JOURNAL OF PALEONTOLOGY, V. 58, NO. 1, P. 109–114, 2 FIGS., JANUARY 1984

BOREIONECTES ZAKHAROV 1965 (BIVALVIA : PECTINIDAE) —A SYNONYM OF *MACLEARNIA* (CRICKMAY 1930)

S. R. A. KELLY, A. V. DHONDT AND V. A. ZAKHAROV
Department of Earth Sciences, University of Cambridge,
Downing Street, Cambridge CB2 3EQ, England;
Koninklijk Belgisch Institut voor Natuurwetenschappen,
Vautierstraat, 29, B-1040, Brussels, Belgium; and
Institute of Geology and Geophysics, Novosibirsk 90, USSR 630090

ABSTRACT—The type specimens of *Boreionectes* and *Maclearnia* (formerly *Mclearnia*) from the Lower Cretaceous of western Canada and England respectively, are redescribed, refigured and interpreted as subjective synonyms at the generic level. Although the name *Boreionectes* has been used widely and *Maclearnia* has been hitherto rarely used, the latter has priority. It is treated as a subgenus of *Camptonectes.*

INTRODUCTION

THE AIM of this article is to stabilize nomenclature. *Camptonectes* (*Boreionectes*) Zakharov (1965) is becoming widely used for certain large camptonectid bivalves, especially from Mesozoic Boreal regions (Zakharov, 1966; Dhondt, 1972). *Maclearnia* (formerly *Mclearnia* Crickmay, 1930), in contrast, is a hitherto poorly known genus from the Lower Cretaceous of western Canada. The two genera are here shown to be subjective synonyms, of which *Maclearnia* has priority. Type specimens of the type species of *Boreionectes* in the British Museum (Natural History), and casts of the types of *Maclearnia,* supplied courtesy of Dr. Jeletzky of the Geological Survey of Canada, have been reexamined and are redescribed and discussed below.

SYSTEMATIC PALAEONTOLOGY

Genus CAMPTONECTES Agassiz, 1864
Subgenus MACLEARNIA (Crickmay, 1930), (emended herein)
(=BOREIONECTES Zakharov, 1965)

Type species.—*Mclearnia mclearnia* Crickmay, 1930, emended here to *Maclearnia maclearni* in accordance with the Code of Zoological Nomenclature (Stoll, 1964, recommendation IV, p. 109) (*non Mclearnia* Caster, 1939, a brachiopod which was renamed *Mclearnites* Caster, 1945, which is a junior subjective synonym of *Shaleria* Caster, 1939 (Muir-Wood and Williams, 1965, p. H402)).

CAMPTONECTES (MACLEARNIA) MACLEARNI (Crickmay, 1930)
Figures 1A, B, C.

Mclearnia mclearni CRICKMAY, 1930, p. 45, 46, Pl. 8, fig. 4; Pl. 9, fig. 1; WARREN and STELCK, 1958, p. 60; CRICKMAY, 1962, p. 8.

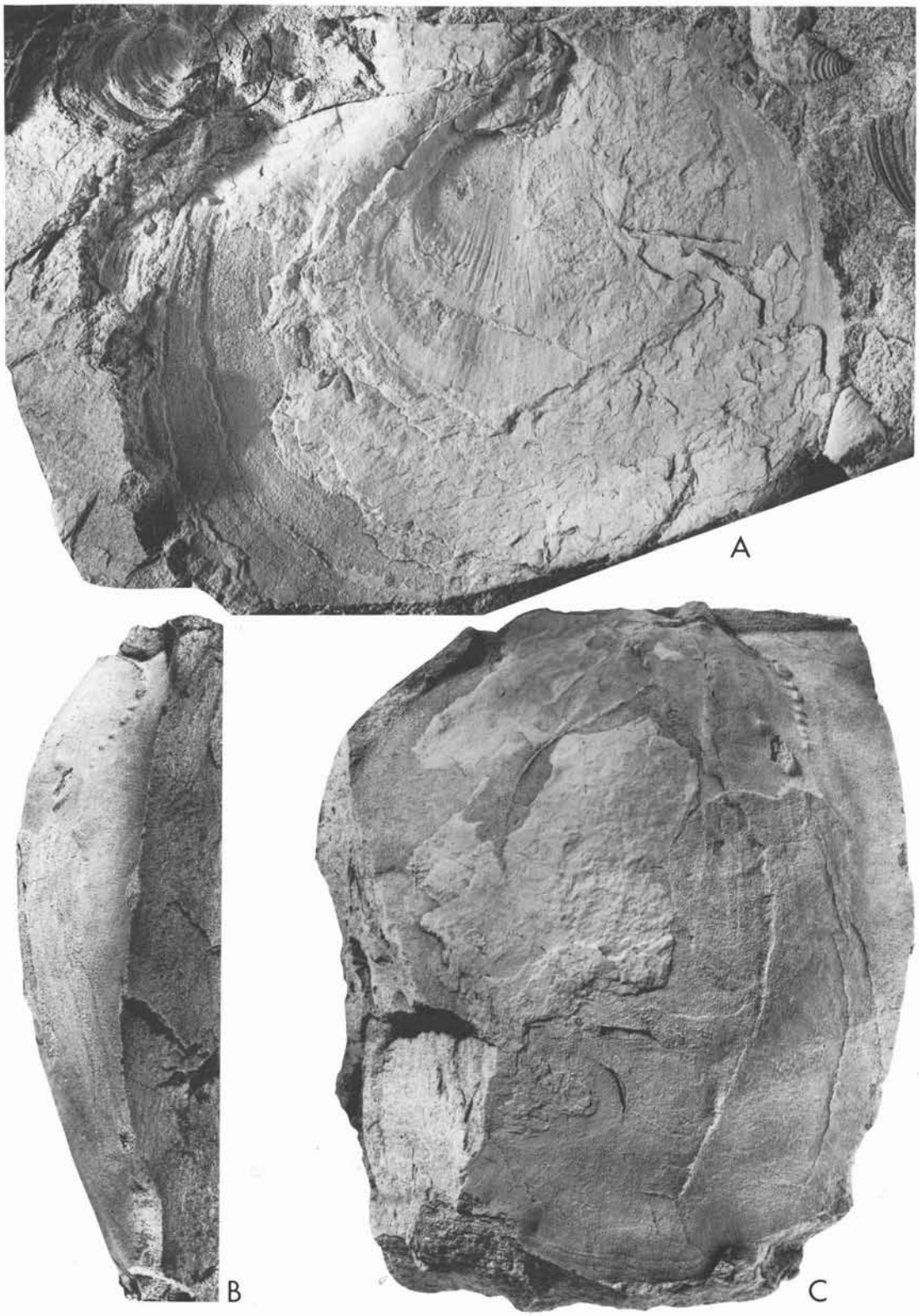
?*Mclearnia mclearni* HERTLEIN, 1969, p. N351, 373, fig. C74.4.

Types.—Geological Survey of Canada, holotype, GSC 9701 (Figure 1A); paratype, GSC 9688 (Figures 2B, C), Zone of *Buchia canadensis,* (=*Buchia okensis* (Pavlow) (Zakharov, 1981, p. 116)), Ryazanian/Berriasian, 350 yards from shore and 1,400 yards north of the mouth of Deer Creek, Harrison Lake, British Columbia, Canada.

Description.—(Based on the type specimens only.) The holotype is a right valve with the exterior embedded in sediment. Much of the distal shell has exfoliated and the mold of the shell exterior is visible. The paratype is an internal mold (not cast as stated by Crickmay in the original description) of a left valve with much of the commissural margins and auricles missing, with some fragments of shell adhering.

Large pectinid with feebly inflated right valve and moderately inflated left valve; auricles in the right valve are subequal and low; there is a distinct byssal notch with traces of

0022-3360/84/0058-0109$03.00


A
B
C

a functional ctenolium; shell exterior is smooth, apart from growth lines; feeble radial ornament is visible on a shell fragment on the same slab and adjacent to the holotype; no trace of '*Chlamys*-like' ornament; shell interior not completely seen, but showing subcentral orbicular adductor muscle scar with a weak radial pattern; the deeply pitted pallial line is clearly seen on the paratype; ligament pit is subcentral and upright; measurements are given in Table 1.

Discussion.—The type species of *Camptonectes* (*Boreionectes*) *cinctus* is *Pecten cinctus* J. Sowerby (1822, p. 96, Pl. 371) (see Dhondt, 1972, p. 35–36, for full synonymy). There are two syntypes, now in the British Museum (Natural History), both originally numbered 43.300. They are refigured here (Figure 2). The original figured specimen (Figure 2A) is a right valve, which is here renumbered LL31441. It came 'from the neighbourhood of Horncastle, Lincs.' It was not stated whether it was found *in situ* or came from the drift, although the Claxby Ironstone does crop out about ten kilometers to the north east of Horncastle. It appears to have been broken since figured by Sowerby and a segment has been lost.

The second specimen (Figure 2B) is a right valve, which is here renumbered LL31442. It came from 'the alluvial clay of Suffolk.' Both specimens are preserved in a limonite oolite. They were originally believed by Sowerby to have come from the Middle Jurassic 'inferior or Ironshoot Oolite,' but Judd (1867, p. 250–251) recognized the Neocomian age of the species, and discussed the early use of the name. Woods (1902, p. 155) recognized the matrix of the specimens as Claxby Ironstone from Lincolnshire. Both specimens are of Lower Cretaceous age, either Valanginian or Hauterivian.

The types of *P. cinctus* represent a large pectinid with both valves moderately inflated, and with the dorsal portion of the flank of the right valve less inflated than that of the left valve; the commissural outline is subcircular; all auricles are severely damaged; external ornament is composed of regular spaced comarginal lamellae and of fine radiating grooves; the ligamental pit is subcentral and vertical; the pallial line is subcircular and the shell interior just outside the pallial line bears radial structures which weaken towards the smooth margin; LL31441 bears an irregular growth on the interior of the shell below the anterior auricle; measurements are given in Table 2.

The types of *Maclearnia* and *Boreionectes* are extremely similar. The only differences are the slightly less inflated right valve of *Maclearnia* and the presence of external radial ornament on *Boreionectes* and not on *Maclearnia.* However, the types of the latter are considerably exfoliated and also examination of large numbers of *Boreionectes* shows that this type of ornament becomes obsolete commonly in adults, and occasionally in juvenile specimens. Hertlein (1969, p. N373) described a '*Chlamys*-like' ornament in *Maclearnia,* but no trace can be seen on the exterior of the type specimens, although there is a faint internal radial structure visible on obliquely broken shell surfaces.

The name *Boreionectes* has been widely used in the Soviet Union (e.g., Zakharov, 1965, 1966; Zakharov and Shurygin, 1978; Paraketsov and Paraketsova, 1979; Sey and Kalatchova, 1980) and in western Europe (e.g., Dhondt, 1972; Kemper, 1976; Kent, 1980). The type specimens, like those of *Maclearnia* are problematical, they are abraded and broken and the original horizon is not precisely known. The subsequent figures of Woods (1902, Pl. 23, text-fig. 2) are usually taken as being typical of the *P. cinctus,* but this may not be necessarily true. It is intended to discuss the species in more detail at a later date. It is not possible to state whether *M. maclearni* is a subjective synonym of *Pecten cinctus* or not.

The reason that *Maclearnia* has been large-

←

FIGURE *1*—*Camptonectes* (*Maclearnia*) *maclearni* (Crickmay). *A,* holotype, right valve exterior mold, with some shell adhering, interior aspect, originally figured Crickmay, 1930, Pl. 8, fig. 4, GSC 9701, ×1; *B, C,* paratype, internal mold of left valve; *B,* posterior aspect; *C,* lateral aspect, originally figured Crickmay, 1930, Pl. 9, fig. 1, GSC 9688, ×1.


A
B

TABLE *1*—Measurements (mm) of type specimens of *Maclearnia maclearni.*

	Length	Height	Inflation (est.)	Length anterior auricle	Length posterior auricle
GSC 9701					
Holotype right valve	115	100+	c13	32	c35
GSC 9688					
Paratype left valve	90+	c115	22+	c38	30+

ly overlooked is because the type specimens are not very well preserved and are, therefore, difficult to compare with other material. Also in the original publication (Crickmay, 1930) *Maclearnia* was placed in the family Pteriidae without much discussion and the stratigraphic placement in the zone of '*Aucella canadiana*' was not elaborated upon by the author until 1962. The authors have examined large numbers of specimens of '*Boreionectes*' from Canada and from many other parts of the Mesozoic Boreal regions and would have placed Crickmay's specimens within *Boreionectes.* However *Maclearnia* has precedence nomenclaturally and therefore that name must be used. *Mclearnia mclearni* appears in the faunal lists of Warren and Stelck (1958, p. 60) and Crickmay (1962, p. 8). The holotype appeared refigured fortuitously next to *Camptonectes sensu stricto* in the Treatise (Hertlein, 1969, fig. C74.4), but the generic entry appeared much later in the text (p. N373) and was placed as 'group uncertain' within the family Pectinidae and it was commented that the genus was in need of investigation. Had the name *Maclearnia* not been used, it would have been desirable to have it suppressed by ICZN application, on the grounds that it was a *nomen oblitum*; however this is not the case.

TABLE *2*—Measurements (mm) of syntypes of *Pecten cinctus.*

	Length	Height	Inflation
BM(NH) LL31441	122	123	31
LL31442	116	117	31

CONCLUSION

Having examined type specimens of *Boreionectes* and casts of the types of *Maclearnia* the authors are satisfied that they are subjective synonyms and that the first published one, *Maclearnia,* should be used for this group of pectinid bivalves. *Boreionectes* was originally placed as a subgenus of *Camptonectes* by Zakharov (1965), this was followed in the Treatise by Hertlein (1969), and it is felt here that *Maclearnia* should also be treated as a subgenus of *Camptonectes.*

ACKNOWLEDGMENTS

The authors are particularly grateful to Drs. J. A. Jeletzky and E. T. Tozer (Geological Survey of Canada) for discussion of *Maclearnia,* especially the former for sending casts of the types, and to Miss Jeanne White who provided photographs of the originals. Dr. T. Poulton (Institute of Petroleum Geology, Canada) helped with literature. Dr. N. Morris and Mr. R. Cleevely (British Museum (Natural History)) are thanked for the loan of types of *Boreionectes.* Mr. R. Melville (International Commission for Zoological Nomenclature) kindly read an early draft manuscript and advised on taxonomic procedure. Mr. D. Bursill (Earth Sciences, Cambridge) assisted with the photography.

REFERENCES

AGASSIZ, L. J. R. 1864. *In,* Meek, F. B. Checklist of the Invertebrate fossils of North America. Cretaceous and Jurassic. Smithsonian Miscellaneous Collections, 7:(177), 40 p.

CASTER, K. E. 1939. A Devonian fauna from Colombia. Bulletin of American Paleontology, 24:218 p.

←

FIGURE *2*—*Camptonectes* (*Maclearnia*) *cinctus* (J. Sowerby). *A,* syntype, right valve, exterior aspect, originally figured J. Sowerby, 1822, Pl. 371, BM(NH) LL31441, ×0.9; *B,* syntype, left valve, exterior aspect, BM(NH) LL31442, ×0.9.

——. 1945. New name for two homonyms. Journal of Paleontology, 19:319.

CRICKMAY, C. H. 1930. Fossil from Harrison Lake area, British Columbia. Bulletin of the National Museum of Canada, 63:33–66.

——. 1962. Gross stratigraphy of Harrison Lake area, British Columbia. Article 8. Evelyn de Mille Books, Calgary, 12 p.

DHONDT, A. V. 1972. Systematic revision of the Chlamydinae (Pectinidae, Bivalvia, Mollusca) of the European Cretaceous. Part 1, *Camptonectes*. Bulletin de l'Institut royal des Sciences Naturelles de Belgique, 48(3):60 p.

HERTLEIN, L. G. 1969. Family Pectinidae, p. N348–N373. *In,* R. C. Moore (ed.), Treatise on Invertebrate Paleontology, Part N, Mollusca, Number 1, Geological Society of America and University of Kansas Press, Lawrence.

JUDD, J. W. 1867. On the strata which form the base of the Lincolnshire Wolds. Quarterly Journal of the Geological Society of London, 23: 227–251.

KEMPER, E. 1976. Geologischer Fuhrer durch die Grafschaft Bentheim und die angrenzenden Gebiete mit einem Abriss der emslandischen Unterkreide. Nordhorn Bentheim, 206 p.

KENT, P. 1980. British Regional Geology. Eastern England from the Tees to the Wash. 2nd edition. Her Majesty's Stationery Office, London, 155 p.

MUIR-WOOD, H. M. and A. WILLIAMS. 1965. Order Strophomenida, p. H361–521. *In,* R. C. Moore (ed.), Treatise on Invertebrate Paleontology, Part H, Brachiopoda, Number 1, Geological Society of America and University of Kansas Press, Lawrence.

PARAKETSOV, K. V. and G. I. PARAKETSOVA. 1979. *In,* V. N. Saks (ed.), The Upper Jurassic and its boundaries with the Cretaceous system. Nauka, Novosibirsk. 85 p. (Russian).

SEY, I. I. and E. D. KALACHOVA. 1980. The biostratigraphy of the Lower and Middle Jurassic of the Far East of the U.S.S.R. Trudy vsesoyuznogo nauchno-issledovatel'skogo geologicheskogo Instituta 285, 187 p. (Russian).

SOWERBY, J. 1822. The Mineral Conchology of Great Britain 4 (2), London, p. 17–104.

STOLL, N. R. 1964. International Code of Zoological Nomenclature adopted by the XV International Congress of Zoology, London. 176 p.

WARREN, P. S. and C. R. STELCK. 1958. The Nikanassin-Luscar hiatus in the Canadian Rockies. Transactions of the Royal Society of Canada, (3)52:55–62.

WOODS, H. 1902. A monograph of the British Cretaceous Lamellibranchiata, Palaeontographical Society Monograph 1(4):145–196.

ZAKHAROV, V. A. 1965. New Upper Jurassic and Lower Cretaceous Camptonectid (Pectinidae, Bivalvia) from Arctic Siberia, p. 72–80. *In,* V. N. Saks (ed.), Stratigraphy and Paleontology of the Mesozoic Deposits of Northern Siberia. Nauka, Moscow. (Russian).

——. 1966. Late Jurassic and early Cretaceous bivalve molluscs of Northern Siberia. Nauka, Moscow, 189 p. (Russian).

——. 1981. Buchiidae and biostratigraphy of the Boreal Upper Jurassic and Neocomian. Trudy Instituta geologii i geofiziki, Sibirskoe otdelenie, Akademiya nauk SSSR, 438, 271 p. (Russian).

—— and B. N. SHURYGIN. 1978. Biogeography, facies and stratigraphy of the Middle Jurassic of the Soviet Arctic (by bivalves). Trudy Instituta geologii i geofiziki. Sibirskoe otdelenie, Akademiya nauk SSSR 352, 206 p. (Russian).

MANUSCRIPT RECEIVED JUNE 28, 1982
REVISED MANUSCRIPT RECEIVED OCTOBER 26, 1982

Derek A. Lee contributed $665 in support of this article.