European Journal of Taxonomy 1065: 1–136
https://doi.org/10.5852/ejt.2026.1065.3289

europeanjournaloftaxonomy.eu
ISSN 2118-9773
2026 · Friedel J.C. *et al.*

Received: 9 January 2026 • *Accepted: 25 March 2026* • *Published: 4 Junio 2026*

Topic editor: Denis Audo • *Desk editor: Pepe Fernández*

Monograph

urn:lsid:zoobank.org:pub:3799FEF6-8185-47D9-89A4-411151296032

A nomenclator of the Palaeozoic taxa of the family Parallelodontidae (Bivalvia, Arcida)

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Abstract. The Parallelodontidae are a long-living family in the bivalve superfamily Arcoidea, ranging from the Devonian to the Recent. Their fossil taxonomic diversity, however, is poorly known – especially so for the Palaeozoic. Here, we intend to fill this gap and provide a list of all Palaeozoic genus- and species-group names of the family published in the literature. This nomenclator compiles details on type species (genus-group names), type locality, type horizon and type material (species-group names), along with information on the original source, as well as remarks on taxonomic status, nomenclature and systematic placement. The catalogue encompasses 16 genus-group names (eleven of which are currently considered as valid) and 247 species-group names (213 valid) proposed within or currently attributed to the Parallelodontidae. Our contribution uncovers numerous widely unknown taxa and reveals an unexpected diversity of the family during the Palaeozoic, thus serving as a basis for future revision and completion of taxonomic databases.

Keywords. Arcoidea, catalogue, nomenclature, *Parallelodon*, taxonomy.

Friedel J.C., Neubauer T.A. & Amler M.R.W. 2026. A nomenclator of the Palaeozoic taxa of the family Parallelodontidae (Bivalvia, Arcida). *European Journal of Taxonomy* 1065: 1–136.
https://doi.org/10.5852/ejt.2026.1065.3289

Introduction

The family Parallelodontidae Dall, 1898 (Arcoidea, Bivalvia) is one of the most long-living and successful families within the Bivalvia Linnaeus, 1758. It is one of six to eight families in the superfamily Arcoidea Lamarck, 1809, including also the early Palaeozoic families Catamarcaiidae Cope, 2000 and Frejidae Ratter & Cope, 1998, and, depending on the author, the still extant families Arcidae Lamarck, 1809, Cucullaeidae Stewart, 1930, Glycymerididae Dall, 1908 (1847), Limopsidae Dall, 1895, and Noetiidae Stewart, 1930 (Carter *et al.* 2011; Ponder *et al*. 2020).

The origin of the Parallelodontidae within the Arcida Gray, 1854 is enigmatic, as their direct ancestor is not established (Cope 1997a, 1997b, 2000, 2004; Ratter & Cope 1998; Waller 1998). During the Great Ordovician Biodiversification Event (GOBE), the Arcida underwent their first radiation (e.g., Cope 1996, 2004; Cope & Babin 1999). The origin of the family Parallelodontidae was placed in the Ordovician by Newell (1969: 256), based on the inclusion of *Glyptarca* Hicks, 1873, which is now separated in a distinct superfamily, Glyptarcoidea Cope, 1996 (e.g., Bieler *et al.* 2010; Carter *et al.* 2011). Additionally, all other Ordovician and Silurian taxa previously attributed to Parallelodontidae or presumed to possess parallelodontid characteristics turned out to be misclassified (Amler & Friedel 2025). *Parallelodon mandelensis* (Dahmer, 1915) from the upper Emsian (Lower Devonian) of Germany undoubtedly has a parallelodontid hinge and seems to be the earliest member of the family (Amler & Friedel 2025). Cyrtodontids and pterioids occurred contemporaneously and may be considered as ancestors (Thomas 1978a; Liljedahl 1984a, 1984b; Amler 1989; Ratter & Cope 1998).

During the Middle Devonian, a first minor radiation occurred primarily in the shelf region deposits of the Rheic Ocean in Central Europe and eastern North America (Amler & Friedel 2025). High sea level and wide shelf areas offered ideal conditions for parallelodontid evolution. The Late Devonian evolution of the group is mainly documented in North America, as facies conditions in Europe seem to have been unfavourable. With the onset of the Carboniferous, parallelodontids experienced a remarkable radiation in the shelf environments bordering Laurussia and Gondwana (Friedel & Amler 2024; Amler & Friedel 2025) documented in the monographs from the Carboniferous Limestone (e.g., McCoy 1844; De Koninck 1885; Hind 1897). During the Pennsylvanian, parallelodontid species diversity slightly declined and remained about constant until the end-Permian (Branson 1948 and data summarised here).

Following a major decline at the Permian–Triassic boundary the family experienced a slow recovery during the Triassic. While only a single species of uncertain affiliation was found in Lower Triassic strata (Hautmann *et al.* 2013), new genera and several species emerged during the Middle and Late Triassic (Diener 1923; Ros & Echevarría 2011; Ros-Franch *et al.* 2014). Parallelodontidae and the order Arcida as a whole radiated during the Jurassic and Cretaceous, with the first appearances of modern arcid families (Ros & Echevarría 2011; Ros-Franch *et al.* 2014; Knight & Morris 2020), and further diversified during the Cenozoic (Combosch & Giribet 2016). The Parallelodontidae are, in fact, hypothesised to form the root of all younger arcoid families (Thomas 1987a, 1987b; Amler 1989). While earlier studies considered the Parallelodontidae extinct (Oliver & Holmes 2006), newer data suggest they have survived until today with only two Recent genera, *Kamenevus* Valentich-Scott, Coan & Zelaya, 2020 and *Porterius* Clark, 1925 (Valentich-Scott *et al.* 2020).

The taxonomy and definition of the family Parallelodontidae and its (sub)genera have been the subject of numerous discussions by several authors in the past (e.g., Amler 1989; Stiller 2006; Ros-Franch *et al.* 2014). This lack of clarity has often led to debates, revisions in generic classification, and reassessments of family affiliations. Systematic categorisation has been based variably on shell shape, ornamentation, but primarily on the arrangement and orientation of the hinge teeth. Especially specimens from Mesozoic and Cenozoic strata typically show well-preserved hinge teeth, allowing detailed description and determination, but still the taxonomy of the species involved is controversial (e.g., Karapunar *et al.*

2020; Knight & Morris 2020). In contrast, Palaeozoic specimens are often poorly preserved, typically as internal or external moulds with the hinge and part of the shell missing or obscured by sediment, leading to an even higher ambiguity as to species identities and generic placement. Up to date, a thorough systematic revision of Palaeozoic parallelodontids is entirely missing.

This catalogue provides an overview of all published Palaeozoic parallelodontid genus- and species-group names, including detailed information on type materials and current taxonomic status as far as available. It summarises information on partly hard-to-access and lesser-known literature and serves as a tool for future revision as well as the completion of taxonomic databases.

Material and methods

To assemble a comprehensive list of names along with their status and current classification we searched the literature, starting with major monographs and revisions and notes therein, as well as several internet sources and databases (Mindat.org, https://www.mindat.org/; The Paleobiology Database, https://paleobiodb.org/; Index to Organism Names, http://www.organismnames.com/; MolluscaBase, https://molluscabase.org/; Google Scholar, https://scholar.google.com/).

For genus-group names, we include 1) all taxa that have been proposed for Palaeozoic type species and were originally or are nowadays placed in Parallelodontidae, and 2) those that contain valid Palaeozoic species and are included in the family today. Genera that have been used for the description of Palaeozoic species but have been placed in Parallelodontidae neither at the time of the original description nor today (e.g., *Arca*, *Cucullaea*) are briefly summarised. For each name, we list the type species and its geographic and stratigraphic occurrence as well as give details on original description, taxonomy, systematics and nomenclature, and grammatical gender.

For species-group names, we include all taxa that were originally or are nowadays placed in Parallelodontidae. Taxa that were temporarily placed in the family but are now assigned to different families are not considered. For each name, we provide (as far as known or available) information on original description, type locality, type horizon/stratigraphic age, type material, and any relevant taxonomic, systematic and nomenclatural remarks. We list information on type locality and horizon as given in the original description source, along with an English translation and further explanations where necessary.

For both genus- and species-group names, we specifically highlight the status for taxa that are invalid (i.e., homonyms, synonyms), unavailable (i.e., nomina nuda) or uncertain (i.e., nomina dubia) after the name in square brackets. All names are listed in their original combination and rank while accounting for mandatory changes in the spelling according to the *International Code of Zoological Nomenclature* (ICZN 1999). Initials are added to duplicate author names in taxon authorships.

Abbreviations

BV = bivalved
LV = left valve
RV = right valve

Results

Class Bivalvia Linnaeus, 1758
Subclass Autobranchia Grobben, 1894
Infraclass Pteriomorphia Beurlen, 1944
Order Arcida Gray, 1854
Superfamily Arcoidea Lamarck, 1809

Family **Parallelodontidae** Dall, 1898

Remarks

The systematic classification follows Carter *et al.* (2011). Note that several of the genus- and species-group names listed below are attributed to families other than the Parallelodontidae at present. Their current systematic classification is indicated in the respective Remarks sections.

Genus-group names

Many Palaeozoic species that are now placed in the family Parallelodontidae were formerly placed in genera that belong to other orders or families today. These are not treated in detail but summarised here (information in parentheses indicate current systematic position; in alphabetic order): *Arca* Linnaeus, 1758 (order Arcida, family Arcidae), *Byssoarca* Swainson, 1833 (o. Arcida, fam. Arcidae; objective synonym of *Arca* Linnaeus, 1758), *Cucullaea* Lamarck, 1801 (o. Arcida, fam. Cucullaeidae), *Cypricardia* Lamarck, 1819 (o. Venerida; today accepted as *Trapezium* Megerle von Mühlfeld, 1811), *Cypricardinia* Hall, 1859 (o. Carditida), *Dolabra* McCoy, 1844 (o. Trigoniida; taxonomic status uncertain), *Leptodesma* Hall, 1883 (o. Ostreida), *Megalodon* J. De C. Sowerby, 1827 (o. Megalodontida), *Microdon* Conrad, 1842 (o. Carditida; junior homonym, replaced by *Eodon* Hall in Miller, 1877), *Modiola* (o. Mytilida; misspelling of *Modiolus* Lamarck, 1799), *Myalina* de Koninck, 1842 (o. Myalinida), *Mytulites* Schlotheim, 1813 (o. Mytilida; objective synonym of *Mytilus* Linnaeus, 1758), *Palaearca* Hall, 1859 (o. Cyrtodontida; today accepted as *Cyrtodonta* Billings, 1858), *Palanatina* Hall & Whitfield, 1870 (o. Modiomorphida), *Pholadomya* G.B. Sowerby I, 1823 (superfamily Pholadomyoidea), *Pleurophorus* King, 1844 (superfam. Kalenteroidea; junior homonym, replaced by *Permophorus* Chavan, 1954), *Psammobia* Lamarck, 1818 (o. Cardiida; today accepted as *Gari* Schumacher, 1817), *Pterinea* Goldfuss, 1832 (o. Ostreida), *Ptychopteria* Hall, 1883 (o. Ostreida), *Pullastra* G.B. Sowerby I, 1826 (o. Venerida; today accepted as *Venerupis* Lamarck, 1818), *Sanguinolites* McCoy, 1844 (superfam. Grammysioidea), *Venerupis* Lamarck, 1818 (o. Venerida).

Alula Girty, 1912

Original source

Girty (1912): 3.

Type species

Alula squamulifera Girty, 1912; by original designation. Upper Permian, United States of America (Colorado).

Gender

Female.

Remarks

Originally related to the family Parallelodontidae; according to Ding *et al.* (1982) part of the family Grammysiidae Miller, 1877; according to Morris *et al.* (1991) included in the family Sanguinolitidae Miller, 1877.

Alytodonta Cope, 1997

Original source

Cope (1997a): 739.

Type species

Alytodonta gibbosa Cope, 1997; by original designation. Lower Silurian, Scotland.

Gender

Female.

Remarks

Originally placed in the family Parallelodontidae by Cope (1997a); placed in the family Frejidae by Cope & Kříž (2013).

Antonella Astafieva-Urbajtis in Astafieva-Urbajtis & Ramovš, 1985 [invalid]

Original source

Astafieva-Urbajtis & Ramovš (1985): 14.

Type species

Antonella catelliformis Astafieva-Urbajtis in Astafieva-Urbajtis & Ramovš, 1985; by original designation. Upper Carboniferous, Slovenia.

Gender

Female.

Remarks

Junior homonym of *Antonella* Cooke & Kondo, 1961 [Gastropoda]; no replacement name available. Originally placed in the "*Catella* Group" of the Parallelodontidae (subfamily Grammatodontinae) by Astafieva-Urbajtis & Ramovš (1985).

Beushausenia Cossmann, 1897 [invalid]

Original source

Cossmann (1897): 93.

Type species

Macrodon rugosus Buckman, 1845; by typification of replaced name. Jurassic, United Kingdom.

Gender

Female.

Remarks

Introduced as a new name for *Macrodon* Buckman, 1845, non Schinz, 1822 [Pisces]. Cossmann indicated *Cucullaea hirsonensis* d'Archiac, 1843 as the type species, however under Art. 67.8 the type species of *Beushausenia* is the type species of *Macrodon*. Junior objective synonym of *Parallelodon*, which is an earlier replacement name. *Beushausenia* Maillieux, 1913 [in Maillieux 1913a] (Pterineidae) is a junior homonym (replaced by *Beushausenella* Maillieux, 1913 [in Maillieux 1913b]).

Carbonarca Meek & Worthen, 1870

Original source

Meek & Worthen (1870): 39.

Type species

Carbonarca gibbosa Meek & Worthen, 1870; by subsequent designation by Newell (1969). Carboniferous, United States of America (Illinois).

Gender

Female.

Remarks

Originally no classification indicated. Questionably assigned to the family Parallelodontidae by Newell (1969).

Cosmetodon Branson, 1942

Original source

Branson (1942): 248.

Type species

Arca keyserlingii d'Orbigny, 1850; by original designation. Upper Jurassic, Russia.

Gender

Male.

Remarks

Cosmetodon was erected as subgenus of *Grammatodon* Meek & Hayden, 1860; this was followed by Newell (1969) and recent studies (e.g., Ros-Franch *et al.* 2014; Prinoth & Posenato 2023). Nevesskaja *et al.* (2013) treated it as a distinct genus.

Cucullopsis Chao, 1927

Original source

Chao (1927): 10.

Type species

Cucullopsis quadrata Chao, 1927; by original designation. Upper Carboniferous to lower Permian, China.

Gender

Female.

Remarks

Originally placed in the family Parallelodontidae. Questionably assigned to the "*Grammatodon* group" of the family Parallelodontidae according to Newell (1969). Consistently treated as a distinct genus (e.g., Astafieva-Urbajtis & Ramovš 1978; Fang *et al.* 2009; Nevesskaja *et al.* 2013).

Grammatodon Meek & Hayden, 1860

Original source

Meek & Hayden (1860): 419.

Type species

Arca (*Cucullaea*) *inornata* Meek & Hayden, 1858; by monotypy. Upper Jurassic, United States of America (Nebraska).

Gender

Male.

Remarks

Originally part of the family "Arcadae". Type genus of the parallelodontid subfamily Grammatodontinae (Newell 1969; Carter *et al.* 2011; Knight & Morris 2020).

Macrodon Buckman, 1845 [invalid]

Original source

Buckman (1845): 98.

Type species

Macrodon rugosus Buckman, 1845; by monotypy. Jurassic, United Kingdom.

Gender

Male.

Remarks

Originally no classification indicated. Junior homonym of *Macrodon* Schinz, 1822 [Pisces]; replaced with *Parallelodon* by Meek & Worthen (1866a). The widely used "*Macrodus*" is an incorrect subsequent spelling.

Mnataia Prantl & Růžička, 1955

Original source

Prantl & Růžička (1955b): 4 [Russian], 9 [English].

Type species

Mnataia pribyli Prantl & Růžička, 1955; by original designation. Middle Devonian, Czech Republic.

Gender

Female.

Remarks

Originally placed in "a special group of pseudocyrtodont pelecypods"; questionably synonymised with *Parallelodon* by Newell (1969). Amler & Friedel (2025) discussed potential cyrtodontid and parallelodontid affinities, yet without conclusion. The genus and species were erected based on a single incomplete valve of 6 mm in length.

Nemodon Conrad, 1869

Original source

Conrad (1869): 97.

Type species

Arca (*Macrodon*) *eufalensis* Gabb, 1860; by original designation. Cretaceous, United States of America (New Jersey).

Gender

Male.

Remarks

Originally no classification indicated; according to Newell (1969) part of the "*Cucullaria* group" of the parallelodontid subfamily Grammatodontinae; according to Carter *et al.* (2011) part of the tribe Nemodontini (Parallelodontidae: Grammatodontinae).

Obliquidon Astafieva-Urbajtis, 1994

Original source

Astafieva-Urbajtis (1994): 114.

Type species

Antonella bedici Astafieva-Urbajtis in Astafieva-Urbajtis & Ramovš, 1985; by original designation. Upper Carboniferous, Slovenia.

Gender

Male.

Remarks

Introduced in a distinct subfamily Obliquidontinae Astafieva-Urbajtis, 1994 in the family Parallelodontidae. The subfamily was considered a synonym of Grammatodontinae by Bieler *et al.* (2010).

Oligodonta Paul, 1941 [nomen nudum]

Original source

Paul (1941): 130.

Remarks

Nomen nudum – Paul mentioned and used the subgenus in his *Fossilium Catalogus* but did not provide a description. Originally questionably classified as a subgenus of *Grammatodon.* Paul (1941) classified *Myalina goldfussiana* De Koninck, 1842 and *Modiola illinoiensis* Worthen, 1884 in the new subgenus, but did not indicate a type species.

Parallelodon Meek & Worthen, 1866

Original source

Meek & Worthen (1866a): 17.

Type species

Macrodon rugosus Buckman, 1845; by typification of replaced name. Jurassic, United Kingdom.

Gender

Male.

Remarks

New name for *Macrodon* Buckman, 1845, non Schinz, 1822 [Pisces]. *Beushausenia* Cossmann, 1897, is another, younger replacement name. Originally no classification; type genus of the family Parallelodontidae.

Prorhynchus Hall, 1885 [invalid]

Original source

Hall (1885): xlviii.

Type species

Palaeanatina quadrata Hall, 1883; by original designation. Devonian, United States of America (Pennsylvania).

Gender

Male. Hall (1885) and several subsequent authors (e.g., Chadwick 1935; Linsley 1994) considered the name as neuter, based on the Greek origin of the suffix '*-rhynchus*' ('ῥύγχος, rhynchos'), but since the ending was Latinised the name is deemed to be masculine according to ICZN Art. 30.1.3.

Remarks

Junior homonym of *Prorhynchus* Schultze, 1851 [flatworm]. Originally no classification suggested, but Hall discussed a relationship to "Palaeanatinae" (= Modiomorphidae); synonymous to *Parallelodon* after Newell (1969); part of the family Leiopteriidae Maillieux, 1921 according to Vokes (1967), which is today considered as a synonym of Pterineidae Meek, 1864 (Bieler *et al*. 2010); Amler & Friedel (2025) doubted affinities with parallelodontid arcoids.

Sufia Prantl & Růžička, 1955

Original source

Prantl & Růžička (1955a): 303 [Czech], 308 [Russian], 313 [English]; originally as "Šufia".

Type species

Sufia paradoxa Prantl & Růžička, 1955; by original designation. Middle Devonian, Czech Republic.

Gender

Female.

Remarks

Originally placed in "a special group of pseudocyrtodont pelecypods"; questionably synonymised with *Parallelodon* by Newell (1969). Amler & Friedel (2025) discussed potential cyrtodontid and parallelodontid affinities, yet without conclusion. The genus and species were erected based on a single incomplete valve of 6 mm in total.

Species-group names

In addition to the names below, we recently detected a number of "new" parallelodontid species names on a webpage (https://www.paleontology.cz/; accessed on 16 Oct. 2025), partly with illustrations and indication of type material. However, none of these names appear in the published literature or fulfil the requirements of the ICZN for availability. Inquiries for further details from the website operator remained unanswered. The names are not listed here to avoid introducing nomina nuda in the published literature.

Macrodon achiardii De Stefani, 1917

Original source

De Stefani (1917): 26, pl. 1 figs 11, 13–14, 17, 20, 22; originally as "*Achiardii*".

Type stratum and age

Rio Marina Formation, Pennsylvanian, Carboniferous (De Stefani 1914; Bortolotti *et al.* 2001).

Type locality

"Cala Baccetti"; a small bay south of Cavo, Elba Island, Italy.

Type material

Studied material (IGF 122E to IGF 125E, IGF 128E to IGF 144E) is stored in the De Stefani collection at the Museo di Storia Naturale di Firenze.

Remarks

No subsequent mention in literature. De Stefani had plenty of specimens and gave a detailed description of the hinge teeth, which support an affinity to *Parallelodon*.

Parallelodon aequalis Chapman, 1908

Original source

Chapman (1908): 39, pl. 4 fig. 57; originally as "æqualis".

Type stratum and age

"Silurian (Melbournian). In brown mudstone"; Melbourne Formation, Murrindindi Supergroup, lower Ludlow, Silurian.

Type locality

"Yarra Improvement Works, S. Yarra"; South Yarra, County of Bourke, Victoria, Australia.

Type material

Holotype is a steinkern of a LV (P 7924). Stored in the collections of the Museums Victoria, Melbourne.

Remarks

Mentioned in the type catalogue of Gill & Davies (1968). The morphology of this species rather matches *Schizodus* King, 1844 (Trigoniida: Schizodidae). Systematic classification is therefore questionable (Amler & Friedel 2025).

Macrodus expansus var. ***alsaticus*** Tornquist, 1896 [invalid]

Original source

Tornquist (1896): 96 [630], pl. 19 fig. 9.

Type stratum and age

"[in der] schiefrigen Facies des Kohlenkalks" (Tornquist 1895: 23) [shaly facies of the Carboniferous Limestone]; middle to upper Visean, Mississippian, Carboniferous (Amler 1987).

Type locality

"Hohlweg unterhalb der Ferme [Bauernhof] Pütig"; along the route from Bourbach-le-Haut to Masevaux, Département Haut-Rhin, France.

Type material

The whereabouts of the material studied by Tornquist (1896) are unknown. He stated the material as belonging to the "Geologische Landesanstalt Elsass-Lothringen". Amler (1987) stated that the Tornquist collection in the Strasbourg Museum was destroyed in a fire (see also Hubmann 2014).

Remarks

Synonym of *Parallelodon koeneni* (Tornquist, 1896) according to Amler (1987).

Parallelodon amoenus De Koninck, 1885

Original source

De Koninck (1885): 163, pl. 25 fig. 39, pl. 26 fig. 19.

Type stratum and age

"calcaire d'Anseremme (étage II)"; Waulsort Formation, upper Tournaisian, Mississippian, Carboniferous.

Type locality

"Anseremme"; Anseremme, Dinant, Belgium.

Type material

The syntypes are stored at the Royal Belgian Institute of Natural Sciences, Brussels, coll. no. RBINS a4736 (pl. 25 fig. 39, not traced) and RBINS a4737 (old no. 697; pl. 26 fig. 19; coll. Dupont).

Remarks

De Koninck (1885) used multiple original spellings; "*amoenus*" in the description of the species, "*amænus*" (*amaenus*) in the plate caption. Subsequent workers, including De Koninck himself, only used "*amoenus*", suggesting that "*amænus*" was a printing error. Listed as potential synonym of *Parallelodon clathratus* (McCoy, 1844) by Amler (1987).

Parallelodon anaklastum Winter, 1963

Original source

Winter (1963): 51, pl. 6 figs 8–10b.

Type stratum and age

"Supai Formation, Permian"; Supai Formation, Artiskian/Kungurian, Cisuralian, Permian.

Type locality

"[Loc. 3]"; Between Cibecue and Fort Apache, route 73 between route 70 and Cedar Creek/Silver Butte, at the eastern side of the route, Navajo County, Arizona, United States of America.

Type material

Holotype (28024/2:1; pl. 6 fig. 9a–b) and additional type material (28024/1:1; pl. 6 figs 10a–b and 28024/3:1; pl. 6 fig. 8) stored at the American Museum of Natural History, New York.

Arca anatina De Koninck in d'Orbigny, 1850 [invalid]

Original source

d'Orbigny (1850): 134.

Type stratum and age

Lower Limestone of Limestone Group; today known as Ballyshannon Limestone Formation of the Tyrone Group (Chadian–Arundian, Visean, Mississippian, Carboniferous) [from *Psammobia decussata* McCoy, 1844].

Type locality

"Little Island, Cork"; County Cork [from *Psammobia decussata* McCoy, 1844], Ireland.

Type material

Lectotype (designated by Hind 1897, as "the type"): NMING: F7260 (Griffith coll.). Also figured by Hind (1897: 159, pl. 11 fig. 22). Stored at the National Museum of Ireland, Dublin [from *Psammobia decussata* McCoy, 1844].

Remarks

This name was introduced by De Koninck in d'Orbigny (1850) as a replacement name for the secondary homonym *Psammobia decussata* McCoy, 1844. The homonymy was not explicitly stated in d'Orbigny (1850), it became only clear in the expanded description in De Koninck (1851: 671, pl. 57 fig. 7a–b), where he indicated the homonymy as "non *Arca decussata*, Münster, et Nyst". These species are the Jurassic *Arca decussata* Roemer, 1836 from northern Germany (who attributed the authorship to Münster) and the Oligocene *Arca decussata* Nyst & Westendorp, 1839 from Belgium (which is sometimes erroneously indicated as of Nyst, 1835; see, e.g., Sandberger 1858–1863). An additional senior homonym

is the extant *Arca decussata* Linnaeus, 1758. Later, De Koninck (1885) revised his earlier assessment and classified the species in *Parallelodon*. Since there was no homonymy anymore, he reinstated McCoy's name (as *Parallelodon decussatus*), with *Arca anatina* being its junior objective synonym. *Arca anatina* has not been used after that (compare ICZN 1999, Art. 59.3); valid as *P. decussatus*.

Prorhynchus angulatum Hall, 1885

Original source

Hall (1885): 493, pl. 96 fig. 7.

Type stratum and age

"Upper part of the Chemung group"; Brallier Formation, Upper Devonian (Berg *et al.* 1993).

Type locality

"Warren, Pa." [Warren, Pennsylvania], United States of America.

Type material

Whereabouts unknown.

Remarks

Linsley (1994) attributed the species to the genus *Parallelodon*.

Parallelodon angustus Hind, 1904

Original source

Hind (1904): 137, pl. 23 figs 11–13.

Type stratum and age

"bed of shale above the Underset Limestone"; shale above or part of the Four Fathom Limestone Member, Alston Formation, Yoredale Group, Visean/Serpukhovian, Mississippian, Carboniferous.

Type locality

"Nine Standard Rigg, Westmoreland"; Westmoreland, Cumbria, United Kingdom.

Type material

The figured syntypes are stored at the Natural History Museum, London, coll. Hind. Two steinkerns of RV (NHMUK PI L 47717; pl. 23 fig. 11 and NHMUK PI L 47718; pl. 23 fig. 12) and a steinkern of a LV (NHMUK PI L 47719; pl. 23 fig. 13, 13a).

Arca antiqua Münster in Goldfuss, 1837 [invalid]

Original source

Goldfuss (1833–1841): 145, pl. 122 fig. 8a–c.

Type stratum and age

"dolomitischer Zechstein"; Z1, Zechstein, Changhsingian, Lopingian, Permian.

Type locality

"Glücksbrunn"; part of the town Bad Liebenstein, Thuringia, Germany.

Type material

Lectotype is a BV specimen (SNSB-BSPG AS VII 2095) designated and figured by Friedel *et al*. (2025: fig. 2c–e). Additional specimens are a steinkern of RV (SNSB-BSPG AS VII 2096) and a steinkern of LV (SNSB-BSPG AS VII 2097). All are stored at the Bavarian State Collections of Natural History, Bavarian State Collection for Palaeontology and Geology, Munich.

Remarks

Recently considered as a junior synonym of *Parallelodon striatus* (von Schlotheim, 1820) by Friedel *et al.* (2025).

Parallelodon antiquior De Koninck, 1885

Original source

De Koninck (1885): 152, pl. 25 figs 37–38.

Type stratum and age

"calcaire carbonifère des Pauquys (étage II)"; Waulsort Formation, upper Tournaisian, Mississippian, Carboniferous.

Type locality

"Pauquys"; Hastière, Namur, Wallonia, Belgium.

Type material

The illustrated syntype is stored at the Royal Belgian Institute of Natural Sciences, Brussels (RBINS a4695; old no. 652; coll. Dupont).

Parallelodon antiquus Barrois, 1891

Original source

Barrois (1891): 200, pl. 3 fig. 3a–b.

Type stratum and age

"Grès armoricain"; upper Arenig (Babin 1966), Middle Ordovician.

Type locality

"Chapelle-Glain"; Loire-Atlantique département, Region Pays de la Loire, France.

Type material

Whereabouts unknown.

Remarks

Douvillé (1913: 440) placed the species in *Actinodonta* Phillips in Phillips & Salter, 1848, followed by other palaeontologists (Dechaseaux 1952: 270; Eberzin 1960: 72), whereas Cox (1960) mentioned its true *Parallelodon* morphology. Pojeta (1971: 17–18) classified the species in "*Pseudarca* [*Siliquarca*]" (Lyrodesmatidae). Amler & Friedel (2025) noted that *P. antiquus* does not show the typical morphological

characteristics of Palaeozoic parallelodontids, particularly with regard to the hinge arrangement, and therefore, doubt the assignment to *Parallelodon*.

Cucullaea arguta Phillips, 1836

Original source

Phillips (1836): 210, pl. 5 fig. 20.

Type stratum and age

Top of Lower Scar Limestones; probably Great Scar Limestone, Visean, Mississippian, Carboniferous (Phillips 1836: 241; compare Amler 1987: 160).

Type locality

"Bolland"; south of Ogden Reservoir, west of Queensbury, Bradford, West Yorkshire, United Kingdom.

Type material

Hind (1897: 174) mentioned the type specimen being stored at the Natural History Museum, London, coll. Gilbertson. We did not trace the specimen.

Remarks

Placed in *Parallelodon* by De Koninck (1885: 154); however, Hind (1897: 174) doubted this assignment.

Parallelodon atavus Whidborne, 1892

Original source

Whidborne (1892): 39, pl. 1 fig. 1, 1a.

Type stratum and age

Wolborough limestone, probably East Ogwell Limestone, Givetian, Devonian (House 2002).

Type locality

"Wolborough"; Wolborough quarry (SX 8522 7047) near Newton Abbot, County Devon (House 2002), United Kingdom.

Type material

The single LV is part of the coll. Vicary (there labelled as *Sanguinolites* according to Whidborne). Whereabouts unknown.

Arca aviculoides De Koninck, 1842

Original source

De Koninck (1842): 114, pl. 3 figs 17a–b, 20a–b; originally as "*aviculoïdes*".

Type stratum and age

"calcaire de Visé" (De Koninck 1842); specified as "calcaire carbonifère de Visé (étage III)" by De Koninck (1885); V3b and V3c, Visean, Mississippian, Carboniferous (Demanet 1958: 29; Godefroid *et al.* 2006).

Type locality

"Visé"; quarries south of Visé, on the east side of the Meuse River valley (Demanet 1958; Godefroid *et al.* 2006), Belgium.

Type material

The illustrated syntypes are stored in the collection of the Géologie de l'Université Lyon; a BV specimen (UCBL-EM 35420; pl. 3 fig. 17) as *Arca aviculoides* var. and a BV specimen (UCBL-EM 35421; pl. 3 fig. 20). Additional material (BV specimen; UCBL-EM 35422) is not figured.

Remarks

Bronn (1848: 92) assigned the species to *Cucullaea*; later placed in *Parallelodon* by De Koninck (1885).

Macrodus* ? *baileyi Clarke, 1907

Original source

Clarke (1907): 234, unnumbered text-fig.

Type stratum and age

"Lower Devonic"; Dalhousie Group, Lower Devonian.

Type locality

"Dalhousie, N.B."; New Brunswick, Canada.

Type material

Not traced.

Remarks

Also described in Clarke (1909); listed but not discussed by Alekseeva (1993). Due to the lack of hinge characters, Amler & Friedel (2025) questioned a classification in Parallelodontidae.

Parallelodon balakhonskiensis Ragozin, 1931

Original source

Ragozin (1931): 7, pl. 1 fig. 1, pl. 3 figs 5–9, 12.

Type stratum and age

Lower Balakhonka [Balakhonskaya] Formation, Upper Pennsylvanian, Carboniferous (Amler & Silantiev 2022).

Type locality

"Pravyy bereg reki Mrassu, v dvukh kilometrakh vyshe ulusa Kameshok" [right bank of the river Mrassu, two kilometres above the Kameshok locality]; Kuznetsk Basin, West Siberia, Russia.

Type material

Whereabouts unknown.

Remarks

Khalfin (1950: 51) classified the species in the freshwater genus *Kinerkaella* Khalfin, 1950 (Myalinida: Prokopievskiidae).

Antonella*? *bedici Astafieva-Urbajtis in Astafieva-Urbajtis & Ramovš, 1985

Original source

Astafieva-Urbajtis & Ramovš (1985): 16, pl. 1 fig. 5a–b.

Type stratum and age

"verkhniy karbon, gzhel'skiy yarus"; Auernig Formation, Gzhelian, Carboniferous.

Type locality

"Yugoslaviya, gory Karavanke [...] Planina pod Golico 2", Karavanke Mts, Slovenia.

Type material

Type material is stored at the Gornjesavski muzej Jesenice, Slovenia, formerly Technical Museum of zelezarne Jesenica. Holotype with coll. no. USMJ 854.

Remarks

This is the type species of the genus *Obliquidon* Astafieva-Urbajtis, 1994.

Macrodus beneckei Tornquist, 1896

Original source

Tornquist (1896): 91 [625], pl. 19 fig. 7; originally as "*Beneckei*".

Type stratum and age

"[in der] schiefrigen Facies des Kohlenkalks" (Tornquist 1895: 23) [shaly facies of the Carboniferous Limestone]; middle to upper Visean, Mississippian, Carboniferous (Amler 1987).

Type locality

"Hohlweg unterhalb der Ferme [Bauernhof] Pütig"; along the route from Bourbach-le-Haut to Masevaux, Département Haut-Rhin, France.

Type material

The whereabouts of the material studied by Tornquist (1896) are unknown. He stated the material as belonging to the "Geologische Landesanstalt Elsass-Lothringen". Amler (1987) stated that the Tornquist collection in the Strasbourg Museum was destroyed in a fire (see also Hubmann 2014).

Remarks

Valid as *Parallelodon beneckei* in Friedel & Amler (2024).

Parallelodon bimodoliratus Dickins, 1963

Original source

Dickins (1963): 40, pl. 3 figs 6–14.

Type stratum and age

"Fossil Cliff Formation"; Sakmarian/Artinskian, Cisuralian, Permian.

Type locality

"Fossil Ridge, near Holmwood, Irwin River area"; Irwin River area, eastward of Geraldton, Perth basin, West Australia.

Type material

Holotype is a LV (UWA Type No. 45352; pl. 3 figs 6–8). Several paratypes available: A and B (UWA Type Nos. 45353, 45354, both Reg. No. 23354), C (UWA Type No. 45355, Reg No. 23350), D (UWA Type No. 45356, Reg No. 23388), E (UWA Type No. 45357, Reg No. 23363) and F (CPC 3878, Field No. WB 266). Stored at the Geology Department of the University of Western Australia (UWA) and Geoscience Australia, Commonwealth Palaeontological Collection (CPC).

Grammatodon biplicata Bird, 1968

Original source

Bird (1968): 142, pl. 12 figs 10–11.

Type stratum and age

"lower Mercer Limestone"; Pottsville Formation, Bashkirian to Moscovian, Lower to Middle Pennsylvanian, Carboniferous.

Type locality

"Near Somerset"; Perry Co., Ohio, United States of America.

Type material

Holotype (pl. 12 fig. 10) and paratype (pl. 12 fig. 11) are BV specimens and stored at the Orton Museum, Ohio State University, coll. no. 9188. Both collected by Morningstar.

Remarks

Bird (1968) consistently used a feminine ending for all species of *Grammatodon*, but the gender of the genus is masculine; the correct spelling is *biplicatus*.

Macrodon blairi Miller & Gurley, 1896

Original source

Miller & Gurley (1896): 11, pl. 2 figs 19–24.

Type stratum and age

"Chouteau limestone"; Kinderhookian, Mississippian, Carboniferous (see Thompson 2001).

Type locality

"near Sedalia, Missouri", United States of America.

Type material

Stored at the University of Cincinnati Museum (now Cincinnati Museum Center) with 20 "cotypes" under coll. no. 3930 to 3935, coll. Miller (see Chappars 1936).

Remarks

As *Parallelodon blairi* in Moore (1928) and Williams (1943).

Arca* (?) *bodana Roemer, 1860

Original source

Roemer (1860): 6, pl. 2 fig. 13; originally as "*Bodana*".

Type stratum and age

"Graue Kalke", beds with "*Spirifer*" [*Cyrtospirifer*] *disjunctus* J. De C. Sowerby in Sedgwick & Murchison, 1840; Givetian or lower Frasnian, Devonian (Amler & Friedel 2025).

Type locality

Bergfeld bei Elbingerode-Rübeland, Harz Mts, Saxony-Anhalt, Germany.

Type material

Whereabouts unknown.

Remarks

Morphology matches that of species of *Parallelodon*, but the arrangement of the hinge teeth is unknown (Amler & Friedel 2025).

Parallelodon brenensis Reed, 1932

Original source

Reed (1932): 44, pl. 8 fig. 7.

Type stratum and age

"Agglomeratic slate of Kashmir"; uppermost Carboniferous to lowermost Permian (Vaidyanadhan & Ramakrishnan 2010; Kumar *et al*. 2025).

Type locality

Bren Spur, Srinagar district, Jammu and Kashmir, India.

Type material

Based on a single specimen (K 24.897), stored at the Geological Survey of India, Kolkata.

Remarks

Species discussed by Waterhouse (1987: 136).

Pterinea brilonensis Kayser, 1872 [invalid]

Original source

Kayser (1872): 675, pl. 27 fig. 2; originally as "*Brilonensis*".

Type stratum and age

"Briloner Eisenstein/Rotheisenstein"; Stringocephalenkalk (Beushausen 1895), upper Givetian, Middle Devonian.

Type locality

"Brilon"; North Rhine-Westphalia, Germany.

Type material

Type material (MB.M.400) is stored at the Museum für Naturkunde, Berlin and is figured in Kayser (1872: pl. 27 fig. 2) and Beushausen (1895: pl. 4 fig. 4).

Remarks

Beushausen (1895: 39, pl. 4 figs 3–4) synonymised *Pterinea brilonensis* Kayser, 1872 with *Pholadomya venusta* Steininger, 1853 and placed the species in the genus *Macrodus*. Amler & Friedel (2025) placed the species in *Parallelodon*.

Arca cancellata J. De C. Sowerby, 1824

Original source

Sowerby (1824): 115, pl. 473 fig. 2.

Type stratum and age

"Derbyshire Limestone"; Carboniferous Limestone, Mississippian, Carboniferous.

Type locality

Derbyshire, United Kingdom.

Type material

Stored at the Natural History Museum, London, with the coll. no. NHMUK PI OR 43184 (figured in Martin 1809: pl. 44 fig. 7 and Sowerby 1824: pl. 473 fig. 2 and Hind 1897: pl. 10 fig. 7). Sowerby reproduced the specimen as a mirror image.

Remarks

The name was already previously mentioned as "*Conchyliolithus Arcites cancellatus*" by Martin (1809). However, that work did not apply the principles of binomial nomenclature and was placed on the Official Index of Rejected and Invalid Works in Zoological Nomenclature by Opinion 231 (ICZN 1954). Sowerby (1824) referred to Martin's figure, described and illustrated it, and made the name available. Hind (1897) classified the species in *Parallelodon*.

Conchyliolithus Arcites cancellatus Martin, 1809 [unavailable]

Original source

Martin (1809): unpaginated text, pl. 44 fig. 7; originally as "*Conchyliolithus Arcites* (*cancellatus*)".

Type stratum and age

Martin did not indicate a horizon; Sowerby (1824) gave it as "Derbyshire Limestone"; Carboniferous Limestone, Mississippian, Carboniferous.

Type locality

No specific locality was mentioned by Martin; Sowerby (1824) referred to it as "Derbyshire Limestone", United Kingdom.

Type material

Stored at the Natural History Museum, London with the coll. no. NHMUK PI OR 43184 (figured in Martin 1809: pl. 44 fig. 7; Sowerby 1824: pl. 473 fig. 2 and Hind 1897: pl. 10 fig. 7). Sowerby reproduced the specimen as a mirror image.

Remarks

Martin (1809) did not apply the principles of binomial nomenclature and was placed on the Official Index of Rejected and Invalid Works in Zoological Nomenclature by Opinion 231 (ICZN 1954). Sowerby (1824) referred to Martin's figure, described and illustrated it, and made the name available (as *Arca cancellata*). Hind (1897) classified the species in *Parallelodon*.

Parallelodon cancellosus Mather, 1915

Original source

Mather (1915): 215 [there misspelt as "*Parrallelodon*"], pl. 15 fig. 7.

Type stratum and age

"Brentwood limestone"; Brentwood Limestone Member, Bloyd Formation, Bashkirian (Morrowan), Pennsylvanian, Carboniferous (Xie *et al*. 2018).

Type locality

"near Fayetteville, Arkansas (Station 135)"; the station is further specified on p. 247 as "Fayetteville quadrangle: Brentwood limestone lentil. Three and a half miles northeast of Fayetteville, Ark. Abandoned quarry. S. 1/2, sec. 2, T. 16 N., R. 30 W.", United States of America.

Type material

Holotype (FMNH UC 16062) stored at the Field Museum of Natural History, Chicago (formerly Walker Museum, University of Chicago, as indicated by Mather).

Remarks

Species discussed in Hoare *et al*. (1989).

Parallelodon capillatus Waterhouse, 1987

Original source

Waterhouse (1987): 135, pl. 1 figs 5–11.

Type stratum and age

"Brae Formation"; Roadian, Guadalupian, Permian (Clapham & James 2008).

Type locality

"[L 4108]: Bowen Basin of central Queensland"; south of Cracow, western flank of Pindari Hills, Queensland, Australia.

Type material

Holotype is a RV (UQF 70214; pl. 1 fig. 11). Additional material is illustrated (UGF 70216, UQF 70217, UQF 70213, UQF 70215). All stored at the Department of Geology and Mineralogy, University of Queensland, Brisbane.

Arca carbonaria E.T. Cox, 1857

Original source

Cox (1857): 567, pl. 7 [sic, actually pl. 8] fig. 5.

Type stratum and age

"limestone over the main coal No. 11, [...] also in a limestone over an equivalent coal"; Pennsylvanian, Carboniferous (Bird 1968), exact age unknown; the species was later reported as common in the Lower Mercer Member, as well as in the Boggs and Upper Mercer members, of the Lower to Middle Pennsylvanian Pottsville Formation of Ohio (Morningstar 1922; Hoare *et al*. 1979).

Type locality

"Providence, Hopkins county; [...] on the property of Edward and William Hawes, near Hawesville, Hancock county, Kentucky", United States of America.

Type material

Bird (1968) stated that the "holotype of this species is lost and no topotype material [...] is available.".

Remarks

Herrick (1887) placed the species in *Macrodon*; Mark (1911) recombined the species as *Parallelodon carbonarius* (see also Hoare *et al*. 1979); Bird (1968) classified it in *Grammatodon*.

Parallelodon carnei Dun & Benson, 1920

Original source

Dun & Benson (1920): 353, pl. 21 fig. 7.

Type stratum and age

"Lower Carboniferous (Burindi)"; probably correlated to the Visean, Mississippian, Carboniferous (see Dun & Benson 1920: 371).

Type locality

"south-eastern portion of Babbinboon"; Babbinboon Mt near Tamworth, New South Wales, Australia.

Type material

Based on a steinkern with a fragement of shell material. Collection not mentioned, but the authors stored material for several other species in the collection of the Geological Survey of New South Wales.

Remarks

Not found in the literature after the original description.

Antonella catelliformis Astafieva-Urbajtis in Astafieva-Urbajtis & Ramovš, 1985

Original source

Astafieva-Urbajtis & Ramovš (1985): 15, pl. 1 fig. 7.

Type stratum and age

"verkhniy karbon, gzhel'skiy yarus"; Auernig Formation, Gzhelian, Carboniferous.

Type locality

"Yugoslaviya, gory Karavanke [...] Križovec 1 (Črni vrh)", Karavanke Mts, Slovenia.

Type material

Type material is stored at the Gornjesavski muzej Jesenice, Slovenia, formerly Technical Museum of zelezarne Jesenica. Holotype with coll. no. USMJ 884.

Parallelodon changhsingensis Yang, He, K.-X. Zhang, S.-B. Wu, Y. Zhang, Yue, H.-T. Wu & Xiao, 2016

Original source

Yang *et al.* (2016): 105, text-fig. 3g–k.

Type stratum and age

Talung Formation, upper Changhsingian, Lopingian, Permian.

Type locality

"Dongpan section, near Dongpan Village, Liuqiao Town, Fusui County, Guangxi Zhuang Autonomous Region"; near the exit along road S60 to route G322, southeast of Chongzuo, China.

Type material

Holotype is a RV (DP8051; text-fig. 3g). One paratype is mentioned (LV; DP1056; text-fig. 3h). Stored at the School of Earth Sciences, China University of Geosciences, Wuhan, China.

Remarks

Note that the original work first appeared online in November 2015 but without a ZooBank registration (compare ICZN 1999, Art. 8.5.3). Therefore, the new species is available only from the printed version (2016).

Macrodon chemungensis Hall & Whitfield, 1869

Original source

Hall & Whitfield (1869): 14.

Type stratum and age

"Chemung group"; Upper Devonian (Brallier Formation and Jennings Formation; Amler & Friedel 2025).

Type locality

"Philipsburgh and Rockville, Alleghany county; at Chemung creek in Chemung county, at Leon in Cattaraugus county, and near Elmira (New-York), and also at Meadville in Pennsylvania", United States of America.

Type material

Syntypes (AMNH-FI-6556, FI-41953, FI-41954, FI-41955 (formerly 6132/1 to 6132/5)) are stored at the American Museum of Natural History, New York. McAlester (1962: 25, pl. 4 figs 1–2) designated the specimen illustrated by Hall (1885: pl. 51 fig. 14; AMNH-FI-41953 / 41954 (formerly 6132/1)) as the "holotype", which however does not qualify for a valid lectotype designation (ICZN 1999, Art. 74.5).

Remarks

McAlester (1962: 25) classified the species in *Grammatodon* (*Cosmetodon*); Linsley (1994) listed it as *Gramatodon* [sic].

Parallelodon chihliensis Chao, 1927

Original source

Chao (1927): 7, pl. 1 fig. 10a–b.

Type stratum and age

"*Spirifer taiyuanensis* zone, Houkou limestone, Lincheng coal field"; Houkou limestone, Taiyuan Formation, upper Carboniferous to lower Permian (Fang *et al.* 2009).

Type locality

"Lincheng coal field, S. Chihli ([...] Loc. 158)"; Lincheng County, Xingtai, Hebei, China.

Type material

Holotype is a RV (no. 1216, pl. 1 fig. 10). Two additional specimens (without number) mentioned by the author. All stored at the Nanjing Institute of Geology and Palaeontology, Chinese Academy of Sciences, Nanjing, China.

Byssoarca clathrata McCoy, 1844

Original source

McCoy (1844): 72, pl. 11 fig. 34.

Type stratum and age

Middle Limestone or Calp Series (Griffith in McCoy 1862); probably Benbulben Shale Formation of the Tyrone Group, Arundian–Asbian, Visean, Mississippian, Carboniferous.

Type locality

"Finner, Bundoran", County Donegal (Griffith in McCoy 1862), Ireland.

Type material

Syntypes probably lost (Hind 1897: 144, 174). Should have been stored at the National Museum of Ireland, Dublin as a part of coll. Griffith.

Remarks

Hüffner (1915) and Amler (1987) attributed the species to the genus *Parallelodon*.

Macrodon cochlearis Winchell, 1863

Original source

Winchell (1863): 16.

Type stratum and age

"Yellow Sandstone beneath Burlington Limestone"; Osagean, Tournaisian–Visean, Mississippian, Carboniferous (Thompson 2001).

Type locality

"Burlington, Iowa", United States of America.

Type material

Not traced.

Remarks

Classified in *Parallelodon* by Moore (1928: 28) and in *Grammatodon* by Paul (1941: 114).

Parallelodon comoides De Koninck, 1885

Original source

De Koninck (1885): 159, pl. 24 figs 52–53.

Type stratum and age

"calcaire carbonifère de Visé (étage III)"; V3b and V3c, Visean, Mississippian, Carboniferous (Demanet 1958: 29; Godefroid *et al.* 2006).

Type locality

"Visé"; quarries south of Visé, on the east side of the Meuse River valley (Demanet 1958; Godefroid *et al.* 2006), Belgium.

Type material

The figured syntype is stored at the Royal Belgian Institute of Natural Sciences, Brussels (RBINS a4720; old no. 1053; coll. de Ryckholt).

Macrodon comptus Gemmellaro, 1892

Original source

Gemmellaro (1892): 6.

Type stratum and age

"Calcare grossolano con *Fusulina*"; Wordian to upper Permian (Sanfilippo *et al.* 2017).

Type locality

"Pietra di Salomone"; 3 km southern of Palazzo Adriano, Palermo, Italy.

Type material

Gemmellaro did not designate types. He mentioned measurements of three specimens, but only the two figured syntypes are stored at the Museo Geologico Università Palermo, Italy (MGUP-001.264a and b).

Remarks

Only briefly described in Gemmellaro (1892: 6); extended description and illustration in Gemmellaro (1896: 24, pl. 23 figs 4–5). Listed as *Parallelodon* by Branson (1948: 649).

Modiola concinna McCoy, 1844

Original source

McCoy (1844): 74, pl. 11 fig. 28.

Type stratum and age

Arenaceous Limestone of Yellow Sandstone Group (Griffith in McCoy 1862); Dinantian (Tournaisian–Visean), Mississippian, Carboniferous.

Type locality

"Townparks, Killeshandra", County Cavan (Griffith in McCoy 1862), Ireland.

Type material

Lectotype (designated by Hind 1897, as "the type"; NMING: F7359) figured by McCoy (1844: pl. 11 fig. 28) and Hind (1897: 153, pl. 12 fig. 16). Stored at the National Museum of Ireland, Dublin as part of the Griffith collection.

Remarks

Hind (1897: 153) synonymised *M. concinna* and *A. fimbriata* McCoy, 1844 with a question mark and used the name *Parallelodon concinnus* for both species.

Parallelodon cooperi L.R. Cox, 1946

Original source

Cox (1946): 612, pl. 13 fig. 4.

Type stratum and age

"Sekondi Series (Upper Palaeozoic)"; original collection label states "Devono-Carboniferous Sekondi Series"; Takoradi Sandstones and Takoradi Shales, Lower Devonian to lower Carboniferous (Machens 1973).

Type locality

Accra, west of Cape Coast and 45 miles from Cape Coast to beyond Takoradi; Sekondi-Takoradi, Ghana.

Type material

Holotype (as the only specimen) is a RV stored at the Natural History Museum, London (NHMUK PI PL 485; positiv and negativ).

Remarks

Further mentioned by Machens (1973) and Amler & Friedel (2025).

Parallelodon corrugatus De Koninck, 1885

Original source

De Koninck (1885): 160, pl. 25 figs 1–2.

Type stratum and age

"calcaire carbonifère de Visé (étage III)"; V3b and V3c, Visean, Mississippian, Carboniferous (Demanet 1958: 29; Godefroid *et al.* 2006).

Type locality

"Visé"; quarries south of Visé, on the east side of the Meuse River valley (Demanet 1958; Godefroid *et al.* 2006), Belgium.

Type material

The illustrated syntype is stored at the Royal Belgian Institute of Natural Sciences, Brussels (RBINS a4723; old no. 1159; coll. de Ryckholt).

Carbonarca cortazari Barrois, 1882

Original source

Barrois (1882): 337, pl. 17 fig. 1a–b.

Type stratum and age

"Assise de la Leña"; probably Namurian (Serpukhovian, Mississippian to Bashkirian, Pennsylvanian), Carboniferous (Malvesy *et al.* 2000).

Type locality

"Sebarga, Pont de Demues"; Sebarga and Pont de Demuès (not found, but according to Barrois 1882: 537, 15 km E of Demuès), Asturias, Spain.

Type material

Holotype is a LV (MGL 4864) and stored at Musée d'Histoire naturelle de Lille (Malvesy *et al.* 2000).

Remarks

As "*Parallelodon* (*Carbonarca*) *Cortazari*" in De Koninck (1885: 142); not found discussed in the literature afterwards.

Byssoarca costellata McCoy, 1844 [invalid]

Original source

McCoy (1844): 72, pl. 11 fig. 36.

Type stratum and age

Upper Limestone of Limestone Group (Griffith in McCoy 1862); probably Dartry Limestone Formation of the Tyrone Group (Asbian, Visean, Mississippian, Carboniferous).

Type locality

"Black Lion, Enniskillen", County Leitrim (Griffith in McCoy 1862), Ireland.

Type material

The figured specimen is lost (Hind 1897: 146). It should have been stored at the National Museum of Ireland, Dublin, as part of the Griffith collection. Another syntype (NMING, coll. no. F7309) is available there.

Remarks

Considered a junior synonym of *Parallelodon cancellatus* "(Martin, 1809)" [actually (J. De C. Sowerby, 1824)] by Hind (1897: 144).

Parallelodon crebristriatus De Koninck, 1885

Original source

De Koninck (1885): 145, pl. 21 figs 10–12.

Type stratum and age

"calcaire carbonifère des Pauquys (étage II)"; Waulsort Formation, upper Tournaisian, Mississippian, Carboniferous.

Type locality

"Pauquys"; Hastière, Namur, Wallonia, Belgium.

Type material

The illustrated syntype is stored at the Royal Belgian Institute of Natural Sciences, Brussels, coll. no. RBINS a4664 (coll. de Ryckholt).

Remarks

Questionable synonym of *Parallelodon haimeanus* (De Koninck, 1851) according to Amler (1987).

Macrodon curtus Dawson, 1868 [invalid]

Original source

Dawson (1868): 302.

Type stratum and age

"bed (e)", on p. 280 further specified as "Stewiacke limestone [...], *Productus* Limestone"; part of the Windsor Group (middle–upper Visean, Mississippian, Carboniferous according to Utting (1978) and Calder (1998).

Type locality

"Windsor"; Nova Scotia, Canada.

Type material

The whereabouts of the material are unknown.

Remarks

Bell (1929: 156) synonymised *M. curtus* with *Parallelidon* [sic] *hardingi* Dawson, 1868.

Parallelodon datianensis Li & Ding in Ding *et al.*, 1982

Original source

Ding *et al.* (1982): 313, pl. 123 fig. 7.

Type stratum and age

Changhsingian, Lopingian, Permian.

Type locality

Huangkeng, Datian County, Fujian, China.

Type material

The figured holotype is a steinkern of a RV (HI-2549). The storage is unknown. Probably Nanjing Institute of Geology and Paleontology, Chinese Academy of Sciences.

Parallelidon [sic] ***dawsoni*** Beede, 1911

Original source

Beede (1911): 168, unnumbered text-fig. on p. 168.

Type stratum and age

"Carbonic (Mississippic); ferruginous magnesian limestone" (probably Windsor Group; middle to upper Visean, Mississippian, Carboniferous according to Utting 1978) and "bed (e)" / "Stewiacke limestone [...], *Productus* Limestone" (part of the Windsor Group; see also *M. hardingi*).

Type locality

"Magdalen Island, Grindstone Island, Cape le Trou at the west coast"; Les Îles-de-la-Madeleine, Quebec, and "Windsor"; Nova Scotia, Canada.

Type material

In addition to material from Grindstone Island, Beede selected one of the two specimens of *M. hardingi* of Dawson (1868: text-fig. 102b on p. 302) as belonging to this new species. He did not select a type. The material of Dawson (1868) is stored at the Redpath Museum of the McGill University, under coll. no. 2820. The whereabouts of Beede's remaining material are unknown.

Remarks

Also listed by Bell (1929) and Calder (1998), who also adopted the spelling error of the genus. Listed by Paul (1941: 115) as *Grammatodon dawsoni*.

Arca decheni von Koenen, 1879

Original source

von Koenen (1879): 337.

Type stratum and age

Bromberg Formation (also called "Formation der Kieseligen Übergangsschichten"); upper Asbian, Mississippian, Carboniferous.

Type locality

Weinberg (also known as "Geistlicher Berg"), northern periphery of Herborn, Hesse, Germany.

Type material

Von Koenen (1879) did not provide a precise list of specimens. He mentioned several specimens from Herborn, but only one specimen has been found (GZG.INV.2420; formerly 563-47); it was designated as the lectotype by Friedel & Amler (2024: fig. 5a). The whereabouts of the remaining syntypes from Herborn are unknown. In addition, a paralectotype from Nehden (GZG.INV.10322) is available; figured by Friedel & Amler (2024: fig. 5e–f). Lectotype and paralectotype stored at the GeoZentrum Göttingen.

Remarks

Recently revised as *Parallelodon decheni* by Friedel & Amler (2024).

Psammobia decussata McCoy, 1844

Original source

McCoy (1844): 53, pl. 10 fig. 2.

Type stratum and age

Lower Limestone of Limestone Group (Griffith in McCoy 1862); probably Ballyshannon Limestone Formation of the Tyrone Group, Chadian–Arundian, Visean, Mississippian, Carboniferous.

Type locality

"Little Island, Cork", County Cork (Griffith in McCoy 1862), Ireland.

Type material

Lectotype (designated by Hind 1897, as "the type"): NMING: F7260 (Griffith coll.). Also figured by Hind (1897: 159, pl. 11 fig. 22). Stored at the National Museum of Ireland, Dublin.

Remarks

De Koninck (1885) attributed the species to the genus *Parallelodon*, which was followed by Amler (1987: 170).

Macrodon delicatus Meek & Worthen, 1870

Original source

Meek & Worthen (1870): 40.

Type stratum and age

"Upper Coal Measures" (= Pennsylvanian), Carboniferous.

Type locality

"Springfield, Illinois", United States of America.

Type material

Not traced.

Remarks

Occurs in a species list in Savage (1924); mentioned as *Grammatodon* in Demanet (1941); listed and illustrated as *Parallelodon* by Hoare *et al*. (1979).

Macrodon delitescens Beushausen, 1895

Original source

Beushausen (1895): 41, pl. 4 fig. 5.

Type stratum and age

"Stringocephalenkalke"; upper Givetian, Middle Devonian.

Type locality

"Soetenich"; Sötenich near Kall, Euskirchen, North Rhine-Westphalia, Germany.

Type material

The species was based on one LV (MB.M.75), which was destroyed and is only preserved in small fragments at the Museum für Naturkunde, Berlin.

Remarks

Additional material from the "Unterer Plattenkalk" (upper Givetian) from Bergisch Gladbach (Bergisches Land, Germany) is also stored in the Ebbighausen coll. (MB.M.21252) at the Museum für Naturkunde, Berlin (Amler & Friedel 2025).

Carbonarca depressa Meek & Worthen, 1870

Original source

Meek & Worthen (1870): 40.

Type stratum and age

"Upper Coal Measures" (= Pennsylvanian), Carboniferous.

Type locality

"Lasalle, Ill." [Lasalle, Illinois], United States of America.

Type material

Not traced.

Remarks

Introduced conditionally for specimens of *Carbonarca gibbosa* Meek & Worthen, 1870 that are "more depressed and oblique than the typical form." The authors stated further: "these may possibly belong a to a distinct species if the differences noted are not due to accidental distortion. If really distinct, this form might be called *C. depressa*". Only mentioned in the PhD thesis of Griffin (1931); not found elsewhere in the literature.

Parallelodon depressus Hyde, 1953

Original source

Hyde (1953): 299.

Type stratum and age

"sandstone in the Allensville member of the Logan formation"; earliest Osagean (upper Tournaisian), Mississippian, Carboniferous (Matchen & Kammer 2006).

Type locality

Rushville, Ohio, United States of America.

Type material

Specimens are stored at Ohio State University, O.S.U. No. 19671. Driscoll (1965: 100, pl. 16 figs 4–5) figured the holotype and paratype and synonymised the species with *P. marshallensis* (Winchell, 1862). He considered the other specimens as not belonging to *Parallelodon*.

Parallelodon desioi Fantini Sestini, 1965

Original source

Fantini Sestini (1965): 144, pl. 20 figs 9–10.

Type stratum and age

"Gircha Formation, Lower Permian"; Lupghar Formation, Sakmarian, Permian.

Type locality

"Abgarch Valley, east of Mor Khun"; Abgarch, Gilgit-Baltistan, Pakistan.

Type material

Holotype is a LV (P 1780), one additional specimen mentioned. All stored at the Paleontology Institute of Milan University.

?*Parallelodon dickinsi* Waterhouse, 1980

Original source

Waterhouse (1980): 103; figured by Dickins (1963: pl. 3 figs 1–5) as *P. subtilistriatus*.

Type stratum and age

"Lower Liveringa Formation"; given as Kungurian (Cisuralian, Permian) by Waterhouse, but Mii *et al.* (2013) classify the Liveringa Group in the Guadalupian–Lopingian, Permian.

Type locality

"Mt Marmion, Western Australia"; Fitzroy Basin, western Kimberley, Australia.

Type material

Holotype is a LV (CPC ["CDC"] 45359, according to Waterhouse 1980; UWA 45359, according to Dickins 1956), figured by Dickins (1963: pl. 3 figs 2–3) as *P. subtilistriatus* Wanner, 1922. Further material is a RV (UWA 45358) and a LV (UWA 45360). Holotype stored at the Commonwealth Palaeontological Collection of Geoscience Australia (CPC), formerly at the Geology Department of the University of Western Australia (UWA). However, the specimen is not listed in the CPC collection catalogue of Strusz (1996).

Remarks

Waterhouse introduced the species based on six specimens that had been misidentified as *P. subtilistriatus* Wanner, 1922 by Dickins (1963).

Parallelodon dilatatus De Koninck, 1885

Original source

De Koninck (1885): 160, pl. 24 figs 46–47.

Type stratum and age

"calcaire carbonifère de Visé (étage III)"; V3b and V3c, Visean, Mississippian, Carboniferous (Demanet 1958: 29; Godefroid *et al.* 2006).

Type locality

"Visé"; quarries south of Visé, on the east side of the Meuse River valley (Demanet 1958; Godefroid *et al.* 2006), Belgium.

Type material

The illustrated syntype is inventoried at the Royal Belgian Institute of Natural Sciences, Brussels (RBINS a4722), but the specimen could not be found and is potentially lost.

Macrodon dokutschajewi Amalitsky, 1886

Original source

Amalitsky (1886): 50, pl. 1 figs 17–18; originally as *Dokutschajewi*.

Type stratum and age

Tatarian (Capitanian to Lopingian), Permian (Maslennikov 1935: 40).

Type locality

"u Chubalova" [near Chubalovo]; S of Gorbatov along the Oka River, Nizhny Novgorod Oblast, Volga-Oka Basin, Russia.

Type material

Not traced.

Remarks

Listed by Netschajew (1894: 84) and, as *Parallelodon*, by Maslennikov (1935: 12, 40).

Arca elegans De Koninck, 1842 [invalid]

Original source

De Koninck (1842): 117, pl. 3 fig. 3a–b.

Type stratum and age

"calcaire de montagne de Visé"; V3b and V3c, Visean, Mississippian, Carboniferous (Demanet 1958: 29; Godefroid *et al.* 2006).

Type locality

"Visé"; quarries south of Visé, on the east side of the Meuse River valley (Demanet 1958; Godefroid *et al.* 2006), Belgium.

Type material

The material of De Koninck (1842–1844) is stored in the collection of the Géologie de l'Université Lyon, but the syntypes of this species could not be found there.

Remarks

De Koninck mentioned that he only had a damaged specimen of this species. Junior homonym of *Arca elegans* Roemer, 1836; *Arca elegantula* De Koninck, 1844 (p. 634) is a replacement name; valid as *Cypricardinia elegantula*. See there for further details.

Arca elegantula De Koninck, 1844

Original source

De Koninck (1844): 634.

Type stratum and age

"calcaire de montagne de Visé"; V3b and V3c, Visean, Mississippian, Carboniferous (Demanet 1958: 29; Godefroid *et al.* 2006).

Type locality

"Visé"; quarries south of Visé, on the east side of the Meuse River valley (Demanet 1958; Godefroid *et al.* 2006), Belgium.

Type material

The material of De Koninck (1842–1844) is stored in the collection of the Géologie de l'Université Lyon, but the syntypes of this species could not be found there.

Remarks

Replacement name for *Arca elegans* De Koninck, 1842 (p. 117, pl. 2 fig. 3a–b), non *Arca elegans* Roemer, 1836. De Koninck (1885) attributed the species to *Parallelodon*. Today valid as *Cypricardinia elegantula* according to Amler (1987).

Cucullopsis elongata Astafieva-Urbajtis in Astafieva-Urbajtis & Ramovš, 1985

Original source

Astafieva-Urbajtis & Ramovš (1985): 11, pl. 1 fig. 8.

Type stratum and age

"verkhniy karbon, gzhel'skiy yarus"; Auernig Formation, Gzhelian, Carboniferous.

Type locality

"Yugoslaviya, gory Karavanke [...] Križovec 1 (Črni vrh)", Karavanke Mts, Slovenia.

Type material

Type material is stored at the Gornjesavski muzej Jesenice, Slovenia, formerly Technical Museum of zelezarne Jesenica. Holotype is a steinkern of a BV specimen with the coll. no. USMJ 885.

Parallelodon elongatus Yanishevsky, 1900

Original source

Yanishevsky (1900): 222, pl. 4 fig. 2.

Type stratum and age

Astafieva-Urbajtis Astafieva-Urbajtis & Ramovš (1985) indicated a Baskhirian (Pennsylvanian, Carboniferous) age, while Mychko *et al.* (2025), based on a wider assessment of the area, attributed strata around the type locality to the Visean (Mississippian) to Bashkirian (Pennsylvanian), Carboniferous.

Type locality

Shartymka River, ca 8 km SE of Polyakovka, Bashkortostan Republic, Russia.

Type material

Type material (KP 426/450) is stored at the A.A. Shtukenberg Geological Museum of Kazan Federal University, Kazan.

Parallelodon elongatus Hind, 1904 [invalid]

Original source

Hind (1904): 138, pl. 24 fig. 16.

Type stratum and age

"Knipe Scar Limestone"; Great Knipe Scar Limestone Group, Asbian, Visean, Mississippian, Carboniferous.

Type locality

"Shap, Westmoreland"; Cumbria, United Kingdom.

Type material

The figured specimen is a steinkern of a LV and stored at the Natural History Museum, London (NHMUK PI L 47736; coll. Hind).

Remarks

Junior homonym of *Parallelodon elongatus* Yanishevsky, 1900, a Carboniferous species from Russia, and secondary homonym of *Macrodon* [= *Parallelodon*] *elongatus* Bittner, 1901, a Triassic species from Hungary (see also ICZN 1999, Art. 57.3.2.). Also, a potential, secondary homonym of *Cucullaea elongata* J. De C. Sowerby, 1824, which was placed in *Parallelodon* by some authors (e.g., Kunz 1964). Currently, the species is classified in *Grammatodon* (*Cosmetodon*) according to Fürsich *et al*. (2019). A replacement name is required.

Grammatodon erectumbona Bird, 1968

Original source

Bird (1968): 138, pl. 12 figs 12–13, 14a–b.

Type stratum and age

"Bed ten of Gaptank Formation"; Upper Pennsylvanian, Carboniferous according to Wardlaw & Nestell (2019).

Type locality

"[USNM] locality 700a – same as locality 700 [2 miles S. 17° E. of Gaptank, 1 1/4 miles E. of a point on the Fort Stockton road 2 miles S. of Gaptank, about 23 1/2 miles NE of Marathon, Texas] but 1/4 mile E. in a small canyon", United States of America.

Type material

Holotype is a BV specimen (USNM PAL 155833; pl. 12 fig. 14a–b). Paratypes are a RV (USNM PAL 155834; pl. 12 fig. 12) and a LV (USNM PAL 155852; pl. 12 fig. 13). All stored at the Smithsonian National Museum of Natural History, Paleobiology Collection, Washington, D.C.

Remarks

Bird (1968) consistently used a feminine ending for all species of *Grammatodon*, but the gender of the genus is masculine. The species is named after its "erect broad umbones" (Bird 1968: 138), however the epithet is not formed following Latin grammar; in case of doubt a species name is to be considered a noun in apposition (ICZN 1999, Art. 31.2.2).

Parallelodon eximius De Koninck, 1885

Original source

De Koninck (1885): 153, pl. 26 fig. 16.

Type stratum and age

"calcaire carbonifère de Visé (étage III)"; V3b and V3c, Visean, Mississippian, Carboniferous (Demanet 1958: 29; Godefroid *et al.* 2006).

Type locality

"Visé"; quarries south of Visé, on the east side of the Meuse River valley (Demanet 1958; Godefroid *et al.* 2006), Belgium.

Type material

The illustrated syntype is stored at the Royal Belgian Institute of Natural Sciences, Brussels, coll. no. RBINS a4698 (old no. 1046).

Parallelodon expansus De Koninck, 1885

Original source

De Koninck (1885): 144 [as *P. dilatatus*], 260 (Corrections), pl. 21 figs 13–15, 22–23 [as *P. expansus*].

Type stratum and age

"calcaire carbonifère des Pauquys (étage II)"; Waulsort Formation, upper Tournaisian, Mississippian, Carboniferous.

Type locality

"Pauquys"; Hastière, Namur, Wallonia, Belgium.

Type material

The illustrated syntypes are stored at the Royal Belgian Institute of Natural Sciences, Brussels, coll. no. RBINS a4660 (old no. 691; pl. 21 figs 13–15) and coll. no. RBINS a4661 (old. no. 678; pl. 21 figs 22–23).

Remarks

De Koninck (1885) erected two species with the same name (*dilatatus*) and renamed one of them in the Corrections (p. 260) as *P. expansus*. The name *dilatatus* on p. 144 is therefore an incorrect original spelling and not a separately available name (ICZN 1999, Art. 32.4).

Arca faba De Koninck, 1842

Original source

De Koninck (1842): 115, pl. 2 fig. 17a–d [sic, actually fig. 17a–c]; originally as "*Faba*".

Type stratum and age

"calcaire anthraxifère supérieur de Visé" specified as "calcaire carbonifère de Visé (étage III)" by De Koninck (1885); V3b and V3c, Visean, Mississippian, Carboniferous (Demanet 1958: 29; Godefroid *et al.* 2006).

Type locality

"Visé"; quarries south of Visé, on the east side of the Meuse River valley (Demanet 1958; Godefroid *et al.* 2006), Belgium.

Type material

The material of De Koninck (1842) is stored in the collection of the Géologie de l'Université Lyon, but the specimen stored there as the illustrated syntype (UCBL-EM 35411) does not match the figures. De Koninck illustrated a BV specimen and a RV, the material stored in Lyon is a damaged LV. Additional material (RBINS a4687, RBINS a4688, RBINS a4689) of De Koninck (1885) is stored at the Royal Belgian Institute of Natural Sciences, Brussels.

Remarks

De Koninck (1885) placed this species in *Parallelodon*; the species name is a noun in apposition and does not change its ending.

Macrodon facetus Miller & Gurley, 1896

Original source

Miller & Gurley (1896): 10, pl. 1 figs 14–16.

Type stratum and age

"Chouteau limestone"; Kinderhookian, Mississippian, Carboniferous (see Thompson 2001).

Type locality

"near Sedalia, Missouri", United States of America.

Type material

Stored at the University of Cincinnati Museum (now Cincinnati Museum Center) with six "cotypes" under coll. no. 3905–3906, coll. Miller (see Chappars 1936).

Remarks

As *Parallelodon facetus* in Moore (1928).

Arca fallax De Koninck, 1851

Original source

De Koninck (1851): 672 [22], pl. 57 fig. 6a–c, in the plate caption as "*Arca* (*Cucullæa*) *fallax*".

Type stratum and age

"calcaire carbonifère inférieur de Visé"; V3b and V3c, Visean, Mississippian, Carboniferous (Demanet 1958: 29; Godefroid *et al.* 2006).

Type locality

"Visé"; quarries south of Visé, on the east side of the Meuse River valley (Demanet 1958; Godefroid *et al.* 2006), Belgium.

Type material

Whereabouts unknown. Additional material (RBINS a4696, RBINS a4697) of De Koninck (1885) is stored at the Royal Belgian Institute of Natural Sciences, Brussels.

Remarks

De Koninck (1885) placed this species in the genus *Parallelodon*.

Arca fimbriata De Koninck, 1844 [invalid]

Original source

De Koninck (1844): 634 (121, pl. 2 fig. 13 as *A. squamosa*).

Type stratum and age

"calcaire de Visé"; V3b and V3c, Visean, Mississippian, Carboniferous (Demanet 1958: 29; Godefroid *et al.* 2006).

Type locality

"Visé"; quarries south of Visé, on the east side of the Meuse River valley (Demanet 1958; Godefroid *et al.* 2006), Belgium.

Type material

The illustrated syntypes are stored in the collection of the Géologie de l'Université Lyon. Syntype UCBL-EM 35397 (figured) is a BV specimen; three further BV specimens are available (UCBL-EM 35398 to 35400).

Remarks

Replacement name for *Arca squamosa* De Koninck, 1842 (p. 121, pl. 2 fig. 13) introduced by De Koninck himself in the correction part of the same book (livr. 14: 634). However, *fimbriata* is a junior homonym

of *Arca fimbriata* McCoy, 1844 and thus invalid as well. McCoy's work was published in October 1844 (Wyse Jackson & Monaghan 1994), the last parts of De Koninck's book supposedly in December of the same year (Sherborn 1922). However, there is still uncertainty as to the exact publication dates of the individual parts of De Koninck's monograph. McCoy even referred to De Koninck's work in the preface, but only mentioned livr. 1–12, supporting the notion that livr. 14 with the replacement name appeared later. Consequently, De Koninck's species is still without a valid name.

Arca fimbriata McCoy, 1844 [invalid]

Original source

McCoy (1844): 71, pl. 12 fig. 8.

Type stratum and age

Lower Limestone of Limestone Group (Griffith in McCoy 1862); probably Ballyshannon Limestone Formation of the Tyrone Group, Chadian–Arundian, Visean, Mississippian, Carboniferous.

Type locality

"Ballyduff, Dungarven", County Waterford (Griffith in McCoy 1862), Ireland.

Type material

The syntype (NMING: F5139) is badly preserved. We doubt that this is the specimen illustrated by McCoy. It is stored in the Griffith coll. of the National Museum of Ireland, Dublin.

Remarks

Senior homonym of *Arca fimbriata* De Koninck, 1844. Hind (1897: 153) synonymised *A. fimbriata* with a question mark with *M. concinna* McCoy, 1844 and used the name *P. concinnus* for both species.

Cypricardinia*? *fossa Campbell & Engel, 1963

Original source

Campbell & Engel (1963): 103, pl. 7 figs 18–24.

Type stratum and age

Limestone at the top of the Tulcumba Sandstone, today Dangarfield Formation, Tournaisian, Carboniferous.

Type locality

North of the Wean-Manilla Road, north-east of Rangari Homestead, Rangari Area, New South Wales, Australia.

Type material

Holotype (F.7603) and paratypes (F.7604 to 7629) from the type locality, and one paratype (F.7630) from Swain's Gully, Merlewood (ca 20 miles south of the type locality). All stored at the University of New England Collection, Maine.

Remarks

Yoo (1988: 238, figs 126–127) placed the species in the genus *Parallelodon*, yet without discussion; the species is not found discussed elsewhere.

Parallelodon fraiponti De Koninck, 1885

Original source

De Koninck (1885): 146, pl. 24 figs 3, 24, pl. 25 fig. 23.

Type stratum and age

"calcaire carbonifère de Visé (étage III)"; V3b and V3c, Visean, Mississippian, Carboniferous (Demanet 1958; Godefroid *et al.* 2006).

Type locality

"Visé"; quarries south of Visé, on the east side of the Meuse River valley (Demanet 1958; Godefroid *et al.* 2006), Belgium.

Type material

The illustrated syntypes are stored at the Royal Belgian Institute of Natural Sciences, Brussels, coll. no. RBINS a4666 (old no. 989; pl. 24 fig. 3), coll. no. RBINS a4667 (old no. 993; pl. 24 fig. 24; coll. de Ryckholt) and RBINS a4668 (old no. 988; pl. 25 fig. 23; coll. de Ryckholt).

Remarks

De Koninck (1885) introduced a new name for "*Arca obtusa* var." in De Koninck (1842: pl. 2 fig. 15a–b, not 15c–d), non Phillips.

Parallelodon geinitzi De Koninck, 1885

Original source

De Koninck (1885): 159, pl. 24 figs 50–51.

Type stratum and age

"calcaire carbonifère de Visé (étage III)"; V3b and V3c, Visean, Mississippian, Carboniferous (Demanet 1958; Godefroid *et al.* 2006).

Type locality

"Visé"; quarries south of Visé, on the east side of the Meuse River valley (Demanet 1958; Godefroid *et al.* 2006), Belgium.

Type material

Lectotype (RBINS a4719; old no. 1343; coll. de Ryckholt) designated by Friedel & Amler (2024) is a BV steinkern. Paralectotype is a steinkern of a RV (RBINS a4719; old no. 1342). The lectotype has been figured by De Koninck (1885: pl. 24 figs 50–51). Both stored at the Royal Belgian Institute of Natural Sciences, Brussels.

Arca striata var. ***geinitziana*** Krotov, 1885

Original source

Krotov (1885): 246, pl. 3 fig. 13; originally as "*Geinitziana*".

Type stratum and age

Artinskian, Cisuralian, Permian.

Type locality

"Yazva River, below the village of Verkhnyaya Yazva; near the village of Antipina"; Perm Krai, Russia.

Type material

Two syntype specimens, one of which was figured (263; Pjotr I. Krotov coll.), are stored at the A.A. Shtukenberg Geological Museum of Kazan Federal University, Kazan.

Remarks

Branson (1948) and Friedel *et al.* (2025) treated the taxon as a distinct species, *Parallelodon geinitzianus*.

Macrodon geminum Waagen, 1881

Original source

Waagen (1881): 255, pl. 20 fig. 3.

Type stratum and age

"Productus-limestone"; middle to upper Permian (Henderson & Shen 2020).

Type locality

"Morah" and "Khura"; Morah between Faisalabad and Lahore and Khura near Khushab, Punjab province, Pakistan.

Type material

Waagen mentioned two specimens, both LV, for description. Whereabouts unknown.

Remarks

Listed also by Reed (1944) and, as *Parallelodon geminus*, by Branson (1948).

Carbonarca gibbosa Meek & Worthen, 1870

Original source

Meek & Worthen (1870): 40.

Type stratum and age

"Upper Coal Measures"; today Pennsylvanian, Carboniferous.

Type locality

"Springfield, Illinois", United States of America.

Type material

Not traced.

Remarks

Type species of *Carbonarca*, listed in McAlester (1968) and Newell (1969).

Macrodus koeneni var. ***gibbosus*** Tornquist, 1896 [invalid]

Original source

Tornquist (1896): 103 [637], pl. 19 fig. 12; originally as "*Koeneni* var. *gibbosus*".

Type stratum and age

"[in der] schiefrigen Facies des Kohlenkalks" (Tornquist 1895: 23) [shaly facies of the Carboniferous Limestone]; middle to upper Visean, Mississippian, Carboniferous (Amler 1987).

Type locality

"Hohlweg unterhalb der Ferme [Bauernhof] Pütig"; along the route from Bourbach-le-Haut to Masevaux, Département Haut-Rhin, France.

Type material

The whereabouts of the material studied by Tornquist (1896) are unknown. He stated the material as belonging to the "Geologische Landesanstalt Elsass-Lothringen". Amler (1987) stated that the Tornquist collection in the Strasbourg Museum was destroyed in a fire (see also Hubmann 2014).

Remarks

Introduced as a new variety based on the greater width of the shell compared to the nominal form. Synonym of *Parallelodon koeneni* (Tornquist, 1896) according to Amler (1987).

Parallelodon gibbosus Yanishevsky, 1900

Original source

Yanishevsky (1900): 223, pl. 4 fig. 1a–b.

Type stratum and age

Astafieva-Urbajtis & Ramovš (1985) indicated a Baskhirian (Pennsylvanian, Carboniferous) age, while Mychko *et al.* (2025), based on a wider assessment of the area, attributed strata around the type locality to the Visean (Mississippian) to Bashkirian (Pennsylvanian), Carboniferous.

Type locality

Shartymka River, ca 8 km SE of Polyakovka, Bashkortostan Republic, Russia.

Type material

Type material (KP 426/449) is stored at the A.A. Shtukenberg Geological Museum of Kazan Federal University, Kazan.

Parallelodon glaber Yanishevsky, 1900

Original source

Yanishevsky (1900): 222, pl. 3 fig. 25.

Type stratum and age

Astafieva-Urbajtis & Ramovš (1985) indicated a Baskhirian (Pennsylvanian, Carboniferous) age, while Mychko *et al.* (2025), based on a wider assessment of the area, attributed strata around the type locality to the Visean (Mississippian) to Bashkirian (Pennsylvanian), Carboniferous.

Type locality

Shartymka River, ca 8 km SE of Polyakovka, Bashkortostan Republic, Russia.

Type material

Type material (KP 426/444, 456, 464) is stored at the A.A. Shtukenberg Geological Museum of Kazan Federal University, Kazan.

Parallelodon grandis Yanishevsky, 1900

Original source

Yanishevsky (1900): 217, pl. 3 fig. 27.

Type stratum and age

Astafieva-Urbajtis & Ramovš (1985) indicated a Baskhirian (Pennsylvanian, Carboniferous) age, while Mychko *et al.* (2025), based on a wider assessment of the area, attributed strata around the type locality to the Visean (Mississippian) to Bashkirian (Pennsylvanian), Carboniferous.

Type locality

Shartymka River, ca 8 km SE of Polyakovka, Bashkortostan Republic, Russia.

Type material

Type material of other parallelodontid species described by Yanishevsky (1900) is stored at the A.A. Shtukenberg Geological Museum of Kazan Federal University, Kazan; material of *P. grandis* seems to be missing though.

Remarks

Listed also in Yanishevsky (1910); not found in the literature afterwards.

Parallelodon guangxiensis Pojeta, Zhang & Z.-Y. Yang 1986

Original source

Pojeta *et al.* (1986): 88, pl. 35 fig. 2, pl. 38 figs 3–4, 6–7.

Type stratum and age

"Sipai Formation (Emsian) Section 3, Beds 12, 13"; Lower Devonian.

Type locality

"Heping Village, Yongfu County, Guangxi", China.

Type material

Holotype (GXD-038) is a LV. Several paratypes available (GXD-037, -644, -646, -656, -651). All stored at the Yichang Institute of Geology and Mineral Resources (today Wuhan Center of China Geological Survey), Wuhan, China.

Remarks

Listed also in Liao & Ruan (2003) and Chen *et al.* (2018); Amler & Friedel (2025) doubted affinities with parallelodontid arcoids.

Parallelodon guizhouensis Lan & Xu in Yao *et al.*, 1980 [nomen nudum]

Original source

Yao *et al.* (1980): 8 (table).

Remarks

Mentioned only in a table in Yao *et al.* (1980) from the Lower Changxing [Changhsing] Limestone (Lopingian; Zhang 2009) at Zhongling, Nayong, Guizhou and Zhongying, Qinglong, Guizhou (China). However, the species was not described and is therefore a nomen nudum; not found in the literature afterwards.

Parallelodon gushiensis Wang, 1982

Original source

Wang (1982): 459, pl. 2 figs 22–33.

Type stratum and age

Lower section of the Miaochong Formation; Pennsylvanian (Zhang 2009).

Type locality

Eastern slope of Daorenchong, Gushi County, Henan, China.

Type material

The holotype (Y0059) and paratypes (Y0060 to Y0069) are stored at the Henan Geological Bureau, Zhengzhou, China.

Arca haimeana De Koninck, 1851

Original source

De Koninck (1851): 672 [22], pl. 57 fig. 9a–c; in the plate caption as "*Arca* (*Cucullæa*) *Haimeana*".

Type stratum and age

"calcaire carbonifère inférieur de Visé"; V3b and V3c, Visean, Mississippian, Carboniferous (Demanet 1958: 29; Godefroid *et al.* 2006).

Type locality

"Visé"; quarries south of Visé, on the east side of the Meuse River valley (Demanet 1958; Godefroid *et al.* 2006), Belgium.

Type material

Whereabouts unknown.

Remarks

Hind (1897) attributed the species to the genus *Parallelodon*, Paul (1941) to *Grammatodon*. Revised (as *Parallelodon haimeanus*) by Amler (1987).

Macrodon hamiltoniae Hall & Whitfield, 1869

Original source

Hall & Whitfield (1869): 13.

Type stratum and age

"Hamilton group [...] soft shales of Bedford"; Middle Devonian.

Type locality

"in most of the localities from Schoharie county to the centre of the State, [...] in Onandaga county, and at Canandaigua and Seneca lakes. [...] in the town of Bedford, Cuyahoga county, Ohio", United States of America.

Type material

Hall did not designate a holotype; syntypes (AMNH-FI-5301, AMNH-FI-6555) are stored at the American Museum of Natural History, New York.

Remarks

Pojeta *et al.* (1986: 89) placed the species in *Parallelodon*, Linsley (1994) in *Gramatodon* [sic].

Macrodon hardingi Dawson, 1868

Original source

Dawson (1868): 302, text-fig. 102a–c; originally as "*Hardingi*".

Type stratum and age

"bed (e)", on p. 280 further specified as "Stewiacke limestone [...], *Productus* Limestone"; part of the Windsor Group, middle to upper Visean, Mississippian, Carboniferous (Utting 1978).

Type locality

"Windsor"; Nova Scotia, Canada.

Type material

Dawson had two specimens. Beede (1911) selected the specimen figured on fig. 102a of Dawson (1868) as the "type" (constituting a valid lectotype designation). He separated the other specimen as a new species: *dawsoni*. Both species are stored together at the Redpath Museum of McGill University, Montreal, Canada, under coll. no. 2820 (coll. Dawson and Hartt).

Remarks

As *Parallelidon* [sic] *hardingi* in Beede (1911: 168, textfig.) and Bell (1929: 156, pl. 26 figs 13–19); as *Grammatodon hardingi* in Paul (1941: 118); as *Grammatodon* (*Parallelidon*) [sic] *hartingi* [sic] in Calder (1998: 297).

Prorhynchus harrisi Caster, 1930

Original source

Caster (1930): 202 [60], pl. 44 [23] fig. 7.

Type stratum and age

"sandstone, below the Olean conglomerate"; Lower Mississippian, Carboniferous (Berg *et al.* 1993).

Type locality

"Stickley, Pa."; apparently misspelling of Stickney, 15 km west of Bradford, Pennsylvania, United States of America.

Type material

Studied material is stored at the paleontological collection of Cornell University, Ithaca, New York, under the coll. no. 5235. There seems to be only an external mould of a LV as the base of this species.

Grammatodon hexacostata Bird, 1968

Original source

Bird (1968): 139, pl. 13 figs 1–2.

Type stratum and age

"Bed ten of Gaptank Formation"; Upper Pennsylvanian, Carboniferous according to Wardlaw & Nestell (2019).

Type locality

"[USNM] locality 700a – same as locality 700 [2 miles S. 17° E. of Gaptank, 1 1/4 miles E. of a point on the Fort Stockton road 2 miles S. of Gaptank, about 23 1/2 miles NE of Marathon, Texas] but 1/4 mile E. in a small canyon", United States of America.

Type material

Holotype is a RV (USNM PAL 155835; pl. 13 fig. 1a–b). Paratype is a RV (USNM PAL 155836; pl. 13 fig. 2a–b). All stored at the Smithsonian National Museum of Natural History, Paleobiology Collection, Washington, D.C.

Remarks

Bird (1968) consistently used a feminine ending for all species of *Grammatodon*, but the gender of the genus is masculine; the correct spelling is *hexacostatus*.

Macrodon hohmanni Knod, 1908

Original source

Knod (1908): 530, pl. 25 figs 8–9a; originally as "*Hohmanni*".

Type stratum and age

Devonian (no further information given).

Type locality

"Yura. 80 km O. von Huanchaca" [Yura, 80 km east of Huanchaca]; Potosí Department, Bolivia.

Type material

Syntypes (coll. no. 512, 513) are stored in the type cabinet of the collection of the Geologisches Institut of the University Freiburg (Knod 1908: 494).

Remarks

Knod (1908) himself doubted the systematic position. Cossmann (1909: 21) stated that "it is probably neither a *Parallelodon* nor a *Beushausenia*" (translated from French). The name was not found in literature after that. Placement uncertain (Amler & Friedel 2025); potentially a leptodesmatid (JCF pers. obs.).

Parallelodon hubeiensis R.-J. Zhang in R.-J. Zhang *et al.*, 1977

Original source

Zhang *et al.* (1977): 491, pl. 192 fig. 16.

Type stratum and age

Wujiaping Formation, Wuchiapingian, Lopingian, Permian.

Type locality

Lichuan, Hubei province, China.

Type material

Holotype is a BV specimen (IV 55308) which is stored at the Hubei Institute of Geology (today Hubei Institute of Geosciences), Wuhan, China.

Parallelodon illinoiensis Weller, 1916

Original source

Weller (1916): 249, pl. 16 fig. 24.

Type stratum and age

"Ste. Genevieve Limestone"; Chesterian, Mississippian, Carboniferous.

Type locality

"Fountain Creek, two miles SW of Waterloo, Monroe County, Illinois", United States of America.

Type material

Holotype (FMNH UC 14833) stored at the Field Museum of Natural History, Chicago (formerly Walker Museum, University of Chicago).

?Carbonarca inaequivalvis Wanner, 1922

Original source

Wanner (1922): 71, pl. 154 fig. 3a–b.

Type stratum and age

Probably Cisuralian, Permian (Charlton *et al*. 2002).

Type locality

"Basleo"; Basleo near Niki-Niki, East Nusa Tenggara, Timor Tengah Selatan, West Timor, Indonesia (Charlton *et al*. 2002).

Type material

Whereabouts unknown.

Remarks

Wanner (1922) described this species as unequivalved. No straight hinge line is recognisable in his illustrations, accordingly the assignment to the genus *Parallelodon* is doubtful.

Arca inermis G. Sandberger & F. Sandberger, 1854 [invalid]

Original source

Sandberger & Sandberger (1850–1856): pl. 28 fig. 11 [description on p. 274 appeared in 1856].

Type stratum and age

"Stringocephalenkalk"; upper Givetian, Middle Devonian.

Type locality

"Villmar"; Villmar near Limburg on the Lahn, Hesse, Germany.

Type material

Nine syntypes (MWNH-DEVO-000232) are stored at the Museum Wiesbaden, Hessisches Landesmuseum für Kunst und Natur. One of the shells is the type material of *Macrodus villmarensis* Beushausen, 1895.

Remarks

Sandberger & Sandberger (1856: 274) listed *Arca michelini* d'Archiac & Verneuil, 1842 in synonymy, but without explanation. We are not aware of any homonymy issue; therefore, their name is a junior objective synonym of *A. michelini* (today in *Parallelodon*). Sandberger & Sandberger distinguished a longer (fig. 11) and a shorter (fig. 11a) variety; Beushausen (1895) separated the latter as a new species, *Macrodus villmarensis*, and treated the elongated variety as *M. michelini* d'Archiac & de Verneuil, 1842.

Parallelodon pygmaeus var. ***infans*** Whidborne, 1896

Original source

Whidborne (1896): 112, pl. 12 figs 4–5.

Type stratum and age

Pilton Shales, Pilton Formation, upper Famennian, Upper Devonian (Amler 1995).

Type locality

Quarry Poleshill, Bradiford near Barnstaple, Devon, United Kingdom.

Type material

Lectotype (LV steinkern) designated by Amler (1995: pl. 1 fig. 11), coll. no. SM.H.324 (coll. Porter, also figured in Whidborne 1896: pl. 12 fig. 5). Paralectotype (RV steinkern), coll. no. SM.H.325, figured by Whidborne (1896: pl. 12 fig. 4) and Amler (1995: pl. 1 fig. 10). Both stored at the Sedgwick Museum Cambridge.

Remarks

Re-described by Amler (1995).

Parallelodon insignis Korejwo & Teller, 1964

Original source

Korejwo & Teller (1964): 239, pl. 3 figs 8–10, text-fig. 5.

Type stratum and age

Upper *Monograptus angustidens* (= *Uncinatograptus uniformis angustidens*) zone, originally correlated with the Ludlowian (upper Silurian), presently considered to represent the lowermost Devonian (Becker *et al.* 2020).

Type locality

Borehole at Chełm, Lublin Voivodeship, Poland.

Type material

Not traced.

Remarks

According to Amler & Friedel (2025) not belonging to parallelodontids.

Parallelodon intermedius De Koninck, 1885

Original source

De Koninck (1885): 149, pl. 26 figs 5, 10–12, 17–18.

Type stratum and age

“calcaire carbonifère des Pauquys et de Furfooz (étage II)”; Waulsort Formation, upper Tournaisian, Carboniferous.

Type locality

“Pauquys, Furfooz”; Hastière and Dinant, Namur, Wallonia, Belgium.

Type material

The illustrated syntypes are stored at the Royal Belgian Institute of Natural Sciences, Brussels, coll. no. RBINS a4682 (old no. 692; pl. 26 fig. 5; coll. Dupont), RBINS a4683 (old no. 689; pl. 26 fig. 10; coll. Dupont), RBINS a4684 (old no. 656; pl. 26 figs 11–12; coll. Dupont), RBINS a4685 (old no. 690; pl. 26 figs 17–18; coll. Dupont).

Remarks

Potentially a senior synonym of *Parallelodon simplex* (Tornquist, 1896) according to Amler (1987: 164).

Palaearca interrupta De Koninck, 1876

Original source

De Koninck (1876): 287, pl. 16 fig. 5.

Type stratum and age

Etheridge (1878: 63, there as "*Arca*") listed the age of this species as "Carboniferous"; this was repeated by Waterhouse (1958). Campbell & Bein (1971) considered the strata at the locality as probably lower Carboniferous.

Type locality

Burragood, on the right bank of the Paterson River, New South Wales, Australia.

Type material

Whereabouts unknown.

Remarks

Placed by Reed (1932) and Termier *et al.* (1974) in *Parallelodon* (as "*interrupta*", but *Parallelodon* is masculine). In some cases, the first description is cited as of 1898, which is the publication date of the English translation of De Koninck's (1876) work.

Parallelodon interruptus De Koninck, 1885 [invalid]

Original source

De Koninck (1885): 148, pl. 25 figs 31–32.

Type stratum and age

"calcaire carbonifère des Pauquys (étage II)"; Waulsort Formation, upper Tournaisian, Mississippian, Carboniferous.

Type locality

"Pauquys"; Hastière, Namur, Wallonia, Belgium.

Type material

The illustrated syntype is stored at the Royal Belgian Institute of Natural Sciences, Brussels, coll. no. RBINS a4679 (old no. 696; pl. 25 figs 31–32; coll. Dupont).

Remarks

Secondary homonym of *Palaearca interrupta* De Koninck, 1876, which was placed in *Parallelodon* by Reed (1932) and Termier *et al.* (1974).

Macrodon hamiltoniae var. ***irvinensis*** Foerste, 1909

Original source

Foerste (1909): 521, pl. 27 fig. 15a–c; originally as "*hamiltoniae-irvinensis* var. nov.".

Type stratum and age

"Bedford-Berea"; upper Famennian, Upper Devonian (Over 2021).

Type locality

"Indian Fields, Irvine, Kentucky", United States of America.

Type material

Syntype (USNM PAL 78759) stored at the Smithsonian National Museum of Natural History, Paleobiology Collection, Washington, D.C.

Remarks

The variety was raised to species level and placed in *Parallelodon* by Hyde (1953: 300), Driscoll (1965: 99) and and Pashin & Ettensohn (1992: 28).

Parallelodon javornikensis Astafieva-Urbajtis in Astafieva-Urbajtis & Ramovš, 1978

Original source

Astafieva-Urbajtis & Ramovš (1978): 10, pl. 1 fig. 2a–b.

Type stratum and age

"verkhniy karbon, gzhel'skiy yarus"; Auernig Formation, Gzhelian, Carboniferous.

Type locality

"Karavanke Alps (loc. Spodnja počivala = 'Javornik-Fall', Javorniški rovt)", Slovenia.

Type material

Type material is stored at the Gornjesavski muzej Jesenice, Slovenia, formerly Technical Museum of zelezarne Jesenica (holotype: USMJ 65).

Parallelodon jiaozishanensis Lan & Xu in Yao *et al.*, 1980 [nomen nudum]

Original source

Yao *et al.* (1980): 8 (table).

Remarks

Mentioned only in a table in Yao *et al.* (1980) from the Upper Changxing [Changhsing] Limestone (Lopingian; Zhang 2009) at Jiaozi Mt, Anshun, Guizhou (China). However, the species was not described and is therefore a nomen nudum; not found in the literature afterwards.

Cucullopsis quadrata jugoslavica Astafieva-Urbajtis in Astafieva-Urbajtis & Ramovš, 1978

Original source

Astafieva-Urbajtis & Ramovš (1978): 11, pl. 1 figs 4–6.

Type stratum and age

"verkhniy karbon, gzhel'skiy yarus"; Auernig Formation, Gzhelian, Carboniferous.

Type locality

"Karavanke Alps (loc. Spodnja počivala = 'Javornik-Fall', Javorniški rovt)", Slovenia.

Type material

Type material is stored at the Gornjesavski muzej Jesenice, Slovenia, formerly Technical Museum of zelezarne Jesenica. Holotype has the coll. no. USMJ 61, additionally figured specimens stored under coll. no. USMJ 63 and USMJ 107.

Parallelodon junggarensis Z.-R. Yang in Wei & Z.-R. Yang, 1983

Original source

Wei & Yang (1983): 392, pl. 156 fig. 16a–b.

Type stratum and age

Shiqiantan Formation, "Middle Carboniferous"; as Shihchientan Formation in Zhang (2009), Pennsylvanian, Carboniferous.

Type locality

Kelameli [also transliterated as Kelamaili], East Junggar, Xinjiang, China.

Type material

Yang did not designate a holotype, but the illustrated specimen (XBA-336) is stored at Xinjiang Bureau of Geology and Mineral Resources, Urumqi, China.

Parallelodon kamaiensis Nelzina, 1960 [nomen nudum]

Original source

Nelzina (1960): 49.

Remarks

Listed by Nelzina (1960) from the lower Permian of Samarskaya Luka at the western slope of Ural Mts, Russia. Nomen nudum, no description or indication provided.

Parallelodon kansasensis Sayre, 1930

Original source

Sayre (1930): 108, pl. 9 figs 4–7.

Type stratum and age

"Drum limestone, oolitic member"; Kansas City Formation, Missouri Group, Missourian, Pennsylvanian, Carboniferous (Moore 1949).

Type locality

"Turner, Cherryvale (station 40) and Independence (stations 12, 23), Kansas; and Kansas City, Mo.", United States of America.

Type material

No types designated; whereabouts unknown.

Remarks

As *Grammatodon kansasensis* in Bird (1968).

?*Parallelodon kilmoriensis* Chapman, 1908

Original source

Chapman (1908): 39, pl. 4 fig. 58 (59?).

Type stratum and age

"Silurian (Melbournian)"; Yan Yean Formation, Wenlock–Ludlow, Silurian.

Type locality

"Police paddock, Kilmore, Bb. 22"; Kilmore, County of Dalhousie, Victoria, Australia.

Type material

Holotype is a steinkern (coll. no. P 7925). One additional specimen available, also steinkern (coll. no. P 7926). Stored at the collections of the Museums Victoria, Melbourne.

Remarks

Mentioned in the type catalogue of Gill & Davies (1968). Systematic classification questionable, may rather be a taxodont protobranch (Amler & Friedel 2025).

Arca kingiana de Verneuil in Murchison *et al.*, 1845

Original source

Murchison *et al*. (1845): 313, pl. 19 fig. 11; originally as "*Kingiana*".

Type stratum and age

"Calcaires d'Iltchegulova. […] Ces calcaires sont subordonnés à la grande masse des grès et des conglomérats du système permien, et en forment ordinairement la base"; Ilchegulova, basal limestone, Kungurian, Permian (Friedel *et al.* 2025).

Type locality

"Calcaires d'Iltchegulova, dans la vallée de la Dioma, gouvernement d'Orenbourg"; Dyoma [Dema] river valley, Il'chegulovo [Il'chigulovo], Bashkortostan Republic, Russia.

Type material

De Verneuil probably erected the species on a single LV, whereabouts unknown.

Remarks

Placed in the genus *Macrodon* by several authors (Chernyshev 1885; Amalitsky 1886; Netschajew 1894) and later in *Parallelodon* by Likharev (1925; as "*P. kingi*"), Maslennikov (1935; as "*P. kingi*") and Friedel *et al.* (2025). See Friedel *et al*. (2025) for further info.

Parallelodon* (?) *kiptschakensis Aleksandri-Sadova, 1959

Original source

Aleksandri-Sadova (1959): p. 172, unnumbered pl. figs 1–19.

Type stratum and age

"Karagandinsnaya svita" [Karaganda Formation]; upper Visean to Serpukhovian (Sadykov & Korobkin 2019), Carboniferous.

Type locality

"r. Kipchak" [Kipchak River]; Karaganda Basin, near Saran, Kazakhstan.

Type material

Studied material stored at the Academician F.N. Chernyshev Central Geological Research Museum (TsNIGR museum), St Petersburg under collection no. 4 to 19/10967 (Romanovskaya *et al*. 1979: 124).

Remarks

Species not found in any subsequent work.

Macrodus kochi Spriestersbach, 1919

Original source

Spriestersbach (1919): 461, pl. 33 fig. 1; originally as "*Kochi*".

Type stratum and age

"aus den Oberen Honselner Schichten"; Upper Honsel Formation, lower Givetian, Middle Devonian (German Stratigraphic Commission 2016; Löw *et al*. 2022).

Type locality

"links an der Straße dicht unter Neuloh, Blatt Herscheid [...]; Gardeweg, Blatt Wipperfürth"; the former locality Neuloh does not exist anymore, it is located along today's A45 highway near Lüdenscheid-Piepersloh; the locality Gardeweg is north of Wipperfürth, North Rhine-Westphalia, Germany.

Type material

Syntypes are a LV (whereabouts unknown) and a figured RV (MB.M.411, coll. Spriestersbach) which is stored at the Museum für Naturkunde, Berlin.

Remarks

Not a *Parallelodon*, probably a taxodont protobranch (Amler & Friedel 2025).

Macrodus koeneni Tornquist, 1896

Original source

Tornquist (1896): 102 [636], pl. 19 fig. 5; originally as "*Koeneni*".

Type stratum and age

"[in der] schiefrigen Facies des Kohlenkalks" (Tornquist 1895: 23) [shaly facies of the Carboniferous Limestone]; middle to upper Visean, Mississippian, Carboniferous (Amler 1987).

Type locality

"Hohlweg unterhalb der Ferme [Bauernhof] Pütig"; along the route from Bourbach-le-Haut to Masevaux, Département Haut-Rhin, France.

Type material

The whereabouts of the material studied by Tornquist (1896) are unknown. He stated the material as belonging to the "Geologische Landesanstalt Elsass-Lothringen". Amler (1987) stated that the Tornquist collection in the Strasbourg Museum was destroyed in a fire (see also Hubmann 2014).

Remarks

Revised as *Parallelodon koeneni* by Amler (1987).

Parallelodon koninckii Etheridge in De Koninck, 1898

Original source

De Koninck (1898): 225 (footnote).

Type stratum and age

"Gympie Beds"; as "?Malchi Fm." (Mississippian, Carboniferous) in Rozefelds *et al*. (1990).

Type locality

Rockhampton District, Queensland, Australia.

Type material

The specimens illustrated by Etheridge (1892) and referred to in De Koninck (1898) are stored at the Queensland Museum under coll. no. F1211 and F1212 (De Vis collection; Rozefelds *et al*. 1990: 696).

Remarks

In the English translation of De Koninck's (1876) work on Australian Palaeozoic fossils, the translator W.S. Dun remarked in a footnote for *Palaearca costellata* McCoy, 1944 that the species identified by Etheridge (1892) as *Parallelodon costellata* might be an undescribed species: "Mr. Etheridge suggests the possibility of the Queensland form being a new species – *Parallelodon Koninckii*, Eth. fil." The species was not found in the literature after that.

Parallelodon koninckianus Yanishevsky, 1900

Original source

Yanishevsky (1900): 219, pl. 3 figs 28–29; originally as "*Koninckianus*".

Type stratum and age

Astafieva-Urbajtis & Ramovš (1985) indicated a Baskhirian (Pennsylvanian, Carboniferous) age, while Mychko *et al.* (2025), based on a wider assessment of the area, attributed strata around the type locality to the Visean (Mississippian) to Bashkirian (Pennsylvanian), Carboniferous.

Type locality

Shartymka River, ca 8 km SE of Polyakovka, Bashkortostan Republic, Russia.

Type material

Type material (KP 426/442) is stored at the A.A. Shtukenberg Geological Museum of Kazan Federal University, Kazan.

Remarks

Yanishevsky compared his species with *Parallelodon bistriata* (Portlock, 1843) (originally in *Pullastra*), *P. elegantulus* (De Koninck, 1844) and *P. undatus* De Koninck, 1885. The former two species are now placed in *Cypricardinia*, the last one with question mark in *Parallelodon* (Amler 1987). Listed also in Yanishevsky (1910, 1915); not found in the literature afterwards.

Macrodon kungurense Stuckenberg, 1898

Original source

Stuckenberg (1898): 209 [Russian], 338 [German], pl. 2 fig. 5a–b.

Type stratum and age

Branson (1948) indicated a Kungurian (Cisuralian, Permian) age for the type locality.

Type locality

"Na pravom' beregu r. Sylvy, na vershine izluchiny, obrashchennoy k' severu, v' 1 verste nizhe derevni Chastykh', izvestnyak' (C2) vystupayet' v' vide kamnya Glazyrya, vozvyshayushchagosya do 100 metrov' nad' vodoyu" [On the right bank of the Sylva River, at the top of the bend facing north, in a 1-km section below the village of Chastykh [Chastye?], a limestone (C2) formation emerges in the form of the Glazyr hill rising up to 100 meters above the water]; Perm Krai, Russia.

Type material

Not traced.

Remarks

Girty (1909a: 407) considered this species (as *M. kungurensis*) to be related with his *Parallelodon multistriatus*.

Arca lacordairiana De Koninck, 1842

Original source

De Koninck (1842): 119, pl. 2 fig. 14a–c; originally as "*Lacordairiana*".

Type stratum and age

"calcaire anthraxifère supérieur de Visé et à Tournay dans l'argile"; V3b and V3c, Visean, and Tn3a und Tn3b, Tournaisian, Mississippian, Carboniferous (Demanet 1958: 29; Godefroid *et al.* 2006).

Type locality

"Visé" and "Tournay"; Visé, quarries south of Visé, on the east side of the Meuse River valley (Demanet 1958; Godefroid *et al.* 2006) and Tournai, Hainaut Province, Belgium.

Type material

Syntype (UCBL-EM 35401) is stored in the collection of the Géologie de l'Université Lyon, but does not match the figure. It is a RV, but De Koninck illustrated a BV specimen.

Remarks

De Koninck (1885: 157) himself placed this species in *Parallelodon* (as *P. lacordaireanus* [sic]).

Parallelodon lamellifer De Koninck, 1885

Original source

De Koninck (1885): 151, pl. 26 figs 7–8.

Type stratum and age

"calcaire carbonifère de Visé (étage III)"; V3b and V3c, Visean, Mississippian, Carboniferous (Demanet 1958: 29; Godefroid *et al.* 2006).

Type locality

"Visé"; quarries south of Visé, on the east side of the Meuse River valley (Demanet 1958; Godefroid *et al.* 2006), Belgium.

Type material

The illustrated syntype is stored at the Royal Belgian Institute of Natural Sciences, Brussels, coll. no. RBINS a4693 (old no. 1039; coll. de Ryckholt).

Parallelodon laminatus De Koninck, 1885

Original source

De Koninck (1885): 162, pl. 25 fig. 22, pl. 26 fig. 1.

Type stratum and age

"calcaire des Pauquys (étage II)"; Waulsort Formation, upper Tournaisian, Carboniferous.

Type locality

"Pauquys"; Hastière, Namur, Wallonia, Belgium.

Type material

The illustrated syntypes are stored at the Royal Belgian Institute of Natural Sciences, Brussels, coll. no. RBINS a4730 (old no. 730; pl. 25 fig. 22; coll. Dupont) and RBINS a4731 (old no. 746; pl. 26 fig. 1; coll. Dupont).

Parallelodon laochangensis Feng, Cui & Liu, 1992

Original source

Feng *et al.* (1992): 515, pl. 7 figs 16–19.

Type stratum and age

Lopingian, Permian.

Type locality

Laochang, Lancang, Yunnan, China.

Type material

Feng *et al.* (1992) missed to indicate a holotype. The following specimens have been illustrated: 90L17 (LV, fig. 16a–b), 89L30 (steinkern of RV, fig. 17), 90L18 (external mould of RV, fig. 18), 90L19 (steinkern of LV, fig. 19). All specimens are kept in the Department of Geological History (today Department of Geobiology), of the School of Earth Sciences, Wuhan, China.

Macrodon latisinuatus Gemmellaro, 1896

Original source

Gemmellaro (1896): 25, pl. 23 figs 1–3.

Type stratum and age

"Calcare grossolano con *Fusulina*"; Wordian to upper Permian (Sanfilippo *et al.* 2017).

Type locality

"Pietra di Salomone"; 3 km S of Palazzo Adriano, Palermo, Italy.

Type material

Gemmellaro did not designate types. His description based on three BV specimens (MGUP-001.263). All syntypes are stored at the Museo Geologico Università Palermo, Italy.

Parallelodon latus De Koninck, 1885

Original source

De Koninck (1885): 146, pl. 24 figs 4–5.

Type stratum and age

"calcaire carbonifère de Visé (étage III)"; V3b and V3c, Visean, Mississippian, Carboniferous (Demanet 1958: 29; Godefroid *et al.* 2006).

Type locality

"Visé"; quarries south of Visé, on the east side of the Meuse River valley (Demanet 1958; Godefroid *et al.* 2006), Belgium.

Type material

The illustrated syntype is stored at the Royal Belgian Institute of Natural Sciences, Brussels, coll. no. RBINS a4665 (old no. 1093; coll. de Ryckholt).

Remarks

Discussed by Amler (1987: 171).

Parallelodon lianyuanensis R.-J. Zhang in R.-J. Zhang *et al.*, 1977

Original source

Zhang *et al.* (1977): 491, pl. 192 fig. 17.

Type stratum and age

Longtan Formation, Wuchiapingian, Lopingian, Permian.

Type locality

Lianyuan County, Loudi, Hunan Province, China.

Type material

Holotype is a steinkern and external mould of a BV specimen (IV 55309) and it is stored at the Hubei Institute of Geology (today Hubei Institute of Geosciences), Wuhan, China.

Parallelodon licharewi Maslennikov, 1935

Original source

Maslennikov (1935): 85 [Russian], 113 [English], pl. 3 fig. 6a–e.

Type stratum and age

"Upper Permian" (no further data given, might also be middle Permian following the revisions of Russian stratigraphy).

Type locality

"s r. Vel' - mezhdu ust'yami Shenoshi i Yelyugi i s r. Led' - iz obnazheniya izvestnyakov u dd. Kokovinskoy i Paskinskoy" [from the Vel River - between the mouths of the Shenon and Elug rivers and from the Led River - from the limestone outcrop near the villages of Kokovinskaya and Paskinskaya]; Arkhangelsk Oblast, Russia.

Type material

Maslennikov stated that he had about 30 specimens. Syntypes (coll. no. 5833) are stored at the Academician F.N. Chernyshev Central Geological Research Museum (TsNIGR museum), St Petersburg, Russia (Lutaenko 2013).

Remarks

Illustrated also in Muromtseva & Guskov (1984: 37, pl. 36 figs 8–9).

Arca loftusiana Howse, 1848 [invalid]

Original source

Howse (1848): 246.

Type stratum and age

"Magnesian-limestone"; Ford or Raisby Formation, Zechstein, Changhsingian, Lopingian, Permian.

Type locality

"Tunstall, Humbleton"; County Tyne and Wear (formerly Durham), United Kingdom.

Type material

The whereabouts of the original material are unknown, probably kept in the collections of the Great North Museum: Hancock in Newcastle upon Tyne, UK (Friedel *et al.* 2025).

Remarks

Later, Howse (1857) himself listed the species as synonymous to "*Macrodon striata*" [= *P. striatus* (von Schlotheim, 1820)], which was followed by Friedel *et al.* (2025); see there for further info.

Parallelodon longjiuensis Guo, 1985 [invalid]

Original source

Guo (1985): 122, pl. 11 fig. 8.

Type stratum and age

Lopingian, Permian.

Type locality

Longjiu, Jiuzhai, Funing County, Yunnan, China.

Type material

Illustrated specimen (IVy 0132) is stored at the Geological Museum of China, Beijing.

Remarks

Considered a synonym of *Parallelodon qinghaiensis* Liu in Gu *et al*., 1976 by Yang *et al*. (2016).

Parallelodon longum Maslennikov, 1935

Original source

Maslennikov (1935): 86 [Russian], 114 [English], pl. 3 figs 7–8.

Type stratum and age

"Upper Permian" (no further data given, might also be middle Permian following the revision of Russian stratigraphy).

Type locality

"s r. Led' vyshe d. Kokovinskoy" [on the Led River, upstream of Kokovinskaya village]; Arkhangelsk Oblast, Russia.

Type material

Syntypes are part of Vaga collection (coll. no. 5833). Stored at the Academician F.N. Chernyshev Central Geological Research Museum (TsNIGR museum), St Petersburg, Russia (Lutaenko 2013).

Parallelodon louisianensis Williams, 1931

Original source

Williams (1931): 139, pl. 1 figs 5–6.

Type stratum and age

Louisiana Limestone, Kinderhookian; Tournaisian, Mississippian, Carboniferous.

Type locality

"locality 615, along the Mississippi River, at Louisiana, Missouri"; the locality is further specified on p. 133 as "NE. 1/4 sec. 18, T 54 N., R. 1 W. - North of Louisiana Milling Co., Louisiana, Missouri", United States of America.

Type material

Holotype, a LV (3656), and paratype, a RV (3657), are stored at the University of Missouri mentioned by Williams (1943).

Remarks

Williams (1943) noted that the species might be a member of *Cypricardinia*, but the similarity to *P. sulcatus* (Weller, 1906) "outweighed other considerations and was the deciding factor."

Nemodon magolici Astafieva-Urbajtis in Astafieva-Urbajtis & Ramovš, 1985

Original source

Astafieva-Urbajtis & Ramovš (1985): 12, pl. 1 figs 3–4.

Type stratum and age

"verkhniy karbon, gzhel'skiy yarus"; Auernig Formation, Gzhelian, Carboniferous.

Type locality

"Yugoslaviya, gory Karavanke [...] Planina pod Golico 2", Karavanke Mts, Slovenia.

Type material

Type material is stored at the Gornjesavski muzej Jesenice, Slovenia, formerly Technical Museum of zelezarne Jesenica. Holotype with coll. no. USMJ 851, additionally figured specimen ("topotype") with coll. no. USMJ 852; further material mentioned by the author.

Parallelodon marinum Lobanova, 1961

Original source

Lobanova (1961): p. 56, pl. 1 figs 4–6.

Type stratum and age

"iz verkhnepermskikh otlozheniya" [from upper Permian deposits]; no further details provided, may refer to middle or upper Permian.

Type locality

"Zapadnogo Primor'ya, rayon pos. Grodekovo, mezhdurech'ye Takheyazha i Tochilki" [Western Primorye, Grodekovo settlement area, interfluve of the Takheyazh and Tochilka rivers], Russia.

Type material

Figured specimen (holotype) is stored at the Academician F.N. Chernyshev Central Geological Research Museum (TsNIGR museum), St Petersburg, under coll. no. 3/9365 (see also Kadlets *et al*. 1996: 197).

Remarks

Species not found in any subsequent work.

Macrodus* (*Parallelodon*) *mandelensis Dahmer, 1915

Original source

Dahmer (1915): 213, pl. 8 figs 14–16.

Type stratum and age

"obere Koblenzer Schichten"; Emsian, Lower Devonian (Amler & Friedel 2025).

Type locality

"Hauberg bei Mandeln bei Dillenburg" [Hau-Berg, Mandeln near Dillenburg]; Hesse, Germany.

Type material

Type material is stored at the Senckenberg Research Institute and Natural History Museum, Frankfurt am Main, under coll. no. SMF60554, SMF67524 to SMF67526 (coll. Dahmer).

Remarks

Recently studied by Amler & Friedel (2025).

Sanguinolites marshallensis Winchell, 1862

Original source

Winchell (1862): 415.

Type stratum and age

Marshall sandstone, Tournaisian–Visean, Mississippian, Carboniferous (McGlannan *et al.* 2022).

Type locality

"Marshall"; Calhoun County, Michigan, United States of America.

Type material

Winchell did not indicate a type or number of specimens. Driscoll (1965) reported a "holotype", a RV (UMMP 26877) and a "paratype", a poorly preserved specimen from the type locality (UMMP 44272). However, Driscoll's designations as holotype/paratype are invalid; both are syntypes. Syntypes are stored at the University of Michigan, Museum of Paleontology, Ann Arbor.

Remarks

Driscoll (1965) placed the species in *Parallelodon* (*Cosmetodon*) and illustrated the so-called "holotype" (pl. 16 figs 1–3).

Macrodon martellii de Stefani, 1917

Original source

de Stefani (1917): 27, pl. 1 figs 12, 15–16, 18–19, 21.

Type stratum and age

Rio Marina Formation, upper Carboniferous to lower Permian (De Stefani 1914; Bortolotti *et al.* 2001).

Type locality

"Cala Baccetti"; a small bay south of Cavo, Elba Island, Italy.

Type material

Studied material (IGF 126E, IGF 127E, IGF 149E) is stored in the De Stefani collection at the Museo di Storia Naturale di Firenze, Italy.

Remarks

Not found in the literature after the original description.

Parallelodon maslennikovi Kanev, 2006

Original source

Kanev (2006): 119, fig. 18, *∂*.

Type stratum and age

"verkhnyaya perm', biarmiyskiy otdel, kazanskiy yarus, verkhnekazanskiy (krasnovidovskiy) pod"yarus" [upper Permian, Biarmian division, Kazanian stage, upper Kazanian (Krasnovidovian) substage].

Type locality

"p-ov Kanin, poberezh'ye Choshskoy guby mezhdu mysom Nadteysalya i mysom Yarnisalya" [Kanin Peninsula, coast of the Cheshskaya Bay between Cape Nedteysalya and Cape Yarnisalya]; Nenets Autonomous Okrug, Russia.

Type material

Holotype (13/367) is a RV stored at the Geological Museum of the Institute of Geology Komi SC UB RAS, Syktyvkar, Russia.

Macrodus matthewi Clarke, 1907

Original source

Clarke (1907): 234, unnumbered text-fig.

Type stratum and age

"Lower Devonic"; Dalhousie Group, Lower Devonian.

Type locality

"Dalhousie, N.B."; New Brunswick, Canada.

Type material

Whereabouts unknown.

Remarks

Also described in Clarke (1909); mentioned by Reed (1927). Due to the lack of hinge characters, Amler & Friedel (2025) questioned a classification in the Parallelodontidae.

Arca mcoyana De Koninck, 1851 [invalid]

Original source

De Koninck (1851): 670, pl. 57 fig. 8a–c; originally as "*M'Coyana*" in the text and as "*Arca* (*Cucullæa*) *M'Coyana*" in the plate caption.

Type stratum and age

"calcaire carbonifère inférieur de Visé"; V3b and V3c, Visean, Mississippian, Carboniferous (Demanet 1958: 29; Godefroid *et al.* 2006).

Type locality

"Visé"; quarries south of Visé, on the east side of the Meuse River valley (Demanet 1958; Godefroid *et al.* 2006), Belgium.

Type material

Probably stored in the collection of the Géologie de l'Université Lyon, but not traced. Additional material of De Koninck stored at the Royal Belgian Institute of Natural Sciences, Brussels.

Remarks

Cucullaea tenuistria McCoy, 1844 was renamed *Arca M'Coyana* by De Koninck (1851: 670), only for the risk of confusion with the Cretaceous species *Arca tenuistriata* Münster in Goldfuss, 1837 (p. 142, erroneously listed as *Arca tenuistria* Münster in the index: 305). Since no homonymy exists, the name is a junior objective synonym of *Parallelodon tenuistria*. Apparently, De Koninck (1885: 162) realised that as well, ignored his earlier renaming, and used *Parallelodon tenuistria* as the valid name.

Parallelodon meridionalis De Koninck, 1885

Original source

De Koninck (1885): 158, pl. 24 figs 7–13, pl. 25 figs 41–42, pl. 26 figs 6, 15.

Type stratum and age

"calschiste des environs de Tournai (étage I)"; Tn3a and Tn3b, lower Ivorian, Tournaisian, Carboniferous (Demanet 1958; Sartenaer & Plodowski 1996; Poty *et al.* 2002; Godefroid *et al.* 2006).

Type locality

"Tournai"; Hainaut Province, Belgium.

Type material

The illustrated syntypes are stored at the Royal Belgian Institute of Natural Sciences, Brussels, coll. no. RBINS a4710 (old no. 215; pl. 24 figs 7–8), RBINS a4711 (old no. 150; pl. 24 fig. 10; coll. de Ryckholt), RBINS a4712 (old no. 137; pl. 24 figs 9, 11–12), RBINS a4713 (old no. 136; pl. 24 fig. 13; coll. de Ryckholt), RBINS a4714 (old no. 146; pl. 25 figs 41–42; coll. de Ryckholt), RBINS a4715 (old no. 146; pl. 26 fig. 6; coll. de Ryckholt) and RBINS a4716 (old no. 185; pl. 26 fig. 15, coll. Lettou).

Arca michelini d'Archiac & de Verneuil, 1842

Original source

d'Archiac & de Verneuil (1842): 373, pl. 36 fig. 6; originally as "*Michelini*".

Type stratum and age

Age not stated; Middle or Upper Devonian.

Type locality

"Paffrath"; near Cologne, North Rhine-Westphalia, Germany.

Type material

Not traced.

Remarks

Amler & Friedel (2025) placed this species in *Parallelodon*; see also discussion of *Arca inermis* G. Sandberger & F. Sandberger, 1854.

Macrodon micronema Meek & Worthen, 1866

Original source

Meek & Worthen (1866b): 261.

Type stratum and age

"Chester division of the Subcarboniferous series"; Chesterian, Mississippian, Carboniferous.

Type locality

"St. Genevieve County, Missouri [...]; Randolph County, Illinois", United States of America.

Type material

Not traced.

Remarks

As *Parallelodon micronema* in a species list in Mansfield (1927).

Pleurophorus minima Worthen, 1884

Original source

Worthen (1884): 17.

Type stratum and age

"Oolitic beds of the St. Louis limestone"; St Louis Limestone, Böue River Group, Visean, Mississippian, Carboniferous.

Type locality

"Monroe county, Ill." [Monroe County, Illinois], United States of America.

Type material

Syntype (no. 2524) stored at the Illinois State Museum.

Remarks

Recombined as *Parallelodon minima* [sic; should be *P. minimus*] by Weller (1916: 248), Hernon (1935: 690) and Hoare (1993: 378).

Parallelodon minimus De Koninck, 1885 [invalid]

Original source

De Koninck (1885): 151, pl. 24 figs 28–30.

Type stratum and age

"calcaire carbonifère de Visé (étage III)"; V3b and V3c, Visean, Mississippian, Carboniferous (Demanet 1958: 29; Godefroid *et al.* 2006).

Type locality

"Visé"; quarries south of Visé, on the east side of the Meuse River valley (Demanet 1958; Godefroid *et al.* 2006), Belgium.

Type material

The illustrated syntype is stored at the Royal Belgian Institute of Natural Sciences, Brussels, coll. no. RBINS a4692 (old no. 1194; coll. de Ryckholt).

Remarks

A secondary junior homonym of *Parallelodon minimus* (Worthen, 1884).

Parallelodon striatus minimus Lan & Xu in Yao *et al.*, 1980 [nomen nudum]

Original source

Yao *et al.* (1980): 8 (table).

Remarks

Mentioned only in a table in Yao *et al.* (1980) from the Lower Changxing [Changhsing] Limestone at Jiaozi Mt, Anshun, Guizhou, as well as the upper Longtan Formation (both upper Permian) at Puga, Zhijin, Guizhou (China). However, the species was not described and is therefore a nomen nudum; not found in the literature afterwards. If available, the name would be a primary junior homonym of *Parallelodon minimus* De Koninck, 1885 and a secondary junior homonym of *Parallelodon minimus* (Worthen, 1884).

Parallelodon minor De Koninck, 1885

Original source

De Koninck (1885): 151, pl. 25 fig. 10.

Type stratum and age

"calcaire carbonifère de Visé (étage III)"; V3b and V3c, Visean, Mississippian, Carboniferous (Demanet 1958: 29; Godefroid *et al.* 2006).

Type locality

"Visé"; quarries south of Visé, on the east side of the Meuse River valley (Demanet 1958; Godefroid *et al.* 2006), Belgium.

Type material

The illustrated syntype is stored at the Royal Belgian Institute of Natural Sciences, Brussels, coll. no. RBINS a4691 (old no. 1061; coll. Nyst).

Arca modesta Winchell, 1863

Original source

Winchell (1863): 15.

Type stratum and age

"Yellow Sandstone beneath Burlington Limestone"; Osagean, Tournaisian-Visean, Mississippian, Carboniferous (Thompson 2001).

Type locality

"Burlington, Iowa", United States of America.

Type material

Not traced.

Remarks

Classified in *Macrodon* by Weller (1900: 90, pl. 3 fig. 16; as "*modesta*"), in *Parallelodon* by Moore (1928: 28), and in *Grammatodon* by Paul (1941: 121; as "*modestus*").

Parallelodon modestus De Koninck, 1885

Original source

De Koninck (1885): 148, pl. 26 fig. 9.

Type stratum and age

"calcaire des Pauquys (étage II)"; Waulsort Formation, upper Tournaisian, Carboniferous.

Type locality

"Pauquys"; Hastière, Namur, Wallonia, Belgium.

Type material

The illustrated syntype is stored at the Royal Belgian Institute of Natural Sciences, Brussels, coll. no. RBINS a4681 (old no. 688; coll. Dupont).

Remarks

Potential secondary homonym of *Arca modesta* Winchell, 1863, which was placed in *Parallelodon* by Moore (1928: 28) and in *Grammatodon* by Paul (1941: 121).

Parallelodon modioliformis Hyde, 1953

Original source

Hyde (1953): 302, pl. 41 figs 1–2.

Type stratum and age

"Byer member, Logan formation"; earliest Osagean (upper Tournaisian), Mississippian, Carboniferous (Matchen & Kammer 2006).

Type locality

"Sciotoville", Ohio, United States of America.

Type material

Figured specimens ("cotypes") and additional material are part of the Hyde collection (no. 752) and of the Ohio State University collection (no. 19670). All specimens are stored at Ohio State University, Columbus.

Macrodon monreali Barrois, 1882

Original source

Barrois (1882): 338, pl. 17 fig. 2a–b.

Type stratum and age

"Assise de Sama"; probably Westphalian (Bashkirian to Moscovian, Pennsylvanian), Carboniferous (after Malvesy *et al.* 2000).

Type locality

Mosquitera (Asturias), Spain.

Type material

Syntypes are a LV and a RV (MGL 4982 (1–2)), stored at Musée d'Histoire naturelle de Lille (Malvesy *et al.* 2000).

Remarks

As *Parallelodon monreali* in the collection catalogue of Malvesy *et al.* (2000).

Parallelodon mrassiensis Ragozin, 1931

Original source

Ragozin (1931): 6, pl. 1 fig. 1, pl. 3 figs 1–4, 12, pl. 4 figs 1b, 2.

Type stratum and age

Lower Balakhonka [Balakhonskaya] Formation, Upper Pennsylvanian, Carboniferous (Amler & Silantiev 2022).

Type locality

"Pravyy bereg reki Mrassu, v dvukh kilometrakh vyshe ulusa Kameshok" [right bank of the river Mrassu, two kilometres above the Kameshok locality]; Kuznetsk Basin, West Siberia, Russia.

Type material

Not traced.

Remarks

Betekhtina (1966) classified the species in the freshwater genus *Kinerkaella* (Myalinida: Prokopievskiidae).

Macrodon multilamellatus Gemmellaro, 1892

Original source

Gemmellaro (1892): 7.

Type stratum and age

"Calcare grossolano con *Fusulina*"; Wordian to upper Permian (Sanfilippo *et al.* 2017).

Type locality

"Pietra di Salomone"; 3 km S of Palazzo Adriano, Palermo, Italy.

Type material

Type material of other parallelodontid species described by Gemmellaro (1892) is stored at the Museo Geologico Università Palermo, Italy; material of *M. multilamellatus* seems to be missing though.

Remarks

Only briefly described in Gemmellaro (1892: 7); extended description and illustration in Gemmellaro (1896: 25, pl. 21 fig. 4).

Parallelodon multilineatus De Koninck, 1885 [invalid]

Original source

De Koninck (1885): 144, pl. 21 figs 16–18.

Type stratum and age

"calcaire carbonifère de Visé (étage III)"; V3b and V3c, Visean, Mississippian, Carboniferous (Demanet 1958: 29; Godefroid *et al.* 2006).

Type locality

"Visé"; quarries south of Visé, on the east side of the Meuse River valley (Demanet 1958; Godefroid *et al.* 2006), Belgium.

Type material

The illustrated syntype is stored at the Royal Belgian Institute of Natural Sciences, Brussels, coll. no. RBINS a4662 (old no. 1171; coll. de Ryckholt).

Remarks

Junior synonym of *Parallelodon haimeanus* (De Koninck, 1851) according to Amler (1987).

Parallelodon multiliratus Girty, 1909

Original source

Girty (1909b): 39, pl. 3 figs 4, 4a, 5.

Type stratum and age

"Caney shale"; Kinderhookian? to Chesterian?, Middle Mississippian, Carboniferous (boundaries not clear).

Type locality

"Atoka quadrangle (station 2089), Tishomingo quadrangle (station 2085)"; the localities are further detailed in the appendix as: "Atoka quadrangle, NE. 1/4 SE. 1/4 sec. 35, T. 2 S., R. 8 E. Caney shale (near top of chert)" and "Tishomingo quadrangle, ravine a short distance (one-eighth mile) west of Viola"; Oklahoma, United States of America.

Type material

Syntypes (USNM PAL 120754, 120742) are stored at the Smithsonian National Museum of Natural History, Paleobiology Collection, Washington, D.C.

Remarks

Mentioned by Aleksandri-Sadova (1965) and Hoare *et al*. (1989).

Parallelodon multistriatus Girty, 1909

Original source

Girty (1909a): 423, pl. 31 figs 13–14a.

Type stratum and age

"Middle of Capitan formation [...]; Delaware Mountain formation"; Guadalupian, Permian.

Type locality

Capitan Peak (station 2926?); [...] Guadalupe Point (station 2931), Guadalupe Mts, Texas. [...] Comanche Canyon, Glass Mts, Texas (station 3763). The stations are further specified on p. 511–512 as: "2926. Guadalupe Mountains, Texas. Just below knob on crest of spur running northward from El Capitan. Part of material from horizon above or below. About 1,000 feet below summit of El Capitan and the top of the Capitan limestone."; "2931. Guadalupe Mountains, Texas. West side of road at entrance to Guadalupe Canyon. Lower half of the Delaware Mountain sandstone; opposite to station 2903 and at about the same horizon, possibly above."; "3763. Big Bend, Texas. Comanche Canyon, Glass Mountains, 17 miles northeast of Marathon, Tex.", United States of America.

Type material

Syntypes (USNM PAL 118224) are stored at the Smithsonian National Museum of Natural History, Paleobiology Collection, Washington, D.C.

Parallelodon mytiloides De Koninck, 1885

Original source

De Koninck (1885): 160, pl. 24 fig. 38.

Type stratum and age

"calcaire carbonifère de Visé (étage III)"; V3b and V3c, Visean, Mississippian, Carboniferous (Demanet 1958: 29; Godefroid *et al.* 2006).

Type locality

"Visé"; quarries south of Visé, on the east side of the Meuse River valley (Demanet 1958; Godefroid *et al.* 2006), Belgium.

Type material

The illustrated syntype is stored at the Royal Belgian Institute of Natural Sciences, Brussels, coll. no. RBINS a4721 (old no. 966; coll. de Ryckholt).

Macrodon naliwkini Yakovlev, 1903

Original source

Yakovlev (1903): 11 [Russian], 35 [German], pl. 2 fig. 18.

Type stratum and age

"Dolomitsuite, salzführende Ablagerungen der Mulde von Bachmut"; lower Permian, potentially Artinskian, following Koken (1901: 309).

Type locality

"Pokrowskoje, Donez-Bassin, Mulde von Bachmut"; Pokrovs'ke, Bakhmut, Donetsk Oblast, Ukraine.

Type material

Yakovlev (1903) indicated in the plate caption the figured syntype to be stored at the "Geologicheskiy komitet / Geologische Comité" (today Academician F.N. Chernyshev Central Geological Research Museum (TsNIGR museum), St Petersburg, Russia), but specimens not yet traced.

Prorhynchus nasutum Hall, 1885

Original source

Hall (1885): 493, pl. 96 fig. 6.

Type stratum and age

"Upper part of the Chemung group"; Brallier Formation, Upper Devonian (Berg *et al.* 1993).

Type locality

"Warren, Pa." [Warren, Pennsylvania], United States of America.

Type material

Not traced.

Remarks

Amler & Friedel (2025) doubt affinities to parallelodontids as there are no hinge characters preserved.

Macrodon newarkensis Herrick, 1888

Original source

Herrick (1888b): 36, pl. 4 fig. 19.

Type stratum and age

"Keokuk and Burlington Groups. Upper Waverly. (Upper Logan)"; all units are Osagean in age (Tournaisian–Visean), Mississippian, Carboniferous (Thompson 2001; Matchen & Kammer 2006).

Type locality

"Near Newark, O. [Ohio], about 60 or 70 feet above congl. II in our division III", United States of America.

Type material

Not traced.

Remarks

Classified as *Parallelodon* by Girty (1911).

Macrodon noinskii Stuckenberg, 1905

Original source

Stuckenberg (1905): 84 [Russian], 136 [German], pl. 10 fig. 24a–b.

Type stratum and age

"Bellerophon-Horizonte" (Krasnoufimian beds of the Ural after Waterhouse 1987: 214; the Krasnoufimian was considered synonymous with the Artinskian substage Saranin by Waterhouse 1997), Cisularian, Permian.

Type locality

"Samarskaya Luka, Tsarev Kurgan [...], selo Kostychi [...], Kapitanskiy ovrag'"; Samara Oblast, Russia.

Type material

Not traced.

Remarks

Misspelt as *M. noinskyi* by Maslennikov (1935: 87). Waterhouse (1987) briefly referred to the species (as *Parallelodon*).

Parallelodon normalis De Koninck, 1885

Original source

De Koninck (1885): 145, pl. 21 figs 19–21.

Type stratum and age

"carbonifère des Pauquys et d'Anseremme (étage II)"; Waulsort Formation, upper Tournaisian, Carboniferous.

Type locality

"Pauquys, Anseremme"; Hastière and Dinant, Namur, Wallonia, Belgium.

Type material

The illustrated syntype is stored at the Royal Belgian Institute of Natural Sciences, Brussels, coll. no. RBINS a4663 (old no. 638). Additional syntypes are stored in Brussels.

Arca obscura De Koninck, 1842

Original source

De Koninck (1842): 114, pl. 2 fig. 16a–d.

Type stratum and age

"calcaire de Visé" (De Koninck 1842); specified as "calcaire carbonifère de Visé (étage III)" by De Koninck (1885); V3b and V3c, Visean, Mississippian, Carboniferous (Demanet 1958: 29; Godefroid *et al.* 2006).

Type locality

"Visé"; quarries south of Visé, on the east side of the Meuse River valley (Demanet 1958; Godefroid *et al.* 2006), Belgium.

Type material

Syntypes are stored at the collections of the Géologie de l'Université Lyon. A BV specimen (UBCL-EM 35409) is figured on pl. 2 fig. 16a–b. Syntype UBCL-EM 35410, also a BV specimen, is not figured. The whereabouts of the specimen figured on pl. 2 fig. 16c–d is unknown.

Remarks

De Koninck (1885) placed this species in *Parallelodon*.

Ptychopteria obsoleta Simpson in Lesley, 1889

Original source

Lesley (1889): 448, fig. 15.

Type stratum and age

"Chemung Group", Brallier Formation, Upper Devonian (Berg *et al.* 1993).

Type locality

"Hill north of Warren, Warren county, Pennsylvania", United States of America.

Type material

Lesley (1889: 839) mentioned that *P. obsoleta* based on Randall's specimen no. 9622 (wrongly labelled as *Yoldia*). It is stored in the collection of the Geological Survey of Pennsylvania.

Remarks

The species was first introduced in Lesley's (1889) dictionary of the fossils from Pennsylvania. Lesley referred to descriptions by G.B. Simpson in the *Transactions of the American Philosophical Society*, which were presented at a society's meeting in 1888 but not published before 1890. However, Lesley (1889: viii) stated that the description and illustration were prepared by Simpson, making him the author of the species. Chadwick (1935: 330) classified the species in the genus *Prorhynchus*. Amler & Friedel (2025) suggested an affiliation to *Parallelodon*.

Parallelodon obsoletiformes Hayasaka, 1925

Original source

Hayasaka (1925): 18, pl. 8 figs 15–16.

Type stratum and age

"Kuro zone" (i.e., *Yabeina globosa* zone) of the Akasaka Limestone, Kazanian (Hayami & Kase 1977; Prinoth & Posenato 2023), Guadalupian, Permian.

Type locality

"Kinshô-zan, Akasaka-Machi, prov. Mino"; Kinshozan, Akasaka-cho, Fuwa-gun, Gifu Prefecture, Honshu, Japan.

Type material

Hayasaka mentioned two specimens, a LV "almost completely freed from the matrix", on which he based most of the description, and another LV embedded in sediment. He did not indicate a holotype. Hanzawa *et al*. (1961: 269) listed a specimen stored at Institute of Geology and Paleontology (today

Department of Earth Science), Tohoku University, Japan (IGPS no. 22392) incorrectly as the "holotype". Hayami & Kase (1977) noted this mistake but stated that "their treatment is here regarded as constituting lectotype designation." However, according to Art. 74.5 a subsequent use of the term "holotype" does not constitute a valid lectotype designation. To serve nomenclatural stability, we formally designate here the same specimen (IGPS no. 22392) as the lectotype.

Remarks

Placed in *Grammatodon* (*Cosmetodon*) by Yancey (1985) and Prinoth & Posenato (2023).

Macrodon obsoletus Meek, 1871

Original source

Meek (1871): 71.

Type stratum and age

"Lower coal measures"; Pennine Lower Coal Measures Formation, Moskovian, Pennsylvanian, Carboniferous.

Type locality

"Mongongalia County, W. Va." [Mongongalia County, West Virginia], United States of America.

Type material

Syntypes (coll. no. USNM PAL 7588) are stored at the Smithsonian National Museum of Natural History, Paleobiology Collection, Washington, D.C. (see also Schuchert 1905).

Remarks

Placed in *Parallelodon* by several authors (e.g., Girty 1909a; Morningstar 1922; Hoare 1961; Hoare *et al.* 1979).

Cucullaea obtusa Phillips, 1836

Original source

Phillips (1836): 210, pl. 5 fig. 19.

Type stratum and age

Top of Lower Scar Limestones; probably Great Scar Limestone, Visean, Mississippian, Carboniferous (Phillips 1836: 241; Amler 1987: 160).

Type locality

"Bolland"; south of Ogden Reservoir, west of Queensbury, Bradford, West Yorkshire, United Kingdom.

Type material

The whereabouts of the material are unknown (Hind 1897: 168).

Remarks

Placed in *Parallelodon* by De Koninck (1885). Note that De Koninck used a broad species concept, resulting in morphologically very different specimens being identified as *Parallelodon obtusus* (Hind 1897: 168; Amler 1987: 160).

Sanguinolites olseni Grabau, 1931

Original source

Grabau (1931): 321, pl. 32 fig. 14a–b.

Type stratum and age

"In the Martinia bed (1194) of the Jisu Honguer limestone"; Zhesi Formation, Wordian–Capitanian, middle Permian (Ren *et al.* 2020).

Type locality

"Jisu Honguer", Mongolia.

Type material

Grabau mentioned the holotype as the only available specimen, it is a RV (no. 483, Cat. G.S.C. 1505), stored in the Museum of the Geological Survey of China (today Geological Museum of China), Beijing.

Remarks

Placed in *Parallelodon* by Gu *et al.* (1976); also listed as such by Gao & Jiang (1998).

Arca oreliana de Verneuil in Murchison *et al.*, 1845

Original source

Murchison *et al*. (1845): 314, pl. 20 fig. 3; originally as "*Oreliana*".

Type stratum and age

"dans les calcaires jaunes dévoniens"; in the yellow Devonian limestones; presumably upper Famennian, uppermost Devonian (according to Lebedev *et al*. 2018).

Type locality

"de Novazilskaya, à trois verstes au sud d'Orel" [from Novazilskaya, three versts [~3 km] south of Oryol]; locality not found, today probably within the city limits of Oryol (Oryol oblast), Russia.

Type material

Not traced.

Remarks

Listed (as *Arca*) also by Venyukov (1886: 161, pl. 8 figs 6–7), Nalivkin (1947: 136, pl. 34 fig. 1; there authorship attributed to Venyukov 1886) and Lebedev *et al*. (2018: 63). Based on the morphology Amler & Friedel (2025) suggested a probable affiliation with *Parallelodon*.

Parallelodon ornatissimus De Koninck, 1885

Original source

De Koninck (1885): 161, pl. 24 figs 1–2, pl. 25 figs 3, 30.

Type stratum and age

"calcaire carbonifère de Visé (étage III)"; V3b and V3c, Visean, Mississippian, Carboniferous (Demanet 1958: 29; Godefroid *et al.* 2006).

Type locality

"Visé"; quarries south of Visé, on the east side of the Meuse River valley (Demanet 1958; Godefroid *et al.* 2006), Belgium.

Type material

The illustrated syntypes are stored at the Royal Belgian Institute of Natural Sciences, Brussels, coll. no. RBINS a4724 (old no. 1033; pl. 24 figs 1–2; coll. de Ryckholt) and RBINS a4725 (old no. 970; pl. 25 fig. 3; coll. De Koninck). Specimen RBINS a4726 (old no. 956; pl. 25 fig. 30) does not match the figure.

Parallelodon ovatus De Koninck, 1885 [invalid]

Original source

De Koninck (1885): 152, pl. 26 figs 2–3.

Type stratum and age

"calschiste de Tournai (étage I)"; Tn3a and Tn3b, lower Ivorian, Tournaisian, Carboniferous (Demanet 1958; Sartenaer & Plodowski 1996; Poty *et al.* 2002; Godefroid *et al.* 2006).

Type locality

"Tournai"; Hainaut Province, Belgium.

Type material

The illustrated syntype is stored at the Royal Belgian Institute of Natural Sciences, Brussels (RBINS a4694; old no. 254; coll. de Ryckholt).

Remarks

Junior secondary homonym of *Parallelodon ovatus* (Hall & Whitfield, 1869).

Macrodon ovatus Hall & Whitfield, 1869

Original source

Hall & Whitfield (1869): 15.

Type stratum and age

"Yellow sandstone"; Waverly Group according to Driscoll (1965), but uncertain from which horizon/formation. The Waverly Group comprises Upper Devonian to Lower Mississippian formations (Clayton *et al*. 1998).

Type locality

"Granville, Licking county, Ohio", United States of America.

Type material

A syntype (AMNH-FI-6556) is stored at the American Museum of Natural History, New York.

Remarks

As *Parallelodon* (*Cosmetodon*) in Driscoll (1965: 98).

Prorhynchus paeneplanus Caster, 1930

Original source

Caster (1930): 203 [61], pl. 44 [23] fig. 5.

Type stratum and age

"sandstone, below the Olean conglomerate"; Lower Mississippian, Carboniferous (Berg *et al.* 1993).

Type locality

"hill south of Smethport, Pa." (in McKean County, Pennsylvania) is mentioned in the text, but plate caption gives "Glade, Pa." (probably Warren County), United States of America.

Type material

Studied material (coll. no. 5234) is stored in the paleontological collection of Cornell University, Ithaca, New York. There seems to be only a steinkern of a RV as the base of this species.

Remarks

Listed as *Prorhynchus peneplanum* [sic] by Chadwick (1935: 333).

Nemodon palaeozoicus Astafieva-Urbajtis in Astafieva-Urbajtis & Ramovš, 1985

Original source

Astafieva-Urbajtis & Ramovš (1985): 13, pl. 1 figs 6a–b, 9.

Type stratum and age

"verkhniy karbon, gzhel'skiy yarus"; Auernig Formation, Gzhelian, Carboniferous.

Type locality

"Yugoslaviya, gory Karavanke [...] Križovec 1 (Črni vrh)", Karavanke Mts, Slovenia.

Type material

Type material is stored at the Gornjesavski muzej Jesenice, Slovenia, formerly Technical Museum of zelezarne Jesenica. Holotype with coll. no. USMJ 882, additionally figured specimen ("topotype") with coll. no. USMJ 879; further material mentioned by the author.

Sufia paradoxa Prantl & Růžička, 1955

Original source

Prantl & Růžička (1955a): 304 [Czech], 310 [Russian], 314 [English], pl. 1 figs 1–3; genus originally as Šufia.

Type stratum and age

"Choteč Limestones - gγ2, Middle Devonian".

Type locality

"Holyně, west of Prague, Bohemia", Czech Republic.

Type material

The holotype, the only specimen, is damaged and incomplete. No information of storage provided.

Remarks

Prantl & Růžička (1955a) provided a detailed description and already discussed similarities with *Parallelodon*. Newell (1969: 256) tentatively synonymised *Sufia* with *Parallelodon*. Amler & Friedel (2025) discussed cyrtodontid or parallelodontid affinities.

Leptodesma parallelum Simpson in Lesley, 1889

Original source

Lesley (1889): 448, fig. 14.

Type stratum and age

"Chemung Group", Brallier Formation, Upper Devonian (Berg *et al.* 1993).

Type locality

"Hill north of Warren, Warren county, Pennsylvania", United States of America.

Type material

Lesley (1889: 332) mentioned *L. parallelum* as specimen no. 9610 of Randall's collection (erroneously labelled as *Cypricardia*). It is stored in the collection of the Geological Survey of Pennsylvania.

Remarks

The species was first introduced in Lesley's (1889) dictionary of the fossils from Pennsylvania. Lesley referred to descriptions by G.B. Simpson in the *Transactions of the American Philosophical Society*, which were presented at a society's meeting in 1888 but not published before 1890. However, Lesley (1889: viii) stated that the description and illustration were prepared by Simpson, making him the author of the species. Chadwick (1935: 330) classified the species in the genus *Prorhynchus*, McAlester (1962) only stated that this species is not a *Leptodesma*. Amler & Friedel (2025) suggested an affiliation to *Parallelodon*.

Parallelodon parkinsoni Amler, 1987

Original source

Amler (1987): 152, pl. 5 figs 7–8, text-figs 25–26.

Type stratum and age

"Kalkschiefer-Brekzie von Königsberg, cd III α 3-4/ cd III βstr? = V 3b γ /V 3c inf.? (Warnantium)"; Warnantian substage, upper Visean, Mississippian, Carboniferous (Poty & Hance 2006).

Type locality

"Aufschluß am Stollen-Eingang 'Schieferkaut', östliche Seite des oberen Strupbach-Tales, 555 m östlich von Schloß Königsberg; Bl. 5317 Rodheim-Bieber; R6 7800, H 12280 oder kleiner Steinbruch am Waldweg zwischen Königsberg und den 'Lindenhöfen' oberhalb der Fischteiche, 220 m nordwestlich von Schloß Königsberg; BI. 5317 Rodheim-Bieber; R 67050, H 12430. – Parkinson gibt nicht an, von welchem der beiden ihm bekannten Fundorte, die etwa 700 m voneinander entfernt liegen, die Bivalvenreste stammen." [Outcrop at the entrance to the 'Schieferkaut' mining tunnel, eastern side of the

upper Strupbach valley, 555 m east of Königsberg Castle; map sheet 5317 Rodheim-Bieber; R6 7800, H 12280 or small quarry on the forest path between Königsberg and the 'Lindenhöfe' above the fish ponds, 220 m northwest of Königsberg Castle; map sheet 5317 Rodheim-Bieber; R 67050, H 12430. – Parkinson did not specify from which of the two sites known to him, which are about 700 m apart, the bivalve remains originate.]; Biebertal-Königsberg NW of Gießen, Hesse, Germany.

Type material

Holotype (steinkern of a LV, SMF.Mbg.3651) and several paratypes (three steinkerns of two LV and one RV, SMF.Mbg.3233, SMF.Mbg.4005, SMF.Mbg.4006), all stored at the Senckenberg Research Institute and Natural History Museum, Frankfurt am Main.

Macrodon parvus White & Whitfield, 1862

Original source

White & Whitfield (1862): 299.

Type stratum and age

"Chemung Group"; Upper Devonian.

Type locality

"Burlington, Iowa", United States of America.

Type material

Syntypes (AMNH-FI-35930, AMNH-FI-35929) are stored at the American Museum of Natural History, New York.

Remarks

As *Parallelodon parvus* in species lists in Moore (1928). The Triassic *Makrodon* [sic] *parvum* [sic] Hofmann, 1873 is a junior primary homonym.

Parallelodon pauli Friedel & Amler, 2024

Original source

Friedel & Amler (2024): 516, fig. 4a–d.

Type stratum and age

"Strunium, Etroeungt Formation, uppermost Famennian (equivalent to Wocklum Stage), Devonian".

Type locality

"River valley Angerbach, Ratingen near Düsseldorf, North Rhine-Westphalia", Germany.

Type material

Holotype (SMF.Mbg.3029) is a BV steinkern, which is also figured by Drevermann (1902: pl. 14 fig. 9) as *Macrodus semicostatus* McCoy. Paratypes are a steinkern of a LV (SMF.Mbg.3028), also figured by Drevermann (1902: pl. 14 fig. 8) and a steinkern of a RV (BGR-B X13470). Stored at the Senckenberg Research Institute and Natural History Museum, Frankfurt am Main, and Bundesanstalt für Geowissenschaften und Rohstoffe, Berlin.

Parallelodon pergibbosus Mather, 1915

Original source

Mather (1915): 214, pl. 15 fig. 6.

Type stratum and age

"Brentwood limestone"; Brentwood Limestone Member, Bloyd Formation, Bashkirian (Morrowan), Pennsylvanian, Carboniferous (Xie *et al*. 2018).

Type locality

"near Fayetteville, Arkansas (Station 135)"; the station is further specified on p. 247 as "Fayetteville quadrangle: Brentwood limestone lentil. Three and a half miles northeast of Fayetteville, Ark. Abandoned quarry. S. 1/2, sec. 2, T. 16 N., R. 30 W.", United States of America.

Type material

Holotype (FMNH UC 16061) stored at the Field Museum of Natural History, Chicago (formerly Walker Museum, University of Chicago, as indicated by Mather).

Arca permiana d'Orbigny, 1850 [invalid]

Original source

d'Orbigny (1850): 165.

Type stratum and age

"Zechsteindolomit von Könitz"; Zechstein Group, Zechstein 1 (reef facies) Series, Werra Formation, Wuchiapingian, Lopingian, Permian (Geinitz 1848; Friedel *et al.* 2025).

Type locality

"Könitz bei Saalfeld in Thüringen" [Könitz near Saalfeld, Thuringia] (Geinitz 1848), Germany.

Type material

Whereabouts unknown.

Remarks

D'Orbigny erected *A. permiana* for a specimen with smooth shell that had been determined as *A. kingiana* by Geinitz (1848: 9, pl. 4 fig. 8); junior synonym of *P. zerrenneri* (Friedel *et al.* 2025).

Parallelodon perplexus De Koninck, 1885

Original source

De Koninck (1885): 155, pl. 25 figs 33–35.

Type stratum and age

"calcaire carbonifère des Pauquys (étage II)"; Waulsort Formation, upper Tournaisian, Mississippian, Carboniferous.

Type locality

"Pauquys"; Hastière, Namur, Wallonia, Belgium.

Type material

The illustrated syntypes are stored at the Royal Belgian Institute of Natural Sciences, Brussels, coll. no. RBINS a4701 (old no. 761; pl. 25 fig. 33; coll. Dupont) and RBINS a4702 (old no. 764; pl. 25 figs 34–35).

Macrodon pettisensis Miller & Gurley, 1896

Original source

Miller & Gurley (1896): 10, pl. 2 figs 17–18.

Type stratum and age

"Chouteau limestone"; Kinderhookian, Mississippian, Carboniferous (Thompson 2001).

Type locality

"near Sedalia, Missouri", United States of America.

Type material

Stored at the Cincinnati Museum Center, Ohio (formerly University of Cincinnati Museum), with 2 "cotypes" (3907–3908, coll. Miller; see Chappars 1936).

Remarks

Not found in the literature after the original description.

Arca pinguis De Koninck, 1842

Original source

De Koninck (1842): 116, pl. 2 fig. 11a–b.

Type stratum and age

"calcaire de montagne de Visé"; V3b and V3c, Visean, Mississippian, Carboniferous (Demanet 1958: 29; Godefroid *et al.* 2006).

Type locality

"Visé"; quarries south of Visé, on the east side of the Meuse River valley (Demanet 1958; Godefroid *et al.* 2006), Belgium.

Type material

The syntypes are stored in the collection of the Géologie de l'Université Lyon. None of the specimens match the figure. UCBL-EM 35387 and UCBL-EM 35388 are both BV and eligible. Additional, not figured syntypes are UCBL-EM 35389 and UCBL-EM 35390.

Remarks

De Koninck (1885) placed this species in *Parallelodon*.

Parallelodon planus Lutkevich & Lobanova, 1960

Original source

Lutkevich & Lobanova (1960): 29, pl. 2 fig. 4.

Type stratum and age

"Upper Permian" (middle or upper Permian in the Russian Permian time scale; in the discussion Lutkevich & Lobanova 1960 stated that the deposits come from strata up to the Tatarian, corresponding to the latest middle to upper Permian).

Type locality

"Vostochnaya chast' Zapadnogo Verkhoyan'ya, r. Uyana, v logu naprotiv rch. Bittuchan" [eastern part of Western Verkhoyansk, Uyana river, in the ravine opposite Bittuchan river]; Sakha Republic, Russia.

Type material

Holotype stated to be stored at the Academician F.N. Chernyshev Central Geological Research Museum (TsNIGR museum), St Petersburg, Russia (coll. no. 25/7443, pl. 2 fig. 4); however, it is not mentioned in the type catalogue of Romanovskaya *et al*. (1979), who listed other species described in that work.

Arca plicata De Koninck, 1873 [invalid]

Original source

De Koninck (1873): 84, pl. 3 fig. 16a–b.

Type stratum and age

Bleiberger Karbon, Nötscher Schichten (Heritsch 1918); Erlachgraben, Badstub and Nötsch Formation, Visean (Mississippian) to Bashkirian (Pennsylvanian), Carboniferous (Schönlaub 1985; Schraut 1996, 1999).

Type locality

"Bleiberg"; Carinthia, Austria.

Type material

Studied specimen is stored at the Geosphere Austria, Vienna (formerly Geologische Bundesanstalt) under coll. no. 517 (Sieber 1979: A216).

Remarks

Junior primary homonym of the extant species *Arca plicata* Dillwyn, 1817. Placed in *Macrodon*? by Frech (1892) and in *Grammatodon* by Paul (1941).

Parallelodon politus Girty, 1909

Original source

Girty (1909a): 424, pl. 9 fig. 25.

Type stratum and age

"Middle of Capitan formation [...]; Delaware Mountain formation"; Guadalupian, Permian.

Type locality

Capitan Peak (station 2926); [...] Guadalupe Point (station 2931), Guadalupe Mts, Texas. [...] southern Delaware Mts, Texas (station 2969?). The stations are further specified on p. 511–512 as "2926. Guadalupe Mountains, Texas. Just below knob on crest of spur running northward from El Capitan. Part of material from horizon above or below. About 1,000 feet below summit of El Capitan and the top of

the Capitan limestone."; "2931. Guadalupe Mountains, Texas. West side of road at entrance to Guadalupe Canyon. Lower half of the Delaware Mountain sandstone; opposite to station 2903 and at about the same horizon, possibly above."; "2969. Van Horn quadrangle, about 30 miles northeast of Van Horn, in the Delaware Mountains. Same as station 3500 [About 15 miles north of Jones's ranch, Delaware Mountains, 4800-foot hill].", United States of America.

Type material

Holotype (USNM PAL 118225) is stored at the Smithsonian National Museum of Natural History, Paleobiology Collection, Washington, D.C. Additional material was mentioned by Girty (1909a).

Macrodus praecursor Spriestersbach, 1942

Original source

Spriestersbach (1942): 175, pl. 3 fig. 15.

Type stratum and age

"Ohler Schiefer, Unteres Mitteldevon"; Brandenberg-Schichten, Eifelian, Middle Devonian (May 1993).

Type locality

"Alte Halde bei Koppelweide im Alpetal; Blatt Wiehl" [old dump near Koppelweide, northern of Alpe, map sheet Wiehl]; North Rhine-Westphalia, Germany.

Type material

Holotype (BGR-B-ORIG-000183071) is the figured LV; additionally, Spriestersbach mentioned three internal moulds; holotype is stored at the Bundesanstalt für Geowissenschaften und Rohstoffe, Berlin.

Remarks

Based on the general shell morphology, Amler & Friedel (2025) discussed its potential affiliation to *Parallelodon*, but the diagnostic hinge characters are unknown.

Mnataia pribyli Prantl & Růžička, 1955

Original source

Prantl & Růžička (1955b): 5 [Russian], 13 [English], pl. 1 figs 1–3; originally as "*přibyli*".

Type stratum and age

"Choteč Limestones - gγ2 (Middle Devonian)".

Type locality

"Holyně near Prague", Czech Republic.

Type material

The holotype, the only specimen, is damaged and incomplete. No information of storage provided.

Remarks

Prantl & Růžička (1955b) provided a detailed description and assumed an affiliation to the family Pseudocyrtodontidae; Newell (1969: 256) tentatively synonymised *Mnataia* with *Parallelodon*. Amler & Friedel (2025) assumed cyrtodontid or parallelodontid affinities.

Arca prisca Goldfuss, 1841

Original source

Goldfuss (1833–1841): 283, pl. 160 fig. 10.

Type stratum and age

"Uebergangskalk"; Visean, lower Carboniferous (Paul 1941: 124).

Type locality

"Grafschaft Glatz" [Powiat Kłodzki]; Lower Silesian Voivodeship, Poland.

Type material

Shell and steinkern of a LV (BIOB-PAL-GF1026). Stored at the Goldfuss-Museum of the University Bonn.

Remarks

Whidborne (1897: 113, pl. 12 fig. 6) attributed *A. prisca* to the genus *Parallelodon*. However, the specimens which Whidborne based this decision on were considered misidentified by Friedel & Amler (2024), who introduced a new species, *Parallelodon pauli*. Paul (1941) placed the species in *Grammatodon*, and Kakhadze (1942: 232–233) stated the species "undoubtedly belongs to the genus *Parallelodon*" (translated from Georgian).

Macrodon pygmaeus Whiteaves, 1892

Original source

Whiteaves (1892): 299, pl. 39 figs 2–3.

Type stratum and age

"Upper Devonian […]; *Stringocephalus* zone"; Givetian, Middle Devonian (Schumacher 1971).

Type locality

"Lake Winnipegosis, on the north-western shore, at Devils Point, [..] at Dawson Bay, on the south-east side, on a small island to the south-west of Whiteaves Point, and on the south-west side, at the mouth of Steep Rock River", southern Manitoba, Canada.

Type material

Whereabouts of types unknown (compare Bailey 1986: 322).

Remarks

Listed as *Parallelodon* in Whidborne (1896–1897); mentioned but not discussed by Amler (1995).

Parallelodon qinghaiensis Liu in Gu *et al.*, 1976

Original source

Gu *et al.* (1976): 123, pl. 11 figs 5–7.

Type stratum and age

Nuoyinhe Group, upper Permian (Zhang 2009).

Type locality

Delingha, Qaidam Basin, Qinghai; near Yikebiquesi, upper Bayin River, China.

Type material

See *Parallelodon reticulatus* Shih in Fan *et al*. (1962).

Remarks

Replacement name for the secondary homonym *Parallelodon reticulatus* Shih in Fan *et al*., 1962, non McCoy, 1844. Gu *et al*. (1976) wrote (translated from Chinese): "The original name of this species was *Parallelodon reticulatus* (Fan Jiasong *et al*., 1962). Because the species name is repeated with *P. reticulatus* (McCoy, 1844 in Hind 1896–1900), a new name was established." The species was considered a senior synonym of *Parallelodon longjiuensis* Guo, 1985 by Yang *et al*. (2016).

Cucullopsis quadrata Chao, 1927

Original source

Chao (1927): 10, pl. 1 figs 11–13.

Type stratum and age

"*Spirifer taiyuanensis* zone, Houkou limestone, Lincheng coal field"; Houkou limestone, Taiyuan Formation, upper Carboniferous to lower Permian (Fang *et al.* 2009).

Type locality

"Lincheng coal field, S. Chihli (Loc. 158)"; Lincheng County, Xingtai, Hebei, China.

Type material

Number of type specimens not indicated, but three syntypes ("cotypes") are illustrated on pl. 1 figs 11–13 (inv. no. 1220–1222). The syntype with inv. no. 1220 (pl. 1 fig. 11) is also figured by Newell (1969: fig. c6.2). Fang *et al*. (2009) referred to this specimen incorrectly as the "holotype". All stored at the Nanjing Institute of Geology and Palaeontology, Chinese Academy of Sciences, Nanjing.

Palaeanatina quadrata Hall, 1883

Original source

Hall (1883): pl. 79 figs 40–49; description on p. 492 appeared in 1885 [there as *Prorhynchus quadratum*].

Type stratum and age

Upper part of Chemung Group (Hall 1885), Upper Devonian.

Type locality

Smethport, Pennsylvania, United States of America.

Type material

Not traced.

Remarks

Hall (1885) introduced for this species the genus *Prorhynchus*. Linsley (1994) attributed it to the genus *Parallelodon* (see also Damborenea 1987). First listed as nomen nudum by Miller (1877: 199).

Parallelodon*? *quichaurensis Gonzalez, 2006

Original source

Gonzalez (2006): 136, fig. 5c–e.

Type stratum and age

"Middle member of the Mojón de Hierro Formation, *Costatumulus amosi* Zone, Asselian to Early Tastubian?"; Cisuralian, Permian.

Type locality

"4000 m E of puesto Tres Lagunas, Tepuel Hills, Chubut", Argentina.

Type material

The holotype is an external mould of a RV (IPI 2613). Several paratypes are available (IPI 2609, IPI 2612A, IPI 2612B, IPI 2613, IPI 2614, IPI 2616, IPI 2617, IPI 2618). All stored at the Fundación Miguel Lillo at Tucumán, Argentina.

Macrodus ratingensis Paeckelmann, 1913

Original source

Paeckelmann (1913): 249, pl. 4 fig. 9.

Type stratum and age

"Étroeungt"; Velberter Schichten (Fa2d–Tn1a), upper Famennian (Strunian), Upper Devonian (Amler 1995).

Type locality

"Bahneinschnitt und Wegprofil 200 m sw' des Blauen Sees, Ratingen-Cromford" [Railway cutting and section along path 200 m southwest of the Blauer See, Ratingen-Cromford]; near Düsseldorf, North Rhine-Westphalia, Germany.

Type material

Lectotype (RV, steinkern) designated by Amler (1995) and stored at the Senckenberg Research Institute and Natural History Museum, Frankfurt am Main (coll. no. SMF.Mbg.3361 = SMF.Mbg.3029; coll. Drevermann, figured by Paeckelmann 1913: pl. 4 fig. 9 and Amler 1995: pl. 1 fig. 12). Paeckelmann mentioned further material (= paralectotypes); one specimen previously stored at IGP of University of Marburg was transferred to Senckenberg Research Institute and Natural History Museum as well; the whereabouts of the remaining specimens are unknown (Amler 1995).

Remarks

Declared as a nomen dubium by Amler (1995); later placed as a valid species in *Guerichia* Rzehak, 1910 (Posidoniidae) by Amler (2004: 165).

Macrodon rectangulus Mansuy, 1914

Original source

Mansuy (1914): 36, pl. 4 fig. 4a–b, pl. 7 fig. 3a–d.

Type stratum and age

Productus limestones, Permian (unspecified horizon).

Type locality

"Phnom Ta Kreem"; west of Battambang, Cambodia.

Type material

Not traced.

Remarks

As *Parallelodon* in Termier & Termier (1959: 277) and Termier *et al*. (1977: 80).

Grammatodon regularis Hind, 1914

Original source

Hind (1914): 26, pl. 4 figs 12–14a.

Type stratum and age

"The marine bed of Millstone Grit, Hazel Hill and Clint Quarries. The marine band associated with *Glyphioceras spirale* at Congleton Edge"; Namurian (Serpukhovian, Mississippian to Bashkirian, Pennsylvanian), Carboniferous (Waters *et al.* 2014).

Type locality

"Hazel Hill and Clint Quarries. [...] Congleton Edge" (Hind 1914); additionally, he included in the synonymy list a specimen from Sawley, near Ripon previously misidentified in Hind (1897); Yorkshire and Cheshire, United Kingdom.

Type material

The illustrated syntypes are stored at the Natural History Museum, London, coll. Hind. Syntypes are a steinkern of a BV specimen from Sawley (NHMUK PI L 47271; pl. 4 fig. 14), an external mould of a RV from Hazel Hill (NHMUK PI L 47770; pl. 4 fig. 13) and a steinkern of a LV from Hazel Hill (NHMUK PI L 47767; pl. 4 fig. 12).

Parallelodon respectus Reed, 1944

Original source

Reed (1944): 287, pl. 53 fig. 1–1b.

Type stratum and age

"Upper Productus Limestone"; Chhidru Formation (Sameeni 2009), Lopingian, Permian (Henderson & Shen 2020: 889).

Type locality

"S. cliffs of Lunwala Wahan, 1/2 mile S.S.W. Kumra Devi"; Lunwala Wahan near Nali, Khushab, Punjab, Pakistan.

Type material

The holotype, based on a complete and well-preserved shell (GSI type no. 17173 / K 33.318), is stored at the Geological Survey of India, Kolkata.

Byssoarca reticulata McCoy, 1844

Original source

McCoy (1844): 73, pl. 12 fig. 9.

Type stratum and age

Chadian, lower Visean, Mississippian, Carboniferous (according to the collection label of National Museum of Ireland, Dublin).

Type locality

"Millicent, Clane", County Kildare (Griffith in McCoy 1862), Ireland.

Type material

Type series stored at the National Museum of Ireland, Dublin. Lectotype (designated by Hind 1897) is a steinkern with shell preservation (NMING: F7355) figured by McCoy (1844) and Hind (1897: pl. 12 fig. 1). Additional paralectotypes are NMING: F7356, NMING: F5136 and NMING: F5137; all Griffith collection.

Remarks

Hind (1897) placed the species in the genus *Parallelodon* (see also Amler 1987). Note that Shih (in Fan *et al.* 1962) introduced *Parallelodon reticulatus* as a secondary synonym of *P. reticulatus* (McCoy, 1844).

Parallelodon reticulatus Shih in Fan *et al.*, 1962 [invalid]

Original source

Fan *et al.* (1962): 146, pl. 1 fig. 2a–c, text-figs 3–4.

Type stratum and age

Nuoyinhe Group, upper Permian (Zhang 2009).

Type locality

Near Yikebiquesi, upper Bayin [Bayinhe] River, Delingha, Qinghai, China.

Type material

Holotype is a LV, no. 00406; storage uncertain, probably at the Institute of Geology and Geophysics, Chinese Academy of Sciences, Beijing, China.

Remarks

Secondary homonym of *Byssoarca reticulata* McCoy, 1844, which was classified in *Parallelodon* by Hind (1897). Liu in Gu *et al*. (1976) introduced *P. qinghaiensis* as a replacement name.

Macrodon sangamonensis Worthen, 1890

Original source

Worthen (1890): 123, pl. 21 fig. 3, 3a.

Type stratum and age

"Coal Measures"; Sparland Formation, McLeansboro Group, Upper Pennsylvanian, Carboniferous.

Type locality

"Rolls Ford, Sangamon county, Illinois", United States of America.

Type material

Syntype(s) is stored at the Illinois State Museum under the coll. no. ISM 2585 (Leary 1971).

Remarks

Recombined as *Parallelodon sangamonensis* by Morningstar (1922: 210, pl. 11 figs 3–4); also discussed and illustrated in Hoare *et al*. (1979: 31, pl. 3 figs 9–10).

Byssoarca semicostata McCoy, 1844

Original source

McCoy (1844): 73, pl. 11 fig. 35.

Type stratum and age

Middle Limestone or Calp Series (Griffith in McCoy 1862); probably Benbulben Shale Formation of the Tyrone Group (Arundian–Asbian, Visean, Mississippian) (Friedel & Amler 2024), Carboniferous.

Type locality

"Manorhamilton, Manorhamilton", County Leitrim (Griffith in McCoy 1862), Ireland.

Type material

Unfortunately, there is no information available on the number of syntypes studied by McCoy. Specimen NMING: F7357/A, coll. Griffith, figured by McCoy (1844: pl. 11 fig. 35), Hind (1897: pl. 11 fig. 5), Wilson (1967: pl. 3 fig. 9) and Friedel & Amler (2024: fig. 7a), was termed as "the type" in Hind (1897: 158) and is either holotype by monotypy or lectotype by subsequent designation of Hind (1897). The documents of the National Museum of Ireland, Dublin custodians state: "The counterparts of this pair of valves were recently noticed on the reverse of the matrix of the lectotype of *Serpulites carbonarius* (M'Coy), now numbered F7357/B. These were not seen by Hind or Wilson as the specimen was glued to a tablet with the annelid uppermost".

Remarks

Hind (1897) placed the species in the genus *Parallelodon*.

Parallelodon semiellipticus Yanishevsky, 1900

Original source

Yanishevsky (1900): 224, pl. 3 fig. 24.

Type stratum and age

Astafieva-Urbajtis & Ramovš (1985) indicated a Baskhirian (Pennsylvanian, Carboniferous) age, while Mychko *et al.* (2025), based on a wider assessment of the area, attributed strata around the type locality to the Visean (Mississippian) to Bashkirian (Pennsylvanian), Carboniferous.

Type locality

Shartymka River, ca 8 km SE of Polyakovka, Bashkortostan Republic, Russia.

Type material

Type material (KP 426/448) is stored at the A.A. Shtukenberg Geological Museum of Kazan Federal University, Kazan.

Arca* (*Macrodon*) *semilarvis "Keyserling"

Remarks

The name appears first (without authorship) in the Atlas for the paleontological course of Meller & Laguzen (1882, Paleozoologiya, part 2, pl. 2 fig. 15; as *Arca* (*Macrodon*) *semilarvis*), who illustrated a specimen from the Pennsylvanian of the western slope of the Ural Mts. It was also mentioned by Chernyshev (1902), who attributed the species to Keyserling ("Keys.") and referred to it as a replacement name for *Macrodon lacordairianum* Verneuil, non De Koninck. The original source could not be found; it is unclear, if the species was indeed described earlier by Keyserling. If no older source can be detected, the name would be available from Meller & Laguzen (1882).

Macrodon semistriatum Noinsky, 1913 [nomen nudum]

Original source

Noinsky (1913): 122, 133, 691, 696, 704.

Remarks

Noinsky (1913) listed the species from the upper Permian ("Pb2") below the "outpost" at the mouth of the rather large "Biruchya" ravine ("Nizhe 'forposta' u ust'ya dovol'no bol'shogo' 'Biryuch'ya' ovraga") in Samara Oblast (Russia) as new, but he did not describe it. On p. 691 he stated that "it is very close to the common *M. striatum* Schloth., and represents, perhaps, only a variation of it" (translated from Russian). However, this does not constitute a description, hence the name is a nomen nudum Maslennikov (1935) listed the species as *Parallelodon* but again without description.

Carbonarca semseyi Rakusz, 1932

Original source

Rakusz (1932): 93, pl. 4 figs 15–16.

Type stratum and age

"Horizont ζ"; Upper Carboniferous, probably Moscovian (according to Hyžný *et al*. 2013).

Type locality

Dobšiná, "Michaeli-Grube", Slovakia.

Type material

Not traced.

Remarks

Rakusz attributed the authorship to K. Papp (1919: 121) (as "Papp, em. aut."), who had only listed the name as nomen nudum in a footnote. Not found in the literature after the original description.

Macrodon* (?) *shubenacadiensis Dawson, 1868

Original source

Dawson (1868): 302, text-fig. 103.

Type stratum and age

None given, but probably from the Windsor Group (middle to upper Visean, Mississippian, Carboniferous according to Utting 1978).

Type locality

"at Shubenacadie and Windsor, also in Cape Breton"; Nova Scotia, Canada.

Type material

Studied material is stored at the Redpath Museum, McGill University, Montreal, under coll. no. 2818 in the coll. Dawson.

Remarks

Bell (1929) placed the species in the genus *Leptodesma* (Pterineidae).

Parallelodon shachtauensis Nelzina, 1961

Original source

Nelzina (1961): p. 159, fig. 1a–b.

Type stratum and age

"Sakmarskiy yarus, tastubskiy gorizont"; lower Sakmarian, Cisuralian, Permian (see Biakov 2012)

Type locality

"Bashkiriya, gora Shak-Tau" [Bashkortostan Republic, Shakhtau hill]; near Sterlitamak, Russia.

Type material

Figured specimen (holotype) is stored at the Academician F.N. Chernyshev Central Geological Research Museum (TsNIGR museum), St Petersburg, under coll. no. 1/9315 (Kadlets *et al*. 1996: 201).

Remarks

Nelzina (1961) used three different original spellings, "*shachtauensis*" in the heading of the description, "*schacktauensis*" in the discussion of the species and "*shacktauensis*" in the introduction and figure caption. Considering the locality name ("Shak-Tau" as used by Nelzina and "Shakhtau" as the current name), all three variants are acceptable spellings. Since the species was not found in any subsequent work, we hereby fix *shachtauensis* as the correct original spelling according to ICZN Art. 32.2.1.

Parallelodon sibiricus Yanishevsky, 1915

Original source

Yanishevsky (1915): 53 [Russian], 93 [French], pl. 5 figs 6, 13, 16–17.

Type stratum and age

Visean, Mississippian, Carboniferous.

Type locality

"la rive droite de la Tom [...] près de la ville de Tomsk" [on the right bank of the Tom [...] near the city of Tomsk]; Tomsk Oblast, Russia.

Type material

Not traced.

Macrodon simense Chernyshev, 1902 [nomen dubium]

Original source

Chernyshev (1902): 346 [Russian], 667 [German].

Type stratum and age

Upper Carboniferous.

Type locality

Russia (locality unknown).

Type material

Not traced.

Remarks

Chernyshev introduced the species as a new name for "*M.*[*acrodon*] *Lacordairianum* auct. u. a." (non De Koninck), but it is entirely unclear to which authors he referred to. Forms previously misidentified as "*M. lacordairianum*" by Verneuil are referred to as "*M. semilarvis* Keys." Since the respective part of the discussion deals with Upper Carboniferous faunas from the central Ural Mts, it is likely that Chernyshev referred to previously misidentified records from these deposits. Given the uncertainty of the species' identity, material availability and the lack of further discussion in the literature, we consider this species as a nomen dubium.

Macrodus simplex Tornquist, 1896

Original source

Tornquist (1896): 98 [632], pl. 19 fig. 8.

Type stratum and age

"[in der] schiefrigen Facies des Kohlenkalks" (Tornquist 1895: 23) [shaly facies of the Carboniferous Limestone]; middle to upper Visean, Mississippian, Carboniferous (Amler 1987).

Type locality

"Hohlweg unterhalb der Ferme [Bauernhof] Pütig"; along the route from Bourbach-le-Haut to Masevaux, Département Haut-Rhin, France.

Type material

The whereabouts of the material studied by Tornquist (1896) are unknown. He stated the material as belonging to the "Geologische Landesanstalt Elsass-Lothringen". Amler (1987) stated that the Tornquist collection in the Strasbourg Museum was destroyed in a fire (see also Hubmann 2014).

Remarks

Tornquist (1896) considered specimens identified as *Parallelodon obtusus* (Phillips, 1836) by De Koninck (1885) as a different species and introduced *Macrodon simplex*. Potentially a junior synonym of *Parallelodon intermedius* (De Koninck, 1885) according to Amler (1987).

Parallelodon spryi Chapman, 1908

Original source

Chapman (1908): 38, pl. 1 fig. 3.

Type stratum and age

"Silurian (Yeringian) [...]; in yellow sandstone" Yan Yean Formation?, Wenlock–Ludlow, Silurian.

Type locality

"Wandong, Victoria" Wandong, County of Dalhousie, Victoria, Australia.

Type material

Holotype is a LV covered with sediment (coll. no. P 7950). Stored at the Museums Victoria, Melbourne.

Remarks

Mentioned in the type catalogue of Gill & Davies (1968). Systematic classification questionable, may rather be a taxodont protobranch (Amler & Friedel 2025).

Modiola squamifera Phillips, 1836

Original source

Phillips (1836): 209, pl. 5 fig. 22.

Type stratum and age

Top of Lower Scar Limestones; probably Great Scar Limestone, Visean, Mississippian, Carboniferous (Phillips 1836: 241; compare Amler 1987: 160).

Type locality

"Bolland"; south of Ogden Reservoir, west of Queensbury, Bradford, West Yorkshire, United Kingdom.

Type material

Figured specimen is a LV in matrix, stored at the Natural History Museum, London (NHMUK PI OR 97152, coll. Gilbertson).

Remarks

Valid as *P. squamifer* (Hind 1897); also listed in Hudson *et al*. (1966).

Arca squamosa De Koninck, 1842 [invalid]

Original source

De Koninck (1842): 121, pl. 2 fig. 13.

Type stratum and age

"calcaire de Visé"; V3b and V3c, Visean, Mississippian, Carboniferous (Demanet 1958: 29; Godefroid *et al.* 2006).

Type locality

"Visé"; quarries south of Visé, on the east side of the Meuse River valley (Demanet 1958; Godefroid *et al.* 2006), Belgium.

Type material

The illustrated syntypes are stored in the collection of the Géologie de l'Université Lyon. Syntype UCBL-EM 35397 (figured) is a BV specimen; three further BV specimens are available (UCBL-EM 35398-35400).

Remarks

Junior homonym of *Arca squamosa* Lamarck, 1819, renamed as *Arca fimbriata* by De Koninck (1844: 634); see entry for that species for further details.

Grammatodon steinhagei Paul, 1954 [nomen nudum]

Original source

Paul (1954): 44 [6].

Remarks

The species name only occurs (as "*G. steinhagei* Paul mscr.") in a species list in Paul (1954), which was published after his death. Since he did not provide a description, the name is a nomen nudum. The material determined by Paul is located at the Bundesanstalt für Geowissenschaften und Rohstoffe (BGR) Berlin Spandau and derives from lower Visean (Mississippian, Carboniferous) limestones at "Wasserfall bei Velbert (westlicher Steinbruch)" (Velbert, Am Wasserfall, western quarry) in North Rhine-Westphalia, Germany.

Macrodon striatocostatus Herrick, 1888

Original source

Herrick (1888b): 37, pl. 6 fig. 7, pl. 11 fig. 37 [sic, actually fig. 27]; originally as "*striato-costatus*".

Type stratum and age

Waverly Group, Division I, upper part of Berea shale (see tabulated list compiled by Cooper appended to Herrick's article) [Upper Devonian according to Kammer & Roeser 2012].

Type locality

"in shales seventy feet below conglomerate I, in Ashland Co.", Ohio, United States of America.

Type material

Not traced.

Remarks

Not found in the literature after the original description.

Mytulites striatus von Schlotheim, 1820

Original source

von Schlotheim (1820): 31, pl. 6 fig. 3a–c.

Type stratum and age

"Höhlenkalkstein"; Zechstein Group, Zechstein 1 (reef facies) Series, Werra Formation, Wuchiapingian, Lopingian, Permian.

Type locality

"Glücksbrunn, Thuringia"; Altenburg cave, Glücksbrunn near Bad Liebenstein-Schweina, Thuringia, Germany.

Type material

Lectotype is a BV specimen (MB.M.5848.1; old no. Qu. A. 161.2) designated by Logan (1967: 41). Further specimens are stored under the coll. no. MB.M.4858. All are stored at the Museum für Naturkunde, Berlin (coll. Schlotheim).

Remarks

Recently revised as *Parallelodon striatus* by Friedel *et al.* (2025).

Palaearca subarguta De Koninck, 1876

Original source

De Koninck (1876): 287, pl. 16 fig. 8.

Type stratum and age

Etheridge (1878, there as "*Arca*") listed the age of this species as "Carboniferous"; this was repeated by Waterhouse (1958). Campbell & Bein (1971) considered the strata at the locality as probably lower Carboniferous.

Type locality

Burragood, on the right bank of the Paterson River, New South Wales, Australia.

Type material

Whereabouts unknown.

Remarks

Etheridge (1889: 205) attributed the species to *Parallelodon* (as *subarguta*, but *Parallelodon* is masculine). In some cases, the first description is cited as of 1898, which is the publication date of the English translation of De Koninck's (1876) work.

Megalodon suboblongus de Verneuil in Murchison *et al.*, 1845

Original source

Murchison *et al*. (1845): 305, pl. 20 fig. 4.

Type stratum and age

"des calcaires dévoniens"; Devonian limestones; probably lower Famennian (cf. Lebedev *et al*. 2020), Devonian.

Type locality

"des environs de Zadonsk, sur les bords du Don" [from the vicinity of Zadonsk, on the banks of the Don River]; Lipetsk Oblast, Russia.

Type material

Not traced.

Remarks

Based on the morphology, Amler & Friedel (2025) suggested a probable affiliation with *Parallelodon*.

Parallelodon subperlongi Gan & Yin, 1978

Original source

Gan & Yin (1978): 310, pl. 109 figs 23, 27.

Type stratum and age

Wujiaping Formation, Lopingian, Permian (Wang *et al*. 2024).

Type locality

Leping, Pingba, Guizhou Province, South China (Yang *et al.* 2015), China.

Type material

Holotype is a LV, no. GI-112 (pl. 109 fig. 23); storage unknown. Fang *et al*. (2009) listed the storage institution for bivalve material with a similar inventory number as "Regional Geological Survey Team of Guizhou Province", yet without providing details.

Remarks

Used as valid species by Yang *et al*. (2016).

Arca substriata Krotov, 1885

Original source

Krotov (1885): 245, pl. 3 fig. 12.

Type stratum and age

"Artinskian strata", Cisuralian, Permian.

Type locality

"Naydena nizhe s. V.-Yaz'vy, na r. Yaz've" [found below Verkhnyaya Yazva, at the Yazva River]; near the village of Antipina, Perm Krai, Russia.

Type material

Type material of another parallelodontid taxon described by Krotov (1885) is stored at the A.A. Shtukenberg Geological Museum of Kazan Federal University, Kazan; material of *A. substriata* seems to be missing though.

Remarks

Friedel *et al.* (2025) placed the species in the genus *Parallelodon*.

Parallelodon*? *subtilistriatus Wanner, 1922

Original source

Wanner (1922): 72, pl. 154 fig. 4a–b.

Type stratum and age

Permian beds at Soefa, Timor (Waterhouse 1987: 214).

Type locality

"Soefa bei Baung, Amarassi"; East Nusa Tenggara, Kupang, West Timor, Indonesia.

Type material

The figured specimen (BIOB-PAL-Wanner-42) and additional material (BIOB-PAL-Wanner-65) are stored at the Bonner Institute of Organismic Biology, University of Bonn.

Remarks

Misspelt as *P. subliratus* by Reed (1944: 289). Mentioned by Charlton *et al*. (2002: 760).

Arca subtumida d'Orbigny, 1850 [invalid]

Original source

d'Orbigny (1850): 165.

Type stratum and age

"untere Zechsteine"; Zechstein Group, Zechstein 1 (reef facies) Series, Werra Formation, Wuchiapingian, Permian (Geinitz 1848).

Type locality

"Corbusen bei Ronneburg, Pößneck, Glücksbrunn, Wartburg bei Seebach in Thüringen" [Korbußen near Ronneburg, Pössneck, Glücksbrunn, Wartburg hill near Seebach, Thuringia] (Geinitz 1848), Germany.

Type material

Whereabouts unknown.

Remarks

D'Orbigny introduced *A. subtumida* for a specimen that Geinitz had determined as *A. tumida* (1848: 9, pl. 4 fig. 7). Considered a junior synonym of *P. striatus* (von Schlotheim, 1820) by Friedel *et al.* (2025).

Cucullaea sulcata Sedgwick, 1829 [invalid]

Original source

Sedgwick (1829): 119.

Type stratum and age

"Magnesian Limestone"; Ford or Raisby Formation, Zechstein, Changhsingian, Lopingian, Permian.

Type locality

"Humbleton"; County Tyne and Wear (formerly Durham), United Kingdom.

Type material

Lectotype designated by Friedel *et al.* (2025) is a steinkern of a LV and RV (NHMUK PI PL 98, coll. Sowerby), stored at the Natural History Museum, London. Lectotype is figured by King (1850: pl. 15 fig. 8) and Friedel *et al.* (2025: fig. 3a).

Remarks

Considered a junior synonym of *Parallelodon striatus* (von Schlotheim, 1820) by Friedel *et al.* (2025).

Macrodon sulcatus Weller, 1906

Original source

Weller (1906): 450, pl. 2 figs 6–9.

Type stratum and age

"Glen Park Limestone"; Glen Park Formation, Kinderhookian, Mississippian, Carboniferous.

Type locality

"Goetz's lime quarry, just below Glen Park station on the St. Louis, Iron Mountain and Southern Railroad, about twenty-five miles south of St. Louis, in Jefferson County, Missouri", United States of America.

Type material

Williams (1931) indicated the syntypes ("cotypes") to be stored at the Field Museum of Natural History, Chicago (FMNH UC 11335).

Remarks

First listed as *Parallelodon* by Moore (1928); further described and discussed by Williams (1931, 1943).

Parallelodon sundaicum Hamlet, 1928

Original source

Hamlet (1928): 82, pl. 12 fig. 18; originally as *sundaïcum*.

Type stratum and age

"Perm" (lower Permian Soefa beds according to Waterhouse 1980).

Type locality

"Töo"; East Nusa Tenggara, West Timor, Indonesia.

Type material

Whereabouts unknown.

Remarks

Since *Parallelodon* is masculine, the species epithet should read *sundaicus*. Also listed by Waterhouse (1980) and mentioned by Charlton *et al*. (2002: 760).

Grammatodon* (*Cosmetodon*) ? *suzukii Nakazawa, 1999

Original source

Nakazawa (1999): 4, fig. 4-1a–b.

Type stratum and age

"Black shale of the uppermost fossil horizon, in the Hovtinden Member (F11)"; Hovtinden Mb., Kapp Starostin Formation, Lopingian, Permian (Bond *et al*. 2018).

Type locality

"Festningen, Spitsbergen", Norway.

Type material

Holotype is an external mould of a BV specimen (HP 100050). Should have been stored at the Department of Geology and Mineralogy, Faculty of Science, Kyoto University; probably stored at the Kyoto University Museum now, but missing (Friedel *et al.* 2025).

Remarks

Described as *Parallelodon suzukii* by Friedel *et al.* (2025).

Parallelodon tamuganeensis Z.-R. Yang in Wei & Z.-R. Yang, 1983

Original source

Wei & Yang (1983): 391, pl. 149 fig. 34.

Type stratum and age

Shiqiantan Formation, "Middle Carboniferous" (in Zhang 2009 as "Shihchientan Formation", Pennsylvanian, Carboniferous).

Type locality

Kelameli [also transliterated as Kelamaili], East Junggar, Xinjiang, China.

Type material

Illustrated specimen: XBA-154 (no holotype indicated); stored at Xinjiang Bureau of Geology and Mineral Resources, Urumqi, China.

Parallelodon tenuicostatus Yanishevsky, 1900

Original source

Yanishevsky (1900): 218, pl. 3 fig. 19.

Type stratum and age

Astafieva-Urbajtis & Ramovš (1985) indicated a Baskhirian (Pennsylvanian, Carboniferous) age, while Mychko *et al.* (2025), based on a wider assessment of the area, attributed strata around the type locality to the Visean (Mississippian) to Bashkirian (Pennsylvanian), Carboniferous.

Type locality

Shartymka River, ca 8 km SE of Polyakovka, Bashkortostan Republic, Russia.

Type material

Yanishevsky did not designate a holotype. The type material (KP 426/443), a LV and a RV, is stored at the A.A. Shtukenberg Geological Museum of Kazan Federal University, Kazan.

Parallelodon tenuis De Koninck, 1885

Original source

De Koninck (1885): 148, pl. 24 fig. 23.

Type stratum and age

"calcaire carbonifère de Visé (étage III)"; V3b and V3c, Visean, Mississippian, Carboniferous (Demanet 1958: 29; Godefroid *et al.* 2006).

Type locality

"Visé"; quarries south of Visé, on the east side of the Meuse River valley (Demanet 1958; Godefroid *et al.* 2006), Belgium.

Type material

The illustrated syntype is stored at the Royal Belgian Institute of Natural Sciences, Brussels, coll. no. RBINS a4680 (old no. 967; coll. de Ryckholt).

Cucullaea tenuistria McCoy, 1844

Original source

McCoy (1844): 72, pl. 12 fig. 10.

Type stratum and age

Dinantian (Tournaisian–Visean), Mississippian, Carboniferous; probably Mullaghfin Formation (Asbian, Visean) (pers. com. I. Somerville 2024).

Type locality

"Cregg, Nobber", County Meath (Griffith in McCoy 1862), Ireland.

Type material

The total number of syntypes is not recorded, three specimens are kept in the Griffith coll. at the National Museum of Ireland, Dublin. The only specimen (NMING: F7297) figured by McCoy (1844: pl. 12 fig. 10) and Friedel & Amler (2024: fig. 6g) was called "the type specimen" by Hind (1897: pl. 11 fig. 4, 4a), which acts as designation of a lectotype. The two other specimens are paralectotypes NMING: F5133 and NMING: F7298.

Remarks

Cucullaea tenuistria was renamed *Arca M'Coyana* by De Koninck (1851: 670), only for the risk of confusion with the Cretaceous species *Arca tenuistriata* Münster in Goldfuss, 1837 (p. 142, erroneously listed as *Arca tenuistria* Münster in the index: 305). Since no homonymy exists, the name is a junior objective synonym of *C. tenuistria*. Apparently, De Koninck (1885: 162) realised that as well, ignored his earlier renaming, and used *Parallelodon tenuistria* as the valid name. Note that the species name is a noun in apposition.

Macrodon tenuistriatus Meek & Worthen, 1866

Original source

Meek & Worthen (1866a): 17.

Type stratum and age

"Coal Measures"; Pennsylvanian, Carboniferous.

Type locality

Springfield, Illinois, United States of America.

Type material

Not traced.

Remarks

As *Macrodon* in the heading of the description, but in the text the authors introduced the genus *Parallelodon* as a replacement name for *Macrodon* Buckman, 1845, non Schinz, 1822, and used the combination *Parallelodon tenuistriatus*. The species was discussed and illustrated by Hoare *et al*. (1979: 31, pl. 3 figs 11–13) and Amler (1987: 168, pl. 5 fig. 5).

Arca tessellata De Koninck, 1842

Original source

De Koninck (1842): 118, pl. 3 fig. 2a–b.

Type stratum and age

"calcaire anthraxifére supérieur de Visé"; V3b and V3c, Visean, Mississippian, Carboniferous (Demanet 1958: 29; Godefroid *et al.* 2006).

Type locality

"Visé"; quarries south of Visé, on the east side of the Meuse River valley (Demanet 1958; Godefroid *et al.* 2006), Belgium.

Type material

The illustrated LV (UCBL-EM 35419) is stored in the collection of the Géologie de l'Université Lyon.

Remarks

Paul (1941) placed the species in *Grammatodon*; not found in the literature afterwards.

Parallelodon theciformis De Koninck, 1885

Original source

De Koninck (1885): 158, pl. 24 figs 26–27.

Type stratum and age

"calcaire carbonifère de Visé (étage III)"; V3b and V3c, Visean, Mississippian, Carboniferous (Demanet 1958: 29; Godefroid *et al.* 2006).

Type locality

"Visé"; quarries south of Visé, on the east side of the Meuse River valley (Demanet 1958; Godefroid *et al.* 2006), Belgium.

Type material

The illustrated syntype is stored at the Royal Belgian Institute of Natural Sciences, Brussels, coll. no. RBINS a4717 (old no. 971, coll. De Koninck).

Remarks

De Koninck (1885) used the spelling *thecidiformis* in the plate caption, but the species has been consistently referred to as *P. theciformis* (e.g., Hind 1897: 171; Amler 1987: 162; Friedel & Amler 2024: 522, 528).

Parallelodon theodorensis Waterhouse, 1987

Original source

Waterhouse (1987): 136, pl. 1 figs 12–17, 19.

Type stratum and age

"Top Flat Formation", Lopingian, Permian.

Type locality

"L 4580"; quarry along highway north of Theodore, Bowen Basin, Banana Shire, Queensland, Australia.

Type material

Holotype is a RV (UQF 74304; pl. 1 fig. 17). Additional material is illustrated (UQF 74302, UQF 74303, UQF 74305, UQF 74306, UQF 74307, UQF 74308). Stored at the Department of Geology and Mineralogy, University of Queensland, Brisbane.

Parallelodon tieni Chao, 1927

Original source

Chao (1927): 9, pl. 1 figs 7–9.

Type stratum and age

"*Spirifer taiyuanensis* zone, Houkou limestone, Lincheng coal field"; Houkou limestone, Taiyuan Formation, upper Carboniferous to lower Permian (Fang *et al.* 2009).

Type locality

"Lincheng coal field, S. Chihli ([...] Loc. 158)"; Lincheng County, Xingtai, Hebei, China.

Type material

Synypes are four specimens (given by the author as "cotypes"), with three of them illustrated on pl. 1 figs 7–9 (inv. no. 1217–1219); all stored at the Nanjing Institute of Geology and Palaeontology, Chinese Academy of Sciences, Nanjing.

Macrodon*?? *triangularis Herrick, 1888

Original source

Herrick (1888a): 74, pl. 8 fig. 8.

Type stratum and age

middle Waverly Group, Kinderhookian, Tournaisian, Mississippian, Carboniferous.

Type locality

Licking County, Ohio (no exact locality indicated in the text), United States of America.

Type material

Not traced.

Remarks

Placed in *Schizodus* (Trigoniida: Schizodidae) by Herrick (1888b: 116).

Parallelodon trimuensis Reed, 1944

Original source

Reed (1944): 288, pl. 56 fig. 13.

Type stratum and age

"Lower *Productus* Limestone"; corresponds to Amb Formation (Douglass 1970), Roadian–Wordian, Guadalupian, Permian (Henderson & Shen 2020).

Type locality

"Northern end of hill 1/2 mile S.S.W. of pt. 1185, S. of Trimu Wahan (Sheet 38P/14S)"; near Musa Khel, Punjab, Pakistan.

Type material

Holotype, based on only one specimen (GSI Type No. 17174 / K30.876), is stored at the Geological Survey of India, Kolkata.

Macrodon truncatus Walcott, 1884

Original source

Walcott (1884): 243, pl. 8 fig. 2.

Type stratum and age

"Lower portion of Lower Carboniferous limestone"; Mississippian, Carboniferous (Bailey 2021).

Type locality

"East slope of a small conical hill, on the east side of Secret-cañon-roas Cañon, Eureka, District, Nevada", United States of America.

Type material

Walcott mentioned only a single specimen. The syntype (probably holotype by monotypy, coll. no. USNM PAL 14382) is stored at the Smithsonian National Museum of Natural History, Paleobiology Collection, Washington, D.C. (see also Schuchert 1905).

Remarks

Not found in the literature after the original description.

Arca tumida J. De C. Sowerby, 1824 [invalid]

Original source

Sowerby (1824): 116, pl. 474 fig. 3.

Type stratum and age

"Magnesian Limestone"; Ford or Raisby Formation, Zechstein, Changhsingian, Lopingian, Permian.

Type locality

"Tunstall Hill, near Sunderland", Durham, United Kingdom.

Type material

Sowerby referred to "plentiful" material. The only available syntype (now lectotype by subsequent designation by Friedel *et al.* 2025) (NHMUK PI PL 805) is a BV steinkern. Stored in the Sowerby collections of the Natural History Museum, London.

Remarks

Recently considered as a junior synonym of *Parallelodon striatus* (von Schlotheim, 1820) by Friedel *et al.* (2025).

Parallelodon undatus De Koninck, 1885

Original source

De Koninck (1885): 156, pl. 25 fig. 15.

Type stratum and age

"calcaire carbonifère des Pauquys (étage II)"; Waulsort Formation, upper Tournaisian, Mississippian, Carboniferous.

Type locality

"Pauquys"; Hastière, Namur, Wallonia, Belgium.

Type material

The illustrated syntype is stored at the Royal Belgian Institute of Natural Sciences, Brussels, coll. no. RBINS a4704 (old no. 653; coll. Dupont).

Remarks

Considered a *Cypricardinia* (Cardiniidae) by Paul (1941); placed with question mark in *Parallelodon* by Amler (1987).

Parallelodon uralicus Muromtseva in Muromtseva & Guskov, 1984

Original source

Muromtseva & Guskov (1984): 37, pl. 36 fig. 7.

Type stratum and age

Kungurian, lower Permian.

Type locality

"Zapadnyy Ural, reki Sylva i Kishert'" [western Urals, Sylva and Kishert rivers]; Perm Krai, Russia.

Type material

The holotype (coll. no. 64/11570) is a LV stored at the Academician F.N. Chernyshev Central Geological Research Museum (TsNIGR museum), St Petersburg, Russia.

Parallelodon vadaszi Rakusz, 1932

Original source

Rakusz (1932): 174, text-fig. 25, pl. 9 fig. 12; originally as "*vadászi*".

Type stratum and age

"Oberkarbon"; Pennsylvanian, Carboniferous (probably Moscovian; see Gulyás-Kis 2004).

Type locality

"Eisenbahneinschnitt von Nagyvisnyó" [Railway cut at Nagyvisnyó]; Heves County, Hungary.

Type material

Not traced.

Remarks

Not found in the literature after the original description.

Pholadomya venusta Steininger, 1853

Original source

Steininger (1853): 49, pl. 2 fig. 7a–b.

Type stratum and age

Givetian, Middle Devonian (Amler & Friedel 2025).

Type locality

Büdesheim (Eifel), Rhineland-Palatinate, Germany.

Type material

Not traced.

Remarks

Beushausen (1895: 39, pl. 4 figs 3–4) synonymised *Pterinea brilonensis* Kayser, 1872 with *Pholadomya venusta* Steininger, 1853 and placed the species in *Macrodus*. Holzapfel (1895: 221) and Amler & Friedel (2025) placed it in *Parallelodon*.

Arca verneuilliana De Koninck, 1842

Original source

De Koninck (1842): 120, pl. 2 fig. 12a–d; originally as "*Verneuilliana*".

Type stratum and age

"calcaire de Visé"; V3b and V3c, Visean, Mississippian, Carboniferous (Demanet 1958: 29; Godefroid *et al.* 2006).

Type locality

"Visé"; quarries south of Visé, on the east side of the Meuse River valley (Demanet 1958; Godefroid *et al.* 2006), Belgium.

Type material

The syntypes are stored in the collection of the Géologie de l'Université Lyon. None of the specimens match the figure perfectly, only the BV syntype UCBL-EM 35391 seems to be the illustrated one (fig. 12c). Additional, but not figured, material (UCBL-EM 35392 to 35396) is available. We also found a specimen labelled as syntype (A83703) in the Muséum national d'Histoire naturelle, Paris (JCF pers. obs.), but its status as such is unclear.

Remarks

Placed in *Parallelodon* by De Koninck (1885) and Hind (1897). Misspelt as "*verneuilianus*" in all subsequent publications.

Macrodus villmarensis Beushausen, 1895

Original source

Beushausen (1895): 38, pl. 4 fig. 2.

Type stratum and age

"Stringocephalenkalk"; upper Givetian, Middle Devonian.

Type locality

"Villmar"; Villmar near Limburg on the Lahn, Hesse, Germany.

Type material

The type material, consisting of only one BV specimen (coll. no. MWNH-DEVO-000232) is stored at the Museum Wiesbaden, Hessisches Landesmuseum für Kunst und Natur. Beushausen selected the type material for *M. villmarensis* from the syntypes of *Arca inermis* G. Sandberger & F. Sandberger, 1854. The type material of both species is stored under the same number.

Remarks

Beushausen (1895) separated the short variety of *Arca inermis* G. Sandberger & F. Sandberger, 1854 [= *Parallelodon michelini* (d'Archiac & de Verneuil, 1842)] as a new species, *Macrodus villmarensis*; see also discussion of *Arca inermis*.

Parallelodon vokesi Elias, 1957

Original source

Elias (1957b): 753, pl. 91 figs 5–12.

Type stratum and age

Redoak Hollow Formation, Upper Mississippian, Carboniferous.

Type locality

Locality not stated in the original publication. Tomlinson in Elias (1957a) listed in the foreword four localities in the vicinity of the village of Milo (Carter County, Oklahoma), but it is unclear from which of those the material is derived.

Type material

Not traced.

Macrodon volgense Stuckenberg, 1905

Original source

Stuckenberg (1905): 82 [Russian], 135 [German], pl. 10 fig. 19.

Type stratum and age

"korallovyy gorizont'" [coral horizon]; age not specified in Stuckenberg (1905), but crinoid material from the same deposits was considered Gzhelian (uppermost Carboniferous) in age by Mirantsev & Rozhnov (2011).

Type locality

"Samarskaya Luka, Tsarev Kurgan'"; Samara Oblast, Russia.

Type material

Not traced.

Remarks

Not found in the literature after the original description.

Parallelodon walciodorensis De Koninck, 1885

Original source

De Koninck (1885): 161, pl. 25 figs 13, 27–28, 43; originally as "*Walciodorensis*".

Type stratum and age

"calcaire de Waulsort et des Pauquys (étage II)"; Waulsort Formation, upper Tournaisian, Carboniferous.

Type locality

"Pauquys"; Hastière, Namur, Wallonia, Belgium.

Type material

The illustrated syntypes are stored at the Royal Belgian Institute of Natural Sciences, Brussels, coll. no. RBINS a4727 (old no. 778; pl. 25 fig. 13; coll. Dupont), RBINS a4728 (old no. 707; pl. 25 figs 27–28; coll. Dupont) and RBINS a4729 (old no. 708; pl. 25 fig. 43; coll. Dupont).

Macrodon whitei Gemmellaro, 1892

Original source

Gemmellaro (1892): 7.

Type stratum and age

"Calcare grossolano con *Fusulina*"; Wordian to upper Permian (Sanfilippo *et al.* 2017).

Type locality

"Pietra di Salomone"; 3 km S of Palazzo Adriano, Palermo, Italy.

Type material

Gemmellaro did not designate types. His description is based on two syntypes, but only the steinkern of a RV illustrated in Gemmellaro (1896) is stored at the Museo Geologico Università Palermo, Italy (MGUP-001.265).

Remarks

Only briefly described in Gemmellaro (1892: 7); extended description and illustration in Gemmellaro (1896: 23 [misprinted as "197"], pl. 21 fig. 7).

Parallelodon yamansuensis Z.-R. Yang in Wei & Z.-R. Yang, 1983

Original source

Wei & Yang (1983): 391, pl. 149 fig. 13a–b.

Type stratum and age

Yamansu Formation, Mississippian, Carboniferous (see also Zhao *et al*. 2019).

Type locality

Hami Mt Pass, Xinjiang, China.

Type material

Yang did not designate a holotype. The illustrated specimen (XBA-132) is s a BV and stored at Xinjiang Bureau of Geology and Mineral Resources, Urumqi, China.

Parallelodon yangshanensis Wang, 1982

Original source

Wang (1982): 460, pl. 2 figs 15–21.

Type stratum and age

Lower section of the Miaochong Formation; Upper Carboniferous (Zhang 2009).

Type locality

West side of Yangshan Coal Mine, Gushi County, Henan, China.

Type material

The holotype (Y0075) and paratypes (Y0076 to Y0082) are stored at the Henan Geological Bureau, Zhengzhou, China.

Remarks

Not found in the literature after the original description.

Arca zerrenneri von Schauroth, 1853

Original source

von Schauroth (1853): 192 [48], fig. 17a–b.

Type stratum and age

"Dolomite von Pösneck"; Zechstein Group, Zechstein 1 (reef facies) Series, Werra Formation, Wuchiapingian, Lopingian, Permian.

Type locality

"Pösneck" [Pößneck]; Thuringia, Germany.

Type material

Species based on only one BV specimen (NMC-F-1185), which is stored at the Naturkundemuseum Coburg.

Remarks

Recently revised as *Parallelodon zerrenneri* by Friedel *et al.* (2025).

Discussion

We uncovered 16 genus-group names used for Palaeozoic species that were originally or are nowadays placed in Parallelodontidae. Eleven of them are presently treated as valid, four are invalid (three junior homonyms, one junior objective synonym) and one is unavailable (nomen nudum). Nine (seven of which are valid) have a Palaeozoic type species: one from the Silurian, three from the Devonian (including one invalid), three from the Carboniferous (including one invalid), one from the Permian and one from

Table 1. Number of species-group names by status and systematic classification.

Status/systematic placement	valid	invalid	questionably valid	nomen dubium	unavailable	**total**
in Parallelodontidae	182	25	5	1	7	**220**
questionably in Parallelodontidae	18		1			**19**
in other families	7	1				**8**
total	**207**	**26**	**6**	**1**	**7**	**247**

unspecified Permo-Carboniferous strata. Six genus-group names (four of which are valid) are based on Mesozoic type species: five from the Jurassic (including two invalid) and one from the Cretaceous. Note, however, that the abovementioned numbers do not account for all genus-group names of Mesozoic parallelodontids.

Of the eleven valid genera, seven are still part of the family Parallelodontidae today, which includes four genera with Mesozoic type species (*Cosmetodon*, *Grammatodon*, *Nemodon* and *Parallelodon*) and three with Palaeozoic type species (*Carbonarca*, *Cucullopsis* and *Obliquidon*). Two (*Mnataia*, *Sufia*) were only questionably assigned to the family and two (*Alula*, *Alytodonta*) have been assigned to different families.

In the species group, we detected 247 names, of which 213 are (potentially) valid, 26 are invalid (14 subjective synonyms, three objective synonyms, nine homonyms), seven are unavailable (six nomina nuda, one included in a work placed on the Official Index of Rejected and Invalid Works) and one is uncertain (nomen dubium) (Table 1). Of the 247 names, 240 were proposed as species, five as varieties and two as subspecies. Of the 213 valid names, six are of questionable taxonomic status (e.g., potential synonyms), seven are considered to belong in different families today, and for another 19 the placement in Parallelodontidae is uncertain (Table 1). It should be noted, however, that many of the remaining taxa currently considered valid in the family require revision as well.

The most significant contributions to species numbers in parallelodontids were made by De Koninck (1885) in his monograph on the Carboniferous bivalves of Belgium with 30 new species, as well as by De Koninck (1842–1844) and McCoy (1844) with nine and eight new species, respectively. Most of the available species-group names were described from Carboniferous deposits (141, of which 110 are currently considered valid), followed by Permian (54, with 45 being valid) and Devonian (34, with 20 being valid) strata. An additional two species come from uncertain Devonian/Carboniferous and another five from Carboniferous/Permian deposits, respectively. Only a limited number of species, none of which are considered to belong to the Parallelodontidae any longer, were obtained from Silurian (3) and Ordovician (1) beds (Fig. 1A). Most of the species-group names were introduced from European material (113; valid: 75), with 43 from Belgium alone, followed by Asia (58; valid: 49), with 30 from Russia (here all records are attributed to Asia) and North America (54; valid: 47), with 47 from the United States (Fig. 1B). Comparatively few species were described from the remaining continents Australia (12; valid: 9), South America (2; valid: 1) and Africa (1 valid).

As a result of the thorough and detailed compilation of this catalogue, we found a surprisingly high number of names that occurred neither in the literature of the past decades, nor in taxonomic databases, suggesting unexpected levels of diversity for the Parallelodontidae at times. Partly, names may have been rendered obsolete due to the inadequacy of descriptions and illustrations (or the lack thereof) or the absence of type material. Nonetheless, it shows that extensive literature research is unavoidable when trying to capture the entirety of a group's taxonomic inventory. It is likely that even this catalogue is

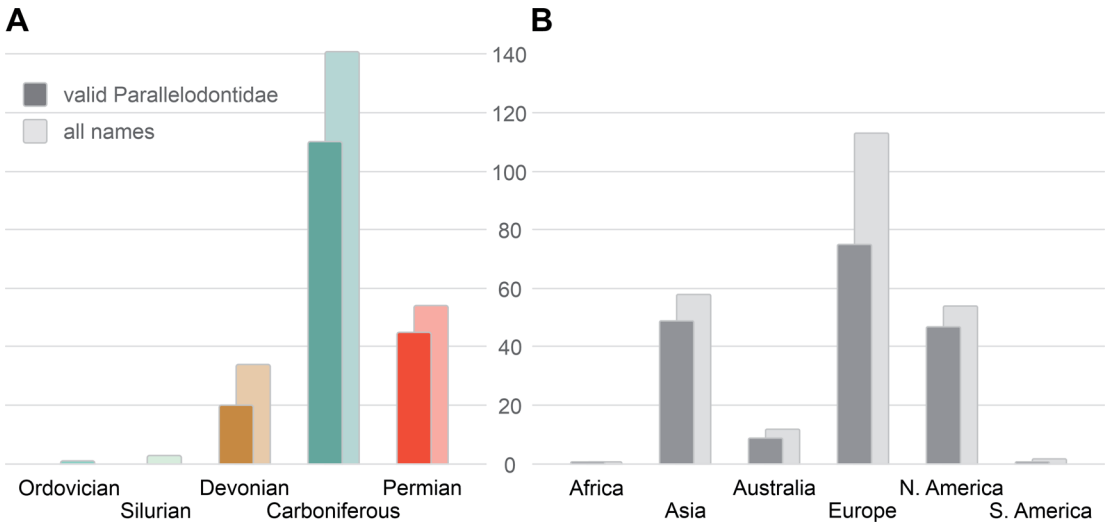

Fig. 1. Number of species-group names for stratigraphic periods (**A**) and continents (**B**). Light coloured bars represent all names, i.e., valid, invalid and uncertain names, including taxa that are no longer in Parallelodontidae. Unavailable names were not considered. Opaque bars refer to valid species-group names in Parallelodontidae. For A, seven species that could not be unambiguously assigned to a single period were excluded. For exact numbers, see Discussion. Note that for the Ordovician and Silurian, no valid Parallelodontidae exist.

not exhaustive either. Yet, it constitutes a significant component in the process of completing taxonomic databases and emphasises the importance of literature work.

Acknowledgements

Our sincere thanks go to following colleagues for their help during collection visits, type material research or for providing photographs or specimens: M.H. Benítez (Fundación Miguel Lillo at Tucumán, Argentina), A. Folie and J. Lalanne (Institut royal des Sciences naturelles de Belgique, Brussels, Belgium), A. Howell (Redpath Museum, McGill University, Montreal, Canada), A.R. Bashforth and L.J. Cotton (Natural History Museum of Denmark, Copenhagen, Denmark), R. Emmanuel (Université de Lyon, Laboratoire de Géologie de Lyon, France), M. Didier, C. Sagne and J.-M. Pacaud (Muséum national d'Histoire naturelle, Paris, France), K. Janneau (Jardin des Sciences de l'Université de Strasbourg, France), F. Hrouda (Museum für Naturkunde, Gera, Germany), C. Kurz (Naturkundemuseum im Ottoneum Kassel, Germany), M. Aberhan, A. Abele-Rassuly, D. Korn and D. Ware (Museum für Naturkunde, Berlin, Germany), A. Ehling and T. Kollaske (Bundesanstalt für Geowissenschaften und Rohstoffe, Berlin, Germany), T. Wiese (Bundesanstalt für Geowissenschaften und Rohstoffe, Hannover, Germany), G. Heumann (Goldfuss-Museum, Universität Bonn, Germany), M. Wilmsen and R. Winkler (Senckenberg Naturhistorische Sammlungen Dresden, Museum für Mineralogie und Geologie, Germany), H. Siedel (Technische Universität Dresden, Germany), A. Gehler and L. Leschner (Geo-Zentrum Göttingen, Germany), W. Werner (SNSB – Bavarian State Collection for Palaeontology and Geology, Munich, Germany), M. Albrecht (Martin-Luther-Universität Halle-Wittenberg, Germany), O. Wings (Naturkundemuseum Bamberg, Germany), E. Mönnig and D. Grabow (Naturkunde-Museum Coburg, Germany), P. Chellouche (Natural History Museum Osnabrück, Germany), T. Wappler (Hessisches Landesmuseum Darmstadt, Germany), L. Schöllmann (LWL–Museum für Naturkunde, Münster, Germany), H.M. Weber and A. Reisdorf (Ruhr Museum Essen, Germany), U. Jansen, C. Franz and S. Hirschmann (Forschungsinstitut und Naturmuseum Senckenberg, Frankfurt am Main, Germany), U. Leppig (Institut für Geo- und Umweltwissenschaften – Geologie, Universität Freiburg, Germany),

B. Gaitzsch (Institute of Geology, TU Bergakademie Freiberg, Germany), S. Brandt (Chemnitz, Germany), H. Kaufmann (Burgwald, Germany), D. Weyer (Berlin, Germany), G. Schraut (Meisenheim, Germany): Müller (Freilingen, Germany), J. Murray (The James Mitchell Museum, University of Galway, Ireland), N. Monaghan and P. Roycroft (National Museum of Ireland – Natural History, Dublin, Ireland), M. Parkes† and S. Power (Geological Survey of Ireland, Dublin, Ireland), C. D'Arpa (Museo Geologico G.G. Gemmellaro, Università degli Studi di Palermo, Italy), S. Dominici (Museo di Storia Naturale di Firenze, Italy), T. Ubukata (Kyoto University, Japan), H.A. Nakrem (Natural History Museum, University of Oslo, Norway), T. Woroncowa-Marcinowska (Muzeum Geologiczne, Warszawa, Poland), J. Muszer and P. Raczyński (Uniwersytet Wrocławski, Wrocław, Poland), V.V. Silantiev and R.D. Petrova (Kazan Federal University, Institute of Geology and Petroleum Technologies, Kazan, Russia), A.S. Biakov (North-East Interdisciplinary Scientific Research Institute, Magadan, Russia), L.E. Shilekhin (Borissiak Paleontological Institute, Russian Academy of Sciences & Lomonosov Moscow State University, Moscow, Russia): Shepard and L. Neep (British Geological Survey, Keyworth, UK), K. Collins and J. Todd (The Natural History Museum, London, UK), S. Humphrey (The Great North Museum, Newcastle upon Tyne, UK), M. Riley (Sedgwick Museum of Earth Sciences, University of Cambridge, UK), D. Bond (Faculty of Science and Engineering, University of Hull, UK), P. Wignall (Faculty of Environment, University of Leeds, UK) and T.E. Yancey (Department of Geology and Geophysics, Texas A&M University, College Station, USA): Mayer (The Field Museum, Chicago, USA). We also want to thank the following colleagues for providing literature and precise publication dates: C. Vos (Belgium), Kei Sato (Kanazawa University, Japan), A. Kaim (Polish Academy of Sciences, Warsaw, Poland), A.S. Biakov (North-East Interdisciplinary Scientific Research Institute, Magadan, Russia) and M.V. Vinarski (Saint Petersburg State University, Russia), M. Hautmann (Paläontologisches Institut und Museum, Universität Zürich, Switzerland), S. Schneider (CASP Cambridge, UK), R.E. Plotnick (University of Illinois, Chicago, USA) and G. Coan (Vero Beach, Florida, USA). Many thanks to Le Yao (Nanjing Institute of Geology and Palaeontology, Chinese Academy of Sciences, Nanjing, China) for helping with Chinese institutions. We are grateful to three anonymous reviewers for their constructive comments. This project was financially supported by the Deutsche Forschungsgemeinschaft (DFG) project Am76/9-1.

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