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**CATALOGUE OF  
TYPE INVERTEBRATE FOSSILS  
OF THE  
GEOLOGICAL SURVEY OF CANADA**

**Volume III**

**Thomas E. Bolton**

**1966**

CATALOGUE OF  
TYPE INVERTEBRATE FOSSILS  
OF THE  
GEOLOGICAL SURVEY OF CANADA

Volume III

Catalogue of type invertebrate fossils of  
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G E O L O G I C A L   S U R V E Y  
O F   C A N A D A

*Volume III*

CATALOGUE OF  
TYPE INVERTEBRATE FOSSILS  
OF THE  
GEOLOGICAL SURVEY OF CANADA

By  
Thomas E. Bolton

D E P A R T M E N T   O F  
M I N E S   A N D   T E C H N I C A L   S U R V E Y S  
C A N A D A

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## INTRODUCTION

Volume I (1960) of the *Catalogue of Type Invertebrate Fossils* listed all fossil types from Foraminifera to Brachiopoda in the Geological Survey of Canada collection as of mid-1959, and Volume II (1965) included all Mollusca in the collection as of mid-1963. Volume III contains all the remaining groups in the collection as of mid-1963, namely ARTHROPODA, WORMS-SCOLOCODONTS, CONODONTS, INCERTAE SEDIS, and an INDEX for all three volumes. This volume completes this phase of the compilation; future volumes will cover subsequent additions to the collection and will include representatives of all phyla.

The format of Volume III is similar to that adopted for the previous two volumes. The original reference for each species is cited as well as subsequent reviews directly related to the forms listed. Once again, no complete synonymy for each or any species is intended or attempted. Trilobites and Insects are the only groups whose types have been segregated in the present volume according to geological periods.

Primary type categories *Holotype*, *Paratype*, *Syntype*, *Lectotype*, *Neotype*, and secondary type terms *Hypotype*, *Plastotype*, *Topotype*, and *Figured specimen* (*Fig. spec.*) are used with the same connotations as in Volumes I and II.

All type specimens in the three volumes are cited as objectively as possible. A specimen is listed as a holotype only where there was definite evidence that a single specimen was the basis for the original description of the species or where there was an original designation of such (i.e., the type). Where no original type was designated but a specimen within a type lot was figured, the present writer has attempted to identify the figured specimen within the lot, but such specimens are not cited in this catalogue as holotypes. Type designations of earlier described forms by subsequent investigations are listed wherever possible. Some fossils in the type collection bear labels showing different localities from those cited in the original description and in some instances the number of specimens in a particular syntypic lot is greater than originally listed. Such extraneous specimens are omitted from the catalogue unless they have a direct bearing on the status of the species.

In recent years there has been a growing tendency for individuals and organizations to deposit types with the Geological Survey of Canada. Many such specimens are listed in all three volumes. Such donations make the specimens readily accessible under proper storage and curatorial supervision and greatly enhance the value of the National Type Collection.



## ARTHROPODA-TRILOBITA

### Cambrian

#### *Acadagnostus acadicus* var. *declivis* (Matthew)

Hypotype 11101

Hutchison, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 68, pl. 1, fig. 1  
MacMullin Formation, Middle Cambrian, south shore St. Andrew Channel, Cape Breton Island, Nova Scotia.

#### *Acontheus inarmatus* Hutchinson

Holotype 12053; paratype 12054

Hutchison, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 109, pl. 16, figs. 8a, b, 9.  
Middle Cambrian, north shore of Highland Cove, Trinity Bay and Manuels River, Conception Bay, Newfoundland.

#### *Acrocephalops matthewi* Hutchinson

Holotype 11186; paratypes 11187–11190

Hutchison, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 100, pl. 6, figs. 3–8.  
MacMullin Formation, Middle Cambrian, east bank Indian River and south shore St. Andrew Channel, Cape Breton Island, Nova Scotia.

#### *Agnostus americanus* Billings

Syntypes 859, a, c

Billings, E.,

1860, Can. Naturalist Geol., vol. 5, p. 302, figs. 1a, b.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 395, figs. 372a, b.

Logan, W.E., 1863, "Geology of Canada", ibid., Rept. Prog., p. 233, figs. 250a, b.

Rasetti, F., 1944, J. Pal., vol. 18, No. 3, p. 233, pl. 36, fig. 2 [holotype 859, paratype 859c].

Levis conglomerate, Upper Cambrian, Levis, Quebec.

#### *Agnostus canadensis* Billings

Syntypes 858, a–c, e, f, h

Billings, E.,

1860, Can. Naturalist Geol., vol. 5, p. 304, figs. 3a [858], b [858b].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 397, figs. 374a, b.

Logan, W.E., 1863, "Geology of Canada", ibid., Rept. Prog., p. 233, figs. 252a, b.

Levis conglomerate, Upper Cambrian, Levis, Quebec.

=*Pseudagnostus canadensis*, Rasetti, F., 1944, J. Pal., vol. 18, No. 3, p. 234, pl. 36,  
figs. 8, 9 [holotype 858b, paratypes 858c–e, h].

#### *Agnostus inexpectans* Kobayashi

Syntypes 12004–12006

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3–4, p. 172, pl. 16, figs. 30–33.

Palmer, A.R., 1962, U.S. Geol. Surv., Prof. Paper 374-F, p. 12, pl. 1, figs. 1, 6 [12005].

McKay Group, Upper Cambrian, west of Harrogate, British Columbia.

## **Arthropoda**

### *Agnostus orion* Billings

Holotype 860f

Billings, E.,

1860, Can. Naturalist Geol., vol. 5, p. 304, fig. 2.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 397, fig. 373.

Logan, W.E., 1863, "Geology of Canada", ibid., Rept. Prog., p. 233, fig. 251.

Rasetti, F., 1944, J. Pal., vol. 18, No. 3, p. 233, pl. 36, fig. 7.

Levis conglomerate, Upper Cambrian, Levis, Quebec.

### *Agnostus pisiformis* (Linnaeus)

Hypotypes 13037–13041

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 86, pl. 12, figs. 2–6.

Upper Cambrian, west bank Manuels River, Conception Bay and west shore of Random Island, south of Elliott's Cove, Newfoundland.

### "*Agnostus*" spp. A–E

Fig. specs. 13051, 13052, 13054, 13063, 13064

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, pp. 92–93, pl. 12, figs. 7–11.

Middle Cambrian, Highland Cove, Trinity Bay, Newfoundland.

### *Agraulos affinis* Billings

Syntype 260

Billings, E., 1872, Can. Naturalist Quart. J. Sci., n. ser., vol. 6, p. 473.

Matthew, G., 1887, Trans. Roy. Soc. Can., vol. 4, sec. 4, p. 153, figs. 2,a,b.

Middle Cambrian, branch, St. Marys Bay, Newfoundland.

### *Agraulos socialis* Billings

Syntype 261

Billings, E.,

1872, Can. Naturalist Quart. J. Sci., n. ser., vol. 6, p. 472, fig. 9.

1874, Geol. Surv., Canada, Palaeoz. Fossils, vol. 2, pt. 1, p. 71, fig. 40.

1882, ibid., Rept. Prog. 1881, Newfoundland, Appendix, p. 10, fig. 4.

Middle Cambrian, Chapel Arm, Trinity Bay, Newfoundland.

### *Agraulos strenuus* Billings

Syntypes 267, a, b, 268, a, 269, a

Billings, E., 1874, Geol. Surv., Canada, Palaeoz. Fossils, vol. 2, pt. 1, p. 71, fig. 4 [269(?)].

Lower Cambrian, Topsail Head and Brigus Bay, Conception Bay, Newfoundland.

### *Anapolenus henrici* Salter

Hypotypes 13108–13114

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 112, pl. 17, figs. 12–18.

Middle Cambrian, east bank Manuels River, Conception Bay, Newfoundland.

### *Anapolenus venustus* Billings

Plastotypes 284, a

Billings, E.,

1872, Can. Naturalist Geol., vol. 6, p. 474, fig. 11.

1874, Geol. Surv., Canada, Palaeoz. Fossils, vol. 2, pt. 1, p. 73, fig. 42.

1882, ibid., Rept. Prog. 1881, Newfoundland, Appendix, p. 11, fig. 6.

Middle Cambrian, Chapel Arm, Trinity Bay, Newfoundland.

=*Clarella venusta*, Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 111, pl. 17, figs. 7, 8.

*Andrarina linarssonii bretonensis* Hutchinson

Holotype 11182; paratype 11183

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 99, pl. 5, figs. 17, 18.

Dugald Formation, Middle Cambrian, Dugald Brook, Cape Breton Island, Nova Scotia.

*Anomocare tucer* see *Ptychoparella teucer* and *P. kindlei**Apatocephalooides pauper* see *Dikelocephalus pauper**Apatocephalooides rotundatus* Rasetti

Holotype 7667; paratype 7667a

Rasetti, F., 1945, J. Pal., vol. 19, No. 5, p. 465, pl. 60, figs. 15, 16.

Levis conglomerate, Upper Cambrian, North Ridge, Levis, Quebec.

*Arionellus cylindricus* Billings

Syntypes 837, a

Billings, E.,

1860, Can. Naturalist Geol., vol. 5, p. 314, fig. 14.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 406, fig. 385.

Logan, W.E., 1863, "Geology of Canada", ibid., Rept. Prog., p. 237, fig. 264.

Levis conglomerate, Upper Cambrian, Levis, Quebec.

= *Keithiella cylindrica*, Rasetti, F., 1944, J. Pal., vol. 18, No. 3, p. 243, pl. 39, fig. 40

[holotype 837a, paratype 837].

*Arionellus subclavatus* Billings

Syntypes 838, a-v

Billings, E.,

1860, Can. Naturalist Geol., vol. 5, p. 315, figs. 15, a.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 406, figs. 386, a.

Logan, W.E., 1863, "Geology of Canada", ibid., Rept. Prog., p. 237, figs. 265a, b.

Levis conglomerate, Upper Cambrian, Levis, Quebec.

= *Keithia subclavata*, Rasetti, F., 1944, J. Pal., vol. 18, No. 3, p. 242, pl. 37, figs.

16-19 [holotype 838e, paratypes 838, a-d].

*Bailiaspis howelli* Hutchinson

Holotype 12030; paratypes 12031-12033

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 102, pl. 14, figs. 1-4.

Middle Cambrian, Highland Cove, Trinity Bay, Newfoundland.

*Bailiaspis cf. B. howelli* Hutchinson

Hypotypes 12034, 12035

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 103, pl. 14, figs. 5a-c, 6.

Middle Cambrian, Highland Cove, Trinity Bay, Newfoundland.

*Bailiaspis latigenae* Hutchinson

Holotype 13043; paratype 13044

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 103, pl. 14, figs. 7a, b, 8.

Middle Cambrian, loose nodule on beach, Deep Cove, St. Marys Bay, Newfoundland.

*Bailiaspis prominens* Resser

Hypotypes 12028, 12029

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 101, pl. 13, figs. 13, 14.

Chamberlain's Brook Formation, Middle Cambrian, east bank Manuels River, Conception Bay, Newfoundland.

*Bailiaspis venusta* Resser

Hypotypes 12036, 12037

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 100, pl. 13, figs. 11, 12.

Chamberlain's Brook Formation, Middle Cambrian, east bank Manuels River, Conception Bay, Newfoundland.

## Arthropoda

*Bailiaspis* sp.

Fig. spec. 11176

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 96, pl. 5, fig. 11.

MacMullin Formation, Middle Cambrian, east bank Indian River, Cape Breton Island, Nova Scotia.

*Bailiaspis* sp.

Fig. spec. 12039

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 104, pl. 14, figs. 9a, b.

Middle Cambrian, on shore near Burgoynes Cove, Smith Sound, Trinity Bay, Newfoundland.

*Bailiella manuelensis* Hutchinson

Holotype 12043; paratypes 12044, 12045

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 106, pl. 15, figs. 5-7.

Chamberlain's Brook Formation, Middle Cambrian, east bank Manuels River, Conception Bay, Newfoundland.

*Bailiella ornata* Resser

Hypotypes 12041, 12042

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 104, pl. 15, figs. 1, 2.

Middle Cambrian, Highland Cove, Trinity Bay, and east bank Manuels River, Conception Bay, Newfoundland.

*Bailiella tenuicincta* (Linnarsson)

Hypotypes 12038, 12040

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 105, pl. 15, figs. 3, 4a-d.

Middle Cambrian, first small bay east of tip of McLeod Point, Trinity Bay, Newfoundland.

*Bailiella* sp.

Fig. spec. 12046

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 107, pl. 16, figs. 1a-c.

Middle Cambrian, on east shore of small bay west of Red Cove, on peninsula between St. Marys and Placentia Bays, Newfoundland.

*Bathyuriscus senectus* (Billings)

Neoholotype [Neotype] 420

Matthew, 1897, Trans. Roy. Soc. Can., ser. 2, vol. 3, sec. 4, p. 196, pl. 4, figs. 4, a.

Lower Cambrian, L'Anse au Loup, Labrador, Newfoundland.

=*Bonnia senecta*, Resser, C.E.,

1936, Smithsonian Misc. Coll., vol. 95, No. 4, p. 8.

1937, J. Pal., vol. 11, No. 1, p. 47, pls. 20-22.

[Note: J. Richardson, 1861 collection and probably part of *Bathyurus senectus* Billings original material.]

*Bathyurus armatus* Billings

Syntype 863

Billings, E.,

1860, Can. Naturalist Geol., vol. 5, p. 319, fig. 23.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 411, fig. 392.

Logan, W.E., 1863, "Geology of Canada", ibid., Rept. Prog., p. 238, fig. 273.

Levis conglomerate, Upper Cambrian, Levis, Quebec.

=*Plethopeltis armatus*, Raymond, P.E., 1913, Victoria Mem. Mus., Bull. 1, p. 65, pl. 7, fig. 18 [the type].

=*Plethometopus armatus*, Rasetti, F., 1944, J. Pal., vol. 18, No. 3, p. 251, pl. 39, fig. 25 [holotype].

*Bathyurus capax* Billings

Syntypes 835c,e

Billings, E.,

1860, Can. Naturalist Geol., vol. 5, p. 318, figs. 20, a [835e].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 409, figs. 389, a.

Logan, W.E., 1863, "Geology of Canada", ibid., Rept. Prog., p. 238, figs. 271, a.

Levis conglomerate, Upper Cambrian, Levis, Quebec.

= *Platycolpus capax*, Raymond, P.E., 1913, Victoria Mem. Mus., Bull. 1, p. 63, pl. 7, figs. 20 [835e], 21 [835c].

Rasetti, F., 1944, J. Pal., vol. 18, No. 3, p. 250, pl. 39, figs. 10 [holotype 835e], 12 [paratype 835c].

*Bathyurus dubius* Billings

Syntypes 992, a-e

Billings, E.,

1860, Can. Naturalist Geol., vol. 5, p. 319, fig. 21.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 410, fig. 390.

Levis conglomerate, Upper Cambrian, Levis, Quebec.

= *Platycolpus dubius*, Rasetti, F., 1944, J. Pal., vol. 18, No. 3, p. 250, pl. 39, figs. 13, 14 [holotype 992, paratypes 992a-c].*Bathyurus parvulus* Billings

Holotype 433

Billings, E.,

1861, "New Species of Lower Silurian Fossils", p. 16, fig. 21.

1861, Rept. Geol. Vermont, vol. 2, p. 953, fig. 361.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 16, fig. 21.

Logan, W.E., 1863, "Geology of Canada", ibid., Rept. Prog., p. 286, fig. 299.

Lower Cambrian [Forneau Formation], L'Anse au Loup, Labrador, Newfoundland.

= *Dorypyge parvula* var. *angifrons*, Matthew, G.F., 1897, Trans. Roy. Soc. Can., ser. 2, vol. 3, sec. 4, p. 197, pl. 4, figs. 6,a.= *Bonnia parvula*, Resser, C.E.,

1936, Smithsonian Misc. Coll., vol. 95, No. 4, p. 7 [holotype 433].

1937, J. Pal., vol. 11, No. 1, p. 45, pl. 8, figs. 1, 2.

*Bayfieldia ulrichi* Rasetti

Holotype 7660; paratypes 7660a-d

Rasetti, F., 1945, J. Pal., vol. 19, No. 5, p. 465, pl. 60, figs. 17-19.

Levis conglomerate, Upper Cambrian, North Ridge, Levis, Quebec.

*Bellaspidella? latifrons* Rasetti

Holotype 7671; paratypes 7671a, b

Rasetti, F., 1945, J. Pal., vol. 19, No. 5, p. 466, pl. 60, figs. 25-27.

Levis conglomerate, Upper Cambrian, North Ridge, Levis, Quebec.

*Bellaspidella resseri* Rasetti

Holotype 7679; paratypes 7679a, b

Rasetti, F., 1945, J. Pal., vol. 19, No. 5, p. 466, pl. 60, figs. 20-22.

Levis conglomerate, Upper Cambrian, North Ridge, Levis, Quebec.

*Bienvillia corax* see *Dikalocephalus? corax**Bonnia billingsi* Resser

Holotype 433b; paratype 433f

Resser, C.E., 1937, J. Pal., vol. 11, No. 1, p. 46, pl. 8, figs. 12, 13 [433b], 14, 15 [433f].

Forneau Formation, Lower Cambrian, L'Anse au Loup, Labrador, Newfoundland.

## **Arthropoda**

*Bonnia matthewi* see *Dorypyge parvula*

*Bonnia occipitalis* Rasetti

Holotype 9486; paratypes 9486a, b

Rasetti, F., 1948, J. Pal., vol. 22, No. 1, p. 17, pl. 4, figs. 13–15 [9486].

Lower Cambrian, Bic, Quebec.

*Bonnia parvula* (Billings)

Hypotype 433a

Resser, C.E.,

1936, Smithsonian Misc. Coll., vol. 95, No. 4, p. 7.

1937, J. Pal., vol. 11, No. 1, p. 45, pl. 8, figs. 3, 4.

Lower Cambrian [Forteau Formation], L'Anse au Loup, Labrador, Newfoundland.

See *Bathyurus parvulus*

*Bonnia richardsoni* Resser

Holotype 433d; paratype 433e

Resser, C.E., 1937, J. Pal., vol. 11, No. 1, p. 47, pl. 8, figs. 16–18 [433d], 19 [433e].

Forteau Formation, Lower Cambrian, L'Anse au Loup, Labrador, Newfoundland.

*Bonnia senecta* see *Bathyuriscus senectus*

*Bonnia westoni* Resser

Holotype 433c

Resser, C.E., 1937, J. Pal., vol. 11, No. 1, p. 46, pl. 8, figs. 9–11.

Forteau Formation, Lower Cambrian, L'Anse au Loup, Labrador, Newfoundland.

cf. *Bonnia* sp.

Fig. specs. 16861, 16920

Norford, B.S., 1962, Geol. Surv., Canada, Paper 62–14, p. 6, pl. 1, figs. 5, 7.

Early Cambrian, near headwaters of Gundahoo River lat. 59°06'N., long. 126°01'W., Rabbit River map-area, British Columbia.

*Briscoia?* *devinei* see *Dikelocephalus devinei*

*Briscoia?* *latimarginalis* Kobayashi

Holotype 11969

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3–4, p. 192, pl. 15, fig. 23.

McKay Group, Upper Cambrian, west of Harrogate, British Columbia.

*Callavia broeggeri* (Walcott)

Hypotypes 12085–12092

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 119, pl. 24, figs. 7–14.

Lower Cambrian, east side of Chapel Head; south shore of Heart's Delight Harbour; south shore of Heart's Desire Harbour, Trinity Bay; and Brigus South Point, Conception Bay, Newfoundland.

*Centropleura belli* Hutchinson

Holotype 10121

Hutchinson, R.D., 1952, Am. J. Sci., vol. 250, p. 275, pl. 1.

Middle Cambrian, Dartmouth River, Gaspé, Quebec.

*Chancia canadensis* Kobayashi

Syntypes 8714

Kobayashi, T., 1936, J. Pal., vol. 10, No. 3, p. 164, pl. 21, fig. 28.

Lower Cambrian, Cap Mountain Ridge, District of Mackenzie.

*Chancia ? clusia* (Walcott)

Hypotypes 8713, a

Kobayashi, T., 1936, J. Pal., vol. 10, No. 3, p. 165, pl. 21, figs. 25-27.

Lower Cambrian, Carcajou River, lat. 65°, northern Mackenzie River, District of Mackenzie.

*Ciceragnostus barlowi* var. *C. definitus* (Howell)

Hypotypes 12114-12116

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 88, pl. 10, figs. 12-14.

Chamberlain's Brook Formation, Middle Cambrian, east bank Manuels River, Conception Bay, Newfoundland.

*Ciceragnostus cicer* (Tullberg)

Hypotypes 13033-13036

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 89, pl. 10, figs. 15, 16a, b; pl. 11, figs. 1a, b, 2.

Middle Cambrian, Highland Cove, Trinity Bay, Newfoundland.

*Clarella venusta* (Billings)

Hypotypes 13105, 13106

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 111, pl. 17, figs. 9, 10

Middle Cambrian, limestone nodules in small bay about 3/4 mile north of head of bay, west shore of Chapel Arm, Trinity Bay and Deep Cove, St. Marys Bay, Newfoundland.

*Clarella* sp.

Fig. spec. 13107

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 112, pl. 17, fig. 11.

Middle Cambrian, east bank Manuels River, Conception Bay, Newfoundland.

*Condylopyge carinata* Westergard

Hypotypes 12093-12098

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 64, pl. 3, figs. 13-15; pl. 4, figs. 1-3.

Chamberlain's Brook Formation, Middle Cambrian, east bank of Manuels River, Conception Bay, Newfoundland.

*Condylopyge rex* (Barrande)

Hypotypes 12101, 12102

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 65, pl. 4, figs. 6, 7.

Middle Cambrian, southeast and west shores Chapel Arm, Trinity Bay, Newfoundland.

*Condylopyge cf. C. spinigera* Westergard

Hypotypes 12099, 12100

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 64, pl. 4, figs. 4, 5.

Chamberlain's Brook Formation, Middle Cambrian, east bank Manuels River, Conception Bay, Newfoundland.

*Condylopyge* sp. A

Fig. spec. 12125

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 65, pl. 4, fig. 8.

Middle Cambrian, Highland Cove, Trinity Bay, Newfoundland.

*Condylopyge* sp. B

Fig. spec. 13053

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 65, pl. 4, fig. 9.

Middle Cambrian, south shore of Little Harbour, St. Marys Bay, Newfoundland.

## **Arthropoda**

*Conocephalites adamsii* see *Ptychoparia adamsi*

*Conocephalites arenosus* see *Solenopleura arenosa*

*Conocephalites miser* Billings

Syntypes 430, a, b

Billings, E.,

1861, "New Species of Lower Silurian Fossils", p. 11, fig. 14 [430(?)].

1861, Rept. Geol. Vermont, vol. 2, p. 950, fig. 354.

1865, Geol. Surv., Canada, Palaeoz. Fossils, p. 11, fig. 14.

Logan, W.E., 1863, "Geology of Canada", ibid., Rept. Prog., p. 286, fig. 293.

Matthew, G.F., 1897, Trans. Roy. Soc. Can., ser. 2, vol. 3, sec. 4, p. 200, pl. 4, figs. 7, a [430b].

Lower Cambrian [Forteau Formation], L'Anse au Loup, Labrador, Newfoundland.

=*Ptychoparia miser*, Walcott, C.D.,

1886, U.S. Geol. Surv., Bull. 30, p. 199, pl. 27, fig. 2 [430b].

1891, ibid., 10th Ann. Rept., p. 651, pl. 96, fig. 8.

=*Labradoria miser*, Resser, C.E., 1936, Smithsonian Misc. Coll., vol. 95, No. 4, p. 25 [neoholotype 430b].

=*Labradoria misera*, Resser, C.E., 1937, J. Pal., vol. 11, No. 1, p. 47, pl. 8, figs. 23–25 [430b], 26, 27 [paratype 430].

=*Labradoria elongata*, Resser, C.E., 1937, ibid., vol. 11, No. 1, p. 48, pl. 8, figs. 28–30 [holotype 430a].

*Conocephalites teucer* see *Ptychoparella teucer* and *P. kindlei*

*Conocephalites vulcanus* see *Ptychoparella vulcania*

*Conocephalites zenkeri* Billings

Syntype 849

Billings, E.,

1860, Can. Naturalist Geol., vol. 5, p. 305, fig. 4.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 398, fig. 375.

Logan, W.E., 1863, "Geology of Canada", ibid., Rept. Prog., p. 233, fig. 253.

Levis conglomerate, Upper Cambrian, Levis, Quebec.

=*Loganopeltis zenkeri*, Rasetti, F., 1944, J. Pal., vol. 18, No. 3, p. 248, pl. 38, fig. 27 [holotype].

*Conocorophye terranovica* Resser

Hypotypes 12024–12027

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 99, pl. 13, figs. 7–10.

Middle Cambrian, Highland Cove, Trinity Bay, Newfoundland.

*Cotalagnostus barrandei* (Salter)

Hypotype 11104

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 69, pl. 1, fig. 4.

MacMullin Formation, Middle Cambrian, east bank Indian River, Cape Breton Island, Nova Scotia.

*Cotalagnostus lens* (Groenwall)

Hypotypes 12142–12145

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 75, pl. 6, figs. 14–17.

Middle Cambrian, first small bay east of tip of McLeod Point, Trinity Bay, Newfoundland.

*Cotalagnostus lens* subsp. *C. claudicons* Westergard

Hypotypes 12146–12148

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 76, pl. 6, figs. 18–20.

Middle Cambrian, first small bay east of tip of McLeod Point, Trinity Bay, Newfoundland.

*Crepicephalus columbiensis* Kobayashi

Syntypes 11984–11988

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3–4, p. 187, pl. 15, figs. 24–28.

McKay Group, Upper Cambrian, west of Harrogate, British Columbia.

*Crepicephalus rivus* Kindle

Holotype 9464; paratypes 9465–9468

Kindle, C.H., 1948, Am. J. Sci., vol. 246, p. 446, pl. 1, figs. 14–18.

Upper Cambrian, Murphy Creek, Gaspé, Quebec.

*Ctenocephalus excavatus* Resser

Hypotypes 12015–12017

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 98, pl. 12, figs. 20a, b; pl. 13, figs. 1a, b, 2.

Middle Cambrian, west shore of Chapel Arm, Trinity Bay, Newfoundland.

*Ctenocephalus (Harttella) terronovicus* Resser

Hypotypes 12010–12014

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 95, pl. 12, figs. 13–17.

Chamberlain's Brook Formation, Middle Cambrian, east bank Manuels River, Conception Bay, Newfoundland.

*Ctenocephalus howelli* Resser

Hypotype 12018

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 96, pl. 12, figs. 18a–c.

Middle Cambrian, east bank Manuels River, Conception Bay, Newfoundland.

*Ctenocephalus resseri* Hutchinson

Holotype 12019

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 97, pl. 12, figs. 19a–c.

Middle Cambrian, Highland Cove, Trinity Bay, Newfoundland.

*Ctenopyge bisulcata* (Phillips)

Hypotypes 11150, 11151

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 87, pl. 4, figs. 9, 10.

MacNeil Formation, Upper Cambrian, MacNeil Brook 3/4 mile upstream from MacKeigan Road, Cape Breton Island, Nova Scotia.

*Ctenopyge flagellifera* (Angelin)

Hypotype 11152

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 87, pl. 4, fig. 11.

MacNeil Formation, Upper Cambrian, Spruce Brook, East Bay, 3/4 mile upstream from Eskasoni road, Cape Breton Island, Nova Scotia.

*Ctenopyge pecten* (Salter)

Hypotypes 11148, 11149

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 86, pl. 4, figs. 7, 8.

MacNeil Formation, Upper Cambrian, MacNeil Brook 3/4 mile upstream from MacKeigan road, Cape Breton Island, Nova Scotia.

## Arthropoda

### *Dikelocephalus affinis* Billings

Syntypes 891, a

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 197, figs. 183a [891], b [891a].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 197, figs. 183, a.

Levis conglomerate, Upper Cambrian, Levis, Quebec.

=*Levisella affinis*, Rasetti, F., 1944, J. Pal., vol. 18, No. 3, p. 246, pl. 38, fig. 8  
[holotype 891].

### *Dikelocephalus belli* Billings

Syntypes 853, a, c-g

Billings, E.,

1860, Can. Naturalist Geol., vol. 5, p. 311, fig. 7.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 403, fig. 378.

Logan, W.E., 1863, "Geology of Canada", ibid., Rept. Prog., p. 236, fig. 260.

Levis conglomerate, Upper Cambrian, Levis, Quebec.

=*Loganellus belli*, Rasetti, F., 1944, J. Pal., vol. 18, No. 3, p. 247, pl. 38, fig. 18  
[holotype 853d, paratypes 853c, e-g].

### *Dikelocephalus? corax* Billings

Syntypes 876, a

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 334, figs. 322a [876a], b [876].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 334, figs. 322a, b.

Levis conglomerate, Upper Cambrian, Levis, Quebec.

=*Bienvillia corax*, Rasetti, F., 1944, J. Pal., vol. 18, No. 3, p. 240, pl. 36, fig. 51  
[holotype 876a].

### *Dikelocephalus cri status* Billings

Syntypes 870, a-e

Billings, E.,

1860, Can. Naturalist Geol., vol. 5, p. 312, fig. 10.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 404, fig. 381.

Logan, W.E., 1863, "Geology of Canada", ibid., Rept. Prog., p. 236, fig. 258.

Levis conglomerate, Upper Cambrian, Levis, Quebec.

=*Richardsonella cristata*, Rasetti, F., 1944, J. Pal., vol. 18, No. 3, p. 256, pl. 39,  
figs. 50, 51 [holotype 870a, paratypes 870b, c].

=*Richardsonella convexa*, Rasetti, F., 1944, ibid., p. 256, pl. 39, fig. 53 [holotype  
870d, paratype 870].

### *Dikelocephalus dalyi* Walcott

Syntypes 5273, a-d

Walcott, C.D., 1914, Smithsonian Misc. Coll., vol. 57, No. 13, p. 367, pl. 64, figs. 1-5.  
Upper Cambrian, 2 miles west of Donald Station, British Columbia.

### *Dikelocephalus devinei* Billings

Syntypes 869, a-c

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 195, figs. 180 [869c], 181  
[869, a].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 195, figs. 180, 181.

Levis conglomerate, Upper Cambrian, Levis, Quebec.

=*Briscoia? devinei*, Rasetti, F., 1944, J. Pal., vol. 18, No. 3, p. 240, pl. 37, figs.  
13-15 [holotype 869c; paratypes 869, a, b].

*Dikelocephalus hisingeri* Billings

- Syntypes 868, a  
Billings, E.,  
1865, "New Species of Lower Silurian Fossils", p. 196, fig. 182 [868a].  
1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 196, fig. 182.  
Levis conglomerate, Upper Cambrian, Levis, Quebec.  
= *Pseudolisania hisingeri*, Rasetti, F., 1944, J. Pal., vol. 18, No. 3, p. 252, pl. 37, figs. 26, 27 [holotype 868a].

*Dikelocephalus magnificus* Billings

- Syntypes 848, a-h  
Billings, E.,  
1860, Can. Naturalist Geol., vol. 5, p. 307, fig. 5.  
1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 399, fig. 376.  
Logan, W.E., 1863, "Geology of Canada", ibid., Rept. Prog., p. 235, figs. 255a, b.  
Levis conglomerate, Upper Cambrian, Levis, Quebec.  
= *Hungaria magnifica*, Rasetti, F., 1944, J. Pal., vol. 18, No. 3, p. 242, pl. 37, figs. 1-3 [holotype 848b, paratypes 848c, f, h].

*Dikelocephalus megalops* Billings

- Syntypes 871a-f  
Billings, E.,  
1860, Can. Naturalist Geol., vol. 5, p. 311, fig. 9.  
1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 403, fig. 380.  
Logan, W.E., 1863, "Geology of Canada", ibid., Rept. Prog., p. 236, fig. 257.  
Levis conglomerate, Upper Cambrian, Levis, Quebec.  
= *Richardsonella megalops*, Rasetti, F., 1944, J. Pal., vol. 18, No. 3, p. 255, pl. 39, figs. 48 [871c], 49 [871a].

*Dikelocephalus oweni* Billings

- Syntypes 854, a-e  
Billings, E.,  
1860, Can. Naturalist Geol., vol. 5, p. 310, fig. 8 [854].  
1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 402, fig. 379.  
Logan, W.E., 1863, "Geology of Canada", ibid., Rept. Prog., p. 236, fig. 259.  
Levis conglomerate, Upper Cambrian, Levis, Quebec.  
= *Lévisella oweni*, Rasetti, F., 1944, J. Pal., vol. 18, No. 3, p. 246, pl. 38, fig. 5 [holotype 854, paratypes 854a-e].

*Dikelocephalus pauper* Billings

- Syntypes 877, a-i  
Billings, E.,  
1865, "New Species of Lower Silurian Fossils", p. 200.  
1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 200.  
Levis conglomerate, Upper Cambrian, Levis, Quebec.  
= *Apatocephaloidea pauper*, Rasetti, F., 1944, J. Pal., vol. 18, No. 3, p. 238, pl. 36, fig. 42 [holotype 877b, paratypes 877, a,c-h].  
= *Richardsonella convexa*, Rasetti, F., 1944, ibid., p. 256 [paratype 877i].

*Dikelocephalus planifrons* Billings

- Syntypes (?) 5594, a-d  
Billings, E.,  
1860, Can. Naturalist Geol., vol. 5, p. 309, fig. 6 [5594?].  
1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 401, fig. 377.  
Logan, W.E., 1863, "Geology of Canada", ibid., Rept. Prog., p. 236, fig. 256.  
Levis conglomerate, Upper Cambrian, Levis, Quebec.  
= *Lazonella planifrons*, Rasetti, F., 1944, J. Pal., vol. 18, No. 3, p. 244, pl. 37, figs. 22, 24 [holotype 5594, paratypes 5594a-d].

[Note: Some doubt specimens primary types as apparently collected by T.C. Weston.]

## Arthropoda

### *Dikelocephalus selectus* Billings

Holotype 879

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 199.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 199.

Levis conglomerate, Upper Cambrian, Levis, Quebec.

=*Saukiella selecta*, Rasetti, F., 1944, J. Pal., vol. 18, No. 3, p. 256, pl. 39, fig. 57.

### *Dikelocephalus sesostris* Billings

Syntypes 855, a-g

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 198, fig. 184 [855b].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 198, fig. 184.

Levis conglomerate, Upper Cambrian, Levis, Quebec.

=*Pseudosaukia sesostris*, Rasetti, F., 1944, J. Pal., vol. 18, No. 3, p. 254, pl. 39, figs. 32, 33 [holotype 855b, paratypes 855a, c-g].

### *Dikelocephalus pygidium*

Fig. spec. 717

Billings, E.,

1860, Can. Naturalist Geol., vol. 5, p. 311, fig. 11.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 403, fig. 382.

Logan, W.E., 1863, "Geology of Canada", ibid., Rept. Prog., p. 237, fig. 263.

Levis conglomerate, Upper Cambrian, Levis, Quebec.

=*Loganellus belli*, Rasetti, F., 1944, J. Pal., vol. 18, No. 3, p. 247, pl. 38, fig. 20.

### *Dipharus attleboensis* (Shaler and Foerste)

Hypotypes 12076, 12077

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 61, pl. 3, figs. 3, 4.

Smith Point Member, Lower Cambrian, Broad Cove, Smith Sound, Newfoundland.

### *Dipharus planus* Hutchinson

Holotype 12078; paratypes 12079-12082

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 61, pl. 3, figs. 5-9.

Lower Cambrian, Brigus South Point, Conception Bay, Newfoundland.

### *Diplagnostus nordengi* Hutchinson

Holotype 12168; paratypes 12169, 12170

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 78, pl. 7, figs. 14-16.

Middle Cambrian, Highland Cove, Trinity Bay, Newfoundland.

### *Diplagnostus planicauda* forma *D. bilobatus* Kobayashi

Hypotypes 12159-12163

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 78, pl. 7, figs. 10-13.

Middle Cambrian, Highland Cove and first small bay east of tip of McLeod Point, Trinity Bay, Newfoundland.

### *Dolichometopsis humei* Kobayashi

Syntypes 8712, a

Kobayashi, T., 1936, J. Pal., vol. 10, No. 3, p. 162, pl. 21, figs. 29, 30.

Lower Cambrian, Cap Mountain Ridge, District of Mackenzie.

### *Dolichometopsis?* sp. undet.

Fig. specs. 13539a, b, 13540, 13541, a, 13542a, b, 13543, 13544a-d, 13545,a-d.

Rasetti, F., 1957, J. Pal., vol. 31, No. 5, p. 958, pl. 118, figs. 9-16; pl. 119, figs. 12-15.

Mount Whyte Formation, Middle Cambrian, beds W7c, 7f, 28f, 28fg, Mount Field and beds W4d, Ross Lake, British Columbia; beds W20d, Eiffel Peak, Alberta.

*Doryagnostus incertus* (Broegger)

Hypotypes 13024–13026

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 87, pl. 10, figs. 9–11.

Middle Cambrian, Highland Cove and 2,000 feet north of mouth of brook on southeast shore Chapel Arm, Trinity Bay, Newfoundland.

*Dorypyge parvula* (Billings)

Hypotypes 427, 433g

Matthew, G.F., 1897, Trans. Roy. Soc. Can., ser. 2, vol. 3, sec. 4, p. 197, pl. 4, figs. 5, a [433g], b, c [427?].

Lower Cambrian [Forteau Formation], L'Anse au Loup, Labrador, Newfoundland.

= *Bonnia matthewi*, Resser, C.E., 1936, Smithsonian Misc. Coll., vol. 95, No. 4, p. 8 [syntypes 427, 433g].

1937, J. Pal., vol. 11, No. 1, p. 45, pl. 8, figs. 5–7 [holotype 433g], 8 [paratype 427].

*Dorypyge parvula* var. *angifrons* see *Bathyurus parvulus**Dunderbergia canadensis* Kobayashi

Syntypes 11954–11956

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3–4, p. 182, pl. 16, figs. 16, a, 17.

Wilson, J.L., 1956, J. Pal., vol. 30, No. 6, p. 1346, pl. 146, fig. 22 [11954].

McKay Group, Upper Cambrian, west of Harrogate, British Columbia.

*Dunderbergia (Megadunderbergia) convexa* Kobayashi

Holotype 11963

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3–4, p. 182, pl. 15, fig. 33.

McKay Group, Upper Cambrian, west of Harrogate, British Columbia.

*Dunderbergia (Megadunderbergia) quadrata* Kabayashi

Holotype 11962

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3–4, p. 183, pl. 15, figs. 32a, b.

Palmer, A.R., 1960, U.S. Geol. Surv., Prof. Paper 334-C, pl. 4, fig. 27.

McKay Group, Upper Cambrian, west of Harrogate, British Columbia.

*Dunderbergia (Megadunderbergia?) simulator* (Hall and Whitfield)

Hypotype 11983

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3–4, p. 183, pl. 16, fig. 39.

McKay Group, Upper Cambrian, 1 mile northwest of Leanchoil, British Columbia.

*Ehmania borealis* Howell

Paratypes 6463–6465

Howell, B.F., 1943, J. Pal., vol. 17, No. 3, p. 240.

Cloud Rapids Formation, Middle Cambrian, Cloud Rapids and point between Cloud Rapids and First Tickle Bay, Canada Bay, Newfoundland.

*Elvinia roemeri* (Shumard)

Hypotypes 11970–11975

Kobayashi, T., 1938, Jap. J., Geol. Geog., vol. 15, Nos. 3–4, p. 180, pl. 15, figs. 6–8, 10–12.

McKay Group, Upper Cambrian, Mount Hunter, British Columbia.

*Elvinia* sp. aff. *E. roemeri* (Shumard)

Hypotype 11935

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3–4, p. 180, pl. 15, fig. 13.

McKay Group, Upper Cambrian, Northwest Van Horne Range, British Columbia.

**Arthropoda**

*Elvinia* (?) sp.

Fig. spec. 11934

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3–4, p. 181, pl. 15, fig. 14.  
McKay Group, Upper Cambrian, Northwest Van Horne Range, British Columbia.

*Elyx matthewi* Hutchinson

Holotype 12020; paratypes 12021–12023

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 99, pl. 13, figs. 3–6.  
Middle Cambrian, Highland Cove, Trinity Bay, Newfoundland.

*Eodiscus armatus* Hutchinson

Holotype 12072; paratypes 12073–12075

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 60, pl. 2, figs. 8a–c, 9;  
pl. 3, figs. 1a–c, 2.  
Middle Cambrian, Highland Cove, Trinity Bay, Newfoundland.

*Eodiscus punctatus* (Salter)

Hypotypes 11113–11116

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 73, pl. 1, figs. 13–16.  
Trout Brook Formation, Middle Cambrian, Canoe Lake Brook, Cape Breton Island, Nova Scotia.

*Eodiscus punctatus* (Salter)

Hypotypes 12067–12071

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 59, pl. 2, figs. 3–7.  
Middle Cambrian, first small bay east of tip of McLeod Point, Trinity Bay, Newfoundland.

*Eodiscus scanicus* (Linnarsson)

Hypotypes 12065, 12066

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 59, pl. 2, figs. 1a–c, 2a–c.  
Middle Cambrian, first small bay east of tip of McLeod Point and west shore of Chapel Arm, Trinity Bay, Newfoundland.

*Fieldaspis bilobata* Rasetti

Hypotypes 13536, 13537

Rasetti, F., 1957, J. Pal., vol. 31, No. 5, p. 956, pl. 121, figs. 12, 13.  
Mount Whyte Formation, Middle Cambrian, beds W20d, Eiffel Peak, Alberta and beds W7ef,  
Mount Field, British Columbia.

*Fieldaspis celer* (Walcott)

Hypotypes 13538a–h

Rasetti, F., 1957, J. Pal., vol. 31, No. 5, p. 957, pl. 118, figs. 2–8.  
Mount Whyte Formation, Middle Cambrian, beds W28fg, Mount Field, British Columbia.

*Fremontia* sp.

Fig. specs. 16859, 16860

Norford, B.S., 1962, Geol. Surv., Canada, Paper 62–14, p. 6, pl. 1, figs. 4, 6.  
Atan Group, Early Cambrian, 7.4 miles northwest of northeastern end of Denetian Lake,  
Kechika map-area, British Columbia.

*Glossopleura* cf. *G. boccar* (Waicott)

Hypotype 16864

Norford, B.S., 1962, Geol. Surv., Canada, Paper 62–14, p. 8, pl. 2, fig. 9.  
Middle Cambrian, mountain between forks of south branch of Snake Indian River, Jasper Park, Alberta.

*Glossopleura williamsi* Kobayashi

Syntypes 8711, a-e

Kobayashi, T., 1936, J. Pal., vol. 10, No. 3, p. 163, pl. 21, figs. 16-18, 21-23.  
Middle Cambrian, Saline River at fork 8 miles above mouth, District of Mackenzie.

*Glyphaspis (?) sp. undet.*

Fig. spec. 11947

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3-4, p. 189, pl. 15, fig. 29.  
McKay Group, Upper Cambrian, west of Harrogate, British Columbia.

*Glyptagnostus "reticulatus" (Angelin)*

Hypotype 11939

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3-4, p. 170, pl. 16, fig. 34.  
McKay Group, Upper Cambrian, west of Harrogate, British Columbia.

*Glyptometopus latlammei* (Clark)

Hypotype 7662

Rasetti, F., 1945, J. Pal., vol. 19, No. 5, p. 467, pl. 61, figs. 1, 2.  
Levis conglomerate, Upper Cambrian, North Ridge, Levis, Quebec.

*Grandagnostus vermontensis* Howell

Paratypes 6456-6459

Howell, B.F.,

1935, J. Pal., vol. 9, No. 3, p. 221.

1937, Bull. Geol. Soc. Amer., vol. 48, p. 1166.

St. Alban's Formation, Middle Cambrian, just west of and 1 mile southwest of St. Albans,  
and 1 1/2 miles south-southeast of Swanton Junction, Franklin co., Vermont, U.S.A.

*Hardyoides minor* Kobayashi

Holotype 11943

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3-4, p. 177, pl. 16, fig. 29.  
McKay Group, Upper Cambrian, west of Harrogate, British Columbia.

*Hartshillia terranova* Hutchinson

Holotype 12059; paratypes 12060, 12061

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 109, pl. 16, figs. 10a, b;  
pl. 17, figs. 1a, b, 2.

Middle Cambrian, first small bay east of tip of McLeod Point, Trinity Bay, Newfoundland.

*Holasaphus centropyge* Matthew

Hypotypes 11200-11204

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 104, pl. 7, figs. 8-12.

MacMullin Formation, Middle Cambrian, south shore St. Andrew Channel, Young's Point,  
and east bank Indian River, Cape Breton Island, Nova Scotia.

*Holocephalina americana* Resser

Hypotypes 12055-12058

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 110, pl. 17, figs. 3-6.

Middle Cambrian, Highland Cove, Trinity Bay and east bank Manuels River, Conception  
Bay, Newfoundland.

*Homagnostus acutus* Kobayashi

Syntypes 11993-11997

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3-4, p. 172, pl. 16, figs.  
18-22.

McKay Group, Upper Cambrian, west of Harrogate, British Columbia.

=*Pseudagnostus?* *acutus*, Palmer, A.R., 1960, U.S. Geol. Surv., Prof. Paper 334-C,  
p. 62, pl. 4, fig. 10 [lectotype 11996].

## Arthropoda

### *Homaagnostus acutus* Kobayashi

Hypotype 11954

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3–4, pl. 16, fig. 16b.

Wilson, J.E., 1956, J. Pal., vol. 30, No. 6, pl. 146, fig. 22.

McKay Group, Upper Cambrian, west of Harrogate, British Columbia.

### *Homaagnostus cf. acutus* Kobayashi

Hypotype 11979

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3–4, p. 173, pl. 15, fig. 4.

McKay Group, Upper Cambrian, Mount Hunter, British Columbia.

### *Hungaia magnifica* see *Dikelocephalus magnificus*

### *Hypagnostus parvifrons* (Linnarsson)

Hypotypes 12140, 12141

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 73, pl. 6, figs. 6a, b, 7.

Middle Cambrian, north shore Highland Cove, Trinity Bay, Newfoundland.

### *Hypagnostus parvifrons* var. *H. mammillatus* (Broegger)

Hypotypes 12136–12139

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 74, pl. 6, figs. 8–11.

Middle Cambrian, first small bay east of tip of McLeod Point, Trinity Bay, Newfoundland.

### *Hypagnostus cf. H. truncatus* (Broegger)

Hypotype 12149

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 74, pl. 6, fig. 12.

Middle Cambrian, Highland Cove, Trinity Bay, Newfoundland.

### *Hypagnostus* ? sp.

Fig. spec. 13050

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 74, pl. 6, fig. 13.

Middle Cambrian, west bank Manuels River, Conception Bay, Newfoundland.

### *Iddingsia concava* Kobayashi

Holotype 11936; hypotype 11937

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3–4, p. 179, pl. 15, figs. 15a, b, 16.

McKay Group, Upper Cambrian, Northwest Van Horne Range, British Columbia.

### *Irvingella (Irvingellina) protuberans* Kobayashi

Syntypes 11976, 11977

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3–4, p. 176, pl. 15, figs. 1a–c, 2.

McKay Group, Upper Cambrian, Mount Hunter, British Columbia.

### *Irvingella (Irvingellina)? sp. undet.*

Fig. spec. 11980

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3–4, p. 176, pl. 15, figs. 3a, b.

McKay Group, Upper Cambrian, Mount Hunter, British Columbia.

### *Jubileia grandifrons* Kobayashi

Holotype 11944

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3–4, p. 191, pl. 16, figs. 28a, b.

McKay Group, Upper Cambrian, west of Harrogate, British Columbia.

### *Kaninia sulcata* Kobayashi

Syntypes 11950–11952

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3–4, p. 190, pl. 16, figs. 36–38.

McKay Group, Upper Cambrian, west of Harrogate, British Columbia.

*Kaninia sulcata* Kobayashi

Hypotype 11953

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3-4, p. 190, pl. 15, fig. 19.  
McKay Group, Upper Cambrian, Northwest Van Horne Range, British Columbia.

*Kaniniella concinna* Kobayashi

Holotype 11968

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3-4, p. 191, pl. 15, figs. 20a, b.  
McKay Group, Upper Cambrian, west of Harrogate, British Columbia.

*Keithia subclavata* see *Arionellus subclavatus**Keithiella cylindrica* see *Arionellus cylindricus**Keithiella cylindrica* (Billings)

Hypotype 7668

Rasetti, F., 1945, J. Pal., vol. 19, No. 5, pl. 61, p. 469, fig. 8.  
Levis conglomerate, Upper Cambrian, Levis, Quebec.

*Keithiella major* Rasetti

Holotype 7666

Rasetti, F., 1945, J. Pal., vol. 19, No. 5, p. 468, pl. 61, figs. 6, 7.  
Levis conglomerate, Upper Cambrian, Levis, Quebec.

*Kochaspis eiffelensis* Rasetti

Hypotypes 13548, 13549a, b, 13550

Rasetti, F., 1957, J. Pal., vol. 31, No. 5, p. 960, pl. 119, figs. 5-8.  
Mount Whyte Formation, Middle Cambrian, beds W20d, Eiffel Peak, Alberta; beds W7ef and W28fg, Mount Field, British Columbia.

*Kochiella ? gibbosa* Rasetti

Holotype 13554; paratypes 13555, a

Rasetti, F., 1957, J. Pal., vol. 31, No. 5, p. 961, pl. 121, figs. 1-4.  
Mount Whyte Formation, Middle Cambrian, beds W28fg, Mount Field, British Columbia.

*Kochiella ? maxeyi* Rasetti

Hypotype 13551-13553

Rasetti, F., 1957, J. Pal., vol. 31, No. 5, p. 961, pl. 120, figs. 1-3.  
Mount Whyte Formation, Middle Cambrian, beds W20d, Eiffel Peak, Alberta; beds W7ef, Mount Field, British Columbia.

*Labradoria elongata* see *Conocephalites miser**Labradoria misera* see *Conocephalites miser**Lauzonella planifrons* see *Dikelocephalus planifrons**Leptoplastus minor* Westergard

Hypotypes 11145-11147

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 85, pl. 4, figs. 3-5.  
MacNeil Formation, Upper Cambrian, MacLean Brook, Cape Breton Island, Nova Scotia.

*Leptoplastus ovatus* Angelin

Hypotypes 11143, 11144

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 84, pl. 4, figs. 1, 2.  
MacNeil Formation, Upper Cambrian, MacLean Brook, Cape Breton Island, Nova Scotia.

## Arthropoda

*Leptoplastus* sp.

Fig. spec. 11207

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 85, pl. 4, fig. 6.

MacNeil Formation, Upper Cambrian, MacLean Brook, Cape Breton Island, Nova Scotia.

*Levisella affinis* see *Dikelocephalus affinis*

*Levisella oweni* see *Dikelocephalus oweni*

*Levisella oweni* (Billings)

Hypotype 7663

Rasetti, F., 1945, J. Pal., vol. 19, No. 5, p. 469, pl. 61, fig. 11.

Levis conglomerate, Upper Cambrian, North Ridge, Levis, Quebec.

*Loganellus belli* see *Dikelocephalus belli* and *D. pygidium*

*Loganellus logani* see *Olenus* ? *logani*

*Loganellus* ? *unisulcatus* (Raymond)

Hypotype 838

Rasetti, F., 1944, J. Pal., vol. 18, No. 3, p. 248, pl. 38, fig. 5.

Levis conglomerate, Upper Cambrian, Levis, Quebec.

*Loganopeltis zenkeri* see *Conocephalites zenkeri*

*Loganopeltoides zenkeri* (Billings)

Hypotype 7685

Rasetti, F., 1945, Am. J. Sci., vol. 243, p. 46, pl. 1, fig. 2.

Levis conglomerate, Upper Cambrian, Levis, Quebec.

*Lotagnostus triseptus* (Salter)

Hypotypes 11106–11112

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 70, pl. 1, figs. 6–12.

MacNeil Formation, Upper Cambrian, Spruce Brook, East Bay, 3/4 mile upstream from Eskasoni road; north shore of East Bay; and on first tributary on east side of McLeod Brook south of present Boisdale road, 1/2 mile upstream from mouth, Cape Breton Island, Nova Scotia.

*Loxopeltis problematica* Rasetti

Holotype 13577; paratype 13578

Rasetti, F., 1957, J. Pal., vol. 31, No. 5, p. 968, pl. 119, figs. 3, 4.

Mount Whyte Formation, Middle Cambrian, beds W7 (talus) and W28fg, Mount Field, British Columbia.

*Meneviella venulosa* (Salter)

Hypotypes 12047–12052

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 108, pl. 16, figs. 2–7.

Middle Cambrian, Highland Cove and first small bay east of tip of McLeod Point, Trinity Brook and east bank Manuels River, Conception Bay, Newfoundland.

*Menocephalus globosus* Billings

Syntypes 884a, d, g, k

Billings, E.,

1860, Can. Naturalist Geol., vol. 5, p. 317, figs. 17–19.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 408, figs. 388a–c.

Logan, W.E., 1863, "Geology of Canada", ibid., Rept. Prog., p. 237, figs. 267a–c.

Levis conglomerate, Upper Cambrian, Levis, Quebec.

=*Onchonotus globosus*, Rasetti, F., 1944, J. Pal., vol. 18, No. 3, p. 249, pl. 38, figs. 29, 30 [holotype 884g, paratypes 884a, d, k].

*Menocephalus sedgwicki* Billings

Syntype 885

Billings, E.,

1860, Can. Naturalist Geol., vol. 5, p. 316.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 407.

Levis conglomerate, Upper Cambrian, Levis, Quebec.

= "Menocephalus" *sedgwicki*, Rasetti, F., 1944, J. Pal., vol. 18, No. 3, p. 258, pl. 36,  
fig. 56.*Meteoraspis borealis* Lochman

Hypotypes 9460–9463

Kindle, C.H., 1948, Am. J. Sci., vol. 246, p. 446, pl. 1, figs. 8–13.

Upper Cambrian, Murphy Creek, Gaspé, Quebec.

*Meteoraspis laticephalus* Kobayashi

Holotype 11964

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3–4, p. 188, pl. 15, figs.  
34a, b.

McKay Group, Upper Cambrian, west of Harrogate, British Columbia.

*Nevadella addyensis* Okulitch

Holotype 10004

Okulitch, V.J., 1951, J. Pal., vol. 25, No. 3, p. 406, pl. 62, figs. 1, 2.

Addy quartzite, Lower Cambrian, near Addy, Washington, U.S.A.

*Oidalagnostus* cf. *O. trispiniger* Westergaard

Hypotypes 12164–12167

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 80, pl. 7, figs. 17–20.

Middle – Upper Cambrian transition beds, Manuels Brook, Conception Bay, Newfoundland.

*Olenaspella evansi* (Kobayashi)

Hypotype 11941

Wilson, J.L., 1956, J. Pal., vol. 30, No. 6, p. 1344, pl. 146, fig. 20.

McKay Group, Upper Cambrian, west of Harrogate, British Columbia.

See *Parabolinella* (?) *evansi**Olenaspella evansi* (Kobayashi)

Hypotype 15151

Palmer, A.R., 1962, U.S. Geol. Surv., Prof. Paper 374–F, p. 37, pl. 5, fig. 5.

McKay Group, Upper Cambrian, north of Jubilee Mountain, British Columbia.

## Olenellid trilobite, undescribed genus

Fig. spec. 16858

Norford, B.S., 1962, Geol. Surv., Canada, Paper 62–14, p. 6, pl. 1, fig. 3.

Early Cambrian, about 2 miles southwest of Mount Simla, Jasper Park, Alberta.

*Olenellus gilberti* Meek

Plastotype 16862

Norford, B.S., 1962, Geol. Surv., Canada, Paper 62–14, p. 6, pl. 1, fig. 8.

Peyto limestone, Early Cambrian, east slope of Mount Odaray, Yoho Park, British Columbia.

*Olenellus gilberti* Meek

Hypotype 16863

Norford, B.S., 1962, Geol. Surv., Canada, Paper 62–14, p. 6, pl. 1, fig. 9.

Early Cambrian, 2.8 miles southwest of Rogers Lake, Rabbit River map-area, British Columbia.

## Arthropoda

### *Olenellus cf. gilberti* Meek

Hypotypes 415, 424b, c, e

Walcott, C.D., 1910, Smithsonian Misc. Coll., vol. 53, No. 6, pl. 41, figs. 1 [415], 2 [424e], 3 [424b], 4 [424c].

Lower Cambrian, Bic, Quebec.

### *Olenellus logani* Walcott

Syntypes 414, a, b, d

Walcott, C.D., 1910, Smithsonian Misc. Coll., vol. 53, No. 6, p. 333, pl. 41, figs. 5, a, b [414b], 6 [414].

Lower Cambrian, L'Anse au Loup, Labrador, Newfoundland.

### *Olenellus mackenziensis* Kobayashi

Holotype and paratype 8716

Kobayashi, T., 1936, J. Pal., vol. 10, No. 3, p. 161, pl. 21, fig. 32.

Lower Cambrian, Clark Mountain, District of Mackenzie.

### *Olenus? logani* Devine

Plastosyntypes 903, a; syntypes 886, a

Devine, T., 1863, Can. Naturalist Geol., vol. 8, p. 95, figs. 1, 2.

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 201, figs. 185, 186.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 201, figs. 185, 186.

Levis conglomerate, Upper Cambrian, Levis, Quebec.

=*Loganellus quebecensis*, Devine, T., 1863, Can. Naturalist Geol., vol. 8, p. 95.

=*Loganellus logani*, Rasetti, F., 1944, J. Pal., vol. 18, p. 247, pl. 38, figs. 13 [paratype 886], 14 [plastosyntype 903].

### *Onchocephalites laevis* Rasetti

Holotype 13556; paratypes 13557, a

Rasetti, F., 1957, J. Pal., vol. 31, No. 5, p. 962, pl. 121, figs. 5-9.

Mount Whyte Formation, Middle Cambrian, beds W28fg, Mount Field, British Columbia.

### *Onchocephalus maior* Rasetti

Hypotype 13558

Rasetti, F., 1957, J. Pal., vol. 31, No. 5, p. 962, pl. 120, fig. 11.

Mount Whyte Formation, Middle Cambrian, beds W7ef, Mount Field, British Columbia.

### *Onchocephalus skapta* (Walcott)

Hypotype 13559

Rasetti, F., 1957, J. Pal., vol. 31, No. 5, p. 963, pl. 120, fig. 9.

Mount Whyte Formation, Middle Cambrian, beds W7ef, Mount Field, British Columbia.

### *Onchocephalus cf. O. skapta* (Walcott)

Hypotype 13560

Rasetti, F., 1957, J. Pal., vol. 31, No. 5, p. 963, pl. 120, fig. 10.

Mount Whyte Formation, Middle Cambrian, beds W28fg, Mount Field, British Columbia.

### *Onchonotus globosus* see *Menocephalus globosus*

### *Onchonotus ovoidea* Kobayashi

Holotype 11965

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3-4, p. 188, pl. 15, figs. 35a, b.

McKay Group, Upper Cambrian, west of Harrogate, British Columbia.

*Onchonotus* ? *sedgwicki* (Billings)

Hypotypes 7669, 7670

Rasetti, F., 1945, J. Pal., vol. 19, No. 5, p. 470, pl. 61, figs. 17–19.  
Levis conglomerate, Upper Cambrian, Levis, Quebec.

*Oryctocephalites resseri* Rasetti

Hypotypes 13547, a

Rasetti, F., 1957, J. Pal., vol. 31, No. 5, p. 960, pl. 119, figs. 1, 2.  
Mount Whyte Formation, Middle Cambrian, beds W7ef, Mount Field, British Columbia.

*Orygmaspis microphthalmus* Kobayashi

Holotype 11946

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3–4, p. 185, pl. 15, fig. 9.  
McKay Group, Upper Cambrian, west of Leanchoil, British Columbia.

*Paedeumias robsonensis* Burling

Holotype 5272

Burling, L.D., 1916, Ottawa Naturalist, vol. 30, p. 53, pl. 1.  
Lower Cambrian, Mount Robson region, British Columbia.

*Paedeumias transitans* Walcott

Syntypes 416

Walcott, C.D., 1910, Smithsonian Misc. Coll., vol. 53, No. 6, p. 305, pl. 41, fig. 7.  
Lower Cambrian, L'Anse au Loup, Labrador, Newfoundland.

*Parabolina dawsoni* Matthew

Hypotypes 11139–11141

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 80, pl. 3, figs. 11–13.  
MacNeil Formation, Upper Cambrian, Spruce and MacNeil Brooks, Cape Breton Island,  
Nova Scotia.

*Parabolina* ? *incerta* Rasetti

Holotype 7659

Rasetti, F., 1945, J. Pal., vol. 19, No. 5, p. 471, pl. 61, fig. 16.  
Levis conglomerate, Upper Cambrian, North Ridge, Levis, Quebec.

*Parabolina spinulosa* (Wahlenberg)

Hypotypes 11135–11138

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 79, pl. 3, figs. 7–10.  
MacNeil Formation, Upper Cambrian, MacNeil Brook 1/10 mile below MacKeigan road,  
Cape Breton Island, Nova Scotia.

*Parabolinella* (?) *evansi* Kobayashi

Syntypes 15147–15150

Kobayashi, T., 1936, Jap. J. Geol. Geog., vol. 13, Nos. 1–2, p. 92, pl. 15, figs. 7–10.  
McKay Group, Upper Cambrian, north of Jubilee Mountain, British Columbia.  
=Olenaspella evansi, Palmer, A.R., 1962, U.S. Geol. Surv., Prof. Paper 374–F, p. 37,  
pl. 5, figs. 4 [15147], 7 [15148], [lectotype 15150].

*Parabolinella evansi* Kobayashi

Hypotypes 11957–11961

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3–4, p. 186, pl. 16, figs. 11–15.  
McKay Group, Upper Cambrian, west of Harrogate, British Columbia.  
=Olenaspella evansi, Wilson, J.L., 1956, J. Pal., vol. 30, Nos. 6, p. 1344, pl. 146,  
fig. 21 [lectotype 11958].

**Arthropoda**

*Parabolinella* ? *punctolineata* Kobayashi

Holotype 8721; paratype 8721a

Kobayashi, T., 1936, J. Pal., vol. 10, No. 3, p. 166, pl. 21, figs. 19, 20.

Upper Cambrian, Jones Ridge, north of Tatonduk River, Yukon-Alaska boundary.

*Parabolinella* (?) *quadrata* Matthew

Syntypes 7342, a

Matthew, G., 1900, Bull. Natural Hist. Soc., New Brunswick, vol. 4, p. 411, pl. 18, fig. 7.

Lower Ordovician and (?) Upper Cambrian [McLeod Brook Formation], McLeod Brook, Cape Breton Island, Nova Scotia.

=*Parabolinella triarthra*, Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 82.

*Paradoxides abenacis* Matthew

Hypotypes 11118–11122

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 74, pl. 1, fig. 18; pl. 2, figs. 1–4.

MacMullin Formation, Middle Cambrian, south shore St. Andrew Channel, Cape Breton Island, Nova Scotia.

*Paradoxides bennetti* Salter

Hypotype 13086

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 117, pl. 25.

Middle Cambrian, on west shore 1/2 mile south of harbour head at Branch, St. Marys Bay, Newfoundland.

*Paradoxides davidi* Salter

Hypotypes 11124–11126

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 76, pl. 2, figs. 6–8.

Trout Brook Formation, Middle Cambrian, Trout Brook, Cape Breton Island, Nova Scotia.

*Paradoxides davidi* Salter

Hypotypes 13079–13085, 13088

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 115, pl. 19, fig. 10; pl. 20, pl. 21; pl. 22, figs. 1–5.

Middle Cambrian, east bank Manuels River, Conception Bay, Newfoundland.

*Paradoxides decorus* Billings

Plastotypes 299, a

Billings, E.,

1872, Can. Naturalist Quart. J. Sci., n. ser., vol. 6, p. 476.

1874, Geol. Surv., Canada, Palaeoz. Fossils, vol. 2, pt. 1, p. 75.

Middle Cambrian, Chapel Arm, Trinity Bay, Newfoundland.

*Paradoxides eteminicus* Matthew

Hypotype 11117

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 73, pl. 1, fig. 17.

Trout Brook Formation, Middle Cambrian, Grand Mira North Road, 1.13 miles south of Salmon River Road, Cape Breton Island, Nova Scotia.

*Paradoxides eteminicus* Matthew

Hypotypes 13089–13094, 13114

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 114, pl. 19, figs. 3–9.

Middle Cambrian, east bank Manuels River, Conception Bay, Newfoundland.

*Paradoxides forchhameri* Angelin

Hypotype 11127

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 77, pl. 2, figs. 9, 10.  
 MacLean Brook Formation, Middle Cambrian, south side Campbelldale Road 100 yards  
 east of Grand Mira South Road, Cape Breton Island, Nova Scotia.

*Paradoxides freboldi* Hutchinson

Holotype 13098; paratypes 13099–13104

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 116, pl. 23, figs. 4–10.  
 Middle Cambrian, Highland Cove, Newfoundland.

*Paradoxides hicksi* Salter

Hypotype 11123

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 76, pl. 2, fig. 5.  
 Trout Brook Formation, Middle Cambrian, Canoe Lake Brook, Cape Breton Island, Nova Scotia.

*Paradoxides hicksi* Salter

Hypotypes 13065–13075

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 113, pl. 18, figs. 4–12;  
 pl. 19, figs. 1, 2.  
 Middle Cambrian, limestone nodules in small bay about 3/4 mile north of head of bay and  
 in small bay near head of arm, west shore of Chapel Arm, Trinity Bay; west shore of  
 Bull Island Point, St. Marys Bay; first small bay east of tip of McLeod Point, Trinity  
 Bay; and west bank of Manuels River, Conception Bay, Newfoundland.

*Paradoxides lamellatus* Hartt in Dawson

Hypotypes 13076–13078

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 113, pl. 18, figs. 1–3.  
 Middle Cambrian, 3/4 mile northwest of stream mouth at Cavendish, northeast shore of  
 Cavendish Bay and north shore of Island Cove, Trinity Bay, Newfoundland.

*Paradoxides parvoculus* Howell

Hypotypes 13115–13120

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 118, pl. 24, figs. 1–6.  
 Middle Cambrian, east bank Manuels River, Conception Bay, Newfoundland.

*Paradoxides cf. P. rugulosus* Corda

Hypotypes 13095–13097

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 115, pl. 23, figs. 1–3.  
 Middle Cambrian, east and west banks Manuels River, Conception Bay, Newfoundland.

*Paradoxides tenellus* Billings

Plastotypes 298, a, b

Billings, E.,

1872, Can. Naturalist Quart. J. Sci., n. ser., vol. 6, p. 476, fig. 12 [298].

1874, Geol. Surv., Canada, Palaeoz. Fossils, vol. 2, pt. 1, p. 74, fig. 43.

Middle Cambrian, Chapel Arm, Trinity Bay, Newfoundland.

*Parapoulsenia lata* Rasetti

Holotype 13561; paratype 13562

Rasetti, F., 1957, J. Pal., vol. 31, No. 5, p. 964, pl. 120, figs. 4–7.  
 Mount Whyte Formation, Middle Cambrian, beds W7ef, Mount Field, British Columbia.

*Parapoulsenia* sp. *P. lata* Rasetti

Hypotype 13563

Rasetti, F., 1957, J. Pal., vol. 31, No. 5, p. 964, pl. 120, fig. 8.  
 Mount Whyte Formation, Middle Cambrian, beds W28fg, Mount Field, British Columbia.

## Arthropoda

### *Peltura scarabaeoides* (Wahlenberg)

Hypotypes 11167–11172

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 93, pl. 5, figs. 1–6.  
MacNeil Formation, Upper Cambrian, Spruce Brook, East Bay, 3/4 mile upstream from  
Eskasoni Road; north shore East Bay; and MacNeil Brook 3/4 mile upstream from  
MacKeigan road, Cape Breton Island, Nova Scotia.

### *Perimetopus arenosus* see *Solenopleura arenosa*

### *Perimetopus secundus* see *Solenopleura arenosa*

### *Peronopsis cf. fallax* var. *concinna* (Matthew)

Hypotypes 11102, 11103

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 69, pl. 1, figs. 2, 3.  
Trout Brook Formation, Middle Cambrian, Canoe Lake Brook, Cape Breton Island, Nova  
Scotia.

### *Peronopsis fallax* subsp. *P. depressa* Westergaard

Hypotypes 12117–12120

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 70, pl. 5, figs. 8–11.  
Middle Cambrian, first small bay east of tip of McLeod Point, Trinity Bay, Newfoundland.

### *Peronopsis howelli* Hutchinson

Holotype 12134; paratype 12135

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 70, pl. 5, figs. 12a, b, 13.  
Middle Cambrian, first small bay east of tip of McLeod Point, Trinity Bay, Newfoundland.

### *Peronopsis (Acadagnostus) inarmata* Hutchinson

Holotype 12112; paratype 12113

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 71, pl. 5, figs. 14, 15.  
Chamberlain's Brook Formation, Middle Cambrian, east bank Manuels River, Conception  
Bay, Newfoundland.

### *Peronopsis (?) latimarginatus* Kobayashi

Holotype 11998; hypotype 11999

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3–4, p. 169, pl. 15, figs.  
30, 31a.

McKay Group, Upper Cambrian, west of Harrogate, British Columbia.

### *Peronopsis (Acadagnostus) matthewi* Hutchinson

Holotype 12127; paratypes 12128–12130

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 71, pl. 5, figs. 16–20.  
Middle Cambrian, Highland Cove, Trinity Bay, Newfoundland.

### *Peronopsis cf. P. quadrata* (Tullberg)

Hypotypes 12131–12133

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 69, pl. 5, figs. 5–7.  
Middle Cambrian, Highland Cove, Trinity Bay, Newfoundland.

### *Peronopsis (Acadagnostus) scutalis* (Salter in Hicks)

Hypotypes 12121–12124, 12126

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 72, pl. 6, figs. 1–5.  
Middle Cambrian, Highland Cove, Trinity Bay and west bank Manuels River, Conception  
Bay, Newfoundland.

### *Peronopsis trilobata* (Matthew)

Hypotypes 12110, 12111

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 69, pl. 5, figs. 3, 4.  
Middle Cambrian, east bank Manuels River, Conception Bay, Newfoundland.

*Phalacroma bairdi* Hutchinson

Holotype 13055; paratypes 13056, 13057

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 90, pl. 11, figs. 9–11.

Upper Cambrian, Manuels River, Conception Bay, Newfoundland.

*Phalacroma? howsei* Hutchinson

Holotype 13058; paratypes 13059–13062

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 91, pl. 11, figs. 12–16.

Middle Cambrian, Highland Cove, Trinity Bay, Newfoundland.

*Phalcacroma nudum* (Beyrich)

Hypotypes 13027–13032

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 90, pl. 11, figs. 3–8.

Middle Cambrian, first small bay east of tip of McLeod Point, Trinity Bay, Newfoundland.

*Phalacroma?* sp.

Fig. spec. 13042

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 89, pl. 12, fig. 1.

Middle Cambrian, Highland Cove, Trinity Cove, Newfoundland.

*Phoreotropis? marginata* Rasetti

Holotype 7661; paratypes 7661a–d

Rasetti, F., 1945, J. Pal., vol. 19, No. 5, p. 471, pl. 61, figs. 28, 29.

Levis conglomerate, Upper Cambrian, North Ridge, Levis, Quebec.

*Plaguira cercops* (Walcott)

Hypotypes 13564, 13565

Rasetti, F., 1957, J. Pal., vol. 31, No. 5, p. 964, pl. 119, figs. 9–11.

Mount Whyte Formation, Middle Cambrian, beds W28f, Mount Field, British Columbia; beds W20d, Eiffel Peak, Alberta.

*Platycolpus capax* (Billings)

Hypotype 835f

Rasetti, F., 1944, J. Pal., vol. 18, No. 3, p. 250, pl. 39, fig. 11.

Levis conglomerate, Upper Cambrian, Levis, Quebec.

[Note: Specimens 835c, e primary types of *Bathyurus capx*, collected by R. Bell; specimen 835f collected by T.C. Weston, thus a hypotype rather than part of the syntypic suite.]

*Platycolpus dubius* see *Bathyurus dubius**Platycolpus marcoui* Clark

Hypotype 13267

Rasetti, F., 1944, J. Pal., vol. 18, No. 3, p. 250, pl. 39, fig. 16.

Levis conglomerate, Upper Cambrian, Levis, Quebec.

*Platydiamesus depresso* Raymond

Hypotype 7680

Rasetti, F., 1945, J. Pal., vol. 19, No. 5, p. 472, pl. 61, fig. 30.

Levis conglomerate, Upper Cambrian, North Ridge, Levis, Quebec.

*Platydiamesus levisensis* Rasetti

Hypotype 7664

Rasetti, F., 1945, J. Pal., vol. 19, No. 5, p. 472, pl. 61, fig. 15.

Levis conglomerate, Upper Cambrian, Levis, Quebec.

*Plethometopus armatus* see *Bathyurus armatus*

**Arthropoda**

*Plethometopus laticeps* Rasetti

Holotype 13268

Rasetti, F., 1944, J. Pal., vol. 18, No. 3, p. 251, pl. 39, fig. 26.

Levis conglomerate, Upper Cambrian, North Ridge, Levis, Quebec.

*Plethopeltis armatus* see *Bathyurus armatus*

*Plethopeltis robustus* Kobayashi

Syntypes 11966, 11967

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3–4, p. 178, pl. 15, figs. 21, 22.

McKay Group, Upper Cambrian, west of Harrogate, British Columbia.

*Pleurectinium bifurcatum* (Illing)

Hypotypes 13045, 13046

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 67, pl. 4, figs. 15a, b, 16a, b.

Middle Cambrian, west bank Manuels River, Conception Bay, Newfoundland.

*Pleurectinium granulatum* (Barrande)

Hypotypes 12103–12107

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 66, pl. 4, figs. 10–14.

Middle Cambrian, west shore Chapel Arm and first small bay east of tip of McLeod Point,

Trinity Bay and east bank Manuels River, Newfoundland.

*Pleurectinium tuberculatum* (Illing)

Hypotypes 12108, 12109

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 67, pl. 5, figs. 1, 2.

Middle Cambrian, Highland Cove, Trinity Bay, Newfoundland.

*Poulsenia columbiana* Rasetti

Holotype 13566; paratype 13567

Rasetti, F., 1957, J. Pal., vol. 31, No. 5, p. 965, pl. 121, figs. 10, 11.

Mount Whyte Formation, Middle Cambrian, beds W7ef, Mount Field, British Columbia.

*Protodus reticulatus* Rasetti

Holotype 9487; paratypes 9487a, b

Rasetti, F., 1948, J. Pal., vol. 22, No. 1, p. 23, pl. 6, figs. 14–17.

Lower Cambrian, Bic, Quebec.

*Pseudagnostus?* *acutus* see *Homagnostus acutus*

*Pseudagnostus canadensis* see *Agnostus canadensis*

*Pseudagnostus latus* Kobayashi

Syntypes 11989–11992

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3–4, p. 171, pl. 16, figs.

23, 24, 40, 41.

McKay Group, Upper Cambrian, west of Harrogate and Van Home Range, British Columbia.

*Pseudatops* cf. *P. reticulatus* (Walcott)

Hypotype 12009

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 94, pl. 12, fig. 12.

Lower Cambrian, Brigus South Point, Conception Bay, Newfoundland.

*Pseudolisania hisingeri* see *Dikelocephalus hisingeri*

*Pseudosaukia sesostris* see *Dikelocephalus sesostris*

*Pterocephalia brevifrons* Kobayashi

Holotype 11938

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3-4, p. 178, pl. 15, figs. 17a, b.  
McKay Group, Upper Cambrian, Northwest Van Horne Range, British Columbia.

*Pterocephalia* sp.

Fig. specs. 16870, 16871

Norford, B.S., 1962, Geol. Surv., Canada, Paper 62-14, p. 10, pl. 3, figs. 15, 16.  
McKay Group, from about 2,500 feet below base of upper unit, Upper Cambrian, near head  
of Tanglefoot Creek, lat. 49°40'N., long. 115°21'W., British Columbia.

*Ptychagnostus atavus* (Tullberg)

Hypotypes 12187-12201

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 83, pl. 8, figs. 16-22;  
pl. 9, figs. 1-8.  
Middle Cambrian, on southeast shore 2,000 feet north of mouth of brook, Chapel Arm,  
Trinity Bay, Newfoundland.

*Ptychagnostus ciceroides* (Matthew)

Hypotypes 12202-12209, 13014, 13015, 13049

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 85, pl. 9, figs. 20-23;  
pl. 10, figs. 1-8.  
Middle Cambrian, first small bay east of tip of McLeod Point, Highland Cove, Trinity Bay  
and large northward bend about 3 miles above mouth Branch River, St. Marys Bay,  
Newfoundland.

*Ptychagnostus grandis* Hutchinson

Holotype 12177; paratypes 12178-12182

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 81, pl. 8, figs. 6-11.  
Middle Cambrian, first small bay east of tip of McLeod Point, Trinity Bay, Newfoundland.

*Ptychagnostus (Triplagnostus) hybridus* (Broegger)

Hypotypes 12183-12186

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 82, pl. 8, figs. 12-15.  
Middle Cambrian, Highland Cove, Trinity Bay, Newfoundland.

*Ptychagnostus punctuosus* (Angelin)

Hypotypes 13016-13023, 13047, 13048

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 84, pl. 9, figs. 9-19.  
Middle Cambrian, Highland Cove, Trinity Bay and east and west banks of Manuels River,  
Conception Bay, Newfoundland.

*Ptychagnostus (Triplagnostus) stenorachis* (Groenwall)

Hypotypes 12171-12176

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 80, pl. 8, figs. 1-5.  
Middle Cambrian, Highland Cove, Trinity Bay, Newfoundland.

*Ptychoparella adamsi* see *Ptychoparia adamsi**Ptychoparella billingsi* Resser

Holotype 502

Resser, C.E., 1937, J. Pal., vol. 11, No. 1, p. 49, pl. 8, figs. 34-37.  
Lower Cambrian, Highgate Springs, Vermont, U.S.A.

**Arthropoda**

*Ptychoparella kindlei* Resser

Holotype 431a

Resser, C.E., 1937, J. Pal., vol. 11, No. 1, p. 50, pl. 8, figs. 40, 41.

Parker Formation, Lower Cambrian, 1 1/2 miles east of Swanton, Vermont, U.S.A.

[Note: probably one of two specimens basis of composite *Anomocare tucer*, Matthew, G.F., 1897, Trans. Roy. Soc. Can., ser. 2, vol. 3, sec. 4, p. 198, pl. 4, fig. 8; as specimen collected by Billings, 1867, it cannot be a primary type of *Conocephalites tucer* Billings, 1861.]

*Ptychoparella tucker* (Billings)

Hypotype 431

Resser, C.E., 1937, J. Pal., vol. 11, No. 1, p. 50, pl. 8, figs. 42, 43 [holotype 431].

Parker Formation, Lower Cambrian, 1 1/2 miles east of Swanton, Vermont, U.S.A.

[Note: as specimen collected by Billings, 1867, it cannot be the original of Figure 14, 1861, *Conocephalites tucker* Billings; probably one of two specimens basis of composite *Anomocare tucer*, Matthew, G.F., 1897, Trans. Roy. Soc. Can., ser. 2, vol. 3, sec. 4, p. 198, pl. 4, fig. 8.]

*Ptychoparella vulcana* (Billings)

Hypotype 432

Resser, C.E., 1937, J. Pal., vol. 11, No. 1, p. 50, pl. 8, figs. 38, 39 [holotype 432].

Winooski? Formation, Lower Cambrian, 1 mile east of Highgate Springs, Vermont, U.S.A.

[Note: although closely resembling the original of *Conocephalites vulcanus* Billings, Figure 17, 1861, specimen part of series collected by Billings in 1867.]

*Ptychoparia adamsi* (Billings)

Hypotype 429

Matthew, G.F., 1897, Trans. Roy. Soc. Can., ser. 2, vol. 3, sec. 4, pp. 180, 199, pl. 4, fig. 9.

Lower Cambrian [Winooski? Formation], 1 mile east of Highgate Springs, Vermont, U.S.A.

=*Ptychoparella adamsi*, Resser, C.E., 1937, J. Pal., vol. 11, No. 1, p. 49, pl. 8, figs. 31–33 [holotype 429].

[Note: as specimen collected by Billings, 1867, it cannot be the original of Figure 15, 1861, *Conocephalites adamsii* Billings.]

*Ptychoparia bretonensis* Hutchinson

Holotype 11177; paratypes 11178–11181

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 97, pl. 5, figs. 12–16.

MacMullin Formation, Middle Cambrian, south shore St. Andrew Channel, Cape Breton Island, Nova Scotia.

*Ptychoparia miser* see *Conocephalites miser*

*Ptychopleura brevifrons* Kobayashi

Holotype 8719; paratype 8719a

Kobayashi, T., 1936, J. Pal., vol. 10, No. 3, p. 165, pl. 21, figs. 7, 8.

Upper Cambrian, Jones Ridge north of Tatonduk River, Yukon-Alaska boundary.

*Redlichia?* sp.

Fig. spec. 8715

Kobayashi, T., 1936, J. Pal., vol. 10, No. 3, p. 162, pl. 21, fig. 24.

Lower Cambrian, Cap Mountain Ridge, District of Mackenzie.

*Richardsonella convexa* see *Dikelocephalus cristatus* and *D. pauper*

*Richardsonella cristata* see *Dikelocephalus cristatus*

*Richardsonella megalops* see *Dikelocephalus megalops*

*Saukiella selecta* see *Dikelocephalus selectus*

*Schistometopus convexus* Rasetti

Hypotypes 13568, 13569, a, b

Rasetti, F., 1957, J. Pal., vol. 31, No. 5, p. 965, pl. 121, figs. 14–17.

Mount Whyte Formation, Middle Cambrian, beds W7ef, Mount Field, British Columbia.

*Schistometopus? minor* Rasetti

Holotype 13570; paratype 13571

Rasetti, F., 1957, J. Pal., vol. 31, No. 5, p. 966, pl. 120, figs. 13–15.

Mount Whyte Formation, Middle Cambrian, beds W7ef, Mount Field, British Columbia.

*Serrodiscus bellimarginatus* (Shaler and Foerste)

Hypotypes 12062, 12063

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 58, pl. 1, figs. 1a–e, 2.

Lower Cambrian, Broad Cove, Smith Sound and south shore of Heart's Delight Harbour, Trinity Bay, Newfoundland.

*Serrodiscus* sp.

Fig. spec. 12064

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 58, pl. 1, figs. 3a, b.

Lower Cambrian, south side Hopeall Head, Trinity Bay, Newfoundland.

*Solenopleura arenosa* (Billings)

Hypotypes 428, a

Matthew, G.F., 1897, Trans. Roy. Soc. Can., ser. 2, vol. 3, sec. 4, p. 199, pl. 4, fig. 10 [428a].

Lower Cambrian [Mallet or Dunham Formation], near International Boundary on road from St. Armand to Highgate Springs, Vermont, U.S.A.

=*Perimetopus arenosus*, Resser, C.E., 1937, J. Pal., vol. 11, No. 1, p. 51, pl. 8, figs. 50, 51 [holotype 428a].

=*Perimetopus secundus*, Resser, C.E., 1937, ibid., vol. 11, No. 1, p. 51, pl. 8, fig. 49 [holotype 428].

[Note: as both specimens collected by Billings, 1867, they cannot be the primary types of *Conocephalites arenosus* Billings, 1861.]

*Solenopleura bretonensis* Matthew

Hypotypes 11184, 11185

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 99, pl. 6, figs. 1, 2.

Dugald Formation, Middle Cambrian, Dugald Brook, Cape Breton Island, Nova Scotia.

*Solenopleura communis* Billings

Plastotype 285

Billings, E.,

1872, Can. Naturalist Quart. J. Sci., n. ser., vol. 6, p. 474.

1874, Geol. Surv., Canada, Palaeoz. Fossils, vol. 2, pt. 1, p. 72.

Matthew, G.F., 1887, Trans. Roy. Soc. Can., vol. 4, sec. 4, p. 155, figs. 4, a, b.

Middle Cambrian, Chapel Arm, Trinity Bay, Newfoundland.

*Sphaerophthalmoidea ornata* Hutchinson

Holotype 11159; paratypes 11160–11166

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 91, pl. 4, figs. 18–25.

MacNeil Formation, Upper Cambrian, Spruce Brook, East Bay, 3/4 mile upstream from Eskasoni road, Cape Breton Island, Nova Scotia.

## Arthropoda

### *Sphaerophthalmus alatus* (Boeck)

Hypotypes 11153–11156

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 88, pl. 4, figs. 12–15.  
MacNeil Formation, Upper Cambrian, MacNeil Brook, 3/4 mile upstream from MacKeigan road, Cape Breton Island, Nova Scotia.

### *Sphaerophthalmus major* Lake

Hypotypes 11157, 11158

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 90, pl. 4, figs. 16, 17.  
MacNeil Formation, Upper Cambrian, MacNeil Brook, 3/4 mile upstream from MacKeigan road, Cape Breton Island, Nova Scotia.

### *Spinagnostus franklinensis* Howell

Paratypes 6454a–d, 6455

Howell, B.F.,

1935, J. Pal., vol. 9, No. 3, p. 219.

1937, Bull. Geol. Soc. Amer., vol. 48, p. 1161.

St. Albans Formation, Middle Cambrian, 3 miles south-southwest of St. Albans and Adams Pasture just west of St. Albans, Franklin co., Vermont, U.S.A.

### *Strenuella strenua* (Billings)

Hypotypes 11128–11134

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 78, pl. 2, fig. 11; pl. 3, figs. 1–6.

MacCodrum Formation, Lower Cambrian, east end Victoria Bridge, Mira River, Cape Breton Island, Nova Scotia.

### *Taenicephalus longifrons* Kobayashi

Syntypes 11940, 11941; hypotype 11942

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3–4, p. 184, pl. 16, figs. 25–27.

Wilson, J.L., 1956, J. Pal., vol. 30, No. 6, p. 1346, pl. 146, figs. 18, 19.

McKay Group, Upper Cambrian, west of Harrogate, British Columbia.

### *Taenicephalus megalops* Kobayashi

Syntypes 12000–12002; hypotype 12003

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3–4, p. 183, pl. 16, figs. 8–10, 35.

Wilson, J.L., 1956, J. Pal., vol. 30, No. 6, p. 1346, pl. 146, figs. 16, 17.

McKay Group, Upper Cambrian, west of Harrogate, British Columbia.

### *Tatonaspis levisensis* Rasetti

Hypotype 7665

Rasetti, F., 1945, J. Pal., vol. 19, No. 5, p. 474, pl. 62, fig. 14.

Levis conglomerate, Upper Cambrian, Levis, Quebec.

### *Tomagnostus fissus* (Lundgren MS; Linnarsson)

Hypotypes 12150–12154

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 76, pl. 7, figs. 1–5.

Middle Cambrian, west shore Chapel Arm, Trinity Bay and west bank Manuels River, Conception Bay, Newfoundland.

### *Tomagnostus perrugatus* (Groenwall)

Hypotypes 12155–12158

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 77, pl. 7, figs. 6–9.

Middle Cambrian, north shore Highland Cove and first small bay east of tip of McLeod Point, Trinity Bay, Newfoundland.

*Triangulaspis vigilans* (Matthew)

Hypotypes 12083, 12084

Hutchinson, R.D., 1962, Geol. Surv., Canada, Bull. 88, p. 63, pl. 3, figs. 10-12.

Lower Cambrian, small quarry about 1 1/2 miles south of Manuels Station and Brigus South Point, Conception Bay, Newfoundland.

*Tricrepicephalus murphyi* Kindle

Holotype 9456; paratype 9457

Kindle, C.H., 1948, Am. J. Sci., vol. 246, p. 448, pl. 1, figs. 2, 3.

Upper Cambrian, Murphy Creek, Gaspé, Quebec.

*Tricrepicephalus rusticus* Kindle

Holotype 9458; paratype 9459

Kindle, C.H., 1948, Am. J. Sci., vol. 246, p. 447, pl. 1, figs. 4, 6.

Upper Cambrian, Murphy Creek, Gaspé, Quebec.

*Tricrepicephalus* sp.

Fig. specs. 16853, 16854

Norford, B.S., 1962, Geol. Surv., Canada, Paper 62-14, p. 8, pl. 2, figs. 3, 7.

Lynx Formation, about 850 feet above base, Upper Cambrian, near Snake Indian River, Jasper Park, Alberta.

## Trilobite pygidium, genus undetermined

Fig. spec. 11205

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 105, pl. 7, fig. 13.

MacMullin Formation, Middle Cambrian, east bank Indian River, 9/10 mile below mouth of Dugald Brook, Cape Breton Island, Nova Scotia.

Trilobites [*Olenoides serratus* (Rominger)]

Hypotype 15174

Baird, D.M.,

1960, "A Guide to Geology", Dept. Northern Affairs and National Res., National Parks Br., p. 22.

1962, Geol. Surv., Canada, Misc. Rept. 4, p. 43.

Norford, B.S., 1962, ibid., Paper 62-14, p. 8, pl. 2, fig. 13.

Middle Cambrian, Yoho National Park, British Columbia.

*Triplagnostus* cf. *lomondensis* Howell

Hypotype 11105

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 70, pl. 1, fig. 5.

Trout Brook Formation, Middle Cambrian, Canoe Lake Brook, Cape Breton Island, Nova Scotia.

## Undetermined pygidium No. 1

Fig. spec. 13546

Rasetti, F., 1957, J. Pal., vol. 31, No. 5, p. 960, pl. 120, fig. 12.

Mount Whyte Formation, Middle Cambrian, beds W7f, Mount Field, British Columbia.

## Undetermined pygidium No. 2

Fig. spec. 13572

Rasetti, F., 1957, J. Pal., vol. 31, No. 5, p. 967, pl. 120, fig. 16.

Mount Whyte Formation, Middle Cambrian, beds W7ef, Mount Field, British Columbia.

## Undetermined pygidium No. 3

Fig. spec. 13573

Rasetti, F., 1957, J. Pal., vol. 31, No. 5, p. 967, pl. 120, fig. 17.

Mount Whyte Formation, Middle Cambrian, beds W7ef, Mount Field, British Columbia.

**Arthropoda**

Undetermined pygidium No. 4

Fig. spec. 13574

Rasetti, F., 1957, J. Pal., vol. 31, No. 5, p. 867, pl. 120, fig. 18.

Mount Whyte Formation, Middle Cambrian, beds W28fg, Mount Field, British Columbia.

Undetermined pygidium No. 5

Fig. specs. 13575, a, 13576

Rasetti, F., 1957, J. Pal., vol. 31, No. 5, p. 967, pl. 120, figs. 19–21.

Mount Whyte Formation, Middle Cambrian, beds W7ef, Mount Field, British Columbia.

*Vanuxemella nortia* Walcott

Hypotype 16865

Norford, B.S., 1962, Geol. Surv., Canada, Paper 62–14, p. 8, pl. 2, fig. 10.

Ross Lake Shale, Middle Cambrian, near Ross Lake, Banff Park, Alberta.

*Wilbernia (?) hunterensis* Kobayashi

Holotype 11978

Kobayashi, T., 1938, Jap. J. Geol. Geog., vol. 15, Nos. 3–4, p. 189, pl. 15, fig. 5.

McKay Group, Upper Cambrian, Mount Hunter, British Columbia.

*Yukonaspis kindlei* Kobayashi

Holotype 8718; paratypes 8718a, b

Kobayashi, T., 1936, J. Pal., vol. 10, No. 3, p. 164, pl. 21, figs. 3–6.

Upper Cambrian (?), Squaw Mountain north of Tatonduk River, Yukon-Alaska boundary.

*Zacanthoides* cf. *Z. cnapus* Walcott

Hypotypes 16867–16869

Norford, B.S., 1962, Geol. Surv., Canada, Paper 62–14, p. 8, pl. 2, figs. 15–17.

Middle Cambrian, Windsor Mountain, southwest Alberta.

## Ordovician-Carboniferous

*Achatella achates* see *Dalmanites achates*

*Achatella billingsi* Sinclair

Holotype 13275

Sinclair, G.W., 1944, Trans. Roy. Can. Inst., vol. 25, pt. 1, No. 53, p. 17, pl. 1, figs. 1, 2.

Middle Trenton, Middle Ordovician, old quarry just north and east of Lakefield, Ontario.

*Achatella* sp.

Fig. spec. 8878

Cooper, G.A., and Kindle C.H., 1936, J. Pal., vol. 10, No. 5, p. 371, pl. 53, fig. 30.

Whitehead Formation, Upper Ordovician, Priest's Road, Percé, Quebec.

*Acidaspis horani* Billings

Holotype 1785

Billings, E., 1857, Geol. Surv., Canada, Rept. Prog. 1853-56, p. 341.

Logan, W.E., 1863, "Geology of Canada", ibid., Rept. Prog., p. 190, fig. 190.

Middle Ordovician, near Cape Tourment, Quebec.

*Acidaspis perarmata* Whiteaves

Holotype 5813

Whiteaves, J.F.,

1891, Can. Rec. Sci., vol. 4, p. 300, pl. 3, fig. 6.

1906, Geol. Surv., Canada, Palaeoz. Fossils, vol. 3, pt. 4, p. 289, pl. 42, fig. 3.

Stearns, C.W., 1956, ibid., Mem. 281, p. 123, pl. 16, fig. 9.

Middle Silurian [Interlake Group], Long Point, east shore Lake Winnipegosis, Manitoba.

*Acrolichas jukesii* see *Lichas jukesii*

*Agnostus fabius* Billings

Syntypes 704, a-g,

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 298, fig. 289 [704c, d, g].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 298, fig. 289.

Middle Ordovician, 4 miles northeast of Portland Creek, Newfoundland.

*Agnostus galba* Billings

Syntypes 689, a-e

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 297, fig. 288 [689, b, e].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 297, fig. 288.

Middle Ordovician, Table Head, Newfoundland.

*Agnostus subobesus* Kobayashi

Syntypes 8717, a

Kobayashi, T., 1936, J. Pal., vol. 10, No. 3, p. 161, pl. 21, figs. 1, 2.

Upper Cambrian or Lower Ordovician, Jones Ridge north of Tatonduk River, Yukon-Alaska boundary.

=*Geragnostus subobesus*, Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 474.

**Arthropoda**

*Amechilus tuberculatus* Kobayashi

Holotype 12715

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 459, pl. 6,  
fig. 11.

McKay Group, Lower Ordovician, north of Brisco Trail, British Columbia.

*Amphilichas?* *anticostiensis* see *Lichas canadensis*

*Amphilichas canadensis* see *Lichas canadensis*

*Amphilichas minganensis* see *Lichas minganensis*

*Amphilichas shallopensis* Twenhofel

Holotype 2546

Twenhofel, W.H., 1928, Geol. Surv., Canada, Mem. 154, p. 328, pl. 57, fig. 6.  
Jupiter Formation, Middle Silurian, Shallop River, Anticosti Island, Quebec.

*Amphion barrandei* Billings

Syntypes 681, a-d, 682, a, b

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 288, figs. 277a [681c], b.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 288, figs. 277a, b.

Divisions K-N [Table Head], Middle Ordovician, Point Rich and Table Head, Newfoundland.

=*Pseudomera barrandei*, Holliday, S., 1942, J. Pal., vol. 16, No. 5, p. 474, pl. 73,  
figs. 8 [681b], 10 [682].

Whittington, H.B., 1961, ibid., vol. 35, No. 5, p. 918, pl. 100,  
figs. 6, 10 [681a], 7 [681], 8 [lectotype 681b].

*Amphion canadensis* Billings

Syntype 1094b

Billings, E., 1859, Can. Naturalist Geol., vol. 4, p. 381, fig. 12b.

Logan, W.E., 1863, "Geology of Canada", Geol. Surv., Canada, Rept. Prog., p. 133, fig. 69.  
Middle Ordovician [Mingan Formation], Mingan Islands, Quebec.

*Amphion canadensis* Billings

Hypotype 1094a

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 288, fig. 278.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 288, fig. 278.

Middle Ordovician [Mingan Formation], Mingan Islands, Quebec.

=*Pliomerops canadensis*, Twenhofel, W.H., 1938, Geol. Soc. Amer., Sp. Paper 11,  
p. 70, pl. 11, fig. 18 [syntype].

Whittington, H.B., 1961, J. Pal., vol. 35, No. 5, p. 917, pl.  
101, figs. 12, 16.

[Note: probably one of the larger specimens noted by Billings in original description.]

*Amphion cayleyi* see *Amphion pygidium*

*Amphion convexus* Billings

Syntypes 833, a-d

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 322.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 322.

Lower Ordovician, lot 20, range 6, Stanbridge tp., Quebec.

*Amphion julius* Billings

Syntypes 680, a, b

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 290, fig. 279 [composite?].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 290, fig. 279.

Division P [Cow Head conglomerate], Middle Ordovician, Cow Head, Newfoundland.

=Colobinion julius, Whittington, H.B., 1961, J. Pal., vol. 35, No. 5, p. 920, pl. 102,  
fig. 18 [holotype 680].*Amphion salteri*? Billings

Hypotype 515

Billings, E., 1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 352, fig. 339.  
Beekmantown, Lower Ordovician, Oxford tp., Ontario.*Amphion pygidium*

Fig. spec. 825, a [mould and cast]

Billings, E.,

1860, Can. Naturalist Geol., vol. 5, p. 322, fig. 29.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 413, fig. 398.

Lower Ordovician(?), Levis, Quebec.

=Amphion cayleyi, Logan, W.E., 1863, "Geology of Canada", ibid., Rept. Prog.,  
p. 413, fig. 398.*Amphion westoni* Billings

Syntypes 824a, c, f, h, i, k, l

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 321, figs. 307a [824a], b [824f].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 321, figs. 307a, b.

Lower Ordovician, lot 20, range 6, Stanbridge tp., Quebec.

=Ectenonotus westoni, Whittington, H.B., 1961, J. Pal., vol. 35, No. 5, p. 915, pl. 99,  
figs. 1 [lectotype 824a], 2, 3, 6 [824h].*Ampyx inflata* Cooper and Kindle

Holotype 8870

Cooper, G.A. and Kindle, C.H., 1936, J. Pal., vol. 10, No. 5, p. 362, pl. 52, fig. 26.

Whitehead Formation, Upper Ordovician, Portage River west of Corner of the Beach, Gaspé,  
Quebec.*Ampyx laeviusculus* Billings

Syntypes 693, a-f

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 295, fig. 285 [693].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 295, fig. 285.

Division N [Table Head], Middle Ordovician, Table Head, Newfoundland.

*Ampyx normalis* Billings

Syntypes 692, a-l

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 295, fig. 286 [692, a].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 295, fig. 286.

Division P [Cow Head conglomerate], Middle Ordovician, 4 miles northeast of Portland  
Creek, Newfoundland.

**Arthropoda**

***Ampyx rutilius* Billings**

Holotype 691

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 296.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 296.

Division P [Cow Head conglomerate], Middle Ordovician, 4 miles northeast of Portland Creek, Newfoundland.

***Ampyx semicostatus* Billings**

Syntypes 690, a, b

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 297, fig. 287 [690].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 297, fig. 287.

Middle Ordovician, 4 miles northeast of Portland Creek, Newfoundland.

***Ampyx walcotti* Kobayashi**

Holotype 12731; hypotypes 12732, 12733

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 469, pl. 8, figs. 1-3.

McKay Group, Lower Ordovician, McKay Creek, British Columbia.

***Ampyx walcotti* var. *stenorachis* Kobayashi**

Holotype 12734; paratype 12735

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 470, pl. 8, figs. 4a, b, 5.

McKay Group, Lower Ordovician, McKay Creek, British Columbia.

***Ampyx 'a'* sp. nov.**

Fig. specs. 12736-12738

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 470, pl. 8, figs. 21-23.

McKay Group, Lower Ordovician, south of Whiskey Trail, British Columbia.

***Ampyx 'b'* sp. nov.**

Fig. specs. 12739-12741

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 471, pl. 8, figs. 18-20.

McKay Group, Lower Ordovician, Vermilion Basin, British Columbia.

***Apatocephalus canadensis* Kobayashi**

Holotype 11926; paratype 11927; hypotypes 11928, 11929

Kobayashi, T., 1953, Jap. J. Geol. Geog., vol. 23, p. 52, pl. 3, figs. 1-4.

McKay Group, Lower Ordovician, north of Brisco Trail, British Columbia.

***Apatocephalus canadensis* Kobayashi**

Hypotype 12620

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 414, pl. 2, fig. 2.

McKay Group, Lower Ordovician, southwest of Harrogate, British Columbia.

***Apitolichas jukesii* (Billings)**

Hypotypes 16300-16315

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Havard, vol. 129, No. 1, p. 106, pl. 32, figs. 6-11; pl. 33, figs. 1-10; pl. 34, figs. 1-10.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

See *Lichas jukesii*

*Arctinurus* sp.

Fig. spec. 11059

Stearn, C.W., 1956, Geol. Surv., Canada, Mem. 281, p. 123, pl. 12, fig. 3.  
Interlake Group, Middle Silurian, west shore Cross Lake, Manitoba.

*Asaphellus (?) canadensis* Kobayashi

Holotype 12664; paratypes 12665, 12666

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 438, pl. 5,  
figs. 1-3.

McKay Group, Lower Ordovician, southeast of Harrogate, British Columbia.

*Asaphellus homfrayi* (Salter)

Hypotypes 11191-11196

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 101, pl. 6, figs. 9-11;  
pl. 7, figs. 1-3.

McLeod Brook Formation, Upper Cambrian or Lower Ordovician, McLeod Brook, Cape Breton Island, Nova Scotia.

*Asaphellus (?) planus* Matthew

Paratypes 7354,a

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 102, pl. 7, figs. 5, 6.

McLeod Brook Formation, Upper Cambrian or Lower Ordovician, McLeod Brook, Cape Breton Island, Nova Scotia.

## Asaphid, gen. &amp; sp. indet.

Fig. specs. 12755-12757

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 436, pl. 8,  
figs. 8, 11, 14.

McKay Group, Lower Ordovician, Jubilee Mountain, southwest of Harrogate and McKay Creek, British Columbia.

*Asaphus alacer* Billings

Holotype 2179

Billings, E., 1866, Geol. Surv., Canada, Cat. Sil. Fossils Anticosti, p. 26, fig. 9a.

Upper Ordovician [English Head Formation], Carleton Point, Anticosti Island, Quebec.

=*Brachyaspis alacer*, Raymond, P.E.,

1912, Trans. Roy. Soc. Can., ser. 3, vol. 5, sec. 4, p. 119, pl. 2, fig. 3.

1913, Geol. Surv., Canada, Mus. Bull. 1, pl. 4, fig. 6.

Twenhofel, W.H., 1928, ibid., Mem. 154, p. 323, pl. 57, figs. 10-12.

*Asaphus? curiosus* Billings

Syntypes 829, a-e

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 318, fig. 305 [829?].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 318, fig. 305.

Lower Ordovician, lot 20, range 6, Stanbridge tp., Quebec.

*Asaphus goniurus* Billings

Syntypes(?) 830,a,b

Billings, E.,

1860, Can. Naturalist Geol., vol. 5, p. 324.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 415.

Beekmantown, Lower Ordovician, Levis, Quebec.

=*Megalaspis goniurus*, Raymond, P.E., 1912, Trans. Roy. Soc. Can., ser. 3, vol. 5,  
sec. 4, p. 119, pl. 2, fig. 6 [syntype 830].

[Note: questionably syntopic as mixed collection attributed to collectors R. Bell and  
T.C. Weston (1894).]

**Arthropoda**

*Asaphus huttoni* Billings

Holotype 657

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 271, fig. 256.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 271, fig. 256.

Division N [Table Head], Middle Ordovician, Table Head, Newfoundland.

*Asaphus illaenoides* Billings

Syntype 832

Billings, E.,

1860, Can. Naturalist Geol., vol. 5, p. 323.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 414.

Levis conglomerate, Lower Ordovician, Levis, Quebec.

=*Sympysurus illaenoides*, Raymond, P.E., 1912, Trans. Roy. Soc. Can., ser. 3, vol. 5, sec. 4, p. 120, pl. 3, fig. 5 [the type].

*Asaphus morrisii* Billings

Syntypes 655a, b, 656, a,c,d,f,g

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 272, fig. 257 [656].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 272, fig. 257.

Middle Ordovician, Table Head, Newfoundland.

*Asaphus notans* Billings

Holotype 2180

Billings, E., 1866, Geol. Surv., Canada, Cat. Sil. Fossils Anticosti, p. 24, fig. 8.

Upper Ordovician [English Head Formation], English Head, Anticosti Island, Quebec.

=*Brachyaspis notans*, Raymond, P.E., 1912, Trans. Roy. Soc. Can., ser. 3, vol. 5, sec. 4, p. 118, pl. 1, fig. 1.

*Asaphus pelops* Billings

Syntypes 831

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 317.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 317.

Lower Ordovician, east side Bedford village, Stanbridge tp., Quebec.

*Asaphus platycephalus* Stokes

Hypotype 2181

Billings, E., 1866, Geol. Surv., Canada, Cat. Sil. Fossils Anticosti, p. 26, fig. 9b.

Upper Ordovician [English Head Formation], English Head, Anticosti Island, Quebec.

=*Brachyaspis altilis*, Raymond, P.E.,

1912, Trans. Roy. Soc. Can., ser. 3, vol. 5, sec. 4, p. 119, pl. 2, figs. 4, 5 [holotype].

1913, Geol. Surv., Canada, Mus. Bull. 1, p. 47, pl. 4, figs. 3, 7.

*Asaphus platycephalus* Stokes

Hypotype 1788

Logan, W.E., 1863, "Geology of Canada", Geol. Surv., Canada, Rept. Prog., p. 184, fig. 193.

Middle Ordovician [Cobourg? beds], Ottawa, Ontario.

=*Isotelus latus*, Raymond, P.E., 1913, ibid., Mus. Bull. 1, p. 45, pl. 5 [holotype].

Wilson, A.E., 1947, ibid., Bull. 9, p. 25, pl. 6.

*Asaphus platycephalus* Stokes

Hypotypes 1789, b

Billings, E., 1870, Quart. J. Geol. Soc. London, vol. 26, p. 479, pl. 31, figs. 1 [1789], 2–4 [1789b]; pl. 32, figs. 1, 2 [1789].

Woodward, H.W., 1871, Geol. Mag., vol. 8, p. 291, pl. 8, fig. 1 [1789].

Middle Ordovician [Cobourg? beds], Ottawa, Ontario.

=*Isotelus latus*, Raymond, P.E., 1920, Connecticut Acad. Arts Sci., Mem. 7, p. 34, pl. 10, fig. 1 [1789].=*Isotelus covingtonensis*, Walcott, C.D., 1924, Smithsonian Misc. Coll., vol. 67, No. 4, p. 134.=*Isotelus ottawaensis*, Wilson, A.E., 1947, Geol. Surv., Canada, Bull. 9, p. 26, pl. 3, fig. 5 [paratype 1789b]; pl. 5, figs. 1a, b [holotype 1789].*Basilicus barrandi* (Hall)

Hypotype 7749

Wilson, A.E., 1947, Geol. Surv., Canada, Bull. 9, p. 23, pl. 1, fig. 2.

Leray beds, Ottawa Formation, Middle Ordovician, lot 4, con. 3, Gloucester tp., Ontario.

*Bathyurellus abruptus* Billings

Syntypes 648, a, b

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 263, fig. 250.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 263, fig. 250.

Whittington, H.B., 1953, J. Pal., vol. 27, No. 5, p. 660, pl. 69, figs. 26, 27 [lectotype 648].

Divisions F, G, H [St. George], Lower Ordovician, Port aux Choix, Newfoundland.

*Bathyurellus expansus* Billings

Syntypes 844, a–e

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 318, figs. 306a [844a], b [844c].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 318, figs. 306a, b.

Lower Ordovician, lot 20, range 6, Stanbridge tp., Quebec.

*Bathyurellus formosus* Billings

Syntypes 644, a, 664

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 266.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 266.

Division P [Cow Head conglomerate], Middle Ordovician, Cow Head, Newfoundland.

=*Uromystrum formosum*, Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 60, pl. 12, figs. 8, 9 [644a]; pl. 13, figs. 1, 2, 4 [lectotype 664].=*Uromystrum patulum*, Whittington, H.B., 1963, ibid., p. 61 [644].*Bathyurellus fraternus* Billings

Syntypes 643, a

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 267, figs. 251a [643], b [643a].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 267, figs. 251a, b.

Division P [Cow Head conglomerate], Middle Ordovician, Cow Head, Newfoundland.

=*Uromystrum fraternum*, Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 58, pl. 12, figs. 1–3 [lectotype 643], 7, 10 [643a].

**Arthropoda**

***Bathyurellus litoreus* Billings**

Syntypes 843, a-d

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 320.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 320.

Lower Ordovician, Levis, Quebec.

***Bathyurellus marginatus* Billings**

Syntypes 646, a, 647

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 264, figs. 248 [646], 249 [647].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 264, figs. 248, 249.

Whittington, H.B., 1953, J. Pal., vol. 27, No. 5, p. 661, [lectotype 646; paratypes 646a, 647].

Divisions F, G, H [St. George], Lower Ordovician, Keppel Island and Port aux Choix, Newfoundland.

***Bathyurellus nitidus* Billings**

Syntypes 645, a-g

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 265, fig. 249 [composite 645c, e].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 265, fig. 249.

Whittington, H.B., 1953, J. Pal., vol. 27, No. 5, p. 661, pl. 67, figs. 9, 13-15; text figs. 4a, b [lectotype 645b, e; paratypes 645, a, c, d, f, g].

Division P [Cow Head conglomerate], Middle Ordovician, Cow Head, Newfoundland.

***Bathyurellus nitidus* Billings**

Hypotypes 16190-16199

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 55, pl. 10, figs. 8, 9, 11, 12, 14-17; pl. 11, figs. 1-12, 14, 15.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

***Bathyurellus rarus* Billings**

Holotype 845

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 320.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 320.

Lower Ordovician, Levis, Quebec.

***Bathyurellus validus* Billings**

Syntype 642

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 268.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 268.

Division L [Table Head], Middle Ordovician, Point Rich, Newfoundland.

=*Uromystrum validum*, Whittington, H.B., 1953, J. Pal., vol. 27, No. 5, p. 659, pl. 67, figs. 1, 2, 4 [lectotype 642].

***Bathyurus acutus* Raymond**

Holotype 7821; paratypes 7821a-d

Raymond, P.E., 1913, Geol. Surv., Canada, Mus. Bull. 1, p. 56, pl. 7, fig. 4.

Wilson, A.E., 1947, ibid., Bull. 9, p. 16, pl. 2, figs. 1a, b [7821d], 2 [7821].

Pamelia beds, Lower Ordovician, CPR cut at Westboro, Ottawa, Ontario.

*Bathyurus amplimarginatus* Billings

Syntypes 517, a

Billings, E.,

1859, Can. Naturalist Geol., vol. 4, p. 365, figs. 12a, b.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 353, fig. 341a.

Logan, W.E., 1863, "Geology of Canada", ibid., Rept. Prog., p. 122, fig. 41.

Twenhofel, W.H., 1938, Geol. Soc. Amer., Sp. Paper 11, p. 71, pl. 10, fig. 13 [517].

Lower Ordovician [Romaine Formation], Mingan Islands, Quebec.

*Bathyurus angelini* Billings

Syntypes 1084, a-c

Billings, E., 1859, Can. Naturalist Geol., vol. 4, p. 467, fig. 37 [1084c].

Logan, W.E., 1863, "Geology of Canada", Geol. Surv., Canada, Rept. Prog., p. 133, fig. 68.

Raymond, P.E., 1905, Annals Carnegie Mus., vol. 3, No. 2, p. 335, pl. 10, figs. 11 [1084], 12 [1084a]; text fig. 1 [the type 1084c].

Lower Ordovician, Grenville, Quebec.

*Bathyurus angelini* Billings

Hypotypes 7829, 7815, a

Raymond, P.E., 1913, Geol. Surv., Canada, Mus. Bull. 1, p. 55, pl. 7, fig. 5 [7829].

Whittington, H.B., 1953, J. Pal., vol. 27, No. 5, p. 653, pl. 65, fig. 18 [7829].

Beekmantown, Lower Ordovician, Argenteuil co., Quebec.

*Bathyurus arcuatus* Billings

Syntypes 866, a-d

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 205, figs. 189, 190 [866b].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 205, figs. 189, 190.

Lower or Middle Ordovician, boulder at St. Antoine de Tilly, Quebec.

= *Platyantyx arcuata*, Whittington, H.B., 1953, J. Pal., vol. 27, No. 5, p. 667; pl. 68, figs. 22-29 [holotype 866a; paratypes 866, b-d].*Bathyurus (Raymondites) bandifer* Sinclair

Holotype 13249

Sinclair, G.W., 1944, Trans. Roy. Can. Inst., vol. 25, pt. 1, No. 53, p. 17, pl. 1, fig. 12.

Wilson, A.E., 1947, Geol. Surv., Canada, Bull. 9, p. 19, pl. 2, fig. 7.

Leray beds, Ottawa Formation, Middle Ordovician, 7 miles west of Cobden, Ontario.

*Bathyurus bituberculatus* Billings

Syntypes 834, a-e

Billings, E.,

1860, Can. Naturalist Geol., vol. 5, p. 319, fig. 22 [834e].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 410, fig. 391.

Logan, W.E., 1863, "Geology of Canada", ibid., Rept. Prog., p. 238, fig. 270.

Beekmantown, Lower Ordovician, Levis, Quebec.

= *Lloydia bituberculatus*, Raymond, P.E., 1913, ibid., Mus. Bull. 1, p. 67, pl. 7, fig. 15 [holotype 834e].*Bathyurus caudatus* Billings

Holotype 635

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 261, fig. 245.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 261, fig. 245.

Divisions G, H [St. George], Lower Ordovician, Port aux Choix, Newfoundland.

## **Arthropoda**

### ***Bathyurus conicus* Billings**

Holotype 516

Billings, E.,

1859, Can. Naturalist Geol., vol. 4, p. 366, fig. 12c.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 353, fig. 341b.

Logan, W.E., 1863, "Geology of Canada", ibid., Rept. Prog., p. 122, fig. 42.

Beekmantown, Lower Ordovician, St. Timothy, Beauharnois Canal, Quebec.

=*Hystricurus conicus*, Raymond, P.E., 1913, ibid., Mus. Bull. 1, p. 60, pl. 7, fig. 9.

### ***Bathyurus cordai* Billings**

Syntype 836c

Billings, E.,

1860, Can. Naturalist Geol., vol. 5, p. 321.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 412.

Lower Ordovician, Levis, Quebec.

### ***Bathyurus cybele* Billings**

Syntypes 518, a

Billings, E.,

1859, Can. Naturalist Geol., vol. 4, p. 366, fig. 12d [518].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 353, fig. 341c.

Logan, W.E., 1863, "Geology of Canada", ibid., Rept. Prog., p. 122, fig. 43.

Lower Ordovician [Romaine Formation], Inner Birch Island, Mingan Islands, Quebec.

=*Petigurus cybele*, Twenhofel, W.H., 1938, Geol. Soc. Amer., Sp. Paper 11, p. 71, pl. 10, figs. 5 [518], 6 [518a].

### ***Bathyurus extans* (Hall)**

Hypotypes 7938, a

Wilson, A.E.,

1947, Geol. Surv., Canada, Bull. 9, p. 16, pl. 2, figs. 5, 6.

1957, Can. Field-Naturalist, vol. 70, No. 1, 1956, pl. 4, fig. 13.

Pamelia beds, Ottawa Formation, Middle Ordovician, near L'Orignal, Ontario.

### ***Bathyurus ingalli* Raymond**

Holotype 4318; hypotypes 3563, a

Raymond, P.E.,

1913, Geol. Surv., Canada, Mus. Bull. 1, p. 57, pl. 7, fig. 7 [4318].

1921, ibid., Mus. Bull. 31, p. 31, pl. 9, figs. 3 [4318], 4 [3563], 5 [3563a].

Wilson, A.E., 1947, ibid., Bull. 9, p. 19, pl. 2, figs. 16–18.

Hull Formation, Middle Ordovician, Kirkfield liftlock, Ontario.

=*Bathyurus (Raymondites) ingalli*, Sinclair, G.W., 1944, Trans. Roy. Can. Inst., vol. 25, pt. 1, No. 53, p. 16, pl. 1, fig. 11.

=*Raymondites ingalli*, Whittington, H.B., 1953, J. Pal., vol. 27, No. 5, p. 654.

### ***Bathyurus (Raymondites) ingalli* Raymond**

Hypotype 13250

Sinclair, G.W., 1944, Trans. Roy. Can. Inst., vol. 25, pt. 1, No. 53, p. 16, pl. 1, figs. 9, 10.

Wilson, A.E., 1947, Geol. Surv., Canada, Bull. 9, p. 19, pl. 2, figs. 15a, b.

Leray-Rockland beds, Ottawa Formation, Middle Ordovician, Paquette Rapids, Ottawa River.

### ***Bathyurus johnstoni* Raymond**

Syntypes 7830, 7831

Raymond, P.E., 1913, Geol. Surv., Canada, Mus. Bull. 1, p. 53, pl. 7, figs. 2 [7831], 3 [7830].

Wilson, A.E., 1947, ibid., Bull. 9, p. 17, pl. 2, figs. 12, 13.

Lowville beds, Middle Ordovician, lot 26, con. 6, Carden tp. and 3 miles north of Coboconk, lot 2, con. 10, Lexington tp., Ontario.

*Bathyurus magnus* Wilson

Holotype 7744

Wilson, A.E., 1947, Geol. Surv., Canada, Bull. 9, p. 17, pl. 2, fig. 14.  
 Lowville beds, Ottawa Formation, Middle Ordovician, City View, Ottawa, Ontario.

*Bathyurus minganensis* Billings

Syntypes 520, a

Billings, E., 1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 353.  
 Lower Ordovician [Romaine Formation], Mingan Islands, Quebec.

*Bathyurus nero* Billings

Syntypes 637, a, 750, 8444, a-d

Billings, E.,  
 1865, "New Species of Lower Silurian Fossils", p. 260, figs. 243a, b [750], c  
 [637 + 8444].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 260, figs. 243a-c.  
 Divisions F, G, H [St. George], Lower Ordovician, Port aux Choix, Table Head and Keppel

Island, Newfoundland.

=*Petigurus nero*, Raymond, P.E., 1913, ibid., Mus. Bull. 1, p. 59, pl. 7, fig. 8 [holotype  
 637].

Whittington, H.B., 1953, J. Pal., vol. 27, No. 5, p. 658, pl. 66, figs.  
 18-20, 23-25; text figs. 3a, b [lectotype 750].

*Bathyurus oblongus* Billings

Syntypes 840, a

Billings, E.,  
 1860, Can. Naturalist Geol., vol. 5, p. 321, fig. 25 [840].  
 1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 412, fig. 394.  
 Logan, W.E., 1863, "Geology of Canada", ibid., Rept. Prog., p. 238, fig. 268.  
 Lower Ordovician, Levis, Quebec.

*Bathyurus perplexus* Billings

Holotype 632

Billings, E., 1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 364, fig. 350.  
 Middle ? Ordovician, Bonne Bay, Newfoundland.

*Bathyurus perspicator* Billings

Holotype 847

Billings, E.,  
 1865, "New Species of Lower Silurian Fossils", p. 205, fig. 191.  
 1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 205, fig. 191.  
 Lower or Middle Ordovician, boulder at St. Antoine de Tilly, Quebec.  
 =*Goniotelus perspicator*, Whittington, H.B., 1953, J. Pal., vol. 27, No. 5, p. 662, pl.  
 68, figs. 1, 2.

*Bathyurus quadratus* Billings

Holotype (?) 862b

Billings, E.,  
 1860, Can. Naturalist Geol., vol. 5, p. 321, fig. 27.  
 1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 412, fig. 396.  
 Logan, W.E., 1863, "Geology of Canada", ibid., Rept. Prog., p. 238, fig. 272.  
 Lower Ordovician, Levis, Quebec.

**Arthropoda**

*Bathyurus saffordi* Billings

Syntypes 842, a–l

Billings, E.,

1860, Can. Naturalist Geol., vol. 5, p. 320.

1861, ibid., vol. 6, p. 313, fig. 2 [842].

1865, "New Species of Lower Silurian Fossils", p. 259, fig. 241b.

1865, Geological Survey of Canada, Palaeoz. Fossils, vol. 1, p. 259, fig. 241b.

Logan, W.E., 1863, "Geology of Canada", ibid., Rept. Prog., p. 239, fig. 274b [842].

Lower Ordovician, Levis, Quebec.

=*Lloydia saffordi*, Raymond, P.E., 1913, ibid., Mus. Bull. 1, p. 67, pl. 7, fig. 16 [842].

*Bathyurus smithii* Billings

Holotype 1318

Billings, E.,

1862, "New Species of Lower Silurian Fossils", p. 56.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 56.

Logan, W.E., 1863, "Geology of Canada", ibid., Rept. Prog., p. 153, fig. 114a.

Black River, Middle Ordovician, Peterborough, Ontario.

=*Dimeropyge smithii*, Sinclair, G.W., 1946, Am. J. Sci., vol. 244, p. 855, pl. 1, fig. 7.

*Bathyurus spiniger* (Hall)

Hypotype 7747

Wilson, A.E., 1947, Geol. Surv., Canada, Bull. 9, p. 20, pl. 2, fig. 3.

Leray beds, Ottawa Formation, Middle Ordovician, edge of hill above Sand Point, Ottawa River, Ontario.

*Bathyurus strenuus* Billings

Syntypes 839, a

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 204, fig. 188 [839a].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 204, fig. 188.

Lower or Middle Ordovician, boulder at St. Antoine de Tilly, Quebec.

=*Psephosthenaspis strenua*, Whittington, H.B., 1953, J. Pal., vol. 27, No. 5, p. 674, pl. 67, figs. 19, 20, 25 [lectotype 839a; paratype 839].

*Bathyurus superbus* Raymond

Syntypes 7422, a

Raymond, P.E., 1910, Ottawa Naturalist, vol. 24, No. 8, p. 129, pl. 2, tigs. 1 [7422], 2 [7422a].

Wilson, A.E., 1947, Geol. Surv., Canada, Bull. 9, p. 18, pl. 2, figs. 10, 11.

Black River, Middle Ordovician, Mechanicsville, Ottawa, Ontario.

*Bathyurus timon* Billings

Syntypes 636, a–c

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 261, fig. 244 [636].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 261, fig. 244.

Divisions G, H [St. George], Lower Ordovician, Port aux Choix, Newfoundland.

*Bathyurus trispinosus* Wilson

Holotype 11304; paratype 11304a

Wilson, A.E.,

1947, Geol. Surv., Canada, Bull. 9, p. 21, pl. 2, figs. 8 [11304a], 9 [11304].

1957, Can. Field-Naturalist, vol. 70, No. 1, 1956, pl. 4, fig. 12.

Leray-Rockland beds, Ottawa Formation, Middle Ordovician, east of Pakenham, Ontario.

*Bathyurus* sp.

Fig. spec. 7833

Raymond, P.E., 1913, Geol. Surv., Canada, Mus. Bull. 1, p. 53, pl. 7, fig. 6.  
 Pamelia Formation, Middle Ordovician, 3 miles west of Clayton, New York, U.S.A.

*Bellefontia* (?) aff. *collieana* (Raymond)

Hypotypes 12661, 12662

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 437, pl. 5,  
 figs. 4, 5.  
 McKay Group, Lower Ordovician, Pinnacle Creek and Harrogate, British Columbia.

*Bellefontia platana* Kobayashi

Holotype 12657; paratype 12658; hypotypes 12659, 12660

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 436, pl. 3,  
 figs. 2-5.  
 McKay Group, Lower Ordovician, McKay Creek, British Columbia.

*Bellefontia* (?) sp.

Fig. spec. 12663

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 437, pl. 5,  
 fig. 6.  
 McKay Group, Lower Ordovician, Harrogate, British Columbia.

*Beltella* (?) sp.

Fig. spec. 11142

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 83, pl. 3, fig. 16.  
 McLeod Brook Formation, Lower Ordovician, McLeod Brook, Cape Breton Island, Nova Scotia.

*Brachyaspis alacer* see *Asaphus alacer**Brachyaspis altilis* see *Asaphus platycephalus**Brachyaspis notans* see *Asaphus notans**Bronteus aquilonaris* Whiteaves

Syntypes 4416, 17736, a [cast and mould], 17737

Whiteaves, J.F.,

1904, Geol. Surv., Canada, Ann. Rept., n. ser., vol. 14, 1901, p. 58F.  
 1906, ibid., Palaeoz. Fossils, vol. 3, pt. 4, p. 267, pl. 42, fig. 2 [4416].

Silurian, portage road below and at falls, Ekwan River, Ontario.

*Bronteus ekwanensis* Whiteaves

Syntypes 4406, 17753, a [cast and mould]

Whiteaves, J.F.,

1904, Geol. Surv., Canada, Ann. Rept., n. ser., vol. 14, 1901, p. 58F.

1906, ibid., Palaeoz. Fossils, vol. 3, pt. 4, p. 266, pl. 42, fig. 1 [4406].

Silurian, rapids below falls (middle and lower), Ekwan River, Ontario.

*Bronteus insularis* Billings

Holotype 2558

Billings, E., 1866, Geol. Surv., Canada, Cat. Sil. Fossils Anticosti, p. 66.  
 Middle Silurian [Chicotte Formation], Southwest Point, Anticosti Island, Quebec.  
 =*Goldius insularis*, Twenhofel, W.H., 1928, ibid., Mem. 154, p. 327, pl. 54, fig. 9.

**Arthropoda**

***Bronteus lunatus* Billings**

Syntypes 1781, a-c

Billings, E., 1857, Geol. Surv., Canada, Rept. Prog. 1853-56, p. 338.

Logan, W.E., 1863, "Geology of Canada", ibid., Rept. Prog., p. 188, fig. 187.

Middle Ordovician [Cobourg beds?], Ottawa, Ontario.

=*Goldius lunatus*, Raymond, P.E., 1921, ibid., Mus. Bull. 31, p. 32, pl. 9, fig. 8 [1781c].

=*Eohonteus lunatus*, Wilson, A.E., 1947, ibid., Bull. 9, p. 38, pl. 8, figs. 10 [holotype 1781]. 11 [1781a].

Sinclair, G.W., 1949, J. Pal., vol. 23, No. 1, p. 52, pl. 14, figs. 2, 6.

***Bronteus manitobensis* Whiteaves**

Syntypes 4108-4110

Whiteaves, J.F., 1892, Geol. Surv., Canada, Contr. Can. Pal., vol. 1, pt. 4, p. 347, pl. 46, figs. 5 [4108], 6 [4109], 7 [4110].

Middle Devonian [Winnipegawan Formation], island north of Whiteaves Point and Rowan Island, Dawson Bay, Lake Winnipegosis and Pentamerus Point, Lake Manitoba, Manitoba.

***Bronteus pompilius* Billings**

Syntypes? 3082, a-e

Billings, E., 1869, Proc. Portland (Maine) Soc. Natural Hist., vol. 1, pt. 2, p. 123, pl. 3, fig. 25 [composite].

Chaleur Group [West Point Formation], Middle Silurian, Port Daniel, Chaleur Bay, Quebec.

***Bumastus billingsi* Raymond and Narraway**

Hypotype 331

Raymond, P.E., 1913, Geol. Surv., Canada, Mus. Bull. 1, p. 34, pl. 3, fig. 12.

Wilson, A.E., 1947, ibid., Bull. 9, p. 34, pl. 7, fig. 13.

Cobourg ? beds, Middle Ordovician, Ottawa, Ontario.

***Bumastus globosus* see *Illaenus globosus***

***Bumastus indeterminatus* (Walcott)**

Hypotype 13253

Wilson, A.E., 1947, Geol. Surv., Canada, Bull. 9, p. 34, pl. 7, fig. 12.

Rockland beds, Ottawa Formation, Middle Ordovician, Parkdale Avenue, Ottawa, Ontario.

***Bumastus (Bumastoides) milleri* see *Illaenus milleri***

***Bumastus milleri* see *Illaenus milleri***

***Bumastus orbicaudatus* see *Illaenus orbicaudatus***

***Bumastus porrectus* Raymond**

Hypotypes 7759, 7760

Wilson, A.E., 1947, Geol. Surv., Canada, Bull. 9, p. 35, pl. 7, figs. 7, 8.

Cobourg beds, Ottawa Formation, Middle Ordovician, corners Percy Street and Fifth Avenue, and Booth and Elm Streets, Ottawa, Ontario.

***Bumastus porrectus* Raymond**

Hypotype 13254

Wilson, A.E., 1947, Geol. Surv., Canada, Bull. 9, p. 35, pl. 7, fig. 9.

Hull beds, Ottawa Formation, Middle Ordovician, east side of Fairy lake, Quebec.

***Calliops calicephalus* (Hall)**

Hypotypes 7765, 8009

Wilson, A.E., 1947, Geol. Surv., Canada, Bull. 9, p. 56, pl. 10, figs. 5, 6.

Sherman Fall beds, Ottawa Formation, Middle Ordovician, CPR cut south of Aylmer road and "The Heap", Hull, Quebec.

*Calliops narrawayi* Okulitch

Hypotype 13261

Wilson, A.E., 1947, Geol. Surv., Canada, Bull. 9, p. 57, pl. 10, fig. 7.

Sherman Fall beds, Ottawa Formation, Middle Ordovician, axe factory, Hull, Quebec.

*Calymene intermedia* var. *antigonishensis* McLearn

Paratypes 5588-5590

McLearn, F.H., 1924, Geol. Surv., Canada, Mem. 137, p. 162, pl. 26, figs. 6, 7, 11.

Stonehouse Formation, Upper Silurian, Arisaig, Nova Scotia.

*Calymene tuberculata* (Brünnich)

Hypotypes 5584, 5587

McLearn, F.H., 1924, Geol. Surv., Canada, Mem. 137, p. 161, pl. 26, figs. 1, 2.

Stonehouse Formation, Upper Silurian, Arisaig, Nova Scotia.

*Calymene tuberculosa* (Dalman)

Hypotypes 5585, 5586

McLearn, F.H., 1924, Geol. Surv., Canada, Mem. 137, p. 161, pl. 26, figs. 3, 4.

Ross Brook Formation, Middle Silurian, Arisaig, Nova Scotia.

*Calymene* sp. indet.

Fig. spec. 3671

Raymond, P.E., 1921, Geol. Surv., Canada, Mus. Bull. 31, p. 38, pl. 11, fig. 5.

Upper Ordovician, Craigleath, Ontario.

*Calyptaulax calderi* Wilson

Holotype 11301; paratype 11301a

Wilson, A.E., 1947, Geol. Surv., Canada, Bull. 9, p. 58, pl. 10, figs. 9, 10.

Leary-Rockland beds, Ottawa Formation, Middle Ordovician, east of Pakenham, Ontario.

*Calyptaulax* sp.

Fig. specs. 16872, 16873

Norford, B.S., 1962, Geol. Surv., Canada, Paper 62-14, p. 12, pl. 4, figs. 1, 7.

Sunblood Formation, Middle Ordovician, Sun blood Mountain, South Nahanni River, District of Mackenzie.

*Ceratocephala exigua* Whittington

Holotype 16298; paratype 16299

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 103, pl. 31, figs. 18, 21; pl. 32, figs. 1-3.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Ceratocephala goniata* Warden

Hypotypes 2990, 7825

Raymond, P.E., 1913, Geol. Surv., Canada, Mus. Bull. 1, p. 38.

Middle Silurian [West Point Formation], Gros Morbe (Actenson's Cove) and Port Daniel, Chaleur Bay, Quebec.

*Ceraurus inconfusus* Barton

Holotype 5997

Barton, D.C., 1913, Bull. Mus. Comp. Zoology Harvard, vol. 54, No. 21, p. 555, pl., fig. 3.

Cobourg Formation, Middle Ordovician, Pefferlaw, Ontario.

*Ceraurus elongatus* Cooper

Paratype 9077

Cooper, G.A., 1930, Am. J. Sci., ser. 5, vol. 20, p. 384, pl. 5, fig. 14.

Whitehead Formation, Upper Ordovician, Irishtown Road, ½ mile west of Mountain Road, Quebec.

**Arthropoda**

*Ceraurinus icarus* see *Cheirurus icarus*

*Ceraurinus marginatus* Barton

Hypotype 3566

Raymond, P.E., 1921, Geol. Surv., Canada, Bull. 31, p. 37, pl. 11, fig. 6.  
Collingwood Formation, Upper Ordovician, Craigleath, Ontario.

*Ceraurinus marginatus* Barton

Hypotypes 8555a, b

Foerste, A.F., 1924, Geol. Surv., Canada, Mem. 138, p. 248, pl. 46, figs. 6a, b.  
Kagawong Formation, Upper Ordovician, 3 miles southwest of Little Current, Manitoulin  
Island, Ontario.

*Ceraurinus marginatus* Barton

Hypotype 13259

Wilson, A.E., 1947, Geol. Surv., Canada, Bull. 9, p. 51, pl. 9, fig. 6.  
Cobourg beds, Ottawa Formation, Middle Ordovician, Philemon Island, Hull, Quebec.

*Ceraurinus pompilius* see *Cheirurus pompilius*

*Ceraurinus trentonensis* Barton

Holotype 5836

Barton, D.C., 1913, Bull. Mus. Comp. Zoology Harvard, vol. 54, No. 21, p. 552, pl.,  
figs. 5, 6.  
Basal Trenton, Middle Ordovician, Goat Island, Ontario.

*Ceraurus dentatus* Raymond and Barton

Holotype 1775 [missing]

Raymond, P.E., and Barton, D.C., 1913, Bull. Mus. Comp. Zoology Harvard, vol. 54,  
No. 20, p. 534, pl. 2, figs. 4, 5.  
Raymond, P.E., 1921, Geol. Surv., Canada, Mus. Bull. 31, p. 35, pl. 11, figs. 7, 8.  
Wilson, A.E., 1947, ibid., Bull. 9, p. 49, pl. 9, figs. 2a, b.  
Leray-Rockland beds, Middle Ordovician, north of Vankleek Hill, Ontario.

*Ceraurus dentatus* Raymond and Barton

Hypotypes 1769, b, 8062

Raymond, P.E., 1921, Geol. Surv., Canada, Mus. Bull. 31, p. 35, pl. 10, figs. 1-3.  
Cobourg and Hull Formations, Middle Ordovician, Cobourg and Belleville, Ontario.

*Ceraurus matrangeris* Sinclair

Holotype 6801; paratype 7395; hypotype 7712

Sinclair, G.W., 1947, Am. J. Sci., vol. 245, p. 254, pl. 1, figs. 3-6.  
Middle Trenton limestone, Middle Ordovician, north of Roberval, Quebec.

*Ceraurus numitor* (Billings)

Hypotype 2199

Twenhofel, W.H., 1928, Geol. Surv., Canada, Mem. 154, p. 333.  
English Head Formation, Upper Ordovician, Makasty Bay, Anticosti Island, Quebec.  
[Note: specimen collected by T.C. Weston and though very similar to figured specimens of  
*Cheirurus numitor* collected from English Head by Richardson doubtful if part of  
original material.]

*Ceraurus pleurexanthemus* Green

Hypotypes 7763, 11303

Wilson, A.E., 1947, Geol. Surv., Canada, Bull. 9, p. 50, pl. 8, figs. 3, 4.  
Leray-Rockland and Cobourg beds, Ottawa Formation, Middle Ordovician, lots 19-24, con.  
1, Winchester tp. and near Alfred, Ontario.

*Ceraurus* sp. 1

Fig. spec. 8874

Cooper, G.A., and Kindle, C.H., 1936, J. Pal., vol. 10, No. 5, p. 370, pl. 53, fig. 27.  
Whitehead Formation, Upper Ordovician, Priest's Road, Percé, Quebec.

*Ceraurus* sp. 2

Fig. spec. 8875

Cooper, G.A., and Kindle C.H., 1936, J. Pal., vol. 10, No. 5, p. 370, pl. 53, fig. 21.  
Whitehead Formation, Upper Ordovician, Irishtown Road, Percé, Quebec.

*Chasmops anticostiensis* Twenhofel

Holotype 2329

Twenhofel, W.H., 1928, Geol. Surv., Canada, Mem. 154, p. 336, pl. 60, fig. 3 [labelled 4].  
Delo, D.M., 1940, Geol. Soc. Amer., Sp. Paper 29, p. 105, pl. 13, fig. 12.  
Ellis Bay Formation, Upper Ordovician, Junction Bay, Anticosti Island, Quebec.

*Chasmops? bebryx* (Billings)

Hypotype 13262

Wilson, A.E., 1947, Geol. Surv., Canada, Bull. 9, p. 61, pl. 10, fig. 14.  
Cobourg beds, Ottawa Formation, Middle Ordovician, Philemon Island, Hull, Quebec.

*Chasmops occidentalis* Twenhofel

Holotype 2187; paratype 2187a

Twenhofel, W.H., 1928, Geol. Surv., Canada, Mem. 154, p. 338, pl. 60, fig. 5 [labelled 2].  
Delo, D.M., 1940, Geol. Soc. Amer., Sp. Paper 29, p. 106, pl. 13, fig. 14.  
English Head Formation, Upper Ordovician, English Head, Anticosti Island, Quebec.

*Cheirurus apollo* Billings

Electrototype 865

Billings, E.,  
1860, Can. Naturalist Geol., vol. 5, p. 322, fig. 28(?).  
1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 413, fig. 397(?).  
Beekmantown, Lower Ordovician, Levis, Quebec.

*Cheirurus eryx* Billings

Holotype(?) 864

Billings, E.,  
1860, Can. Naturalist Geol., vol. 5, p. 322, fig. 30.  
1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 413, fig. 399.  
Logan, W.E., 1863, "Geology of Canada", ibid., Rept. Prog., p. 239, fig. 276.  
Beekmantown, Lower Ordovician, Levis, Quebec.

*Cheirurus glaucus* Billings

Syntypes 850, a

Billings, E.,  
1865, "New Species of Lower Silurian Fossils", p. 323, figs. 308a, b [850].  
1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 323, figs. 308a, b.  
Lower Ordovician, lot 20, range 6, Stanbridge tp., Quebec.

*Cheirurus icarus* Billings

Syntypes 2816, a-c

Billings, E., 1860, Can. Naturalist Geol., vol. 5, p. 67, fig. 11.  
Upper Ordovician [Vaureal Formation], Carleton Point, Anticosti Island, Quebec.  
=Ceraurinus icarus, Foerste, A.F., 1924, Geol. Surv., Canada, Mem. 138, p. 249, pl. 44, figs. 3a [2186], b [2186b].

## Arthropoda

### *Cheirurus mercurius* Billings

Syntypes 668, a-f

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 285, fig. 272 [668].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 285, fig. 272.

Division P [Cow Head conglomerate], Middle Ordovician, Cow Head, Newfoundland.

=*Cydonocephalus mercurius*, Whittington, H.B., 1963, Bull. Mus. Comp. Zoology

Havard, vol. 129, No. 1, p. 102, pl. 30, figs. 11-13 [holotype 668], 19, 20 [668f].

=*Kawina limbata*, Whittington, H.B., 1963, ibid., p. 92 [668b].

### *Cheirurus numitor* see *Ceraurus numitor*

### *Cheirurus nuperus* Billings

Hypotype 2553

Twenhofel, W.H., 1928, Geol. Surv., Canada, Mem. 154, p. 333, pl. 54, fig. 7.

Middle Silurian, Chicotte Formation, Southwest Point, Anticosti Island, Quebec.

### *Cheirurus perforator* Billings

Holotype 684

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 287, fig. 275.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 287, fig. 275.

Division N [Table Head], Middle Ordovician, Table Head, Newfoundland.

### *Cheirurus polydorus* Billings

Syntypes 685, a-c

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 286.

1865, Geol. Surv., Canada, Palaeoz. Fossils", vol. 1, p. 286.

Division P, Middle Ordovician, Portland Creek, Newfoundland.

"*Cheirurus*" *polydorus*, Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 85, pl. 25, fig. 10.

### *Cheirurus pompilius* Billings

Holotype 1317

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 181, fig. 162.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 181, fig. 162.

Middle Ordovician [Mingan Formation], south side of Large Island, Mingan Islands, Quebec.

=*Ceraurinus pompilius*, Twenhofel, W.H., 1938, Geol. Soc. Amer., Sp. Paper 11, p. 75, pl. 11, fig. 19.

### *Cheirurus prolificus* Billings

Syntypes 687, a-n

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 285, fig. 273 [687].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 285, fig. 273.

Division P [Cow Head conglomerate], Middle Ordovician, Cow Head Newfoundland.

=*Cydonocephalus prolificus*, Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 101, pl. 29, figs. 16, 17 [holotype 687].

### *Cheirurus satyrus* Billings

Holotype 1087

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 324, fig. 309.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 324, fig. 309.

Lower? Ordovician, Island of Montreal, Quebec.

*Cheirurus sol* Billings

Syntype 683

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 288, fig. 276(?)

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 288, fig. 276(?)

Middle Ordovician, 4 miles northeast of Portland Creek, Newfoundland.

= *Heliomera sol*, Evitt, W.R., 1951, J. Pal., vol. 25, No. 5, p. 603, pl. 85, figs. 24-29  
[plaster cast of lectotype].*Cheirurus solitarius* Billings

Holotype 852

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 206,

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 206.

Lower or Middle Ordovician, boulder at St. Antoine de Tilly, Quebec.

= *Idiorhapha solitaria*, Whittington, H.B., 1953, J. Pal., vol. 27, No. 5, p. 675, pl. 69, figs. 14, 15.*Cheirurus tarquinius* Billings

Syntypes 3081, a-d

Billings, E., 1869, Proc. Portland Soc. Natural Hist., vol. 1, pt. 2, p. 121.

Raymond, P.E., 1916, Bull. Mus. Comp. Zool. Harvard, vol. 60, No. 1, p. 38 [the type 3081].

Middle Silurian, Port Daniel, Chaleur Bay, Quebec.

*Cheirurus vulcanus* Billings

Syntypes 669, a-c

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 284, figs. 271a [669], b [669c?], c [669b].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 284, figs. 271a-c.

Division P [Cow Head conglomerate], Middle Ordovician, Cow Head, Newfoundland.

= *Kawina limbata*, Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 92, pl. 25, figs. 9, 11, 12 [669c].= *Kawina vulcanus*, Whittington, H.B., 1963, ibid., p. 91, pl. 25, figs. 7, 8 [lectotype 669].=?*Kawina* sp. ind., Whittington, H.B., 1963, ibid., p. 95, pl. 31, fig. 1 [669b].*Cheirurus vulcanus* Billings

Hypotypes 851, c

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 324, figs. 310a, b [851], c [851c].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 324, figs. 310a-c.

Lower Ordovician, lot 20, range 6, Stanbridge tp., Quebec.

= *Pseudosphaeroxochus vulcanus* var. *billingsi*, Raymond, P.E., 1905, Annals Carnegie Mus., vol. 3, No. 2, p. 369.*Clelandis*(?) sp.

Fig. spec. 12711

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 456, pl. 6, figs. 5a, b.

McKay Group, Lower Ordovician, north of Brisco Trail, British Columbia.

**Arthropoda**

*Colobionion julius* (Billings)

Hypotypes 16140-16144

Whittington, H.B., 1961, J. Pal., vol. 35, No. 5, p. 920, pl. 102, figs. 1-3, 6-17.

Upper Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Columbicephalus macrops* Kobayashi

Holotype 12686

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 444, pl. 5,  
figs. 7a, b.

Glenogle Formation, Lower Ordovician, Vermilion Basin, British Columbia.

*Cryptolithus bellulus* (Ulrich)

Hypotypes 6780, a

Foerste, A.F., 1924, Geol. Surv., Canada, Mem. 138, p. 237, pl. 43, figs. 19 [6780],  
20 [6780a].

Upper Ordovician, Yamaska River, 1½ miles below St. Hugues, Quebec.

*Cryptolithus loretensis* Foerste

Hypotype 10790

Foerste, A.F., 1924, Geol. Surv., Canada, Mem. 138, p. 236, pl. 43, figs. 15, 16.

Trenton, Middle Ordovician, Falls of Lorette, near Quebec City, Quebec.

*Cryptolithus* sp.

Fig. spec. 1773

Foerste, A.F., 1924, Geol. Surv., Canada, Mem. 138, p. 236, pl. 43, fig. 17.

Trenton, Middle Ordovician, Montmorency Falls near Quebec City, Quebec.

*Cryptolithus* sp.

Hypotypes 1753, a

Foerste, A.F., 1924, Geol. Surv., Canada, Mem. 138, p. 236.

'Trenton', Middle Ordovician, Montreal, Quebec.

*Cybele spicata* Raymond

Holotype 3564

Raymond, P.E., 1921, Geol. Surv., Canada, Mus. Bull. 31, p. 34, pl. 11, fig. 1.

Collingwood Formation, Upper Ordovician, Craigleath, Ontario.

*Cybeloides plana* Sinclair

Holotype 13258

Sinclair, G.W., 1944, Trans. Roy. Can. Inst., vol. 25, pt. 1, No. 53, p. 19, pl. 1, fig. 8.

Wilson, A.E., 1947, Geol. Surv., Canada, Bull. 9, p. 46, pl. 10, fig. 3.

Sherman Fall beds, Middle Ordovician, quarry 1 mile west of Finch, Ontario.

*Cybeloides* sp.

Fig. spec. 16874

Norford, B.S., 1962, Geol. Surv., Canada, Paper 62-14, p. 12, pl. 4, fig. 2.

Sunblood Formation, Middle Ordovician, Sunblood Mountain, South Nahanni River, District of Mackenzie.

*Cyclognathus rotundifrons* Matthew

Hypotypes 11173-11175

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 94, pl. 5, figs. 7-9.

McLeod Brook Formation, Lower Ordovician, McLeod Brook, Cape Breton Island, Nova Scotia.

*Cyclopyge kindlei* Cooper

Holotype 9076

Cooper, G.A., 1930, Am. J. Sci., ser. 5, vol. 20, p. 378, pl. 5, figs. 2022.

Whitehead Formation, Upper Ordovician, South Cove, Percé, Quebec.

*Cydonocephalus griffiths* Whittington

Holotype 16272; paratypes 16273, 16274, 16276

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 98,  
pl. 27, figs. 3, 7, 10-15, 19; pl. 28, figs. 1-4.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Cydonocephalus mercurius* see *Cheirurus mercurius**Cydonocephalus prolificus* (Billings)

Hypotypes 16283-16286

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 101,  
pl. 28, figs. 12-15; pl. 30, figs. 1-10.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Cydonocephalus prominulus* Whittington

Holotype 16287; paratype 16288

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 103,  
pl. 30, figs. 14-18, 21.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Cydonocephalus scrobiculus* Whittington

Holotype 16280; paratypes 16281, 16282

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 101,  
pl. 28, figs 9-11; pl. 29, figs. 8, 10-15.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Cydonocephalus torulus* Whittington

Holotype 16277; paratypes 16275, 16278, 16279, 16320

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 100,  
pl. 27, figs. 16-18; pl. 28, figs. 5-8; pl. 29, figs. 1-7, 9; pl. 26, figs. 1-4, 6.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Cyphaspis bellula* Whiteaves

Syntypes 4104, a, 4105, 4106, a-c

Whiteaves, J.F., 1892, Geol. Surv., Canada, Contr. Can. Pal., vol. 1, pt. 4, p. 349,  
pl. 46, figs. 9, a [4106].

Middle Devonian [Winnipegosis Formation], Islands north of Whiteaves Point, Dawson Bay,  
Lake Winnipegosis, Manitoba.

*Dalmanites achates* Billings

Syntype 1784

Billings, E., 1860, Can. Naturalist Geol., vol. 5, p. 63, fig. 9.

Logan, W.E., 1863, "Geology of Canada", Geol. Surv., Canada, Rept. Prog., p. 187,  
fig. 186.

Middle Ordovician [Cobourg? beds], Ottawa, Ontario.

=*Achatella achates*, Wilson, A.E., 1967, ibid., Bull. 9, p. 60, pl. 10, fig. 16 [holotype].

*Dalmanites limulurus* Green

Hypotype 2751

Williams, M.Y., 1919, Geol. Surv., Canada, Mem. 111, pl. 21, fig. 2.

Lockport Formation, Middle Silurian, West Flamborough, Wentworth co., Ontario.

*Dalmanitina logani* (Hall)

Hypotypes 5998, 6210, 6211

McLearn, F.H., 1924, Geol. Surv., Canada, Mem. 137, p. 167, pl. 27, figs. 3-5.

Stonehouse Formation, Upper Silurian, Arisaig, Nova Scotia.

=*Scotiella logani*, Delo, D.M., 1940, Geol. Soc. Amer., Sp. Paper 29, p. 33.

**Arthropoda**

*Dalmanitina logani* var. *conservatrix* McLearn

Paratype 5999

McLearn, F.H., 1924, Geol. Surv., Canada, Mem. 137, p. 168, pl. 27, fig. 2.  
Stonehouse Formation, Upper Silurian, Arisaig, Nova Scotia.

=*Scotiella logani* var. *conservatrix*, Delo, D.M., 1940, Geol. Soc. Amer., Sp. Paper 29,  
p. 34, pl. 2, fig. 18.

*Dechenella (Basidechenella) formosensis* Fagerstrom

Paratype 14756

Fagerstrom, J.A., 1961, J. Pal., vol. 35, No. 1, p. 42, pl. 14, fig. 5.  
Formosa reef limestone, Middle Devonian, outcrop south side of road 6 miles southeast of  
Teeswater, lot 5, con. 3, Carrie tp., Ontario.

*Dechenella (Dechenella) (?) halli* Stumm

Hypotype 14758

Fagerstrom, J.A., 1961, J. Pal., vol. 35, No. 1, p. 42, pl. 14, fig. 19.  
Formosa reef limestone, Middle Devonian, north side outcrop nearest west road, Falls of  
Teeswater River, Ontario.

*Dikelocephalus missisquoii* Billings

Holotype 878

Billings, E.,  
1865, "New Species of Lower Silurian Fossils", p. 199.  
1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 199.  
Beekmantown, Lower Ordovician, Philipsburg, Quebec.

*Dimeropyge gibbus* Sinclair

Paratype 6701

Sinclair, G.W., 1946, Am. J. Sci., vol. 244, p. 856, pl. 1, fig. 4.  
Sherman Fall limestone, Middle Ordovician, Lakefield, Ontario.

*Dimeropyge lucifer* Sinclair

Holotype 6726; paratype 6726a

Sinclair, G.W., 1946, Am. J. Sci., vol. 244, p. 858, pl. 1, figs. 5, 6.  
Middle Trenton, Middle Ordovician, 1 mile north of Roberval, Quebec.

*Dimeropyge smithii* see *Bathyurus smithii*

Dimeropygid cephalon, gen. ind.

Fig. spec. 16160

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 50, pl.  
6, figs. 10-12.  
Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Dimeropygiella eos* Kobayashi

Holotype 12712

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 456, pl. 6,  
fig. 10.  
McKay Group, Lower Ordovician, south of Whiskey Trail, British Columbia.

*Dolichometopus ? convexus* Billings

Holotype 718

Billings, E.,  
1865, "New Species of Lower Silurian Fossils", p. 269, fig. 253.  
1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 269, fig. 253.  
Division G [St. George], Lower Ordovician, Port aux Choix, Newfoundland.

*Dolichometopus ? gibberulus* Billings

Holotype 660

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 269, fig. 254.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 269, fig. 254.

Division G [St. George], Lower Ordovician, Port au Choix, Newfoundland.

*Dolichometopus ? rarus* Billings

Holotype 514

Billings, E., 1865, Geol. Surv., Canada. Palaeoz. Fossils, vol. 1, p. 352, fig. 338.

Lower Ordovician, Oxford tp., Ontario.

*Echinolichas parallelobatus* Fagerstrom

Paratype 14759

Fagerstrom, J.A., 1961, J. Pal., vol. 35, No. 1, p. 43.

Formosa reef limestone, Middle Devonian, road-cut 2 miles north of Formosa, Ontario.

*Ectenonotus westoni* see *Amphion westoni**Ectenonotus* sp.

Fig. specs. 16134, 16135

Whittington, H.B., 1961, J. Pal., vol. 35, No. 5, p. 917, pl. 100, figs. 1-5.

Upper Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Enocrinurus caplanensis* Northrop

Syn types 9158

Northrop, S.A., 1939, Geol. Soc. Amer., Sp. Paper 21, p. 239, pl. 26, figs. 13-15.

Clemville Formation, Middle Silurian, St. Alphonse-de-la Rivière Caplan, Gaspé, Quebec.

*Enocrinurus cybeleformis* Raymond

Holotype 3385

Raymond, P.E., 1921, Geol. Surv., Canada, Mus. Bull. 31, p. 33, pl. 11, fig. 2.

Wilson, A.E., 1947, ibid., Bull. 9, p. 44, pl. 8, fig. 6.

Rockland Formation, Middle Ordovician, 1 mile west of Kirkfield liftlock, Ontario.

*Enocrinurus elegantulus* Billings

Syntypes 2551 [on same piece of rock]

Billings, E., 1866, Geol. Surv., Canada, Cat. Sil. Fossils Anticosti, p. 62.

Middle Silurian [Jupiter Formation], The Jumpers, Anticosti Island, Quebec.

*Enocrinurus hypoleprus* Steam

Holotype 11062; paratypes 11040, 11050

Steam, C.W., 1956, Geol. Surv., Canada, Mem. 281, p. 122, pl. 12, figs. 1, 2, 4.

Interlake Group, Middle Silurian, south bank Saskatchewan River and east side of bay behind  
and at Denbeigh Point, Lake Winnipegosis, Manitoba.*Enocrinurus laurentinus* Twenhofel

Holotype 2325e; paratype 2325

Twenhofel, W.H., 1928, Geol. Surv., Canada, Mem. 154, p. 328, pl. 59, figs. 2, 3.

Ellis Bay Formation, Upper Ordovician, Junction Cliff, Anticosti Island, Quebec.

*Enocrinurus mirus* Billings

Syntypes 697, a-c, 698, a-c

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 292, fig. 282.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 292, fig. 282 [697, 698a].

Middle Ordovician, Pistolet Bay and Table Head, Newfoundland.

=Cybele mira, Howell, B.J., 1947, Bull. Wagner Free Inst. Sci., vol. 22, No. 2, p. 12,  
pl. 1, figs. 1, 2.

**Arthropoda**

*Enocrinurus cf. princeps* Poulsen

Hypotypes 15405-15407

Raasch, G.O. et al., 1961, "Geology of the Arctic", vol. 1, p. 478, pl. 5, figs. 1-3.

Middle Silurian, Prong Creek, Wind River area, lat. 65°17'N, long. 135° 45'W, central Yukon.

*Enocrinurus cf. E. princeps* Poulsen

Hypotype 16903

Norford, B.S., 1962, Geol. Surv., Canada, Paper 62-14, p. 20, pl. 8, fig. 14.

Silurian, lat. 64°47'N, long. 135°07'W, Yukon Territory.

*Enocrinurus trentonensis* Walcott

Hypotype 13257

Wilson, A.E., 1947, Geol. Surv., Canada, Bull. 9, p. 45, pl. 8, fig. 5.

Rockland beds, Ottawa Formation, Middle Ordovician, south of Embrun, Ontario.

*Endymion meeki* Billings

Holotype 875

Billings, E.,

1862, "New Species of Lower Silurian Fossils", p. 94, fig. 84.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 94, fig. 84.

Lower Ordovician, Levis, Quebec.

=*Endymionia meeki*, Billings, E., 1865, ibid., p. 281.

*Eobronteus benoratus* Sinclair

Holotype 9573; paratypes 9573a, b

Sinclair, G.W., 1949, J. Pal., vol. 23, No. 1, p. 47, pl. 14, figs. 3, 5.

Black River limestone, Middle Ordovician, north of Ste. Anne de Chicoutimi, Quebec.

*Eobronteus curtus* Sinclair

Holotype 9572; paratype 9572a

Sinclair, G.W., 1949, J. Pal., vol. 23, No. 1, p. 50, pl. 13, figs. 1, 2.

Basal Trenton, Middle Ordovician, Riviere Sault à la Puce, County Montmorenci, Quebec.

*Eobronteus lunatus* see *Bronteus lunatus*

*Eobronteus reedi* Sinclair

Holotype 11081; paratype 11081a

Sinclair, G.W., 1949, J. Pal., vol. 23, No. 1, p. 51, pl. 14, figs. 7, 9, 10.

Middle Trenton, Middle Ordovician, Cap a l'Aigle, Quebec.

*Eoharpes dentoni* (Billings)

Hypotypes 1767, 7827

Raymond, P.E.,

1913, Geol. Surv., Canada, Mus. Bull. 1, p. 33, pl. 3, fig. 5 [1767].

1921, ibid., Mus. Bull. 31, p. 30, pl. 9, fig. 6 [not 1781c].

Wilson, A.E., 1947, ibid., Bull. 9, p. 11, pl. 1, figs. 7 [7827], 8 [neotype].

Trenton, Middle Ordovician, Ottawa River, Ottawa, Ontario.

*Eoharpes ottawaensis* see *Harpes ottawaensis*

*Eoharpes ottawaensis* var. *anticostiensis* Twenhofel

Syntypes 2196, 2197

Twenhofel, W.H., 1928, Geol. Surv., Canada, Mem. 154, p. 321, pl. 56, figs. 2, 3.

English Head Formation, Upper Ordovician, Wreck Point and English Head, Anticosti Island, Quebec.

*Eulomella mckayensis* Kobayashi

Holotype 12703

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 451, pl. 6,  
fig. 3.McKay Group, Lower Ordovician, north end Steamboat Mountain west of Brisco, British  
Columbia.*Flexicalymene senaria* (Conrad)

Hypotypes 7761, 7762

Wilson, A.E., 1947, Geol. Surv., Canada, Bull. 9, p. 48, pl. 10, figs. 11a, b, 12.

Rockland and Sherman Fall beds, Ottawa Formation, Middle Ordovician, 4 miles west of  
L'Orignal and Governor Bay, Ontario.*Geragnostus clusus* Whittington

Holotype 16171; paratypes 16172-16175

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 28,  
pl. 1, figs. 1-17.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Geragnostus aff. mundus* (Raymond)

Hypotypes 12749, 12750

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 475, pl. 7,  
fig. 1; pl. 8, fig. 17.

McKay Group, Lower Ordovician, southeast of Sinclair Creek, British Columbia.

*Geragnostus subobesus* see *Agnostus subobesus**Glaphurus divisus* Whittington

Holotype 16183; paratypes 16184-16187

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 51,  
pl. 8, figs. 11-14; pl. 9, figs. 1-6, 8.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Goldius insularis* see *Bronteus insularis**Goldius lunatus* see *Bronteus lunatus**Gonioteloides monoceros* Kobayashi

Holotype 12697; paratype 12698

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 447, pl. 6,  
figs. 17a, b, 18a, b.

McKay Group, Lower Ordovician, north of Brisco Trail, British Columbia.

*Gonioteloides punctatus* Kobayashi

Holotype 12699

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 448, pl. 6,  
figs. 19a, b.

McKay Group, Lower Ordovician, south of Whiskey Trail, British Columbia.

*Goniotelus kindlei* Whittington

Holotype 16206; paratypes 16207, 16208

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 63,  
pl. 14, figs. 3-9.

Cow Head Group, Middle Ordovician, Boulder at Lower Head, Newfoundland.

*Goniotelus perspicator* (Billings)

Hypotypes 13270-13272

Whittington, H.B., 1953, J. Pal., vol. 27, No. 5, p. 662, pl. 68, figs. 3, 4, 6, 8-10.

Lower or Middle Ordovician, boulder at St. Antoine de Tilly, Quebec.

**Arthropoda**

*Goniotelus perspicator* (Billings)

Hypotype 16316

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 63,  
pl. 35, figs. 2, 5, 7, 9.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Goniotelus rostratus* Whittington

Holotype 16209; paratypes 16210, 16211

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 64,  
pl. 14, figs. 10-12; pl. 15, figs. 1-4, 6.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Goniotelus* sp. ind.

Fig. spec. 16212

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 65,  
pl. 15, figs. 5, 7, 8.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Goniurus elongatus* Raymond

Syntypes 7937, a

Raymond, P.E., 1913, Geol. Surv., Canada, Mus. Bull. 1, p. 66, pl. 7, figs. 11 [7937],  
12 [7937a].

Beekmantown, Lower Ordovician, between Philipsburg and St. Armand, Quebec.

*Goniurus perspicator* (Billings)

Hypotype 7836

Raymond, P.E., 1913, Geol. Surv., Canada, Mus. Bull. 1, p. 65, pl. 7, fig. 10.

Lower or Middle Ordovician, boulder at St. Antoine de Tilley, Quebec.

=*Goniotelus perspicator*, Whittington, H.B., 1953, J. Pal., vol. 27, No. 5, p. 662, pl.  
68, figs. 5, 7.

*Haploconus smithii* (Billings)

Hypotype 7828

Raymond, P.E., 1913, Geol. Surv., Canada, Mus. Bull. 1, p. 62, pl. 7, figs. 13, 14.

Sherman Fall limestone, Middle Ordovician, Peterborough, Ontario.

=*Dimeropyge gibbus*, Sinclair, G.W., 1946, Am. J. Sci., vol. 244, p. 856, pl. 1, figs.  
1-3 [holotype].

*Hardyia metion* Walcott

Hypotypes 9377, a

Kindle, C.H., 1929, Can. Field-Naturalist, vol. 43, No. 7, p. 146, figs. 16, 17.

Lower Ordovician, Swift's Ranch, 7 miles north Jasper, British Columbia.

*Harpes consuetus* Billings

Holotype 2550

Billings, E., 1866, Geol. Surv., Canada, Cat. Sil. Fossils Anticosti, p. 64.

Twenhofel, W.H., 1928, ibid., Mem. 154, p. 321, pl. 54, fig. 8.

Middle Silurian [Chicotte Formation], Southwest Point, Anticosti Island, Quebec.

*Harpes granti* Billings

Holotype 874

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 326, fig. 314.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 326, fig. 314.

Beekmantown, Lower Ordovician, lot 20, range 6, Stanbridge tp., Quebec.

*Harpes ottawaensis* Billings

Holotype 329; paratype 329c

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 182, fig. 165.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 182, fig. 165.

Middle Ordovician [Cobourg beds?], Ottawa, Ontario.

=*Eoharpes ottawaensis*, Raymond, P.E.,

1913, ibid., Mus. Bull. 1, pl. 3, fig. 6.

1921, ibid., Mus. Bull. 31, p. 29, pl. 9, fig. 1.

Wilson, A.E., 1947, ibid., Bull. 9, p. 12, pl. 1, fig. 9.

*Harpides atlanticus* Billings

Holotype 674

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 281, fig. 267.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 281, fig. 267.

Division P [Cow Head conglomerate], Middle Ordovician, 4 miles northeast of Portland Creek, Newfoundland.

*Harpides concentricus* Billings

Holotype 672

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 282, fig. 268.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 282, fig. 268.

Division P [Cow Head conglomerate], Middle Ordovician, 4 miles northeast of Portland Creek, Newfoundland.

*Harpides?* *desertus* Billings

Holotype 873

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 333, fig. 321.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 333, fig. 321.

Beekmantown, Lower Ordovician, Bedford, Quebec.

*Harpillaenius arcuatus* (Billings)

Hypotypes 16242-16250

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 78, pl. 20, figs. 13, 15, 16; pl. 21, figs. 4-15.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Heliomera albata* Whittington

Holotype 16259; paratypes 16258, 16260-16262

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 86, pl. 24, figs. 1-13.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Heliomera sol* see *Cheirurus sol*

## Heliomerinid pygidium

Fig. spec. 16265

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 86, pl. 25, fig. 3.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

## Arthropoda

### *Heliomerooides alacer* Whittington

Holotype 16263; paratype 16264

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 88, pl. 24, figs. 14-16; pl. 25, figs. 1, 2, 4-6.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

### *Hemiarges aeolus* Sinclair

Holotype 13276

Sinclair, G.W., 1944, Trans. Roy. Can. Inst., vol. 25, No. 1, p. 19, pl. 1, figs. 5-7. Middle Trenton, Middle Ordovician, Lakefield, Ontario.

### *Hemiarges aquilonius* Whittington

Holotype 15242; paratypes 15243-15246; hypotypes 15247-15265

Whittington, H.B., 1961, J. Pal., vol. 35, No. 3, p. 439, pl. 56, figs. 1-34; pl. 57, figs. 1-28.

Member C, Read Bay Formation, Upper Silurian, near Cape Hotham, Cornwallis Island, Arctic.

### *Hemiarges paulianus* (Clarke)

Hypotype 3741

Raymond, P.E., 1921, Geol. Surv., Canada, Mus. Bull. 31, p. 32, pl. 9, fig. 2. Hull Formation, Middle Ordovician, Kirkfield liftlock, Ontario.

### *Hemiarges paulianus* (Clarke)

Hypotypes 11302, 13256

Wilson, A.E., 1947, Geol. Surv., Canada, Bull. 9, p. 42, pl. 8, figs. 7, 8.

Sherman Fall and Cobourg beds, Ottawa Formation, Middle Ordovician, Brewery Creek and Philemon Island, Hull, Quebec.

### *Hemigyraspis* sp.

Fig. spec. 7820

Raymond, P.E., 1912, Trans. Roy. Soc. Can., ser. 3, vol. 5, sec. 4, p. 120, pl. 3, fig. 7.

Lower Ordovician, 3 miles east of Golden in Kicking Horse Pass, British Columbia.

=*Hemigyraspis mconnelli*, Raymond, P.E., 1913, Geol. Surv., Canada, Mus. Bull. 1, p. 41, pl. 4, fig. 4.

### *Holasaphus moorei* Raymond

Holotype 7823; paratypes 7823a-g

Raymond, P.E., 1913, Geol. Surv., Canada, Mus. Bull. 1, p. 35, pl. 3, figs. 7 [7823c], 8 [7823e], 9 [7823d], 10 [7823a], 11 [holotype 7823].

Beauhamois Formation, Lower Ordovician, near CPR station at St. Anne de Bellevue, Quebec.

### *Holometopus angelini* Billings

Syntype 872

Billings, E.,

1862, "New Species of Lower Silurian Fossils", p. 95, figs. 85a, b.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 95, figs. 85a, b.

Lower Ordovician, Levis, Quebec.

### *Holotrachelus inexpectans* Cooper

Holotype 9075

Cooper, G.A., 1930, Am. J. Sci., ser. 5, vol. 20, p. 374, pl. 4, figs. 19, 20.

Whitehead Formation, Upper Ordovician, Murphy Creek, Percé, Quebec.

*Homalonotus knighti* Koenig

Hypotype 6209

McLearn, F.H., 1924, Geol. Surv., Canada, Mem. 137, p. 163, pl. 26, figs. 12, 13.  
Moyart Formation, Upper Silurian, Arisaig, Nova Scotia.

*Homotelus? elongatus* Raymond

Hypotype 7748

Wilson, A.E., 1947, Geol. Surv., Canada, Bull. 9, p. 22, pl. 1, fig. 5.  
Hull beds, Ottawa Formation, Middle Ordovician, Chaudiere Falls, Hull, Quebec.

*Hyperagnostus binodosus* Kobayashi

Holotype 12747; paratype 12748

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 475, pl. 7,  
figs. 2, 3.  
McKay Group, Lower Ordovician, north of Brisco Trail, British Columbia.

*Hyperbolochilus expansus* Kobayashi

Holotype 12636

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 422, pl. 3,  
fig. 1.

McKay Group, Lower Ordovician, north of Brisco Trail, British Columbia.

*Hystricurus conicus* see *Bathyurus conicus**Hystricurus cf. genalatus* Ross

Hypotypes 12707, 12708

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 454, pl. 6,  
figs. 1, 2.  
McKay Group, Lower Ordovician, Jubilee Mountain, southwest of Harrogate, British Columbia.

*Hystricurus platypleurus* Kobayashi

Holotype 12706

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 454, pl. 6,  
fig. 6.  
McKay Group, Lower Ordovician, north of Brisco Trail, British Columbia.

*Hystricurus* sp.

Fig. spec. 12709

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 455, pl. 6,  
fig. 8.  
McKay Group, Lower Ordovician, west side McKay Creek, 1 mile north of Sinclair Creek,  
British Columbia.

*Idiorhapha solitaria* (Billings)

Hypotype 13274

Whittington, H.B., 1953, J. Pal., vol. 27, No. 5, p. 675, pl. 69, figs. 11-13.  
Lower or Middle Ordovician, boulder at St. Antoine de Tilly, Quebec.

*Idiorhapha solitaria* (Billings)

Hypotype 16317

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 44,  
pl. 35, figs. 1, 3, 4, 6, 8.  
Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

## **Arthropoda**

### *Illaenid hypostome*

Fig. spec. 16226

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 72,  
pl. 18, figs. 4, 7.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

### *Illaenus aboynensis* Whiteaves

Syntypes 3015, a, b

Whiteaves, J.F., 1895, Geol. Surv., Canada, Palaeoz. Fossils, vol. 3, pt. 2, p. 108,  
pl. 15, figs. 7 [3015], 8 [3015a].

Guelph Formation, Middle Silurian, Aboyne near Elora, Ontario,

### *Illaenus americanus* Billings

Hypotypes 7757, 7758

Wilson, A. E., 1947, Geol. Surv., Canada, Bull. 9, p. 31, pl. 7, figs. 3, 4.

Cobourg beds, Ottawa Formation, Middle Ordovician, lots 10-12, con. 3, Roxborough tp.  
and lots 1-3, con. 8, Cornwall tp., Ontario.

### *Illaenus angusticollis* Billings

Syntypes 1314, a-d

Billings, E., 1859, Can. Naturalist Geol., vol. 4, p. 376, figs. 10 a-d.

Logan, W.E., 1863, "Geology of Canada", Geol. Surv., Canada, Rept. Prog., p. 151,  
figs. 113a-d.

Wilson, A.E., 1947, ibid., Bull. 9, p. 32, pl. 7, figs. 10 [holotype 1314b], 11 [paratype  
1314d].

Middle Ordovician, St. Joseph Island, Lake Huron, Ontario.

### *Illaenus arcuatus* Billings

Syntypes 661, a-h

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 279, fig. 265 [661b].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 279, fig. 265.

Division P [Cow Head conglomerate], Middle Ordovician, Cow Head, Newfoundland.

=*Harpillaenus arcuatus*, Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard,  
vol. 129, No. 1, p. 78, pl. 21, figs. 1-3 [holotype 661b].

### *Illaenus bayfieldi* Billings

Syntypes 1089, a-c

Billings, E., 1859, Can. Naturalist Geol., vol. 4, p. 369, figs. 4-6.

Logan, W.E., 1863, "Geology of Canada", Geol. Surv., Canada, Rept. Prog., p. 133,  
figs. 65a-c.

Raymond, P.E., 1905, Ann. Carnegie Mus., vol. 3, No. 2, p. 348, pl. 13, figs. 11,  
12 [1089b?].

Twenhofel, W.H., 1938, Geol. Soc. Amer., Sp. Paper 11, p. 68, pl. 11, figs. 11 [1089b],  
12, 13 [1089a].

Middle Ordovician [Mingan Formation], Trilobite Bay, Mingan Islands, Quebec.

### *Illaenus bucculentus* Whittington

Holotype 16227; paratypes 16228-16230

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 72,  
pl. 18, figs. 6, 8-16.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Illaeus clavifrons* Billings

Holotype(?) 1323

Billings, E., 1859, Can. Naturalist Geol., vol. 4, p. 379.

Twenhofel, W.H., 1938, Geol. Soc. Amer., Sp. Paper 11, p. 69, pl. 11, fig. 16.

Middle Ordovician [Mingan Formation], Large Island, Mingan Islands, Quebec.

*Illaeus conifrons* Billings

Syntype 1322

Billings, E., 1859, Can. Naturalist Geol., vol. 4, p. 378, figs. 11a, b.

Logan, W.E., 1863, "Geology of Canada", Geol. Surv., Canada, Rept. Prog., p. 151, figs. 111a, b.

Middle Ordovician [Mingan Formation], Mingan Islands, Quebec.

= *Thaleops conifrons*, Twenhofel, W.H., 1938, Geol. Soc. Amer., Sp. Paper 11, p. 73, pl. 11, fig. 10.*Illaeus conradi* Billings

Syntypes 1320, a

Billings, E., 1859, Can. Naturalist Geol., vol. 4, p. 372, figs. 7-9 [1320a].

Logan, W.E., 1863, "Geology of Canada", Geol. Surv., Canada, Rept. Prog., p. 151, figs. 110a-c.

Wilson, A.E., 1947, ibid., Bull. 9, p. 32, pl. 7, figs. 14, 15 [holotype 132a, paratype 1320].

Middle Ordovician [Leray Beds], La petite Chaudiere, Ottawa River, above Hull, Quebec.

*Illaeus consimilis* Billings

Syntypes 663, a-c, h-j

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 277, figs. 263a, c [663], b [663h]; p. 331, fig. 317 [663i].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 277, figs. 263a-c; p. 331, fig. 317.

Divisions M, N [Table Head], Middle Ordovician, Table Head, Newfoundland.

*Illaeus consobrinus* Billings

Syntypes 676, a-e

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 280, figs. 266a, b [676c]; p. 332, figs. 320a, b.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 280, figs. 266a, b; p. 332, figs. 320a, b.

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 71, pl. 17, figs. 1, 2, 4 [holotype 676c].

Division P [Cow Head conglomerate], Middle Ordovician, Cow Head, Newfoundland.

*Illaeus consobrinus* Billings

Hypotypes 16220-16225

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 71, pl. 17, figs. 3, 5-16; pl. 18, figs. 1-3, 5.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Illaeus fraternus* Billings

Syntypes 665, a-e

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 276, figs. 262a [665a, e], b [665b].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 276, figs. 262a, b.

Middle Ordovician, Point Rich, Newfoundland.

**Arthropoda**

*Illeaenus globosus* Billings

Syntypes 1090, a, b

Billings, E., 1859, Can. Naturalist Geol., vol. 4, p. 367, figs. 1-3 [1090b].

Logan, W.E., 1863, "Geology of Canada", Geol. Surv., Canada, Rept. Prog., p. 133, figs. 64a-c.

Middle Ordovician [Mingan Formation], Mingan Islands, Quebec.

=*Bumastus globosus*, Twenhofel, W.H., 1938, Geol. Soc. Amer., Sp. Paper 11, p. 67, pl. 11, figs. 14 [1090a], 15 [1090b].

*Illeaenus grandis* Billings

Syntype 2322

Billings, E., 1859, Can. Naturalist Geol., vol. 4, p. 380.

Middle Silurian(?), Anticosti Island, Quebec.

*Illeaenus milleri* Billings

Syntypes 1319, a-c

Billings, E., 1859, Can. Naturalist Geol., vol. 4, p. 375, fig. 10 [1319b].

Logan, W.E., 1863, "Geology of Canada", Geol. Surv., Canada, Rept. Prog., p. 151, fig. 112.

Middle Ordovician [Leary-Rockland beds], near L'Orignal, Ontario.

=*Bumastus milleri*, Wilson, A.E., 1947, ibid., Bull. 9, p. 35, pl. 7, figs. 1a, b [holotype 1319b].

1957, Can. Field-Naturalist vol. 70, No. 1, 1956, pl. 4, fig. 11.

=*Bumastus (Bumastoidea) milleri*, Whittington, H.B., in Miller, A.K. et al., 1954, Geol. Soc. Amer., Mem. 62, p. 138, pl. 62, figs. 16-18, 20 [holotype 1319b], 25 [1319a], 26 [1319c], 29 [1319a].

*Illeaenus orbicaudatus* Billings

Hypotype 2324

Billings, E., 1866, Geol. Surv., Canada, Cat. Sil. Fossils Anticosti, p. 27, fig. 10.

Upper Ordovician [Ellis Bay Formation], Ellis Bay, Anticosti Island, Quebec.

=*Bumastus orbicaudatus*, Twenhofel, W.H., 1928, ibid., Mem. 154, p. 322 [holotype 2324].

[Note: specimen not primary as collected by T.C. Weston, 1865.]

*Illeaenus simulator* Billings

Syntypes 890, c, d

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 327, figs. 315a, b.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 327, figs. 315a [890d], b [890].

Middle? Ordovician, lot 20, range 6, Stanbridge tp., Quebec.

*Illeaenus spiculatus* Whittington

Holotype 16234; paratypes 16235-16241

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 74, pl. 19, figs. 10-18; pl. 20, figs. 1-12, 14.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Illaenus tumidifrons* Billings

Syntypes 662, a-m

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 278, figs. 264a [662, a(?)], b [662k(?)].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 278, figs. 264a, b.

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 69, pl. 16, figs. 1-5 [lectotype 662].

Division P [Cow Head conglomerate], Middle Ordovician, Cow Head, Newfoundland.

*Illaenus tumidifrons* Billings

Hypotypes 16213-16219

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 69, pl. 15, figs. 9-13; pl. 16, figs. 6-16.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Illaenus vindex* Billings

Syntype 1088

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 179, figs. 160a, b.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 179, figs. 160a, b.

Middle Ordovician [Mingan Formation], Mingan Islands, Quebec

=Thaleops conifrons, Twenhofel, W.H., 1938, Geol. Soc. Amer., Sp. Paper 11, p. 73, pl. 11, fig. 9.

*Illaenus* sp. indet 1 and 2

Fig. specs. 16231-16233

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 73, pl. 19, figs. 1-9.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Ischyrophyma tuberculata* Whittington

Holotype 16166; paratypes 16167-16170

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 48, pl. 8, figs. 1-10.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

?*Ischyrophyma* sp. ind.

Fig. spec. 16161

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 50, pl. 6, figs. 13-16.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Ischyrotoma twenhofeli* Raymond

Hypotypes 16162-16165

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 45, pl. 7, figs. 3, 5-13.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Isocolus dysdercus* Whittington

Holotype 16153; paratypes 16154-16159

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 41, pl. 5, figs. 7-10; pl. 6, figs. 1-9, 16.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

**Arthropoda**

*Isoteloides divergens* Wilson

Holotype 6604

Wilson, A.E., 1932, Trans. Roy. Soc. Can., ser. 3, vol. 26, sec. 4, p. 385, pl. 3, fig. 4.  
Chazy, Middle Ordovician, Barnhart Island core, near Cornwall, Ontario.

*Isoteloides homalonotoides* (Walcott)

Hypotype 7934

Raymond, P.E., 1913, Geol. Surv., Canada, Mus. Bull. 1, pl. 4, fig. 5.

Wilson, A.E., 1947, ibid., Bull. 9, p. 29, pl. 1, fig. 6.

Middle Ordovician, Kirkfield, Ontario.

*Isotelus arenicola* Raymond

Paratypes 4328, 7423

Raymond, P.E., 1910, Ottawa Naturalist, vol. 24, No. 8, p. 130, pl. 2, fig. 5 [4328],  
text fig. 1 [7423].

Chazy, Middle Ordovician, Lake Deschenes, Britannia, Ottawa, Ontario.

*Isotelus covingtonensis* see *Asaphus platycephalus*

*Isotelus gigas* DeKay

Hypotype 1786

Raymond, P.E., 1912, Trans. Roy. Soc. Can., ser. 3, vol. 5, sec. 4, p. 120, pl. 3, fig. 6.  
Trenton, Middle Ordovician, Cobourg, Ontario.

*Isotelus gigas* DeKay

Hypotype 1798

Raymond, P.E., 1912, Trans. Roy. Soc. Can., ser. 3, vol. 5, sec. 4, p. 119, pl. 2, fig. 9.  
Ordovician [Red River Formation], Inmost Island, Lake Winnipeg, Manitoba.

*Isotelus gigas* DeKay

Hypotypes 5591, 7750

Wilson, A.E., 1947, Geol. Surv., Canada, Bull. 9, p. 24, pl. 3, figs. 2a-c, 3.

Hull beds, Ottawa Formation, Middle Ordovician, Hull, Quebec, and below bridge at  
Plantagenet, Ontario.

*Isotelus iowensis* (Owen)

Hypotype 13251

Wilson, A.E., 1947, Geol. Surv., Canada, Bull. 9, p. 24, pl. 3, fig. 4.

Leray beds, Ottawa Formation, Middle Ordovician, Mechanicsville, Ottawa, Ontario.

*Isotelus latus* see *Asaphus platycephalus*

*Isotelus maximum* Locke

Hypotype 332

Wilson, A.E., 1947, Geol. Surv., Canada, Bull. 9, p. 26, pl. 3, fig. 1.

Cobourg beds?, Ottawa Formation, Middle Ordovician, Ottawa, Ontario.

*Isotelus maximus* Locke

Hypotype 7935

Raymond, P.E., 1913, Geol. Surv., Canada, Mus. Bull. 1, p. 46, pl. 4, fig. 8.

Upper Ordovician, Hawthorne, Ontario.

*Isotelus ottawaensis* see *Asaphus platycephalus*

*Jujuyaspis borealis* Kobayashi

Holotype 12727; paratype 12728

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 467, pl. 7,  
figs. 12, 13a,b.

McKay Group, Lower Ordovician, Steamboat Mountain, west of Brisco, British Columbia.

*Kainella flagricauda* (White)

Hypotype 11930

Kobayashi, T., 1953, Jap. J. Geol. Geog., vol. 23, p. 45, pl. 3, fig. 5.

McKay Group, Lower Ordovician, 2 miles south of mouth Sinclair Canyon, British Columbia.

*Kainella kindlei* Kobayashi

Holotype 12619

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 413, pl. 2,  
fig. 1.

McKay Group, Lower Ordovician, north of Brisco Trail, British Columbia.

*Kainella stenorachis* Kobayashi

Holotype 11931; paratype 11932

Kobayashi, T., 1953, Jap. J. Geol. Geog., vol. 23, p. 46, pl. 3, figs. 6, 7.

McKay Group, Lower Ordovician, north of Brisco Trail, British Columbia.

*Kawina arnoldi* Whittington

Holotype 16268; paratypes 16269-16271

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 93,  
pl. 26, figs. 7-9, 11, 12, 14; pl. 27, figs. 1, 2, 4-6, 8, 9.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Kawina limbata* Whittington

Holotype 16267

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 92,  
pl. 26, figs. 4-6, 10.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland

See *Cheirurus mercurius* and *C. vulcanus**Kawina vulcanus* (Billings)

Hypotype 16266

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 91,  
pl. 26, figs. 1-3, 13; pl. 28, figs. 16-19.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

?*Kawina* sp. ind.

Fig. specs. 16289, 16290

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 95,  
pl. 31, figs. 2, 3, 6, 7.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

See *Cheirurus vulcanus**Kayseraspis (?) euclides* (Walcott)

Hypotypes 12670-12674

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 442, pl. 4,  
figs. 4-8.

McKay Group, Lower Ordovician, Harrogate section, British Columbia.

*Kayseraspis (?) euclides* (Walcott)

Hypotype 12675

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 442, pl. 4,  
fig. 9.

McKay Group, Lower Ordovician, north Vermilion Basin, British Columbia.

**Arthropoda**

*Kayseraspis (?) euclides* (Walcott)

Hypotypes 12676-12678

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 442, pl. 4,  
figs. 10-12.

McKay Group, Lower Ordovician, headwaters Pinnacle Creek, Brisco Range, British Columbia.

*Kayseraspis (?) euclides* (Walcott)

Hypotypes 12679-12681

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 442, pl. 5,  
figs. 8-10.

McKay Group, Lower Ordovician, southeast of Harrogate, British Columbia.

*Kayseraspis (?) cf. euclides* (Walcott)

Hypotypes 12682, 12683

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 442, pl. 5,  
figs. 22, 23.

McKay Group, Lower Ordovician, west side McKay Creek, 1.5 miles from Sinclair Creek,  
British Columbia.

*Kayseraspis (?) sp.*

Fig. specs. 12684, 12685

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 444, pl. 4,  
figs. 13, 14.

McKay Group, Lower Ordovician, north Vermilion Basin, and Rocky Mountain quartzite,  
Lower Ordovician, Mount Norquay, British Columbia.

*Kirkella cf. vigilans* (Whittington)

Hypotypes 12687-12693

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 445, pl. 5,  
figs. 12-17; pl. 8, fig. 6.

McKay Group, Lower Ordovician, McKay Creek, British Columbia.

*Kobayashia lanceolata* Kobayashi

Holotype 12667; paratype 12668; hypotype 12669.

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 441, pl. 4,  
figs. 1-3.

McKay Group, Lower Ordovician, McKay Creek, British Columbia.

*Lachnostaoma (?) sp.*

Fig. spec. 12702

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 449, pl. 5,  
fig. 11.

McKay Group, Lower Ordovician, McKay Creek, British Columbia.

*Lehua argus* Whittington

Holotype 16255; paratypes 16256, 16257

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 84,  
pl. 23, figs. 1-9, 11.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Leiostegium quadratum* (Billings)

Hypotype 862e

Raymond, P.E., 1913, Geol. Surv., Canada, Mus. Bull. 1, p. 68, pl. 7, fig. 17.

Levis conglomerate, Lower Ordovician, Levis, Quebec.

*Leiostegium (Evansaspis) glabrum* Kobayashi

Holotype 12629; paratype 12631; hypotypes 12630, 12632-12635

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 421, pl. 2, figs. 11-17.

McKay Group, Lower Ordovician, north of Brisco Trail and 1 mile north of Harrogate, British Columbia.

*Leonaspis semiglabra* Poulsen

Hypotypes 15398-15404

Raasch, G.O. et al., 1961, "Geology of the Arctic", vol. 1, p. 474, pl. 4, figs. 12-18. Middle Silurian (Road River Formation), Prong Creek, Wind River area, lat. 65°17'N, long. 135°45'W., Yukon Territory.

*Lichas canadensis* Billings

Holotype 2471; paratype 2471a

Billings, E., 1866, Geol. Surv., Canada, Cat. Sil. Fossils Anticosti, p. 65, fig. 22 [2471].

Middle Silurian [Jupiter Formation], East Point, Anticosti Island, Quebec.

=*Amphilichas canadensis*, Twenhofel, W.H., 1928, ibid., Mem. 154, p. 327, pl. 57, fig. 9 [2471].

=*Amphilichas ? anticostiensis*, Northrop, S.A., 1939, Geol. Soc. Amer., Sp. Paper 21, p. 238.

*Lichas jukesii* Billings

Syntypes 671, a, c-n

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 282, figs. 269a, b.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 282, figs. 269a, b.

Division P [Cow Head conglomerate], Middle Ordovician, Cow Head, Newfoundland.

=*Acrolichas jukesii*, Foerste, A.F., 1920, Am. J. Sci., vol. 49, p. 41, pl. 2, fig. 1B.

=*Apatolichas jukesii*, Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 106, pl. 32, figs. 4, 5 [holotype 671a].

*Lichas jukesii* Billings

Hypotypes 671b, 887

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 335, figs. 323a [671b], b [887].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 335, figs. 323a, b.

Division P [Cow Head conglomerate], Middle Ordovician, Cow Head, Newfoundland and range 6, lot 20, Stanbridge tp., Quebec.

=*Acrolichas jukesii*, Foerste, A.F., 1920, Am. J. Sci., vol. 49, p. 41, pl. 2, fig. 1A [671b].

*Lichas minganensis* Billings

Syntypes 1332, a

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 181, figs. 163a [1332], b [1332a].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 181, figs. 163a, b.

Middle Ordovician [Mingan Formation], south side of Large Island, Mingan Islands, Quebec.

=*Amphilichas minganensis*, Twenhofel, W.H., 1938, Geol. Soc. Amer., Sp. Paper 11, p. 75, pl. 10, figs. 10, 11.

*Lichas superbus* Billings

Syntype 3605

Billings, E., 1874, Can. Naturalist Quart. J. Sci., n. ser., vol. 7, No. 4, p. 239,

Middle Devonian [Onondaga Formation], Cayuga, Ontario.

**Arthropoda**

*Lichas (Terataspis) n. sp.*

Fig. spec. 4107

Whiteaves, J.F., 1892, Geol. Surv., Canada, Contr. Can. Pal., vol. 1, pt. 4, p. 349,  
pl. 46, fig. 8.

Middle Devonian [Winnipegian Formation], Rowan Island, Dawson Bay, Lake Winnipegosis,  
Manitoba.

*Licnocephala longa* Kobayashi

Holotype 12700; paratype 12701

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 448, pl. 6,  
fig. 16; pl. 8, fig. 13.

McKay Group, Lower Ordovician, McKay Creek, British Columbia.

*Lingukainella robusta* Kobayashi

Holotype 11933

Kobayashi, T., 1953, Jap. J. Geol. Geog., vol. 23, p. 48, pl. 3, fig. 8.

McKay Group, Lower Ordovician, south of Whiskey Trail, British Columbia.

*Lloydia bituberculatus* see *Bathyurus bituberculatus*

*Lloydia saffordi* (Billings)

Hypotypes 639, a

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 65,  
pl. 11, figs. 13, 16-18.

Middle Ordovician, Cow Head, Newfoundland.

See *Bathyurus saffordi*

*Lloydia* sp. indet.

Fig. spec. 716

Raymond, P.E., 1913, Geol. Surv., Canada, Mus. Bull. 1, pl. 7, fig. 19.

Lower Ordovician, Levis, Quebec.

*Lunacrania trisepta* Kobayashi

Holotype 12743

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 472, pl. 7,  
fig. 8.

McKay Group, Lower Ordovician, Jubilee Mountain, southwest of Harrogate, British  
Columbia.

*Macroculites enigmaticus* Kobayashi

Holotype 12716

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 461, pl. 6,  
fig. 14.

McKay Group, Lower Ordovician, Jubilee Mountain, southwest of Harrogate, British  
Columbia.

*Macroculites (?)* sp.

Fig. spec. 12717

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 462, pl. 6,  
figs. 15a, b.

McKay Group, Lower Ordovician, Jubilee Mountain, southwest of Harrogate, British  
Columbia.

*Megalaspis goniurus* see *Asaphus goniurus*

*Metabowmania latilimbata* Kobayashi

Holotype 12713; hypotype 12714

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 458, pl. 6,  
fig. 13; pl. 8, fig. 9.

McKay Group, Lower Ordovician, north of Brisco Trail, British Columbia.

*Mystrocephala stummi* Fagerstrom

Holotype 14753; paratype 14754

Fagerstrom, J.A., 1961, J. Pal., vol. 35, No. 1, p. 43, pl. 14, figs. 1, 2.

Formosa reef limestone, Middle Devonian, north end road-cut 2½ miles north of Formosa,  
Ontario.*Mystrocephala* sp.

Fig. spec. 14755

Fagerstrom, J.A., 1961, J. Pal., vol. 35, No. 1, p. 43,

Formosa reef limestone, Middle Devonian, north end road-cut 2½ miles north of Formosa,  
Ontario.*Neoagnostus aspidoides* Kobayashi

Holotype 12745; paratype 12746

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 473, pl. 7,  
figs. 4, 5.McKay Group, Lower Ordovician, Jubilee Mountain, southwest of Harrogate, British  
Columbia.*Neotaenicephalus obsoleta* Kobayashi

Holotype 12704

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 452, pl. 6,  
figs. 12a, b.McKay Group, Lower Ordovician, Jubilee Mountain, southwest of Harrogate, British  
Columbia.*Nileidae(?)* gen. and sp. indet.

Fig. specs. 12637, 12638

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 425, pl. 5,  
figs. 20, 21.

Glenogle Formation, Lower Ordovician, north Vermilion Basin, British Columbia.

*Nileus affinis* Billings

Syntypes 889, a

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 275, figs. 261a, b [889a].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 275, figs. 261a, b.

Raymond, P.E., 1912, Trans. Roy. Soc. Can., ser. 3, vol. 5, sec. 4, p. 120, pl. 3, fig.  
4 [the type].Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 53,  
pl. 9, figs. 7, 11, 12 [889]; pl. 10, figs. 1-3, 5, 6 [lectotype 889a].

Lower Ordovician, Island of Orleans, Quebec.

*Nileus affinis* Billings

Hypotypes 16188, 16189

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 53,  
pl. 9, figs. 9, 10; pl. 10, figs. 4, 7, 10, 13.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

## Arthropoda

### *Nileus macrops* Billings

Syntypes 649, a-c

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 273, fig. 259 [649a].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 273, fig. 269.

Division N [Table Head], Middle Ordovician, Table Head, Newfoundland.

### *Nileus scrutator* Billings

Syntypes 667, a-d, 720,a

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 274, fig. 260 [667a].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 274, fig. 260.

Divisions N, P [Cow Head conglomerate], Middle Ordovician, 4 miles northeast of Portland Creek, and Table Head, Newfoundland.

### *Niobe (Niobella) homfrayi* Salter

Hypotype 11199

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 103, pl. 7, fig. 7.

McLeod Brook Formation, Upper Cambrian or Lower Ordovician, McLeod Brook, Cape Breton Island, Nova Scotia.

### *Ogygites canadensis* (Chapman)

Hypotype 1924b

Raymond, P.E., 1912, Trans. Roy. Soc. Can., ser. 3, vol. 5, sec. 4, p. 118, pl. 1, fig. 2.

Upper Ordovician, Collingwood, Ontario.

=*Ogygites latimarginatus*, Wilson, A.E., 1957, Can. Field-Naturalist, vol. 70, No. 1, 1956, pl. 5, fig. 2.

### *Ogygites canadensis* (Chapman)

Hypotype 7817

Raymond, P.E., 1913, Geol. Surv., Canada, Mus. Bull. 1, p. 43, pl. 6, fig. 1.

Collingwood, Upper Ordovician, Adeline Street between Preston and Rochester Streets, Ottawa, Ontario.

### *Onchometopus susae* (Whitfield)

Hypotype 7170

Raymond, P.E., 1912, Trans. Roy. Soc. Can., ser. 3, vol. 5, sec. 4, p. 118, pl. 2, figs. 1, 2.

Ordovician [Red River Formation], East Selkirk, Manitoba.

### *Otarion wilsonae* Sinclair

Holotype 13255

Sinclair, G.W., 1944, Trans. Roy. Soc. Can. Inst., vol. 25, pt. 1, No. 53, p. 18, pl. 1, figs. 3, 4.

Wilson, A.E., 1947, Geol. Surv., Canada, Bull. 9, p. 39, pl. 8, figs. 4a, b.

Sherman Fall beds, Middle Ordovician, Eganville, Ontario.

### *Paenebeltella convexa* Kobayashi

Holotype 12729; paratype 12730

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 468, pl. 7, fig. 21a, b; pl. 8, fig. 12.

McKay Group, Lower Ordovician, north of Brisco Trail, and south of Whiskey Trail, British Columbia.

*Parabolinella bisulcata* Kobayashi

Holotype 12718; paratype 12719

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 463, pl. 7,  
figs. 18, 19.

McKay Group, Lower Ordovician, north end Steamboat Mountain, British Columbia.

*Parahystericurus* (?) sp.

Fig. spec. 12710

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 455, pl. 6,  
fig. 7.

McKay Group, Lower Ordovician, north of Brisco Trail, British Columbia.

*Peltura canadensis* Kobayashi

Holotype 12726

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 466, pl. 7,  
fig. 20.

McKay Group, Lower Ordovician, southeast of Harrogate, British Columbia.

*Peltura pacifica* Kobayashi

Holotype 12722; paratypes 12723-12725

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 465, pl. 7,  
figs. 14-17.

Glenogle Formation, Lower Ordovician, north Vermilion Basin, British Columbia.

*Perischoclonus capitalis* Raymond

Hypotypes 16251-16254, 16318, 16319

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 80,  
pl. 22, figs. 2, 4, 6-13; pl. 35, figs. 10, 11; pl. 36, figs. 5, 7, 8.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Petigurus cybele* see *Bathyurus cybele**Petigurus nero* see *Bathyurus nero**Phacops (Portlockia) marklandensis* McLearn

Paratype 6001

McLearn, F.H., 1924, Geol. Surv., Canada, Mem. 137, p. 171, pl. 28, fig. 1.

Ross Brook Formation, Middle Silurian, Arisaig, Nova Scotia.

=Eophacops marklandensis, Delo, D.M., 1940, Geol. Soc. Amer., Sp. Paper 29, p. 28,  
pl. 2, fig. 5.*Phacops orestes* Billings

Syntypes 2472, a-c

Billings, E., 1860, Can. Naturalist Geol., vol. 5, p. 65, figs. 10, a.

Middle Silurian [Jupiter Formation], East Point, Anticosti Island, Quebec.

=Phacops (Portlockia) orestes, Twenhofel, W.H., 1928, Geol. Surv., Canada, Mem.  
154, p. 335, pl. 50, fig. 11 [2472a], 12 [2472].*Phaseolops sepositus* Whittington

Holotype 16148; paratypes 16149-16152

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 37,  
pl. 4, figs. 11-13; pl. 5, figs. 1-6.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Phillipsia eichwaldi* Fischer

Hypotypes 4375a, 7677, a, b.

Bell, W.A., 1929, Geol. Surv., Canada, Mem. 155, p. 186, pl. 35, figs. 3-6.

Mississippian, Kennetcook River, Hants co., Nova Scotia.

**Arthropoda**

*Phylacops vigilans* Cooper and Kindle

Paratypes 8872, a

Cooper, G.A., and Kindle, C.H., 1936, J. Pal., vol. 10, No. 5, p. 367, pl. 52, figs. 39, 45, 46, 51.

Whitehead Formation, Upper Ordovician, Grande Coupe and Portage Road, Gaspé, Quebec.

*Platyantyx arcuata* see *Bathyurus arcuatus*

*Pliomerid pygidium*

Fig. spec. 16139

Whittington, H.B., 1961, J. Pal., vol. 35, No. 5, p. 921, pl. 101, figs. 14, 17, 20.

Upper Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Pliomerops canadensis* (Billings)

Lectotype 1101; hypotype 1101d

Whittington, H.B., 1961, J. Pal., vol. 35, No. 5, p. 917, pl. 101, figs. 10, 13 [1101d], 11 [1101].

Mingan Formation, Middle Ordovician, "Little Hamer Island", Mingan Islands, Quebec.

[Note: according to associated labels, specimens collected by J. Richardson, 1860, therefore doubtful if part of *Amphion canadensis* syntypic material.]

*Proetus alaricus* Billings

Holotype 2198

Billings, E., 1860, Can. Naturalist Geol., vol. 5, p. 68, fig. 12.

Logan, W.E., 1863, "Geology of Canada", Geol. Surv., Canada, Rept. Prog., p. 219, fig. 230.

Twenhofel, W.H., 1928, ibid., Mem. 154, p. 325, pl. 51, fig. 8.

Upper Ordovician [English Head Formation], Carleton Point, Anticosti Island, Quebec.

*Proetus chamblensis* Foerste

Syntypes 8435 [several specimens on one slab]

Foerste, A.F.,

1914, Denison Univ. Bull. J. Sci. Lab., vol. 17, p. 320, pl. 4, figs. 1a-h.

1924, Geol. Surv., Canada, Mem. 138, p. 243, pl. 46, fig. 7.

Upper Ordovician, Chambly Canton, Quebec.

*Proetus (Crassiproetus) crassimarginata* (Hall)

Paratype 14757

Fagerstrom, J.A., 1961, J. Pal., vol. 35, No. 1, p. 41, pl. 14, fig. 9.

Formosa reef limestone, Middle Devonian, just east of bridge at Formosa, Ontario.

*Proetus haldemani* Hall

Hypotypes 4282, a-e, g

Whiteaves, J.F., 1891, Geol. Surv., Canada, Contr. Can. Pal., vol. 1, pt. 3, p. 246, pl. 31, figs. 6 [4282b], 7 [4282a], 8 [4282].

Upper Devonian, Grand View, Mackenzie River, Northwest Territories.

*Proetus manitobensis* McCammon

Holotype 14910; paratypes 14911-14916

McCammon, H., 1960, Manitoba Dept. Mines Natural Res., Mines Branch, Publ. 69-6, p. 75, pl. 13, figs. 1-5a, b.

Dawson Bay Formation, Middle Devonian, 2 miles west of Nina Lake along road to The Narrows, Lake Manitoba, sec. 24, tp. 24, rge. 10, W. Prin. mer.; north side Charlie Island, Lake Winnipegosis; north bank Red Deer River 100 yards west of Highway 10 bridge between The Pas and Mafeking, l.s.d. 7, sec. 17, tp. 45, rge. 25, W. Prin. mer.; and Snake Island, Lake Winnipegosis, Manitoba.

*Proetus mundulus* Whiteaves

Syntypes 4113, a-k, 4114, a, 4115, 4116, a, 4117-4122, 4127.

Whiteaves, J.F., 1892, Geol. Surv., Canada, Contr. Can. Pal., vol. 1, pt. 4, p. 350, pl. 46, figs. 10, 11 [4113a].

Middle Devonian [Winnipegosis and Dawson Bay Formations], island north of Whiteaves Point; islands in southern portion of Dawson Bay; Devil Point, Lake Winnipegosis; and Red Deer River, Manitoba.

=*Proetus manitobensis*, McCammon, H., 1960. Manitoba Dept. Mines Natural Res., Mines Branch, Publ. 59-6, p. 75 [hypotypes 4119-4122].

*Proetus phocion* Billings

Syntypes 3337, a-e

Billings, E., 1874, Geol. Surv., Canada, Palaeoz. Fossils, vol. 2, pt. 1, p. 63, fig. 31. Devonian [Grande Greve Formation], Indian Cove, Gaspé, Quebec.

*Protopliomerops longispinus* Kobayashi

Holotype 12625

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 417, pl. 2, fig. 7.

McKay Group, Lower Ordovician, McKay Creek, British Columbia.

*Protopliomerops radiatus* Kobayashi

Holotype 12623; paratype 12624

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 416, pl. 2, figs. 5a, b, 6.

McKay Group, Lower Ordovician, McKay Creek, British Columbia.

*Protopliomerops subquadratus* Kobayashi

Holotype 12621; paratype 12622

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 414, pl. 2, figs. 3, 4.

McKay Group, Lower Ordovician, McKay Creek, British Columbia.

*Protopresbynileus* (?) aff. *willdeni* (Hintze)

Hypotypes 12694-12696

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 446, pl. 5, figs. 18, 19; pl. 8, fig. 15.

McKay Group, Lower Ordovician, McKay Creek and Harrogate section, British Columbia.

*Psephosthenaspis strenua* (Billings)

Hypotype 13273

Whittington, H.B., 1953, J. Pal., vol. 27, No. 5, p. 674, pl. 67, figs. 24, 28, 29.

Lower or Middle Ordovician, boulder at St. Antoine de Tilly, Quebec.

*Pseudomera barrandei* see *Amphion barrandei**Pseudomera billingsi* Whittington

Holotype 16136; hypotypes 16137, 16138

Whittington, H.B., 1961, J. Pal., vol. 35, No. 5, p. 919, pl. 101, figs. 1-9.

Upper Cow Head Group, Middle Ordovician, boulder, Lower Head, Newfoundland.

*Pseudosphaerexochus apollo* (Billings)

Hypotypes 8441, 8442

Raymond, P.E., 1913, Geol. Surv., Canada, Mus. Bull. 1, p. 36, pl. 4, figs. 1 [8841], 2 [8842].

Lower Ordovician, Levis, Quebec.

**Arthropoda**

*Pseudosphaerexochus canadensis* see *Sphaerexochus canadensis*

*Pseudosphaerexochus vulcanus* var. *billingsi* see *Cheirurus vulcanus*

*Pterygometopus achates* (Billings)

Hypotype 3384

Raymond, P.E., 1921, Geol. Surv., Canada, Mus. Bull. 31, p. 38, pl. 11, fig. 3.  
Cobourg Formation, Middle Ordovician, cement quarry at Picton, Ontario.

*Pterygometopus billingsi* (Sinclair)

Hypotype 7764

Wilson, A.E., 1947, Geol. Surv., Canada, Bull. 9, p. 55, pl. 10, figs. 4a, b.  
Sherman Fall beds, Ottawa Formation, Middle Ordovician, Axe factory, Hull, Quebec.

Pygidium gen. indet 1-4

Fig. specs. 16291-16297

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, pp. 95-97,  
pl. 31, figs. 4, 5, 8-17, 19, 20.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Raymondites ingalli* see *Bathyurus ingalli*

*Remopleurides affinis* Billings

Syntypes 881, a-c

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 325, fig. 313.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 325, fig. 313 [881c?].  
Lower Ordovician, lot 20, range 6, Stanbridge tp., Quebec.

*Remopleurides canadensis* Billings

Holotype 1760

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 182, fig. 164.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 182, fig. 164.

Chazy, Middle Ordovician, Front con., Clarence tp., Ontario.

*Remopleurides ligulus* Whittington

Holotype 16145; paratypes 16146, 16147

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 36,  
pl. 4, figs. 1-10.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Remopleurides? schlotheimi* Billings

Syntypes 694, a-d. 695

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 294, figs. 284a, b.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 294, figs. 284a, b.  
Middle Ordovician, Pistolet and Bonne Bay, Newfoundland.

*Remopleurides striatulus* Walcott

Hypotype 3758

Raymond, P.E., 1921, Geol. Surv., Canada, Mus. Bull. 31, p. 31, pl. 9, fig. 7.  
Middle Trenton, Middle Ordovician, Trenton, Ontario.

*Remopleurides* sp. indet.

Fig. spec. 8871

Cooper, G.A., and Kindle, C.H., 1936, J. Pal., vol. 10, No. 5, p. 363, pl. 52, figs. 20,  
31.

Whitehead Formation, Upper Ordovician, Grande Coupe, Gaspé, Quebec.

*Rhamphopyge altipolum* Kobayashi

Holotype 12744

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 473, pl. 6,  
figs. 9a, b.

McKay Group, Lower Ordovician, Jubilee Mountain, southwest Harrogate, British Columbia.

*Scotiella logani* see *Dalmanitina logani**Scotiella logani* var. *conservatrix* see *Dalmanitina logani* var. *conservatrix**Scutellum borealis* (Poulsen)

Hypotypes 15408-15411

Raasch, G.O. et al., 1961, "Geology of the Arctic", vol. 1, p. 477, pl. 5, figs. 7-10.  
Norford, B.S., 1962, Geol. Surv., Canada, Paper 62-14, p. 20, pl. 8, fig. 7 [15411].

Middle Silurian [Road River Formation], Prong Creek, Wind River area, lat. 65°17'N, long.  
135°45'W., Yukon Territory.

*Selenoharpes vitilis* Whittington

Holotype 16176; paratypes 16177, 16179-16182

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 32,  
pl. 2, figs. 4-8; pl. 3, figs. 2-4, 6-11.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Selenoharpes vitilis* Whittington?

Hypotype 16178

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 34,  
pl. 3, figs. 1, 5.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

*Shumardia glacialis* Billings

Syntypes 670, a-c

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 283, fig. 270.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 283, fig. 270.

Division P [Cow Head conglomerate], Middle Ordovician, Portland Creek and Pistolet Bay,  
Newfoundland.

*Shumardia granulosa* Billings

Syntypes 880 [several specimens on one slab]

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 92, figs. 83a, b.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 92, figs. 83a, b.

Lower Ordovician, Levis, Quebec.

"

*Shumardia* sp.

Fig. spec. 12742

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 471, pl. 7,  
fig. 9.

McKay Group, Lower Ordovician, north of Brisco Trail, British Columbia.

*Sphaeragnostus gaspensis* Cooper and Kindle

Syntypes 8868, a, b

Cooper, G.A., and Kindle, C.H., 1936, J. Pal., vol. 10, No. 5, p. 361, pl. 52, figs. 22,  
23, 35.

Whitehead Formation, Upper Ordovician, Grande Coupe and Priest's Road, Percé, Quebec.

## **Arthropoda**

*Sphaerexochus bridgei* Cooper and Kindle

Syntype 8876

Cooper, G.A. and Kindle, C.H., 1936, J. Pal., vol. 10, No. 5, p. 371.  
Whitehead Formation, Upper Ordovician, Priest's Road, Percé, Quebec.

*Sphaerexochus canadensis* Billings

Syntypes 2557, a

Billings, E., 1866, Geol. Surv., Canada, Cat. Sil. Fossils Anticosti, p. 64, fig. 21.  
Middle Silurian [Chicotte Formation], Southwest Point, Anticosti Island, Quebec.  
= *Pseudosphaerexochus canadensis*, Twenhofel, W.H., 1928, ibid., Mem. 154, p. 335,  
pl. 50, fig. 13 [holotype 2557a].

*Sphaerexochus parvus* Billings

Syntype 1093

Logan, W.E., 1863, "Geology of Canada", Geol. Surv., Canada, Rept. Prog., p. 133, fig.  
66.

Chazy, Middle Ordovician, Island of Montreal near Mile End, Quebec.

*Sphaerexochus parvus* Billings

Hypotype 1330

Billings, E.,  
1865, "New Species of Lower Silurian Fossils", p. 180, figs. 161a, b.  
1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 180, figs. 161a, b.  
Twenhofel, W.H., 1938, Geol. Soc. Amer., Sp. Paper 11, p. 76, pl. 10, fig. 12 [holo-  
type].

Middle Ordovician [Mingan Formation], south side of Large Island, Mingan Islands, Quebec.

*Sphaerocorophe robusta* Walcott

Hypotype 13260

Wilson, A.E., 1947, Geol. Surv., Canada, Bull. 9, p. 52, pl. 10, fig. 1.  
Sherman Fall beds, Ottawa Formation, Middle Ordovician, Brewery Creek, Hull, Quebec.

*Sphaerocoryphe salteri* Billings

Syntypes 2328, a, b

Billings, E., 1866, Geol. Surv., Canada, Cat. Sil. Fossils Anticosti, p. 63,  
Twenhofel, W.H., 1928, ibid., Mem. 154, p. 331, pl. 51, figs. 6 [2328], 7 [2328a].  
Upper Ordovician [Ellis Bay Formation], Junction Cliff, Anticosti Island, Quebec.

*Sphaerocoryphe* sp.

Fig. spec. 8877

Cooper, G.A. and Kindle, C.H., 1936, J. Pal., vol. 10, No. 5, p. 371, pl. 53, figs. 4,  
11.

Whitehead Formation, Upper Ordovician, Priest's Road, Percé, Quebec.

*Sphaerophthalmella inexpectans* Kobayashi

Holotype 12720; paratype 12721

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 464, pl. 7,  
figs. 10a, b, 11.

McKay Group, Lower Ordovician, north end Steamboat Mountain, British Columbia.

*Sympysops spinifera* Cooper and Kindle

Paratypes 8863, a

Cooper, G.A. and Kindle, C.H., 1936, J. Pal., vol. 10, No. 5, p. 367, pl. 53, figs. 3,  
9, 10, 12, 24.

Whitehead Formation, Upper Ordovician, Grande Coupe, Gaspe, Quebec.

*Sympysurina* (*Sympysurina*) cf. *corlissensis* (Raymond)

Hypotype 12642

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 431, pl. 7,  
figs. 22a, b.

McKay Group, Lower Ordovician, Jubilee Mountain southwest of Harrogate, British Columbia.

*Sympysurina* (*Sympysurina*) *spicata* Ulrich

Hypotypes 12639, 12640

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 430, pl. 3,  
figs. 8, 9.

McKay Group, Lower Ordovician, Steamboat Mountain, west of Brisco, British Columbia.

*Sympysurina* (*Sympysurina*) *spicata* var. *eugenia* Walcott

Hypotype 12641

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 430, pl. 3,  
fig. 22.

McKay Group, Lower Ordovician, Jubilee Mountain, southwest of Harrogate, British Columbia.

*Sympysurina* *spicata* Ulrich

Hypotype 8720

Kobayashi, T., 1936, J. Pal., vol. 10, No. 3, p. 164, pl. 21, fig. 15.

Lower Ordovician (?), Squaw Mountain north of Tatonduk River, Yukon-Alaska boundary.

*Sympysurina* (*Sympysurina*) *tatondukensis* see *Sympysurina* aff. *S. woosteri**Sympysurina* *walcotti* Kindle

Holotype 9378

Kindle, C.H., 1929, Can. Field-Naturalist, vol. 43, No. 7, p. 146, fig. 18.

Lower Ordovician, Swift's Ranch, 7 miles north of Jasper, British Columbia.

*Sympysurina* aff. *S. woosteri* Ulrich

Hypotypes 8722, a-c

Kobayashi, T., 1936, J. Pal., vol. 10, No. 3, p. 164, pl. 21, figs. 9, 10 [8722b], 11  
[8722a], 12, 13 [8722c], 14 [8722].

Lower Ordovician, Jones Ridge north of Tatonduk River, Yukon-Alaska boundary.

=*Sympysurina* (*Sympysurina*) *tatondukensis*, Kobayashi, T., 1955, J. Fac. Sci., Univ.  
Tokyo, sec. 2, vol. 9, pt. 3, p. 429 [syntypes 8722, a-c].

*Sympysurina* 'a' sp.

Fig. specs. 12652, 12653

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 433, pl. 3,  
figs. 10, 11.

McKay Group, Lower Ordovician, north end Steamboat Mountain, west of Brisco, British  
Columbia.

*Sympysurina* 'b' sp.

Fig. specs. 12654-12656

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 433, pl. 3,  
figs. 12-14.

McKay Group, Lower Ordovician, 2 miles south of Sinclair Creek, McKay Creek and north  
of Brisco Trail, British Columbia.

*Sympysurina* (*Sympysuroides*) cf. *brevispicata* Hintze

Hypotypes 12648-12651

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 433, pl. 3,  
figs. 15-18.

McKay Group, Lower Ordovician, McKay Creek and 2 miles south of Sinclair Creek, British  
Columbia.

**Arthropoda**

*Sympysurina (Sympysuroides) elegans* Poulsen

Hypotypes 12643-12645

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 432, pl. 3,  
figs. 19-21.

McKay Group, Lower Ordovician, west side McKay Creek, 1 mile north of Sinclair Creek,  
British Columbia.

*Sympysurina (Sympysuroides) expansa* Kobayashi

Holotype 12646; paratype 12647

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 432, pl. 3,  
figs. 6a, b, 7.

McKay Group, Lower Ordovician, Jubilee Mountain, southwest of Harrogate, British  
Columbia.

*Sympysurus illaenoides* see *Asaphus illaenoides*

*Telephus americanus* Billings

Syntypes 699, a-e, 700, a, b

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 291, fig. 281 [700b].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 291, fig. 281.

Hadding, A., 1913, Geol. fören Förhandle, vol. 35, No. 1, p. 41, pl. 1, fig. 11; text  
figs. 1a, b [700b].

Ulrich, E.O., 1930, Proc. U.S., National Mus., vol. 76, Art. 21, pl. 2, figs. 22, 23  
[holotype 700b], 24 [699], 25 [700a], 26 [700], 27 [699e].

Middle Ordovician, 4 miles northeast of Portland Creek and Table Head, Newfoundland.

*Telephus pacificus* Kobayashi

Holotype 12627; hypotype 12628

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 419, pl. 2, figs.  
9a, b, 10.

Glenogle Formation, Middle Ordovician, Vermilion Basin, British Columbia.

*Tesselacauda flabella* Kobayashi

Holotype 12626

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 417, pl. 2,  
figs. 8a, b.

McKay Group, Lower Ordovician, north of Brisco Trail, British Columbia.

*Thaleops conifrons* see *Illaenus conifrons* and *Illaenus vindex*

*Thaleops ovata* Conrad

Hypotype 1321

Wilson, A.E., 1947, Geol. Surv., Canada, Bull. 9, p. 36, pl. 7, figs. 16a, b.

Leray beds, Ottawa Formation, Middle Ordovician, Mechanicsville, Ottawa, Ontario.

*Tostonia cf. iole* Walcott

Hypotypes 9376, a, b

Kindle, C.H., 1929, Can. Field-Naturalist, vol. 43, No. 7, p. 146, figs. 13-15.

Lower Ordovician, Swift's Ranch, 7 miles north of Jasper, British Columbia.

*Tretaspis elevata* Cooper and Kindle

Paratype 8869

Cooper, G.A., and Kindle, C.H., 1936, J. Pal., vol. 10, No. 5, p. 361.

Whitehead Formation, Upper Ordovician, Priest's Road, Percé, Quebec.

*Triarthrus belli* Matthew

Holotype 7351

Matthew, G.W.. 1900, Bull. Natural Hist. Soc., New Brunswick, vol. 4, p. 412, pl. 18, fig. 8.

Hutchinson, R.D., 1952, Geol. Surv., Canada, Mem. 263, p. 83, pl. 3, fig. 15.

McLeod Brook Formation, Lower Ordovician, McLeod Brook, Cape Breton Island, Nova Scotia.

*Triarthrus fischeri* Billings

Syntypes 678, a-i

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 291, fig. 280 [678a].

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 291, fig. 280.

Division N [Table Head], Middle Ordovician, Pistolet Bay, Newfoundland.

*Triarthrus glaber* Billings

Syntypes 1939, e, h

Billings, E., 1859, Can. Naturalist Geol., vol. 4, p. 382.

Logan, W.E., 1863, "Geology of Canada", Geol. Surv., Canada, Rept. Prog., p. 202, fig. 198 [1939 + 1939h].

Upper Ordovician, Quiatchouan River, Lake St. John, Quebec.

*Triarthrus spinosus* Billings

Hypotypes 13615, 13616

Wilson, A.E., 1957, Can. Field-Naturalist, vol. 70, No. 1, 1956, pl. 5, figs. 3, 4.

Upper Ordovician, Gloucester tp., Ontario.

*Trinodus priscus* Kobayashi

Holotype 12751

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 476, pl. 7, fig. 6.

McKay Group, Lower Ordovician, McKay Creek, British Columbia.

*Trinodus tardiformis* Kobayashi

Holotype 12752

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 476, pl. 7, figs. 7a, b.

Glenogle Formation, Middle Ordovician, Vermilion Basin, British Columbia.

*Uromystrum formosum* (Billings)

Hypotypes 16202, 16203

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 60, pl. 12, figs. 11, 14; pl. 13, figs. 3, 5, 6.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

See *Bathyurellus formosus**Uromystrum fraternum* (Billings)

Hypotypes 16200, 16201

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 58, pl. 12, figs. 4-6, 12-13.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

See *Bathyurellus fraternus**Uromystrum patulum* Whittington

Holotype 16204; paratypes 16205, a

Whittington, H.B., 1963, Bull. Mus. Comp. Zoology Harvard, vol. 129, No. 1, p. 61, pl. 13, figs. 7-11; pl. 14, figs. 1, 2.

Cow Head Group, Middle Ordovician, boulder at Lower Head, Newfoundland.

See *Bathyurellus formosus*

**Arthropoda**

*Uromystrum validum* see *Bathyurellus validus*

*Vermilionites bisulcatus* Kobayashi

Holotype 12705

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, p. 453, pl. 6,  
fig. 4.

McKay Group, Lower Ordovician, north of Brisco Trail, British Columbia.

*Vogdesia sinclairi* Wilson

Holotype 13252

Wilson, A.E., 1947, Geol. Surv., Canada, Bull. 9, p. 30, pl. 7, figs. 2a, b.  
Leary beds, Ottawa Formation, Middle Ordovician, west of Cumberland, Ontario.

Trilobite, gen. and sp. indet.

Fig. spec. 12753

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, pl. 8, fig. 7.  
McKay Group, Lower Ordovician, west side of McKay Creek, 1 mile north of Sinclair Creek,  
British Columbia.

Trilobite, gen. and sp. indet.

Fig. spec. 12754

Kobayashi, T., 1955, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, pt. 3, pl. 8, fig. 16.  
McKay Group, Lower Ordovician, north of Brisco Trail, British Columbia.

Trilobites

Fig. specs. 9379-9382

Kindle, C.H., 1929, Can. Field-Naturalist, vol. 43, No. 7, p. 146, figs. 19-22.  
Lower Ordovician, Swift's Ranch, 7 miles north of Jasper, British Columbia.

Trilobite pygidium

Fig. spec. 15072

Whittington, H.B., in Boucot, A.J. et al., Geol. Surv., Canada, Bull. 65, p. 40,  
pl. 9, figs. 1-3.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

## ARTHROPODA-MEROSTOMATA-XIPHOSURA

*Belinurus grandaevis* Jones and Woodward

Syntypes 10391, 10400

Jones, T.R. and Woodward, H., 1899, Geol. Mag., ser. 4, vol. 6, p. 387, pl. 15, figs. 2, 3.

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 48, pl. 16, figs. 1, 6 [lectotype 10391, paratype 10400].

Riversdale Group, Pennsylvanian, 3rd railway cut east of Riversdale station, Nova Scotia.

*Belinurus grandaevis* Jones and Woodward

Hypotypes 12804a-c, 12805, 12806

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 48, pl. 16, figs. 3-5, 7, 8.

Canso Group, Upper Carboniferous, over Reptile tracks and west of Partridge Island, West Bay, Parrsboro, Nova Scotia.

*Belinurus reginae* Baily

Hypotypes 12802, 12803a, b

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 48, pl. 16, figs. 2, 9, 10.

Canso Group, Upper Carboniferous, east of Ottawa House and over Reptile tracks, West Bay, Parrsboro, Nova Scotia.

*Cyclus subcircularis* Bell

Holotype 7642

Bell, W.A., 1929, Geol. Surv., Canada, Mem. 155, p. 187, pl. 35, fig. 7.

Mississippian, Windsor, Nova Scotia.

*Euproops amiae* Woodward

Syntypes 10393, 10398, 12807

Woodward, H., 1918, Geol. Mag., n. ser., dec. 6, vol. 5, No. 10, p. 465, figs. 2-4.

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 49, pl. 17, figs. 1, 2, 6 [lectotype 10393; paratypes 10398, 12807].

Pictou Group, Pennsylvanian, Donkin No. 6, Caledonia No. 4 pits, Glace Bay Mines, Cape Breton Island, Nova Scotia.

*Euproops amiae* Woodward

Hypotypes 12808a-e

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 49, pl. 17, figs. 3-5, 7, 8.

Pictou Group, Pennsylvanian, Donkin No. 6 pit, Glace Bay Mines, Cape Breton Island, Nova Scotia.

*Euproops cf. danae* (Meek and Worthen)

Hypotype 12828, 12860

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 49, pl. 17, fig. 9; pl. 21, fig. 1.

Canso Group, Upper Carboniferous, shore section  $\frac{1}{2}$  mile north of Margaree Harbour and Black River Station, Nova Scotia.

## **Arthropoda**

### *Euproops thompsoni* Raymond

Hypotypes 13312-13314

Copeland, M.J., 1957, J. Pal., vol. 31, No. 3, p. 598, pl. 67, figs. 7, 9, 10.

Windsor Group, Mississippian, near Wallace, Cumberland co., Nova Scotia.

### *Euproops* sp.

Fig. specs. 13310, 13311

Copeland, M.J., 1957, J. Pal., vol. 31, No. 3, p. 597, pl. 67, figs. 6, 8,

Windsor Group, Mississippian, Kentville Creek at Limestone Point on Pugwash Basin,  
Cumberland co., Nova Scotia.

## **ARTHROPODA-MEROSTOMATA-EURYPTERIDA**

### *"Angustidatus" seriatus* Cooper

Hypotype 13449, a, b

Harker, P. and Raasch, G.O., 1958, "Jurassic and Carboniferous of Western Canada",  
Am. Assoc. Petrol. Geol., pl. 1, No. 11,

Banff Formation, Mississippian, Gulf Rumsey No. 6-30 well, depth 5,200-5,225 feet, l.s.d.  
6, sec. 30, tp. 33, rge. 20, W. 4th mer., Alberta.

=*Angustidontus* sp., Copeland, M.J. and Bolton, T.E., 1960, Geol. Surv., Canada, Bull.  
60, p. 37, pl. 10, fig. 3.

### *Angustidontus weihmannae* Copeland and Bolton

Holotype 14013; paratype 14013a

Copeland M.J. and Bolton, T.E., 1960, Geol. Surv., Canada, Bull. 60, p. 38, pl. 10,  
Nos. 1, 2.

Ireton Formation, Woodbend Group, Upper Devonian, Gulf Sachs No. 10 well, depth 7,717.5-  
7,720 feet, l.s.d. 10, sec. 36, tp. 43, rge. 1, W. 5th mer., Alberta.

### *Carcinosoma libertyi* Copeland and Bolton

Holotype 13984, a [obverse and reverse]

Copeland, M.J. and Bolton, T.E., 1960, Geol. Surv., Canada, Bull. 60, p. 26, pl. 2,  
Nos. 1-4; fig. 7.

St. Edmund Formation, Middle Silurian, west of Gore Bay village, Manitoulin Island,  
Ontario.

### *Carcinosoma?* sp.

Fig. spec. 14558

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 53, pl. 12, fig. 1.

Allen Bay Formation, Upper Silurian, 3.2 miles west-northwest along coast from Cape  
Majendie Point, Grinnell Peninsula, Devon Island, Arctic.

### Eurypterid? remains

Fig. spec. 14559

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 54, pl. 11, figs. 4, 5.

Allen Bay Formation, Upper Silurian, 3.2 miles west-northwest along coast from Cape  
Majendie Point, Grinnell Peninsula, Devon Island, Arctic.

*Eurypterus boylei* Whiteaves

Holotype 2910

Whiteaves, J.F., 1884, Geol. Surv., Canada, Palaeoz. Fossils, vol. 3, pt. 1, p. 42, pl. 7, fig. 3.

Guelph Formation, Middle Silurian, Elora, Ontario.

=*Tylopterus boylei*, Clarke, J.M. and Ruedemann, R., 1912, N.Y. State Mus., Mem. 14, p. 218, fig. 42.

=*Tylopterus boylei*, Copeland, M.J. and Bolton, T.E., 1960, Geol. Surv., Canada, Bull. 60, p. 35, pl. 6, No. 3.

*Eurypterus (Anthraconectes) brasdorensis* Bell

Holotype 9649

Bell, W.A., 1922, Trans. Roy. Soc. Can., ser. 3, vol. 16, sec. 4, p. 164, pl. 1, fig. 11.

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 50, pl. 9, fig. 7.

Pictou Group, Pennsylvanian, New Campbellton seam, near Sydney, Nova Scotia.

*Eurypterus dekayi* Hall

Hypotype 13996

Copeland, M.J. and Bolton, T.E., 1960, Geol. Surv., Canada, Bull. 60, p. 29, pl. 6, No. 2.

Bertie Formation, Upper Silurian, Canada Southern Railway, Bertie tp., Welland co., Ontario.

*Eurypterus fischeri* Eichwald

Hypotypes 13997-14001, 14003, 14004, a, b, d

Copeland, M.J. and Bolton, T.E., 1960, Geol. Surv., Canada, Bull. 60, p. 30, pl. 7, Nos. 1-5, 7, 8; pl. 8, Nos. 5a, b, d; pl. 9, No. 1.

Unit 14, Member A, Reed Bay Formation, Upper Silurian, Goodsir Creek, central east coast Cornwallis Island, Arctic.

*Eurypterus fischeri rectangularis* Schmidt

Hypotype 1400c

Copeland, M.J. and Bolton, T.E., 1960, Geol. Surv., Canada, Bull. 60, p. 30, pl. 8, No. 5c.

Unit 14, Member A, Reed Bay Formation, Upper Silurian, Goodsir Creek, central east coast Cornwallis Island, Arctic.

*Eurypterus lacustris* Harlan

Hypotypes 13985-13990, 13992, 13995

Copeland, M.J. and Bolton, T.E., 1960, Geol. Surv., Canada, Bull. 60, p. 31, pl. 3, Nos. 1-5; pl. 4, Nos. 2, 3; pl. 5, Nos. 1-3; pl. 6, No. 1.

Bertie Formation, Upper Silurian, lot 5, con. 10, lot 2, con. 13 and lot 4, con. 10, Bertie tp., Welland co.; Canada Southern Railway near Bertie; and quarry behind Ridgeway, Ontario.

*Eurypterus laticeps* Schmidt

Hypotype 14002

Copeland, M.J. and Bolton, T.E., 1960, Geol. Surv., Canada, Bull. 60, p. 32, pl. 7, No. 6.

Unit 14, member A, Read Bay Formation, Upper Silurian, Goodsir Creek, central east coast Cornwallis Island, Arctic.

**Arthropoda**

*Eurypterus remipes* DeKay

Hypotype 3224c

Logan, W.E., 1863, "Geology of Canada", Geol. Surv., Canada, Rept. Prog., p. 959, fig. 464.

Bertie Formation, Upper Silurian, lot 5, con. 10, Bertie tp., Welland co., Ontario.

=*Eurypterus lacustris*, Copeland, M.J. and Bolton, T.E., 1960, Geol. Surv., Canada, Bull. 60, p. 31, pl. 4, fig. 1.

*Eurypterus remipes* DeKay

Hypotype 3224g

Kindle, E.M., 1934, Trans. Roy. Soc. Can., ser. 3, vol. 28, sec. 4, p. 45, fig. 2 [top].

Bertie Formation, Upper Silurian, lot 5, con. 10, Bertie tp., Welland co., Ontario.

*Eurypterus remipes* DeKay

Hypotype 9145

Kindle, E.M., 1934, Trans. Roy. Soc. Can., ser. 3, vol. 28, sec. 4, p. 44, fig. 1.

Gascons Formation, Middle Silurian, 1 1/3 miles south of Port Daniel, Bay of Chaleur, Quebec.

=*Eurypterus remipes quebecensis*, Kjellesvig-Waering, E.N., 1958, J. Pal., vol. 32, No. 6, p. 1130, pl. 146, fig. 2.

*Eurypterus* sp.

Fig. specs. 12827a-c

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 50, pl. 16, figs. 11-13.

Parrsboro Formation, Riversdale Group, Pennsylvanian, 2 mile above mouth Harrington River, 10 miles east of Parrsboro, Nova Scotia.

*Eusarcus logani* Williams

Syntypes 3759, a-f

Williams, M.Y., 1915, Geol. Surv., Canada, Mus. Bull. 20, p. 8, pl. 3, figs. 2-6; pl. 4, figs. 1, 2; pl. 5, figs. 1-5.

Eramosa Member, Lockport Formation, Middle Silurian, east of Guelph, Ontario.

*Pterygotus atlanticus* Clarke and Ruedemann

Syntypes 3239, a-c

Clarke, J.M. and Ruedemann, R., 1912, N.Y. State Mus., Mem. 14, p. 356, pl. 79, figs. 3-5.

Russell, L.S., 1954, Nat. Mus. Can., Bull. 132, p. 86, pl. 1, fig. 4; pl. 2, fig. 2.

Lower Devonian, Campbellton, New Brunswick.

*Pterygotus cummingsi* Grote and Pitt

Hypotype 13991

Copeland, M.J. and Bolton, T.E., 1960, Geol. Surv., Canada, Bull. 60, p. 32, pl. 4, No. 4.

Bertie Formation, Upper Silurian, North Buffalo, New York, U.S.A.

*Pterygotus gaspesiensis* Russell

Paratype 10326

Russell, L.S., 1954, Nat. Mus. Can., Bull. 132, p. 86, pl. 2, fig. 3.

Battery Point Formation, Gaspe sandstone series, Middle Devonian, D'Aiguillon, Cap des Rosiers tp., Quebec.

*Pterygotus* sp. 1

Fig. spec. 14010

Copeland, M.J. and Bolton, T.E., 1960, Geol. Surv., Canada, Bull. 60, p. 33, pl. 9, Nos. 2, 3.

Escuminac Formation, Upper Devonian, Scaumenac Bay, Chaleur Bay, Quebec.

*Pterygotus* ? sp. 2

Fig. spec. 14012

Copeland, M.J. and Bolton, T.E., 1960, Geol. Surv., Canada, Bull. 60, p. 34, fig. 8.  
 Upper Silurian, on Lesseps Brook 1050 paces downstream from the junction of the Lake  
 Ste. Ann road, Gaspé co., Quebec.

## ARTHROPODA-ARACHNIDA

*Anthracomartus* sp.

Fig. spec. 12786

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 50, pl. 11, fig. 4.  
 Canso? Group, Upper Carboniferous, ½ mile south of Black Point on east side of Cumberland  
 Basin, Nova Scotia.

*Eoscorpius* sp.

Fig. spec. 12778

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 51, pl. 15, figs. 4, 5.  
 Pennsylvanian, Stellarton coalfield, Nova Scotia.

## ARTHROPODA-BRANCHIOPODA

*Asmussia alta* (Raymond)

Hypotypes 12799, 12800

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 37, pl. 5, figs. 3, 8.  
 Bell, W.A., 1960, ibid., Mem. 314, p. 46, pl. 23, fig. 1 [12799].  
 Horton and Stellarton (Pictou) Group, Pennsylvanian, near Petit de Grat and Coalburn  
 borehole 529', Nova Scotia.

*Asmussia canadensis* see *Estheria canadensis**Asmussia* sp. cf. *A. membranacea* Pacht

Hypotype 15185

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 14.  
 Melville Island Formation, Middle or Upper Devonian, west coast in talus at Kelly Point  
 south of Purchase Bay, Melville Island, Arctic.

*Asmussia* sp. cf. *A. pogrebovi?* (Lutkevich)

Hypotype 15185a

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 14,  
 Melville Island Formation, Middle or Upper Devonian, west coast in talus at Kelly Point  
 south of Purchase Bay, Melville Island, Arctic.

*Asmussia tenella* (Bronn)

Hypotype 12853

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 38, pl. 5, fig. 6.  
 Canso Group, Upper Carboniferous, McLellan Brook, Nova Scotia.

*Cyclestherioides blackstonensis* (Raymond)

Hypotype 12851 [Missing]

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 40, pl. 5, fig. 4.  
 Alma Formation, Canso Group, near Alma, Nova Scotia.

**Arthropoda**

*Eoleaia elongata* Copeland

Holotype 10399

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 37, pl. 7, fig. 8.  
Riversdale Group, Pennsylvanian, west branch North River, Nova Scotia.

*Eoleaia laevicostata* (Raymond)

Hypotype 14385

Bell, W.A., 1960, Geol. Surv., Canada, Mem. 314, p. 48, pl. 24, fig. 3.  
Cheverie Formation, Horton Group, Mississippian, south of Blue Beach fault zone, Horton Bluff, Nova Scotia.

*Eoleaia leiaiformis* (Raymond)

Hypotypes 14380-14385, 14415

Bell, W.A., 1960, Geol. Surv., Canada, Mem. 314, p. 47, pl. 22, fig. 6; pl. 23, figs. 3-5, 7, 9; pl. 24, figs. 7, 8.

Cheverie and Horton Bluff Formations, Horton Group, Mississippian, on shore Avon River opposite Horton Bluff; Harding (Angus) Brook, Gaspereau Valley, Kings co.; and Arichat Harbour near head on south side and about 2,000 feet west of head of harbour, Nova Scotia.

*Erisopsis belli* Raymond

Holotype 9450

Raymond, P.E., 1946, Bull. Mus. Comp. Zool. Harvard, vol. 96, No. 3, p. 234, pl. 1, fig. 6.

Cheverie Formation, Horton Group, Mississippian, shore southwest of Cheverie on Avon River, opposite Horton Bluff, Nova Scotia.

=*Euestheria belli*, Bell, W.A., 1960, Geol. Surv., Canada, Mem. 314, p. 34, pl. 22, fig. 8.

*Estheria bellula* Whiteaves

Holotype 4812a; paratype 4812

Whiteaves, J.F., 1889, Geol. Surv., Canada, Contr. Can. Pal., vol. 1, pt. 2, p. 162, pl. 21, figs. 7, a.

Lower Cretaceous [Jurassic], Rink Rapids, Lewes River, Yukon.

*Estheria canadensis* Lambe

Syntypes 10000 [numerous specimens on one slab]

Lambe, L.M., 1910, Report on the Dominion of Canada Expedition to the Arctic Islands and Hudson Strait on Board the D.S.G. Arctic, J.E. Bernier, Appendix A, p. 482.

"Carboniferous" (Middle or Upper Devonian), ravine 4 miles northeast of Cape Providence, south coast of Melville Island, Arctic.

=*Asmussia canadensis*, Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 13, pl. 3, figs. 1, 2 [lectotype 10000; paratypes 10000a].

*Euestheria belli* (Raymond)

Hypotype 14407

Bell, W.A., 1960, Geol. Surv., Canada, Mem. 314, p. 45, pl. 22, fig. 4.

Horton Group, Mississippian, Arichat Harbour, Petit de Grat Island, Nova Scotia.

*Euestheria dawsoni* (Jones)

Hypotype 12852

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 38, pl. 5, figs. 5, 9.  
Canso Group, Upper Carboniferous, near Parrsboro, Nova Scotia.

*Euestheria dawsoni* (Jones)

Hypotype 14373

Bell, W.A., 1960, Geol. Surv., Canada, Mem. 314, p. 44, pl. 24, fig. 1.

Cheverie Formation, Horton Group, Mississippian, on shore Avon River opposite Horton Bluff, Nova Scotia.

*Euestheria lirella* Bell

Holotype 14386; paratypes 14387-14390

Bell, W.A., 1960, Geol. Surv., Canada, Mem. 314, p. 45, pl. 22, figs. 1-3, 5, 7.

Horton Group, Mississippian, near head on south side Arichat Harbour, Nova Scotia.

*Euestheris cf. dawsoni* (Jones)

Hypotype 12814

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 38, pl. 5, fig. 9.

Pictou Group, Pennsylvanian, McLellan Brook, Pictou co., Nova Scotia.

*Euestheria raymondi* Copeland

Holotype 10395; paratype 12797

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 38, pl. 5, figs. 1, 2.

Lower Mississippian (or Canso Group, Upper Carboniferous), north branch Becaguimec River, about 1 mile above Cloverdale, New Brunswick.

*Leaiia acutangularis* (Raymond)

Hypotype 12819

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 36, pl. 8, fig. 3.

Canso Group, Upper Carboniferous, Brown's Brook, Nova Scotia.

*Leaiia acutilirata* Copeland

Holotype 10396

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 36, pl. 7, fig. 3.

Canso Group, Upper Carboniferous, McKay Brook, Nova Scotia.

*Leaiia baentschiana* (Beyrich)

Hypotype 12793, 12809, 12816, 12824, 12825a, 12854, 12855, 12857

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 34, pl. 4, fig. 10; pl. 6, figs. 3, 4; pl. 7, figs. 1, 9; pl. 8, figs. 1, 2, 4.

Canso Group, Upper Carboniferous, 1500' above base type section, Strait of Canso, on Sutherland River below Ross' bridge near Lismore, Nova Scotia, and point north of Cape Enrage, New Brunswick; Riversdale Group, Pennsylvanian, west branch of North River, Nova Scotia.

*Leaiia laevicostata* Raymond

Holotype 9449

Raymond, P.E., 1946, Bull. Mus. Comp. Zool. Harvard, vol. 96, No. 3, p. 282, fig. 5.

Chevrie Formation, Horton Group, Mississippian, on shore Avon River opposite Horton Bluff, Nova Scotia.

=*Eoleaiia laevicostata*, Kobayashi, T., 1954, J. Fac. Sci., Univ. Tokyo, sec. 2, vol. 9, No. 1, p. 140, fig. 30b.

Bell, W.A., 1960, Geol. Surv., Canada, Mem. 314, p. 48, pl. 24, fig. 6.

*Leaiia laevis* (Raymond)

Hypotype 12817

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 35, pl. 7, fig. 10.

Riversdale Group, Pennsylvanian, west branch North River, Nova Scotia.

*Leaiia magnacostata* Copeland

Holotype 10397

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 36, pl. 6, fig. 5.

Pictou Group, Pennsylvanian, Greener Point, Barrington Cove, north of Sydney Harbour, Nova Scotia.

*Leaiia silurica* Matthew

Hypotype 12818

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 35, pl. 7, fig. 4.

Canso Group, Upper Carboniferous, 27 chains below road at Datan's bridge, Brown's Brook, Nova Scotia.

## Arthropoda

*Leiaia tricarinata* Meek and Worthen

Hypotypes 12787, 12795, 12796, 12815, 12824, 12826, 12856

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 35, pl. 4, figs. 8, 9; pl. 7, figs. 2, 5, 7; pl. 8, fig. 5.

Canso Group, Upper Carboniferous, near Alma, Point Edward, West side Parrsboro Harbour, and on Sutherland River below Ross' bridge near Lismore, Nova Scotia; Riversdale Group, Pennsylvanian, Treen Bluff section and west branch North River, Nova Scotia.

*Leiaia* sp.

Fig. specs. 14408, 14409, a

Bell, W.A., 1960, Geol. Surv., Canada, Mem. 314, p. 49, pl. 24, figs. 4, 5.

Cheverie Formation, Horton Group, Mississippian, on shore Avon River opposite Horton Bluff, Nova Scotia.

*Lioestheria (?) simoni* (Pruvost)

Hypotype 12801

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 39, pl. 5, fig. 7.

Canso? Group, Upper Carboniferous, Nova Scotia.

*Lioestheria striata* (Goldfuss and Munster)

Hypotype 12823

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 39, pl. 6, figs. 1, 2.

Canso Group, Upper Carboniferous, near Madden Cove, Strait of Canso, Nova Scotia.

*Lynceites cansoensis* Copeland

Holotype 10383; paratype 12792

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 41, pl. 9, figs. 8, 9.

West Bay Formation, Canso Group, Upper Carboniferous, east side West Bay, 2 miles west of Parrsboro, Nova Scotia.

*Palaeolimnadiopsis pruvosti* Raymond

Hypotype 12794

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 40, pl. 4, fig. 7.

Pictou ? - Riversdale ? Group, Pennsylvanian, Treen Bluff, Malagash, Nova Scotia.

*Pseudestheria alta* Raymond

Holotype 9451

Raymond, P.E., 1946, Bull. Mus. Comp. Zool. Harvard, vol. 96, No. 3, p. 246, fig. 1.

Cheverie Formation, Horton Group, Mississippian, on shore Avon River opposite Horton Bluff, Nova Scotia.

=*Asmussia alta*, Bell, W.A., 1960, Geol. Surv., Canada, Mem. 314, p. 46, pl. 23, fig. 2.

*Pseudestheria leiaiformis* Raymond

Holotype 12398; paratype 14379

Raymond, P.E., 1946, Bull. Mus. Comp. Zool. Harvard, vol. 96, No. 3, p. 246, fig. 2 [12398].

Tasch, P., 1956, J. Pal., vol. 30, No. 5, p. 1255, text figs. 1-13.

Cheverie Formation, Horton Group, Mississippian, on shore Avon River opposite Horton Bluff, Nova Scotia.

=*Eoleiaia leiaiformis*, Bell, W.A., 1960, Geol. Surv., Canada, Mem. 314, p. 47, pl. 23, figs. 6, 8.

*Pteroleiaia canadensis* Copeland

Holotype 15189; paratypes 15186, a, 15188, 15189, a,c, 15190

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 15, pl. 4, figs. 1, 6; pl. 5, fig. 25.

Melville Island Formation, Middle or Upper Devonian, west coast 5 miles southwest of Kelly Point, Melville Island, Arctic.

## ARTHROPODA-OSTRACODA

*Aechmina equilateralis?* Bassler

Hypotype 14535

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 29, pl. 6, fig. 34.

Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Aechmina* sp.

Fig. spec. 15194

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 10, pl. 2, fig. 10.

Rochester Formation, Middle Silurian, basal 5 feet access road Sir Adam Beck Generating Station section, Niagara Falls, Ontario.

*Aechminella biltmoreensis* (Loranger)

Hypotype 17346

McGill, P., 1963, Bull. Can. Petrol. Geol., vol. 11, No. 1, p. 3, pl. 1, figs. 4-6.

Mildred Member, Beaverhill Lake Formation, Upper Devonian, 1,054-1,064 feet Bear Biltmore No. 1 well, l.s.d. 7, sec. 11, tp. 87, rge. 17, W. 4th mer., Alberta.

*Aechminella clivusbestiola* McGill

Holotype 17345; paratypes 17345a-c

McGill, P., 1963, Bull. Can. Petrol. Geol., vol. 11, No. 1, p. 3, pl. 1, figs. 1-3.

Christina Member, Beaverhill Lake Formation, Upper Devonian, 1,324-1,334 feet Bear Biltmore No. 1 well, l.s.d. 7, sec. 11, tp. 87, rge. 17, W. 4th mer., Alberta.

"*Amphissites*" (?) *concentricus* (Ulrich and Bassler)

Hypotypes 14530, a-f

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 43, pl. 6, figs. 17-21.

Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Aparchites canadensis* Fritz

Syntypes 9406, 9407

Fritz, M.A., 1940, J. Pal., vol. 14, No. 1, p. 77, pl. 12, figs. 1-3.

Middle Devonian, Clute Well 14-441-25 (480') lot 147, N.T.R., Raleigh tp., Kent co., Ontario.

*Aparchites dentis* McGill

Holotype 17347; paratypes 17347a-g

McGill, P., 1963, Bull. Can. Petrol. Geol., vol. 11, No. 1, p. 4, pl. 1, figs. 7-10.

Firebag Member, Beaverhill Lake Formation, Upper Devonian, 1,682 feet Bear Biltmore No. 1 well, l.s.d. 7, sec. 11, tp. 87, rge. 17, W. 4th mer., Alberta.

*Aparchites mitis* Jones

Holotype 4298

Jones, T.R., 1891, Geol. Surv., Canada, Contr. Can. Micro-Pal., pt. 3, p. 91, pl. 11, figs. 15a,b.

Upper Devonian, Hay River, 40 miles above mouth, District of Mackenzie.

**Arthropoda**

*Aparchites mundulus* Jones

Holotype 17706

Jones, T.R., 1891, Geol. Surv., Canada, Contr. Can. Micro-Pal., pt. 3, p. 62, pl. 10,  
figs. 12a, b.

Middle Ordovician, Lorette Falls, St. Charles River, Quebec.

*Aparchites parvulus* Jones

Holotype 7167

Jones, T.R., 1897, Geol. Surv., Canada, Palaeoz. Fossils, vol. 3, pt. 3, p. 230, pl. 22,  
figs. 4a-c.

Ordovician, Little Black Island, Lake Winnipeg, Manitoba.

*Aparchites sinuatus* Hall

Hypotype 14515

Copeland, M.J., 1960, Pal., vol. 3, pt. 1, p. 100, pl. 23, figs. 21, 22 [figs. 19, 20  
=Bythocypris phillipsiana].

Stonehouse Formation, Upper Silurian, Arisaig, Nova Scotia.

*Aparchites whiteavesi* Jones

Holotype 3838 [missing]

Jones, T.R., 1889, Annals Mag. Natural Hist., ser. 6, vol. 3, p. 384, pl. 17, fig. 10;  
text figs. 5, 6.

Ordovician, Lower Fort Garry, St. Andrew, Manitoba.

*Arcy zona foordi* Copeland

Holotype 14528; paratypes 14528a, b

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 42, pl. 6, figs. 7, 8.

Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Bairdia fragosa* Morey

Hypotype 15159

Copeland, M.J., 1960, Trans. Roy. Soc. Can., ser. 3, vol. 54, sec. 4, pl. 1, fig. 8.

Exshaw Formation, Mississippian, Crowsnest Pass, sec. 8, tp. 8, rge. 5, W. 5th mer.,  
Alberta.

*Bairdia magnacurta* Morey

Hypotype 15168

Copeland, M.J., 1960, Trans. Roy. Soc. Can., ser. 3, vol. 54, sec. 4, pl. 1, fig. 7.

Exshaw Formation, Mississippian, Crowsnest Pass, sec. 8, tp. 8, rge. 5, W. 5th mer.,  
Alberta.

*Bairdia* sp. cf. *B. subparallela* Morey

Hypotype 15167

Copeland, M.J., 1960, Trans. Roy. Soc. Can., ser. 3, vol. 54, sec. 4, pl. 1, fig. 9.

Exshaw Formation, Mississippian, Crowsnest Pass, sec. 8, tp. 8, rge. 5, W. 5th mer.,  
Alberta.

*Bairdia* sp.

Fig. spec. 14553

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 47.

Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Bassleratia typa* Kay

Paratype 6246

Kay, G.M., 1934, J. Pal., vol. 8, No. 3, p. 341.

Hull Formation, Middle Ordovician, Healey Falls, Trent River, Ontario.

*Bellornatia tricollis* Kay

Paratypes 6254

Kay, G.M., 1934, J. Pal., vol. 8, No. 3, p. 342, pl. 44, figs. 25, 26.  
Hull Formation, Middle Ordovician, Healey Falls, Trent River, Ontario.

*Beyrichia (Beyrichia) arctigena* Martinsson

Holotype 15013; paratypes 15014-15017

Martinsson, A., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 16, pl. 4, figs. 1-6.  
Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

*Beyrichia arcuata* (Bean)

Hypotype 4197

Jones, T.R., 1889, Annals Mag. Natural Hist., ser. 6, vol. 3, p. 381, pl. 17, figs. 7a-c.  
Lower Devonian, Cape Bon Ami, New Brunswick.  
=Kloedenia sp. aff. K. sussexensis, Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 34, pl. 8, fig. 13.

*Beyrichia decora* Billings

Syntype 2547

Billings, E., 1866, Geol. Surv., Canada, Cat. Sil. Fossils Anticosti, p. 67.  
Middle Silurian [Jupiter Formation], The Jumpers, Anticosti Island, Quebec.

*Beyrichia kloedeni* var. *acadica* Jones

Syntypes 4186, 4188, a-c

Jones, T.R., 1889, Annals, Mag. Natural Hist., ser. 6, vol. 3, p. 379, pl. 17, figs. 3 [4188?], 4 [4188a], 5 [4188b], 6 [4186], 8, 9 [4188c].  
Lower Devonian, Cape Bon Ami, New Brunswick.  
=Kloedenia acadica, Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91. p. 36, pl. 8, figs. 14-16 [lectotype 4188a; paratypes 4186, 4188, b, c].

*Beyrichia (Neobeyrichia) kochii* Boll

Hypotype 14507

Copeland, M.J., 1960, Pal., vol. 3, pt. 1, p. 98, pl. 23, fig. 23.  
Stonehouse Formation, Upper Silurian, Arisaig, Nova Scotia.

*Beyrichia logani* Jones

Syntypes 1080, a, b

Jones, T.R.,  
1858, Annals Mag. Natural Hist., ser. 3, vol. 1, No. 4, p. 244, pl. 9, figs. 7-9.  
1858, Geol. Surv., Canada, Can. Org. Rem., dec. 3, p. 91, pl. 11, figs. 2-4.  
Beekmantown Formation, Lower Ordovician, Grenville, Argenteuil co., Quebec and Hawkesbury, Ontario.

*Beyrichia logani* var. *leperditoides* Jones

Holotype 1098

Jones, T.R.,  
1858, Annals Mag. Natural Hist., ser. 3, vol. 1, No. 4, p. 244, pl. 9, figs. 10, b.  
1858, Geol. Surv., Canada, Can. Org. Rem., dec. 3, p. 91, pl. 11, figs. 5a, b.  
Beekmantown Formation, Lower Ordovician, Grenville, Argenteuil co.. Quebec.

*Beyrichia logani* var. *reniformis* Jones

Holotype 1097

Jones, T.R.,  
1858, Annals Mag. Natural Hist., ser. 3, vol. 1, No. 4, p. 244, pl. 9, fig. 6.  
1858, Geol. Surv., Canada, Can. Org. Rem., dec. 3, p. 91, pl. 11, fig. 1.  
Beekmantown Formation, Lower Ordovician, Hawkesbury, Ontario.

**Arthropoda**

*Beyrichia (Neobeyrichia) maccoyiana* Jones

Hypotypes 14508, 14509

Copeland, M.J., 1960, Pal., vol. 3, pt. 1, p. 99, pl. 23, figs. 12, 13.

Stonehouse Formation, Upper Silurian, Arisaig, Nova Scotia.

*Beyrichia (Neobeyrichia) maccoyiana* var. *sulcata* Reuter

Hypotypes 14510–14512

Copeland, M.J., 1960, Pal., vol. 3, pt. 1, p. 99, pl. 23, figs. 14–16.

Stonehouse Formation, Upper Silurian, Arisaig, Nova Scotia.

*Beyrichia (Nodibeyrichia) pustulosa* Hall

Hypotypes 14498–14504

Copeland, M.J., Pal., vol. 3, pt. 1, p. 96, pl. 23, figs. 2–9.

Stonehouse Formation, Upper Silurian, Arisaig, Nova Scotia.

*Beyrichia quadrifida* Jones

Syntype 17707

Jones, T.R., 1891, Geol. Surv., Canada, Contr. Can. Micro-Pal., pt. 3, p. 66, pl. 11,  
figs. 9a, b.

Middle Ordovician, Lorette Falls, St. Charles River, Quebec.

*Beyrichia venusta* Billings

Syntypes 2475, 2548

Billings, E., 1866, Geol. Surv., Canada, Cat. Sil. Fossils Anticosti, p. 68.

Middle Silurian [Jupiter Formation], East Point and The Jumpers, Anticosti Island, Quebec.

*Beyrichiopsis lophota* Copeland

Holotype 10387; paratype 12837

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 32, pl. 3, figs. 1–8.

Point Edward Formation, Canso Group, Pennsylvanian, near Sydney, Nova Scotia.

*Bolla americana* var. *zygocornis* Swartz

Hypotypes 14534, a

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 29, pl. 6, figs. 32, 33.

Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Bolla sagittaformis* Swartz

Hypotypes 14533, a, b

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 29, pl. 6, figs. 30, 31.

Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Bolla subaequata* Ulrich

Hypotypes 6247, b

Kay, G.M., 1934, J. Pal., vol. 8, No. 3, p. 337, pl. 44, figs. 9–12 [6247].

Hull Formation, Middle Ordovician, Healy Falls, Ontario.

*Boursella trilobata* Turner

Holotype 9397

Turner, M.C., 1939, Bull. Am. Pal., vol. 25, No. 88, p. 14, pl. 1, fig. 4.

Middle Devonian, Lethwaite well 24-441-48 (250'), lot 141, N.T.R., Raleigh tp., Kent co., Ontario.

*Bufina lineata* Turner

Holotype 9401

Turner, M.C., 1939, Bull. Am. Pal., vol. 25, No. 88, p. 21, pl. 1, figs. 9, 12.

Middle Devonian, Union D'Clute Sykes well 12-441-23 (215'), lot 15, con. 15, Raleigh tp., Kent co., Ontario.

*Bythocypris alcocki* Copeland

Holotype 14547; paratypes 14547a-d

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 46, pl. 10, figs. 16-20.

Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Bythocypris cylindrica* (Hall)

Hypotype 975

Ulrich, E.O., 1889, Geol. Surv., Canada, Contr. Can. Micro-Pal., vol. 2, p. 48, pl. 9, fig. 6.

Stony Mountain Formation, Upper Ordovician, Stony Mountain, Manitoba.

*Bythocypris cylindrica* (Hall)

Hypotype 8583e

Foerste, A.F., 1924, Geol. Surv., Canada, Mem. 138, p. 255, pl. 46, fig. 2.

Queenston Formation, Upper Ordovician, lot 24, con. 8, St. Vincent tp., 4 miles northwest of Meaford, Ontario.

*Bythocypris?* cf. *B. perarcuata* Swartz and Swain

Hypotypes 14549, a, b

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 46, pl. 10, figs. 25-27.

Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Bythocypris* cf. *B. phaseolina* Ulrich and Bassler

Hypotypes 14548, a-c

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 46, pl. 10, figs. 21-24.

Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Bythocypris phillipsiana* (Jones and Holl)

Hypotypes 14516, 14517

Copeland, M.J., 1960, Pal., vol. 3, pt. 1, p. 101, pl. 23, figs. 19-20, [figs. 21, 22  
=Aparachites sinuatus].

Stonehouse Formation, Upper Silurian, Arisaig, Nova Scotia.

*Bythocypris swartzi* Copeland

Holotype 14552; paratypes 14552a-f

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 47, pl. 10, figs. 37-40.

Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Bythocypris* sp. 1

Fig. specs. 14554, a, b

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 45.

Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Bythocypris?* sp.

Fig. spec 15169

Copeland, M.J., 1960, Trans. Roy. Soc. Can., ser. 3, vol. 54, sec. 4, p. 39, fig. 1.

Exshaw Formation, Mississippian, Crowsnest Pass, sec. 8, tp. 8, rge. 5, W. 5th mer., Alberta.

*Camdenidea canadensis* Copeland

Holotype 14550; paratypes 14550a-c

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 45, pl. 10, figs. 28-31.

Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Candona bairdioides* (Jones and Kirkby)

Hypotype 12829

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 28, pl. 4, figs. 1-3.

Joggins Formation, Cumberland Group, Pennsylvanian, roof of 40 Brine seam, Joggins, Nova Scotia.

**Arthropoda**

*Candona salteriana* (Jones)

Hypotype 12844

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 29, pl. 1, fig. 4.

Joggins Formation, Cumberland Group, Pennsylvanian, shales immediately above 40 Brine seam, Joggins, Nova Scotia.

*Carbonita agnes* (Jones)

Hypotype 12841

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 25, pl. 1, figs. 19–21.

Riversdale group, Pennsylvanian, ½ mile north of Finlay Point, Mabou Mines, Nova Scotia.

*Carbonita altilis* (Jones and Kirkby)

Hypotypes 12833, 12839

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 25, pl. 1, figs. 1-3, 15-18.

Upper part Boss Point Formation, Riversdale Group, Pennsylvanian, near Joggins, Nova Scotia.

*Carbonita elongata* (Jones and Kirkby)

Hypotype 12842

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 25, pl. 1, figs. 22–25.

Riversdale Group, Pennsylvanian, roof shales of 40 Brine seam, Joggins, Nova Scotia.

*Carbonita fabulina* (Jones and Kirkby)

Hypotype 12835

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 26, pl. 1, figs. 10, 11.

Riversdale Group, Pennsylvanian, shore section Port Hood, Nova Scotia.

*Carbonita inflate* (Jones and Kirkby)

Hypotypes 12838, 12843

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 26, pl. 1, figs. 12–14; pl. 2,  
figs. 18, 19.

Pictou Group, Pennsylvanian, Mabou Mines, Nova Scotia.

*Carbonita rankiniana* (Jones and Kirkby)

Hypotype 12849

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 27, pl. 2, figs. 22, 23.

Joggins Formation, Cumberland Group, Pennsylvanian, roof shales immediately above  
Joggins seam, Joggins, Nova Scotia.

*Carbonita scalpellus* (Jones and Kirkby)

Hypotype 12850

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 27, pl. 4, fig. 6.

Pictou Group, Pennsylvanian, shales immediately above Backpit seam, Sydney, Nova Scotia.

*Carbonita secans* (Jones and Kirkby)

Hypotype 12834

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 27, pl. 1, figs. 8, 9.

Cumberland Group, Pennsylvanian, Bayview #8 mine on 40 Brine seam, Joggins, Nova Scotia.

*Carbonita cf. subula* (Jones and Kirkby)

Hypotypes 14400–14406

Bell, W.A., 1960, Geol. Surv., Canada, Mem. 314, p. 43, pl. 21, figs. 2–4, 8, 9.

Horton Bluff Formation, Horton Group, Mississippian, north of Blue Beach fault, Horton  
Bluffs, Nova Scotia.

*Cavellina caduca* McGill

Holotype 17350; paratypes 17350a-d

McGill, P., 1963, Bull. Can. Petrol. Geol., vol. 11, No. 1, p. 9, pl. 1, figs. 20-25.

Mildred Member, Beaverhill Lake Formation, Upper Devonian, 1,074-1,084 feet Bear Biltmore No. 1 well, l.s.d. 7, sec. 11, tp. 87, rge. 17, W. 4th mer., Alberta.

*Coryellina* sp.

Fig. spec. 15166

Copeland, M.J., 1960, Trans. Roy. Soc. Can., ser. 3, vol. 54, sec. 4, pl. 1, fig. 4.

Sohn, I.G., 1962, J. Pal., vol. 36, No. 6, pl. 167, fig. 35.

Exshaw Formation, Mississippian, Crowsnest Pass, sec. 8, tp. 8, rge. 5, W. 5th mer., Alberta.

*Ctenobolbina clavigera* (Jones)

Hypotypes 13604-13610, 13624

Copeland, M.J., 1958, J. Pal., vol. 32, No. 1, p. 236, text figs. 1-8.

Pamelia beds, Ottawa Formation, Middle Ordovician, Buena Vista road, Rockliffe; Hogsback Rapids, Rideau River, Ottawa, Ontario; and Broad Street, Aylmer, Quebec.

"Ctenobolbina" *punctata* Ulrich

Hypotypes 15195, a, b

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 10, pl. 2, figs. 11-13.

Rochester Formation, Middle Silurian, 10-15 feet above base De Cew Falls section, St. Catharines, and 10-13 feet above base access road Sir Adam Beck Generating Station section, Niagara Falls, Ontario.

*Cypridina acadica* Bell

Holotype 7742

Bell, W.A., 1929, Geol. Surv., Canada, Mem. 155, p. 185, pl. 34, figs. 5, a.

Lower Windsor Group, Mississippian, Maxner Point, Windsor, Nova Scotia.

*Cytherellina siliqua* (Jones)

Hypotypes 14505, 14506

Copeland, M.J., 1960, Pal., vol. 3, pt. 1, p. 101, pl. 23, figs. 10, 11.

Stonehouse Formation, Upper Silurian, Arisaig, Nova Scotia.

*Cytheropsis siliqua* Jones

Holotype 1328

Jones, T.R., 1858, Annals Mag. Natural Hist., ser. 3, vol. 1, No. 4, p. 249, pl. 10, fig. 6.

Middle Ordovician [Leray-Rockland beds], Paquette Rapids, Ottawa River.

*Daleiella* ? *canadensis* Copeland

Holotype 14532; paratypes 14532a, b

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 31, pl. 6, figs. 27-29.

Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Dihogmochilina latimarginata* see *Isochilina grandis* var. *latimarginata**Dizygopleura chaleurensis* Copeland

Holotype 14531; paratypes 14531a-f

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 40, pl. 6, figs. 22-26.

Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Dizygopleura sculptura* Turner

Holotype 9399

Turner, M.C., 1939, Bul. Am. Pal., vol. 25, No. 88, p. 19, pl. 1, fig. 6.

Middle Devonian, East Coste well 6-441-2 (200'), northeast corner lot 19, con. 7, Tilbury East tp., Kent co., Ontario.

**Arthropoda**

*Dizygoptera symmetrica* (Hall)

Hypotypes 15196, a-d

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 10, pl. 2, figs. 14-18.

Rochester Formation, Middle Silurian, 40-45 feet above base De Cew Falls section, St. Catharines, and 28-30 feet above base access road Sir Adam Beck Generating Station section, Niagara Falls, Ontario.

*Drepanella richardsoni* var. *canadensis* Ulrich

Hypotypes 8524 [2 specimens], 8583a, b

Foerste, A.F., 1924, Geol. Surv., Canada, Mem. 138, p. 252, pl. 46, figs. 5a[8583a], b [8583b], c [8524].

Queenston Formation, Upper Ordovician, lot 24, con. 8, St. Vincent tp., 4 miles northwest of Meaford, Ontario.

*Egorovia longituda* McGill

Holotype 17352; paratypes 17352a-g

McGill, P., 1963, Bull. Can. Petrol. Geol., vol. 11, No. 1, p. 10, pl. 2, figs. 14-18.

Moberly Member, Beaverhill Lake Formation, Upper Devonian, 1,154-1,164 feet Bear Biltmore No. 1 well, l.s.d. 7, sec. 11, tp. 87, rge. 17, W. 4th mer., Alberta.

*Entomis brookei* Kindle

Holotype 7977; paratypes 7977a, b

Kindle, E.M., 1919, Geol. Surv., Canada, Mus. Bull. 29, p. 8, pl. 2, figs. 7-10.

Simpson shale, Upper Devonian, east bank Mackenzie River 5 miles above RabbitSkin River, District of Mackenzie.

*Entomis serratostriata* (Sandberger)

Hypotypes 7976, b

Kindle, E.M., 1919, Geol. Surv., Canada, Mus. Bull. 29, p. 7, pl. 2, figs. 4-6.

Simpson shale, Upper Devonian, east bank Mackenzie River 5 miles above RabbitSkin River, District of Mackenzie.

*Entomis variostriata* Clarke

Hypotypes 7975, a, b

Kindle, E.M., 1919, Geol. Surv., Canada, Mus. Bull. 29, p. 7, pl. 2, figs. 1-3.

Simpson shale, Upper Devonian, east bank Mackenzie River 5 miles above RabbitSkin River, District of Mackenzie.

*Eriella beaumontensis* (Loranger)

Hypotypes 17353, a

McGill, P., 1963, Bull. Can. Petrol. Geol., vol. 11, No. 1, p. 11, pl. 3, figs. 1-3.

Christina-Calumet Members, Beaverhill Lake Formation, Upper Devonian, 1,404-1,414 feet Bear Biltmore No. 1 well, l.s.d. 7, sec. 11, tp. 87, rge. 17, W. 4th mer., Alberta.

*Eucraterellina crateriformis* (Swartz)

Hypotypes 14520, a, b

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 27, pl. 5, figs. 6-8.

Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Eucraterellina oblonga* (Ulrich and Bassler)

Hypotypes 14522, a

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 27, pl. 5, figs. 13, 14.

Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Eukloedenella alcocki* Copeland

Holotype 14546; paratypes 14546a-h

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 41, pl. 10, figs. 7-15.

Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Eukloedenella dalhousiensis* Copeland

Holotype 14545; paratypes 14545a-e

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 42, pl. 10, figs. 1-6.

Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Eukloedenella doverensis* Turner

Holotype 9400

Turner, M.C., 1939, Bull. Am. Pal., vol. 25, No. 88, p. 20, pl. 1, figs. 5, 8.

Middle Devonian, Union D'Clute Sykes well 12-441-23 (200'), lot 15, con. 15, Raleigh tp., Kent co., Ontario.

*Eurychilina (?) striatomarginata* (Miller)

Hypotype 8525

Foerste, A.F., 1924, Geol. Surv., Canada, Mem. 138, p. 253, pl. 46, fig. 4.

Queenston Formation, Upper Ordovician, lot 24, con. 8, St. Vincent tp., 4 miles northwest of Meaford, Ontario.

*Eurychilina tutu* Copeland

Holotype 15199; paratypes 15198, a-h, 15199a

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 55, pl. 12, figs. 2-10.

'Trenton', Middle Ordovician, Gretna quarry, 4½ miles south-southwest of Napanee, Ontario.

*Graphiadactylis fernglenensis* Benson

Hypotypes 15160, a

Copeland, M.J., 1960, Trans. Roy. Soc. Can., ser. 3, vol. 54, sec. 4, pl. 1, figs. 12, 13.

Exshaw Formation, Mississippian, Crowsnest Pass, sec. 8, tp. 8, rge. 5, W. 5th mer., Alberta.

*Graphiadactylis granopunctatus* (Ulrich and Bassler)

Hypotype 15162

Copeland, M.J., 1960, Trans. Roy. Soc. Can., ser. 3, vol. 54, sec. 4, pl. 1, fig. 16.

Exshaw Formation, Mississippian, Crowsnest Pass, sec. 8, tp. 8, rge. 5, W. 5th mer., Alberta.

*Graphiadactylis cf. G. lineatus* (Ulrich and Bassler)

Hypotype 15515

Copeland, M.J., 1960, Trans. Roy. Soc. Can., ser. 3, vol. 54, sec. 4, pl. 1, fig. 14.

Exshaw Formation, Mississippian, Crowsnest Pass, sec. 8, tp. 8, rge. 5, W. 5th mer., Alberta.

*Graphiadactylis moridgei* Benson

Hypotype 15163

Copeland, M.J., 1960, Trans. Roy. Soc. Can., ser. 3, vol. 54, sec. 4, pl. 1, fig. 15.

Exshaw Formation, Mississippian, Crowsnest Pass, sec. 8, tp. 8, rge. 5, W. 5th mer., Alberta.

*Graphiadactylis* sp.

Fig. spec. 15156

Copeland, M.J., 1960, Trans. Roy. Soc. Can., ser. 3, vol. 54, sec. 4, pl. 1, fig. 17.

Exshaw Formation, Mississippian, Crowsnest Pass, sec. 8, tp. 8, rge. 5, W. 5th mer., Alberta.

*Gutschickia bretonensis* Copeland

Holotype 10388; paratypes 12836a, b

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 29, pl. 3, figs. 9-19.

MacDonald Glen Formation, lower member, Riversdale Group, Pennsylvanian, near Mabou Mines, Nova Scotia.

**Arthropoda**

*Gutschickia ninevehensis* (Holland)

Hypotype 12840

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 29, pl. 2, figs. 20, 21.  
Riversdale Group, Pennsylvanian, shore section Port Hood, Nova Scotia.

*Halliella labiosa* Ulrich

Hypotype 6253

Kay, G.M., 1934, J. Pal., vol. 8, No. 3, p. 332.  
Hull Formation, Middle Ordovician, Healey Falls, Trent River, Ontario.

*Halliella magnapuncta* Kay

Paratypes 6244, 6245

Kay, G.M., 1934, J. Pal., vol. 8, No. 3, p. 334.  
Hull Formation, Middle Ordovician, Healey Falls, Trent River, Ontario and Decorah Formation, Middle Ordovician, sec. 13, Glenwood tp., Winneshiek co., Iowa, U.S.A.

*Haploprimitia obscura* McGill

Holotype 17348; paratypes 17348a, b

McGill, P., 1963, Bull. Can. Petrol. Geol., vol. 11, No. 1, p. 7, pl. 1, figs. 11-13.  
Mildred Member, Beaverhill Lake Formation, Upper Devonian, 1,094-1,114 feet Bear  
Biltmore No. 1 well, l.s.d. 7, sec. 11, tp. 87, rge. 17, W. 4th mer., Alberta.

*Haploprimitia punctata* Turner

Holotype 9395

Turner, M.C., 1939, Bull. Am. Pal., vol. 25, No. 88, p. 10, pl. 1, fig. 1.  
Middle Devonian, D'Clute well 19-441-30 (230'), lot 16, con. 15, Raleigh tp., Kent co.,  
Ontario.

*Healdia* sp.

Fig. specs. 15158, a

Copeland, M.J., 1960, Trans. Roy. Soc. Can., ser. 3, vol. 54, sec. 4, pl. 1, figs. 10, 11.  
Exshaw Formation, Mississippian, Crowsnest Pass, sec. 8, tp. 8, rge. 5, W. 5th mer.,  
Alberta.

*Herrmannina* cf. *H. consobrina* (Jones)

Hypotypes 15184, a, b

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 7.  
Middle Devonian, northern shore of Deans Dundas Bay, Prince Albert Peninsula, lat. 72°21'  
N., long. 118°25'W., Victoria Island, Arctic.

*Hittboldtina evelinae* (Jones)

Hypotype 12832

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 28, pl. 1, figs. 5-7.  
Port Hood Formation, Riversdale Group, Pennsylvanian, shore section, Port Hood, Nova  
Scotia.

*Hollinella? novascotica* (Jones and Kirkby)

Hypotypes 14396-14399

Bell, W.A., 1960, Geol. Surv., Canada, Mem. 314, p. 42, pl. 21, figs. 1, 5-7.  
Horton Bluff Formation, Horton Group, Mississippian, north of Blue Beach fault, Horton  
Bluffs, Nova Scotia.

*Hollinella subcircularis* Turner

Holotype 9398

Turner, M.C., 1939, Bull. Am. Pal., vol. 25, No. 88, p. 17, pl. 1, fig. 20.  
Middle Devonian, Dauphin Imperial well 2-441-70 (130'), lot 2, con. 2, Tilbury East tp.,  
Kent co., Ontario.

*Hypotetragona albertensis* Loranger (nude name)

Topotypes 17351a-g

McGill, P., 1963, Bull. Can. Petrol. Geol., vol. 11, No. 1, p. 5, pl. 12, figs. 1-13.

Ireton Formation, Upper Devonian, 2,140-2,144 feet Bear Beaumont No. 1 well, l.s.d. 14, sec. 25, tp. 75, rge. 17, W. 4th mer., Alberta.

*Hypotetragona* sp.

Fig. spec. 15161

Copeland, M.J., 1960, Trans. Roy. Soc. Can., ser. 3, vol. 54, sec. 4, pl. 1, figs. 5, 6.

Exshaw Formation, Mississippian, Crowsnest Pass, sec. 8, tp. 8, rge. 5, W. 5th mer., Alberta.

*Isochilina amii* Jones

Holotype 17708

Jones, T.R., 1891, Geol. Surv., Canada, Contr. Can. Micro-Pal., pt. 3, p. 68, pl. 10, figs. 14a, b.

Middle Ordovician, Lorette Falls, St. Charles River, Quebec.

*Isochilina bellula* Jones

Syntypes 4297, a

Jones, T.R., 1891, Geol. Surv., Canada, Contr. Can. Micro-Pal., pt. 3, p. 92, pl. 11, figs. 16a, b.

Upper Devonian, Hay River, 40 miles above mouth, Northwest Territories.

*Isochilina grandis* var. *latimarginata* Jones

Syntypes 6055, b, d, f-i, 6057, a; plaster casts 6055a,c,e

Jones, T.R., 1891, Geol. Surv., Canada, Contr. Can. Micro-Pal., pt. 3, p. 78, pl. 10, figs. 1-4.

Middle Silurian [Cedar Lake Formation], Denbeigh (Long) Point, east side of Lake Winnipegosis, and north end Mossy portage, Cedar Lake, Manitoba.

=*Dihogmochilina latimarginata*, Stearn, C.W., 1956, ibid., Mem. 281, p. 126, pl. 12, fig. 5 [6055a plaster cast of holotype 6055].*Isochilina labellosa* Jones

Syntype 13473

Jones, T.R., 1891, Geol. Surv., Canada, Contr. Can. Micro-Pal., pt. 3, p. 69, pl. 10, figs. 16a-c, 17.

"Chazy" [Pamelia beds], Middle Ordovician, Broad Street, Aylmer, Quebec.

*Isochilina labellosa* Jones

Syntype 13474

Jones, T.R., 1891, Geol. Surv., Canada, Contr. Can. Micro-Pal., pt. 3, p. 69, pl. 10, fig. 19.

"Birdseye" limestone [Lowville beds], Middle Ordovician, lot 3, con. 3, R.F., Gloucester tp., Carleton co., Ontario.

*Isochilina labrosa* Jones

Holotype 3841

Jones, T.R., 1889, Annals Mag. Natural Hist., ser. 6, vol. 3, p. 383, pl. 17, fig. 11.

Lower Devonian, Cape Bon Ami, New Brunswick.

=*Saccarchites labrosus*, Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 37, pl. 9, fig. 25.*Isochilina ottawa* see *Leperditia (Isochilina) ottawa*

**Arthropoda**

*Isochilina whiteavesii* Jones

Holotype 17709

Jones, T.R., 1891, Geol. Surv., Canada, Contr. Can. Micro-Pal., pt. 3, p. 68, pl. 10,  
figs. 13a, b.

Middle Ordovician, Lorette Falls, St. Charles River, Quebec.

*Jenningsina concentrica* Turner

Holotype 9405

Turner, M.C., 1939, Bull. Am. Pal., vol. 25, No. 88, p. 28, pl. 1, fig. 16.

Middle Devonian, Union D'Clute Sykes well 12-441-23 (200'), lot 15, con. 15, Raleigh tp.,  
Kent co., Ontario.

*Kloedenia acadica* see *Beyrichia arcuata*

*Kloedenia? newbrunswicensis* Copeland

Holotype 14541; paratypes 14541a-g

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 35, pl. 8, figs. 1-8.

Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Kloedenia punctillosa* Ulrich and Bassler

Hypotypes 14538, a

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 33, figs. 9, 10.

Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Kloedenia retifera* Ulrich and Bassler

Hypotypes 14540, a-g

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 33, pl. 7, figs. 14-21

Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Kloedenia* sp. aff. *K. sussexensis* see *Beyrichia arcuata*

*Kloedenia wilckensiana* (Jones)

Hypotypes 14513, 14514

Copeland, M.J., 1960, Pal., vol. 3, pt. 1, p. 99, pl. 23, figs. 17, 18.

Stonehouse Formation, Upper Silurian, Arisaig, Nova Scotia.

*Kloedenia?* sp. indet.

Fig. specs. 14539, a-e

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 32, pl. 7, figs. 11-13.

Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Leperditia amygdalina* Jones

Syntypes 1078, a

Jones, T.R., 1858, Geol. Surv., Canada, dec. 3, p. 97, pl. 11, figs. 18, 19.

Pamelia beds, Middle Ordovician, near L'Original, Ontario.

*Leperditia anna* Jones

Holotype 506

Jones, T.R.,

1858, Annals Mag. Natural Hist., ser. 3, vol. 1, No. 4, p. 247, pl. 9, figs. 18a-c.

1858, Geol. Surv., Canada, dec. 3, p. 96, pl. 11, figs. 13a-c.

Beekmantown Formation, Lower Ordovician, Ste. Anne de Bellevue, Quebec.

*Leperditia balthica* var. *guelphica* Jones

Syntypes 3013, c

Jones, T.R., 1891, Geol. Surv., Canada, Micro-Pal., pt. 3, p. 80, pl. 13, figs. 12a,  
b, 13a-c.

Guelph Formation, Middle Silurian, Durham, Ontario.

*Leperditia caeca* Jones

Syntypes 8746, 8749

Jones, T.R., 1891, Geol. Surv., Canada, Contr. Can. Micro-Pal., pt. 3, p. 88, pl. 12,  
figs. 7, 9.

Middle Silurian, below Cedar Lake, Saskatchewan River, and foot of Grand Rapids, near  
mouth of Saskatchewan River, Manitoba.

*Leperditia caecigena* Miller

Hypotypes 8522, a-c

Foerste, A.F., 1924, Geol. Surv., Canada, Mem. 138, p. 250.

Queenston Formation, Upper Ordovician, along north and south road bordering lot 24, con.  
8, St. Vincent tp., 4 miles northwest of Meaford, Ontario.

*Leperditia canadensis* var. *josephiana* Jones

Holotype 1334h

Jones, T.R., 1858, Geol. Surv., Canada, dec. 3, p. 94, pl. 11, fig. 16.

Middle Ordovician, St. Joseph Island, Lake Huron, Ontario.

*Leperditia canadensis* var. *labrosa* Jones

Holotype 1079

Jones, T.R., 1858, Annals Mag. Natural Hist., ser. 3, vol. 1, No. 4, p. 245, pl. 9,  
figs. 13a-c.

Chazy (?), Middle Ordovician, Hawkesbury, Ontario.

*Leperditia canadensis* var. *louckiana* Jones

Holotype 1337

Jones, T.R., 1858, Geol. Surv., Canada, dec. 3, p. 93, pl. 11, fig. 11.

Middle Ordovician, Loucks Mill, Castor River, Ontario.

*Leperditia canadensis* var. *nana* Jones

Syntypes 1099, a

Jones, T.R.,

1858, Annals Mag. Natural Hist., ser. 3, vol. 1, No. 4, p. 244, pl. 9, figs. 11, 12.

1858, Geol. Surv., Canada, dec. 3, p. 92, pl. 11, figs. 6, 7.

Beekmantown Formation, Middle Ordovician, Grenville, Argenteuil co., Quebec.

*Leperditia canadensis* var. *pauquettiana* Jones

Holotype 1336a

Jones, T.R.,

1858, Annals Mag. Natural Hist., ser. 3, vol. 1, No. 4, p. 246, pl. 9, figs. 17a-d.

1858, Geol. Surv., Canada, dec. 3, p. 94, pl. 11, figs. 12a-d.

Leray beds, Middle Ordovician, Paquette Rapids, Ottawa River.

*Leperditia concinnula* Billings

Syntypes 702, a-c

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 299.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 299.

Divisions L, M [Table Head], Middle Ordovician, Port Rich, and Table Head, Newfoundland.

*Leperditia (?) exigua* Jones

Holotype 8747

Jones, T.R., 1891, Geol. Surv., Canada, Contr. Can. Micro-Pal., pt. 3, p. 94, pl. 12,  
fig. 10.

Devonian, small island east side of Lake Winnipegosis about 30 miles south of Denbeigh  
(Long) Point, Manitoba.

**Arthropoda**

*Leperditia hisingeri* Schmidt

Hypotypes 8752, b

Jones, T.R., 1891, Geol. Surv., Canada, Contr. Can. Micro-Pal., pt. 3, p. 82, pl. 13,  
figs. 1a-c, 9a, b.

Stearn, C.W., 1956, ibid., Mem. 281, p. 124, pl. 12, fig. 6.

Middle Silurian [Cedar Lake Formation], Denbeigh (Long) Point, Lake Winnipegosis,  
Manitoba.

*Leperditia hisingeri* var. *egeana* Jones

Holotype 8749

Jones, T.R., 1891, Geol. Surv., Canada, Contr. Can. Micro-Pal., pt. 3, p. 83, pl. 12,  
fig. 8.

Middle Silurian [Moose Lake Formation], foot of Grand Rapids, Saskatchewan River,  
Manitoba.

*Leperditia hisingeri* var. *fabulina* Jones

Syntypes 6052, b

Jones, T.R., 1891, Geol. Surv., Canada, Contr. Can. Micro-Pal., pt. 3, p. 82, pl. 10,  
figs. 5a-c, 7.

Stearn, C.W., 1956, ibid., Mem. 281, p. 124, pl. 12, fig. 13.

Middle Silurian [Fisher Branch Formation?], east side Lake Winnipegosis, Manitoba.

*Leperditia hisingeri* var. *fabulina* Jones

Syntype 8748, a

Jones, T.R., 1891, Geol. Surv., Canada, Contr. Can. Micro-Pal., pt. 3, p. 82, pl. 13,  
figs. 2, 5.

Middle Silurian, foot of Grand Rapids, Saskatchewan River, Manitoba.

*Leperditia hisingeri* var. *fabulina* Jones

Syntypes 8753, a

Jones, T.R., 1891, Geol. Surv., Canada, Contr. Can. Micro-Pal., pt. 3, p. 82, pl. 12,  
fig. 15; pl. 13, figs. 3a-c.

Middle Silurian, Denbeigh (Long) Point, Lake Winnipegosis, Manitoba.

*Leperditia hisingeri* var. *gibbera* Jones

Holotype 8754

Jones, T.R., 1891, Geol. Surv., Canada, Contr. Can. Micro-Pal., pt. 3, p. 82, pl. 13,  
fig. 4.

Middle Silurian, Denbeigh (Long) Point, Lake Winnipegosis, Manitoba.

=*Leperditia longigibbera*, Swartz, F.M., 1949, J. Pal., vol. 23, No. 3, p. 314.

*Leperditia manitoulinensis* Foerste

Syntypes 8520, a-c

Foerste, A.F., 1924, Geol. Surv., Canada, Mem. 138, p. 250, pl. 46, figs. 1a [8520e],  
b [8520b], c [8520a], d [8520c].

Meaford Formation, Upper Ordovician, Clay Cliffs, Manitoulin Island, Ontario.

*Leperditia (Isochilina) ottawa* Jones

Syntypes 1077, a

Jones, T.R.,

1858, Annals Mag. Natural Hist., ser. 3, vol. 1, No. 4, p. 248, pl. 10, figs. 1a-c  
[1077?].

1858, Geol. Surv., Canada, dec. 3, p. 97, pl. 11, figs. 14a-c.

Beekmantown Formation, Lower Ordovician, canal at Grenville, Argenteuil co., Quebec.

*Leperditia phaseola* (Hisinger)

Holotype 8755, a

Jones, T.R., 1891, Geol. Surv., Canada, Contr. Can. Micro-Pal., pt. 3, p. 85, pl. 13,  
figs. 7, 8.

Stearn, C.W., 1956, ibid., Mem. 281, p. 125, pl. 12, fig. 7.

Middle Silurian [East Arm Formation], Roche Rouge, Saskatchewan River, Manitoba.

*Leperditia phaseola* var. *guelphica* Jones

Holotype 3005

Jones, T.R., 1891, Geol. Surv., Canada, Contr. Can. Micro-Pal., pt. 3, p. 86, text fig. 5.  
Guelph Formation, Middle Silurian, Durham, Ontario.*Leperditia selwynii* Jones

Syntypes 10562, a-e

Jones, T.R., 1891, Geol. Surv., Canada, Contr. Can. Micro-Pal., pt. 3, p. 89, pl. 12,  
figs. 1-3, 5.

Middle Silurian, 12 and 15 mile pools, Jupiter River, Anticosti Island, Quebec.

*Leperditia subcylindrica* Ulrich

Holotype 6832

Ulrich, E.O., 1889, Geol. Surv., Canada, Contr. Can. Micro-Pal., pt. 2, p. 49, pl. 9,  
fig. 4.

Stony Mountain Formation, Upper Ordovician, Stony Mountain, Manitoba.

*Leperditia trentonensis* Wilson

Holotype 6228

Wilson, A.E., 1921, Geol. Surv., Canada, Bull. 33, p. 57, pl. 4, figs. 12, 13.  
Rockland beds, Middle Ordovician, MacLaren Landing above Ottawa, Ontario.*Leperditia ventralis* Billings

Syntypes 701, a

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 300.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 300.

Division N [Table Head], Middle Ordovician, Bonne Bay, Newfoundland.

*Leperditia whiteavesii* Jones

Syntypes 8751, a, b

Jones, T.R., 1891, Geol. Surv., Canada, Contr. Can. Micro-Pal., pt. 3, p. 87, pl. 12,  
figs. 11, 12a-c, 14.

Middle Silurian, Chemahawin, Saskatchewan River, Manitoba.

*Leperditiae* spp.

Fig. specs. 8750

Jones, T.R., 1891, Geol. Surv., Canada, Contr. Can. Micro-Pal., pt. 3, p. 89, pl. 12,  
fig. 6.

Middle Silurian, foot of Grand Rapids, near mouth of Saskatchewan River, Manitoba.

*Libumella reticulata* Copeland

Holotype 14529; paratypes 14529a-g

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 44, pl. 6, figs. 9-16.

Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Limnoprimitia? hortonensis* Bell

Holotype 14391; paratypes 14392-14395

Bell, W.A., 1960, Geol. Surv., Canada, Mem. 314, p. 41, pl. 19, figs. 1-8.

Horton Bluff Formation, Horton Group, Mississippian, north of Blue Beach fault, Horton  
Bluffs, Nova Scotia.

**Arthropoda**

*Mesomphalus magnificus* Copeland

Holotype 14537; paratypes 14537a-n

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 38, pl. 7, figs. 1-8; pl. 8, figs. 9-12.

Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Menoeidina arcuata* Turner

Holotype 9402

Turner, M.C., 1939, Bull. Am. Pal., vol. 25, No. 88, p. 22, pl. 1, figs. 11, 14.

Middle Devonian, Moore well 26 (190'), lot 142, con. T.R., Raleigh tp., Kent co., Ontario.

*Molleritia canadensis* Copeland

Holotype 15179; paratypes 15176-15178, 15180-15183

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 4, pl. 1, figs. 3-17; text figs. 1, 2.

Middle Devonian, East Porcupine and Hart Rivers, Yukon, and north shore Deans Dundas Bay, lat. 72°21'N, long. 118°25'W., Victoria Island, Arctic.

*Molleritia canadensis insignis* Copeland

Holotype 15175

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 6, pl. 1, figs. 1, 2.

Middle Devonian, East Porcupine River, lat. 65°47'30"N., long. 139°14'30"W., Yukon.

"*Octonaria*" *curta* Ulrich

Hypotype 15197, a

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 10, pl. 2, figs. 19, 20.

Rochester Formation, Middle Silurian, 20-25 feet above base De Cew Falls section, St. Catharines, Ontario.

*Octonaria foordi* Copeland

Holotype 14525; paratypes 1425a-j

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 25, pl. 5, figs. 18-24.

Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Octonaria* cf. *O. typicus* (Bassler)

Hypotype 14524

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 26, pl. 5, fig. 17.

Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Oepikium planum* Copeland

Holotype 15200

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 56, pl. 12, fig. 11.

'Trenton', Middle Ordovician, Gretna quarry, 4½ miles south-southwest of Napanee, Ontario.

*Pachydomella? clarkei* Copeland

Holotype 14542; paratypes 14542a-d

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 48, pl. 9, figs. 1-14.

Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Parabolbina granosa* (Ulrich)

Hypotype 14543, a-f

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 30, pl. 9, figs. 15-19.

Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Paraechmina abnormis* (Ulrich)

Hypotype 15193, a-c

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 10, pl. 2, figs. 6-9.  
 Rochester Formation, Middle Silurian, 15-30 feet above base De Cew Falls section,  
 St. Catharines, Ontario.

*Paraechmina postica* Ulrich and Bassler

Hypotype 15191

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 10, pl. 2, fig. 1.  
 Rochester Formation, Middle Silurian, 20-25 feet above base De Cew Falls section,  
 St. Catharines, Ontario.

*Paraechmina spinosa* (Hall)

Hypotypes 15192, a-c

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 10, pl. 2, figs. 2-5.  
 Rochester Formation, Middle Silurian, 30-35 feet above base De Cew Falls section,  
 St. Catharines, and 28-30 feet above base access road Sir Adam Beck Generating  
 Station section, Niagara Falls, Ontario.

*Paraparchites gibbus* Bell

Holotype 13590

Bell, W.A., 1929, Geol. Surv., Canada, Mem. 158, p. 185, pl. 34, figs. 6, a, b.  
 Lower Windsor Group, Mississippian, Maxner Point, Windsor, Nova Scotia.

*Paraparchites okeni*? (Munster)

Hypotype 12779

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 30, pl. 4, fig. 4.  
 Mabou Formation, Canso Group, Pennsylvanian, along Southwest Mabou River, Inverness  
 co., Nova Scotia.

*Paraparchites scotoburdigalensis*? (Hibbert)

Hypotype 12780

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 30, pl. 4, fig. 5.  
 Mabou Formation, Canso Group, Pennsylvanian, along Southwest Mabou River, Inverness  
 co., Nova Scotia.

*Phlyctiscapha keslingi* Copeland

Holotype 14544; paratypes 14544a-d

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 36, pl. 9, figs. 20-24.  
 Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Plagionephrodes montisdorsus* McGill

Holotype 17359; paratypes 17359a-d

McGill, P., 1963, Bull. Can. Petrol. Geol., vol. 11, No. 1, p. 22, pl. 4, figs. 15-18.  
 Beaverhill Lake Formation, Middle Devonian, 4907-4922 feet Anglo Canadian Beaverhill  
 Lake No. 2 well, l.s.d. 11, sec. 11, tp. 50, rge. 17, W. 4th mer., Alberta.

*Plagionephrodes pustulosus* McGill

Holotype 17360; paratypes 17360a-c

McGill, P., 1963, Bull. Can. Petrol. Geol., vol. 11, No. 1, p. 24, pl. 4, figs. 19-21.  
 Calumet Member, Beaverhill Lake Formation, Upper Devonian, 1,413.5 feet Bear Biltmore  
 No. 1 well, l.s.d. 7, sec. 11, tp. 87, rge. 17, W. 4th mer., Alberta.

*Primitia aequalis* Jones and Holl

Hypotype 4187

Jones, T.R., 1889, Annals Mag. Natural Hist., ser. 6, vol. 3, p. 379, pl. 17, fig. 2.  
 Lower Devonian, Cape Bon Ami, New Brunswick.

**Arthropoda**

*Primitia lativia* Ulrich

Holotype 6833

Ulrich, E.O., 1889, Geol. Surv., Canada, Contr. Can. Micro-Pal., pt. 2, p. 50, pl. 9, figs. 8, a.

Stony Mountain Formation, Upper Ordovician, Stony Mountain, Manitoba.

*Primitia lativia* Ulrich

Hypotype 8583c

Foerste, A.F., 1924, Geol. Surv., Canada, Mem. 138, p. 254, pl. 46, fig. 3.

Queenston Formation, Upper Ordovician, lot 24, con. 8, St. Vincent tp., 4 miles northwest of Meaford, Ontario.

*Primitia mundula* var. Jones

Hypotypes 4162, a-g, 4186

Jones, T.R., 1889, Annals Mag. Natural Hist., ser. 5, vol. 3, p. 375, pl. 16, figs. 1 [4162], 2 [4162a], 4 [4162b], 5 [4162c], 6 [4162d], 7 [4162e], 8, 9, [4162f]; pl. 17, fig. 1. [4186].

Lower Devonian, Campbellton, New Brunswick.

*Primitia mundula* (Jones)

Hypotype 14497

Copeland, M.J., 1960, Pal., vol. 3, pt. 1, p. 101, pl. 23, fig. 1.

Stonehouse Formation, Upper Silurian, Arisaig, Nova Scotia.

*Primitia? (Beyrichia) parallela* Ulrich

Holotype 975

Ulrich, E.O., 1889, Geol. Surv., Canada, Contr. Can. Micro-Pal., pt. 2, p. 51, pl. 9, figs. 7, a.

Stony Mountain Formation, Upper Ordovician, Stony Mountain, Manitoba.

*Primitia scaphoides* Jones

Holotype 4185

Jones, T.R., 1889, Annals Mag. Natural Hist., ser. 6, vol. 3, p. 377, pl. 16, fig. 3.

Lower Devonian, Campbellton, New Brunswick.

*Primitia scitula* Jones

Holotype 4296a

Jones, T.R., 1891, Geol. Surv., Canada, Contr. Can. Micro-Pal., pt. 3, p. 91, pl. 11, figs. 14a, b.

Upper Devonian, Hay River 40 miles above mouth, District of Mackenzie.

*Punctaparchites ovatus* Kay

Paratype 6252

Kay, G.M., 1934, J. Pal., vol. 8, No. 3, p. 332.

Hull Formation, Middle Ordovician, Healey Falls, Trent River, Ontario.

*Pyxiprimitia* cf. *P. germana* (Ulrich)

Hypotype 14527

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 28, pl. 6, fig. 5.

Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Pyxiprimitia ventriclefta* Swartz

Hypotypes 14526, a-d

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 28, pl. 6, figs. 1-4, 6.

Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

*Quasillites fordei* var. *minimus* Turner

Holotype 9404

Turner, M.C., 1939, Bull. Am. Pal., vol. 25, No. 88, p. 27, pl. 1, fig. 13

Middle Devonian, Union D'Clute Storey well 15-441-26 (190'), lot 142, N.T.R., Raleigh tp., Kent co., Ontario.

*Quasillites reticulata* Turner

Holotype 9403

Turner, M.C., 1939, Bull. Am. Pal., vol. 25, No. 88, p. 26, pl. 1, fig. 10.

Middle Devonian, D'Clute well 14 (240'), lot 147, N.T.R., Raleigh tp., Kent co., Ontario.

*Raymondia goniglypta* Kay

Paratype 6250

Kay, G.M., 1934, J. Pal., vol. 8, No. 3, p. 342.

Hull Formation, Middle Ordovician, Healey Falls, Trent River, Ontario.

*Saccarchites labrosus* see *Isochilina labrosa**Sansabella carbonaria* Cooper

Hypotypes 12831a-d

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 31, pl. 2, figs. 1-8.

Port Hood Formation, Riversdale Group, Pennsylvanian, above main coal seam, Port Hood, Nova Scotia.

*Sansabella reversa* Copeland

Holotype 10386; paratypes 12830a-d

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 31, pl. 2, figs. 9-17.

Port Hood Formation, Riversdale Group, Pennsylvanian, above main coal seam, Port Hood, Nova Scotia.

*Scrobicula* sp.

Fig. spec. 15165

Copeland, M.J., 1960, Trans. Roy. Soc. Can., ser. 3, vol. 54, sec. 4, pl. 1, fig. 1.

Exshaw Formation, Mississippian, Crowsnest Pass, sec. 8, tp. 8, rge. 5, W. 5th mer., Alberta.

*Semihealdiooides levinsoni* McGill

Holotype 17349; paratypes 17349a-d

McGill, P., 1963, Bull. Can. Petrol. Geol., vol. 11, No. 1, p. 8, pl. 1, figs. 14-19.

Calumet Member, Beaverhill Lake Formation, Upper Devonian, 1,494-1,514 feet Bear Biltmore No. 1 well, 1.s.d. 7, sec. 11, tp. 87, rge. 17, W. 4th mer., Alberta.

*Senescella albertensis* (Loranger)

Hypotypes 17356, a

McGill, P., 1963, Bull. Can. Petrol. Geol., vol. 11, No. 1, p. 21, pl. 4, figs. 1-4.

Mildred Member, Beaverhill Lake Formation, Upper Devonian, 1,010-1,020 feet Bear Biltmore No. 1 well, 1.s.d. 7, sec. 11, tp. 87, rge. 17, W. 4th mer., Alberta.

*Senescella granulosa* McGill

Holotype 17354; paratypes 17354a-e

McGill, P., 1963, Bull. Can. Petrol. Geol., vol. 11, No. 1, p. 20, pl. 3, figs. 14-16.

Christina-Calumet Members, Beaverhill Lake Formation, Upper Devonian, 1,413 feet Bear Biltmore No. 1 well, 1.s.d. 7, sec. 11, tp. 87, rge. 17, W. 4th mer., Alberta.

*Senescella veritatis* McGill

Holotype 17355; paratypes 17355a-e

McGill, P., 1963, Bull. Can. Petrol. Geol., vol. 11, No. 1, p. 20, pl. 3, figs. 17-22.

Ireton Formation, Upper Devonian, 1,848-1,858 feet Bear Beaumont No. 1 well, 1.s.d. 14, sec. 25, tp. 75, rge. 17, W. 4th mer., Alberta.

**Arthropoda**

***Strepula quadrilirata* var. *simplex* Ulrich**

Holotype 13692

Ulrich, E.O., 1889, Geol. Surv., Canada, Contr. Can. Micro-Pal., pt. 2, p. 55, pl. 9, fig. 13.

Stony Mountain Formation, Upper Ordovician, Stony Mountain, Manitoba.

***Strepulites dalhousiensis* Copeland**

Holotype 14523; paratype 14523a

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 25, pl. 5, figs. 15, 16. Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

***Tetrasacculus stewartae* Benson and Collinson**

Hypotype 15157

Copeland, M.J., 1960, Trans. Roy. Soc. Can., ser. 3, vol. 54, sec. 4, pl. 1, figs. 2, 3. Exshaw Formation, Mississippian, Crowsnest Pass, sec. 8, tp. 8, rge. 5, W. 5th mer., Alberta.

***Thipsnephrodes silvancendatus* McGill**

Holotype 17357; paratype 17357a

McGill, P., 1963, Bull. Can. Petrol. Geol., vol. 11, No. 1, p. 22, pl. 4, figs. 5-10. Mildred Member, Beaverhill Lake Formation, Upper Devonian, 1,084-1,094 feet Bear Biltmore No. 1 well, l.s.d. 7, sec. 11, tp. 87, rge. 17, W. 4th mer., Alberta.

***Thipsura whiteavesi* Copeland**

Holotype 14519; paratypes 14519a-c

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 23, pl. 5, figs. 3-5. Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

***Thipsurella curvistriata* (Roth)**

Hypotypes 14521, a-d

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 24, pl. 5, figs. 9-12. Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

***Thipsurella cf. T. v-scripta* (Jones and Holl)**

Hypotypes 14518, a, b

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 24, pl. 5, figs. 1, 2. Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

***Thomasatia falcicosta* Kay**

Paratype 6249

Kay, G.M., 1934, J. Pal., vol. 8, No. 3, p. 337, pl. 46, fig. 19.

Hull Formation, Middle Ordovician, Healey Falls, Trent River, Ontario.

***Tubulibairdia chaleurensis* Copeland**

Holotype 14551; paratypes 14551a-e

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 47, pl. 10, figs. 32-36. Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

***Ulrichia fragilis* var. *subnodata* Turner**

Holotype 9396

Turner, M.C., 1939, Bull. Am. Pal., vol. 25, No. 88, p. 25, pl. 1, fig. 2. Middle Devonian, Dauphin Imperial well 2-441-70 (130'), lot 2, con. 4, Tilbury East tp., Kent co., Ontario.

*Waylandella* ? sp.

Fig. spec. 15164

Copeland, M.J., 1960, Trans. Roy. Soc. Can., ser. 3, vol. 54, sec. 4, pl. 1, fig. 18.  
 Exshaw Formation, Mississippian, Crowsnest Pass, sec. 8, tp. 8, rge. 5, W. 5th mer., Alberta.

*Zygobeyrichia dalhousiensis* Copeland

Holotype 14536

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 31, pl. 6, fig. 35.  
 Dalhousie shale, Lower Devonian, Stewart's Cove, Dalhousie, New Brunswick.

## ARTHROPODA-CIRRIPEDIA

*Balanus crenatus* Bruguière

Hypotype 13621

Wilson, A.E., 1957, Can. Field-Naturalist, vol. 70, No. 1, pl. 5, fig. 10.  
 Pleistocene, Sandpits near Upplands, Ottawa, Ontario.

*Loricula canadensis* Whiteaves

Holotype 5070

Whiteaves, J.F., 1889, Geol. Surv., Canada, Contr. Can. Pal., vol. 1, pt. 2, p. 190,  
 pl. 26, figs. 4, a.  
 Upper Cretaceous, South Duck River, tp. 34, rge. 23, W. Prin. mer., Manitoba.

## ARTHROPODA-MALACOSTRACA

*Anthracophausia* sp.

Fig. spec. 12783

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 47, pl. 14, fig. 1.  
 Mabou Formation, Canso Group, Upper Carboniferous, Southwest Mabou River, Inverness co., Nova Scotia.

*Anthrapalaemon dubius* (Milne-Edwards)

Hypotypes 12781, 12789, 12812, 12813, 12821, 12822

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 42, pl. 10, figs. 3-6; pl. 11,  
 figs. 2, 3.

Parrsboro Formation, Riversdale Group, Pennsylvanian, Harrington River, 1 mile from mouth, 10 miles east of Parrsboro;  $\frac{1}{2}$  mile west of Diligent River, 5 miles west of Parrsboro; west side Parrsboro harbour, Nova Scotia; Cumberland Group, Pennsylvanian, near St. George's Mine, Joggins, Nova Scotia.

*Anthrapalaemon hillianus* Dawson

Hypotype 15187

Bell, W.A., 1922, Trans. Roy. Soc. Can., ser. 3, vol. 16, sec. 4, p. 162, pl. 1, fig. 10.  
 Riversdale Group, Pennsylvanian, Ste. Rose coal mine, Ste. Rose, Inverness co., Nova Scotia.

*Anthrapalaemon* sp.

Fig. spec. 12861

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 43, pl. 21, fig. 2.  
 Pictou Group, Pennsylvanian, Asphalt borehole 884, 1269', Pictou coalfield, Nova Scotia.

## Arthropoda

### *Callianassa whiteavesii* Woodward

Syntypes 5818, a-c

Woodward, H., 1896, Quart. J. Geol. Soc. London, vol. 52, p. 223, figs. 1, 2.

Whiteaves, J.F., 1903, Geol. Surv., Canada, Mesoz. Fossils 1, pt. 5, p. 319, figs. 18, 19.

Rathbun, M.J., 1926, U.S. Nat. Mus., Smithsonian Inst., Bull. 138, p. 107, pl. 20, figs. 6, 7.

Upper Cretaceous, Comox River, Vancouver Island, British Columbia.

### *Callianassa whiteavesii* Woodward

Hypotypes 5382, a-f

Woodward, H., 1900, Geol. Mag., n. ser., dec. 4, vol. 7, p. 435, pl. 17, figs. 2a, b.

Rathbun, M.J., 1926, U.S. Nat. Mus., Smithsonian Inst., Bull. 138, p. 107, pl. 20, figs. 8a, b.

Upper Cretaceous, Sounding Creek, tp. 30, rge. 8, W. 4th mer., Alberta.

### *Ceratiocaris cornwallensis* Copeland

Holotype 14006; paratypes 14005, 14011

Copeland, M.J. and Bolton, T.E., 1960, Geol. Surv., Canada, Bull. 60, p. 49, pl. 8, Nos. 1, 2; pl. 9, No. 5.

Member C, Cape Phillips Formation, Upper Silurian, Cape Phillips and Snowblind Creek, northern Cornwallis Island, Arctic.

### *Ceratiocaris cornwallensis* Copeland

Hypotypes 14555, 14556

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 52, pl. 11, figs. 1, 2.

Devon Island and Cape Phillips Formations, Upper Silurian, 6½ miles northeast of Point Hogarth, Prince Alfred Bay, Devon Island and 3½ miles southeast of mouth of river flowing into Stuart ('Disappointment') Bay, Cornwallis Island, Arctic.

### *Ceratiocaris pusilla* Matthew

Hypotypes 13298, a

Copeland, M.J., 1957, J. Pal., vol. 31, No. 3, p. 601, pl. 67, figs. 1-3.

Jones Creek Formation, Silurian, 1 mile above mouth Cunningham Brook, about 14 miles northeast of St. John, New Brunswick.

### *Ceratiocaris* sp. cf. *C. stygia* Salter

Hypotypes 14007-14009

Copeland, M.J. and Bolton, T.E., 1960, Geol. Surv., Canada, Bull. 60, p. 50, pl. 8, Nos. 3, 4; pl. 9, fig. 4.

Cape Phillips Formation, Upper Silurian, Twilight Creek (Stuart River), Bathurst Island, Arctic.

### *Ceratiocaris* sp.

Fig. spec. 14557

Copeland, M.J., 1962, Geol. Surv., Canada, Bull. 91, p. 53, pl. 11, fig. 3.

Member C, Read Bay Formation, Upper Silurian, Washington Point, Baillie-Hamilton Island, Arctic.

### *Dithyrocaris glabroides* Copeland

Holotype 10389; paratypes 12791, 12798

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 51, pl. 6, figs. 6, 7; pl. 9, fig. 6.

West Bay Formation, Canso Group, near Parrsboro, Nova Scotia.

*Echinocaris beecheri* Copeland

Holotype 13785

Copeland, M.J. and Bolton, T.E., 1960, Geol. Surv., Canada, Bull. 60, p. 6, pl. 1,  
No. 8; fig. 2.

Banff? Formation, Mississippian, Imperial Zama Lake well, depth 1,355 feet, l.s.d. 15,  
sec. 22, tp. 115, rge. 10, W. 6th mer., Alberta.

*Echinocaris castorensis* Copeland

Holotype 13782; paratypes 13778-13781

Copeland, M.J. and Bolton, T.E., 1960, Geol. Surv., Canada, Bull. 60, p. 4, pl. 1,  
Nos. 1-5; fig. 1.

Alexo Formation, Upper Devonian, talus at foot of "Beaver Ridge", lat. 52°50'N., long.  
117°45'W., Alberta.

*Echinocaris consanguina* Eller

Hypotype 13783

Copeland, M.J. and Bolton, T.E., 1960, Geol. Surv., Canada, Bull. 60, p. 5, pl. 1,  
Nos. 6, a.

Alexo Formation, Upper Devonian, "Beaver Ridge", lat. 52°50'N., long. 117°45'W., Alberta.

*Echinocaris* sp. (Telson)

Fig. spec. 13784

Copeland, M.J. and Bolton, T.E., 1960, Geol. Surv., Canada, Bull. 60, p. 6, pl. 1,  
No. 7.

Duvernay Formation, Upper Devonian, Imperial Westlock No. 14-24 well, depth 5,095 feet,  
l.s.d. 14, sec. 24, tp. 59, rge. 26, W. 4th mer., Alberta.

*Enoploclytia minor* Woodward

Holotype 5971

Woodward, H., 1900, Geol. Mag., n. ser. dec. 4, vol. 7, p. 434.

Whiteaves, J.F., 1903, Geol. Surv., Canada, Mesoz. Fossils, vol. 1, pt. 5, p. 321.

Upper Cretaceous, Hornby Island, British Columbia.

*Eryma dawsoni* Woodward

Holotype 5969

Woodward, H., 1900, Geol. Mag., n. ser., dec. 4, vol. 7, p. 400, pl. 16, fig. 2.

Whiteaves, J.F., 1903, Geol. Surv., Canada, Mesoz. Fossils, vol. 1, pt. 5, p. 321, pl.  
41, fig. 2.

Rathbun, M.J., 1926, U.S. Nat. Mus., Smithsonian Inst., Bull. 138, p. 128, pl. 35, fig. 1.

Upper Cretaceous, northeast side Hornby Island, British Columbia.

*Eryma stacoides* bordenensis Copeland

Holotype 14496

Copeland, M.J. and Bolton, T.E., 1960, Geol. Surv., Canada, Bull. 60, p. 56, pl. 11,  
Nos. 1, 2; fig. 10.

Jurassic, east-central Borden Island, approx. long. 78°28'N., lat. 110°07'W., Arctic.

*Homalopsis richardsoni* Woodward

Holotype 5995, a

Woodward, H., 1896, Quart. J. Geol. Soc. London, vol. 52, p. 224, fig. 3.

Whiteaves, J.F., 1900, Geol. Surv., Canada, Mesoz. Fossils, vol. 1, pt. 4, p. 266,  
fig. 13.

Rathbun, M.J., 1926, U.S. Nat. Mus., Smithsonian Inst., Bull. 138, p. 86, pl. 20, fig. 3.

Cretaceous (?), west of Alliford Bay, Skidegate Inlet, Queen Charlotte Islands, British  
Columbia.

**Arthropoda**

*Hoploparia bennetti* Woodward

Holotype 5972

Woodward, H., 1900, Geol. Mag., n. ser., dec. 4, vol. 7, p. 433.

Whiteaves, J.F., 1903, Geol. Surv., Canada, Mesoz. Fossils, vol. 1, pt. 5, p. 320.

Upper Cretaceous, Comox River, Vancouver Island, British Columbia.

*Hoploparia (?) canadensis* Whiteaves

Holotype 5057

Whiteaves, J.F.,

1884, Trans. Roy. Soc. Can., vol. 2, sec. 4, p. 237.

1885, Geol. Surv., Canada, Contr. Can. Pal., vol. 1, pt. 1, p. 87, pl. 11.

Upper Cretaceous, Highwood River, 10 miles west of first fork, Alberta.

=*Podocratus canadensis*, Rathbun, M.J., 1926, U.S. Nat. Mus., Smithsonian Inst., Bull.

138, p. 134, pl. 36.

*Hoploparia westoni* Woodward

Syntypes 5377, a, 5378

Woodward, H., Geol. Mag., n. ser., dec. 4, vol. 7, p. 433, pl. 17, figs. 1a-c.

Upper Cretaceous, Red Deer River, tp. 23, rge. 15, W. 4th mer., Alberta.

*Linuparus canadensis* (Whiteaves)

Hypotype 5968

Woodward, J., 1900, Geol. Mag., n. ser., dec. 4, vol. 7, p. 398, pl. 16, fig. 1.

Whiteaves, J.F., 1903, Geol. Surv., Canada, Mesoz. Fossils, vol. 1, pt. 5, p. 325, pl. 41, fig. 1.

Upper Cretaceous, 2 miles up Comox River, Vancouver Island, British Columbia.

=*Podocratus canadensis*, Rathbun, M.J., 1926, U.S. Nat. Mus., Smithsonian Inst., Bull. 138, p. 134, pl. 35, fig. 2.

*Linuparus (Podocrates) vancouverensis* Whiteaves

Syntypes 5964, 5965, a

Whiteaves, J.F.,

1896, Trans. Roy. Soc. Can., ser. 2, vol. 1, sec. 4, p. 132.

1903, Geol. Surv., Canada, Mesoz. Fossils, vol. 1, pt. 5, p. 323, pl. 40, fig. 1.

Woodward, H., 1900, Geol. Mag., n. ser., dec. 4, vol. 7, p. 394, pl. 15, fig. 1.

Upper Cretaceous, 2 miles up Puntledge (Comox) River, Vancouver Island, and Hornby Island, British Columbia.

=*Podocratus vancouverensis*, Rathbun, M.J., 1926, U.S. Nat. Mus., Smithsonian Inst., Bull. 138, p. 135, pl. 37, figs. 1, 2.

*Linuparus (Podocrates) vancouverensis* Whiteaves

Hypotype 5966, 5967

Woodward, H., 1900, Geol. Mag., n. ser., dec. 4, vol. 7, p. 394, pl. 15, figs. 2, 3.

Whiteaves, J.F., 1903, Geol. Surv., Canada, Mesoz. Fossils, vol. 1, pt. 5, p. 323, pl. 40, figs. 2, 3.

Upper Cretaceous, Comox River, Vancouver Island, and Hornby Island, British Columbia.

=*Podocratus vancouverensis*, Rathbun, M.J., 1926, U.S. Nat. Mus., Smithsonian Inst., Bull. 138, p. 135, pl. 37, fig. 3.

*Mesidotea sabinei* Nothorst

Hypotypes 9368, a, b

Kindle, E.M., 1928, Can. Field-Naturalist, vol. 42, No. 9, p. 211, fig.

Pleistocene, bank Ottawa River below Rifle Range, Ottawa, Ontario.

*Palaeastacus (?) ornatus* Whiteaves

Holotype 12397

Whiteaves, J.F.

1887, Geol. Natural Hist. Surv., Canada, Ann. Rept., n. ser., vol. 2, p. 161E.

1889, Geol. Surv., Canada, Contr. Can. Pal., vol. 1, pt. 2, p. 183, pl. 25, fig. 3.

Upper Cretaceous, Sounding Creek, tp. 30, rge. 8, W. 4th mer., Alberta.

*Palaeocaris novascoticus* Copeland

Holotype 13316; paratypes 13317–13324

Copeland, M.J., 1957, J. Pal., vol. 31, No. 3, p. 596, pl. 67, fig. 4; pl. 68, figs. 1–9.

Upper Horton Group, Mississippian, Borehole 530, 1 mile south of Hillsboro, Inverness co., Nova Scotia.

*Palaeocaris cf. typus* Meek and Worthen

Hypotype 12777

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 47, pl. 15, fig. 1.

Pictou Group, Pennsylvanian, Borehole 60, Stellarton, Nova Scotia.

*Palaeocaris* sp.

Fig. spec. 13315

Copeland, M.J., 1957, J. Pal., vol. 31, No. 3, p. 595, pl. 67, fig. 5.

Pictou Group, Pennsylvanian, near Clifton, Gloucester co., New Brunswick.

*Palaeocystes harveyi* Woodward

Holotype 5817; paratype 5817a

Woodward, H., 1896, Quart. J. Geol. Soc. London, vol. 52, p. 226, fig. 4.

Whiteaves, J.F., 1903, Geol. Surv., Canada, Mesoz. Fossils, vol. 1, pt. 5, p. 317, fig. 17.

Rathbun, M.J., 1926, U.S. Nat. Mus., Smithsonian Inst., Bull. 138, p. 101, pl. 20, fig. 4.

Upper Cretaceous, Comox River, Vancouver Island, British Columbia.

*Plagiolophus vancouverensis* Woodward

Syntypes 5815, 5816, a, b

Woodward, H., 1896, Quart. J. Geol. Soc. London, vol. 52, p. 227, figs. 5, 6.

Whiteaves, J.F., 1903, Geol. Surv., Canada, Mesoz. Fossils, vol. 1, pt. 5, p. 316, figs. 15, 16.

Rathbun, M.J., 1926, U.S. Nat. Mus., Smithsonian Inst., Bull. 138, p. 37, pl. 20, figs. 1, 2.

Upper Cretaceous, Comox River, Vancouver Island, and northwest side Hornby Island, British Columbia.

*Ptychocaris novaki* Copeland

Syntypes 12459, a

Copeland, M.J. and Bolton, T.E., 1960, Geol. Surv., Canada, Bull. 60, p. 52, pl. 10, Nos. 4–6; fig. 9, Nos. 3, 4.

Middle Devonian, south side and about 1 mile inland from eastern end of Eids Fiord, southwestern Ellesmere Island.

*Pygocephalus cooperi* Huxley

Hypotypes 12811, 12858

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 43, pl. 10, fig. 1; pl. 11, fig. 1.

Parrsboro Formation, Riversdale Group, Pennsylvanian, near Parrsboro, Nova Scotia.

*Pygocephalus cf. cooperi* Huxley

Hypotype 12810

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 44, pl. 10, fig. 2.

Parrsboro Formation, Riversdale Group, Pennsylvanian, near Parrsboro, Nova Scotia.

**Arthropoda**

*Spathiocaris* cf. *S. bipartita* (Woodward)

Hypotypes 13787, 13790

Copeland, M.J. and Bolton, T.E., 1960, Geol. Surv., Canada, Bull. 60, p. 8, pl. 1, Nos. 10, 13.

Duvernay Formation, Upper Devonian, Imperial Paddle River No. 1, depth 7,730–7,743 feet, l.s.d. 5, sec. 17, tp. 56, rge. 8, W. 5th mer., Alberta.

*Spathiocaris* cf. *S. lata* (Woodward)

Hypotypes 13786, 13788, 13789

Copeland, M.J. and Bolton, T.E., 1960, Geol. Surv., Canada, Bull. 60, p. 8, pl. 1, Nos. 9, 11, 12.

Black shales and Duvernay Formation, Upper Devonian, Central Leduc Toad River No. 1 well, depth 5,189 feet, lat. 59°21'N, long 124°59'W, British Columbia and Imperial Paddle River No. 1 well, depth 7,730–7,743 feet, l.s.d. 5, sec. 17, tp. 56, rge. 8, W. 5th mer., Alberta.

*Spathiocaris?* sp. (telson)

Fig. spec. 13791

Copeland, M.J. and Bolton, T.E., 1960, Geol. Surv., Canada, Bull. 60, p. 9, pl. 1, No. 14.

Upper Devonian black shales, Central Leduc Toad River No. 1 well, depth 5,165–5,170 feet, lat. 59°21'N, long. 124°59'W, British Columbia.

*Tealliocaris barathrota* Copeland

Holotype 10384; paratypes 12782, 12784, 12785a-d

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 45, pl. 13, figs. 2–6; pl. 14, figs. 2, 3.

Canso Group, near Creignish, Inverness co., and Mabou Formation, Canso Group, Upper Carboniferous, Southwest Mabou River, near Mabou, Nova Scotia.

*Tealliocaris belli* Copeland

Holotype 10381

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 46, pl. 12, fig. 4.

Canso Group, Upper Carboniferous, West Bay near Parrsboro, Nova Scotia.

*Tealliocaris caudafimbriata* Copeland

Holotype 10382

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 44, pl. 12, fig. 3.

West Bay Formation, Canso Group, Upper Carboniferous, near Parrsboro, Nova Scotia.

*Crustacea incertae sedis*

Fig. specs. 12775, 12820

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 60, pl. 13, fig. 1; pl. 20.

Pictou Group, Pennsylvanian, near Stellarton and Canso Group, second bridge up French River, Merigomish, Nova Scotia.

## ARTHROPODA-MYRIAPODA

*Amynilyspes springhillensis* Copeland

Holotype 10385

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 52, pl. 15, fig. 2.

Joggins Formation, Cumberland Group, Pennsylvanian, near Springhill, Cumberland co., Nova Scotia.

*Myriapoda incertae sedis*

Fig. spec. 12776

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 59, pl. 15, fig. 3.

Lancaster Formation, Cumberland Group, Pennsylvanian, near St. John, New Brunswick.

*Xylobius sigillariae* Dawson

Hypotype 12788

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 53, pl. 11, fig. 6.

Joggins Formation, Cumberland Group, Pennsylvanian, near Joggins, Nova Scotia.

## ARTHROPODA-INSECTA

### Carboniferous

*Archimylacris acadica* (?) Scudder

Hypotype 12845

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 56, pl. 9, fig. 4.

Pictou Group, Pennsylvanian, Borehole 60, Thorburn area, Pictou co., Nova Scotia.

*Archimylacris morienensis* Copeland

Holotype 10394

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 57, pl. 19, fig. 5.

Pictou Group, Pennsylvanian, Morien Bay at South Port Morien, Nova Scotia.

*Archimylacris* sp. 1

Fig. spec. 12774

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 57, pl. 12, fig. 1.

Pictou Group, Pennsylvanian, Coalburn borehole (319'), Pictou co., Nova Scotia.

*Archimylacris* sp. 2

Fig. specs. 12773a, b

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 57, pl. 19, figs. 3, 4.

Pictou Group, Pennsylvanian, Borehole 60, Thorburn area, Pictou co., Nova Scotia.

*Archimylacris* sp. (pronotum)

Fig. spec. 12772

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 58, pl. 9, fig. 1.

Pictou Group, Pennsylvanian, Borehole 60 (384' within Thorburn coal series), Thorburn area, Pictou co., Nova Scotia.

## Arthropoda

(*Blattoidea*) *carri* see *Schistaspis bretonensis*

(*Blattoidea*) *schuchertiana* see *Schistaspis bretonensis*

*Brodioptera amiae* Copeland

Holotype 10392

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 54, pl. 18, figs. 4–6.

Riversdale Group, Pennsylvanian, Howard's Mills, River Wallace, 30 miles north of Stellarton, Nova Scotia.

*Brodioptera cumberlandensis* Copeland

Holotype 10390

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 54, pl. 18, figs. 1–3.

Parrsboro Formation, Riversdale Group, West Bay near Parrsboro, Nova Scotia.

*Geroneura wilsoni* Matthew

Holotype 8129

Matthew, G.F., 1889, Trans. Roy. Soc. Can., vol. 6, sec. 4, p. 57, pl. 4, fig. 10.

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 55, pl. 9, fig. 5.

"Fern Ledges" or Lancaster Formation, Cumberland Group, Pennsylvanian, near St. John, New Brunswick.

*Hemimylacris* sp. (pronotum)

Fig. spec. 12790

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 58, pl. 11, fig. 5.

Pictou Group, Pennsylvanian, McLellan Brook, Pictou co., Nova Scotia.

*Homothetus erutus* Matthew

Holotype 8135

Matthew, G.F., 1894, Trans. Roy. Soc. Can., vol. 12, sec. 4, p. 95, pl. 1, fig. 11.

"Fern Ledges" or Lancaster Formation, Cumberland Group, Pennsylvanian, near St. John, New Brunswick.

*Meganeura* sp.

Fig. specs. 12863, 12864

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 55, pl. 21, figs. 4, 5.

Pictou Group, Pennsylvanian, Sydney coalfields, Nova Scotia.

*Phyllobletta* (?) spp.

Fig. specs. 12846, 12847a–e, 12848, 12849a

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 59, pl. 12, fig. 2; pl. 18, figs. 7–11; pl. 19, figs. 1, 6, 7.

Pictou Group, Pennsylvanian, Thorburn area, 8 miles southeast of Stellarton and Sydney coalfield, Nova Scotia.

*Schistaspis bretonensis* Bell

Holotype 9650; paratype 9650a

Bell, W.A., 1922, Trans. Roy. Soc. Can., ser. 3, vol. 16, sec. 4, p. 166, pl. 1, figs. 12–14.

Morien Group, Pennsylvanian, New Campbellton Mines, near Sydney, Nova Scotia.

=(*Blattoidea*) *carri* and (*Blattoidea*) *schuchertiana*, Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, pp. 58, 59, pl. 9, figs. 2, 3.

*Palaeodictyoptera incertae sedis*

Fig. spec. 12859

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 56, pl. 19, fig. 2.

Pictou Group, Pennsylvanian, Sydney coalfields, Nova Scotia.

## Insecta incertae sedis

Fig. spec. 12862

Copeland, M.J., 1957, Geol. Surv., Canada, Mem. 286, p. 60, pl. 21, fig. 3.  
Pictou Group, Pennsylvanian, Borehole, Stellarton, Nova Scotia.

## Mesozoic

*Otiorthynchites williamsi* Cockerell

Holotype 17687

Cockerell, T.D.A., in Williams, M.Y., 1943, Trans. Roy. Soc. Can., ser. 3, vol. 37,  
sec. 4, p. 115, pl. 1, fig. 6.

Peng Chau Formation, Jurassic, west side Peng Chau Island, Mirs Bay, Hong Kong.

## Tertiary

*Anthomyia burgessi* Scudder

Holotype 6166

Scudder, S.H.,

1877, Geol. Surv., Canada, Rept. Prog. 1875-76, p. 274.

1890, Fossil Insects N.A., vol. 2, p. 549, pl. 3, fig. 34.

Oligocene-Miocene, Quesnel, British Columbia.

*Anthomyia inanimata* Scudder

Holotype 6165

Scudder, S.H.,

1877, Geol. Surv., Canada, Rept. Prog. 1875-76, p. 273.

1890, Fossil Insects N.A., vol. 2, p. 548, pl. 3, fig. 19.

Oligocene-Miocene, Quesnel, British Columbia.

*Aphaenogaster longaeva* Scudder

Holotype 6178

Scudder, S.H.,

1877, Geol. Surv., Canada, Rept. Prog. 1875-76, p. 267.

1890, Fossil Insects N.A., vol. 2, p. 615, pl. 3, fig. 28.

Oligocene-Miocene, Quesnel, British Columbia.

*Aphrophora angusta* Handlirsch

Holotype 7277

Handlirsch, A., 1910, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 3, p. 128,  
fig. 36.

Oligocene-Miocene, Tulameen River opposite Vermilion Cliff, British Columbia.

*Aphrophora* sp.

Fig. spec. 6146

Scudder, S.H., 1895, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 1, p. 20, pl. 1,  
fig. 4.

Oligocene-Miocene, north fork Similkameen River, British Columbia.

**Arthropoda**

*Aranea columbiae* Scudder

Syntypes 6131, a, 6150

Scudder, S.H.,

1878, Geol. Surv., Canada, Rept. Prog. 1876-77, p. 463.

1890, Fossil Insects N.A., vol. 2, p. 71, pl. 2, figs. 1, 2.

Oligocene-Miocene, Quesnel, British Columbia.

*Archiaiocellia oligoneura* Handlirsch

Holotype 7250

Handlirsch, A., 1910, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 3, p. 100,  
figs. 3-5.

Oligocene-Miocene, opposite Horsefly Mine, Quesnel District, British Columbia.

*Boletina sepulta* Scudder

Holotype 6177b

Scudder, S.H., 1877, Geol. Surv., Canada, Rept. Prog. 1875-76, p. 271.

Oligocene-Miocene, Quesnel, British Columbia.

*Bothromicromus lachlani* Scudder

Holotype 6130

Scudder, S.H.,

1878, Geol. Surv., Canada, Rept. Prog. 1876-77, p. 462.

1890, Fossil Insects N.A., vol. 2, p. 164, pl. 2, fig. 8.

Oligocene-Miocene, Quesnel, British Columbia.

*Brachypeza abita* Scudder

Holotype 6169

Scudder, S.H.,

1877, Geol. Surv., Canada, Rept. Prog. 1875-76, p. 271.

1890, Fossil Insects N.A., vol. 2, p. 591, pl. 3, fig. 7.

Oligocene-Miocene, Quesnel, British Columbia.

*Brachypeza procera* Scudder

Holotype 6170

Scudder, S.H.,

1877, Geol. Surv., Canada, Rept. Prog. 1875-76, p. 272.

1890, Fossil Insects N.A., vol. 2, p. 591, pl. 3, fig. 14.

Oligocene-Miocene, Quesnel, British Columbia.

*Bracon* sp.

Fig. spec. 6174

Scudder, S.H.,

1879, Geol. Surv., Canada, Rept. Prog. 1877-78, p. 177B.

1890, Fossil Insects N.A., vol. 2, p. 607, pl. 3, fig. 33.

Oligocene-Miocene, north fork Similkameen River, British Columbia.

*Buprestis saxigena* Scudder

Syntypes 6154, a-d

Scudder, S.H.,

1879, Geol. Surv., Canada, Rept. Prog. 1877-78, p. 181B.

1890, Fossil Insects N.A., vol. 2, p. 494, pl. 2, figs. 24, 25.

1895, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 1, p. 36.

Oligocene-Miocene, Nicola River below main coal seam, British Columbia.

*Buprestis sepulta* Scudder

Holotype 6155

Scudder, S.H.,

1879, Geol. Surv., Canada, Rept. Prog. 1877-78, p. 181B.

1890, Fossil Insects N.A., vol. 2, p. 495, pl. 2, fig. 26.

1895, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 1, p. 37.

Oligocene-Miocene, Nicola River below main coal seam, British Columbia.

*Buprestis tertaria* scudder

Syntypes 6153, a, b

Scudder, S.H.,

1879, Geol. Surv., Canada, Rept. Prog. 1877-78, p. 180B.

1890, Fossil Insects N.A., vol. 2, p. 493, pl. 2, fig. 23.

1895, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 1, p. 35.

Oligocene-Miocene, Nicola River below main coal seam, British Columbia.

*Calyptites antediluvianum* Scudder

Holotype 6173

Scudder, S.H.,

1877, Geol. Surv., Canada, Rept. Prog. 1875-76, p. 270.

1890, Fossil Insects N.A., vol. 2, p. 606, pl. 3, fig. 32.

Oligocene-Miocene, Quesnel, British Columbia.

*Cercopites torpescens* Scudder

Holotype 6138

Scudder, S.H., 1895, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 1, p. 14, pl. 1,

fig. 1.

Oligocene-Miocene, north fork Similkameen River, British Columbia.

*Cercopsis grandescens* Scudder

Holotype 6140

Scudder, S.H., 1895, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 1, p. 16, pl. 1,

fig. 2.

Oligocene-Miocene, north fork Similkameen River, British Columbia.

*Cercopsis selwyni* Scudder

Holotype 6139

Scudder, S.H.,

1879, Geol. Surv., Canada, Rept. Prog. 1877-78, p. 184B.

1890, Fossil Insects N.A., vol. 2, p. 318, pl. 2, fig. 14.

1895, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 1, p. 15.

Oligocene-Miocene, Nine Mile Creek, Similkameen River, British Columbia.

*Cercyon ? terrigena* Scudder

Holotype 6194

Scudder, S.H.,

1879, Geol. Surv., Canada, Rept. Prog. 1877-78, p. 179B.

1890, Fossil Insects N.A., vol. 2, p. 510, pl. 2, fig. 21.

1895, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 1, p. 45.

Oligocene-Miocene, Nicola River below main coal seam, British Columbia.

*Coelidea columbiana* Scudder

Holotype 6137

Scudder, S.H.,

1879, Geol. Surv., Canada, Rept. Prog. 1877-78, p. 185B.

1890, Fossil Insects N.A., vol. 2, p. 313, pl. 2, fig. 13.

1895, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 1, p. 13.

Oligocene-Miocene, 3 miles up north fork Similkameen River, British Columbia.

**Arthropoda**

*Cryptohypnus ? terrestris* Scudder

Holotype 6156

Scudder, S.H.,

1879, Geol. Surv., Canada, Rept. Prog. 1877-78, p. 181B.

1890, Fossil Insects N.A., vol. 2, p. 497, pl. 2, fig. 30.

1895, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 1, p. 38.

Oligocene-Miocene, Nicola River below main coal seam, British Columbia.

*Dawsonites veter* Scudder

Holotype 6143

Scudder, S.H., 1895, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 1, p. 18, pl. 1,  
fig. 10.

Oligocene-Miocene, north fork Similkameen River, British Columbia.

*Elateridae ? sp.*

Fig. spec. 6157

Scudder, S.H.,

1879, Geol. Surv., Canada, Rept. Prog. 1877-78, p. 182B.

1890, Fossil Insects N.A., vol. 2, p. 498, pl. 2, fig. 28.

1895, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 1, p. 40.

Oligocene-Miocene, Nicola River below main coal seam, British Columbia.

*Enchophora* sp.

Fig. spec. 6134

Scudder, S.H., 1895, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 1, p. 10, pl. 1,  
fig. 5.

Oligocene-Miocene, north fork Similkameen River, British Columbia.

*Etoptychoptera tertaria* Handlirsch

Holotype 7273

Handlirsch, A., 1910, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 3, p. 122,  
fig. 30.

Oligocene-Miocene, Tulameen River opposite Vermilion Cliff, British Columbia.

*Euschistus antiquus* Scudder

Holotype 6150

Scudder, S.H., 1878, Geol. Surv., Canada, Rept. Prog. 1876-77, p. 459.

Oligocene-Miocene, Quesnel, British Columbia.

=*Teleoschistus antiquus*, Scudder, S.H., 1890, Fossil Insects N.A., vol. 2, p. 454,  
pl. 2, figs. 17-19; 1895, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 2, p. 25.

*Formica arcana* Scudder

Holotype 6180

Scudder, S.H.,

1877, Geol. Surv., Canada, Rept. Prog. 1875-76, p. 266.

1890, Fossil Insects N.A., vol. 2, p. 618, pl. 3, fig. 24.

Oligocene-Miocene, Quesnel, British Columbia.

*Galerucella picea* Scudder

Holotype 6152

Scudder, S.H.,

1879, Geol. Surv., Canada, Rept. Prog. 1877-78, p. 182B.

1890, Fossil Insects N.A., vol. 2, p. 485, pl. 2, fig. 31.

1895, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 1, p. 32.

Oligocene-Miocene, Nine Mile Creek, Similkameen River, British Columbia.

*Geranchon petrorum* see *Lachnus petrorum*

*Gerris defuncta* Handlirsch

Holotype 7276, a

Handlirsch, A., 1910, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 3, p. 126,  
figs. 34, 35.

Oligocene-Miocene, Quilchena, Nicola Lake, British Columbia.

*Heteromyza senilis* Scudder

Holotype 6164

Scudder, S.H.,

1877, Geol. Surv., Canada, Rept. Prog. 1875-76, p. 275.

1890, Fossil Insects N.A., vol. 2, p. 547, pl. 3, figs. 1, 2.

Oligocene-Miocene, Quesnel, British Columbia.

*Hygrotrechus stali* Scudder

Syntypes 6149, a, b

Scudder, S.H., 1879, Geol. Surv., Canada, Rept. Prog. 1877-78, p. 183B.

Oligocene-Miocene, 3 miles up north fork Similkameen River, British Columbia.

=*Telmatrechus stali*, Scudder, S.H., 1890, Fossil Insects N.A., vol. 2, p. 351, pl. 2,  
figs. 11, 12; 1895, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 1, p. 23.

*Hypoclinia obliterate* Scudder

Holotype 6179

Scudder, S.H.,

1877, Geol. Surv., Canada, Rept. Prog. 1875-76, p. 267.

1890, Fossil Insects N.A., vol. 2, p. 615, pl. 3, fig. 25.

Oligocene-Miocene, Quesnel, British Columbia.

*Lachnus petrorum* Scudder

Holotype 6132

Scudder, S.H., 1877, Geol. Surv., Canada, Rept. Prog. 1875-76, p. 279.

Oligocene-Miocene, Quesnel, British Columbia.

=*Geranchon petrorum*, Scudder, S.H., 1890, Fossil Insects N.A., vol. 2, p. 249, pl. 2,  
fig. 6; 1895, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 1, p. 7.

*Lachnus quesneli* Scudder

Holotype 6133

Scudder, S.H., 1878, Geol. Surv., Canada, Rept. Prog. 1876-77, p. 461.

Oligocene-Miocene, Quesnel, British Columbia.

=*Scenaphis quesneli*, Scudder, S.H., 1890, Fossil Insects N.A., vol. 2, p. 250, pl. 2,  
figs. 4, 5; 1895, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 3, p. 8.

*Lithortalis picta* Scudder

Holotype 6162

Scudder, S.H.,

1877, Geol. Surv., Canada, Rept. Prog. 1875-76, p. 277.

1890, Fossil Insects N.A., vol. 2, p. 541, pl. 3, figs. 10, 16.

Oligocene-Miocene, Quesnel, British Columbia.

*Lonchaea senescens* Scudder

Holotype 6160

Scudder, S.H.,

1877, Geol. Surv., Canada, Rept. Prog. 1875-76, p. 277-

1890, Fossil Insects N.A., vol. 2, p. 539, pl. 3, fig. 18.

Oligocene-Miocene, Quesnel, British Columbia.

**Arthropoda**

- Microphorus defunctus* Handlirsch  
Holotype 7275, a  
Handlirsch, A., 1910, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 3, p. 124,  
figs. 32, 33.  
Oligocene-Miocene, Tulameen River opposite Vermilion Cliff, British Columbia.
- Nebria paleomelas* Scudder  
Holotype 6159  
Scudder, S.H.,  
1879, Geol. Surv., Canada, Rept. Prog. 1877-78, p. 179B.  
1890, Fossil Insects N.A., vol. 2, p. 532, pl. 2, fig. 20.  
1895, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 1, p. 54.  
Oligocene-Miocene, Nicola River below main coal seam, British Columbia.
- Palaeoptysma venosa* Scudder  
Holotype 6148  
Scudder, S.H., 1895, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 1, p. 21, pl. 1,  
fig. 8.  
Oligocene-Miocene, north fork Similkameen River, British Columbia.
- Palaphrodes* sp.  
Fig. spec. 6145 [missing]  
Scudder, S.H., 1895, Geol. Surv., Canada, Contr. Pal., vol. 2, pt. 1, p. 19.  
Oligocene-Miocene, north fork Similkameen River, British Columbia.
- Palecphora* sp.  
Fig. spec. 6141  
Scudder, S.H., 1895, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 1, p. 6, pl. 1,  
fig. 7.  
Oligocene-Miocene, north fork Similkameen River, British Columbia.
- Palloptera morticina* Scudder  
Holotype 6161  
Scudder, S.H.,  
1877, Geol. Surv., Canada, Rept. Prog. 1875-76, p. 278.  
1890, Fossil Insects N.A., vol. 2, p. 540, pl. 3, fig. 15.  
Oligocene-Miocene, Quesnel, British Columbia.
- Penthetria angustipennis* Handlirsch  
Holotype 7251, a  
Handlirsch, A., Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 3, p. 104, fig. 6.  
Oligocene-Miocene, Horsefly Mine, Quesnel district, British Columbia.  
=Plecia angustipennis, Rice, H.M.A., 1959, ibid., Bull. 55, p. 9, fig. 3, No. 11.
- Penthetria avunculus* Handlirsch  
Syntypes 7264, a  
Handlirsch, A., 1910, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 3, p. 114,  
figs. 20, 21.  
Oligocene-Miocene, Tulameen River opposite Vermilion Cliff, British Columbia.  
=Plecia curtula, Rice, H.M.A., 1959, ibid., Bull. 55, p. 10, pl. 1, fig. 11; fig. 4, No. 7,  
[7264].
- Penthetria avus* Handlirsch  
Holotype 7265  
Handlirsch, A., 1910, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 3, p. 115,  
fig. 22.  
Oligocene-Miocene, Tulameen River opposite Vermilion Cliff, British Columbia.  
=Plecia avus, Rice, H.M.A., 1959, ibid., Bull. 55, p. 14, pl. 3, fig. 6; fig. 5, No. 13.

*Penthetria brevipes* Handlirsch

Holotype 7253

Handlirsch, A., 1910, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 3, p. 106, fig. 8.  
Oligocene-Miocene, Tulameen River opposite Vermilion Cliff, British Columbia.

=*Plecia pulla*, Rice, H.M.A., 1959, ibid., Bull. 55, p. 10, pl. 1, fig. 7; fig. 3, No. 14.

*Penthetria canadensis* Handlirsch

Holotype 7269

Handlirsch, A., 1910, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 3, p. 118,  
fig. 26.

Oligocene-Miocene, Tulameen River opposite Vermilion Cliff, British Columbia.

=*Plecia canadensis*, Rice, H.M.A., 1959, ibid., Bull. 55, p. 13, pl. 2, fig. 10; fig. 5,  
No. 5.

*Penthetria curtula* Handlirsch

Holotype 7270

Handlirsch, A., 1910, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 3, p. 119,  
fig. 27.

Oligocene-Miocene, Horsefly Mine, Quesnel district, British Columbia.

=*Plecia curtula*, Rice, H.M.A., 1959, ibid., Bull. 55, p. 10, pl. 1, fig. 9; fig. 4, No. 1.

*Penthetria dilatata* Handlirsch

Holotype 7271, a

Handlirsch, A., 1910, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 3, p. 120,  
fig. 28.

Oligocene-Miocene, Horsefly Mine, Quesnel district, British Columbia.

=*Plecia dilatata*, Rice, H.M.A., 1959, ibid., Bull. 55, p. 15, pl. 3, fig. 9; fig. 8, No. 5.

*Penthetria elatior* Handlirsch

Holotype 7257, a

Handlirsch, A., 1910, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 3, p. 108,  
fig. 12.

Oligocene-Miocene, Tulameen River opposite Vermilion Cliff, British Columbia.

=*Plecia elatior*, Rice, H.M.A., 1959, ibid., Bull. 55, p. 17, pl. 4, fig. 5; fig. 8, Nos.  
10, 11.

*Penthetria falcatula* Handlirsch

Holotype 7259, a

Handlirsch, A., 1910, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 3, p. 110,  
fig. 14.

Oligocene-Miocene, Tulameen River opposite Vermilion Cliff, British Columbia.

=*Plecia transitoria*, Rice, H.M.A., 1959, ibid., Bull. 55, p. 14, pl. 3, fig. 1; fig. 6,  
No. 5.

*Penthetria fragmentum* Handlirsch

Holotype 7260

Handlirsch, A., 1910, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 3, p. 111,  
fig. 15.

Oligocene-Miocene, Horsefly Mine, Quesnel district, British Columbia.

=*Plecia transitoria*, Rice, H.M.A., 1959, ibid., Bull. 55, p. 14, pl. 4, fig. 3; fig. 6,  
No. 6.

*Penthetria lambei* Handlirsch

Holotype 7266

Handlirsch, A., 1910, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 3, p. 116,  
fig. 23.

Oligocene-Miocene, Tulameen River opposite Vermilion Cliff, British Columbia.

=*Plecia pictipennis*, Rice, H.M.A., 1959, ibid., Bull. 55, p. 15, pl. 3, fig. 8; fig. 7,  
No. 11.

**Arthropoda**

*Penthetria nana* Handlirsch

Holotype 7261, a

Handlirsch, A., 1910, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 3, p. 111,  
figs. 16, 17.

Oligocene-Miocene, Tulameen River opposite Vermilion Cliff, British Columbia.

=*Plecia nana*, Rice, H.M.A., 1959, ibid., Bull. 55, p. 10, pl. 1, fig. 8; fig. 3, Nos.  
15a, b.

*Penthetria ovalis* Handlirsch

Holotype 7267

Handlirsch, A., 1910, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 3, p. 117,  
fig. 24.

Oligocene-Miocene, Tulameen River opposite Vermilion Cliff, British Columbia.

=*Plecia pictipennis*, Rice, H.M.A., 1959, ibid., Bull. 55, p. 15, pl. 3, fig. 5; fig. 7,  
No. 10.

*Penthetria pictipennis* Handlirsch

Syntypes 7254-7256

Handlirsch, A., 1910, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 3, p. 106,  
figs. 9-11.

Oligocene-Miocene, Tulameen River opposite Vermilion Cliff and right bank 1½ miles above  
Princeton, and Quilchena, Nicola Lake, British Columbia.

=*Plecia pictipennis*, Rice, H.M.A., 1959, ibid., Bull. 55, p. 15, pl. 3, fig. 2; fig. 7,  
Nos. 1a, b, 2 [lectotype 7256; paratype 7254].

*Penthetria platyptera* Handlirsch

Holotype 7272, a

Handlirsch, A., 1910, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 3, p. 121,  
fig. 29.

Oligocene-Miocene, Horsefly Mine, Quesnel district, British Columbia.

=*Plecia platyptera*, Rice, H.M.A., 1959, ibid., Bull. 55, p. 16, pl. 4, fig. 1; fig. 8,  
No. 7.

*Penthetria pulchra* Handlirsch

Holotype 7263, a

Handlirsch, A., 1910, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 3, p. 113,  
fig. 19.

Oligocene-Miocene, Tulameen River, right bank 1 mile above Princeton, British Columbia.

=*Plecia pulchra*, Rice, H.M.A., 1959, ibid., Bull. 55, p. 16, pl. 4, fig. 2; fig. 8, No. 8.

*Penthetria pulla* Handlirsch

Holotype 7252, a

Handlirsch, A., 1910, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 3, p. 105,  
fig. 7.

Oligocene-Miocene, Tulameen River opposite Vermilion Cliff, British Columbia.

=*Plecia pulla*, Rice, H.M.A., 1959, ibid., Bull. 55, p. 10, pl. 1, fig. 6; fig. 3, No. 13.

*Penthetria reducta* Handlirsch

Holotype 7258

Handlirsch, A., 1910, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 3, p. 109,  
fig. 13.

Oligocene-Miocene, Horsefly Mine, Quesnel district, British Columbia.

=*Plecia reducta*, Rice, H.M.A., 1959, ibid., Bull. 55, p. 12, pl. 2, fig. 2; fig. 4, No. 8.

*Penthetria separanda* Handlirsch

Holotype 7262, a

Handlirsch, A., 1910, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 3, p. 112,  
fig. 18.

Oligocene-Miocene, Tulameen River opposite Vermilion Cliff, British Columbia.

=*Plecia pictipennis*, Rice, H.M.A., 1959, ibid., Bull. 55, p. 15, pl. 4, fig. 4; fig. 7,  
No. 3.*Penthetria similkameena* Scudder

Syntypes 6172, a, b

Scudder, S.H., 1879, Geol. Surv., Canada, Rept. Prog. 1877-78, p. 177B.

Oligocene-Miocene, north fork Similkameen River, British Columbia.

=*Plecia similkameena*, Scudder, S.H., 1890, Fossil Insects N.A., vol. 2, p. 583, pl. 3,  
figs. 20-22.Rice, H.M.A., 1959, Geol. Surv., Canada, Bull. 55, p. 12, pl. 2,  
fig. 5; fig. 5, No. 1 [lectotype 6172—attached wing].*Penthetria transitoria* Handlirsch

Holotype 7268

Handlirsch, A., 1910, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 3, p. 117,  
fig. 25.

Oligocene-Miocene, Tulameen River opposite Vermilion Cliff, British Columbia.

=*Plecia transitoria*, Rice, H.M.A., 1959, ibid., Bull. 55, p. 14, pl. 3, fig. 3; fig. 6,  
Nos. 4a, b.*Pimpla decessa* Scudder

Holotype 6177a

Scudder, S.H.,

1877, Geol. Surv., Canada, Rept. Prog. 1875-76, p. 269.

1890, Fossil Insects N.A., vol. 2, p. 612, pl. 3, fig. 27.

Oligocene-Miocene, Quesnel, British Columbia.

*Pimpla saxeana* Scudder

Holotype 6175

Scudder, S.H.,

1877, Geol. Surv., Canada, Rept. Prog. 1875-76, p. 268.

1890, Fossil Insects N.A., vol. 2, p. 610, pl. 3, fig. 23.

Oligocene-Miocene, Quesnel, British Columbia.

*Pimpla senecta* Scudder

Holotype 6176

Scudder, S.H.,

1877, Geol. Surv., Canada, Rept. Prog. 1875-76, p. 268.

1890, Fossil Insects N.A., vol. 2, p. 611, pl. 3, figs. 29-31.

Oligocene-Miocene, Quesnel, British Columbia.

*Planophlebia gigantea* Scudder

Holotype 6135

Scudder, S.H.,

1879, Geol. Surv., Canada, Rept. Prog. 1877-78, p. 186B.

1890, Fossil Insects N.A., vol. 2, p. 296, pl. 2, fig. 16.

1895, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 1, p. 11.

Oligocene-Miocene, north fork Similkameen River 3 miles upriver, British Columbia.

**Arthropoda**

*Plecia angustipennis* (Handlirsch)

Hypotype 14426

Rice, H.M.A., 1959, Geol. Surv., Canada, Bull. 55, p. 9, pl. 1, fig. 5; fig. 3, No. 12.  
Oligocene, Diamond Vale Coal Company, Quilchena district, British Columbia.

*Plecia avus* (Handlirsch)

Hypotypes 14458–14464

Rice, H.M.A., 1959, Geol. Surv., Canada, Bull. 55, p. 14, pl. 3, fig. 7; fig. 5, Nos. 14–  
17; fig. 6, Nos. 1–3.

Oligocene, shale cliffs on east side of Driftwood Creek from 300 to 350 yards upstream,  
Smithers district; Tranquille Creek, Kamloops district; on CPR west of Princeton on  
Station park and on south bank of Tulameen River 400 yards west of old entry portal,  
Princeton district; and 1.45 miles from schoolhouse east side Driftwood Creek, Smithers  
district, British Columbia.

*Plecia cairnesi* Rice

Holotype 14432; paratypes 14433, 14434

Rice, H.M.A., 1959, Geol. Surv., Canada, Bull. 55, p. 11, pl. 2, figs. 3, 7; fig. 3,  
Nos. 17–19.

Oligocene, 1.45 miles from schoolhouse east side Driftwood Creek, Smithers district and  
northwest of Falkland, Okanagan Lake district, British Columbia.

*Plecia canadensis* (Handlirsch)

Hypotypes 14452–14457, 6172 (detached wing)

Rice, H.M.A., 1959, Geol. Surv., Canada, Bull. 55, p. 13, pl. 2, fig. 8; fig. 5, Nos.  
6–12.

Oligocene, from 40 feet above Pleasant Valley No. 2 Mine Portal, Tulameen River, Prince-  
ton district; Diamond Vale Coal Company, Quilchena district; Tranquille Creek,  
Kamloops district; shale cliffs on east side of Driftwood Creek, Smithers district; and  
3 miles up north fork of Simikameen River, Princeton district, British Columbia.

*Plecia curtula* (Handlirsch)

Hypotypes 14427–14431

Rice, H.M.A., 1959, Geol. Surv., Canada, Bull. 55, p. 10, pl. 1, fig. 10; fig. 4, Nos.  
2–6.

Oligocene, from section along Tulameen River about a quarter mile north, and on east side  
of bank downstream from CPR bridge; 40 feet above Pleasant Valley No. 2 Mine Portal,  
Tulameen River; opposite Vermilion Cliff, Tulameen River, Princeton district; shale  
cliffs on east side of Driftwood Creek from 300 to 350 yards upstream, Smithers  
district; and above Tulameen River on southeast bank north of CPR bridge, Princeton  
district, British Columbia.

*Plecia dilatata* (Handlirsch)

Hypotype 14482

Rice, H.M.A., 1959, Geol. Surv., Canada, Bull. 55, p. 15, fig. 8, No. 6.  
Princeton Group, Oligocene, 0.7 mile north of bridge over Whipsaw Creek, Princeton  
district, British Columbia.

*Plecia intermedia?* (Scudder)

Hypotype 14425

Rice, H.M.A., 1959, Geol. Surv., Canada, Bull. 55, p. 9, fig. 3, No. 10.  
Oligocene, shale cliffs on east side Driftwood Creek from 300 to 350 yards upstream,  
Smithers district, British Columbia.

*Plecia kelownensis* Rice

Holotype 14423; paratype 14424

Rice, H.M.A., 1959, Geol. Surv., Canada, Bull. 55, p. 8, pl. 1, fig. 4; fig. 3, Nos. 8, 9.  
Oligocene, Mission Creek, Kelowna district and east bank from 300 to 350 yards upstream  
Driftwood Creek, Smithers district, British Columbia.

*Plecia minutula* Rice

Holotype 14422

Rice, H.M.A., 1959, Geol. Surv., Canada, Bull. 55, p. 8, pl. 1, figs. 3a, b; fig. 3, No. 7.  
Princeton Group, Oligocene, from 40 feet above Pleasant Valley No. 2 Mine Portal, Tulameen River, Princeton district, British Columbia.

*Plecia pictipennis* (Handlirsch)

Hypotypes 14472-14481

Rice, H.M.A., 1959, Geol. Surv., Canada, Bull. 55, p. 15, pl. 4, fig. 6; fig. 7, Nos. 4-9; fig. 8, Nos. 1-4a, b.

Oligocene, east bank from 300 to 350 yards upstream and east side 1.45 miles from schoolhouse, Driftwood Creek, Smithers district; from 40 feet above Pleasant Valley No. 2 Mine Portal, Tulameen River, Azolla locality on China (Asp) Creek, section about 25 feet above river level on south bank of Tulameen River 400 yards west of old entry portal, and Tulameen River opposite Vermilion Cliff, Princeton district, British Columbia.

*Plecia pulchra* (Handlirsch)

Hypotype 14483

Rice, H.M.A., 1959, Geol. Surv., Canada, Bull. 55, p. 16, fig. 8, No. 9.  
Princeton Group, Oligocene, North Fork, Similkameen River, British Columbia.

*Plecia reducta* (Handlirsch)

Hypotypes 14439-14448

Rice, H.M.A., 1959, Geol. Surv., Canada, Bull. 55, p. 12, pl. 2, fig. 6; fig. 4, Nos. 9-18.

Oligocene, from 40 feet above Pleasant Valley No. 2 Mine Portal, Tulameen River, Princeton district; shale cliffs on east side of Driftwood Creek 300 to 350 yards upstream, Smithers district; Azolla locality on China (Asp) Creek, Princeton district; east side 1.45 miles from schoolhouse, Driftwood Creek, Smithers district; Tulameen River opposite Vermilion Cliff and section about 25 feet above river level on south bank of Tulameen River 400 yards west of old entry portal, Princeton district, British Columbia.

*Plecia similkameena* Scudder

Hypotypes 14449-14451

Rice, H.M.A., 1959, Geol. Surv., Canada, Bull. 55, p. 12, pl. 2, fig. 9; fig. 5, Nos. 2-4.

Oligocene, Tranquille Creek, Kamloops district and 40 feet above Pleasant Valley No. 2 Mine Portal, Tulameen River, Princeton district, British Columbia.

*Plecia transitoria* (Handlirsch)

Hypotypes 14465-14471

Rice, H.M.A., 1959, Geol. Surv., Canada, Bull. 55, p. 14, pl. 3, fig. 4; fig. 6, Nos. 7-14.

Oligocene, east bank from 300 to 350 yards upstream, Driftwood Creek, Smithers district; 40 feet above Pleasant Valley No. 2 Mine Portal, Tulameen River; 3 miles up north fork Similkameen River; Tulameen River opposite Vermilion Cliff; road-cut in village of Princeton directly below Princeton General Hospital, Princeton district; Horsefly Mine, Quesnel district; and Tranquille Creek, Kamloops district, British Columbia.

**Arthropoda**

*Plecia tulameenensis* Rice

Holotype 14435; paratypes 14436, 14437; hypotype 14438

Rice, H.M.A., 1959, Geol. Surv., Canada, Bull. 55, p. 11, pl. 2, figs. 1, 4; fig. 3, Nos. 16, 20, 21; fig. 4, No. 19.

Oligocene, 40 feet above Pleasant Valley No. 2 Mine Portal, Tulameen River, Princeton district; Tranquille Creek, Kamloops district; and section about 25 feet above river level on south bank of Tulameen River 400 yards west of old entry portal, Princeton district, British Columbia.

*Promastox archaicus* Handlirsch

Holotype 7248

Handlirsch, A., 1910, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 3, p. 97, fig. 1.

Oligocene-Miocene, Horsefly Mine, Quesnel district, British Columbia.

*Prometopia depilis* Scudder

Holotype 6158

Scudder, S.H.,

1877, Geol. Surv., Canada, Rept. Prog. 1875-76, p. 278.

1890, Fossil Insects N.A., vol. 2, p. 500, pl. 2, fig. 29.

1895, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 1, p. 41.

Oligocene-Miocene, Quesnel, British Columbia.

*Ptysmaphora fletcheri* Scudder

Holotype 6147, a

Scudder, S.H., 1895, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 1, p. 21, pl. 1, fig. 6.

Oligocene-Miocene, north fork Similkameen River, British Columbia.

*Ricania antiquata* Scudder

Holotype 6136

Scudder, S.H., 1895, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 1, p. 12, pl. 1, fig. 3.

Oligocene-Miocene, north fork Similkameen River, British Columbia.

*Sbenaphis quesneli* see *Lachnus quesneli*

*Sciara deperdita* Scudder

Holotype 6167

Scudder, S.H.,

1878, Geol. Surv., Canada, Rept. Prog. 1876-77, p. 457.

1890, Fossil Insects N.A., vol. 2, p. 586, pl. 3, fig. 17.

Oligocene-Miocene, Quesnel, British Columbia.

*Sciomyza revelata* Scudder

Syntypes 6163, a

Scudder, S.H.,

1877, Geol. Surv., Canada, Rept. Prog. 1875-76, p. 275.

1878, ibid., Rept. Prog. 1876-77, p. 458.

1890, Fossil Insects N.A., vol. 2, p. 542, pl. 3, figs. 3-6.

Oligocene-Miocene, Quesnel, British Columbia.

*Stenecphora punctalata* Scudder

Holotype 6142, a

Scudder, S.H., 1895, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 1, p. 17, pl. 1, fig. 9.

Oligocene-Miocene, north fork Similkameen River, British Columbia.

*Stenolocris venosa* Scudder

Holotype 6144

Scudder, S.H., 1895, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 1, p. 19, pl. 1,  
fig. 11.

Oligocene-Miocene, north fork Similkameen River, British Columbia.

*Teleoschistus antiquus* see *Euschistus antiquus*

*Telmatrechus stali* see *Hygrotrechus stali*

*Tenebrio primigenius* Scudder

Holotype 6151

Scudder, S.H.,

1879, Geol. Surv., Canada, Rept. Prog. 1877-78, p. 183B.

1890, Fossil Insects N.A., vol. 2, p. 483, pl. 2, fig. 32.

1895, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 1, p. 31.

Oligocene-Miocene, Nine Mile Creek, Similkameen River, British Columbia.

*Tipula tulameena* Handlirsch

Holotype 7274

Handlirsch, A., 1910, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 3, p. 123,  
fig. 31.

Oligocene-Miocene, Tulameen River opposite Vermilion Cliff, British Columbia.

*Trichonta dawsoni* Scudder

Holotype 6168

Scudder, S.H.,

1877, Geol. Surv., Canada, Rept. Prog. 1875-76, p. 272.

1890, Fossil Insects N.A., vol. 2, p. 590, pl. 3, figs. 12, 13.

Oligocene-Miocene, Quesnel, British Columbia.

*Xylonomus lambei* Handlirsch

Holotype 7249

Handlirsch, A., 1910, Geol. Surv., Canada, Contr. Can. Pal., vol. 2, pt. 3, p. 99, fig. 2.

Oligocene-Miocene, Tranquille Creek, Kamloops district, British Columbia,

## ARTHROPODA-INCERTAE SEDIS

*Anomalocaris canadensis* Whiteaves

Holotype 3418

Whiteaves, J.F., 1906, Geol. Surv., Canada, Palaeoz. Fossils, vol. 3, pt. 4, p. 313,  
fig. 20.

Middle Cambrian, Mount Stephen, East Kootenay, British Columbia.

*Eopteria richardsoni* Billings

Holotype 756

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 306, figs. 298a, b.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 306, figs. 298a, b.

Beekmantown Formation, Lower Ordovician, near St. Antoine de Tilly, Quebec.

**Arthropoda**

*Ischyryna winchelli* Billings

Syntypes 2114, a

Billings, E., 1866, Geol. Surv., Canada, Cat. Sil. Fossils Anticosti, p. 16, figs. 4a-c.

Twenhofel, W.H., 1928, ibid., Mem. 154, p. 339, pl. 56, figs. 6, 7.

Upper Ordovician [English Head Formation], Macasty Bay, Anticosti Island, Quebec.

*Ischyryna plicata* Billings

Holotype 2291

Billings, E., 1866, Geol. Surv., Canada, Cat. Sil. Fossils Anticosti, p. 52.

Upper Ordovician [Ellis Bay Formation], Junction Cliff, Anticosti Island, Quebec.

=*Technophorus plicata*, Twenhofel, W.H., 1928, ibid., Mem. 154, p. 340, pl. 56, fig. 8.

*Ribeiria (Ribeirina) calcifera* Billings

Holotype 469

Billings, E.,

1865, "New Species of Lower Silurian Fossils", p. 340, figs. 326a-c.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 340, figs. 326a-c.

Beekmantown Formation, Lower Ordovician, Oxford tp., Grenville co., Ontario.

*Ribeiria (Ribeirina) longiuscula* Billings

Holotype 470

Billings E.,

1865, "New Species of Lower Silurian Fossils", p. 341, fig. 327.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 341, fig. 327.

Beekmantown Formation, Lower Ordovician, Oxford tp., Grenville co., Ontario.

*Technophorus plicata* see *Ischyryna plicata*

*Technophorus punctostriatus-quincuncialis* Foerste

Syntypes 8413, 8415

Foerste, A.F., 1914, Denison Univ. Bull., J. Sci. Lab., vol. 17, p. 316, pl. 2, figs. 13A, B.

Upper Ordovician, Chambly, Quebec.

=*Technophorus quincuncialis*, Foerste, A.F., 1924, Geol. Surv., Canada, Mem. 138, p. 249, pl. 30, figs. 13a, b.

## WORMS-SCOLECODONTS

*Arabellites sinuatus* Walliser

Holotype 15018

Walliser, O.H., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 22, pl. 5, figs. 1a, b.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

*Aritharia biclavata* var. *westonensis* Foerste

Holotype 5597

Foerste, A.F., 1924, Geol. Surv., Canada, Mem. 138, p. 78, pl. 5, fig. 3.

Upper Ordovician, south of bridge at Weston, Humber River, Ontario.

Burrow

Fig. spec. 8581

Foerste, A.F., 1924, Geol. Surv., Canada, Mem. 138, p. 78, pl. 6, figs. 4a, b.

Meaford Formation, Upper Ordovician, Clay Cliffs, Manitoulin Island, Ontario.

*Cornulites flexuosus* Hall

Hypotype 13211

Wilson, A.E., 1948, Geol. Surv., Canada, Bull. 11, p. 54, pl. 25, fig. 3.

Lowville beds, Ottawa Formation, Middle Ordovician, first quarry on Merivale Road south of Carling Avenue, Ottawa, Ontario.

*Cornulites parvus* Wilson

Holotype 6752

Wilson, A.E., 1926, Geol. Surv., Canada, Contr. Can. Pal., Bull. 44, p. 31, pl. 8, fig. 1.

Beaverfoot Formation, Upper or Lower Ordovician, east of Palliser Pass, British Columbia.

*Cornulites serpularius* Schlotheim

Hypotypes 6009, 6010

McLearn, F.H., 1924, Geol. Surv., Canada, Mem. 137, p. 39, pl. 2, figs. 12, 13.

Beechhill Formation, Lower Silurian, Beechhill Cove, Arisaig, Nova Scotia.

*Cornulites (Ortonis) sublaevis* Whiteaves

Syntypes 4215, a-d

Whiteaves, J.F., 1891, Geol. Surv., Canada, Contr. Can. Pal., vol. 1, pt. 3, p. 210, pl. 28, figs. 6 [4215], 7 [4215a].

Upper Devonian, 40 miles above mouth Hay River, District of Mackenzie.

*Ildraites beckeri* Walliser

Holotype 15019

Walliser, O.H., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 23, pl. 5, figs. 2a-c.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

*Ildraites* n. sp.

Holotype 15020

Walliser, O.H., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 23, pl. 5, figs. 3a-c.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

Worms—Scolecodonts

*Lechthaylus? curiosus* Wilson

Holotype 13210

Wilson, A.E., Geol. Surv., Canada, Bull. 11, p. 53, pl. 25, figs. 6, 7.

Cobourg beds, Ottawa Formation, Middle Ordovician, Mines Branch excavation at corner Rochester and Lydia Streets, Ottawa, Ontario.

*Leodicites alatus* Walliser

Holotype 15022

Walliser, O.H., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 24, pl. 5, figs. 5a, b.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

*Leodicites sublunatus* Walliser

Holotype 15021

Walliser, O.H., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 24, pl. 5, figs. 4a, b.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

*Leodicites sp.*

Fig. spec. 15023

Walliser, O.H., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 25, pl. 5, figs. 6a, b.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

*Lumbriconereites cf. L. webbi* Stauffer

Hypotypes 15034–15036

Walliser, O.H., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 25, pl. 7, figs. 1–3.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

*Lumbriconereites n. sp.*

Holotype 15037

Walliser, O.H., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 25, pl. 7, figs. 4a-c.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

*Lumbriconereites sp.*

Fig. spec. 15038

Walliser, O.H., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 26, pl. 7, figs. 5a-c.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

*Oenonites sp.*

Hypotype 13212

Wilson, A.E., 1948, Geol. Surv., Canada, Bull. 11, p. 54, pl. 24, figs. 7, 8.

Cobourg beds, Ottawa Formation, Middle Ordovician, Mines Branch excavation at corner of Rochester and Lydia Streets, Ottawa, Ontario.

*Polychaetaspis? kozlowskii* Walliser

Holotype 15024; paratypes 15025, 15026

Walliser, O.H., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 26, pl. 6, figs. 1–3.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

*Polychaetaspis cf. P. wyszogrodensis* Kozlowski

Hypotypes 15027–15032

Walliser, O.H., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 27, pl. 6,  
figs. 4–10.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

## Scolecodont sp. indet.

Fig. specs. 15039, 15040

Walliser, O.H., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 28, pl. 7,  
figs. 6a, b, 7a, b.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

*Serpula annulata* (Dawson)

Hypotype 7744

Bell, W.A., 1929, Geol. Surv., Canada, Mem. 155, p. 97, pl. 5, figs. 1, a.

Mississippian, Nova Scotia.

*Serpula hertti* Bell

Holotype 7748

Bell, W.A., 1929, Geol. Surv., Canada, Mem. 155, p. 98, pl. 5, fig. 2.

Mississippian, Miller's quarry, Windsor, Nova Scotia.

*Serpula semicoalita* Whiteaves

Holotype 5058

Whiteaves, J.F., 1889, Geol. Surv., Canada, Contr. Can. Pal., vol. 1, pt. 2, p. 185, pl.  
26, fig. 1.

Cretaceous, Vermilion River, tp. 25, rge. 20, W. Prin. mer., Manitoba.

*Serpulites dissolutus* Billings

Syntypes 1758, 1759

Billings, E.,

1862, "New Species of Lower Silurian Fossils", p. 56.

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 56.

Middle Ordovician, 3 miles above Lachine and Lac Ouareau River, Quebec.

*Serpulites longissimus* Sowerby

Hypotype 6212

McLean, F.H., 1924, Geol. Surv., Canada, Mem. 137, p. 36, pl. 1, fig. 12.

Stonehouse? Formation, Upper Silurian, coast section, Arisaig, Nova Scotia.

*Serpulites splendens* Billings

Syntypes 1091, a-e

Billings, E., 1859, Can. Naturalist Geol., vol. 4, p. 470.

'Chazy', Middle Ordovician, Island of Montreal, Quebec.

*Spirorbis avonensis* Bell

Holotype 14414; paratypes 14410–14413

Bell, W.A., 1960, Geol. Surv., Canada, Mem. 314, p. 41, pl. 19, figs. 10–12; pl. 20,  
fig. 1.Horton Bluff Formation, Mississippian, Halfway River 5,500 feet downstream from bridge  
at Bishopville and Horton Bluffs north of Blue Beach fault, Nova Scotia.*Spirorbis caperatus* M'Coy

Hypotypes 7641, a

Bell, W.A., 1929, Geol. Surv., Canada, Mem. 155, p. 98, pl. 6, figs. 1, 2.

Mississippian, Minudie, Cumberland co., Nova Scotia.

Worms—Scolecodonts

*Spirorbis omphalodes* (Goldfuss)

Hypotypes 4214, a-e

Whiteaves, J.F., 1891, Geol. Surv., Canada, Contr. Can. Pal., vol. 1, pt. 3, p. 209,  
pl. 28, figs. 3-5.

Upper Devonian, 40 miles above mouth Hay River, District of Mackenzie.

Worm Burrows?

Fig. spec. 4505

Williams, M.Y., 1919, Geol. Surv., Canada, Mem. 111, pl. 2, fig. 2.

Whirlpool Formation, Cataract Group, Lower Silurian, Glen William, Ontario.

Worm burrows?

Fig. specs. 6522, a

Wilson, A.E., 1932, Trans. Roy. Soc. Can. ser. 3, vol. 26, sec. 4, p. 378, pl. 1, figs.  
3, 4.

Upper Chazy [Aylmer Formation], Middle Ordovician, shaft Barnhart Island near Cornwall,  
Ontario.

## CONODONTS

### *Angulodus* n. sp.

Holotype 15069

Walliser, O.H., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 29, pl. 8,  
fig. 19.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

### *Hindeodella* cf. *H. equidensata* Rhodes

Hypotype 15065

Walliser, O.H., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 30, pl. 8,  
fig. 15.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

### *Hindeodella* n. sp.

Holotype 15066

Walliser, O.H., in Boucot A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 30, pl. 8,  
fig. 16.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

### *Ligonodina* sp.

Fig. spec. 15046

Walliser, O.H., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 30, pl. 7,  
fig. 13.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

### *Lonchodina greilingi* Walliser

Hypotypes 15067, 15068

Walliser, O.H., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 31, pl. 8,  
figs. 17, 18.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

### *Ottawella sinclairi* Wilson

Holotype 13213

Wilson, A.E., 1948, Geol. Surv., Canada, Bull. 11, p. 55, pl. 24, fig. 6.

Cobourg beds, Ottawa Formation, Middle Ordovician, Mines Branch excavation at corner of  
Rochester and Lydia Streets, Ottawa, Ontario.

### *Ottawina trentonensis* Wilson

Holotype 13214

Wilson, A.E., 1948, Geol. Surv., Canada, Bull. 11, p. 56, pl. 25, fig. 5.

Cobourg beds, Ottawa Formation, Middle Ordovician, Mines Branch excavation at corner of  
Rochester and Lydia Streets, Ottawa, Ontario.

### *Ozarkodina denckmanni* Ziegler

Hypotypes 15063, 15064

Walliser, O.H., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 31, pl. 8,  
figs. 13, 14.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

## **Conodonts**

### *Ozarkodina* sp.

Fig. specs. 15172, a

Copeland, M.J., 1960, Trans. Roy. Soc. Can., ser. 3, vol. 54, sec. 4, pl. 1, figs. 23, 24.  
Exshaw Formation, Mississippian, Crowsnest Pass, sec. 8, tp. 8, rge. 5, W. 5th mer.,  
Alberta.

### *Paltodus* cf. *P. acostatus* Branson and Branson

Hypotype 15043

Walliser, O.H., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 31, pl. 7,  
fig. 10.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

### *Paltodus* cf. *P. recurvatus* Rhodes

Hypotype 15041

Walliser, O.H., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 31, pl. 7,  
fig. 8.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

### *Paltodus* cf. *P. unicostatus* Branson and Mehl

Hypotype 15042

Walliser, O.H., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 32, pl. 7,  
fig. 9.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

### *Plectospathodus* *extensus* Rhodes

Hypotype 15070

Walliser, O.H., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 32, pl. 8,  
fig. 20.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

### *Polygnathus* spp.

Fig. specs. 15171, a

Copeland, M.J., 1960, Trans. Roy. Soc. Can., ser. 3, vol. 54, sec. 4, pl. 1, figs. 19, 20.  
Exshaw Formation, Mississippian, Crowsnest Pass, sec. 8, tp. 8, rge. 5, W. 5th mer.,  
Alberta.

### *Prioniodina bicurvata pronoides* Walliser

Holotype 15059; paratypes 15058, 15060

Walliser, O.H., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 33, pl. 8,  
figs. 8-10.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

### *Prioniodina* cf. *P. bicurvata pronoides* Walliser

Hypotype 15061

Walliser, O.H., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 33, pl. 8,  
fig. 11.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

### *Prioniodina* cf. *P. excavata* (Branson and Mehl)

Hypotype 15062

Walliser, O.H., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 32, pl. 8,  
fig. 12.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

*Siphonodella duplicita* (Branson and Mehl)

Hypotypes 15170, a

Copeland, M.J., 1960, Trans. Roy. Soc. Can., ser. 3, vol. 54, sec. 4, pl. 1, figs. 21, 22.

Exshaw Formation, Upper Silurian, Crowsnest Pass, sec. 8, tp. 8, rge. 5, W. 5th mer., Alberta.

*Spathognathodus canadensis* Walliser

Holotype 15051; paratypes 15052, 15053

Walliser, O.H., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 34, pl. 8, figs. 1-3.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

*Spathognathodus cf. S. canadensis* Walliser

Hypotypes 15054, 15055

Walliser, O.H., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 34, pl. 8, figs. 4a, b, 5a-c.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

*Spathognathodus* sp.

Fig. spec. 15056

Walliser, O.H., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 35, pl. 8, figs. 6a, b.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

*Spathognathodus* n. sp.

Holotype 15057

Walliser, O.H., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 35, pl. 8, fig. 7.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

*Trichonodella inconstans* Walliser

Hypotypes 15044, 15045

Walliser, O.H., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 35, pl. 7, figs. 11, 12.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

## Species indet. a-d

Fig. specs. 15047-15050

Walliser, O.H., in Boucot, A.J. et al., 1960, Geol. Surv., Canada, Bull. 65, p. 35, pl. 7, figs. 14-17.

Sutherland River Formation, Upper Silurian, Douro Range, West Devon Island, Arctic.

## INCERTAE SEDIS

*Cruziana similis* Billings

Syntype 346

Billings, E.,

1872, Can. Naturalist Geol., n. ser., vol. 6, p. 469, fig. 6.

1874, Geol. Surv., Canada, Palaeoz. Fossils, vol. 2, pt. 1, p. 68, fig. 37.

'Upper Cambrian' [Lower Ordovician], Great Bell Island, Newfoundland.

*Ctenichnites bisulcatus* Matthew

Holotype 17693

Matthew, G.F., 1903, Geol. Surv., Canada, Rept. Cambrian of Cape Breton, p. 239.

Upper Cambrian, falls of MacMullin Brook, Indian Brook, Escasonie, Nova Scotia.

*Cyclocrinites halli* see *Pasceolus halli*

*Cyclocrinites intermedius* (Billings) [Algae]

Hypotype 8131

Twen hofel, W.H., 1928, Geol. Surv., Canada, Mem. 154, p. 102, pl. 1, fig. 10.

Gun River Formation, Middle Silurian, Cape MacGilvray, Anticosti Island, Quebec.

*Eophyton jukesii* Billings

Holotype 351

Billings, E.,

1872, Can. Naturalist Geol., n. ser., vol. 6, p. 466.

1874, Geol. Surv., Canada, Palaeoz. Fossils, vol. 2, pt. 1, p. 66.

'Upper Cambrian' [Lower Ordovician], Great Bell Island, Newfoundland.

*Eophyton linnaeanum?* Torell

Hypotype 343

Billings, E.,

1872, Can. Naturalist Geol., n. ser., vol. 6, p. 466, fig. 1.

1874, Geol. Surv., Canada, Palaeoz. Fossils, vol. 2, pt. 1, p. 65, fig. 32.

'Upper Cambrian' [Lower Ordovician], Great Bell Island, Newfoundland.

*Ischadites canadensis* Billings

Holotype 2590

Logan, W.E., 1863, "Geology of Canada", Geol. Surv., Canada, Rept. Prog., p. 309,  
fig. 313,

Lower Silurian [Cabot Head Formation], Limehouse, Ontario.

=*Receptaculites canadensis*, Billings, E.,

1865, ibid., Palaeoz. Fossils, vol. 1, p. 385, fig. 362.

1865, Can. Naturalist Geol., n. ser., vol. 2, p. 191, fig. 10.

Williams, M.Y., 1919, Geol. Surv., Canada, Mem. 111,  
pl. 5, fig. 1.

*Ischadites? insularis* see *Receptaculites insularis*

*Ischadites jonesii* see *Receptaculites jonesii*

*Ischadites ottawaensis* Wilson

Holotype 9321; paratype 9323, a, b [specimen and thin section]

Wilson, A.E., 1948, Geol. Surv., Canada, Bull. 11, p. 26, pl. 13, figs. 1-4.

Cobourg beds, Ottawa formation, Middle Ordovician, Booth Street and south end of LeBreton Street, Ottawa, Ontario.

*Oldhamia keithi* Ruedemann

Holotype 13603

Ruedemann, R., 1942, New York State Mus., Bull. 327, pl. 5, figs. 1, 2.

Lower Ordovician, Mechins Point, Gaspé, Quebec.

*Pasceolus globosus* Billings [Algae]

Syntypes 1376, a-e

Billings, E.,

1857, Geol. Surv., Canada, Rept. Prog. 1853-56, p. 343.

1865, ibid., Palaeoz. Fossils, vol. 1, p. 391.

1865, Can. Naturalist Geol., n. ser., vol. 2, p. 195, fig. 14.

Wilson, A.E., 1948, ibid., Bull. 11, p. 28, pl. 14, figs. 4 [1376b], 5 [1376d].

Middle Ordovician [Cobourg? beds], Ottawa, Ontario.

*Pasceolus globosus* Billings [Algae]

Hypotype 9333

Wilson, A.E., 1948, Geol. Surv., Canada, Bull. 11, p. 28, pl. 14, fig. 6.

Cobourg beds, Ottawa Formation, Middle Ordovician, south end LeBreton Street, Ottawa, Ontario.

*Pasceolus gregarius* Billings [Algae]

Syntypes 2230, a, c, d

Billings, E., 1866, Geol. Surv., Canada, Cat. Sil. Fossils Anticosti, p. 72.

Lower Silurian [Beccsie Formation], Reef Point, Anticosti Island, Quebec.

=*Cyclocrinites gregarius*, Twenhofel, W.H., 1928, ibid., Mem. 154, p. 102.

*Pasceolus halli* Billings [Algae]

Syntype 2227

Billings, E.,

1857, Geol. Surv., Canada, Rept. Prog. 1853-56, p. 342.

1865, ibid., Palaeoz. Fossils, vol. 1, p. 390, fig. 366.

1865, Can. Naturalist Geol., n. ser., vol. 2, p. 195, fig. 13.

Logan, W.E., 1863, "Geology of Canada" Geol. Surv., Canada, Rept. Prog., p. 309, fig. 312. Wilson, A.E., ibid., Bull. 11, pl. 13, fig. 6; pl. 14, fig. 7 [holotype 2227].

Upper Ordovician [Ellis Bay Formation], White Cliff, Ellis Bay, Anticosti Island, Quebec.

=*Cyclocrinites halli*, Twenhofel, 1928, ibid., Mem. 154, p. 101 [holotype and paratypes 2227].

*Pasceolus intermedius* Billings [Algae]

Syntypes 2338, a-d, f, g

Billings, E., 1866, Geol. Surv., Canada, Cat. Sil. Fossils Anticosti, p. 72.

Middle Silurian [Gun River Formation], 3 miles west of Jupiter River, Anticosti Island, Quebec.

*Receptaculites cf. arcticus* Etheridge

Hypotypes 6497, 6498

Wilson, A.E., 1931, Trans. Roy. Soc. Can., ser. 3, vol. 25, sec. 4, p. 290, pl. 1, figs. 1, 2.

Upper Ordovician, drift at Cape Dorset and at Coral Bay, Lake Nettilling, Baffin Island, Arctic.

*Incertae sedis*

*Receptaculites calciferus* Billings

Holotype 461, a [parts of one specimen]

Billings, E.,

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 359, fig. 346; p. 384, fig. 358.

1865, Can. Naturalist Geol., n. ser., vol. 2, p. 190, fig. 6.

Lower Ordovician [Romaine Formation], Mingan Islands, Quebec.

*Receptaculites canadensis* see *Ischadites canadensis*

*Receptaculites? elegantulus* Billings

Holotype 462

Billings, E., 1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 360, fig. 347.

Lower Ordovician [Romaine Formation], Mingan Islands, Quebec.

*Receptaculites? insularis* Billings

Holotype (?) 2228

Billings, E., 1866, Geol. Surv., Canada, Cat. Sil. Fossils Anticosti, p. 29.

Upper Ordovician [Ellis Bay Formation], Ellis Bay, Anticosti Island, Quebec.

=*Ischadites? insularis*, Twenhofel, W.H., 1928, ibid., Mem. 154, p. 102, pl. 1, fig. 9.

*Receptaculites iowensis* (Owen)

Hypotype 1367

Billings, E.,

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 385, fig. 364.

1865, Can. Naturalist Geol., n. ser., vol. 2, p. 191, fig. 12 [fig. 11 = *R. jonesii*].

Middle Ordovician, Ottawa, Ontario.

=*Ischadites ottawaensis*, Wilson, A.E., 1948, Geol. Surv., Canada, Bull. 11, p. 26.

*Receptaculites jonesi* Billings

Syntypes 3257, a [1 specimen], b, c

Billings, E.,

1865, Geol. Surv., Canada, Palaeoz. Fossils, vol. 1, p. 389, figs. 363, 365a, b [3257, a].

1865, Can. Naturalist Geol., n. ser., vol. 2, p. 191, fig. 11 [fig. 12 = *R. iowensis*].

Devonian [Grande Greve Formation], Grande Greve, Gaspé, Quebec.

=*Ischadites jonesi*, Wilson, A.E., 1948, Geol. Surv., Canada, Bull. 11, pl. 13, fig. 5 [holotype 3257a].

*Receptaculites occidentalis* Salter

Syntypes 1125, a, d, f, h, j, k, m, n, p

Salter, J.W., 1859, Geol. Surv., Canada, Can. Org. Rem., dec. 1, p. 45, pl. 10, figs. 1 [1125], 2 [1125a].

Wilson, A.E.,

1931, Trans. Roy. Soc. Can., ser. 3, vol. 25, sec. 4, p. 288, pl. 1, fig. 4 [1125m].

1948, Geol. Surv., Canada, Bull. 11, p. 28, pl. 14, figs. 1-3.

Middle Ordovician [Leary-Rockland beds], Paquette Rapids, Allumette Island, Quebec.

*Receptaculites oweni* Hall

Hypotype 9089

Hume, G.S., 1925, Geol. Surv., Canada, Mem. 145, pl. 4, fig. 1.

Liskeard Formation, Ordovician, Lake Timiskaming area, Ontario.

*Receptaculites* sp.

Fig. spec. 9078

Hume, G.S., 1926, Geol. Surv., Canada, Contr. Can. Pal., Bull. 44, p. 62, pl. 12.  
Ordovician, North Arm Great Slave Lake, District of Mackenzie.

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