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University of Alberta fossil fish type catalogue update

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Abstract: This list updates the fossil fish types deposited in the collections of the University of Alberta Laboratory for Vertebrate Palaeontology (UALVP). This collection contains 111 fish holotypes, 1073 fish paratypes, 62 casts of fish holotypes from other museums, and 31 casts of fish paratypes from other museums. The catalogue number, the latest classification, a short description of the material, the collector(s) of the holotype (if known), the type locality, the full citation including the pages on which it was described, tables, and listings of any figures are provided for each type specimen. As in Bruner's (2019) list, this includes unpublished "types" languishing in Ph.D. and M.Sc. theses, as these specimens are labeled in the collections as "types" on the museum labels and in the computer catalogue. Also, this type catalogue lists specimens incorrectly cited as holotypes and paratypes in the scientific literature, mistakes made in Bruner's (2019) listing, and type specimens on long term loan to the UALVP (Paleontology Collections (PAL) of the Institut Teknologi Bandung (ITB)).

INTRODUCTION

Since the publication of the first list of fossil fish types (Bruner, 2019), 22 new holotypes and 95 paratypes have been published and added to the UALVP fossil fish collection. Also newly added are six casts of holotypes and eight casts of paratypes from other museums (Tab. 1). After the publication of the first list, it was discovered a University of Alberta student, working on Late Cretaceous and Paleocene mammals, had overwritten three fields in the computer catalogue for about 600 catalogue entries. The fields overwritten for each of these catalogue entries were: "Class" replaced with Mammalia; "Description" replaced with descriptions of the parts of the mammal; and "Type status" were all erased. After spending months trying to recoup the lost information, it became apparent an update to the fossil fish type list would have to be published as a large number of types were among the written over catalogue entries and had been missed in the initial search. Also, at the end of this list is a list of 49 UALVP museum catalogue numbers for which the locations were not given by Bruner (2019). The UALVP fossil fish types are housed in three locations on campus: (1) on display in the paleontology museum in the Earth Sciences building (ESB-B01); (2) the fossil fish collection in Centennial Center for Interdisciplinary Science (CCIS LC-245); and (3) the Paleontology Teaching Collection in the Biological Sciences Building (M-459).

Table 1. Total number of fossil fish types in UALVP collection

	Bruner (2019)	Bruner (2024)	TOTAL
Holotypes	89	22	111
Paratypes	978	95	1073
Casts of Holotypes	56	6	62
Casts of Paratypes	23	8	31

Agnatha Haeckel, 1895

Cephalaspidiformes

Cephalaspidae Agassiz, 1843

UALVP48848 CAST OF HOLOTYPE *Cephalaspis brevirostris* Denison, 1952, cast of FMNH PF328 at the Field Museum of Natural History

Collector: Robert H. Dennison, 1952.

Early Devonian: Water Canyon Formation

Utah: Cache County: about 8 mil E of Hyrum, northeast of Blacksmith Fork, west slope of hill, NE1/4 Sec. 3, T10N, R2E. Denison 1952 Fieldiana: Geology 11(6):265-287. Cranial shield. Desc. 277-279, and fig. Fig. 55, p. 378, Fig. 56, p. 379. Biological Sciences Building: M-459: Cabinet 10: Drawer 4

Denison, Robert H. 1955. Early Devonian fishes from Utah. Part I. Osteostraci. Fieldiana: Geology Vol. 11(6):265-287

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Agnatha Haeckel, 1895

Cephalaspidiformes

Cephalaspidae Agassiz, 1843

UALVP31583 CAST OF HOLOTYPE *Cephalaspis novaescotiae* Denison, 1955, cast of FMNH PF1212 at the Field Museum of Natural History

Collector: Robert H. Dennison, 1952.

Canada: Nova Scotia: Antigonish County: about 3 mi SW of Arisaig, a small knoll on the west side of the McAras Brook road.

Early Devonian: Lower Dittonian, Knoydart Fm., about 100 ft above bed 44 of Fletcheer's section, thus presumably in his bed 53; or probably in bed 22 of the section of Lonard; about 560 ft above the lowest exposure of the Knoydart Fm. Dorsal half of the cephalic shield, exposed on the inner side. Denison, 1955, Fieldiana: Zoology 37(17):449-464. Desc. (pp. 454-458) and fig. Fig. 111, p. 453. Biological Sciences Building: M-459: Cabinet 10: Drawer 4

Denison, Robert H. 1955. Early Devonian vertebrates from the Knoydart Formation of Nova Scotia. Fieldiana: Geology 37:449-464.

Grade Teleostomi

Acanthodii Owen, 1846

Ischnacanthiformes Berg, 1940

Ischnacanthidae Woodward, 1891

UALVP41920 HOLOTYPE *Ischnacanthus gannitus* Hermus, 2003, p. 41

Published as *Tricuspicanthus gannitus* Blais, Hermus, and Wilson, 2015.

Collector: L. Alan Lindoe, 1996

Canada: Northwest Territories, Mackenzie Mountains, MOTH: Man on the Hill #1. 62°32'N. latitude, 127°44'W. longitude.

Devonian-Devonian Early-Lochkovian, Road River Formation. Right upper and lower jaw elements preserved in medial view. Hermus 2003, M.Sc. Referred to pp. 41, Table 2.4, p. 105, Table 3.2, p. 191, Appendix I, p. 255, and fig. Fig. 2.13, B, p. 107, Fig. 2.14, C, p. 109. CCIS L2-245 Devonian 15, 19

Hermus, Chelsea Rae. 2003. Taxonomy and ontogeny of *Ischnacanthus* (Pisces: Acanthodii: Ischnacanthiformes) from the Lower Devonian (Lochkovian), Northwest Territories, Canada. Master of Science Thesis. Department of Biological Sciences. University of Alberta. Edmonton, Alberta, Canada. 255 pp.

Blais, Stephanie, Hermus, C., and Wilson, Mark V. H. 2015. Four new Early Devonian ischnacanthid acanthodians from the Mackenzie Mountains, Northwest Territories, Canada: an early experiment in dental diversity. Journal of Vertebrate Paleontology Vol. 35(1): 1-13

PARATYPES:

UALVP32405 Nearly complete fish in right lateral view, Hermus 2003, M.Sc. Referred to p. 41, Table 3.1, p. 187, Table 3.3, p. 195, Table 3.4, p. 207, Table 3.7, p. 219, and fig. Fig. 2.13, A, p. 107, Fig. 3.8, p. 205, Fig. 3.12, p. 227, Fig. 3.13, p. 229, Appendix I, p. 255. CCIS L2-245 Devonian 3, 3

UALVP32443 Left upper jaw element and palatoquadrate cartilages in medial view, Hermus 2003, M.Sc. Referred to p. 42, Table 3.2, p. 191, Appendix I, p. 255, and fig. Fig. 2.13, D, p. 107. Published as *Tricuspicanthus gannitus* Blais, Hermus, and Wilson, 2015. Blais et al. 2015 JVP 35(1):1-13 referred to p.7. CCIS LC-245 Devonian 9, 16

UALVP41527 left upper (or right lower) dentigerous jawbones and palatoquadrate cartilages in medial view, without associated cartilage, Hermus 2003, M.Sc. Referred to p. 42, Table 3.2, p. 191, Appendix I, p. 255. Published as *Tricuspicanthus gannitus* Blais, Hermus, and Wilson, 2015. Blais et al. 2015 JVP 35(1):1-13 referred to p.7. CCIS LC-245 Devonian 9, 16

UALVP41663 very small right and left upper dentigerous jawbones in medial view, Hermus 2003, M.Sc. Referred to p. 42, Table 2.4, p. 105, Table 3.2, p. 191, Appendix I, p. 255. Published as *Tricuspicanthus gannitus* Blais, Hermus, and Wilson, 2015. Blais et al. 2015 JVP 35(1):1-13 referred to p.7. Also listed as paratype for Agnatha *Waengsjoeaspis platycornis* Scott and Wilson, 2012, possible misquote of catalogue number? Scott, and Wilson, 2012, SVP Vol. 32(6):1235-1253, Referred to p. 1240. CCIS L2-245 Devonian 15, 19

UALVP41929 slightly disarticulated anterior half of a midsized fish with right lateral view preserved, Hermus 2003, M.Sc. Referred to p. 41, Table 2.4, p. 105, Appendix I, p. 255, as *Ischnacanthus gannitus*; Descr. p. 49 as *Ischnacanthus* sp. A. CCIS LC-245 Devonian 9, 16

UALVP42015 Right upper jaw element and partial palatoquadrate cartilages in medial view, Hermus 2003, M.Sc. Referred to p. 42, Table 2.4, p. 105, Table 3.2, p. 191, Appendix I, p. 255. and fig. Fig. 2.13, E, p. 107, Fig. 2.14, A, p. 109. Published as *Tricuspicanthus gannitus* Blais, Hermus, and Wilson, 2015. Blais et al. 2015 JVP 35(1):1-13 referred to p.7. CCIS LC-245 Devonian 9, 16

UALVP42062 left lower jawbone and Meckel's cartilage in medial view, Hermus 2003, M.Sc. Referred to p. 42, Table 2.4, p. 105, Table 3.2, p. 191, Appendix I, p. 255, and fig. Fig. 2.14, B, p. 109. Published as *Tricuspicanthus gannitus* Blais, Hermus, and Wilson, 2015. Blais et al. 2015 JVP 35(1):1-13 referred to p.7. CCIS L2-245 Devonian 14, 17

UALVP42143 right lower dentigerous jawbone with Meckel's cartilage in medial view, Hermus 2003, M.Sc.

Referred to pp. 42, Table 2.4, p. 105, Table 3.2, p. 191, Appendix I, p. 255, and fig. Fig. 2.13, C, p. 107. Published as *Tricuspicanthus gannitus* Blais, Hermus, and Wilson, 2015. Blais et al. 2015 JVP 35(1):1-13 referred to p.7. CCIS LC-245 Devonian 9, 16

UALVP42199 right and left upper and lower jaw elements in medial view, Hermus 2003, M.Sc. Referred to pp. 42, Table 2.4, p. 105, Table 3.2, p. 191, Appendix I, p. 255, and fig. Fig. 2.13, C, p. 107, Published as *Tricuspicanthus gannitus* Blais, Hermus, and Wilson, 2015. Blais et al. 2015 JVP 35(1):1-13 referred to p.7. CCIS L2-245 Devonian 15, 19

UALVP42658 left upper dentigerous jawbones and palatoquadrate cartilages in medial view, Hermus 2003, M.Sc. Referred to pp. 42, Table 2.4, p. 105, Table 3.2, p. 191, Appendix I, p. 255. Published as *Tricuspicanthus gannitus* Blais, Hermus, and Wilson, 2015. Blais et al. 2015 JVP 35(1):1-13 referred to p.7. CCIS L2-245 Devonian 15, 19

UALVP42659 anterior portion of fish with right lower dentigerous jawbone and Meckel's cartilage visible in medial view, Hermus 2003, M.Sc. Referred to pp. 41, 49, Table 3.1, p. 187, Appendix I, p. 255 as *Ischnacanthus gannitus*. Published as *Tricuspicanthus gannitus* Blais, Hermus, and Wilson, 2015. Blais et al. 2015 JVP 35(1):1-13 referred to p.7. CCIS L2-245 Devonian 15, 19

UALVP42660 a partial fish in right lateral view, Hermus 2003, M.Sc. Referred to pp. 41, 43, Table 3.1, p. 189, and fig. Fig. 2.15, p. 111, Appendix I, p. 255. Published as *Tricuspicanthus gannitus* Blais, Hermus, and Wilson, 2015. Blais et al. 2015 JVP 35(1):1-13 referred to p.7, fig. Fig. 6, A, C, p. 9, CCIS L2-245 Devonian 15, 19

UALVP42668 nearly complete fish preserved in right lateral view, Hermus 2003, M.Sc. Referred to pp. 41, Table 3.1, p. 189, Appendix I, p. 255.

UALVP43109 [double use of catalogue number, recatalogued as UALVP56246] nearly complete fish preserved in right lateral view, Hermus 2003, M.Sc. Referred to p. 49, Appendix I, p. 255. p. 41, as *Ischnacanthus gannitus*, P. 49 as *Ischnacanthus* sp. A; CCIS L2-245 Devonian 15, 7

UALVP45038 small fish preserved in left lateral view, Hermus 2003, M.Sc. Referred to pp. 41, Table 2.4, p. 105, Appendix I, p. 255. CCIS L2-245 Devonian 14, 18

UALVP45075 left upper dentigerous jawbones and palatoquadrate cartilages in medial view, Hermus 2003, M.Sc. Referred to pp. 42, Table 2.4, p. 105, Table 3.2, p. 191, Appendix I, p. 255. Published as *Tricuspicanthus gannitus* Blais, Hermus, and Wilson, 2015. Blais et al. 2015 JVP 35(1):1-13 referred to p.7, CCIS L2-245 Devonian 14, 18

UALVP45649 right upper and lower jawbones and associated cartilages in medial view, Hermus 2003, M.Sc. Referred to pp. 42, Table 2.4, p. 105, Table 3.2, p. 191, Appendix I, p. 255. Published as *Tricuspicanthus gannitus* Blais, Hermus, and Wilson, 2015. Blais et al. 2015 JVP 35(1):1-13 referred to p.7.

UALVP45650 right upper jawbones and partial palatoquadrate cartilages in medial view, Hermus 2003, M.Sc. Referred to pp. 42, Table 2.4, p. 105, Table 3.2, p. 191, Appendix I, p. 255. Published as *Tricuspicanthus gannitus* Blais, Hermus, and Wilson, 2015. Blais et al. 2015 JVP 35(1):1-13 referred to p.7. CCIS LC-245 Devonian 9, 16

Grade Teleostomi

Acanthodii Owen, 1846

Ischnacanthiformes Berg, 1940

Ischnacanthidae Woodward, 1891

UALVP45037 HOLOTYPE *Ischnacanthus mackenziensis* Hermus, 2003, p. 46

Collector: Mark V. H. Wilson, 1998.

Canada: Northwest Territories, Mackenzie Mountains, MOTH: Man on the Hill #1. 62°32'N. latitude, 127°44'W. longitude.

Devonian-Devonian Early-Lochkovian, Road River Formation. Complete right lower dentigerous jawbone and Meckel's cartilage in medial view. Hermus 2003, M.Sc. Referred to pp. 47, 48, Table 2.6, p. 119, Table 3.2, p. 191, Appendix I, p. 255, and fig. Fig. 2.18, A, p. 121, Fig. 2.19, B, p. 123.

Hermus, Chelsea Rae. 2003. Taxonomy and ontogeny of *Ischnacanthus* (Pisces: Acanthodii: Ischnacanthiformes) from the Lower Devonian (Lochkovian), Northwest Territories, Canada. Master of Science Thesis. Department of Biological Sciences. University of Alberta. Edmonton, Alberta, Canada. 255 pp.

PARATYPE:

UALVP32447 partial right upper jaw element in medial view, Hermus 2003, M.Sc. Referred to pp. 47, 48, Table 2.6, p. 119, Table 3.2, p. 191, Appendix I, p. 255. and fig. Fig. 2.18, B, p. 121, Fig. 2.19, A, p. 123 CCIS LC-245 Devonian 9, 16

Grade Teleostomi

Acanthodii Owen, 1846

Ischnacanthiformes Berg, 1940

Ischnacanthidae Woodward, 1891

UALVP45078 HOLOTYPE *Ischnacanthus marksmithi* Hermus, 2003, p. 38

Published as *Tricuspicanthus gannitus* Blais, Hermus, and Wilson, 2015.

Canada: Northwest Territories, Mackenzie Mountains, MOTH: Man on the Hill #1. 62°32'N. latitude, 127°44'W. longitude.

Devonian-Devonian Early-Lochkovian, Road River Formation. Articulated upper and lower left dentigerous

jawbones and cartilages preserved in medial view. Hermus 2003, M.Sc. Referred to pp. 38, 39, Table 2.3, p. 101, Table 3.2, p. 191, Appendix I, p. 255, and fig. Fig. 2.11, A, p. 99, Fig. 2.9, C, p. 95 as *Ischnacanthus marksmithi* Hermus, 2003; Published as *Tricuspicanthus gannitus* Blais, Hermus, and Wilson, 2015, Blais et al. 2015 JVP 35(1):1-13, fig. Fig. 5,A, p. 8 CCIS L2-245 Devonian 15, 19

Hermus, Chelsea Rae. 2003. Taxonomy and ontogeny of *Ischnacanthus* (Pisces: Acanthodii: Ischnacanthiformes) from the Lower Devonian (Lochkovian), Northwest Territories, Canada. Master of Science Thesis. Department of Biological Sciences. University of Alberta. Edmonton, Alberta, Canada. 255 pp.

Blais, Stephanie, Hermus, C., and Wilson, Mark V. H. 2015. Four new Early Devonian ischnacanthid acanthodians from the Mackenzie Mountains, Northwest Territories, Canada: an early experiment in dental diversity. Journal of Vertebrate Paleontology Vol. 35(1): 1-13

PARATYPES:

UALVP23294 lower left dentigerous jawbones and Meckel's cartilages in medial view, Hermus 2003, M.Sc. Referred to p. 39, Table 2.3, p. 101, Table 3.2, p. 191, and fig. Fig. 2.11, C, p. 99, Appendix I, p. 255; Published as *Tricuspicanthus gannitus* Blais, Hermus, and Wilson, 2015 Blais et al. 2015. JVP 35(1):1-13 referred to p. 7 CCIS LC-245 Devonian 9, 16

UALVP42661 small, incomplete fish preserved in right lateral view Hermus 2003, M.Sc. Referred to pp. 39, 40, Table 3.4, p. 207, Appendix I, p. 255.

UALVP45074 lower left dentigerous jawbones and Meckel's cartilages in medial view, Hermus 2003, M.Sc. Referred to p. 39, Table 2.3, p. 101, Table 3.2, p. 191, Appendix I, p. 255, and fig. Fig. 2.11, B, p. 99, Fig. 2.12, p. 103; Published as *Tricuspicanthus gannitus* Blais, Hermus, and Wilson, 2015. Blais et al. 2015. JVP 35(1):1-13 Ref. to p. 7 CCIS LC-245 Devonian 9, 16

Grade Teleostomi

Acanthodii Owen, 1846

Ischnacanthiformes Berg, 1940

Ischnacanthidae Woodward, 1891

UALVP45072 HOLOTYPE *Ischnacanthus pisciculus* Hermus, 2003, p. 44

HOLOTYPE *Tricuspicanthus pisciculus* Blais, Hermus, and Wilson, 2015

Canada: Northwest Territories, Mackenzie Mountains, MOTH: Man on the Hill #1. 62°32'N. latitude, 127°44'W. longitude.

Devonian-Devonian Early-Lochkovian, Road River Formation. Small left upper dentigerous jawbone and palatoquadrate cartilage preserved in medial view. Hermus 2003, M.Sc. Referred to pp. 44, 45, Table 2.5, p. 115, Table 3.2, p. 191, Appendix I, p. 255, and fig. Fig. 2.16, A, p. 113, Fig. 2.17, p. 117; Published as *Tricuspicanthus pisciculus* Blais, Hermus, and Wilson, 2015 Blais et al. 2015. JVP 35(1):1-13 Fig. Fig.7, p. 10 CCIS: L2-245: Devonian 15, 19

Hermus, Chelsea Rae. 2003. Taxonomy and ontogeny of *Ischnacanthus* (Pisces: Acanthodii: Ischnacanthiformes) from the Lower Devonian (Lochkovian), Northwest Territories, Canada. Master of Science Thesis. Department of Biological Sciences. University of Alberta. Edmonton, Alberta, Canada. 255 pp.

Blais, Stephanie, Hermus, C., and Wilson, Mark V. H. 2015. Four new Early Devonian ischnacanthid acanthodians from the Mackenzie Mountains, Northwest Territories, Canada: an early experiment in dental diversity. Journal of Vertebrate Paleontology Vol. 35(1): 1-13

PARATYPE: UALVP45620 small left upper dentigerous jawbone and palatoquadrate cartilage preserved in medial view, Hermus 2003, M.Sc. Referred to p. 45, Table 2.5, p. 115, Table 3.2, p. 191, Appendix I, p. 255, and fig. Fig. 2.16, B, p. 113 as *Ischnacanthus pisciculus*; Published as *Tricuspicanthus pisciculus* Blais, Hermus, and Wilson, 2015 Blais et al. 2015. JVP 35(1):1-13 referred to p. 10. CCIS L2-245 Devonian 15, 19

Grade Teleostomi

Acanthodii Owen, 1846

Ischnacanthiformes Berg, 1940

Ischnacanthidae Woodward, 1891

UALVP45040 HOLOTYPE *Ischnacanthus rugosus* Hermus, 2003, p. 29

Paratype for *Euryacanthus rugosus* Blais, Hermus, and Wilson, 2015.

Collected 1998.

Canada: Northwest Territories, Mackenzie Mountains, MOTH: Man on the Hill #1. 62°32'N. latitude, 127°44'W. longitude.

Devonian-Devonian Early-Lochkovian, Road River Formation. Complete right upper dentigerous jawbone and palatoquadrate cartilage, preserved in medial view. Hermus 2003, M.Sc. Referred to p. 29, Table 2.1, p. 79, Table 3.2, p. 191, Appendix I, p. 255, fig. Fig. 2.2, B, p. 77, Fig. 2.4, p. 83; Blais et al. 2015. JVP 35(1):1-13 fig. Fig. 3, D, p.5. CCIS L2-245 Devonian 15, 19

Hermus, Chelsea Rae. 2003. Taxonomy and ontogeny of *Ischnacanthus* (Pisces: Acanthodii: Ischnacanthiformes) from the Lower Devonian (Lochkovian), Northwest Territories, Canada. Master of Science Thesis. Department of Biological Sciences. University of Alberta. Edmonton, Alberta, Canada. 255 pp.

Blais, Stephanie, Hermus, C., and Wilson, Mark V. H. 2015. Four new Early Devonian ischnacanthid acanthodians from the Mackenzie Mountains, Northwest Territories, Canada: an early experiment in dental diversity. Journal of Vertebrate Paleontology Vol. 35(1): 1-13

PARATYPES:

UALVP41650 anterior half of a lower right dentigerous jawbone and Meckel's cartilage in medial view Hermus, 2003, M.Sc. thesis Referred to p. 30, Table 2.1, p. 79, Table 3.2, p. 191, Appendix I, p. 255, and fig. Fig. 2.2, F, p. 77, Fig. 2.3, A, p. 81, as (*Ischnacanthus rugosus*). Blais et al. 2015. JVP 35(1):1-13 ref. to p. 4, as *Euryacanthus rugosus* Blais, Hermus, and Wilson, 2015. CCIS LC-245 Devonian 9, 16

UALVP42023 right upper dentigerous jawbone and palatoquadrate cartilage in medial view Hermus, 2003, M.Sc. thesis Referred to p. 30, Table 2.1, p. 79, Table 3.2, p. 191, Appendix I, p. 255, fig. Fig. 2.2, A, p. 77, Fig. 2.3, B, p. 81; Blais et al. 2015. JVP 35(1):1-13 Referred to p. 4 Paratype for *Euryacanthus rugosus* Blais, Hermus, and Wilson, 2015. Biological Sciences Building: M-459: Cabinet 11: Drawer 5

UALVP42025 Left upper dentigerous jawbone and palatoquadrate cartilage in medial view Hermus, 2003, M.Sc. thesis Referred to p. 30, Table 2.1, p. 79, Table 3.2, p. 191, Appendix I, p. 255, fig. Fig. 2.2, C, p. 77, Fig. 2.3, C, p. 81, as *Ischnacanthus rugosus*. Blais et al. 2015. JVP 35(1):1-13 referred to p. 4, Paratype for *Euryacanthus rugosus* Blais, Hermus, and Wilson, 2015. Biological Sciences Building: M-459: Cabinet 11: Drawer 5

UALVP45076 partial lower left dentigerous jawbone and palatoquadrate cartilage in medial view Hermus, 2003, M.Sc. thesis Referred to p. 30, Table 2.1, p. 79, Table 3.2, p. 191, Appendix I, p. 255, fig. Fig. 2.2, E, p. 77, as *Ischnacanthus rugosus*. Blais et al. 2015. JVP 35(1):1-13 ref. to p. 4, Paratype for *Euryacanthus rugosus* Blais, Hermus, and Wilson, 2015. Teaching Collection Biological Sciences Building: M-459: Cabinet 11: Drawer 5; and CCIS LC-245 Devonian 9, 16

UALVP45648 large right upper and lower jawbones and associated cartilages in medial view Hermus, 2003, M.Sc. thesis Referred to p. 30, Table 2.1, p. 79, Table 3.2, p. 191, Appendix I, p. 255, and fig. Fig. 2.2, D, p. 77, Fig. 2.3, D, p. 81, as *Ischnacanthus rugosus* Hermus, 2003; Blais et al. 2015. JVP 35(1):1-13 Fig. Fig. 3, A-C, p. 5 Holotype for *Euryacanthus rugosus* Blais, Hermus, and Wilson, 2015. CCIS L2-245 Devonian 15, 19

Grade Teleostomi

Acanthodii Owen, 1846

Ischnacanthiformes Berg, 1940

Ischnacanthidae Woodward, 1891

UALVP42666 HOLOTYPE *Ischnacanthus wilsoni* Hermus, 2003, p. 34

Published as Holotype for *Erymnacanthus clivus* Blais, Hermus, and Wilson, 2015

COLLECTOR: Lindoe, L. Allan, 1996.

Canada: Northwest Territories, Mackenzie Mountains, MOTH: Man on the Hill #1. 62°32'N. latitude, 127°44'W. longitude.

Devonian-Devonian Early-Lochkovian, Road River Formation. Partial right upper dentigerous jawbone and left and right lower jaw elements preserved in medial view. Hermus 2003, M.Sc. Referred to pp. 34, 36, 37, Table 2.2, p. 93, Table 3.2, p. 191, Appendix I, p. 255, and fig. Fig. 2.8, A, p. 91, Fig. 2.9, C, p. 95, as *Ischnacanthus wilsoni* Hermus 2003; Blais et al. 2015. JVP 35(1):1-13 Fig. 4A, B, p. 7 Holotype for *Erymnacanthus clivus* Blais, Hermus, and Wilson, 2015. Biological Sciences Building: M-459: Cabinet 11: Drawer 5

Hermus, Chelsea Rae. 2003. Taxonomy and ontogeny of *Ischnacanthus* (Pisces: Acanthodii: Ischnacanthiformes) from the Lower Devonian (Lochkovian), Northwest Territories, Canada. Master of Science Thesis. Department of Biological Sciences. University of Alberta. Edmonton, Alberta, Canada. 255 pp.

Blais, Stephanie, Hermus, C., and Wilson, Mark V. H. 2015. Four new Early Devonian ischnacanthid acanthodians from the Mackenzie Mountains, Northwest Territories, Canada: an early experiment in dental diversity. Journal of Vertebrate Paleontology Vol. 35(1): 1-13

PARATYPES:

UALVP42198 left upper jaw element in medial view, Hermus 2003, M.Sc. Referred to p. 35, Table 2.2, p. 93, Table 3.2, p. 191, Appendix I, p. 255, and fig. Fig. 2.8, B, p. 91, as *Ischnacanthus wilsoni* Hermus 2003; Blais et al. 2015. JVP 35(1):1-13 Ref. to p. 6 paratype for *Erymnacanthus clivus* Blais, Hermus, and Wilson, 2015. CCIS LC-245 Devonian 9, 16

UALVP45077 left upper jaw element in medial view, Hermus 2003, M.Sc. Referred to p. 35, Table 2.2, p. 93, Table 3.2, p. 191, Appendix I, p. 255, and fig. Fig. 2.8, C, p. 91, as *Ischnacanthus wilsoni* Hermus 2003; Blais et al. 2015. JVP 35(1):1-13 ref. to p. 6 paratype for *Erymnacanthus clivus* Blais, Hermus, and Wilson, 2015. CCIS LC-245 Devonian 9, 16

UALVP45079 right upper jaw element in medial view, Hermus 2003, M.Sc. Referred to pp. 35, 36, Table 2.2, p. 93, Table 3.2, p. 191, Appendix I, p. 255, and fig. Fig. 2.8, D, p. 91. Fig. 2.9, A, B, p. 95, as *Ischnacanthus wilsoni* Hermus, 2003; Blais et al. 2015. JVP 35(1):1-13 ref. to p. 6 paratype for *Erymnacanthus clivus* Blais, Hermus, and Wilson, 2015. CCIS LC-245 Devonian 9, 16

UALVP45097 large partial body of a fish with partially

disarticulated jaws, preserved in right lateral view Hermus 2003, M.Sc., Referred to pp. 35, 36, 37, 38, Table 3.1, p. 189, and fig. Fig. 2.10, p. 97, Fig. 4.2, p. 250, Appendix I, p. 255, as *Ischnacanthus wilsoni* Hermus, 2003; Blais et al. 2015. JVP 35(1):1-13 ref. to p. 6 paratype for *Erymnacanthus clivus* Blais, Hermus, and Wilson, 2015. CCIS L2-245 Devonian 15, 19

Acanthodii Owen, 1846
Ischnacanthiformes Berg, 1940
Ischnacanthidae Woodward, 1891
UALVP56502 HOLOTYPE *Euryacanthus serratus* Blais, 2015
Canada: Northwest Territories, B-MOTH (?=GSC 69063) Silurian, Late Wenlockian (Homerian) or early Ludlovian (Gorstian), Road River Fm. Right upper palatoquadrate cartilage and dentigerous jaw bone in lingual view Blais, S. A. 2015. U of A Ph.D. thesis 233 pp. Ref. to pp. 73-80, and fig. Fig. 3.2, p. 89 CCIS LC-245 Devonian 9, 16;
Blais, Stephanie Anne. 2015. Ischnacanthiform dentitions and the origin and evolution of vertebrate teeth. PhD Thesis. Dept. of Biological Sciences, University of Alberta, Edmonton, Alberta, Canada. 1-233 pp.

Acanthodii Owen, 1846
Ischnacanthiformes Berg, 1940
Ischnacanthidae Woodward, 1891
UALVP56501 HOLOTYPE *Oroichthys theobromodon* Blais, 2015
Collector: Blais, Stephanie Anne, 2013
Canada: Northwest Territories, B-MOTH (?=GSC 69063). Silurian, Late Wenlockian (Homerian) or early Ludlovian (Gorstian), Road River Fm. isolated dentigerous jaw bone fragment Blais, S. A. 2015. U of A Ph.D. thesis 233 pp. Ref. to pp. 80-84, and fig. Fig. 3.3, p. 90; Fig. 3.4, p. 91.
Blais, Stephanie Anne. 2015. Ischnacanthiform dentitions and the origin and evolution of vertebrate teeth. PhD Thesis. Dept. of Biological Sciences, University of Alberta, Edmonton, Alberta, Canada. 1-233 pp.

Chondrichthyes Huxley, 1880
Elasmobranchii Bonaparte, 1838
UALVP46531 HOLOTYPE *Wapitiodus homalorhizo* Mutter, De Blanger, and Neuman, 2007
Collector: Lindoe, Allan L., 2003.
Canada: British Columbia, Wapiti Lake, Wapiti Lake F. Triassic-Triassic Lower-Smithian, Sulphur Mountain Fm. F cirque, scree slope on E side of ridge, W of Fossil F. Lake. Nearly complete, twoparts. Mutter, De Blanger, and Neuman, 2007, fig. Fig. 13, A, B, p. 323, Fig. 14, p. 324, Fig. 15, p. 326; Mutter, R. 2004. Fossil fische aus der Trias der kanadischen Rocky Mountians. Described this specimen as *Palaeobates*, Hybodontidae
Mutter, R. J., De Blanger, K., and Neuman, A. G. 2007. Elasmobranchs from the Lower Triassic Sulphur Mountain Formation near Wapiti Lake (BC, Canada). Zoological Journal of the Linnean Society Vol. 149:309–337.
PARATYPE:
UALVP4800 Mutter et al., 2007, referred to p. 323 (This paratype specimen was not listed by Bruner, 2019)

Chondrichthyes Huxley, 1880
Elasmobranchii Bonaparte, 1838
?Hybodontoidea Owen, 1846
Homalodontidae Mutter, Neuman, and De Blanger, 2008
TMP 97.74.10 HOLOTYPE at Royal Tyrrell Museum of Paleontology *Homalodontus aplopagus* (Mutter, De Blanger, and Neuman, 2007)
Canada: British Columbia, Wapiti Lake, Wapiti Lake C
Triassic-Triassic Early-Smithian, Sulphur Mountain Fm.
Mutter, R. J., De Blanger, K., and Neuman, A. G. 2007. Elasmobranchs from the Lower Triassic Sulphur Mountain Formation near Wapiti Lake (BC, Canada) Zoological Journal of the Linnean Society Vol. 149:309-337.
Mutter, Raoul J., Neuman, Andrew G., and De Blanger, Keith. 2008. Corrigendum *Homalodontus* nom. nov., a replacement name for *Wapitiodus* Mutter, de Blanger and Neuman, 2007 (Homalodontidae nom. nov., ?Hybodontoidea), preoccupied by *Wapitiodus* Orchard, 2005 Zoological Journal of the Linnean Society Vol. 154:419-420
PARATYPES:
UALVP17932 fin spine; Mutter et al., 2007, referred to p. 313 Biological Sciences Building: M-459: Cabinet 11: Drawer 1
UALVP46527 part of body. Mutter, De Blanger, and Neuman, 2007, Fig. 12, p. 322, CCIS L2-245 Triassic 07, 11
UALVP46528 part of body Published Mutter, De Blanger, and Neuman, 2007, Fig. 8, A, p. 319; CCIS LC-245, Triassic 5, 3 [location not listed by Bruner, 2019]
UALVP46529 anterior body preserved in ventral view with pectoral fins. Mutter, De Blanger, and Neuman, 2007, Fig. 10, Figs. 11, A,B, p. 321, CCIS L2-245 Triassic 07, 11

Chondrichthyes Huxley, 1880
Elasmobranchii Bonaparte, 1838
Homalodontidae Mutter, De Blanger, and Neuman, 2008
UALVP46531 HOLOTYPE *Homalodontus homalorhizo*

(Mutter, De Blanger, and Neuman, 2007)
Collector: Lindoe, Allan L., 2003
Canada: British Columbia, Wapiti Lake, Wapiti Lake F, F cirque, scree slope on E side of ridge, W of Fossil F. Lake.
Triassic-Triassic Lower-Smithian: Sulphur Mountain Fm.
nearly complete, 2 parts, Mutter, De Blanger, and Neuman (2007) Fig. 13, A,B p. 323, Fig. 14, p. 324, Fig. 15, p. 326; Mutter, R. 2004. Fossil fische aus der Trias der kanadischen Rocky Mountians. refereed to this specimen as *Palaeobates*, Hybodontidae. Mutter et al. (2007) Fig. 14, p. 324.

Mutter, R. J., De Blanger, K., and Neuman, A. G. 2007. Elasmobranchs from the Lower Triassic Sulphur Mountain Formation near Wapiti Lake (BC, Canada) Zoological Journal of the Linnean Society Vol. 149:309-337.

Mutter, Raoul J., Neuman, Andrew G., and De Blanger, Keith. 2008. Corrigendum *Homalodontus* nom. nov., a replacement name for *Wapitiodus* Mutter, de Blanger and Neuman, 2007 (Homalodontidae nom. nov., ?Hybodontoidea), preoccupied by *Wapitiodus* Orchard, 2005 Zoological Journal of the Linnean Society Vol. 154:419-420

Chondrichthyes Huxley, 1880
Elasmobranchii Bonaparte, 1838
Eugeneodontiformes Zangerl, 1981
Caseodontoideaa Zangerl, 1981
Caseodontidae Zangerl, 1981
Caseodus varidentis Mutter and Neuman, 2008.
Canada: British Columbia, Wapiti Lake, Cirque C
Triassic-Triassic Lower-Smithian, Sulphur Mountain Fm.

Mutter, R. J, and Neuman, A. G. 2008. New eugeneodontid sharks from the Lower Triassic Sulphur Mountain Formation of Western Canada. pp. 9-41. IN: Cavin, L., Longbottom, A., and Richter, M. (editors). Fishes and the Break-Up of Pangea. Geological Society Special Publication No. 295. 372 pp.
PARATYPES:
UALVP46535 Symphysial area of a lower jaw with 4 poorly preserved fragmentary teeth preserved in situ in the tooth whorl plus scattered teeth. Mutter and Neuman. 2008. Geol. Soc. Special Pub. No. 295: 9-41. Referred to pp. 14-17, and fig. Fig. 7, p. 17.
UALVP47003 Fragment of tooth whorl and adjoining lateral tooth files. Mutter and Neuman. 2008. Geol. Soc. Special Pub. No. 295: 9-41. Referred to pp. 17-18 and fig. Fig. 8, a,b, p. 17. CCIS L2-245 Triassic 11, 4

Chondrichthyes Huxley, 1880
Elasmobranchii Bonaparte, 1838
Eugeneodontiformes Zangerl, 1981
Caseodontoideaa Zangerl, 1981
Caseodontidae Zangerl, 1981
Fadenia uroclasmato Mutter and Neuman. 2008
Canada: British Columbia, Wapiti Lake, Cirque C
Triassic-Triassic Lower-Smithian, Sulphur Mountain Fm.

Mutter, R. J, and Neuman, A. G. 2008. New eugeneodontid sharks from the Lower Triassic Sulphur Mountain Formation of Western Canada. pp. 9-41. IN: Cavin, L., Longbottom, A., and Richter, M. (editors). Fishes and the Break-Up of Pangea. Geological Society Special Publication No. 295. 372 pp.
PARATYPE:
UALVP46526 Anterior body section with two pectoral fins, vague outlines and surface depressions of the dorsoventrally flattened neurocranium, sclerotic rings, branchial skeleton with several arches and part of tooth-bearing jaws. Mutter and Neuman. 2008. Geol. Soc. Special Pub. No. 295: 9-41. Referred to pp. 18-25, and fig. Fig. 13, A, B, p. 22, Fig. 14, B, p. 23.

Chondrichthyes Huxley, 1880
Elasmobranchii Bonaparte, 1838
Orectolobiformes Applegate, 1972
Ginglymostomatidae Gill, 1862
UALVP58762 HOLOTYPE *Cantioscyllium clementsi* Case, Cook, Kightlinger, and Borodin, 2019
Collectors: Gerard R. Case, Todd D. Cook, Taylor Kightlinger, and Paul D. Borodin. 2019.
USA: North Carolina: Bladen County, near Elizabethtown, from a landfill (garbage) pit now filled and located at 34° 36.458' N, 78° 36.490' W.; Late Cretaceous, middle Campanian, Bladen Formation. Complete tooth of indeterminate jaw position. Case et al, 2019, Descr. p, 72 and fig. Fig. 1, F, p. 70. CCIS LC-245, Cretaceous 12, 4
Note:
Figure 1, on page 71 cites the wrong UALVP catalogue numbers "B, *Meristodonoides* sp., UALVP 85757 [should be UALVP58757] (incomplete tooth); C, *Lonchidion babulskii*, UALVP 58758 (incomplete tooth); D, *Squatina* sp., UALVP 58760 (incomplete tooth); E, *Plicatoscyllium globidens*, UALVP 58761 (complete lateral tooth); F, *Cantioscyllium clementsi* sp. nov., UALVP 587625 [should be UALVP58762] (holotype, complete lateral tooth)."

Case, Gerard R., Cook, Todd D., Kightlinger, Taylor, and Borodin, Paul D. 2019. Middle Campanian Euselachian Diversity of the Southern Region of the Atlantic Coastal Plain of North America Vertebrate Anatomy Morphology Palaeontology 7:69–82

Chondrichthyes Huxley, 1880
Elasmobranchii Bonaparte, 1838
Batomorphii Cappetta, 1980
Myliobatiformes Compagno, 1973
Myliobatidae Bonaparte, 1838 [change in Family]

UALVP52360 HOLOTYPE *Eorhinoptera grabdai* Case, Cook, and Wilson, 2011 [*E. grabdai* is now in synonymy as *Meridiania convexa* Case, 1994]

Collector: Grabda, David W.

United States: South Carolina Fishburne Tertiary-Eocene-Eocene early (Ypresian) single isolated pavement tooth, with 12 root lobelets. Case et al, 2010 Historical Biol. pp. 1-6, p. 2, Fig. 2, A, p. 3, Fig. 3, A, p. 4 Case, G. R. and Cook, Todd, 2011. Fig. 2, A, p. 141, Fig. 3, A, p. 142. CCIS L2-245, Eocene 4, 12

Case, Gerard R., Cook, Todd D., and Wilson, Mark V. H. 2011. A new genus and species of fossil myliobatoid ray from the Fishburne Formation (lower Eocene/Ypresian) of Berkeley County, South Carolina, USA. Historical Biology Vol. 23 (2-3):139-144.

PARATYPES:

UALVP52361 single isolated pavement tooth, with 4 root lobelets Case et al. 2010 Historical Biol. pp. 1-6, p. 2, Fig. 2, B, p. 3, Fig. 3, B, p. 4; Case, et al. 2011 Fig. 2, B, p. 141, Fig. 3, B, p. 142, CCIS L2-245, Eocene 4, 12

UALVP52362 single isolated pavement tooth, with 6 root lobelets Case, et al. 2011 Fig. 2, C, p. 141, CCIS L2-245, Eocene 4, 12

UALVP52363 single isolated pavement tooth, with 4 root lobelets Case et al. 2010 Historical Biol. pp. 1-6, p. 2, Case, et al. 2011 Referred to p. 140, CCIS L2-245, Eocene 4, 12

UALVP52364 Under 10, fractured pavement teeth. Case et al. 2010 Historical Biol. pp. 1-6, p. 2, Fig. 2, D, p. 3; Case, et al. 2011. Fig. 2, D, p. 141, CCIS L2-245, Eocene 4, 12

Chondrichthyes Huxley, 1880
Elasmobranchii Bonaparte, 1838
Batomorphii Cappetta, 1980
Rajiformes Berg, 1940
Sclerorynchoidei Cappetta, 1980 [change in spelling of suborder]
Sclerorynchidae Cappetta, 1974 [change in spelling of family]

UALVP53724 HOLOTYPE *Borodinopristis shannoni* Case, Cook, Wilson, and Borodin, 2012, p. 593

Collector: Case, Gerard R.

United States: North Carolina, Bladen County, Elizabethtown. Cretaceous-Cretaceous Late-Campanian middle 1 rostral plate Case et al. 2012 Hist. Biology Vol. 24(6):p. 593, Fig. 2, p. 594. CCIS LC-245, Cretaceous 12, 4

Case, Gerard R., Cook, Todd D., Wilson, Mark V. H., and Borodin, Paul D. 2012. A new species of the sclerorhynchid sawfish *Borodinopristis* from the Campanian (Upper Cretaceous) of North Carolina, USA. Historical Biology Vol. 24(6):592-597.

PARATYPES:

UALVP53725 1 rostral plate Case et al. 2012, p. 593, Fig. 3, A, p. 595. CCIS LC-245, Cretaceous 12, 4

UALVP53726 1 rostral plate Case et al. 2012, p. 593, Fig. 3, B, p. 595. CCIS LC-245, Cretaceous 12, 4

UALVP53727 1 rostral plate Case et al. 2012, p. 593, Fig. 3, C, p. 595. CCIS LC-245, Cretaceous 12, 4

Osteichthyes Huxley, 1880
Actinopterygii Cope, 1887
Saurichthyiformes ldinger 1937
Saurichthyidae Stensiö, 1925

CMN 12288 HOLOTYPE *Saurichthys toxolepis* Mutter, Cartanyà, and Basaraba, 2008. Holotype at Canadian Museum of Nature, Ottawa, Ontario, Canada

Canada: British Columbia: Wapiti Lake Proincial Park, Ganoid Ridge at Wapiti Lake

Late Triassic, Vega-Phroso Siltstone Member, Sulphur Mountain Fm., age is believed to be Griesbachian to mainly (early) Smithin (and possibly Spathian).

Mutter, R. J., Cartanyà, J., and Basaraba, S. U. A. 2008. New evidence of *Saurichthys* from the Lower Triassic with an evaluation of early saurichthyid diversity. pp. 103-127. In: Arratia, G,, Schultze H-P., and Wilson, M.V. H., (editors). Mesozoic Fishes 4 – homology and phylogeny. Dr. Friedrich Pfeil, Munich, Germany. 502 pp.

PARATYPES:

UALVP1799 58 vertebral units (?mistake=UALVP17998?) Mutter, Cartanyà, and Basaraba, 2008, Mesozoic Fishes 4, Referred to p. 110. ? CCIS: L2-245: Triassic 05: drawer 06 (as UALVP17998)

UALVP17980 Partial skull. Mutter, Cartanyà, and Basaraba, 2008, Mesozoic Fishes 4, Referred to p. 107. CCIS L2-245 Triassic 5, 5

UALVP17981 Partial skull Mutter, Cartanyà, and Basaraba, 2008, Mesozoic Fishes 4, Referred to p. 107. CCIS L2-245 Triassic 5, 6

UALVP17982 Partial skull Mutter, Cartanyà, and Basaraba, 2008, Mesozoic Fishes 4, Referred to p. 107. CCIS L2-245 Triassic 5, 6

UALVP17984 Partial skull Mutter, Cartanyà, and Basaraba, 2008, Mesozoic Fishes 4, Referred to p. 107. CCIS L2-245 Triassic 5, 6

UALVP17991 partial, missing anterior part of snout; Mutter, Cartanyà, and Basaraba, 2008, Mesozoic Fishes 4, Referred to p. 107 Earth Sciences Building: B-01

UALVP17992 Mutter, Cartanyà, and Basaraba, 2008,

Mesozoic Fishes 4, Referred to p. 107; fig. Fig. 2, p. 107; Fig. 4, C, p. 108. Earth Sciences Building: B-01

UALVP17993 Partial specimen Mutter, Cartanyà, and Basaraba, 2008, Mesozoic Fishes 4, Referred to p. 107; fig. Fig. 9, p. 111; (UALVP17996 = counterpart to UALVP17993) CCIS L2-245 Triassic 5, 6

UALVP17994 partial body, scale Mutter, Cartanyà, and Basaraba, 2008, Mesozoic Fishes 4, fig. Fig. 8, p. 111. CCIS L2-245 Triassic 5, 6

UALVP17996 Partial specimen Mutter, Cartanyà, and Basaraba, 2008, Mesozoic Fishes 4, Referred to p. 107, opercle, cleithrum, p. 110. (UALVP17993 = counterpart to UALVP17996) CCIS L2-245 Triassic 5, 6

UALVP17998 partial body and fin Mutter, Cartanyà, and Basaraba, 2008, Mesozoic Fishes 4, Referred to p. 107; fig. Fig. 7, B, p. 110; Fig. 9, p. 111. CCIS L2-245 Triassic 5, 6

UALVP20346 lower jaw Mutter, Cartanyà, and Basaraba, 2008, Mesozoic Fishes 4, Referred to p. 107. CCIS L2-245 Triassic 5, 6

UALVP24227 skull Mutter, Cartanyà, and Basaraba, 2008, Mesozoic Fishes 4, Referred to p. 107; fig. Fig. 4, A, B, p. 108. Earth Sciences Building: B-01

UALVP33502 head Mutter, Cartanyà, and Basaraba, 2008, Mesozoic Fishes 4, Referred to p. 107;

UALVP33505 head Mutter, Cartanyà, and Basaraba, 2008, Mesozoic Fishes 4, Referred to p. 107, p. 110 and fig. Fig. 3, p. 107. CCIS L2-245 Triassic 5, 6

UALVP46512 head part/counterpart Mutter, Cartanyà, and Basaraba, 2008, Mesozoic Fishes 4, Referred to p. 107; CCIS L2-245 Triassic 4, 11

UALVP46514 Partial body, small Mutter, Cartanyà, and Basaraba, 2008, Mesozoic Fishes 4, Referred to p. 107; fig. Fig. 7, C, p. 110; Fig. 9, p. 111; CCIS L2-245 Triassic 4, 11

UALVP46611 Partial body. Mutter, Cartanyà, and Basaraba, 2008, Mesozoic Fishes 4, Referred to p. 107; fig. Fig. 7, A, p. 110; CCI: L2-245 Triassic 5, 5

UALVP46612 scales, 2 parts listed as *Saurichthys* in Appendix 2 but listed as PARATYPE under new species *Saurichthys toxolepis*; Mutter, Cartanyà, and Basaraba, 2008, Mesozoic Fishes 4, Referred to p. 107; Fig. 9, p. 111; CCIS L2-245, Triassic 4, 11

Osteichthyes Huxley, 1880
Actinopterygii Cope, 1887
Chondrostei Miller, 1845
Acipenseriformes Berg, 1940
Acipenseridae Bonaparte, 1831

UALVP56596 HOLOTYPE *Anchiacipenser acanthaspis* Sato, Murray, Vernygora and Currie, 2018

Collectors: Hiroki Sato, Clive Coy, and Greg Funston. June 28, 2018

Canada: Alberta: Dinosaur Provincial Park (DPP), in the DPP Core locality, 50.740247°N. Lat., -111.49309463278313°W. Long.

Cretaceous: late Campanian, Dinosaur Park Formation, Belly River Group, dated at 75.5 to 74.8 Ma. well-preserved, articulated specimen preserving the head and anterior portion of the body lacking the pelvic, dorsal, anal, and caudal fins Sato et al. 2018 JVP Vol. 38(4):1-13ms pp. Descr. pp. 3-13, and fig. Fig. 1, p. 3, Fig. 2, p. 4, Fig. 3, p. 5, Fig. 4, p. 6, Fig. 5, 6, p. 7, Fig. 7, p. 8, Fig. 8, p. 9, Fig. 9, p. 10, Fig. 10, A, p. 11. CCIS L2-245 Cretaceous 10, 1

Sato, Hiroki, Murray, Alison M., Vernygora, Oksana, and Currie, Philip J. 2018. A rare, articulated sturgeon (Chondrostei: Acipenseriformes) from the Upper Cretaceous of Dinosaur Provincial Park, Alberta, Canada. Journal of Vertebrate Paleontology. Vol. 38(4): DOI: 10.1080/02724634.2018.1488137.

Osteichthyes Huxley, 1880
Actinopterygii Cope, 1887
Chondrostei Miller, 1845
Acipenseriformes Berg, 1940
Acipenseridae Bonaparte, 1831

UALVP62007 HOLOTYPE *Boreiosturion labyrinthicus* Murray, Nelson, and Brinkman, 2023

Collectors: Anatasia Pavlic and Cal Kiejko. October 17, 2022

Canada: Alberta: Edmonton; North Saskatchewan River valley; downstream from the bridge at 75th Street at water level; 53.559611° N. Lat., 113.428361° W. Long. Cretaceous: late Campanian, Horseshoe Canyon Formation. Partial skull in nodule preserving the posterior part of the skull, the subopercles, and the anterior part of pectoral girdles. Murray et al 2023 JVP Referred to p. e2232846-3 to p. e2232846-5 and fig. Fig. 2, p. e2232846-4; Fig. 3, Fig. 4, p. e2232846-5; Fig. 5, p. p. e2232846-6; Fig. 6, p. p. e2232846-7. CCIS L2-245 Cretaceous 10, 2

Murray, Alison M., Nelson, Luke E., and Brinkman, Donald B. 2023. A new sturgeon from the Upper Cretaceous Horseshoe Canyon Formation central Alberta. Canada Journal of Vertebrate Paleontology Vol. 43: DOI: 10.1080/02724634.2023.2232846

Osteichthyes Huxley, 1880
Perleidiformes, Berg, 1937
Platysiagidae Brough, 1939
Helmolepis cyphognathus Neuman and Mutter, 2005

Neuman, Andrew G., and Mutter, Raoul J. 2005. *Helmolepis cyphognathus*, sp. nov., a new platysiagid ac-

tinopterygian from the Lower Triassic Sulphur Mountain Formation (British Columbia, Canada). Canadian Journal of Earth Sciences Vol. 42(1):25–36

PARATYPES:

UALVP46671 and UALVP46671-T1 Head; Neuman, Andrew G., and Mutter, Raoul J., 2005, CJES 42(1): referred to p. 28. CCIS L2-245, Triassic 5, drawer 3 (location not listed in Bruner, 2019)

UALVP46769: UALVP46769-T1, UALVP46769-T2, Partial vertebrae; Neuman, Andrew G., and Mutter, Raoul J., 2005, CJES 42(1): referred to p. 28. CCIS L2-245, Triassic 8, 11 (not listed in Bruner, 2019)

Osteichthyes Huxley, 1880
Perleidiformes, Berg, 1937
Perleididae (=Parasemionotidae)

UALVP19119 HOLOTYPE *Perleidus canadensis* Neuman. 1986 reidentified and published as Platysiagidae, *Helmolepis cyphognathus* Mutter and Neuman, 2005

Canada: British Columbia, Wapiti Lake, Wapiti Lake F Cirque 54°31' 45" N. Lat., 120°44' 45" W. Long. (Note: Neuman, 1986, p. 36, longitude incorrectly given as 140°45.4' W. Long.)

Triassic-Triassic Early-Smithian Sulphur Mountain Fm.

The following specimens were originally described as *Perleidus canadensis* Neuman. 1986 in Neuman (1986) but were reidentified and published as Platysiagidae, *Helmolepis cyphognathus* Mutter and Neuman, 2005 and were cited in Bruner (2019, pp. 110-114).

PARATYPES: UALVP1310, UALVP1317, UALVP1319, UALVP18988, UALVP18991, UALVP19015, UALVP19059, UALVP19071, UALVP19094, UALVP19100, UALVP19110, UALVP19120, UALVP19122, UALVP22539, UALVP22540, UALVP22541, UALVP22542, UALVP22543, UALVP22544, UALVP22545, UALVP22546, UALVP22547, UALVP22548, UALVP22549, UALVP22550, UALVP22551, UALVP22552.

Neuman, Andrew G., and Mutter, Raoul J. 2005 *Helmolepis cyphognathus*, sp. nov., a new platysiagid actinopterygian from the Lower Triassic Sulphur Mountain Formation (British Columbia, Canada). Canadian Journal of Earth Sciences Vol. 42:25–36

Neuman, Andrew G. 1986. Fossil Fishes of the Families Perleididae and Parasemionotidae from the Lower Triassic Sulphur Mountain Formation of Western Canada University of Alberta, Department of Zoology. M.Sc. Thesis. Edmonton, Alberta, Canada 142 pp.

PARATYPES of *Perleidus canadensis* Neuman. 1986 not cited or reidentified as *Helmolepis cyphognathus* Mutter and Neuman, 2005:

UALVP19110 partial Neuman 1986, MSc thesis, Ref. to p. 36. CCIS L2-245 Triassic 6, 12

UALVP22542 fish head. Neuman 1986, MSc thesis Ref. to p. 36. CCIS: L2-245 Triassic 1, 5

Osteichthyes Huxley, 1880
Parasemionotidae

UALVP22308 HOLOTYPE *"*Laudonia*" *brevicephala* Neuman. 1986

Collectors: Lindoe, L. Allan; Neuman, Andrew G., 1985

Canada: British Columbia, Wapiti Lake, Cirque R, 54°32.5' N. Lat., 120° 45.5' W. Long.

Triassic-Triassic Early-Smithian, Sulphur Mountain complete skeleton; Neuman 1986, MSc thesis Ref. to Appendices 2, Part 1, p. 140, Appendix 2, Part 2, p. 141, Appendix 2, Part 3, p. 142, and fig.. Fig. 14, A, B, p. 75. Fig. 15, A, p. 75. Earth Sciences Building: B-01

**Laudonia* is preoccupied by a trilobite named by Harrington (1956).

Neuman, Andrew G. 1986. Fossil Fishes of the Families Perleididae and Parasemionotidae from the Lower Triassic Sulphur Mountain Formation of Western Canada Uniiversity of Alberta, Department of Zoology. M.Sc. Thesis. Edmonton, Alberta, Canada 142 pp.

PARATYPES of *"*Laudonia*" *brevicephala* Neuman. 1986

UALVP22112 almost complete Neuman 1986, MSc thesis Ref. to p. 73. CCIS: L2-245: Triassic 06: drawer 11

UALVP22300 fish complete counterpart of Tyrrell TMP 83.206.51 Neuman 1986, MSc thesis Ref. to p. 73. CCIS L2-245 Triassic 06, 11

UALVP22301 fish complete Neuman 1986, MSc thesis Ref. to Appendix 2, Part 1, p. 140, Appendix 2, Part 2, p. 141, Appendix 2, Part 3, p. 142, and fig. Fig. 11,B, p. 56., Fig. 14, B, p. 75, Fig. 15, B, p. 77, F8ig. 16, A, B, p. 79.

UALVP22303 fish skull Neuman 1986, MSc thesis Ref. to p. 73. CCIS L2-245 Triassic 1,3

UALVP22304 fish minus tail, part and counterpart Neuman 1986, MSc thesis Ref. to p. 73.

UALVP22310 Fish complete, part and counterpart. Neuman 1986, MSc thesis Ref. to p. 73, Appendix 2, Part 1, p. 140, Appendix 2, Part 2, p. 141, Appendix 2, Part 3, p. 142, CCIS L2-245 Triassic 6, 11

Osteichthyes Huxley, 1880
Parasemionotidae
Albertonia lambei Neuman. 1986

Canada: British Columbia, Wapiti Lake, Cirque R, 54° 32.5' N. Lat., 120° 45.5' W. Long.

Triassic-Triassic Early-Smithian, Sulphur Mountain

Neuman, Andrew G. 1986. Fossil Fishes of the Families

Perleididae and Parasemionotidae from the Lower Triassic Sulphur Mountain Formation of Western Canada Uniiversity of Alberta, Department of Zoology. M.Sc. Thesis. Edmonton, Alberta, Canada 142 pp.
PARATYPES of *Albertonia lambei* Neuman. 1986
UALVP22291 fish complete, 2 latex peels, Neuman 1986, MSc thesis Ref. to p. 92, Appendix 2, Part 1, p. 140, Appendix 2, Part 2, p. 141, Appendix 2, Part 3, p. 142, CCIS L2-245 Triassic 3, 13
UALVP22293 lacking tail complete, 2 latex peels, Neuman 1986, MSc thesis Ref. to p. 92, Appendix 2, Part 1, p. 140, Appendix 2, Part 2, p. 141, Appendix 2, Part 3, p. 142, and fig. Fig. 19, A, p. 95., Fig. 20, B, p. 96. CCIS L2-245 Triassic 3, 13
UALVP22294 fish Neuman 1986, MSc thesis Ref. to p. 92, Appendix 2, Part 1, p. 140, Appendix 2, Part 2, p. 141, Appendix 2, Part 3, p. 142, Earth Sciences Museum, ESB-B01

Osteichthyes Huxley, 1880
Osteoglossiformes Regan, 1909
Osteoglossoidei Regan, 1909
Osteoglossidae Bonaparte, 1850
UALVP58786 Cast of HOLOTYPE *Phareodus queenslandicus* Hills, 1934 Original F2357 at Queensland Museum, Australia
Australia: southeastern Queensland, Redbank Plains.
Eocene. Hills, 1934, Descr. pp. 160-164, and fig. Plate 18. CCIS L2-245: Cretaceous 12, 5
Hills, E. S. 1934. Tertiary fresh water fishes from southern Queensland. Memoirs of the Queensland Museum. 10(4):157-174.
PARATYPE:
UALVP58787 Cast of PARATYPE F2359 Hills, 1934, fig. Fig. 5, p. 162, Fig. 6, p. 163. CCIS L2-245 Cretaceous 12, 5

Osteichthyes Huxley, 1880
Osteoglossiformes Regan, 1909
Osteoglossoidei Regan, 1909
Osteoglossidae Bonaparte, 1850
UALVP62364 Latex Cast of HOLOTYPE *Joffrichthys tanyourus* Murray, Zelenitsky, Brinkman, and Neuman, 2018
at Royal Tyrrell Museum of Paleontology TMP 2015.011.0003;
Collector: Edgar Nernberg, March 2015
Canada: Alberta, Calgary
Tertiary-Paleocene-Paleocene late, Paskapoo Formation
Complete fish preserved in right lateral view. Murray et al 2018 Zool. J of the Linnean Soc Vol. 20:1-38 Desc. pp. 5-11, Table 1, p. 7, and fig. Fig. 2, p. 5, Fig. 4, p. 8. Appendix 1, p. 34. CCIS L2-245 Paleocene 13, 11
Murray, Alison M., Zelenitsky, Darla K., Brinkman, Donald B., and Neuman, Andrew G. 2018. Two new Palaeocene osteoglossomorphs from Canada, with a reassessment of the relationships of the genus †*Joffrichthys*, and analysis of diversity from articulated versus microfossil material Zoological Journal of the Linnean Society Vol. 20:1-38
PARATYPE:
UALVP62367 Latex Cast of PARATYPE at Royal Tyrrell Museum of Paleontology TMP 2015.011.0002; anteroventral portion of fish, preserving the head and ventral body, missing the dorsal and caudal regions, preserved in right lateral view Murray et al 2018 Zool. J of the Linnean Soc Vol. 20:1-38 Desc. pp. 5-11, Table 1, p. 7, and fig. Fig. 3, p. 6, Fig. 5, p. 8, Appendix 1, p. 34 CCIS L2-245 Paleocene 13, 11

Osteichthyes Huxley, 1880
Osteoglossiformes Regan, 1909
Osteoglossoidei Regan, 1909
Osteoglossidae Bonaparte, 1850
UALVP62368 Latex Cast of HOLOTYPE *Lopadichthys colwellae* Murray, Zelenitsky, Brinkman, and Neuman, 2018
at Royal Tyrrell Museum of Paleontology TMP 2015.011.0001;
Collector: Edgar Nernberg, March 2015
Canada: Alberta, Calgary
Tertiary-Paleocene-Paleocene late, Paskapoo Formation
A complete fish preserved in left lateral view Murray et al 2018 Zool. J of the Linnean Soc Vol. 20:1-38 Desc. pp. 11-20, Table 2, p. 14, and fig. Fig. 7, p. 12, Fig. 10, p. 15, Fig. 12 A,B,C, p. 17, Fig. 13, p. 17, Fig. 16, E, p. 19, Appendix 1, p. 34 CCIS L2-245 Paleocene 13, 11
Murray, Alison M., Zelenitsky, Darla K., Brinkman, Donald B., and Neuman, Andrew G. 2018. Two new Palaeocene osteoglossomorphs from Canada, with a reassessment of the relationships of the genus †*Joffrichthys*, and analysis of diversity from articulated versus microfossil material Zoological Journal of the Linnean Society Vol. 20:1-38
PARATYPES:
UALVP62369 Latex Cast of Paratype at Royal Tyrrell Museum of Paleontology TMP 2015.011.0004; A complete fish preserved in left lateral view Murray et al 2018 Zool. J of the Linnean Soc Vol. 20:1-38 Desc. pp. 11-20, Table 2, p. 14, and fig. Fig. 8, p. 12, Fig. 11, p. 15, Fig. 14, p. 18, Fig. 16, B, p. 19, Appendix 1, p. 34 CCIS L2-245 Paleocene 13, 11
UALVP62370 Latex Cast of Paratype at Royal Tyrrell Museum of Paleontology TMP 2015.011.0005; The posterior portion of a fish, preserving the dorsal, anal, and caudal fins and most of the body, but missing the head and

anteroventral body, preserved in left lateral view Murray et al 2018 Zool. J of the Linnean Soc Vol. 20:1-38 Desc. pp. 11-20, Table 2, p. 14, and fig. Fig. 9, p. 13, Fig. 11, p. 15, Fig. 15, p. 18, Fig. 16, B, p. 19, Appendix 1, p. 34 CCIS L2-245 Paleocene 13, 11

Osteichthyes Huxley, 1880
Clupeomorpha Greenwood et al., 1966
Ellimmichthyiformes Grande, 1982
Armigatidae Murray and Wilson, 2013
UALVP51679 HOLOTYPE *Armigatus oligodentatus* Vernygora and Murray 2016, p. 2
Collector: Darrin Molinaro, 2009
Morocco
Cretaceous-Cretaceous Late-Cenomanian, Akrabou Formation
1 whole fish, KK89-D-4, Referred to p. 534 and figured Fig. 10, p. 535 Murray et al. (2013); Vernygora and Murray 2016 JVP Vol 36(1):1-9 Figured Fig. 1, p. 3, Fig. 2 B, p. 5, Fig. 3 A, B, p. 5; Referred to p. 2, p. 3, p. 4 Table 1, p. 6 CCIS L2-245 Cretaceous 8, 5
Vernygora, Oksana, and Murray, Alison M. 2016 A new species of *Armigatus* (Clupeomorpha, Ellimmichthyiformes) from the Late Cretaceous of Morocco, and its phylogenetic relationships Journal of Vertebrate Paleontology Journal of Vertebrate Paleontology Vol. 36(1):1-9
PARATYPES:
UALVP47146 Whole fish Vernygora and Murray 2016 JVP Vol 36(1):1-9 Referred to p. 2, p. 3, p. 4 Table 1 CCIS L2-245 Cretaceous 8, 5
UALVP47155 whole fish, part and counterpart; Referred to p. 534 Murray et al. (2013); Vernygora and Murray 2016 JVP Vol 36(1):1-9 Referred to p. 2, p. 4 Table 1 CCIS L2-245 Cretaceous 8, 5
UALVP51602 2 Whole fish, "17"; Referred to p. 536 Murray et al. (2013); Vernygora and Murray 2016 JVP Vol 36(1):1-9 Referred to p. 2, p. 4 Table 1 CCIS L2-245 Cretaceous 8, 5
UALVP51622 Whole fish Vernygora and Murray 2016 JVP Vol 36(1):1-9 Figured Fig. 1 B p. 3; Referred to p. 2, p. 3, p. 4 Table 1 CCIS L2-245 Cretaceous 8, 5
UALVP51623 Whole fish, part and counterpart; Referred to p. 536 Murray et al. (2013); Vernygora and Murray 2016 JVP Vol 36(1):1-9 Figured Fig. 2, p. 5; Referred to p. 2, p. 3, p. 4 Table 1, p. 6 CCIS L2-245 Cretaceous 8, 5
UALVP51680 1 whole fish, KK89-A-7; Referred to p. 534 Murray et al. (2013); Vernygora and Murray 2016 JVP Vol 36(1):1-9 Referred to p. 2, p. 4 Table 1, p. 6 CCIS L2-245 Cretaceous 8, 5
UALVP51681 1 whole fish, KK89-S-2 Vernygora and Murray 2016 JVP Vol 36(1):1-9 Referred to p. 2, p. 3, p. 4 Table 1, p. 6 CCIS L2-245 Cretaceous 8, 5

Osteichthyes Huxley, 1880
Ellimmichthyiformes Grande, 1982
Paraclupeidae Chang and Chou, 1977
Thorectichthys marocensis Murray and Wilson, 2013
Morocco: Ouarzazate, Agoult, site KK0809.
Cretaceous-Cretaceous Late-Cenomanian, Akrabou Formation.
INCORRECTLY listed as paratypes of *Thorectichthys marocensis* Murray and Wilson, 2013 by Bruner (2019, p. 121)
UALVP51664 whole fish, and one crustacean. Murray and Wilson, 2013, Mes. Fishes 5, fig. Fig. 1D, P. 270, Descr. pp. 276, 277, Table 1, p. 277, p. 278. Murray et al., 2013, Descr. p. 534. CCIS LC-245, Cretaceous 8, 3
UALVP51715 1 whole fish, part and counterpart, KK89-M1. Murray and Wilson, 2013, Mes. Fishes 5, Descr. p. 276 and Table 2, p. 277. Murray et al., 2013, Mes. Fishes 5, Descr. p. 534 and fig. Fig. 9, p. 535 CCIS LC-245, Cretaceous 8, 3

Osteichthyes Huxley, 1880
Ellimmichthyiformes Grande, 1982
Paraclupeidae Chang and Chou, 1977
Thorectichthys rhadinus Murray and Wilson, 2013
Morocco: Ouarzazate, Agoult, site KK0809.
Cretaceous-Cretaceous Late-Cenomanian, Akrabou Formation.
Murray, Alison M., and Wilson, Mark V. H. 2013. Two new paraclupeid fishes (Clupeomorpha: Ellimmichthyiformes) from the Upper Cretaceous of Morocco. pp. 267–290 IN: Arratia, G., and Schultze, H.-P. (editors) Mesozoic Fishes 5-Global diversity and Evolution Dr. Friedrich Pfeil Munchen, Germany. 560 pp.
PARATYPES NOT LISTED BY Bruner (2019) see *T. marocensis* above
UALVP51664 whole fish, and one crustacean. Murray and Wilson, 2013, Mes. Fishes 5, fig. Fig. 1D, P. 270, Descr. pp. 276, 277, Table 1, p. 277, p. 278. Murray et al., 2013, Descr. p. 534. CCIS LC-245, Cretaceous 8, 3
UALVP51715 1 whole fish, part and counterpart, KK89-M1. Murray and Wilson, 2013, Mes. Fishes 5, Descr. p. 276 and Table 2, p. 277. Murray et al., 2013, Mes. Fishes 5, Descr. p. 534 and fig. Fig. 9, p. 535 CCIS LC-245, Cretaceous 8, 3

Osteichthyes Huxley, 1880
Paracanthopterygii (sensu Patterson and Rosen, 1989)
Percopsidae Regan, 1911
Massamorichthys wilsoni Murray, 1996
Canada: Alberta, Joffre, Joffre Bridge SW Fish Layer
Tertiary-Paleocene, Paskapoo Formation.

Murray, Alison M. 1994. Description of two new species of basal paracanthopterygian fishes from the Paleocene of Alberta, and a phylogenetic analysis of the Percopsiformes (Teleostei: Paracanthopterygii) Master of Science Thesis, Department of Zoology, University of Alberta, Edmonton, Alberta, Canada 175 pp.

Murray, Alison M. 1996. A new Paleocene genus and species of percopsid, *Massamorichthys wilsoni* (Paracanthopterygii) from Joffre Bridge, Alberta, Canada. Journal of Vertebrate Paleontology, Vol. 16(4): 642–652

PARATYPES:

UALVP25526 listed as paratype in Murray 1994 M.Sc. thesis but not Murray (1996) CCIS L2-245, Paleocene 7, 11

*UALVP32554 (RECATALOGUED AS UALVP51963 Murray, 1996, Descr. pelvic splint, p. 649. CCIS L2-245, Paleocene 7, 12

Osteichthyes Huxley, 1880
Ostariophysi (sensu Fink and Fink, 1981)
Siluriformes (sensu Chardon, 1968)
Hypsidoridae Grande, 1987

UALVP27058 Cast of HOLOTYPE *Hypsidoris farsonensis* Lundberg and Case, 1970 at Princeton Natural History Museum, PU20570, (now deposited at Peabody Museum of Natural History, Yale University, New Haven, Connecticut)

Collector: Ed Hix, 1970

USA: Wyoming: Sweetwater County: about 3 miles east of Big Sandy Reservoir near Farson

Early Middle Eocene, Laney Member, Green River Formation

Whole fish. Lundberg and Case, 1970, J. of Pal. Vol. 44(3):451-457 Descr. Pp. 452-455 and fig. Plate 61, Figs. 1-2, Plate 82, text-figs. Fig. 1, p. 453, Fig. 2, p, 454, Tables 1 and2, p. 454. CCIS L2-245 Eocene 4, 4

Lundberg, J. G., and Case, G. R. 1970. A new catfish from the Eocene Green River Formation, Wyoming Journal of Paleontology Vol. 44(3):451-457

Osteichthyes Huxley, 1880
Ostariophysi (sensu Fink and Fink, 1981)
Gonorynchiformes Berg, 1940
Gonorynchidae Richardson, 1848

UALVP60986 HOLOTYPE *Notogoneus maarvelis* Grande and Wilson 2022 IN: Grande et al., 2022

Collector: Northwest Territories Geological Survey, 1993

Canada: Northwest Territories. Wombat Kimberlite

Late Cretaceous, Early Campanian, Wombat kimberlite maar deposits

A small individual (29.2 mm SL and 34.6 mm TL) possibly a juvenile; part and counterpart Grande, Terry C. et al. 2022 Cret. Res. Vol. 135 Descr. pp. 9-17 and fig. Fig. 4, p. 6; Fig. A, (part) anterior portion of fish, B, (counterpart) anterior portion of fish p. 8; Fig. 6, A (part) skull and pectoral region, B (counterpart), p. 10; Fig. 7, (part) A, body region, B caudal region, p. 12; Fig. 8, (part) A, Dorsal and Pelvic fins, B, caudal skeleton, p. 14; Table 1, measurements and meristics, p. 16;

Grande, Terry C., Wilson, Mark V. H., Reyes, Alberto V., Buryak, Serhiy D., Wolfe, Alexander P., and Siver, Peter A. 2022. A new, Late Cretaceous gonorynchiform fish in the genus †*Notogoneus* from drill core of crater-lake deposits in a kimberlite maar, Northwest Territories, Canada. Cretaceous Research 135 (105176):1-19

Osteichthyes Huxley, 1880
Ostariophysi (sensu Fink and Fink, 1981)
Cypriniformes Bleeker, 1860
Cyprinoidei sensu Stout, Tan, Lemmon, Lemon, and Armbruster 2016
Cyprinidae Rafinesque, 1815

PALITB/TLW-154-2009 HOLOTYPE *Hadromos sandersae* Murray, 2020 Paleontology Collections (PAL) of the Institut Teknologi Bandung (ITB), Indonesia. This specimen is currently housed in the UALVP collections CCIS L2-245 Eocene 4, 17

Collector: Alison M. Murray

Indonesia: Sumatra, Sumatera Barat (West Sumatra) Province, Barisan Mountain Range, Ombilin Basin, Datarmasiag-Tanahsirah Main Quarry, 00°34’72.0” S LAT, 100°46’11.1” E LONG.

Eocene, Sangkarewang Fm.

A complete fish with the body preserved in right lateral view, but the skull elements are disarticulated and displaced. Murray JVP Vol. 40(1) Descr. Pp. e1762627-7- e1762627-11, fig. Fig. 3, p. e1762627-7, Fig. 4, p. e1762627-8. CCIS L2-245 Eocene 4, 17

Murray, Alison M. 2020. Early Cenozoic Cyprinoids (Ostariophysi: Cypriniformes: Cyprinidae and Danionidae) from Sumatra, Indonesia. Journal of Vertebrate Paleontology Vol. 40(1): e1762627-1 - e1762627-24.

PARATYPE:

PALITB/TLW-118-2009 Preserves caudal fin, along with partial dorsal and anal fins, caudal vertebrae, and a few elements of the head. Descr. Pp. e1762627-7, e1762627-

9-11, fig. Fig. 5, p. e1762627-10 Paleontology Collections (PAL) of the Institut Teknologi Bandung (ITB), Indonesia. This specimen is currently housed in the UALVP collections CCIS L2-245 Eocene 4, 17

Osteichthyes Huxley, 1880
Ostariophysi (sensu Fink and Fink, 1981)
Cypriniformes Bleeker, 1860
Cyprinoidei sensu Stout, Tan, Lemmon, Lemon, and Armbruster 2016
Cyprinidae Rafinesque, 1815

PALITB/TLW-099-2009 HOLOTYPE *Sangkarewangia sumatranus* Murray, 2020

Paleontology Collections (PAL) of the Institut Teknologi Bandung (ITB), Indonesia. This specimen is currently housed in the UALVP collections CCIS L2-245 Eocene 4, 17

Collector: Alison M. Murray

Indonesia: Sumatra, Sumatera Barat (West Sumatra) Province, Barisan Mountain Range, Ombilin Basin, Datarmasiag-Tanahsirah Main Quarry, 00°34'72.0" S LAT, 100°46'11.1" E LONG.

Eocene, Sangkarewang Fm.

A partially disarticulated fish preserved in right lateral view. Descr. Pp. e1762627-11-14, fig. Fig. 8, p. e1762627-12; Fig. 9, p. e1762627-13; Fig. 10, p. e1762627-14; Fig. 11, p. e1762627-15. CCIS L2-245 Eocene 4, 17

Murray, Alison M. 2020. Early Cenozoic Cyprinoids (Ostariophysi: Cypriniformes: Cyprinidae and Danionidae) from Sumatra, Indonesia. Journal of Vertebrate Paleontology Vol. 40(1):e1762627-1 - e1762627-24.

PARATYPES:

PALITB/TLW-221-2009 a poorly preserved specimen in left lateral view Descr. Pp. e1762627-12-14, fig. Fig. S1B SUPPLEMENTAL DATA – Supplemental materials are available for this article for free at www.tandfonline.com/UJVP; Paleontology Collections (PAL) of the Institut Teknologi Bandung (ITB), Indonesia. This specimen is currently housed in the UALVP collections CCIS L2-245 Eocene 4, 17

PALITB/TLW-226-2009 Complete fish preserved in left lateral view. Descr. Pp. e1762627-12, e1762627-14, fig. Fig. S1A SUPPLEMENTAL DATA – Supplemental materials are available for this article for free at www.tandfonline.com/UJVP; Paleontology Collections (PAL) of the Institut Teknologi Bandung (ITB), Indonesia. This specimen is currently housed in the UALVP collections CCIS L2-245 Eocene 4, 17

Osteichthyes Huxley, 1880
Aulopiformes Rosen, 1973
Suborder ENCHODONTOIDEI (sensu Nelson, 1994)
Family INCERTAE SEDIS

UALVP61435a,b HOLOTYPE *Spinascutichthys pankowskiae* Murray, Chida, and Holmes, 2022

Donor: Madeline Pankowski recognized the significance of the fossil material and convinced her family to purchase it and donate it to the UALVP.

Lebanon, North of Beirut, near the village of En Nammoura, En Nammoura quarry

Late Cretaceous, middle Cenomanian.

A complete specimen preserved in part and counterpart in lateral view with the mouth closed (Fig. 1A, B). Murray, et al. 2022. J. of Vert. Paleo. (Article: e2101370) Desc. Pp. e2101370-3 to e2101370-10 and fig. Fig. 1A,B, p. e2101370-4; Fig. 4, p. e2101370-6; Table 1, p. e2101370-8. CCIS L2-245 Cretaceous 8, 6

Murray, Alison M., Chida, Mori, and Holmes, Robert B. 2022. New enchodontoid fish (Teleostei: Aulopiformes) from the Late Cretaceous of Lebanon. Journal of Vertebrate Paleontology (Article: e2101370): DOI: 10.1080/02724634.2022.2101370

PARATYPES:

UALVP61434a,b Complete specimen preserved in part and counterpart with the mouth open Desc. pp. e2101370-3, e2101370-5, e2101370-8; and fig. Fig. 1C, D, p. e2101370-4; Fig. 5, p. e2101370-7, Table 1, p. e2101370-8. CCIS L2-245 Cretaceous 8, 6

UALVP61436a,b A complete specimen with the skull preserved in dorsal view. Desc. pp. e2101370-3, e2101370-5, e2101370-7; and fig. Fig. 1E, p. e2101370-4; Fig. 3, e2101370-6; Table 1, p. e2101370-8. CCIS L2-245 Cretaceous 8, 6

Osteichthyes Huxley, 1880
Cichliformes Betancur-R, Broughton, Wiley, Carpenter, López, Li, Holcroft, Arcila, Sanciangco, Cureeneau, Houg, Lu, Grande, Arratia and Orti, 2013
Cichlidae Gill, 1872
Pseudocrenilabrine Fowler, 1934

Libyachromis fugacior Príkryl, Kaur, and Murray, 2022

Libya, Jabel Al Hasáwnah

Early Oligocene (Rupelian), Tarab Fm.

Príkryl, Tomás´, Kaur, Jasdeep, and Murray, Alison M. 2022. New Oligocene Pseudocrenilabrinae cichlid fishes (Teleostei, Cichlidae) from freshwater deposits of Libya. Journal of Systematic Palaeontology DOI: 10.1080/14772019.2022.2033861 pp. 1-24.

CASTS OF PARATYPES:

UALVP62386 Latex peels of IGPv 373 Referred to Príkryl et al. 2022 p 5 Table 1, p. 8 CCIS LC-245, Oligocene 1, 9

UALVP62387 Latex peels of IGPv IGPv 380 Referred to Príkryl et al. 2022 p 5 Table 1 CCIS LC-245, Oligocene 1, 9

UALVP62388 Latex peels of IGPv IGPv 390 Referred to Príkryl et al. 2022 p 5 Table 1, p. 8 CCIS LC-245, Oligocene 1, 9
UALVP62389 Latex peels of IGPv IGPv 398 Referred to Príkryl et al. 2022 p 5 Table 1, p. 8 CCIS LC-245, Oligocene 1, 9

Updated Locations

49 Catalogue numbers with missing UALVP museum locations in Bruner (2019):
UALVP17932 Biological Sciences Building: M-459, teaching collection, Cabinet 11, Drawer 1
UALVP17940 CCIS LC-245, Triassic 5, 3
UALVP17943 CCIS LC-245, Triassic 1, 11
UALVP23294 CCIS LC-245, Devonian 9, 16
UALVP32418 (REASSIGNED = UALVP47187) Biological Sciences Building: M-459, teaching collection, Cabinet 11, Drawer 1
UALVP32443 CCIS LC-245, Devonian 9, 16
UALVP32554 (RECATALOGUED AS UALVP51963 CCIS L2-245, Paleocene 07, 12
UALVP41527 CCIS LC-245, Devonian 9, 16
UALVP41650 CCIS LC-245, Devonian 9, 16
UALVP42015 CCIS LC-245, Devonian 9, 16
UALVP42198 CCIS LC-245, Devonian 9, 16
UALVP42143 CCIS LC-245, Devonian 9, 16
UALVP43023 CCIS LC-245, Silurian 10, 12
UALVP45074 CCIS LC-245, Devonian 9, 16
UALVP45076 CCIS LC-245, Devonian 9, 16; and Devonian 15, 19;
UALVP45077 CCIS LC-245, Devonian 9, 16
UALVP45097 CCIS LC-245, Devonian 15, 19
UALVP45650 CCIS LC-245, Devonian 9, 16
UALVP46528 CCIS LC-245, Triassic 5, 3
UALVP46671 and UALVP46671-T1 CCIS LC-245, Triassic 5, 3
UALVP46769 CCIS LC-245, Triassic 8, 11
UALVP47134 CCIS LC-245, Cretaceous 8, 4
UALVP47142 CCIS LC-245, Cretaceous 12, 6
UALVP47178 CCIS LC-245, Cretaceous 8, 4
UALVP47186 CCIS LC-245, Cretaceous 8, 3
UALVP47187 (PREVIOUSLY = UALVP32418) Biological Sciences Building: M-459, teaching collection, Cabinet 11, Drawer 1
UALVP47234 CCIS LC-245, Devonian 9, 16
UALVP51610 CCIS LC-245, Cretaceous 12, 6
UALVP51611 CCIS LC-245, Cretaceous 12, 6
UALVP51640 CCIS LC-245, Cretaceous 8, 3
UALVP51641 CCIS LC-245, Cretaceous 8, 3
UALVP51647 CCIS LC-245, Cretaceous 8, 4
UALVP51648 CCIS LC-245, Cretaceous 8, 4
UALVP51649 CCIS LC-245, Cretaceous 8, 4
UALVP51650 CCIS LC-245, Cretaceous 8, 4
UALVP51653 CCIS LC-245, Cretaceous 8, 4
UALVP51664 CCIS LC-245, Cretaceous 8, 3
UALVP51665 CCIS LC-245, Cretaceous 12, 6
UALVP51666 CCIS LC-245, Cretaceous 12, 6
UALVP51667 CCIS LC-245, Cretaceous 12, 6
UALVP51659 CCIS LC-245, Cretaceous 8, 4
UALVP51715 CCIS LC-245, Cretaceous 8, 3
UALVP51963 (PREVIOUSLY = UALVP32554) CCIS LC-245, Paleocene 7, 12
UALVP53724 CCIS LC-245, Cretaceous 12, 4
UALVP53725 CCIS LC-245, Cretaceous 12, 4
UALVP53726 CCIS LC-245, Cretaceous 12, 4
UALVP53727 CCIS LC-245, Cretaceous 12, 4
UALVP54106 CCIS LC-245, Cretaceous 12, 6
UALVP54108 CCIS LC-245, Cretaceous 12, 6

Literature Cited

Bruner, J.C. 2019. Type specimens of fossil fishes catalogue of the University of Alberta Laboratory for Vertebrate Palaeontology. CRC Press Taylor and Francis Group, Boca Raton, FL, 166 pp.

Harrington, H.J. 1956. Olenellidae with advanced cephalic spines. Journal of Paleontology 30:56–61.

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