Ichthyosauromorph taxonomy

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Introduction

This document presents a list of valid ichthyosauromorph species. It is a constant work in progress given the pace at which new ichthyosaur research happens. Perhaps not as rapidly as some other fossil groups, but certainly fast enough to require some attention.

It's also intended to give some handle on the vast literature available for ichthyosaurs and their near relatives by means of synonymy lists. I've chosen this format for it's familiarity, but also because I rather enjoy the process and trials to building a complete yet usable synonymy list.

I've used this also as an exercise in typography – like much of my more public output. This document is typeset in Lual*TEX using typefaces with various nice features – old style figures, small capitals, optical sizes. The fonts used are nonetheless open source, courtesy of their development at Adobe.

Layout of synonymy lists

The synonymy lists are presented as unruled tables:

If a work names a new species or combination, the LSID of the act is included as a link button alongside the taxon name, where this is

1 i.e. LSID

available. Similarly all works that have publication LSIDs have those included too.

'Richter symbols' & certainty of assignment

I've followed the recommendations of Matthews (1973), pretty much to the letter, for the symbols and styles included in the leftmost two columns.

- *In front of the year* * (asterisk) this publication marks the name becoming valid under ICZN rules.
- . (dot/period) we accept responsibility for attaching this reference to the taxon in question.
- (no sign) we cannot responsibly attach this reference, but do not doubt it.
- ? (question mark) there is some doubt in attaching this reference to the current taxon.
- *v vidimus*, we have checked the deposited specimens. Can be accompanied by the above tokens:
 - v^* we have seen the type specimen(s).
 - v. we take responsibility for attaching the deposited specimens.
 - ν we do not take responsibility for attaching the deposited specimens.
 - *v?* the specimens cannot be certainly assigned to this taxon.
- (?) the year of publication is uncertain.
- *p* only part of the deposited specimens can be assigned to the current taxon.
 - *vp* the deposited specimens have been checked and only part of them belong to this taxon.
- And by formatting the year 1881 (italicised) this work does not add morphological information, only occurrence information.
- 1881 (upright) the work adds to our knowledge on this taxon.
- (1881) (parentheses surrounding the year) the date of this work is uncertain.

Life Science Identifiers (LSID)

Life science identifiers² are unique keys to identify and locate information important to the various life sciences. Relevant to this document are the identifiers used to link nomenclatural acts in *ZooBank*,³ the official registry of the International Commission on Zoological Nomenclature (ICZN). Naming new taxa in the recent literature requires registering the act in ZooBank to be 'officially' recognised.⁴

Many of the taxa included herein were named before ZooBank was yet a glint in anyone's eye, although they may well have been included in the printed equivalent *Zoological Record*. I've registered several new publications and acts where these were not in ZooBank before, that may be used henceforth. At the moment, these include only the original naming of species, not new combinations of specific and generic names.

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2https://en.wikipedia.org/wiki/LSID
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3http://zoobank.org

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4 https://www.iczn.org/the-code/
the-international-code-of-zoological-nomenclat
the-code-online/(Article 8.5.3);https:
//en.wikipedia.org/wiki/ZooBank
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Links in this document

The Lagrange to provide links within the document⁵ and to other references on the web⁶. These have different colours, as follows:

Citation links from the year of a citation to its reference in the bibliography.

 $\mathit{URL}\,$ often web links, particularly to websites, DOI links, LSID with the address fully written.

link to a ZooBank LSID for an act.

List of Species

Acamptonectes densus Aegirosaurus leptospondylus Acuetzpalin carranzai Arthropterygius chrisorum Arthropterygius hoybergeti Arthropterygius lundi Arthropterygius thalassonotus Athabascasaurus bitumineus Barracudasauroides panxianensis $Be san osaurus\ leptor hynchus$ Brachypterygius alekseevi Brachypterygius extremus Brachypterygius pseudoscythica Californosaurus perrini Callawavia neoscapularis Cartorhynchus lenticarpus Caypullisaurus bonapartei Cetarthrosaurus walkeri Chacaicosaurus cayi Chaohusaurus chaoxianensis $Cha ohus aurus\ geishan ensis$ Chaohusaurus zhangjiawanensis Contectopalatus atavus Cymbospondylus buchseri Cymbospondylus nichollsi Cymbospondylus petrinus Cymbospondylus piscosus? Dearcmhara shawcrossi $Eurhinosaurus\ longirostris$ Excalibosaurus costini 8 Gengasaurus nicosiai Grippia longirostris Guizhouichthyosaurus tangae Guizhouichthyosaurus wolonggangense Gulosaurus helmi Hauffiopteryx typicus Himalayasaurus tibetensis 8 Hudsonelpidia brevirostris Ichthyosaurus acutirostris Ichthyosaurus anningae

Ichthvosaurus breviceps Ichthyosaurus communis Ichthvosaurus convbeari Ichthyosaurus larkini Ichthyosaurus somersetensis Isfjordosaurus minor Leninia stellans Leptonectes moorei Leptonectes solei Leptonectes tenuirostris Macgowania janiceps Maiaspondylus lindoei Malawania anachronus Mikadocephalus gracilirostris Mixosaurus cornalianus Mixosaurus kuhnschneyderi Mixosaurus xindianensis Mollesaurus pariallus Muiscasaurus catheti Nannopterygius enthekiodon Nannopterygius saveljeviensis Nannopterygius yasykovi Ophthalmosaurus icenicus Onhthalmosaurus natans Parvinatator wapitiensis Pervushovisaurus bannovkensis Pervushovisaurus campylodon Pessopteryx nisseri Phalarodon callawayi Phalarodon fraasi 9 Phalarodon major Phantomosaurus neubigi Platypterygius hercynicus Platypterygius americanus Platypterygius australis Platypterygius hauthali Platypterygius ochevi 10 Platypterygius platydactylus Platypterygius sachicarum Protoichthyosaurus applebyi

Protoichthyosaurus prostaxalis Qianichthyosaurus xingyiensis Qianichthyosaurus zhoui Ouasianosteosaurus vikinghoegdai Sclerocormus parviceps Shastasaurus alexandrae Shastasaurus liangae Shastasaurus pacificus Shastasaurus sikkaniensis Shonisaurus popularis Simbirskiasaurus birjukovi Sisteronia seeleyi Stenopterygius aaleniensis Stenopterygius quadriscissus Stenopterygius triscissus Stenopterygius uniter Suevoleviathan disinteger Suevoleviathan integer Sveltonectes insolitus Temnodontosaurus azerguensis $Temnodon to saurus\ crassiman us$ Temnodontosaurus eurvcephalus Temnodontosaurus nuertingensis $Temnodontos aurus\ platyodon$ Temnodontosaurus trigonus 11 Thaisaurus chonglakmanii $Tha lattoarchon\ saurophag is$ Tholodus schmidi 11 Toretocnemus californicus

Toretocnemus zitteli

Undorosaurus kielanae

Undorosaurus nessovi

Utatsusaurus hataii

Wahlisaurus massarae

Wimanius odontopalatus

Xinminosaurus catactes

Undorosaurus gorodischensis

Undorosaurus trautscholdi

5 e.g. citations and sections

6 e.g. LSIDS and DOIS

ICHTHYOSAUROMORPHA Motani et al., 2015

HUPEHSUCHIA Carroll & Dong, 1991

Eohupehsuchus brevicollis Chen et al, 2014b

2014b Eohupehsuchus brevicollis Chen et al.

p 4 [Jialingjiang Formation (Upper Spathian, Lower Triassic); Yangping, Yuan'an County, Hubei Province, China].

Eretmorhipis carrolldongi Chen et al., 2015

1991 Hupehsuchia n. g., n. s.

p 143 [Jialingjiang Formation (Upper Spathian, Lower Triassic); Tuling, Baihechuan, Xunjian District, Nanzhang County, Hubei Province, China].

2015 Eretmorhipis carrolldongi Chen et al.

p 4 [Jialingjiang Formation (Upper Spathian, Lower Triassic); Yingzhishang,

Yuan'an County, Hubei Province, China].

Hupehsuchus nanchangensis Young & Dong, 1972

Nanchangosaurus suni Wang, 1959

Parahupehsuchus longus Chen et al., 2014a

ICHTHYOSAURIFORMES Motani et al., 2015

Acamptonectes densus Fischer et al., 2012

URN:LSID:ZOOBANK.ORG:ACT:AAB4BA7E-F53D-4962-8A9C-3240DFE2C4D8

v * 2012 Acamptonectes densus Fischer et al., 2012

Fischer et al. p 3 [Speeton Clay Formation, Simbiskites concinnus/staffi ammonite biozones (basal-upper Hauterivian, Lower Cretaceous, Cretaceous); Speeton, Yorkshire, U.K. and Cremlingen, Lower Saxony, Germany.] URN:LSID:ZOOBANK.ORG:PUB:66B3821A-1025-48DC-9C5F-7E6277FFD975

Aegirosaurus leptospondylus (Wagner, 1853)

1853 Ichthyosaurus leptospondylus Wagner, 1853

Wagner [Solnhofen Formation (Lower Tithonian, Upper Jurassic, Jurassic); Ger-

many.l

2000 Aegirosaurus leptospondylus (Wagner, 1853)

Bardet and Fernández p 504 [Malm ζ 2b, Solnhofen Formation (early Lower Tithonian, Upper Jurassic, Jurassic); Borscheim, Schrandel quarry district; Bavaria, Germany.l

Acuetzpalin carranzai Barrientos-Lara et al., 2020

URN:LSID:ZOOBANK.ORG:ACT:90130A25-6901-4DA6-84B8-D0680DF9BCAB

2020 LSID

2020 Acuetzpalin carranzai Barrientos-Lara et al., Barrientos-Lara et al. p 3 [La Casita Formation (Kimmeridgian, Upper Jurassic, Jurassic); Cerro de Palotes, near of Cuencamé, Durango state, Northeast Mexico.] URN:LSID:ZOOBANK.ORG:PUB:2287DBB3-3E85-409D-9D97-A946DE865FCB

Arthropterygius chrisorum (Russell, 1993)

1993 Ophthalmosaurus chrisorum Russell, 1993

Russell p 198 [Ringnes Formation (Oxfordian-Kimmeridgian, Upper Jurassic, Jurassic); Cape Grassy, Melville Island, Canada (UTM WGS84 12X 433220 8453461 = 76° 9' 4" N

113° 30′ W).]

2017 Keilhauia nui Delsett et al., 2017

Delsett et al. p 7 [Slottsmøya Member, Agardfjellet Formation (early Berriasian, Lower Cretaceous, Cretaceous); Janusfjellet, Spitsbergen, Svalbard (UTM WGS84 33X 0518847 8696044).] fide Zverkov and Prilepskaya (2019)

2018 Palvennia hoybergeti Druckenmiller et al.,

Delsett et al. p 8 [UTM WGS84 33X 0519622 8695649] PMO 222.669 fide Zverkov and

2012

Prilepskaya (2019)

Arthropterygius chrisorum (Russell, 1993) Zverkov and Prilepskaya p 15

Arthropterygius hoybergeti (Druckenmiller et al., 2012)

URN:LSID:ZOOBANK.ORG:ACT:03BA5E23-17B5-4AB1-B98A-681B9968A3F9

2012 Palvennia hoybergeti Druckenmiller et al.,

2012 LSID

Druckenmiller et al. p 326 [Slottsmøya Member, Agardfjellet Formation (Middle Volgian, Upper Jurassic, Jurassic); Spitsbergen, Svalbard (UTM WGS84 33X 0518775 8696150).] URN:LSID:ZOOBANK.ORG:PUB:8791DF9D-E15B-4470-A02A-F05ECC3BB7D6

2018 Palvennia hoybergeti Druckenmiller et al.,

Delsett et al. p 8 [UTM WGS84 33X 0519622 8695649]

2019 Arthropterygius hoybergeti (Druckenmiller et al., 2012)

Zverkov and Prilepskaya p 31

Arthropterygius lundi (Roberts et al., 2014)

URN:LSID:ZOOBANK.ORG:ACT:71E65B35-7215-44AA-BCE7-E9A3B265E04F

2014 Janusaurus lundi Roberts et al., 2014 LSID

Roberts et al. p 4 [Slottsmøya Member, Agardfjellet Formation (middle Volgian, Upper Jurassic, Jurassic); Janusfjellet, Spitsbergen, Svalbard (UTM WGS84 33X 518821 8696195 = 78° 20.264' N 15° 50.044' E).] URN:LSID:ZOOBANK.ORG:PUB:FF4834F1-AEED-4B08-8E74-7125801C1B3E fide Zverkov and Prilepskaya (2019)

2016 Ianusaurus lundi Roberts et al., 2014

Delsett et al. Delsett et al.

Janusaurus lundi Roberts et al., 2014 2019 Arthrontervgius lundi (Roberts et al., 2014)

Zverkov and Prilepskaya p 40

Arthropterygius thalassonotus Campos et al., 2019

URN:LSID:ZOOBANK.ORG:ACT:3F09C714-961C-433C-B056-DFD3F8E3B5CD

2019 Arthroptervgius thalassonotus Campos et al.. 2019 LSID

Campos et al. p 184 [Vaca Muerta Formation (late Tithonian, Upper Jurassic, Jurassic); Yesera del Tromen-Pampa Tril area, north-western Neuquén Province, Argentina. URN:LSID:ZOOBANK.ORG:PUB:A668AA96-CE4F-442E-AD3E-B757AD580CFC

Athabascasaurus bitumineus Druckenmiller and Maxwell, 2010

v * 2010 Athabascasaurus bitumineus Druckenmiller and Maxwell, 2010

Druckenmiller and Maxwell p 1039 [Wabiskaw Member, Clearwater Formation (lowermost Albian, Lower Cretaceous, Cretaceous); 35 km north of Fort McMurray, Alberta, Canada (UTM WGS84 12V 459464 6317120 = 56° 59′ 45″ N 111° 40′ 02″ W).]

Barracudasauroides panxianensis (Jiang et al., 2006)

2006 Mixosaurus panxianensis Jiang et al., 2006

Jiang et al. p 62 [Upper Member, Guanling Formation, Nicoraella germanicus Conodont Biozone (Pelsonian, Anisian, Middle Triassic, Triassic); Yangjuan Village, Xinmin District, Panxian County, Guizhou Province, China.]

2010 Barracudasauroides panxianensis (Maisch, 2010)

Maisch p 161

Besanosaurus leptorhynchus Dal Sasso and Pinna, 1996

Besanosaurus leptorhynchus Dal Sasso and Pinna, 1996

Dal Sasso and Pinna p 4 [Besano Formation, Nevadites secedensis Ammonite Biozone (Ilyrian, Anisian, Middle Triassic, Triassic); Sasso Caldo quarry, Besano, Varese Province, Lombardy, Northern Italy.]

Brachypterygius alekseevi (Arkhangelsky, 2001)

2001 Otschevia alekseevi Arkhangelsky, 2001

Arkhangelsky p 629 [Dorsoplanites panderi Ammonite Biozone (Volgian, Upper Jurassic, Jurassic); Volga River, 18 km north of Ulyanovsk, Ulyanovsk District, Ulyanovsk Region, Russian,

2010 Brachypterygius alekseevi (Arkhangelsky, 2001)

Maisch p 167

2015 Grendelius alekseevi (Zverkov et al., 2015)

Zverkov et al. p 562

Brachypterygius extremus (Boulenger, 1904)

URN:LSID:ZOOBANK.ORG:ACT:5B04A1AF-9081-417D-9BFC-DC3AFA6DAAE3

1904 Ichthyosaurus extremus Boulenger, 1904

Boulenger p 425 [Kimmeridge Clay Formation (Kimmeridgian-Tithonian, Upper Jurassic, Jurassic); Smallmouth Sands, Weymouth, Dorset, U.K.] URN:LSID:ZOOBANK.ORG:PUB:98E5CD50-9FAF-458D-9D0A-9464EF76F429

1922 Brachyptervgius extremus (Boulenger, 1904)

von Huene p 97 URN:LSID:ZOOBANK.ORG:PUB:2E316B82-8A25-43AE-A1C5-3785124EA6AE

v * 1976 Grendelius mordax McGowan, 1976

McGowan p 671 [Kimmeridge Clay Formation, Aulacostephanus autissiodorensis Ammonite Biozone (middle Kimmeridgian, Upper Jurassic, Jurassic); Stowbridge, Norfolk, U.K. (UTM WGS84 31U 321960 5835045).]

Brachypterygius pseudoscythica (Efimov, 1998)

1998 Otschevia pseudoscythica Efimov, 1998

Efimov p 83 [Ilowaiskya pseudoscythica Ammonite Biozone (Volgian, Upper Jurassic,

Jurassic); Volga River, Ulyanovsk District, Ulyanovsk Region, Russia.]

2000 Brachypterygius psudoscythius (Efimov, 1998)

[sic.]

Maisch and Matzke p 79

Grendelius pseudoscythicus (Efimov, 1998)

Zverkov et al. p 561

Californosaurus perrini (Merriam, 1902)

1902 Shastasaurus perrini Merriam, 1902

Merriam p 89 [Hosselkus Limestone Formation; Shasta County, California, U.S.A.]

1905 Delphinosaurus perrini (Merriam, 1902) Merriam p 24 1934 Californosaurus perrini (Merriam, 1902)

Kuhn p 27 [non Delphinosaurus Eichwald, 1853]

Callawayia neoscapularis (McGowan, 1994)

1994 Shastasaurus neoscapularis McGowan, 1994

McGowan p 170 [Pardonet Formation, Epigondolella triangularis Conodont Biozone (Norian, Upper Triassic, Triassic); Peace Reach, Williston Lake, British Columbia,

2000 Callawayia neoscapularis (McGowan, 1994)

Maisch and Matzke p 69 New combination takes priority over Metashastasaurus (Nicholls and Manabe, 2001, p. 1001).

2001 Metashastasaurus neoscapularis (McGowan,

Nicholls and Manabe p 985 [Pardonet Formation (Norian, Upper Triassic, Triassic); Chicken Creek, British Columbia, Canada.]

Cartorhynchus lenticarpus Motani et al., 2015

URN:LSID:ZOOBANK.ORG:ACT:FCCC9BB7-FD52-42F4-B2EC-B0B7E2A1CA32

2015 Cartorhynchus lenticarpus Motani et al., 2015 Motani et al. p 485 [Upper Member, Nanlinghu Formation, Subcolumbites Ammonite Biozone (Olenekian, Lower Triassic, Triassic); Majishan Quarry, Chaohu City, Hefei, China (UTM WGS84 50R 577953 3499041 = 31° 37′ 26" N 117° 49′ 19" E).] URN:LSID:ZOOBANK.ORG:PUB:9CFFEE63-2B8A-4C01-B9C7-CD3C53D684F5

Caypullisaurus bonapartei Fernández, 1997

URN:LSID:ZOOBANK.ORG:ACT:046EED7E-C624-465F-R0D4-1BR782CCD97D

Caypullisaurus bonapartei Fernández, 1997 1997

Fernández p 480 [Vaca Muerta Formation. Virgatosphinctes mendozanus Ammonite Biozone (late Tithonian, Upper Jurassic, Jurassic); Cerro Lotena, Neuquén Province, northwest patagonia, Argentina (UTM WGS84 19H 442358 5661434 = 39° 11' 40" N 69° 40' 03" S).] URN:LSID:ZOOBANK.ORG:PUB:1A5DDCD0-1713-410A-AE1B-F02EA1F1DF77

Chacaicosaurus cayi Fernández, 1994	
Chaohusaurus chaoxianensis (Chen, 1985)	
Chaohusaurus geishanensis Young and Dong, 1972	
Chaohusaurus zhangjiawanensis Chen et al., 2013	
Contectopalatus atavus (Quenstedt, 1852)	
Cymbospondylus buchseri Sander, 1989	
Cymbospondylus nichollsi Fröbisch et al., 2006	
Cymbospondylus petrinus Leidy, 1868	
Cymbospondylus piscosus? Leidy, 1868	
Dearcmhara shawcrossi Brusatte et al., 2015	
Eurhinosaurus longirostris (Mantell, 1851)	
Excalibosaurus costini McGowan, 1986	
Gengasaurus nicosiai Paparella et al., 2016	
Grippia longirostris Wiman, 1929	
Guizhouichthyosaurus tangae Yin et al., 2000	
Guizhouichthyosaurus wolonggangense (Chen et al., 2007)	
Gulosaurus helmi Cuthbertson et al., 2013	
Hauffiopteryx typicus Maisch, 2008	
Himalayasaurus tibetensis Young and Dong, 1972	
Hudsonelpidia brevirostris McGowan, 1995	
Ichthyosaurus acutirostris Owen, 1840	
Ichthyosaurus anningae Lomax and Massare, 2015	
Ichthyosaurus breviceps Owen, 1881	
Ichthyosaurus communis Conybeare, 1822	
Ichthyosaurus conybeari Lydekker, 1888	
Ichthyosaurus larkini Lomax and Massare, 2017	
Ichthyosaurus somersetensis Lomax and Massare, 2017	
Isfjordosaurus minor (Wiman, 1910)	
Leninia stellans Fischer et al., 2014a	
Leptonectes moorei McGowan and Milner, 1999	
Leptonectes solei (McGowan, 1993)	
Leptonectes tenuirostris (Conybeare, 1822)	
Macgowania janiceps (McGowan, 1996)	
Maiaspondylus lindoei Maxwell and Caldwell, 2006	
Malawania anachronus Fischer et al., 2013 List of Species-List of Species	8
Mikadocephalus gracilirostris Maisch and Matzke, 1997	
Mixosaurus cornalianus (Bassani, 1886)	

Cetarthrosaurus walkeri Seeley, 1873

ICHTHYOSAUROMORPH TAXONOMY 2016 Muiscasaurus catheti Maxwell et al., 2016 Maxwell et al. p 61 [Arcillolitas abigarradas Member, Paja Formation (Barremian-Aptian, Lower Cretaceous, Cretaceous); Vereda Llanitos, Sachica, Boyaca, Colombia (UTM WGS84 18N 662860 616018 = 05° 34.278′ N 73° 31.781′ W).] Nannopterygius enthekiodon (Hulke, 1871) URN:LSID:ZOOBANK.ORG:ACT:8467F95F-AC53-4EA7-9612-230E9222A6FC v * 1871 Ichthyosaurus enthekiodon Hulke, 1871 LSID Hulke p 441 [Kimmeridge Clay Formation (Kimmeridgian-Tithonian, Upper Jurassic, Jurassic); Kimmeridge Bay, Dorset, U.K.] URN:LSID:ZOOBANK.ORG:PUB:4F0E90D0-27FF-409A-9CD5-976F182B8B4C Nannopterygius enthekiodon (Hulke, 1871) von Huene p 98 URN:LSID:ZOOBANK.ORG:PUB:2E316B82-8A25-43AE-A1C5-3785124EA6AE Nannopterygius saveljeviensis (Arkhangelsky, 1997) 1997 Paraophthalmosaurus savejeviensis Arkhangelsky p 88 Arkhangelsky, 1997 1999b Yasykovia kabanovi Efimov, 1999b Efimov p 98 2020 Nannopterygius savejeviensis (Arkhangelsky, Zverkov and Jacobs p 246 [Volgian, Upper Jurassic, Jurassic.] Nannopterygius yasykovi (Efimov, 1999b) 1999b Yasykovia sumini Efimov, 1999b Efimov p 98 Ophthalmosaurus icenicus Seeley, 1874 URN:LSID:ZOOBANK.ORG:ACT:F598EAB9-08BF-44CF-BBF3-BB940BD24DBE v * 1874 Ophthalmosaurus icenicus Seeley, 1874 LSID Seeley p 707 [Peterborough Member, Oxford Clay Formation (Callovian, Middle Jurassic, Jurassic); Peterborough, Cambridgeshire.] URN:LSID:ZOOBANK.ORG:PUB:4C83C9B2-665D-4AD7-8AF8-D365E5491831 Ophthalmosaurus natans (Marsh, 1879) Parvinatator wapitiensis Nicholls and Brinkman, 1995 Pervushovisaurus bannovkensis Arkhangelsky, 1998 Pervushovisaurus campylodon (Carter, 1846) 1846 Ichthyosaurus campylodon Carter, 1846 Carter p 60 [Upper Greensand Formation (Albian-Cenomanian, Lower-Upper Cretaceous, Cretaceous); Cambridge, Cambridgeshire, U.K.] 1922 Myopterygius campylodon (Carter, 1846) von Huene p 98 URN:LSID:ZOOBANK.ORG:PUB:2E316B82-8A25-43AE-A1C5-3785124EA6AE 1972 Platypterygius campylodon (Carter, 1846) McGowan p 17 2016 Pervushovisaurus campylodon (Carter, 1846) Fischer p 8 Pessopteryx nisseri Wiman, 1910 Phalarodon callawayi Schmitz et al., 2004 Phalarodon fraasi Merriam, 1910 Phalarodon major von Huene, 1916

Phantomosaurus neubigi (Sander, 1997)

Platypterygius hercynicus Kuhn, 1946

Platypterygius americanus Nace, 1939

1939 Myopterygius americanus Nace, 1939 Nace p 674 [Mowry Shale Member, Graneros Formation; Crook County Wyoming, 1968 Myopterygius americanus Nace, 1939 Romer p 27 [Mowry Shale Member, Graneros Formation; Osage, Wyoming, U.S.A.] 1972 Platypterygius americanus (Nace, 1939) McGowan p 17

Platypterygius australis (M'Coy, 1867)

Platypterygius hauthali (von Huene, 1927)

Platypterygius ochevi Arkhangelsky et al., 2008

Platypterygius platydactylus (Broili, 1907)

1922 Platypterygius platydactylus (Broili, 1907)

 $von\ Huene\ p\ 99\ {\tt URN:LSID:ZOOBANK.ORG:PUB:2E316B82-8A25-43AE-A1C5-3785124EA6AE}$

Platypterygius sachicarum Páramo, 1997

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Protoichthyosaurus applebyi Lomax et al., 2017
Protoichthyosaurus prostaxalis Appleby, 1979
Qianichthyosaurus xingyiensis Yang et al., 2013
Qianichthyosaurus zhoui Li, 1999
Quasianosteosaurus vikinghoegdai Maisch and Matzke, 2003
Sclerocormus parviceps Jiang et al., 2016
Shastasaurus alexandrae Merriam, 1902
Shastasaurus liangae (Yin et al., 2000)
Shastasaurus pacificus Merriam, 1895
Shastasaurus sikkaniensis (Nicholls and Manabe, 2004)
Shonisaurus popularis Camp, 1976
Simbirskiasaurus birjukovi Otschev and Efimov, 1985
Sisteronia seeleyi Fischer et al., 2014b
Stenopterygius aaleniensis Maxwell et al., 2012
Stenopterygius quadriscissus (Quenstedt, 1858)
Stenopterygius triscissus (Quenstedt, 1858)
Stenopterygius uniter von Huene, 1931a
Suevoleviathan disinteger (von Huene, 1926)
Suevoleviathan integer (Bronn, 1844)
Sveltonectes insolitus Fischer et al., 2011
Temnodontosaurus azerguensis Martin et al., 2012
Temnodontosaurus crassimanus (Blake, 1876)
Temnodontosaurus eurycephalus McGowan, 1974
Temnodontosaurus nuertingensis (von Huene, 1931b)
Temnodontosaurus platyodon (Conybeare, 1822)
Temnodontosaurus trigonus (von Theodori, 1843)
Thaisaurus chonglakmanii Mazin et al., 1991
Thalattoarchon saurophagis Fröbisch et al., 2013
Tholodus schmidi von Meyer, 1849
Toretocnemus californicus Merriam, 1903
Toretocnemus zitteli (Merriam, 1903)
Undorosaurus gorodischensis Efimov, 1999a
   1999a Undorosaurus gorodischensis Efimov, 1999a
                                            Efimov p 52 [Epivirgatites nikitini Ammonite Biozone (Volgian, Upper Jurassic, Juras-
                                            sic); Undory, Volga Oblast, Russia.]
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2012 Cryopterygius kristiansenae Druckenmiller

et al., 2012 LSID

Druckenmiller et al. p 313 [Slottsmøya Member, Agardfjellet Formation (middle Volgian, Upper Jurassic, Jurassic); Janusfjellet, Spitsbergen, Svalbard (UTM WGS84

33X 0518842 8696067).] URN:LSID:ZOOBANK.ORG:PUB:8791DF9D-E15B-4470-A02A-F05ECC3BB7D6 fide Zverkov and Efimov (2019)

Zverkov and Efimov p 1189

2019 Undorosaurus gorodischensis Efimov, 1999a

Undorosaurus kielanae (Tyborowski, 2016)

2016 Cryopterygius kielanae Tyborowski, 2016

Tyborowski p 793 [Sławno Limestone Member, Kcynia Formation (uppermost Lower Tithonian = Middle Volgian, Upper Jurassic, Jurassic); Owadów-Brzezinki Quarry, Sławno (UTM WGS84 34U 439831 5692022 = 51.3762583 N 20.1355167 E).]

2019 Undorosaurus kielanae (Tyborowski, 2016)

Zverkov and Efimov p 1187

Undorosaurus nessovi Efimov, 1999a

Undorosaurus trautscholdi Arkhangelsky and Zverkov, 2014

Utatsusaurus hataii Shikama et al., 1978

Wahlisaurus massarae Lomax, 2016

2016 Wahlisaurus massarae Lomax, 2016

Lomax p 388 [Barnstone Member?, Scunthorpe Mudstone Formation?, Pre-planorbis or Psiloceras planorbis beds (lowermost Hettangian, Lower Jurassic, Jurassic); Normanton Hills near Normanton on Soar, Nottinghamshire, U.K.]

Wimanius odontopalatus Maisch and Matzke, 1998

Xinminosaurus catactes Jiang et al., 2008

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