for the first time.

Within the northern Świdnik block, the Namurian *B* fauna is very scarce. In the lower part of the sequence there occur non-marine bivalves of the genera *Curvirimula* and *Najadites*, and undeterminable marine bivalves and brachiopods. One borehole only *(S2)* yielded the goniatite, *Reticuloceras* cf. *adpressum* BISAT & HUDSON, which indicates the

Table 4

Upper Carboniferous fauna in the northern Świdnik block

Westphalian A	Edmondia arcuata /Phill./, Dunbarella cf. papyracea /Sow./ Gastrioceras subcrenatum /Frech/, G. cf. subcrenatum /Frech/, Anthracoceras arcuatilobum /Ludw./, ?Anthracoceras sp.
Namurian B+C	Levipustula cf. piscariae /Wat./ Aviculopecton cf. delepinei Dom., Curvirimula belgica /Hind/, Najadites sp. Anthracoceras cf. arcuatilobum /Ludw./, Gastrioceras cumbriense Bis., G. cf. cumbriense Bis., G. ex gr. cancellatum /Bis./, Reticuloceras superbilingue Bis., R. cf. bilingue /Salt./, R. cf. wrighti Huds., R. cf. adpressum Bis. & Huds.
Namurian A	Rugosochonetes aureolus /Schwarzb./, R. brinkmanni /Schwarzb./, Plicochonetes waldschmidti /Paeck./, Tornquistia polita /Mc Coy/, ?Echinaria sp., Fluctuaria undata /Dofr./ Anthraconeilo oblongum /Hind/, A. laevirostrum /Portl./, Palaeoneilo luciniforme /Phill./, P. ostraviense /Kleb./, Nuculopsis gibbosa /Flem./, Polidevcia attenuata /Flem./, P. cf. bellicostata /Schwarzb./, Posidoniella elongata /Phill./, Posidoniella sp., Posidonia corrugata /Ether./, Streblochondria cf. condrustine Dem., Janeia primaeva /Phill./, Edmondia cf. maccoyi Hind, Chaenocardiola footi /Baily/, Ennirostra augustai /Hajkr, Lukaš., Ruž. & Řeh./, Citothyris cf. nanetae /Ruž. & Řeh./ Euphemites urei ardennensis /Weir/ Dolorthoceras striolatum /Flem./, Reticycloceras sulcatum /Flem./, R. cf. sulcatum /Flem./, Stroboceras cf. sulcatum /Sow./, Stroboceras sp., Brachycycloceras dilatatum /de Kon./, Cravenoceras sp., Cravenoceratoides nitidus /Phill./, Ct. cf. stellarum /Bis./, Ct. edalense /Bis./, Eumorphoceras cf. bisulcatum Girty, Eumorphoceras sp., Kazakhoceras scaliger /Schmidt/, Anthracoceras paucilobum /Phill./, Paradimorphoceras looneyi /Phill./ Paladin mucronatus /Mc Coy/

above-mentioned R_1a Zone. The higher part of the sequence contains *Reticuloceras* cf. *bilingue* (SALTER) and *R.* cf. *wrighti* HUDSON indicative of the R_2b Zone.

Well documented paleontologically is the Namurian *C*, which makes up the goniatite substage G_1. All its standard biozones (*see* KOREJWO 1969b, Chart 2) are distinguished, and they are evidenced as follows: G_1a by *Reticuloceras superbilingue* BISAT, G_1b by *Gastrioceras* ex gr. *cancellatum* (BISAT), and G_1c by *Gastrioceras cumbriense* (BISAT).

WESTPHALIAN *A*

The lower boundary of the Westphalian stage is placed at the base of the layer with marine fauna which contains *Edmondia arcuata* (PHILLIPS), *Dunberella* sp., *Gastrioceras subcrenatum* (FRECH), and *Anthra-*

coceras arcuatilobum (LUDWIG). The latter species ranges, both in the Lublin Coal Basin (*vide* KOREJWO 1969b, KOREJWO & TELLER 1968) and in western Europe (*vide* PATTEISKY 1959, 1965), since the uppermost Namurian through the Lower Westphalian. The species *Gastrioceras subcrenatum* (FRECH) became, however, recognized by the International Carboniferous Congress in Heerlen held in 1927 as the index of the lowermost Westphalian Zone (G_2a) and this very age is attributed to the deposits yielding the indicated fauna. The index species of that zone was formerly stated in the Lublin Coal Basin in the boreholes Niedrzwica-*2* and Niedrzwica-*3* (KOREJWO & TELLER 1967b).

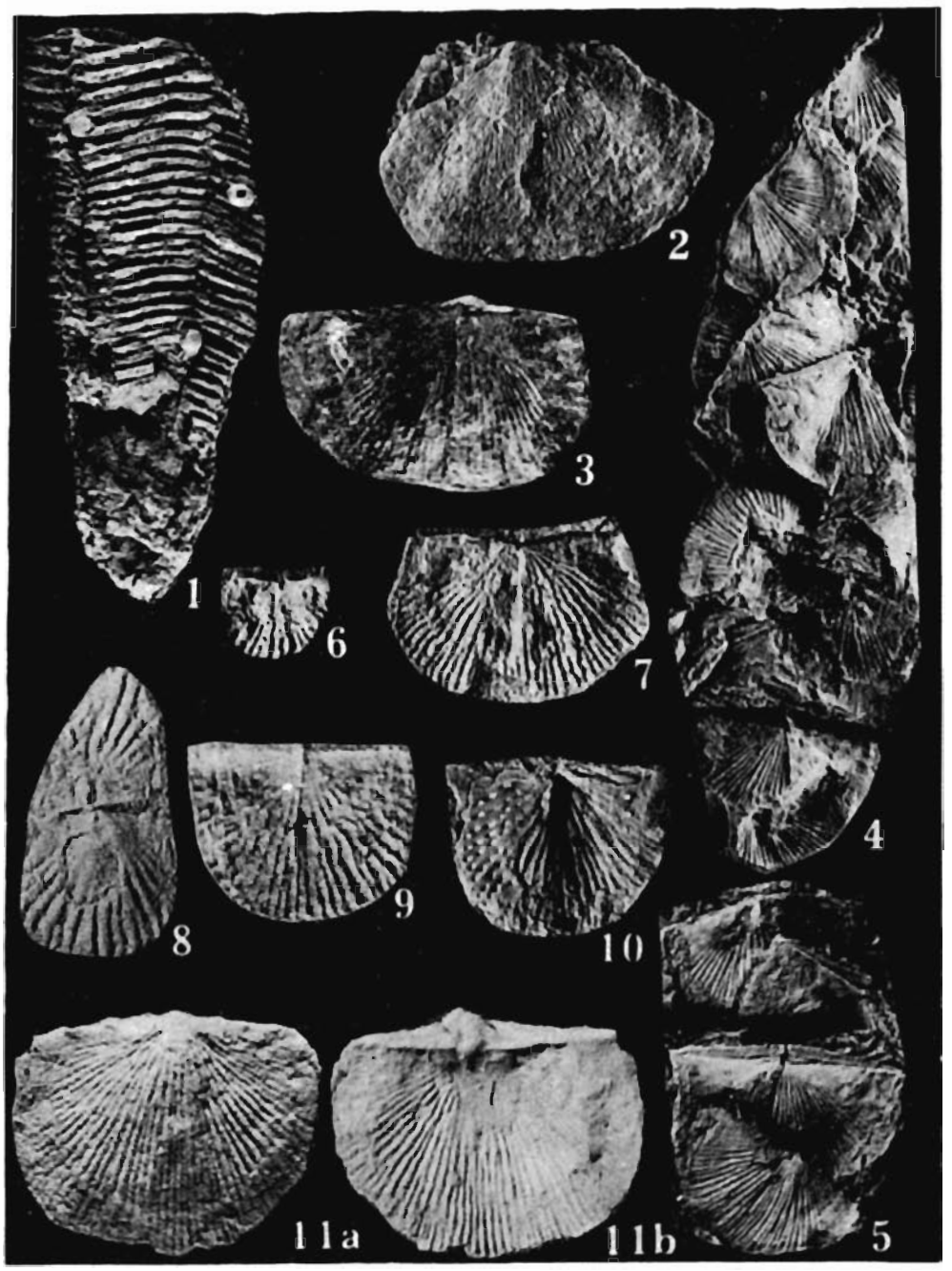
The fauna indicative of the Gastrioceras subcrenatum Zone is the last one within the Westphalian sequence of the northern Świdnik block, and which grades upwardly into a limnic series devoid of stratigraphic documents. Nevertheless, it is to be noted that the paralic conditions prevailed in the area of the Lublin Coal Basin much longer than it was in other regions of Poland, the Upper Silesia Coal Basin including. The investigated sections of the Świdnik blocks may therefore be regarded as the key sections for the Upper Carboniferous (Silesian) stratigraphy in Poland.

FINAL REMARKS

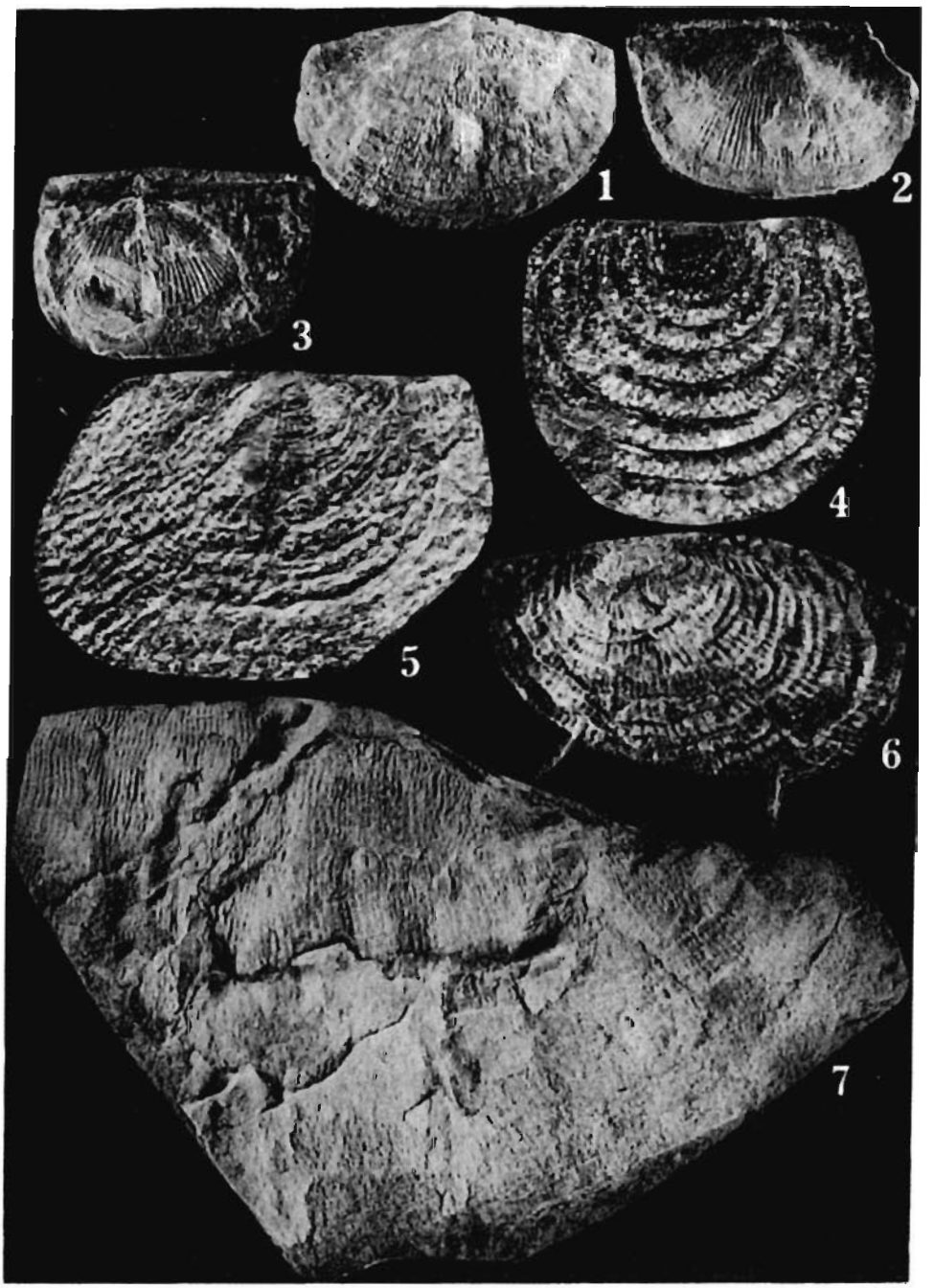
The investigated sequence of Lower to Upper Carboniferous deposits recognized in the Świdnik blocks display the latest biostratigraphic evidences (Gastrioceras subcrenatum Zone) in the Carboniferous column of Poland. The regional setting of the Świdnik blocks within the Lublin Coal Basin indicates that their tectonic structure (depressed blocks) of Variscan, precisely Asturian age, has effectively favored preservation of the sequence which usually became removed in this region prior to mid-Jurassic and/or younger Mesozoic sedimentation (*see* ŻELICHOWSKI 1972a, 1979a, b; CHIŻNIAKOW & ŻELICHOWSKI 1974).

The volcanic rocks underlying the investigated sequence may generally be regarded as of early Variscan (supposedly Bretonian) orogenic activity. Such volcanic rocks are typical not only of other parts of the Lublin Coal Basin (*see* ŻELICHOWSKI 1972a; KOREJWO 1974, 1981, 1982), as they are also recorded from western Pomerania, Isle of Rugen and Mecklenburgia, *i.e.* in all the areas situated along the marginal zone of the Precambrian East-European Platform (*see* KOREJWO 1975, 1977, 1980).

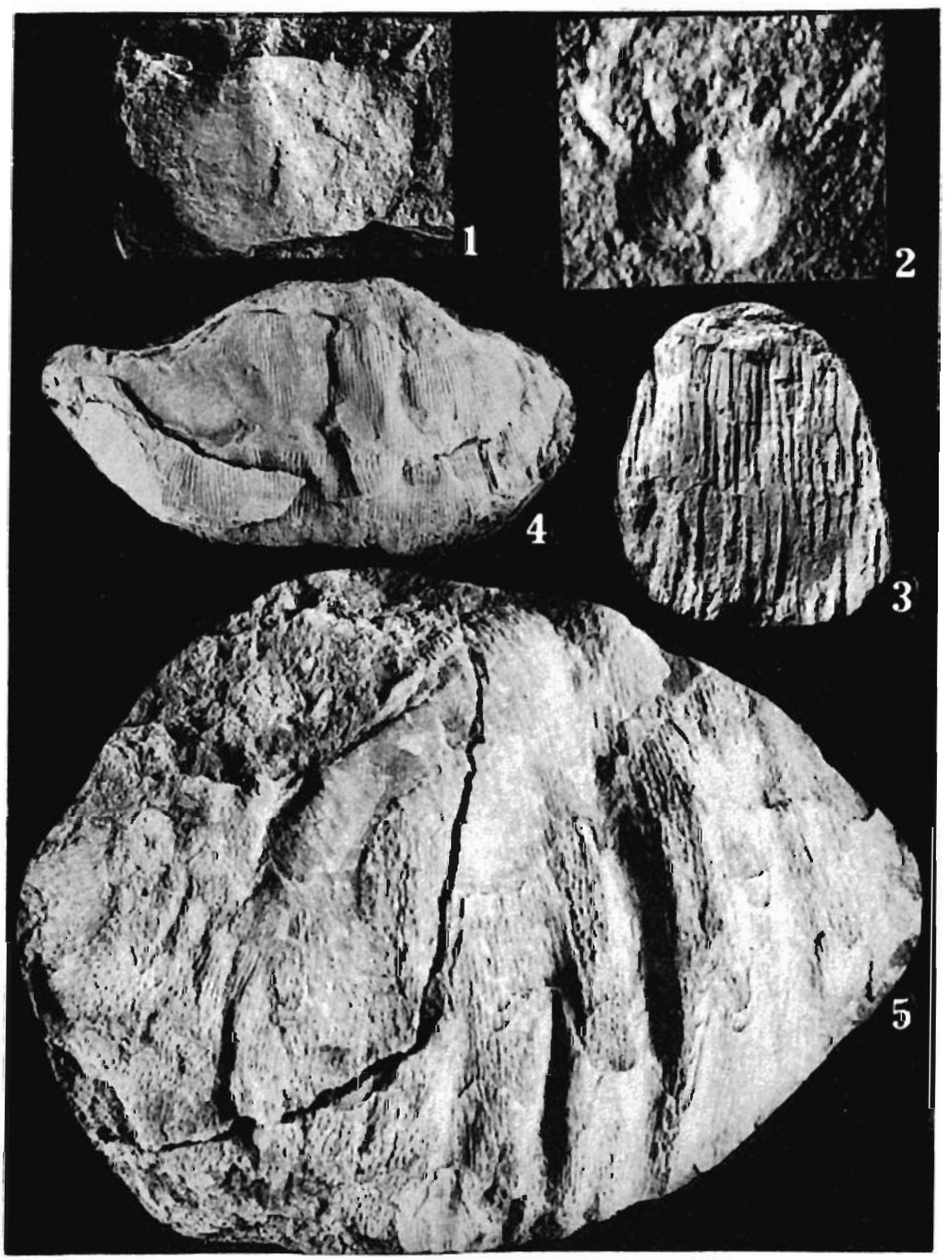
Institute of Geological Sciences
of the Polish Academy of Sciences,
Al. Żwirki i Wigury 93,
02-089 Warszawa, Poland



1 — *Paraconularia* sp.; borehole M7 (depth 1251-1257 m), × 2
2-5 — *Rugosochonetes aureolus* (SCHWARZBACH); 2 — S3 (1040-1044 m), × 3; 3 — S8 (1316—1332 m), × 7; 4-5 — M7 (1263-1269 m), × 3
6-10 — *Plicochonetes waldschmidti* (PAECKELMANN); 6 — M12 (1357-1363 m), × 7; 7 — S7 (1233-1239 m), × 7; 8 — M1 (1411-1413 m), × 10; 9 — M1 (1417-1422 m), × 10; 10 — S3 (1044-1050 m), × 6
11a-11b — *Plicochonetes* sp.; M1 (1417-1422 m), × 6



1-3 — *Rugosochonetes brinkmanni* (SCHWARZBACH); 1 — borehole S3 (depth 1510-1514 m), × 3; 2-3 — S3 (1040-1044 m), 2 × 4, 3 × 5
4 — *Echinoconchus punctatus* (MARTIN); S6 (1915-1918 m), × 4
5 — *Levipustula* cf. *piscariae* (WATERLOT); S6 (1341-1347 m), × 2.5
6 — *Fluctuaria undata* (DEFRANCE); S3 (1510-1514 m), × 5
7 — *Gigantoproductus giganteus* (MARTIN); S3 (1453-1458 m), × 1

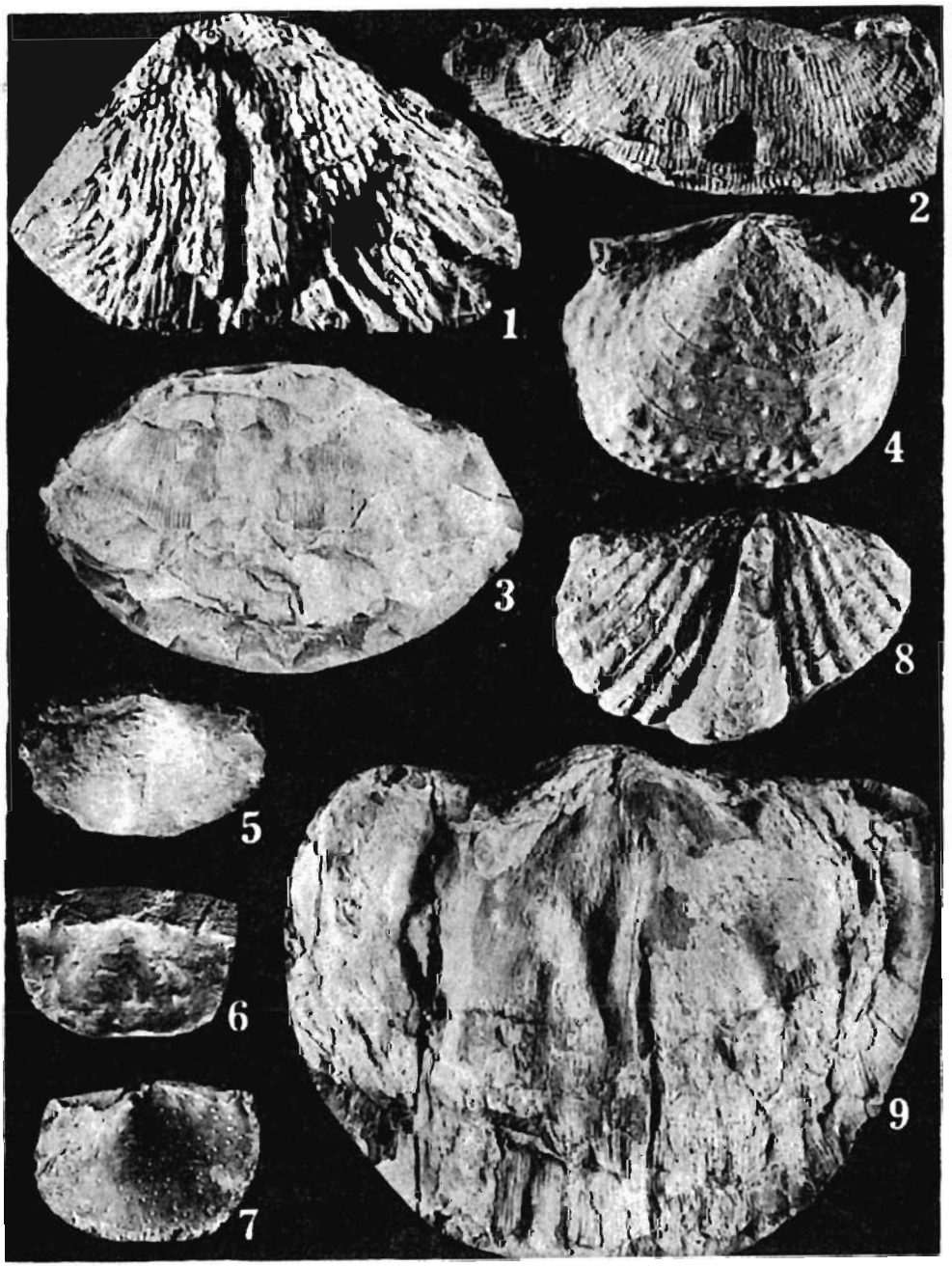


1-2 — *Tornquistia polita* (Mc COY); 1 — borehole S4 (depth 1615-1619 m), × 6; 2 — M3 (1410-1415 m), × 20

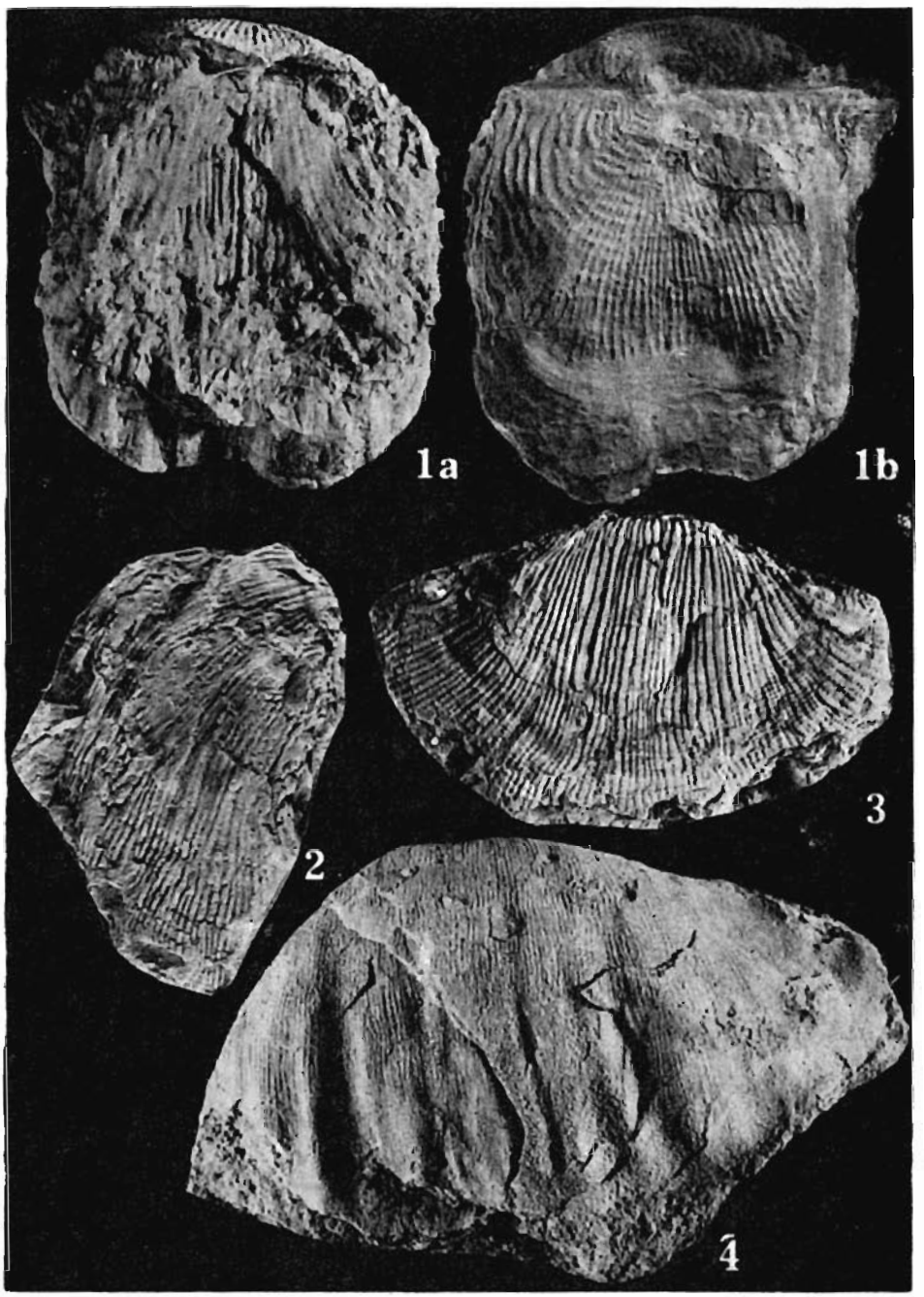
3 — *Antiquatonia* sp.; M7 (1139-1143 m), × 2

4 — *Gigantoproductus latissimus complicatus* (PAECKELMANN); S8 (1836-1840 m), × 1

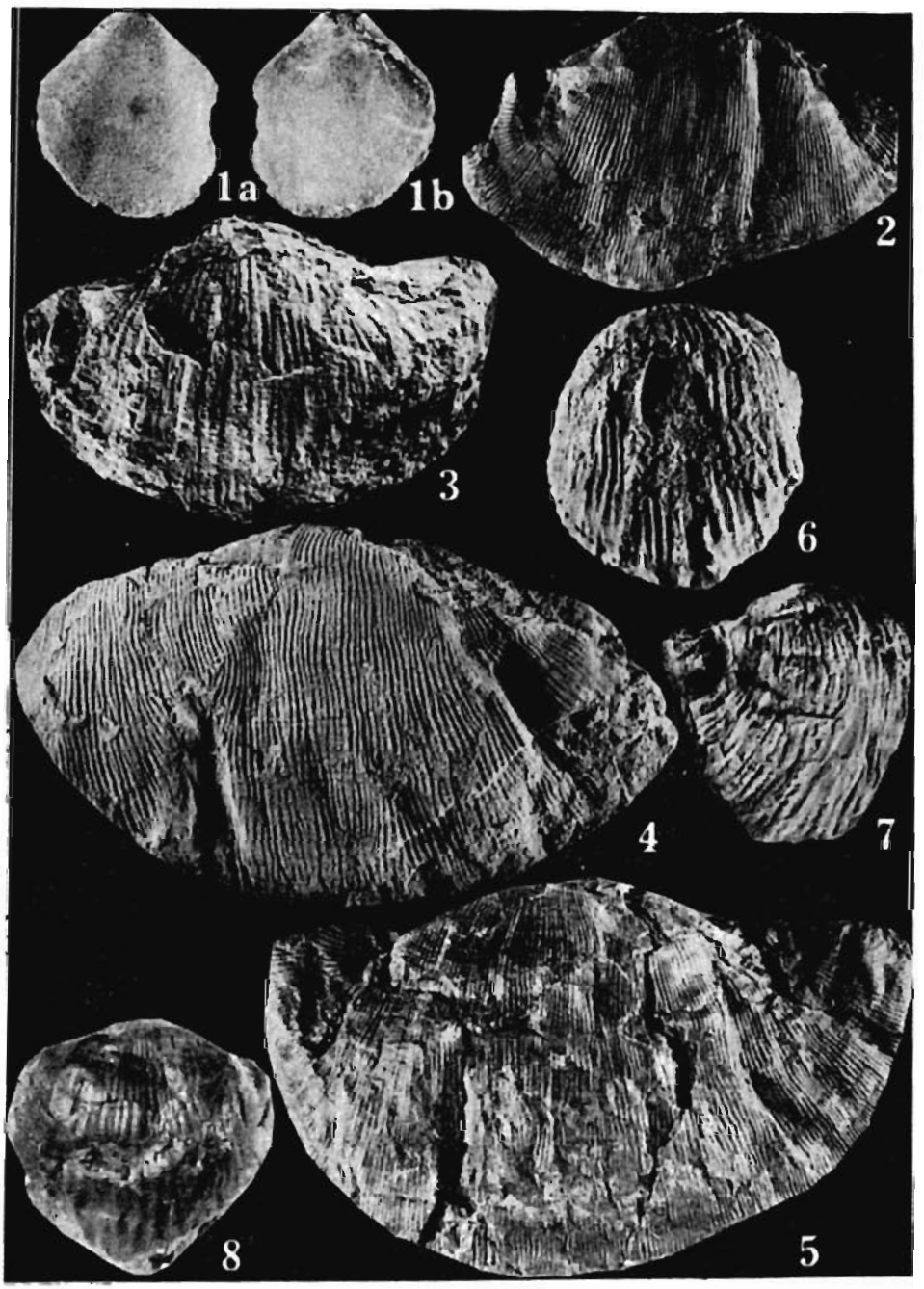
5 — *G. striatosulcatus* (SCHWETZOW); S3 (1453-1458 m), × 1



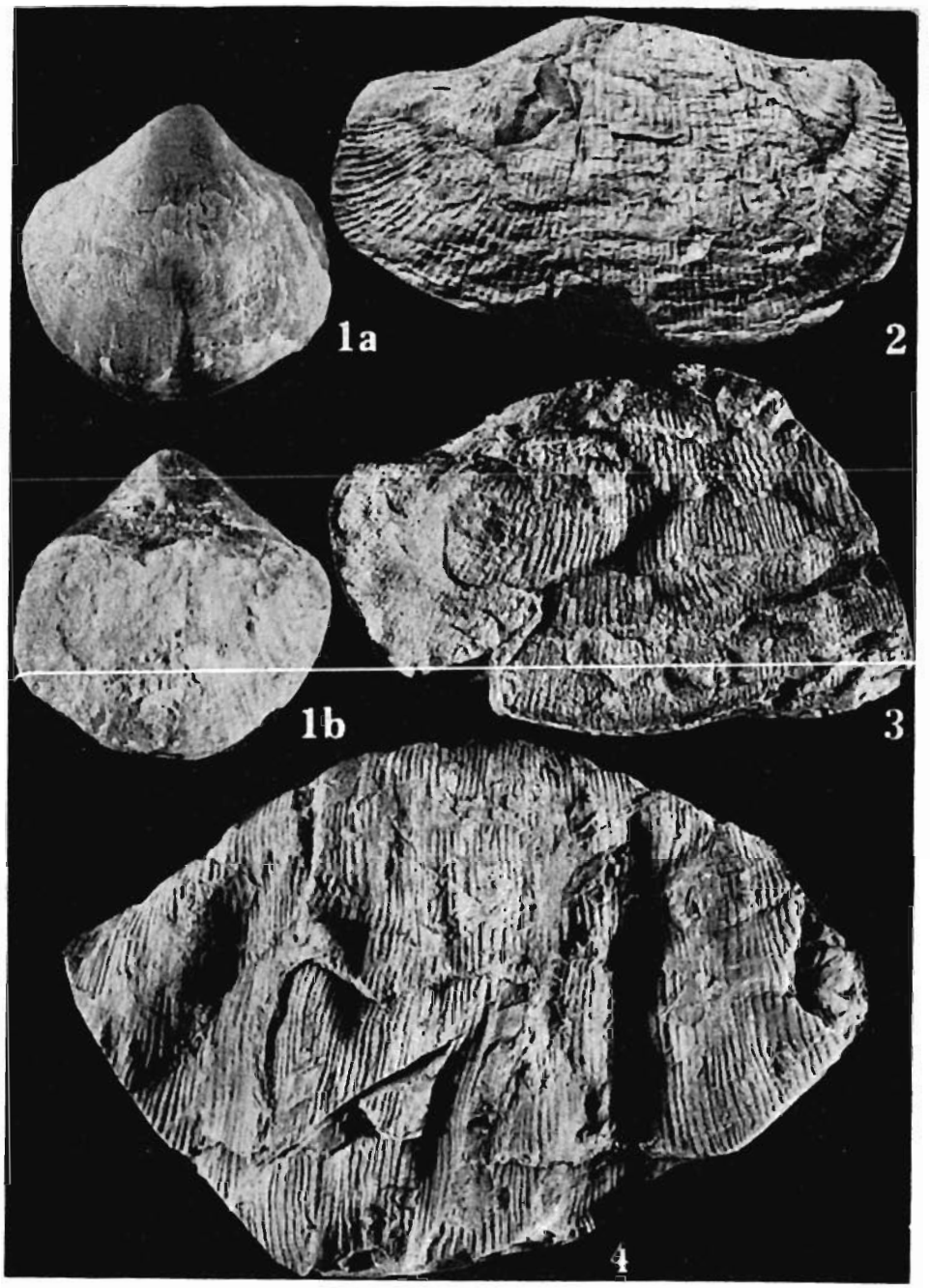
1 — *?Echinaria* sp.; borehole S5 (depth 1113-1118 m), × 1.5
2 — *Gigantoproductus latissimus complicatus* (PAECKELMANN); S5 (1244-1249 m), × 2
3 — *G. latipriscus* (SARYCHEVA); S8 (1836-1840 m), × 1.3
4 — *Overtonia* sp.; M7 (1646-1652 m), × 4
5-7 — *Tornquistia polita* (Mc COY); 5 — S3 (1510—1514 m), × 4; 6 — M12 (1369-1375 m), × 12; 7 — M7 (1528-1534 m), × 10
8 — *Spirifer bisulcatus* cf. *oystermouthensis* VAUGHAN; S7 (1388-1394 m), × 2
9 — *Gigantoproductus* ex gr. *gigantoides* (PAECKELMANN); S3 (1836-1840 m), × 1



1a-1b — *Pugilis* cf. *pugilis* (PHILLIPS); borehole M1 (depth 1448-1452 m), × 1
2 — *Linoproductus* sp.; M2 (1514-1520 m), × 2.5
3 — *Gigantoproductus latipriscus* (SARYCHEVA); M2 (1169-1175 m), × 1
4 — *G. giganteus* (MARTIN); M2 (1590-1596 m), × 1



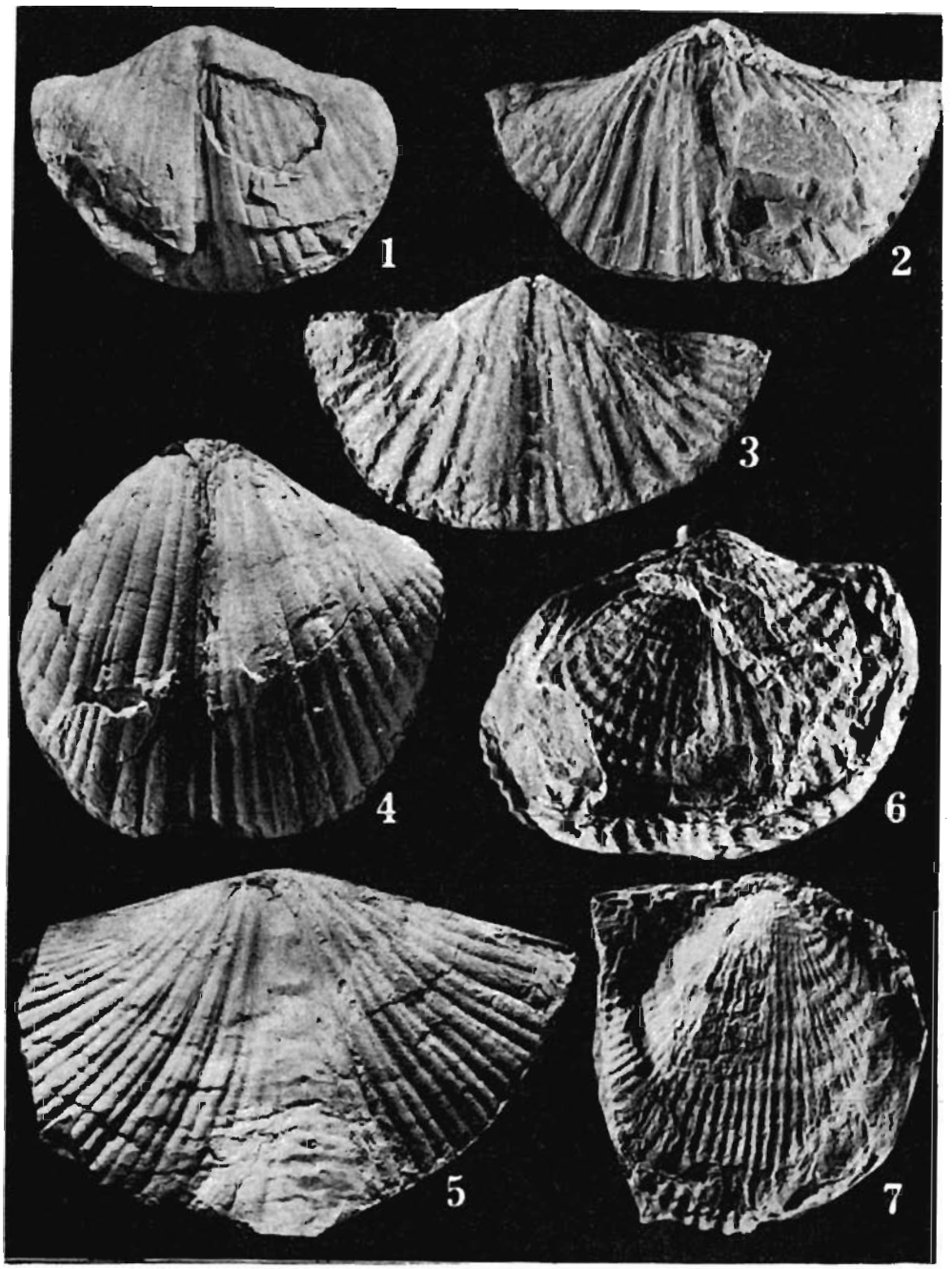
1a-1b — *Composita* sp.; borehole M2 (depth 1175-1184 m), × 5
2 — *Gigantoproductus latissimus complicatus* (PAECKELMANN); M1 (1416--1417 m), × 1
3 — *G. latissimus latissimus* (SOWERBY); M2 (1514-1520 m), × 2
4 — *G. giganteus* (MARTIN); M7 (1646-1652 m), × 1
5 — *G. bisati* (PAECKELMANN); M7 (1646-1652 m), × 1
6-8 — *Eomarginifera setosa* (PHILLIPS); 6 — M12 (1357-1363 m), × 3.5; 7-8 — M8 (1361-1367 m), × 3



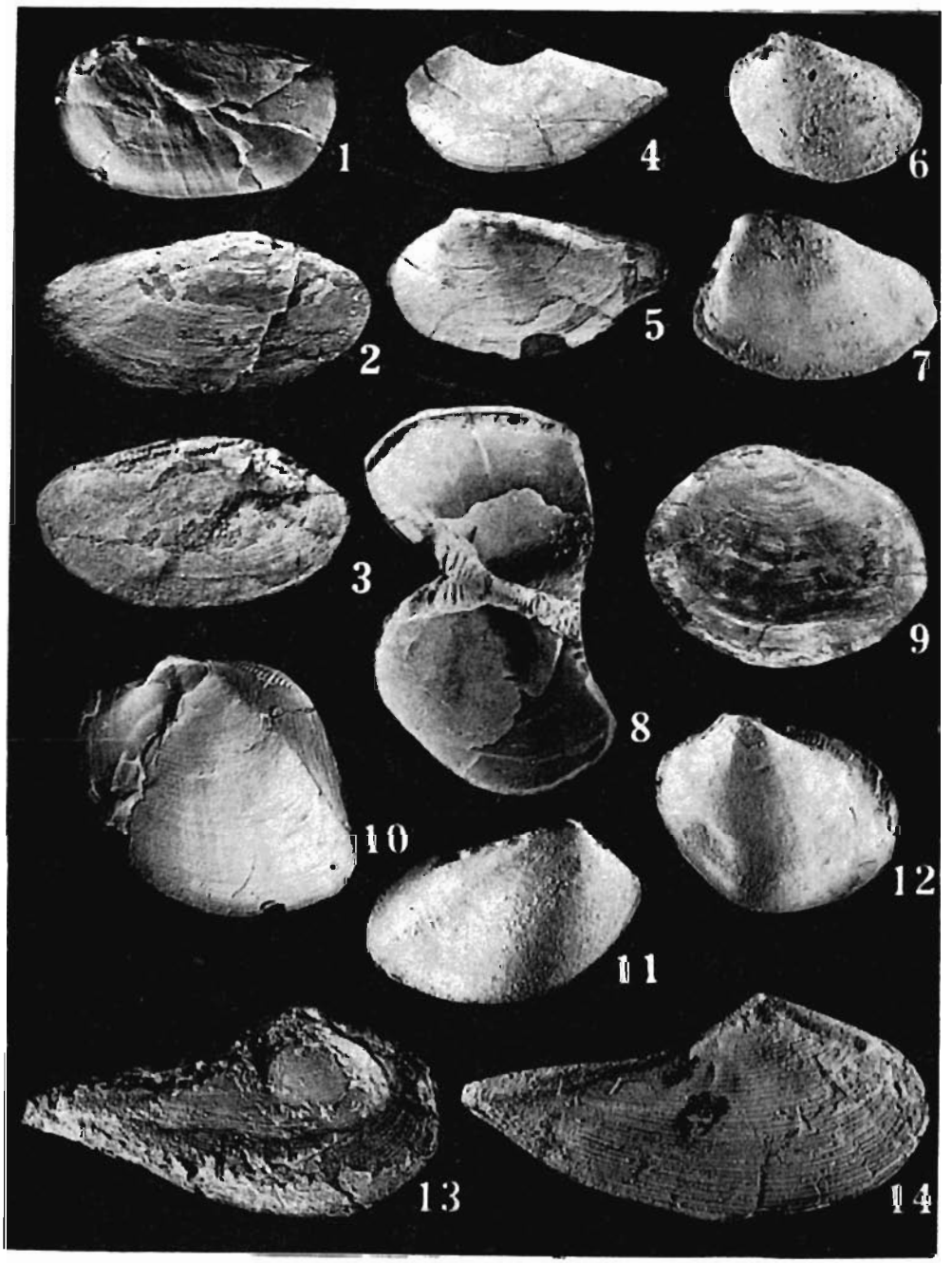
1a-1b — *Crurithyris urei* (FLEMING); borehole M2 (depth 1175-1181 m), × 5
2 — *Gigantoproductus latissimus latissimus* (SOWERBY); M1 (1430-1433 m), × 2
3 — *G. latipriscus* SARYCHEVA; M8 (1199-1205 m), × 2
4 — *G. striatosulcatus* (SCHWETZOW); M8 (1700-1707 m), × 1.5

1 — *Gigantoproductus latissimus latissimus* (SOWERBY); borehole S7 (depth 1291-1295 m), × 1
2 — *Eomarginifera cf. lobata* (SOWERBY); M1 (1448-1452 m), × 3
3-4 — *E. lobata* (SOWERBY); M1 (1448-1452 m), 3 × 3.5, 4 × 3
5 — *Echinaria* sp.; M12 (924-930 m), × 2
6a-6b — *Pugilis* sp.; S7 (1388-1394 m), × 2

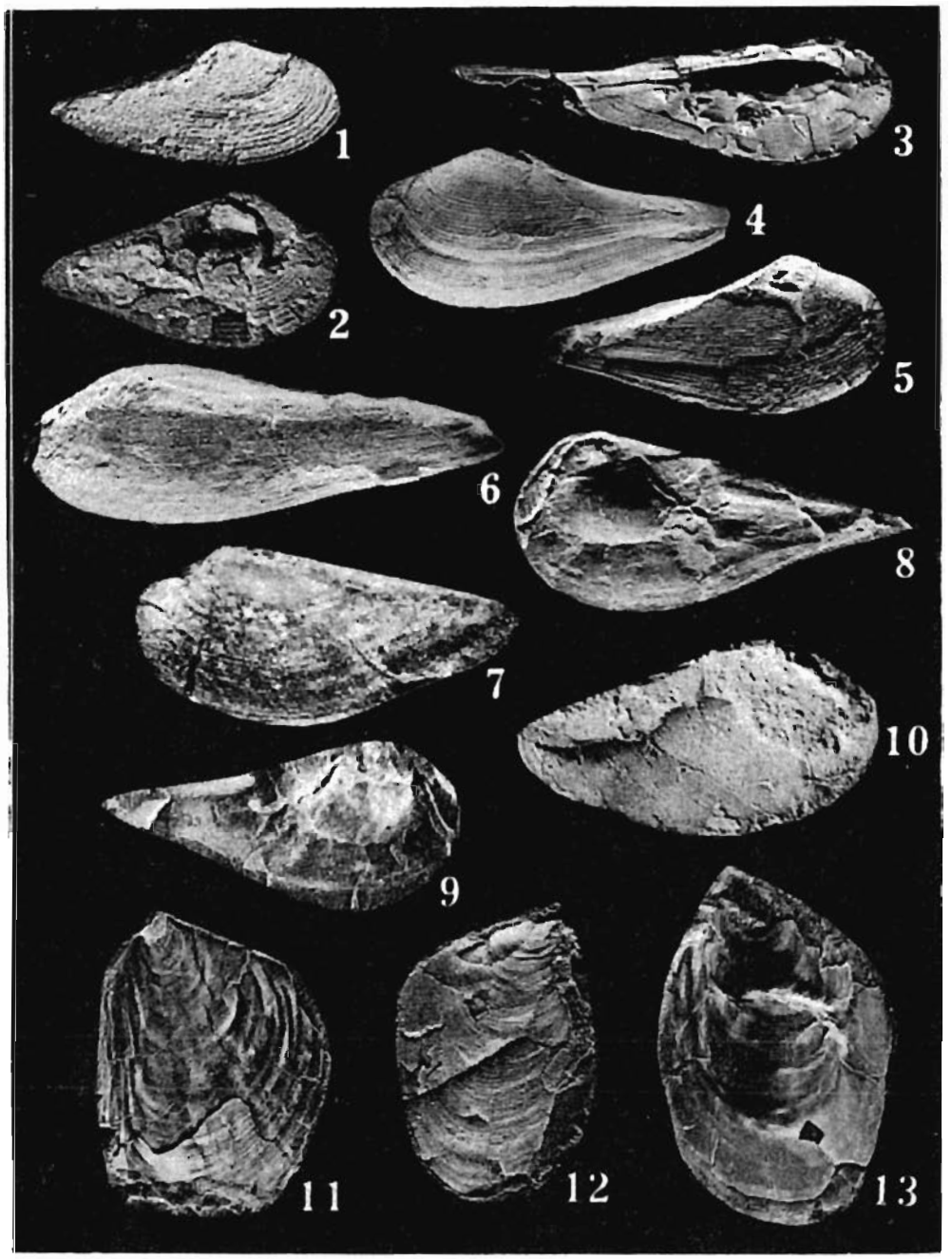
1-3 — *Eomarginifera* cf. *nasuta* (PAECKELMANN); borehole S7 (depth 1388-1394 m), 1 and 3 × 2.5, 2 × 3
4-5 — *Martinia glabra* (SOWERBY); M1 (1448-1452 m), × 2.5
6 — *Spirifer* ex gr. *bisulcatus* SOWERBY; M2 (1514-1520 m), × 2
7-8 — *Sp. bisulcatus* cf. *oystermouthensis* VAUGHAN; M8 (1605-1611 m), × 2
9 — *Gigantoproductus latipriscus* SARYCHEVA; S3 (1453-1458 m), × 1
10 — *Phricodothyris monopustulosa* DEMANET; M2 (1175-1181 m), × 3



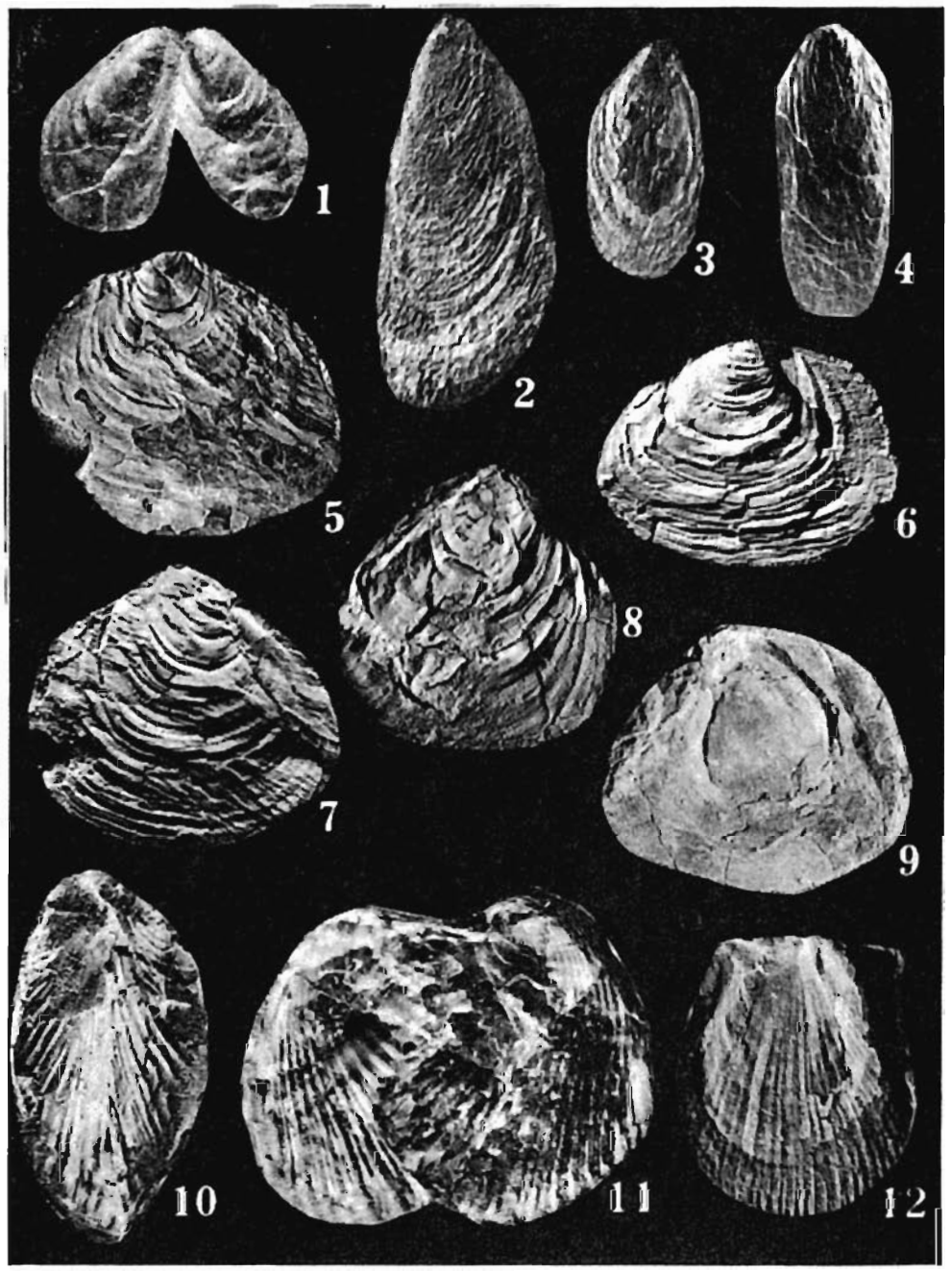
1 — *Prospira* sp.; borehole M1 (depth 1448-1452 m), × 2
2-3 — *Spirifer bisulcatus calcaratus* Mc COY; 2 — M2 (1514-1520 m), × 2.5; 3 — M2 (1175-1181 m), × 2
4 — *Brachythyris* sp.; M1 (1448-1452 m), × 2
5 — *Neospirifer* sp.; M1 (1448-1452 m), × 2
6-7 — *Eomarginifera praecursor* (MUIR-WOOD); M8 (1605-1611 m), × 4



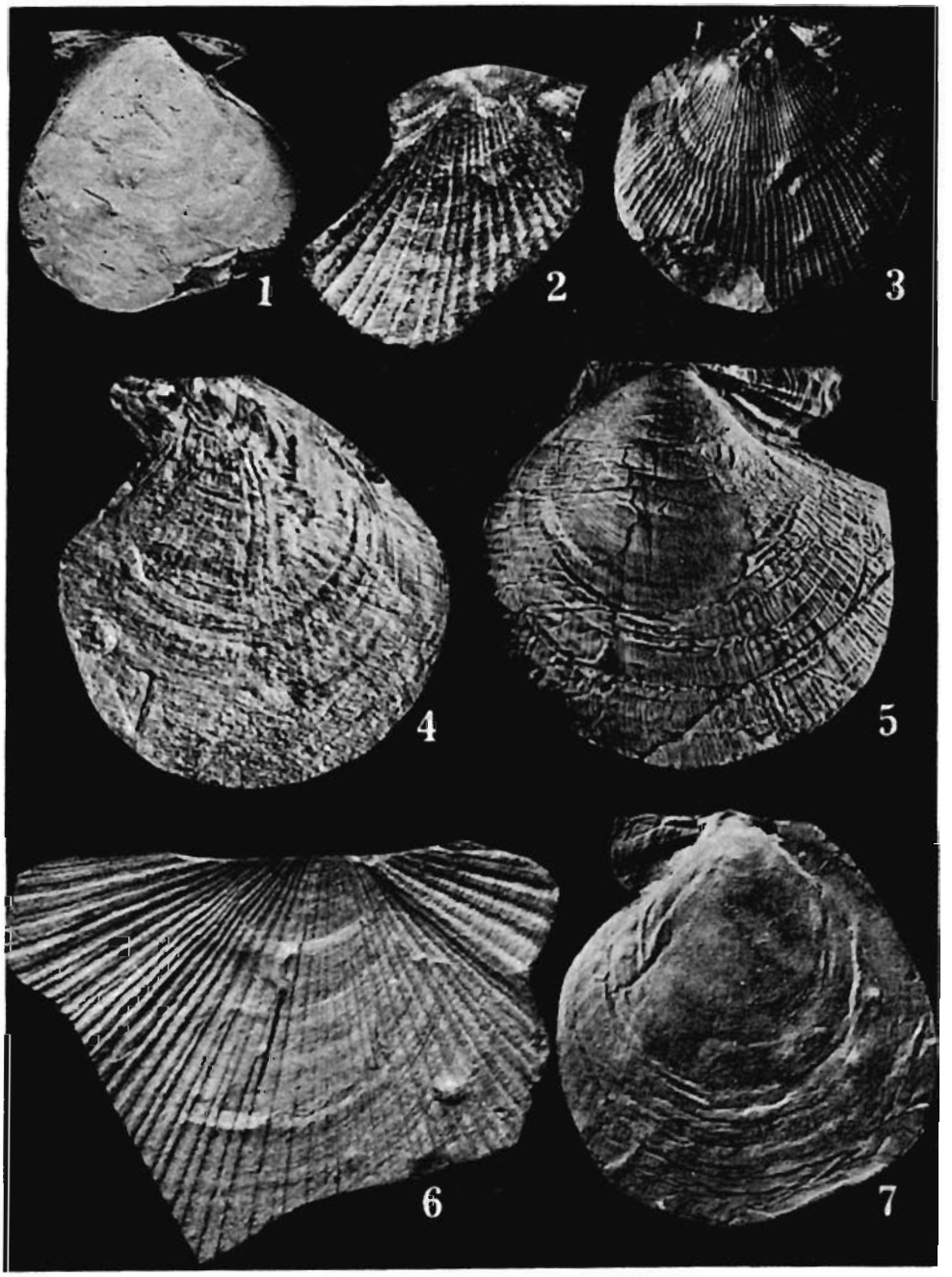
1 — *Anthraconello rotundatum* CHERNYSHEV; borehole M7 (depth 1126-1131 m), × 4
2-3 — *A. oblongum* (HIND); 2 — M7 (1223-1229 m), × 4; 3 — M1 (1422-1426 m), × 3
4-5 — *A. laevirostrum* (PORTLOCK); 4 — S3 (1040-1044 m), × 2; 5 — S3 (1453-1458 m), × 5
6-7 — *Nuculopsis gibbosa* (FLEMING); 6 — S3 (1453-1458 m), ×8; 7 — M7 (1646-1652 m), × 8
8 — *N. cf. adontoides* (MEEK); M1 (1430-1433 m), × 5
9 — *Palaeonello luciniforme* (PHILLIPS); S8 (1316-1322 m), × 6
10-12 — *P. ostraviense* (KLEBELSBERG); 10 — M2 (1336-1342 m), × 6; 11 — S2 (1536-1542 m), × 5; 12 — S3 (1510-1514 m), × 4
13-14 — *Polidevcia gigantea* SHULGA; 13 — M7 (1528-1534 m), × 2.5; 14 — M2 (1422-1426 m), × 3



1-2 — *Polidevcia sharmani* (ETHERIDGE); borehole M1 (depth 1422-1426 m), 1 × 10, 2 × 8
3 — *P. vasicekí* KUMPERA, PRANTL & RUZICKA; M7 (1239-1245 m), × 2
4-6 — *P. attenuata* (FLEMING); 4 — M7 (1528-1534 m), × 2; 5 — M7 (1405-1411 m), × 3; 6 — S3 (1040-1044 m), × 2
7-9 — *P. cf. bellicostata* (SCHWARZBACH); 7 — S8 (1316-1322 m), × 10; 8 — S3 (1108-1114 m), × 7; 9 — S3 (1504-1510 m), × 7
10 — *Phestia cf. stilla* (Mc COY); M1 (1405-1411 m), × 8
11 — *Septimyalina cf. dorlodoti* (DEMANET); M3 (1424-1430 m), × 3.5
12-13 — *S. sublamellosa* (ETHERODGE); 12 — M3 (1084-1089 m), × 4; 13 — M3 (1051-1057 m), × 6

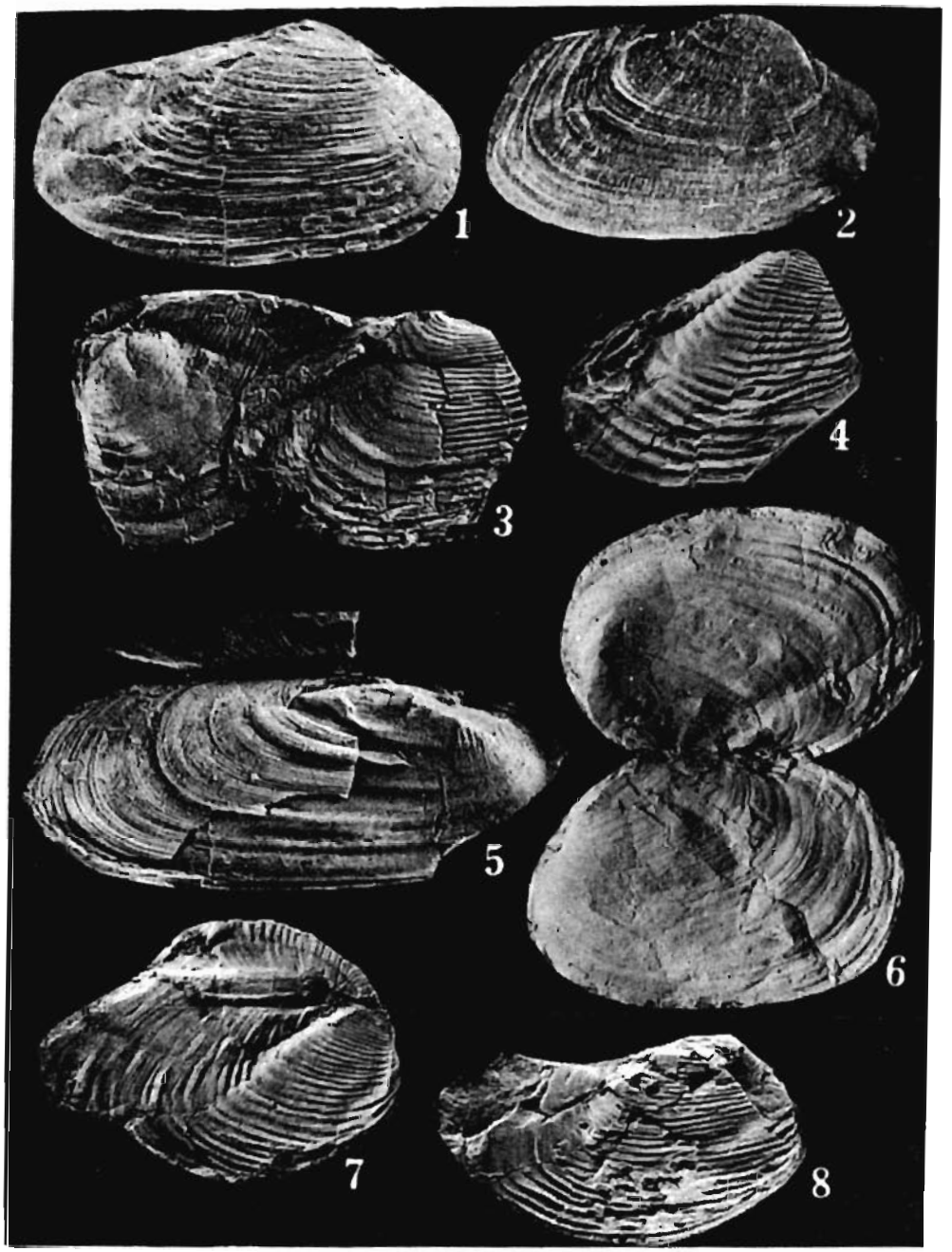


1 — *Posidoniella* sp.; borehole S8 (depth 1096-1102 m), × 10
2-4 — *Posidoniella elongata* (PHILLIPS); 2-3 — S8 (1163-1169 m), × 4; 4 — S8 (1118-1124 m), × 3.5
5-8 — *Posidonia corrugata* (ETHERIDGE); 5 — M7 (1528-1534 m), × 3.5; 6 — M12 (1098-1104 m), ×5; 7 — M1 (1405-1411 m), × 7; 8 — S3 (1504-1510 m), × 6
9 — *Shizodus* cf. *obliquus* (Mc COY); M3 (1063-1069 m), × 1
10-11 — *Chaenocardiola footi* (BAILY); 10 — S3 (1237-1243 m), × 3.5; 11 — S6 (1571-1574 m), × 2.5
12 — *Palaeolima* cf. *boltoni* DEMANET; M7 (1233-1239 m), × 10

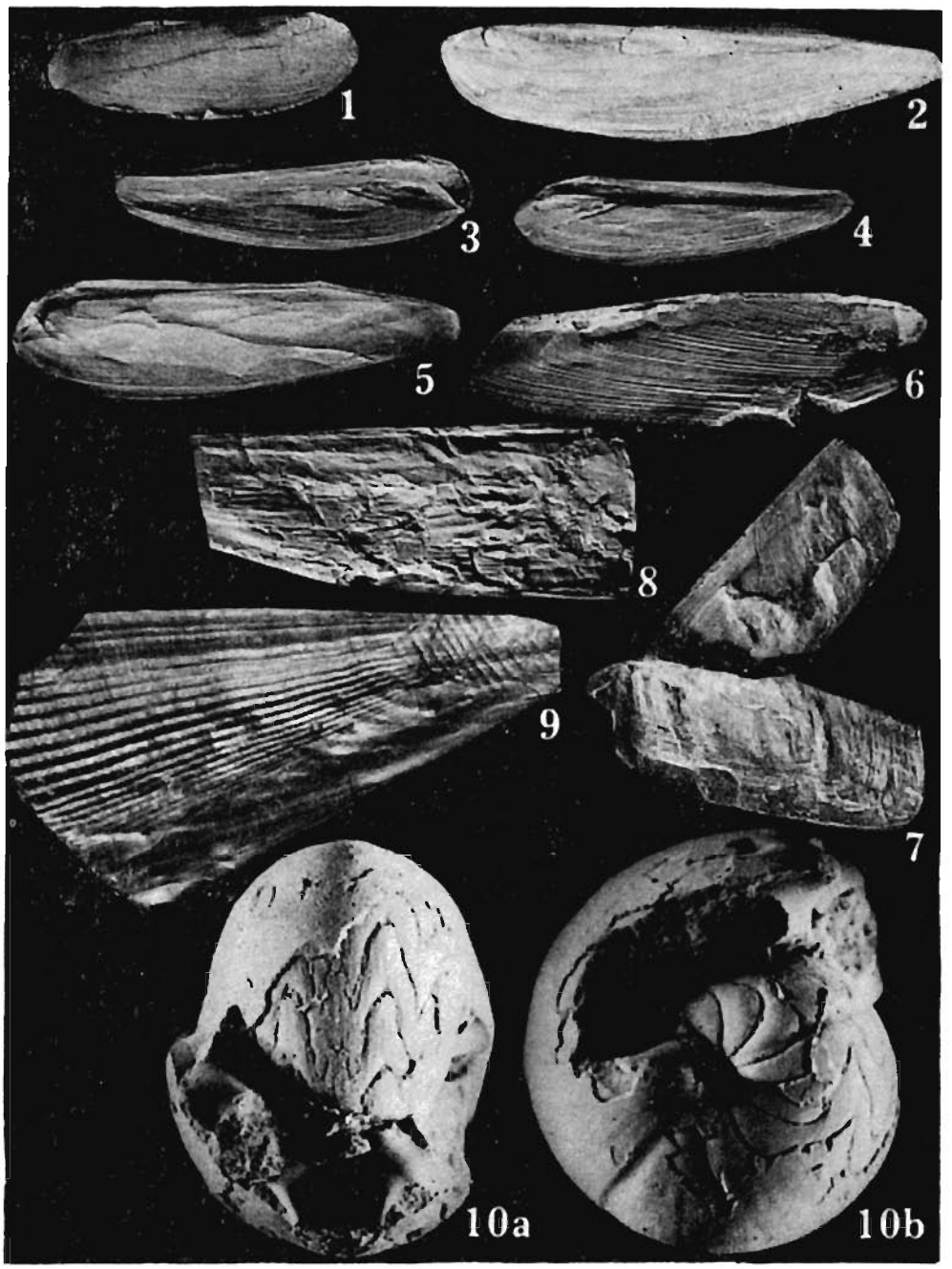


1 — *Streblochondria* cf. *condrustine* (DEMANET); borehole S3 (depth 1231-1237 m), × 4
2 — *Aviculopecten* cf. *delepinei* DEMANET; S6 (1341-1347 m), × 7
3 — *A.* cf. *gentilis* (SOWERBY); M7 (1059-1065 m), × 4
4 — *Obliquipecten costatus* YATES; M7 (1528-1534 m), × 3
5 — *Streblopteria* cf. *elliptica* (PHILLIPS); M8 (1605-1611 m), × 4
6 — *Dunbarella* cf. *papyracea* (SOWERBY); S4 (1205-1210 m), × 3
7 — *Streblopteria anisota* (PHILLIPS); S3 (1453-1458 m), × 5

1 — *Streblopteria purvesi* (DEMANET); borehole M2 (depth 1336-1342 m), × 8
2 — *S. anisota* (PHILLIPS); M8 (1481-1485 m), × 4
3 — *Streblochondria condrustina* (DEMANET); M10 (1397-1401 m), × 2.5
4-5 — *Janeia primaeva* (PHILLIPS); 4 — S3 (1291-1296 m), × 4; 5 — S2 (1398-1404 m), × 5
6 — *J. boehmi* (SCHMIDT); M3 (1084-1089 m), × 2.5
7 — *Najadites* sp.; M7 (981-986 m), × 7
8-9 — *Curvirimula belgica* (HIND); 8 — S3 (983-989 m), × 8; 9 — M10 (1022-1035 m), × 12
10 — *Sanguinolites* cf. *clavatus* (ETHERIDGE); M7 (1143-1147 m), × 8
11 — *Edmondia unioniformis* (PHILLIPS); M7 (1245-1251 m), × 2.5



1-2 — *Edmondia arcuata* (PHILLIPS); 1 — borehole S4 (depth 1205-1210 m), × 2; 2 — S2 (1143-1149 m), × 3
3-4 — *E. cf. maccoyi* HIND; 3 — M3 (1256-1262 m), × 2.5; 4 — S2 (1536-1542 m), × × 1.5
5 — *E. cf. pentonensis* HIND; M7 (1233-1239 m), × 2
6 — *E. unioniformis* (PHILLIPS); M1 (1448-1452 m), × 1.5
7-8 — *Grammysiopsis variabilis* (Mc COY); M3 (1424-1430 m), 7 × 3, 8 × 2.5



1 — *Ennirostra* cf. *coxi* HAJKR, LUKASOVA, RUZICKA & REHOR; borehole M7 (depth 1646-1652 m), × 4.5

2-5 — *E. augustai* (HAJKR, LUKASOVA, RUZICKA & REHOR); 2 — S3 (1108-1114 m), × 3; 3-4 — M3 (1232-1238 m), × 2; 5 — S5 (1191-1197 m), × 4

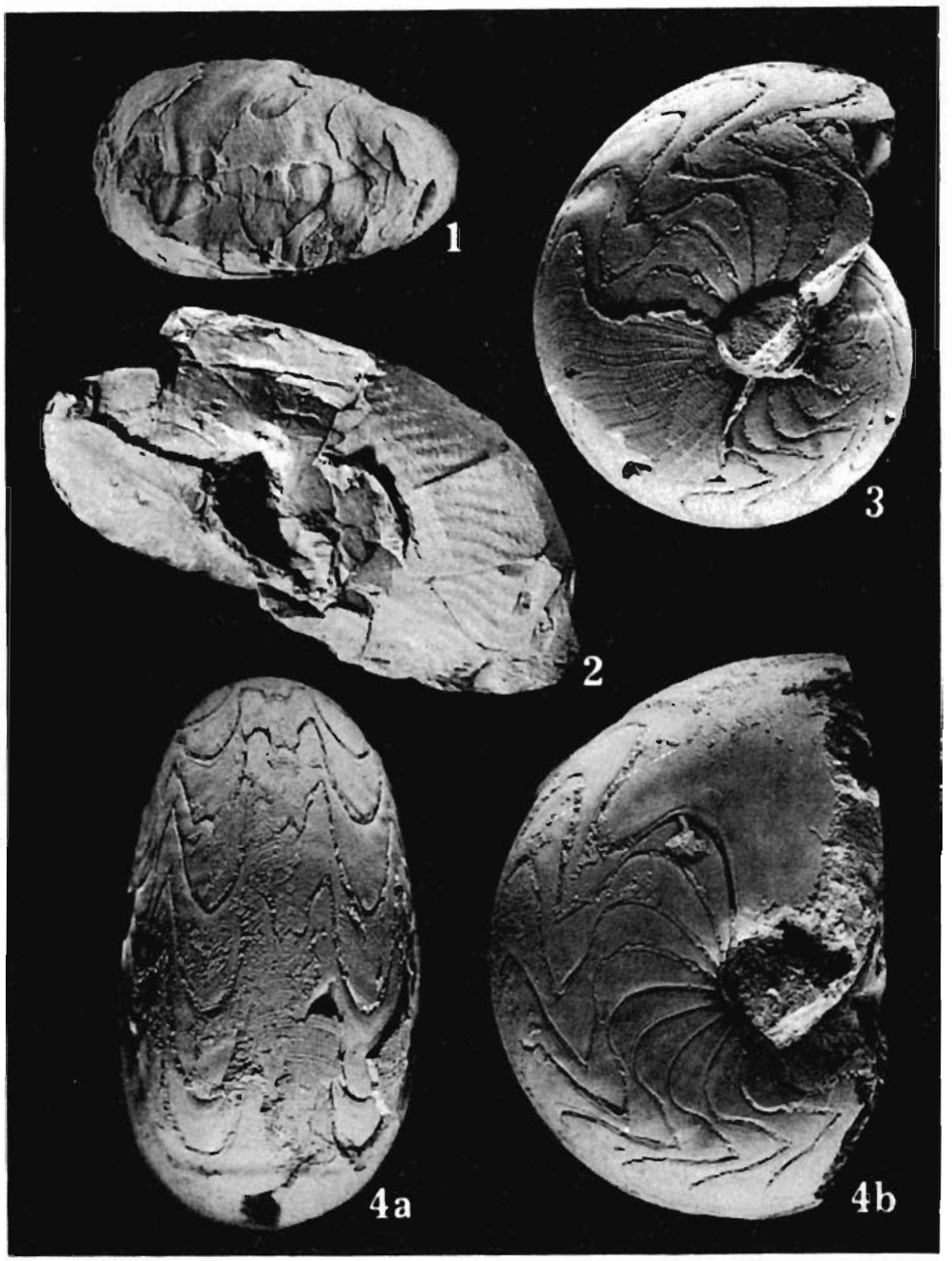
6 — *Citothyris* cf. *sturi* (RUZICKA & REHOR); M3 (1256-1262 m), × 3

7 — *C.* cf. *nanetae* (RUZICKA & REHOR); S3 (1044-1050 m), × 4

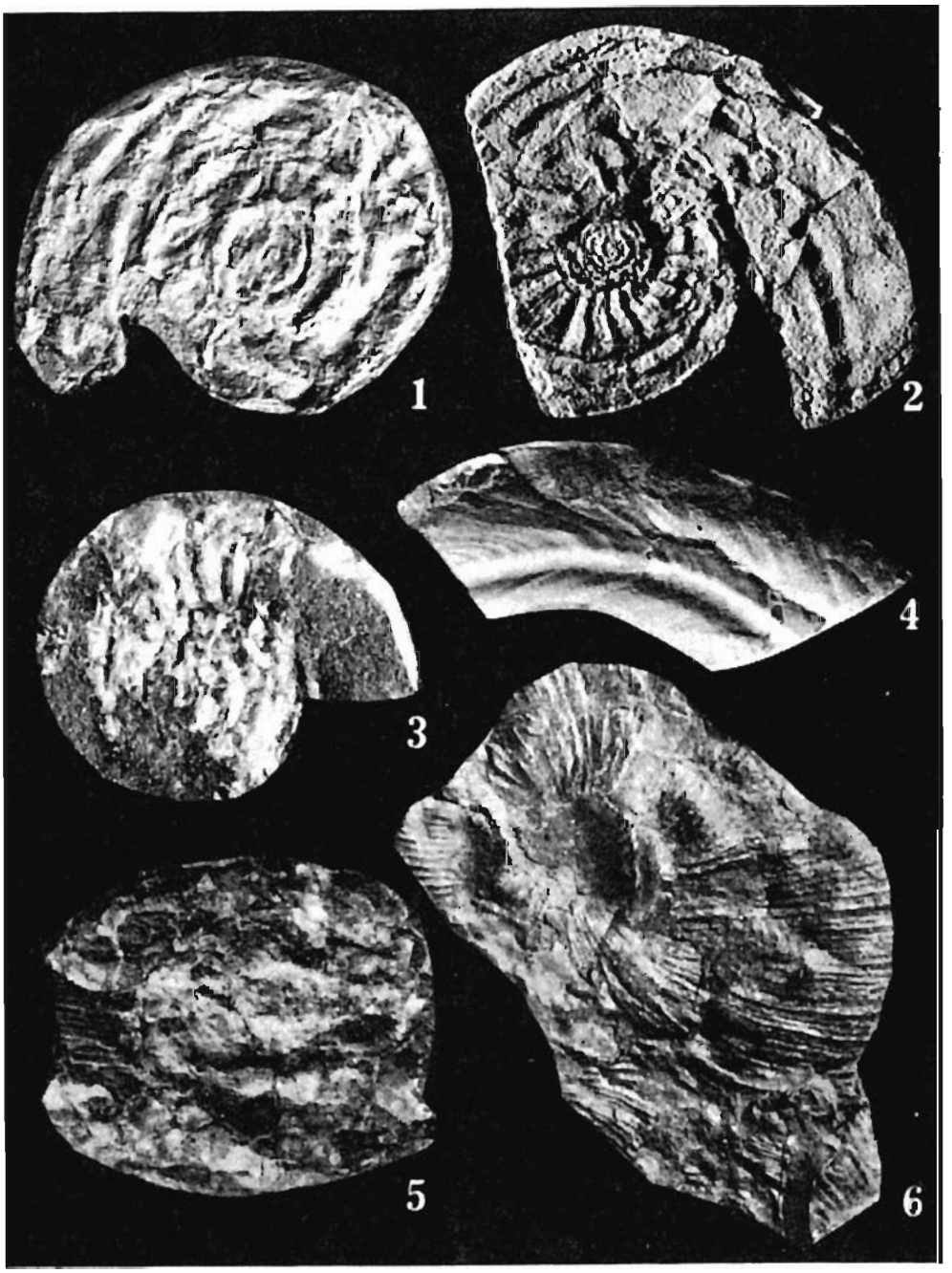
8 — *Aviculopinna* cf. *carbonaria* DEMANET; M12 (1200-1206 m), × 2

9 — *Sulcatopinna flabelliformis* (HIND); S2 (1855-1861 m), × 2

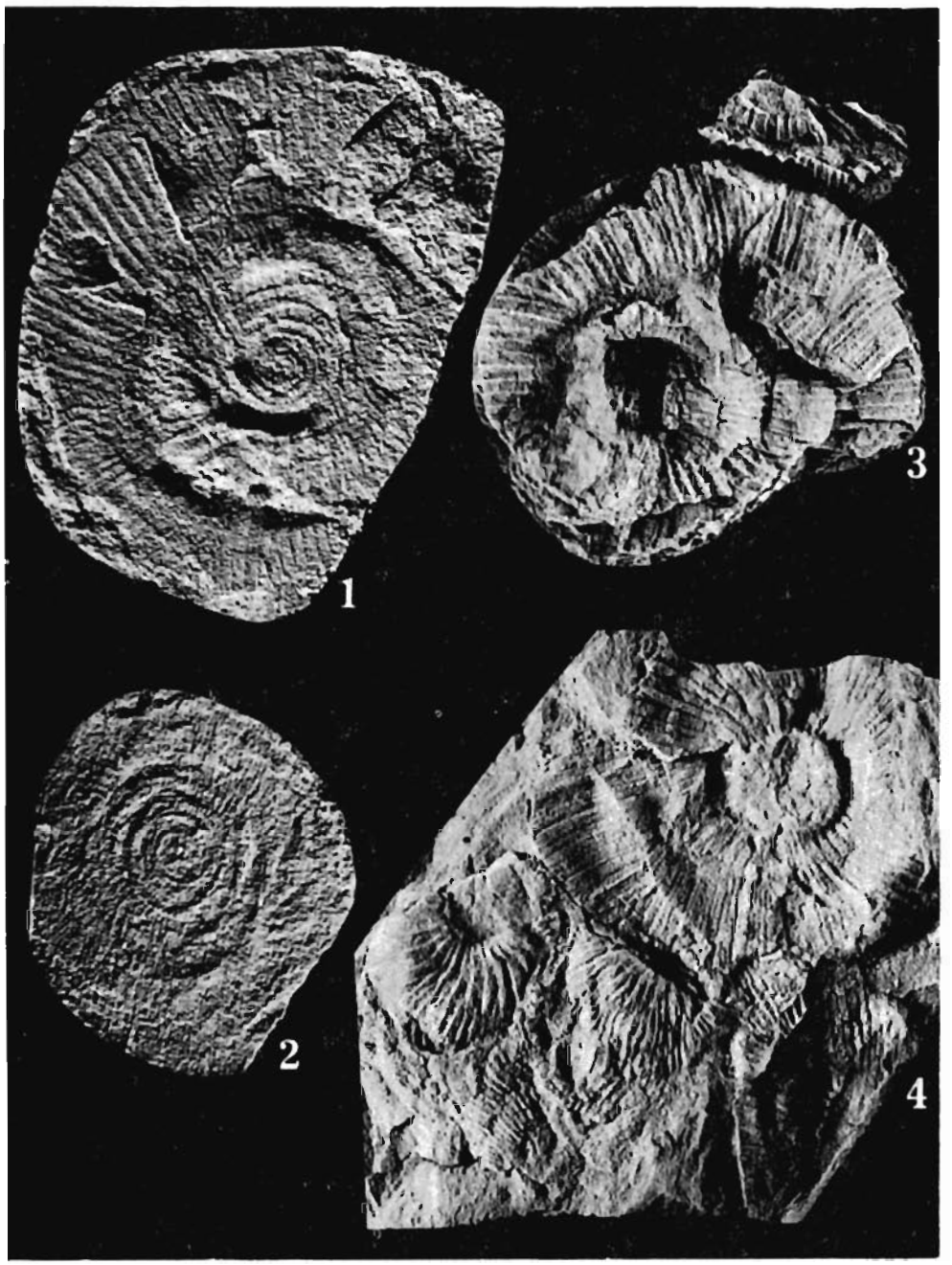
10a-10b — *Goniatites crenistria* (PHILLIPS); M8 (1700-1707 m), × 3



1 — *Sudeticeras* cf. *newtonense* MOORE; borehole S3 (depth 1608-1614 m), × 4
2 — ? *Beyrichoceratoides* sp.; M1 (1430-1433 m), × 2
3-4 — *Sudeticeras splendens* (BISAT); M1 (1416-1417 m), × 3



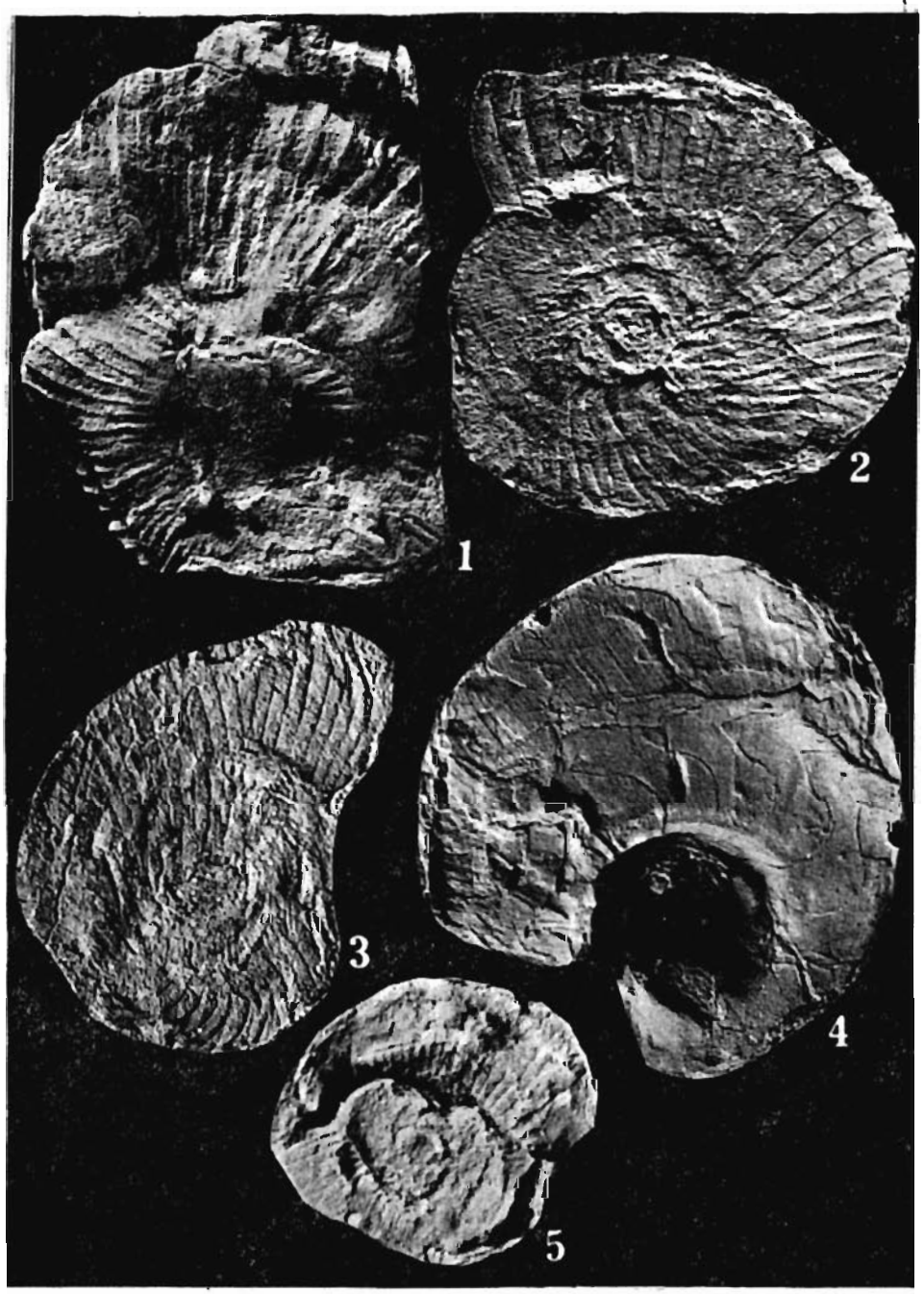
1 — *Eumorphoceras* cf. *pseudobilingue* BISAT; borehole M7 (depth 1528-1534 m), × × 6
2 — *E. bisulcatum* GIRTY; M12 (1151-1155 m), × 7
3 — *E.* cf. *bisulcatum* GIRTY; S6 (1571-1574 m), × 10
4 — *Eumorphoceras* sp.; S6 (1571-1574 m), × 2.5
5 — *Cravenoceras* sp.; S8 (1150-1156 m), × 6
6 — *Cravenoceratoides nitidus* (PHILLIPS); M7 (1149-1155 m), × 3



1 — *Cravenoceratoides* cf. *stellarum* (BISAT); borehole S2 (depth 1434-1440 m), × × 5

2 — *Ct. edalense* (BISAT); S4 (1615-1619 m), × 8

3-4 — *Ct. nitidus* (PHILLIPS); 3 — S3 (1044—1050 m), × 3; 4 — S2 (1434-1440 m), × 3

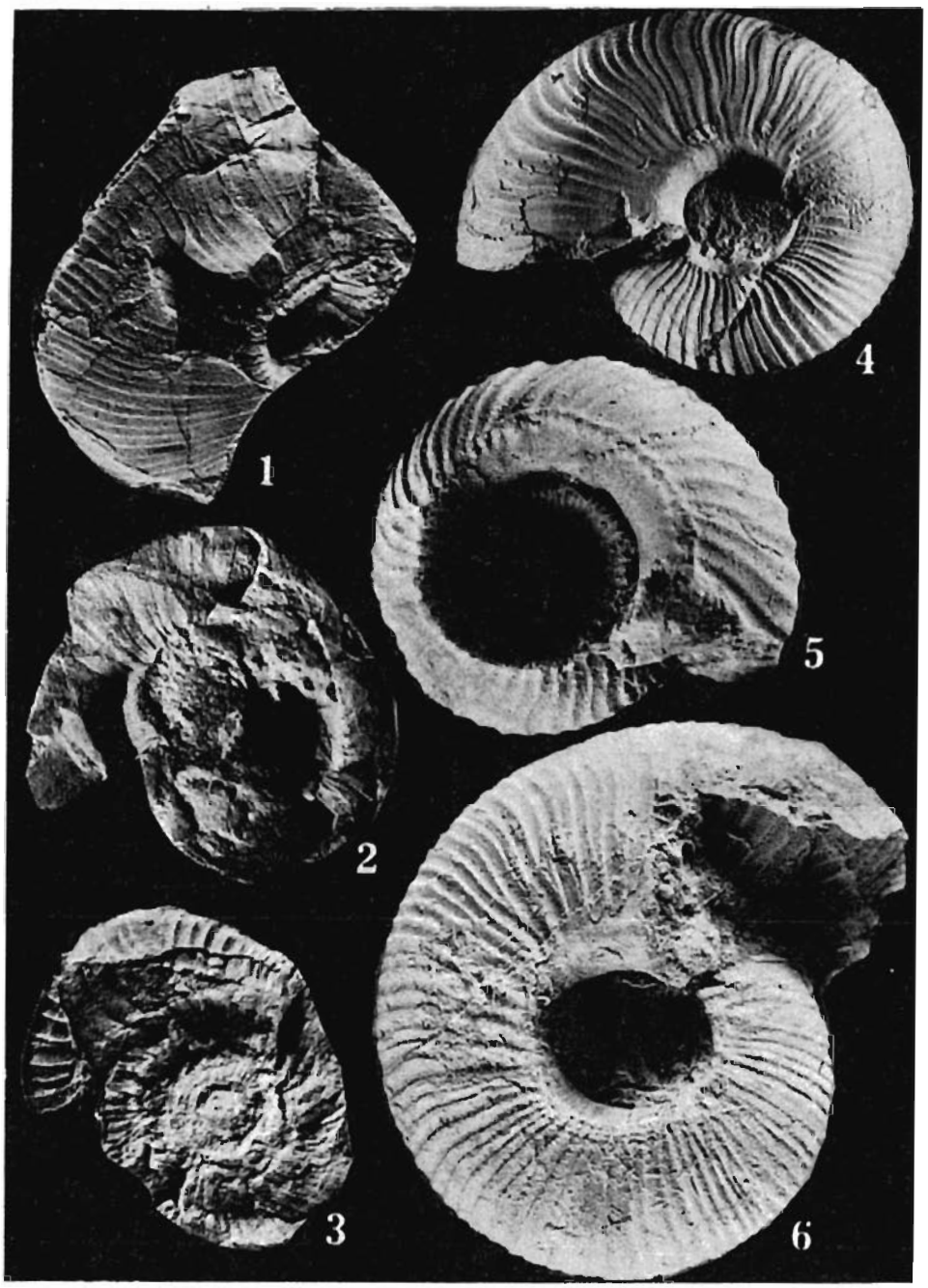


1 — *Cravenoceratoides nitidus* (PHILLIPS); borehole M7 (depth 1149-1155 m), × × 4.5

2-3 — *Ct. edalense* (BISAT); M10 (1124-1130 m), × 5

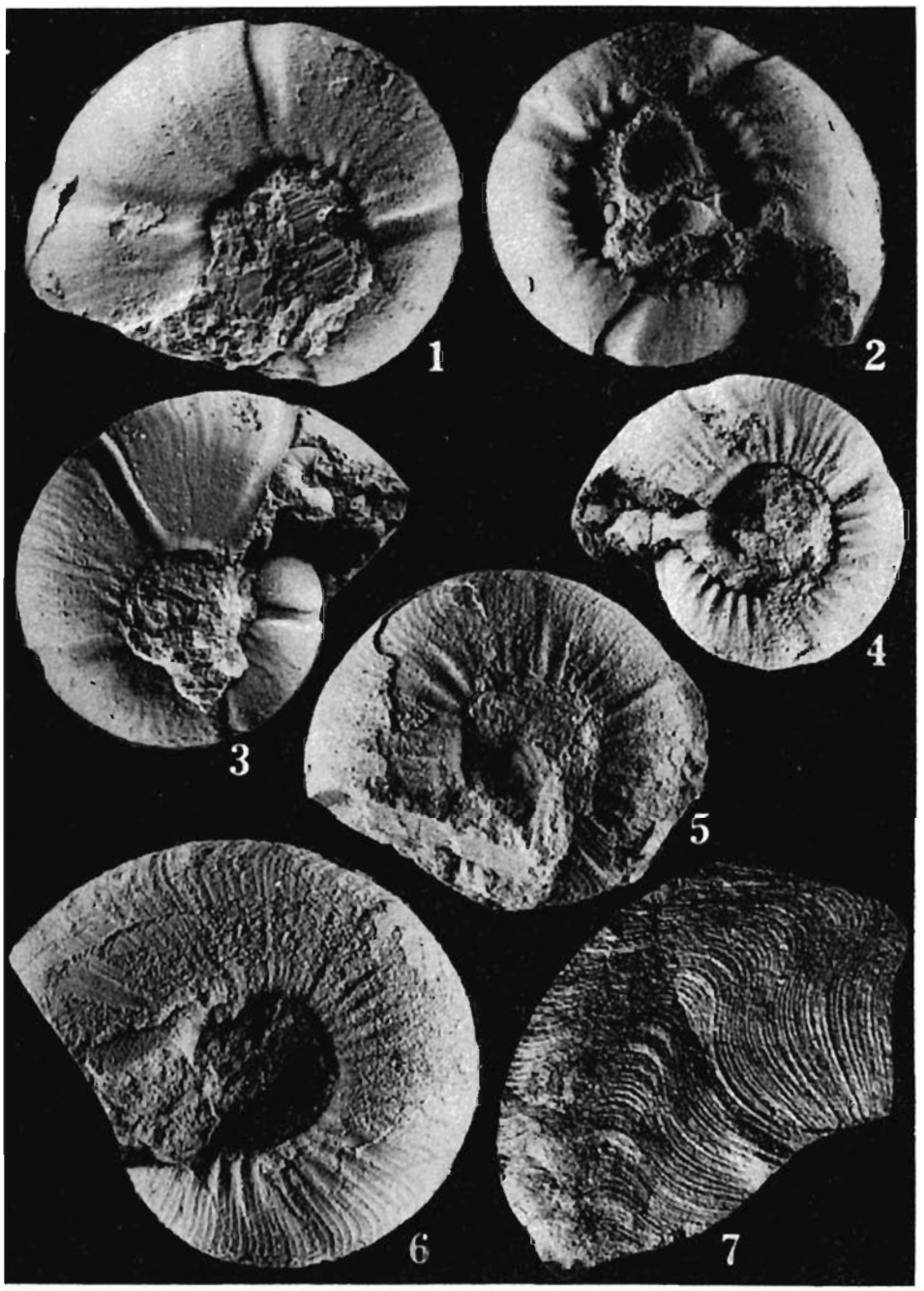
4 — *Homoceras henkei* SCHMIDT; M12 (991-997 m), × 6

5 — *H. cf. henkei* SCHMIDT; M12 (991-997 m), × 10



1-3 — *Homoceras* cf. *henkei* SCHMIDT; 1—2 — borehole M10 (depth 975—981 m), 1 × 7, 2 × 6; 3 — M12 (991-997 m), × 7

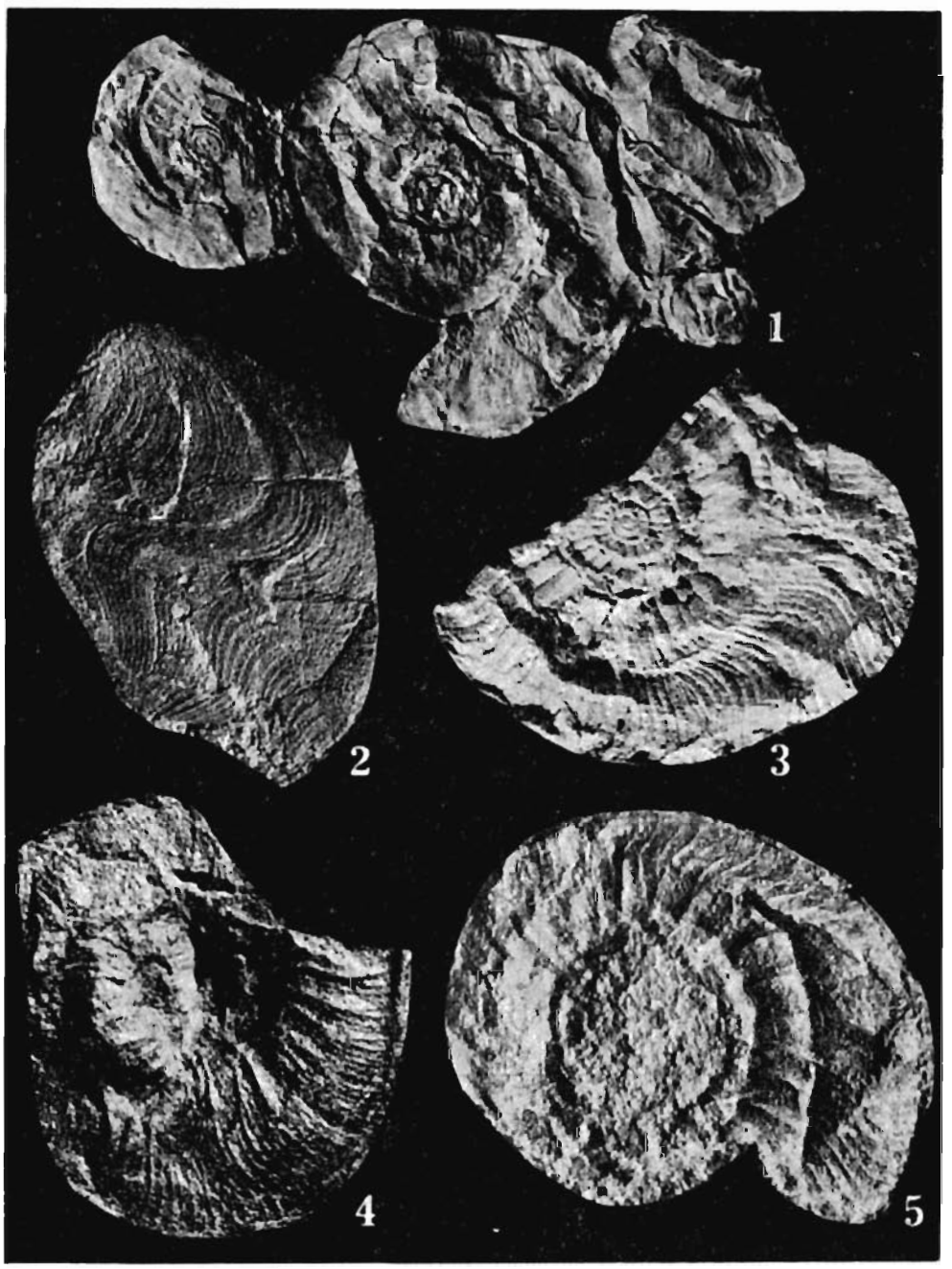
4-6 — *H. beyrichianum* (KONINCK); 4 — M12 (1092-1098 m), × 4; 5 — M3 (1051-1057 m), × 7; 6 — M7 (1126-1131 m), × 4



1-3 — *Homoceras magistrorum* HODSON; 1—2 — borehole M12 (depth 991-997 m), × 6; 3 — M10 (975-981 m), × 5

4-6 — *Homoceratoides varicatus* SCHMIDT; 4 — M10 (975-981 m), × 5; 5—6 — M7 (1059-1065 m), × 6

7 — *Reticuloceras* cf. *adpressum* BISAT & HUDSON; M10 (975-981 m), × 5

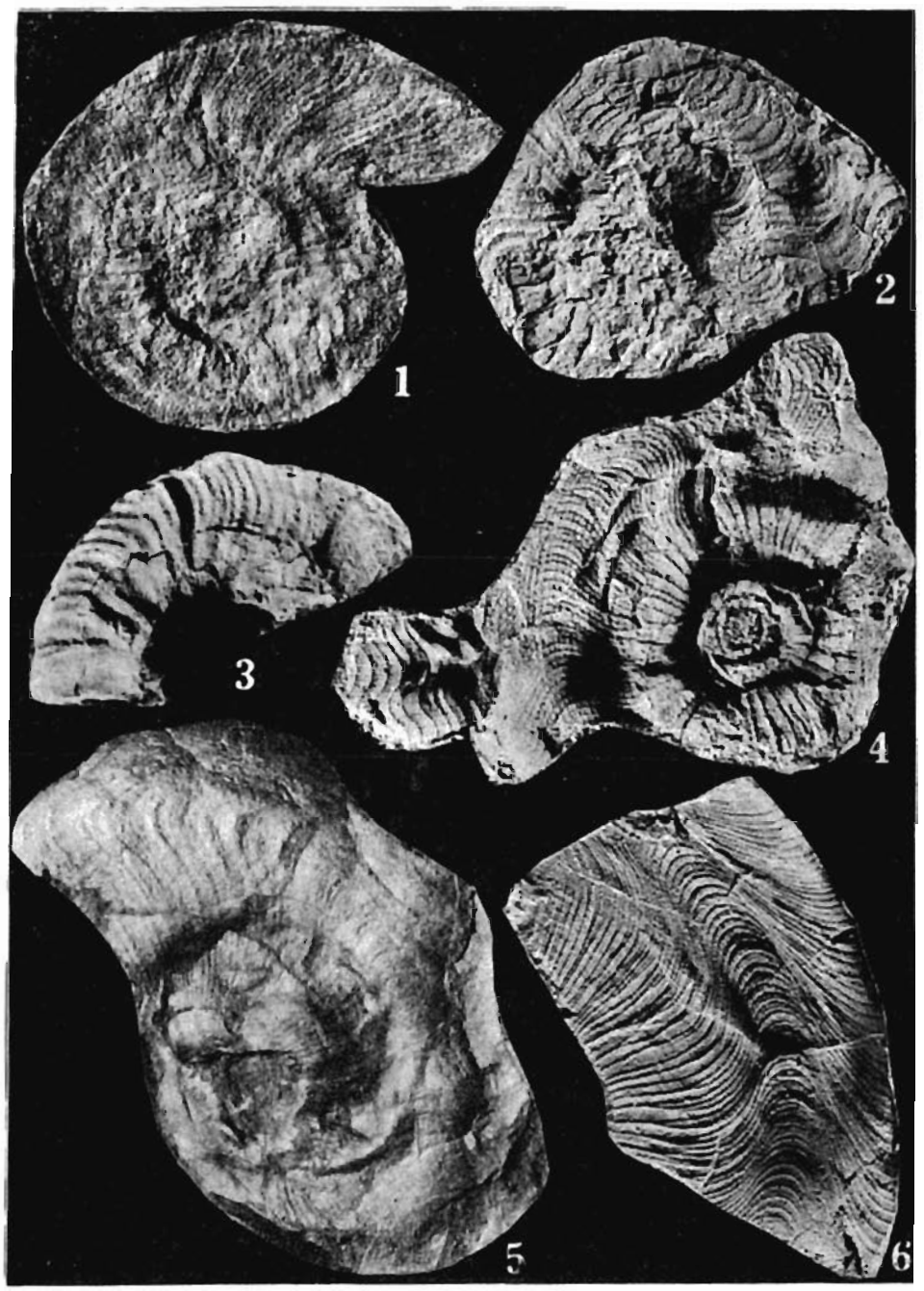


1 — *Reticuloceras adpressum* BISAT & HUDSON; borehole M10 (depth 975-981 m), × 3

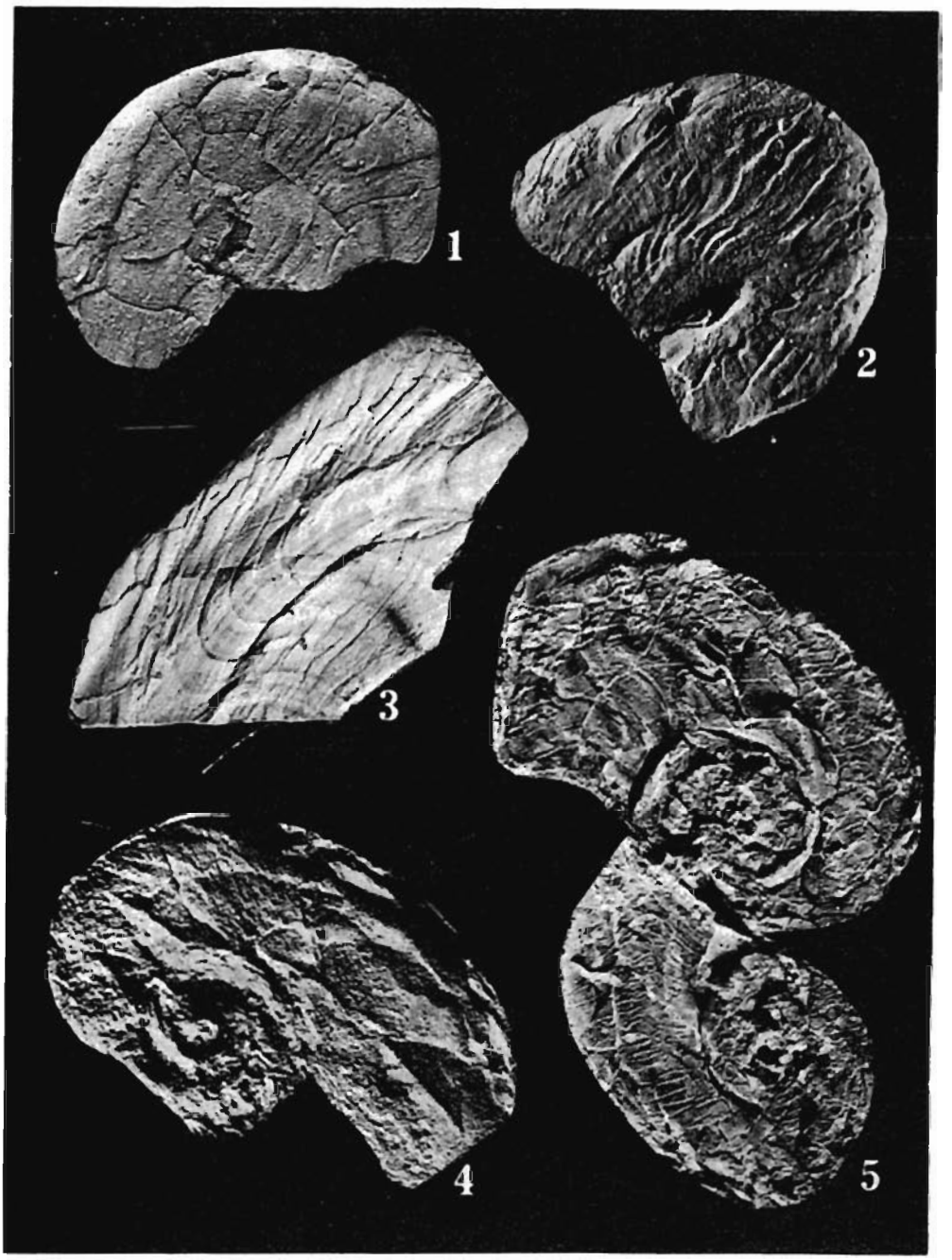
2 — *R. cf. adpressum* BISAT & HUDSON; M7 (1059-1065 m), × 5

3 — *R. nodosum* BISAT & HUDSON; M12 (924-930 m), × 8

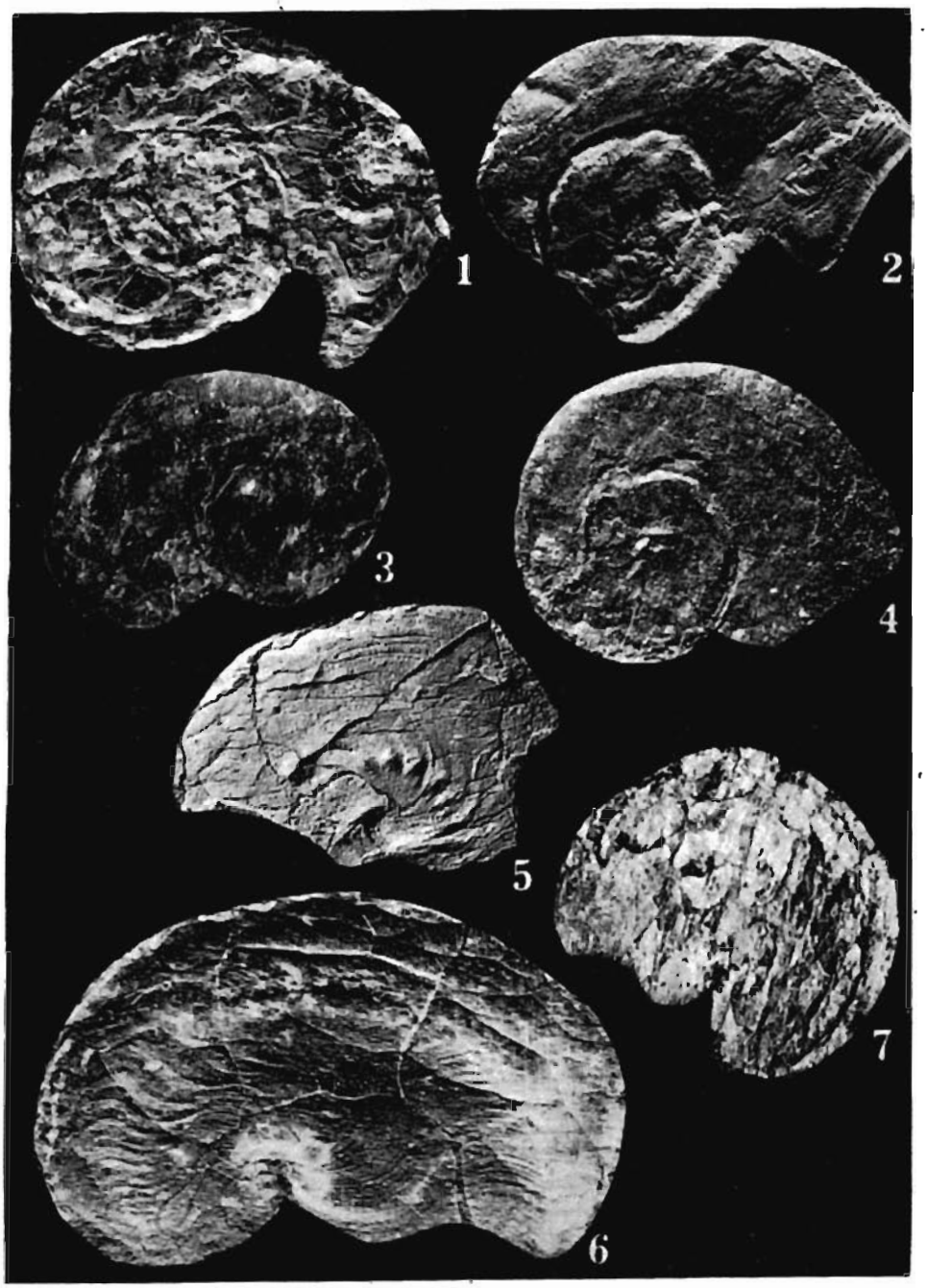
4-5 — *R. cf. nodosum* BISAT & HUDSON; 4 — M12 (924-930 m), × 10; 5 — M7 (981-986 m), × 10



1 — *Reticuloceras adpressum* BISAT & HUDSON; borehole M7 (depth 1059-1065 m), × 6
2-3 — *R.* cf. *eoreticulatum* BISAT; M7 (981-986 m), 2 × 6, 3 × 5
4 — *R.* cf. *stubblefieldi* BISAT & HUDSON; M12 (924-930 m), × 5
5 — *R.* cf. *hodsoni* BOUCKAERT; M7 (998-1003 m), × 5

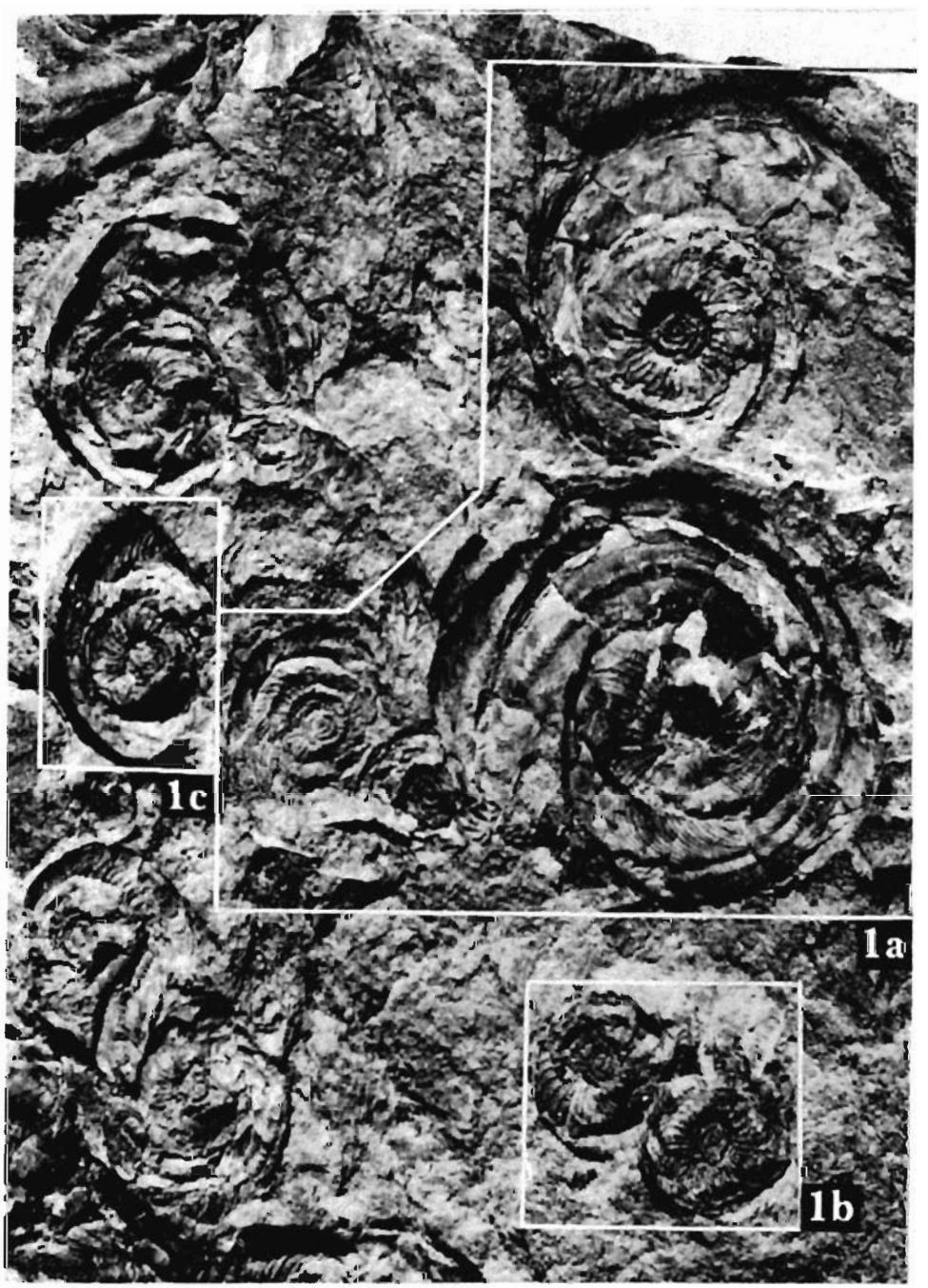


1-3 — *Paradimorphoceras tooneyi* (PHILLIPS); 1 — borehole M3 (depth 1051-1057 m), × 2; 2 — M12 (1098-1104 m), × 6; 3 — M8 (1106-1112 m), × 4
4-5 — *Anthracoceras paucilobum* (PHILLIPS); 4 — M2 (1147-1155 m), × 3; 5 — M12 (1151-1155 m), × 3



1-2 — *Anthracoceras paucilobum* (PHILLIPS); 1 — borehole S6 (depth 1571-1574 m), × 2; 2 — S3 (1371-1377 m), × 6
3 — *A.* cf. *arcuatilobum* (LUDWIG); S6 (1389-1395 m), × 5
4 — *A. arcuatilobum* (LUDWIG); S4 (1205-1210 m), × 8
5 — ? *Anthracoceras* sp.; S2 (1143-1149 m), × 4
6-7 — *Paradimorphoceras looneyi* (PHILLIPS); S6 (1571-1574 m), 6 × 2.5, 7 × 3

1 — *Kazakhoceras* cf. *scaliger* (SCHMIDT); borehole S6 (depth 1669-1672 m), × 5
2-3 — *Reticuloceras* cf. *wrighti* HUDSON; S4 (1396-1402 m), 2 × 4, 3 × 1.5
4 — *R.* cf. *adpressum* BISAT & HUDSON; S2 (1360-1366 m), × 7
5 — *R.* cf. *bilingue* (SALTER); S6 (1389-1395 m), × 5

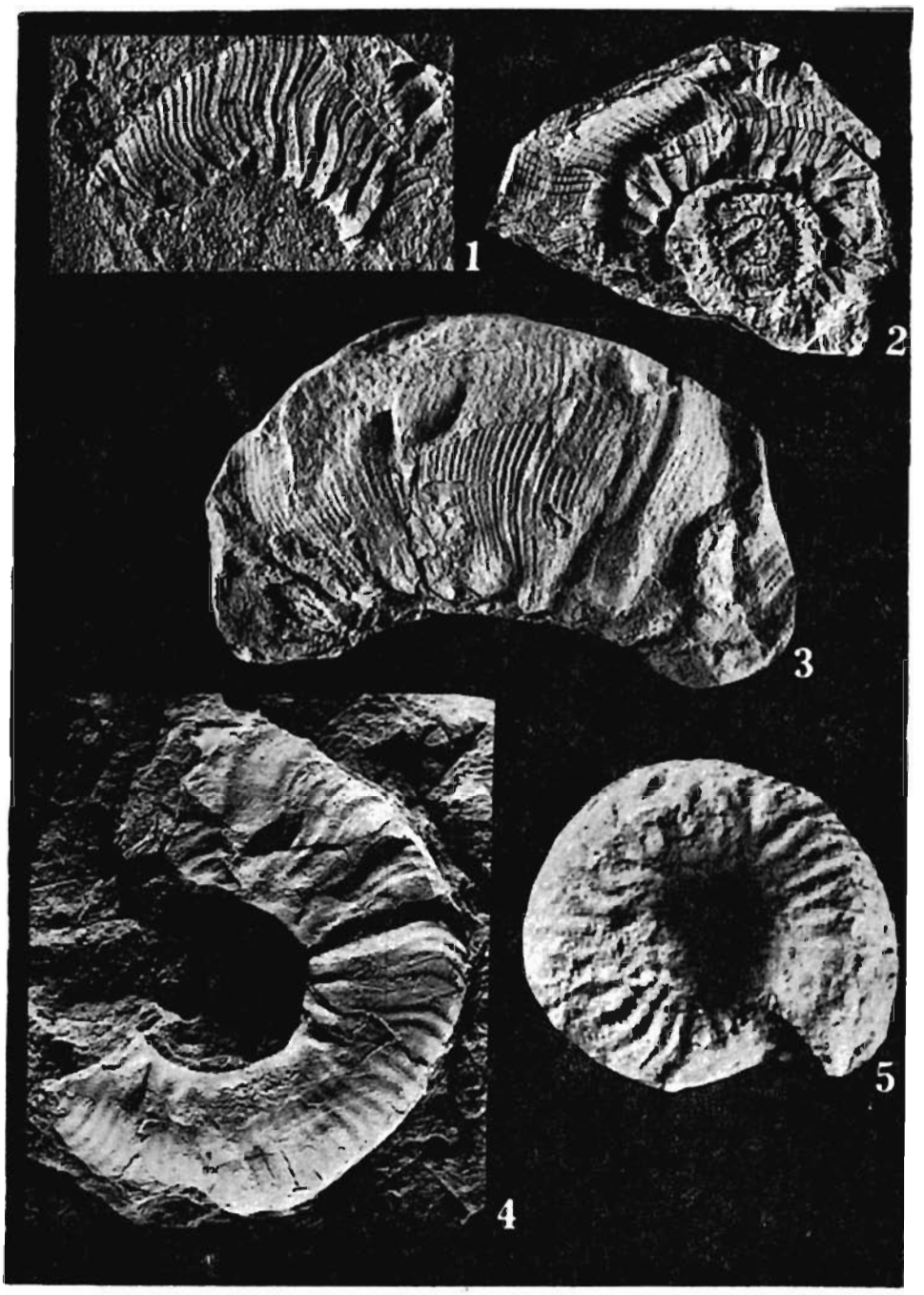


1a-1c — *Reticuloceras superbilingue* BISAT; borehole S2 (depth 1244-1250 m), × 3.5

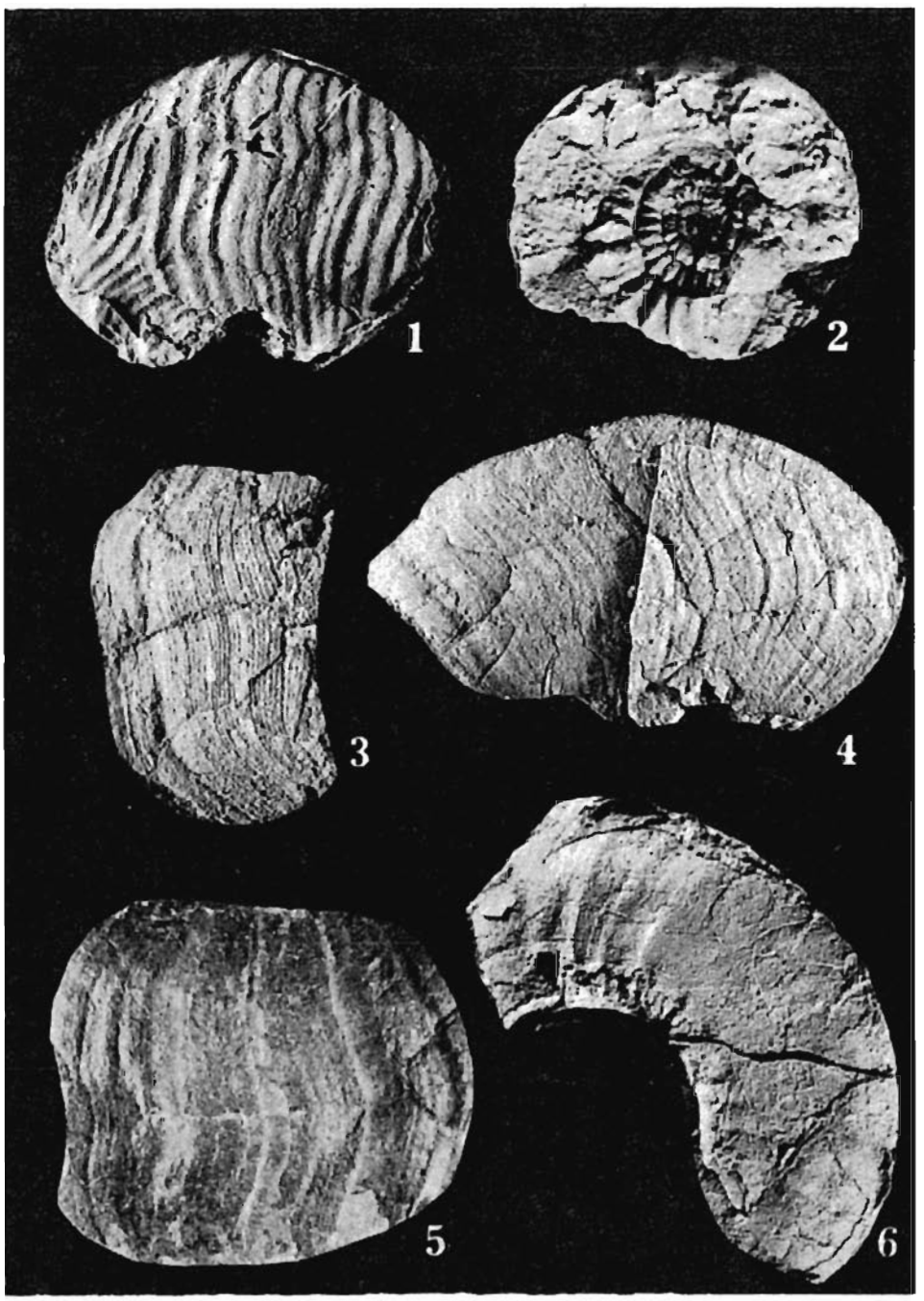
1-4 — *Reticuloceras* cf. *bilingue* (SALTER); 1 — borehole S6 (depth 1389-1395 m), × × 5; 2—4 — S2 (1285-1291 m), 2 × 5, 3 × 3, 4 × 5

1 — *Reticuloceras superbilingue* BISAT; borehole S2 (depth 1244-1250 m), × 2.5
2-4 — *Gastrioceras* ex gr. *cancellatum* BISAT; 2—3 — S4 (1319-1325 m), 2 × 5, 3 × 3; 4 — S6 (1341-1347 m), × 4

1-2 — *Gastrioceras* ex gr. *cancellatum BISAT*; borehole S2 (depth 1244-1250 m), × 5

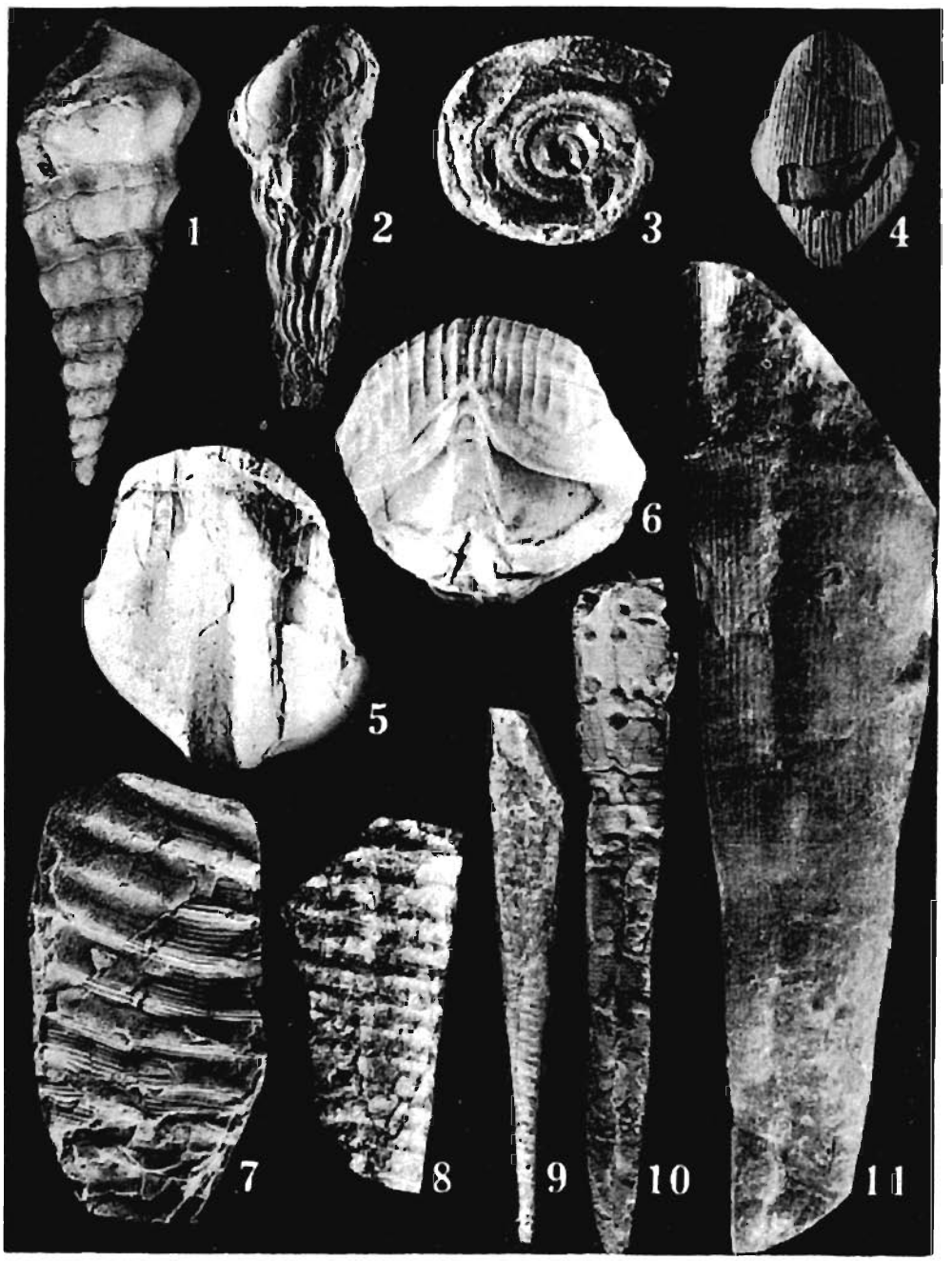


1-2 — *Gastrioceras* ex gr. *cancellatum* BISAT; borehole S2 (depth 1244-1250 m), × 4
3-4 — *G. cumbriense* BISAT; S2 (1184-1190 m), 3 × 5, 4 × 3
5 — *G. cf. cumbriense* BISAT; S6 (1278-1282 m), × 10

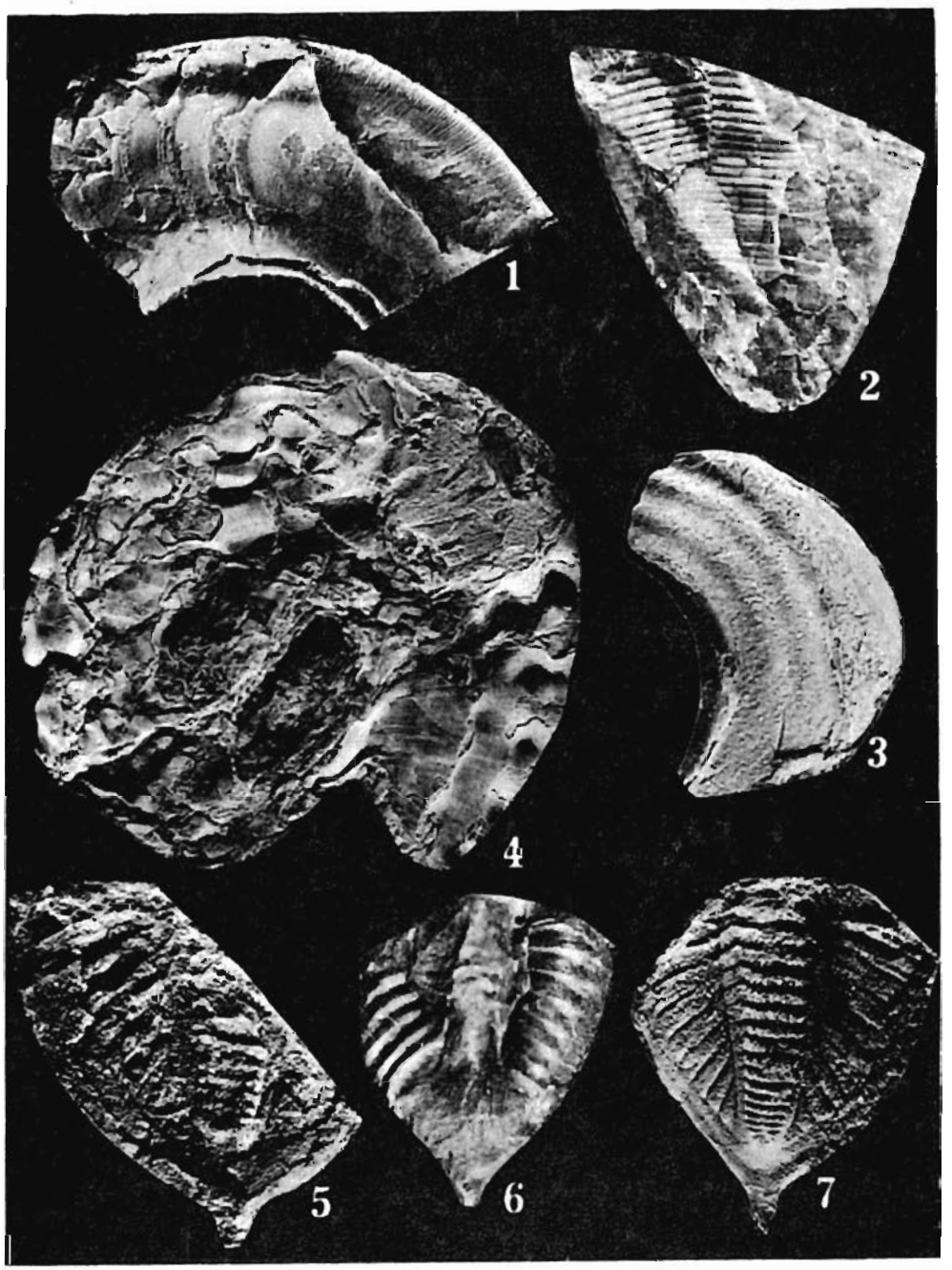


1-2 — *Gastrioceras* cf. *cumbriense* BISAT; borehole S2 (depth 1184-1190 m), 1 × 4, 2 × 8

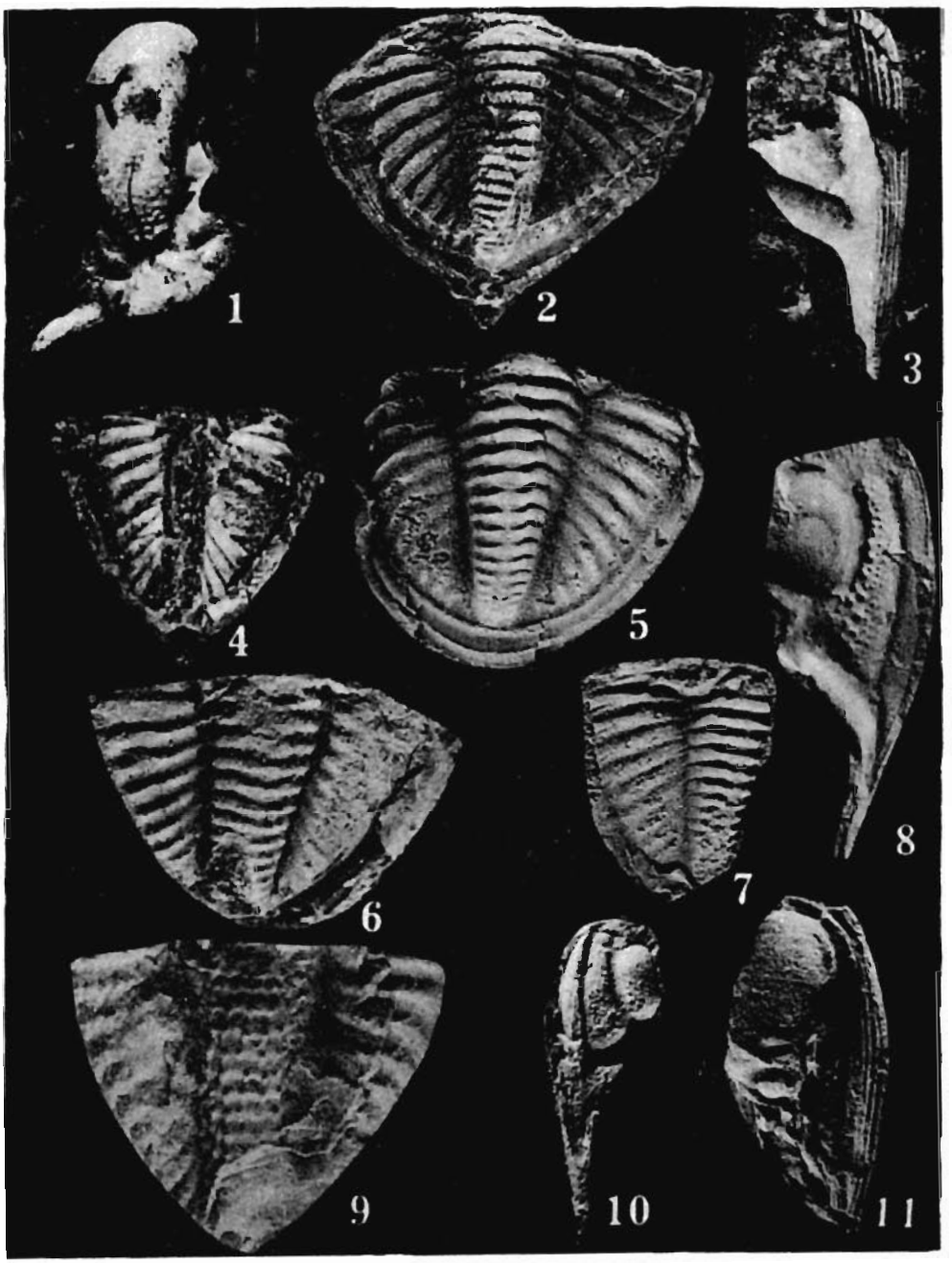
3-6 — *G. subcrenatum* (FRECH); 3—4 — S6 (1227-1233 m), 3 × 4, 4 × 2; 5—6 — S2 (1143-1149 m), 5 × 2.5, 6 × 2



1 — *Palaeostylus (Stephanozyga) cf. rugiferus* (PHILLIPS); borehole M1 (depth 1430-1433 m), × 2
2 — *Microptychis* sp.; S3 (1608-1614 m), × 3
3 — *Straparollus catilliformis* (KONINCK); S3 (1435-1441 m), × 5
4 — *Retispira silesiaca* (SCHWARZBACH); M7 (1528-1534 m), × 3
5-6 — *Euphemites urei ardennensis* (WEIR); S3 (1044-1050 m), × 2.5; 6 — S3 (1231-1237 m), × 3
7-8 — *Reticycloceras sulcatum* (FLEMING); 7 — S3 (1504-1510 m), × 4; 8 — S8 (1316-1322 m), × 3
9-10 — *Dolorthoceras cf. striolatum* (MEYER); 9 — S8 (1316-1322 m), × 1.5; 10 — M2 (1175-1181 m), × 3
11 — *Kionoceras cf. namurcense* DEMANET; S6 (1389-1395 m), × 3



1 — *Stroboceras* sp.; borehole S3 (depth 1504-1510 m), × 1.5
2 — *Brachycycloceras dilatatum* (KONINCK); S6 (1571-1574 m), × 3
3 — *Stroboceras* cf. *sulcatum* (SOWERBY); S3 (1108-1114 m), × 1.5
4 — *Tylonautilus* cf. *nodosocarinatus* (ROEMER); M3 (1084-1089 m), × 1
5-7 — *Paladin mucronatus* (Mc COY); 5 — M10 (1375-1381 m), × 7; 6 — S8 (1316-1322 m), × 10; 7 — M12 (1369-1375 m), × 3



1-4 — *Paladin mucronatus* (Mc COY); 1, 3, 4 — borehole S8 (depth 1316-1322 m), 1 × 10, 3 × 8, 4 × 10; 2 — S3 (1040-1044 m), × 4

5-8 — *Linguaphillipsia* cf. *silesiaca* (SCUPIN); 5,7 — M7 (1646-1652 m), × 5; 6,8 — M1 (1448-1452 m), 6 × 10, 8 × 6

9-11 — *Linguaphillipsia* sp.; 9 — M1 (1448-1452 m), × 10; 10 — M8 (1700—1707 m), × × 8; 11 — M8 (1605-1611 m), × 4

REFERENCES

BOJKOWSKI, K. 1966. Faunistic characteristics of the Lublin Carboniferous. *Prace I. G.*, 44, 55—82. Warszawa.

— 1972. A description of the Upper Carboniferous fauna of the Upper Silesian Coal Basin. *Prace I. G.*, 61, 89—134. Warszawa.

— 1979. Goniatites from the Carboniferous of the Upper Silesian and Lublin Coal Basins. *Biul. I. G.*, 311, 5—63. Warszawa.

CHIŻNIAKOW, A. W. & ŻELICHOWSKI, A. M. 1974. Outline of the tectonics of the Lublin — Lvov area (SE Poland and W Ukraine). *Kwart. Geol.*, 18 (4), 707—719. Warszawa.

HAHN, G. & HAHN, R. 1975. Die Trilobiten des Ober-Devon, Karbon und Perm. *Leitfossilien*, 1, 1—127. Berlin—Stuttgart.

HAJKR, O., LUKAŠOVA, A., RUZICKA, B. & REHOR, F. 1975. Aussonderung der Karbonmuschel *Enniostra* gen. nov. als neue Gattung. *Papers Pedagog. Faculty in Ostrava*, Praha. 33, 1—108.

KOREJWO, K. 1969a. Results obtained in borehole Bystrzyca *IG*-1; Carboniferous. *Biul. I. G.*, 228, 39—54. Warszawa.

— 1969b. Stratigraphy and paleogeography of the Namurian in the Polish Lowland. *Acta Geol. Polon.*, 19 (4), 609—709. Warszawa.

— 1974. The Carboniferous of the Abramów structure. *Acta Geol. Polon.*, 24 (4), 631—661. Warszawa.

— 1975. The lowermost Dinantian from the Babilon-1 column, Western Pomerania. *Acta Geol. Polon.*, 25 (4), 451—504. Warszawa.

— 1977. Lithology and paleotectonic development of the Carboniferous in the Wierzchowo area, Western Pomerania. *Acta Geol. Polon.*, 27 (4), 431—453. Warszawa.

— 1980. Karbon z rejonu Koszalina (Pomorze Zachodnie). *Arch. Inst. Nauk Geol.* PAN; Warszawa.

— 1981. Karbon w obrębie południowego bloku Świdnika (rów lubelski). *Arch. Inst. Nauk Geol. PAN;* Warszawa.

— 1982. Karbon w obrębie północnego bloku Świdnika (rów lubelski). *Arch. Inst. Nauk Geol. PAN;* Warszawa.

KOREJWO, K. & TELLER, L. 1967a. La stratigraphie du Carbonifère inférieur — Viséan supérieur — dans les forages Sułów-1 *et* Lamki-1 (Pologne du Sud-Ouest). *Acta Geol. Polon.*, 17 (2), 299—312. Warszawa.

— & — 1967b. Some horizons of Upper Carboniferous goniatites of the Lublin Basin. *Bull. Acad. Polon. Sci., Sér Sci. Géol. Géogr.*, 15 (4), 207—208. Warszawa.

— & — 1968. The Carboniferous of the western part of Lublin Basin. *Acta Geol. Polon.*, 18 (1), 153—168. Warszawa.

— & — 1971. The Carboniferous of the Dęblin structure. *Acta Geol. Polon.*, 21 (2), 213—239. Warszawa.

— & — 1972. The Carboniferous of the Kock elevation. *Acta Geol. Polon.*, 22 (4), 655—675. Warszawa.

MOORE, E. W. 1950. The genus *Sudeticeras* and its distribution in Lancashire and Yorkshire. *Manch. Geol. Assoc.*, 2 (1), 31—50. Manchester.

NICOLAUS, H. J. 1963. Zur Stratigraphie und Fauna der crenistria-Zone im Kulm des Rheinischen Schiefergebirges. *Beih. Geol. Jb.*, 53, 1—246. Hannover.

OSMÓLSKA, H. 1970. Revision of non-cyrtosymbolinid trilobites from the Tournaisian — Namurian of Eurasia. *Palaeontologia Polonica*, 23, 1—165. Warszawa.

PATTEISKY, K. 1959. Die Goniatiten im Namur des Niederrheinisch — Westfaelischen Karbongebietes. *Mitt. Westf. Berggewerkschaftskasse*, 14, 1—65. Bochum.

— 1965. Die Fauna des Westdeutschen Oberkarbons, *IV:* Die Goniatiten im Westfal des Niederrheinisch-Westfaelischen Karbons. *Palaeontographica, A*, 125, 1—39. Stuttgart.

PORZYCKI, J. 1976. Geological structure of central part of the Lublin Coal Basin. *Przegl. Geol.*, 7, 385—393. Warszawa.

— 1980. Utwory węglonośne wizenu i namuru Lubelszczyzny. *Arch. Inst. Geol.;* Warszawa.

REHOR, F. & REHOR, M. 1972. Die Makrofauna kohlenfuehrenden Karbons im Tschechoslovakischen Teil des Oberschlesischen Beckens. *Profil*, 7—137. Ostrava.

YATES, P. J. 1962. The palaeontology of the Namurian rocks of Slieve Anierin, Co. Leitrim, Eire. *Palaeontology*, 5 (3), 355—443. London.

ŻAKOWA, H. 1966. Zone Goniatites crenistria Phill. in the vicinity of Sokolec and Jugów, at the foot of the Owl Mts. Central Sudetes. *Prace I. G.*, 43, 1—189. Warszawa.

— 1970. The present state of the stratigraphy and paleogeography of the Carboniferous in the Holy Cross Mts. *Acta Geol. Polon.*, 20 (1), 3—32. Warszawa.

— 1971. Zone Goniatites granosus in the Gałęzice syncline (Holy Cross Mts). *Prace I. G.*, 60, 7—137. Warszawa.

ŻELICHOWSKI, A. M. 1972a. Evolution of the geological structure of the area between the Holy Cross Mts and the river Bug. *Biul. I. G.*, 262. 7—97. Warszawa.

— 1972b. Occurrence of goniatites in the Carboniferous deposits of the Hrubieszów — Tomaszów Lub. area (SE Poland). *Kwart. Geol.*, 16 (3), 587—595. Warszawa.

— 1979a. Geological structure of the marginal basin basement at the boundary of its Warsaw and Lublin section. *Kwart. Geol.*, 23 (1), 125—139. Warszawa.

— 1979b. Geological cross-section through in marginal part of the Precambrian platform in the Lublin — Podlasie area (Cenozoic excluded). *Kwart. Geol.*, 23 (2), 291—307. Warszawa.

K. KOREJWO

BIOSTRATYGRAFIA OSADÓW KARBOŃSKICH BLOKÓW ŚWIDNIKA

(Streszczenie)

Przedmiotem pracy* jest przedstawienie zarysu problematyki biostratygraficznej osadów karbońskich napotkanych w 14 profilach wiertniczych w obrębie bloków Świdnika (południowego i północnego) w rowie lubelskim (*patrz* KOREJWO 1981, 1982). Zarówno osady dinantu jak i silezu posiadają tutaj dość liczną makrofaunę (*patrz* tab. 1—4 oraz pl. 1—37), wśród której szczególnie cenne są goniatyty. W bloku południowym wskazują one na obecność szeregu poziomów charakteryzujących podpiętra goniatytowe E_1, E_2 oraz H_1 namuru *A*, a także podpiętra R_1 dolnej części namuru *B*. Wśród napotkanych goniatytów niektóre formy stwierdzono w Polsce po raz pierwszy. W bloku północnym obecne są natomiast poziomy charakteryzujące podpiętro E_2 namuru dolnego, podpiętra R_1, R_2 oraz G_1 namuru górnego (*B*+*C*), a także podpiętro G_2 dolnej części westfalu *A*. Gatunki napotkane w osadach obu bloków Świdnika stanowią najbardziej reprezentatywny zespół górnokarbońskich goniatytów nie tylko dla obszaru lubelskiego, ale także dla całej Polski.

---

* Praca wykonana w ramach problemu *MR. I. 16* „Geodynamika obszaru Polski".