Primary insect type specimens in the University of British Columbia – Beaty Biodiversity Museum - Spencer Entomological Collection

R. T. CURTISS[1] AND K. M. NEEDHAM[2]

ABSTRACT

This paper, the first in a series on the insects of the Spencer Entomological Collection at the Beaty Biodiversity Museum – University of British Columbia, includes a comprehensive listing of primary types in this collection. A brief history of the University of British Columbia entomology holdings is outlined. Included in this catalogue are 87 primary types, listed with original label data and references to original descriptions. In addition, high-resolution images of the specimens are included as supplementary material.

Keywords: Insect, primary type specimens, holotype, allotype

INTRODUCTION

The University of British Columbia (UBC) entomology holdings in the Beaty Biodiversity Museum – Spencer Entomological Collection (BBM-SEC) are the largest in British Columbia and the among largest in western Canada. The BBM-SEC currently holds approximately 650 000 pinned, alcohol preserved, and slide-mounted specimens, mainly from British Columbia and Yukon, Canada, and Alaska, United States of America. The collection includes large collections of Coleoptera, Hemiptera, Odonata, Siphonaptera, and Lepidoptera, as well as representatives of all other insect orders (Needham 2019). Many arachnid species of British Columbia and Salticidae from around the world are also in the collection.

George J. Spencer (1888–1966) initiated the collection in 1924, but it was not officially founded until 1953. The collection was housed in the UBC Zoology Department, Biological Sciences Building, from 1924 to 2009, when it was moved to the Beaty Biodiversity Museum along with all other nonanthropological UBC natural history collections. By the time Spencer left UBC in 1958, the collection had grown to approximately 300 000 specimens. Geoffrey G.E. Scudder (1934–2023) assumed direction of the entomological collection in 1958 and served as director for over 40 years. Through Scudder's efforts, the collection has strong holdings of Hempitera. Additional collections have been incorporated into the museum including: Buckell, Cannings, Stuart, Whitehouse (Odonata); Buckell, Spencer (Orthoptera); Downes, Scudder

[1]Washington State University Tree Fruit Research and Extension Center 1100 N. Western Ave. Wenatchee, WA 98801; rcurtiss@wsu.edu
[2]Beaty Biodiversity Museum University of British Columbia Vancouver Campus 2212 Main Mall Vancouver, BC V6T 1Z4

(Hemiptera); Spencer (Psocodea, Siphonaptera); Blackmore, de Waard, Kimmich, Llewellyn-Jones (Lepidoptera); Guppy, Harrison, Stace-Smith (Coleoptera); Foxlee (Diptera, Hymenoptera) (Hatch 1949; Riegert 1991). Much of the primary type material housed at the BBM-SEC was formerly in these personal collections. The current director, Wayne P. Maddison, is actively collecting Salticidae: Araneae from around the world and adding to the collection yearly.

Following the lead of de Ruette (1970) and Brown *et al.* (2004), our purpose in this catalogue is to list the BBM-SEC primary type specimens as part of a larger effort to make available information regarding the holdings of the BBM-SEC to taxonomic workers worldwide. In the following list of type holdings, we present comprehensive data for all known primary type specimens belonging to the BBM-SEC.

MATERIALS AND METHODS

Primary insect type specimens were always separated from the main BBM-SEC collection, but we extensively searched for those that may have been inadvertently placed in the main collection. Once found, all primary types were added to a Microsoft Excel database and photographed using a Leica microscope and digital camera with the LAS Montage Module (Leica Microsystems Inc., Deerfield, Illinois, United States of America) to allow for photographic study and to minimise damage due to excessive handling. Other, nonprimary type specimens were left distributed throughout the main collection and were not documented fully. Photographs of each specimen, with a single dorsal view photograph, unless otherwise noted, are arranged in the current paper's figures by order according to their BBM-SEC "HOL-" accession number.

Specimens in this catalogue are arranged alphabetically under orders by family, then genus, then species. The original binomen as published is given, followed by the status and sex of the specimen when noted or when published in the original reference; the figure and image numbers are also given. Next, the reference to the original description is given, followed by each label (from top to bottom on the pin) associated with the specimen, transcribed exactly as it appears and enclosed in quotation marks; there are often several labels on each specimen. The Spencer Collection has two accession systems for primary types: the first is a "HOL-" number; the second is a number prefix that is unique to each order or family. Both numbers are listed as the final labels associated with each specimen. Next, present systematic position, if other than the original description, is listed in square brackets. Any author comments and supplementary information not noted on specimen labels are given in square brackets. All M.H. Hatch specimens have a handwritten red type or allotype label and were published in the University of Washington Publications in Biology (UWPB); to save space, unless otherwise noted on M.H. Hatch specimens, label colour is omitted from the full data and the publication is abbreviated to UWPB.

RESULTS

We located, in total, 87 insect primary type specimens in the BBM-SEC, as well as many paratypes and other nonprimary type specimens. The BBM-SEC has types from Coleoptera (61 specimens), Trichoptera (three specimens),

Diptera (three specimens), Hymenoptera (two specimens), Hemiptera (nine specimens), Psocodea (eight specimens), and Lepidoptera (one specimen) (Figures 1, 2, and 3). Larger photographs of these specimens can be found in Supplementary material, File S1. Additionally, the BBM-SEC maintains a collection website, with photographs of these and other specimens from multiple angles (https://www.zoology.ubc.ca/entomology/).

Primary types of the Spencer Entomological Collection:

COLEOPTERA

Anobiidae

Oligomerus crestonensis. Hatch 1961: UWPB, 16: 316. [Fig. 2M] Type ♂. Labels: "Creston, B.C. 4.viii.1950 G. Stace Smith"; "Ex. *Corylus californica* 2000 ft."; "?n. sp. near 12686 HB Leech 19.xi.1950"; "*Oligomerus obtusus* LeC. M. Hatch-1957 check type"; "*Oligomerus crestonensis* Hatch"; "Type ♂ *Oligomerus crestonensis* 1958-M. Hatch"; "Ex. G. Stace Smith collection purchased 1960"; "HOL-0045"; "COL-16652".

Byrrhidae

Byrrhus caribooensis. Hatch 1961: UWPB, 16: 298. [Fig. 2F] Type ♂. Labels: "G. Stace Smith 28.v.1932"; "Mile 150 Cariboo Rd. B.C."; "Det. 9884 K.W. Cooper 1933"; "TYPE ♂ *Byrrhus caribooensis* 1957- M.H. Hatch"; "*Byrrhus caribooensis* Hatch"; "*Byrrhus cyclophorus* Kirby P.J. Johnson 1987"; "HOL-0038"; "COL-16645" [Current status: junior synonym of *Byrrhus cyclophorus* Kirby (Johnson 1993)].

Cantharidae

Malthodes stacesmithi. Fender 1954: Pan-Pacific Entomologist, **30**: 131–132. [Fig. 2D] Holotype. Labels: "Barkerville, B.C. 12.viii.1950 G. Stace Smith"; "*Malthodes stacesmithi* Fender HOLOTYPE"; "Ex. G. Stace Smith collection purchased 1960"; "*Malthodes stacesmithi* Fender"; "HOL-0036"; "COL-16643".

Carabidae

Bembidion gordoni. Lindroth 1963: Opuscula Entomologica, Supplementum, XXIV: 284–286. [Fig. 1A] Holotype ♂. Labels: "Kitchener 15.viii.1955 B.C. G. Stace Smith"; "Goat R. shore"; "♂"; "see letter"; "Det. 499? C.A. Frost 6.x.1956"; "*gordoni* C.H. Lindroth 1958"; "Holotypus *gordoni* Lth."; "HOL-0001"; "COL-16608".

Chrysomelidae

Chalcoides sculpturata. Lazorko 1974: Entomologische Blätter für Biologie und Systematik der Käfer, 70: 149. [Fig. 2P] Holotype ♂. Labels: "Creston, B.C. 29.v.1949 G. Stace Smith"; "Host *Salix exigua*"; "Ex. G. Stace Smith collection purchased 1960"; "*Chalcoides fulvicornis sculpturata* Laz. det. W. Lazorko 1973"; "HOLOTYPUS *Chalcoides fulvicornis sculpturata* Laz. 1973"; "*Chalcoides fulvicornis sculpturata* Laz. W.V."; "HOL-0048"; "COL-16655" [current combination *Crepidodera sculpturata* **(**Lazorko)].

C. sculpturata. Lazorko 1974. [Fig. 2Q] Allotype ♀. Labels: "Creston, B.C. 13.vi.1952 G. Stace Smith"; "Ex. *Salix exigua*"; "♀"; "Ex. G. Stace Smith

collection purchased 1960"; "Host *Salix exigua*"; "ALLOTYPUS *Chalcoides fulvicornis sculpturata* Laz. 1973"; "HOL-0049"; "COL-16656" [current combination *Crepidodera sculpturata* **(**Lazorko)].

Ciidae

Plesiocis spenceri. Hatch 1961: UWPB, 16: 233. [Fig. 2N] Type ♂. Labels: "Vancouver, B.C. Feb 1925 G.J. Spencer"; "ex. *Polyporous volvata* – museum"; "TYPE ♂ *Plesiocis spenceri* 1957-M. Hatch"; "Ex. G. Stace Smith collection purchased 1960"; "HOL-0046"; "COL-16653" [current combination *Ennearthron spenceri* (Hatch)].

P. spenceri Hatch 1961 [Fig. 2O] Allotype ♀. Labels: "Vancouver, B.C. Feb 1925 G.J. Spencer"; "ex. *Polyporous volvata* – museum"; "ALLOTYPE ♀ *Plesiocis spenceri* 1957-M. Hatch"; "Ex. G. Stace Smith collection purchased 1960"; "HOL-0047"; "COL-16654" [current combination *Ennearthron spenceri* (Hatch)].

Cryptophagidae

Atomaria melanica. Hatch 1961: UWPB, 16: 220. [Fig. 2H] Type. Labels: "Barkerville, B.C. 23.ix.1952 G. Stace Smith"; "Evening flight 4300 Ft."; "TYPE *Atomaria melanica* 1957-M. Hatch"; "*Atomaria melanica* Hatch"; "*Atomaria* (*s. str.*) *atrata* Reitter det. C. Johnson 2006 (=*melanica* Hatch)"; "HOL-0040"; "COL-16647".

Dermestidae

Pseudohadrotoma kaliki. Beal 1967: Miscellaneous Publications of Entomologica Americana, 5/6: 294–296. [Fig. 2E] Holotype ♂. Labels: "Creston, B.C. 30.vi.1948 G. Stace Smith"; "on flowers, *Philadelphus lewisii*"; "HOLOTYPE ♂ *Pseudohadrotoma kaliki* R.S. Beal"; "*Pseudohadrotoma kaliki* Beal"; "HOL-0037"; "COL-16644".

Histeridae

Gnathoncus rossi. Hatch 1961: UWPB, 16: 266. [Fig. 2C] Type. Labels: "Creston, B.C. 17.vi.1950 G. Stace Smith"; "Ex. rotten wood with ants"; "Ex. G. Stace Smith collection purchased 1960"; "TYPE *Gnathoncus rossi* 1959-M. Hatch"; "*Gnathoncus rossi* Hatch"; "UBC"; "HOL-0035"; "COL-16642".

Leiodidae

Agathidium obtusum. Hatch 1957: UWPB, 16: 36. [Fig. 2AF] Type ♂. Labels: "Creston, B.C. 29.iii.1949 G. Stace Smith"; "under bark"; "Del 1954 A. virile GT. H Houk"; "*Agathidium* (*s. str.*) *virile* Fall ♂ M. Hatch 1954"; "Ex. G. Stace Smith collection purchased 1960"; "*Agathidium obtusum* Hatch"; "Type ♂ (*s. str.*) *obtusum* 1955-M.H. Hatch"; "HOL-0077"; "COL-21222" [synonym of *Agathidium conjunctum* Brown].

Catops mathersi. Hatch 1957: UWPB, 16: 45. [Fig. 1B] Type ♂. Labels: "Stanley B.C."; "vii.20.1929 W.G. Mathers"; "Type ♂ *Catops mathersi* 1954-M. Hatch"; "HOL-0002"; "COL-16609".

C. mathersi. Hatch 1957. [Fig. 3C] Allotype ♀. Labels: "Stanley B.C."; "vii.20.1929 W.G. Mathers"; "Allotype ♀ *Catops mathersi* 1954-M. Hatch"; "HOL-0080"; "COL-20225".

Colon complicatum. Hatch 1957: UWPB 16: 37. [Fig. 1D] Type ♂. With genitalia in vial on pin, labels: "Creston, B.C. 6.v.1949 G. Stace Smith"; "evening flight"; "*Colon complicatum* Hatch"; "TYPE *Colon (Myloechus) complicatum* 1954-M. Hatch"; "*Colon (Myloechus) serratum* Hatch DET. S. Peck 1995"; "HOL-0004"; "COL-16611".

Colon femorale [*Colon femoralis* on label]. Hatch 1957: UWPB, 16: 41. [Fig. 1E] Type ♂. With genitalia in vial on pin, labels: "Creston, B.C. 3.vi.1949 G. Stace Smith"; "evening flight"; "*Colon femoralis* Hatch"; "Ex. G. Stace Smith collection purchased 1960"; "TYPE ♂ *Colon* (*s. str.*) *femoralis* 1954-M. Hatch"; "syn of *Colon lanceolatum* Hatch 57 DET. S. Peck 1992"; "HOL-0005"; "COL-16612" [synonym of *Colon (Colon) lanceolatum* Hatch (Peck and Stephan 1996)]. [Article 31.2 of the ICZN code requires that genus and species name gender agree: *i.e.*, this species should be *Colon femorale*.]

Colon tibiale [*Colon tibialis* on label]. Hatch 1957: UWPB, 16: 40. [Fig. 1F] Type ♂. With genitalia in vial on pin, labels: "Creston, B.C. 24.v.1948 G. Stace Smith"; "evening flight"; "*Colon tibialis* Hatch"; "TYPE ♂ *Colon* (*s. str.*) *tibialis* 1954-M. Hatch"; "*Colon tibialis* Hatch det. K. Stephan 1990"; "HOL-0006"; "COL-16613". [Article 31.2 of the ICZN code requires that genus and species name gender agree: *i.e.,* this species should be *Colon tibiale*; Hatch (1957) originally published the species name as *tibialis*.]

Colon vancouverense. Peck and Stephan 1996: The Canadian Entomologist 128: 694. [Fig. 1G] Holotype ♂. With genitalia in vial on pin, labels: "Royal Oak V.I. B.C."; "29.v.1956 E. Argyle"; "*Colon* ♂ Hatch 1959"; "Ex. G. Stace Smith collection purchased 1960"; "HOLOTYPE *Colon (Colon) vancouverensis* Peck & Stephan 1995"; "HOL-0007"; "COL-16614".

Hydnobius contortus. Hatch 1957: UWPB, 16: 24. [Fig. 2AC] Type ♂. Labels: "Creston, B.C. 12.xii.1951 G. Stace Smith"; "on snow"; "TYPE ♂ *Hydnobius contortus* 1954-M. Hatch"; "Ex. G. Stace Smith collection purchased 1960"; "HOL-0074"; "COL-21219".

Hydnobius crestonensis. Hatch 1957: UWPB, 16: 23. [Fig. 2AD] Type ♂. Labels: "Creston, B.C. 20-xi 1948 G. Stace Smith"; "on snow"; "Ex. G. Stace Smith collection purchased 1960"; "TYPE ♂ *Hydnobius crestonensis* 1954-M. Hatch"; "HOL-0075"; "COL-21220"; "*Macrohydnobius crestonensis* (Hatch) Det. S. Peck 2008" [current combination *Macrohydnobius crestonensis* (Hatch)].

Hydnobius stacesmithi [*Hydnobius stace-smithi* on label]. Hatch 1957: UWPB, 16: 24. [Fig. 2AE] Type ♂. Labels: "Copper Mtn., B.C. 30.x.1929 G. Stace Smith"; "on snow"; "TYPE ♂ *Hydnobius stace-smithi* 1954-M. Hatch"; "Ex. G. Stace Smith collection purchased 1960"; "HOL-0076"; "COL-21221"; "*Hydnobius matthewsi* Crotch Det. S. Peck, 2008" [The ICZN code prohibits the use of hyphens: *i.e.*, this species should be *Hydnobius stacesmithi*; Hatch (1957) originally published the species name as *stace-smithi*.] [synonym of *Macrohydnobius matthewsi* (Crotch)].

Leiodes tenuis. Hatch 1957: UWPB, 16: 28. [Fig. 3A] Type ♂. Labels: "Nicola Ranges, B.C."; "31.viii.1932 W.W. Speam"; "sweepings 3800ft."; "Bel 1954 H. Houk *tenuus*"; "*Leiodes tenuis* Hatch"; "TYPE ♂ *Leiodes tenuis* 1954 M. Hatch"; "*Leiodes serripes* Hatch det. R. Baranowski 1985 ♂"; "HOL-0078"; "COL-21223" [synonym of *Leiodes serripes* Hatch].

Ptomaphagus thomomysi. Hatch 1957: UWPB, 16: 42. [Fig. 1C] Type ♀. Labels: "Creston, B.C. 14.v.1948 G. Stace Smith"; "in gopher burrow"; "TYPE

♀ *Ptomaphagus (Adelops) thomomysi* 1954-M. Hatch"; "Ex. G. Stace Smith collection purchased 1960"; "*Ptomaphagus nevadicus* det. S. Peck 1970"; "HOL-0003"; "COL-16610" [synonym of *Ptomaphagus nevadicus* Horn].
P. thomomysi. Hatch 1957. [Fig. 3D] Allotype ♂. Labels: "Creston, B.C. 12.v.1948 G. Stace Smith"; "in gopher burrow"; "TYPE ♀ *Ptomaphagus (Adelops) thomomysi* 1954-M. Hatch"; "Ex. G. Stace Smith collection purchased 1960"; "*Ptomaphagus nevadicus* det. S. Peck 1970"; "HOL-0081"; "COL-21226" [synonym of *Ptomaphagus nevadicus* Horn].

Nemonychidae
Pityomacer pix. Kuschel 1989: Insect Systematics and Evolution (formerly Entomologica Scandinavica), 20: 121–171. [Fig. 2R] Holotype ♂. Labels: "♂"; "Vernon, B.C. 25.v.1946 Hugh B. Leech"; "*comptus* ? LeC."; "Looks like 16325. May be 16329 ?"; "Ex. G. Stace Smith collection purchased 1960"; "U Br C"; "HOLOTYPE *Pityomacer pix* Kuschel, 1986"; "*Pityomacer pix* Kuschel det. G. Kuschel 1986"; "*Pityomacer pix* Kuschel det. G. Kuschel 1987"; "HOL-0050"; "COL-16657".

Rhizophagidae
Rhizophagus galbus. Bousquet 1990: The Canadian Entomologist, 122: 148. [Fig. 2G] Holotype ♂. Labels: "Ex. G. Stace Smith collection purchased 1960"; "Creston, B.C. 14.vi.1951 G. Stace Smith"; "ex. *Populus trichocarpa* 2000 ft."; "10156"; "HOLOTYPE *Rhizophagus galbus* Bousquet"; "HOL-0039"; "COL-16646".

Staphylinidae
Achrolocha leechi. Hatch 1957: UWPB, 16: 79. [Fig. 1J] Type. Labels: "Salmon Arm 23.xi.33 Hugh B. Leech"; "on discarded lemon"; "Phyllodrops"; "TYPE *Achrolocha leechi* 1951-M. Hatch"; "HOL-0010"; "COL-16617" [current combination *Elonium leechi* (Hatch)].
Ancyrophorus columbiensis. Hatch 1957: UWPB, 16: 91. [Fig. 1S] Type. Labels: "Copper Mtn., B.C. 11.x.1930 G. Stace Smith"; "*Carpelimus* sp. Saevers 1945"; "TYPE *Ancyrophorus columbiensis* 1951 – M.H. Hatch"; "HOLOTYPUS *Ancyrophorus columbiensis* Hatch"; "Ex. G. Stace Smith collection purchased 1960"; "*Ancyrophorus columbiensis* Hatch"; "*Ochthephilus columbiensis* Hatch det. Makranczy, 1999"; "HOL-0019"; "COL-16626" [current combination *Ochthephilus columbiensis* (Hatch)].
Anthobium sinuosum. Hatch 1957: UWPB, 16: 66. [Fig. 1L] Type ♀. Labels: "Creston, B.C. 20.ix.1951 G. Stace Smith"; "Ex. Fungus"; "TYPE ♀ *Anthobium sinuosum* 1951-M.H. Hatch"; "Ex. G. Stace Smith collection purchased 1960"; "HOL-0012"; "COL-16619" [Hatch (1957) published "Type male . . ."; however, the label clearly states this specimen is female and is designated as the type].
A. sinuosum. Hatch 1957. [Fig. 2T] Allotype ♂. Labels: "Creston, B.C. 20.ix.1951 G. Stace Smith"; "Ex. Fungus"; "ALLOTYPE ♂ *Anthobium sinuosum* 1951-M.H. Hatch"; "Ex. G. Stace Smith collection purchased 1960"; "HOL-0052"; "COL-16659" [Hatch (1957) published "Type male, Allotype . . . female"; however, the label clearly states this specimen is male and is designated as the allotype].

Arpedium columbiense. Hatch 1957: UWPB, 16: 53. [Fig. 1O] Type. Labels: "Barkerville, B.C. 19.viii.1950 G. Stace Smith"; "Wendel Park"; "Ex. G. Stace Smith collection purchased 1960"; "TYPE *Arpedium columbiense* 1951-M.H. Hatch"; "*Arpedium cribratum* Fauvel Det. J.M. Campbell 1981"; "HOL-0015"; "COL-16622" [synonym of *Arpedium cribratum* Fauvel].

Bledius bowronensis. Hatch 1957: UWPB, 16: 105. [Fig. 1T] Type. Labels: "Bowron Lake 19.viii.1950 B.C. G. Stace Smith"; "TYPE *Bledius bowronensis* 1951-M.H. Hatch"; "*Bledius bowronensis* Hatch"; "HOL-0020"; "COL-16627".

Lathrobium guppyi. Hatch 1957: UWPB, 16: 164. [Fig. 1U] Type ♀. Labels: "Wellington, B.C. 11.v.1946 Richard Guppy"; "Paederinae Seavers, 1947"; "Type ♀ *Lathrobium (Tetartopeus) guppyi* 1951-M.H. Hatch"; "*Tetartopeus Lathrobium guppyi* Hatch"; "*Medon guppyi* (Hatch) '76 Det. L.E. Watrous"; "HOL-0021"; "COL-16628" [current combination *Medon guppyi* (Hatch)].

Lobrathium impressimum. Hatch 1957: UWPB, 16: 167. [Fig. 1V] Type ♂. Labels: "Kootenay Ldg. 19.vi.1948 B.C. G. Stace Smith"; "Shaw Creek"; "Type ♂ *Lobrathium (s. str.) impressimus*1951-M.H. Hatch"; "Ex. G. Stace Smith collection purchased 1960"; "*Lathrobium coloradense* (Casey) '76 det. LEWatrous"; "HOL-0022"; "COL-16629".

Mycetoporus rugosus. Hatch 1957: UWPB, 16: 131. [Fig. 2B] Type. Labels: "Terrace B.C. Mrs. W.W.H."; "*Mycetoporus humidus* Say"; "Type *Mycetoporus rugosus* 1951-M. Hatch"; "HOL-0034"; "COL-16641".

Olophrum leechi. Hatch 1957: UWPB, 16: 63. [Fig. 1M] Type ♂. Labels: "Grouse Mt. 17.xi.1929 H.B. Leech"; "TYPE ♂ *Olophrum leechi* 1951-M. Hatch"; "♂"; "*Anthobium leechi* (Hatch) Det. J.M. Campbell 1981"; "HOL-0013"; "COL-16620".

Olophrum quesneli. Hatch 1957: UWPB, 16: 62. [Fig. 1N] Type ♀. Labels: "Barkerville, B.C. 12.viii.1950 G. Stace Smith"; "Grouse Creek 4200 ft"; "TYPE *Olophrum quesneli* 1951-M.H. Hatch"; "*Oluphrum boreale* Paykull Det. J.M. Campbell 1981"; "HOL-0014"; "COL-16621" [synonym of *Oluphrum boreale* Paykull].

Paradeliphrum inflatum. Hatch 1957: UWPB, 16: 68. [Fig. 1K] Type ♂. Labels: "Copper Mtn., B.C. 3.xi.1930 G. Stace Smith"; "TYPE *Paradelphrum inflatum* 1951-M.H. Hatch"; "Ex. G. Stace Smith collection purchased 1960"; "*Paradelphrum inflatum* Hatch"; "*Porrhodites inflatus* (Hatch) Det. J.M. Campbell"; "HOL-0011"; "COL-16618" [current combination *Porrhodites inflatum* (Hatch)].

Paralispinus rufescens. Hatch 1957: UWPB, 16: 245. [Fig. 1I] Type. Labels: "Creston, B.C. 17.vi.1950 G. Stace Smith"; "ex. Rotten wood with ants"; "near 3310"; "TYPE *Lispinus rufescens* 1951-M. Hatch"; "Ex. G. Stace Smith collection purchased 1960"; "HOL-0009"; "COL-16616" [current combination *Clavilispinus rufescens* (Hatch)].

Philonthus confertoides. Hatch 1957: UWPB, 16: 182. [Fig. 1Z] Type ♂. Labels: "Enderby B.C. 15.IX.34 H. Leech"; "♂"; "430"; "near P. confertus ? Horn"; "Philonthus ? confertus 4489 Lec."; "DEL 1953 H. Houk"; "TYPE ♂ *Philonthus confertoides* 1955-M. Hatch"; "U.B.C. Collection"; "*Philonthus strictus* Hausen Smetana det. 1993"; "HOL-0026"; "COL-16633" [synonym of *Philonthus strictus* Hausen].

Philonthus crestonensis. Hatch 1957: UWPB, 16: 193. [Fig. 1X] Type ♂. Labels: "Creston, B.C. 27.xi.1932 G. Stace Smith"; "under bark, *Populus*

trichocarpa"; "4401 or near (over) *scopti* C.A. Frost 1946"; "Ex. G. Stace Smith collection purchased 1960"; "Type ♂ *Philonthus crestonensis* 1951-M.H. Hatch"; "HOL-0024"; "COL-16631" [current combination *Bisnius crestonensis* (Hatch)].

Philonthus forcipatus. Hatch 1957: UWPB, 16: 202. [Fig. 1W] Type ♂. Labels: "Needles, BC 28.ix.1943 H.B. Leech"; "in duff under larch tree"; "DEL 1953 Houk"; "Type ♂ *Philonthus (Gabrius) forcipatus* 1953-M. Hatch"; "Property of UBC"; "HOL-0023"; "COL-16630" [current combination *Gabrius forcipatus* (Hatch)].

Philonthus stacesmithi [*Philonthus stace-smithi* on label]. Hatch 1957: UWPB, 16: 194. [Fig. 1Y] Type ♂. Labels: "Creston, B.C. 4.iv.1950 G. Stace Smith"; "Rung 4450 ♂ Nov. Scripti C.A Frost 1946"; "Type ♂ *Philonthus stace-smithi* 1951-M.H. Hatch"; "Ex. G. Stace Smith collection purchased 1960"; "*Philonthus stace-smithi* Hatch"; "HOL-0025"; "COL-16632" [The ICZN code prohibits the use of hyphens: *i.e*., this species should be *Philonthus stacesmithi*; Hatch (1957) originally published the species name as *stace-smithi*.] [current combination *Bisnius stacesmithi* (Hatch)].

Phlaeopterus kootenayensis. Hatch 1957: UWPB, 16: 58. [Fig. 1R] Type ♂. Labels: "Bull River 15.ix.1954 G. Stace Smith"; "6 mi. from mouth"; "TYPE *Phlaeopterus kootenayensis* 1955-M.H. Hatch"; "*Phlaeopterus kootenayensis* Hatch"; "HOL-0018"; "COL-16625".

Phloeopterus stacesmithi [*Phlaeopterus stace-smithi* on label]. Hatch 1957: UWPB, 16: 60. [Fig. 1Q] Type ♂. Labels: "Barkerville, B.C. 13.VIII.1950 G. Stace Smith"; "Round Top Mtn. 6200 ft."; "TYPE ♂ *Phloeopterus stace-smithi* 1951-M.H. Hatch"; "Ex. G. Stace Smith collection purchased 1960"; "*Phloeopterus stace-smithi* Hatch"; "HOL-0017"; "COL-16624". [The ICZN code prohibits the use of hyphens: *i.e*., this species should be *Phloeopterus stacesmithi*; Hatch (1957) originally published the species name as *stace-smithi*].

Quedius raphiroides. Hatch 1957: UWPB, 16: 219. [Fig. 1AA] Type ♂. Labels: "Barkerville, B.C. 12.VIII.1950 G. Stace Smith"; "TYPE ♂ *Quedius (Distichalius) raphiroides* 1952-M.H. Hatch"; "*Quedius raphiroides* Hatch"; "*Quedius fulvicollis* Steph. Smetana det. 1968"; "HOL-0027"; "COL-16634" [synonym of *Quedius fulvicollis* Stephens].

Sepedophilus carissimus. Hatch 1957: UWPB, 16: 125. [Fig. 2A] Type. Labels: "Creston, B.C. 3.iv.1949"; "TYPE *Conosoma carissimum* 1951-M.H. Hatch"; "Ex. G. Stace Smith collection purchased 1960"; "*Sepedophilus carissimus* Hatch"; "HOL-0033"; "COL-16640" [synonym of *Sepedophilus littoreus* Linnaeus].

Siagonium stacesmithi [*Siagonium stace-smithi* on label]. Hatch 1957: UWPB, 16: 243. [Fig. 1H] Type ♂. Labels: "Creston, B.C. 4.vi.1949 G. Stace Smith"; "Evening flight"; "*Siagonium* sp. nov.?"; "Near 3298 C.A. Frost 8.xi.1949"; "TYPE ♂ *Siagonium stace-smithi* 1951-M.H. Hatch"; "Ex. G. Stace Smith collection purchased 1960"; "HOL-0008"; "COL-16615". [The ICZN code prohibits the use of hyphens: *i.e*., this species should be *Siagonium stacesmithi*; Hatch (1957) originally published the species name as *stace-smithi*].

Sunius rugithorax. Hatch 1957: UWPB, 16: 154. [Fig. 2U] Allotype ♂. Labels: "Creston, B.C. 4.iv.1950 G. Stace Smith"; "under stone"; "ALLOTYPE ♂ *Medon (Caloderma) rugithorax* 1951-M.H. Hatch"; "Ex. G. Stace Smith collection purchased 1960"; "HOL-0053"; "COL-16660" [Hatch (1957)

published as “allotype female”; specimen clearly labelled as male] [current and published combination *Sunius rugithorax* Hatch; labelled as *Medon (Caloderma) rugithorax* Hatch].

Tachinus acutus. Hatch 1957: UWPB, 16: 112. [Fig. 1AB] Type ♂. Labels: “Wynndel, B.C. 23.viii.1949 G. Stace Smith”; “Ex. Fungus”; “Type ♂ *Tachinus acutus* 1951-M. Hatch”; “Ex. G. Stace Smith collection purchased 1960”; “*Tachinus acutus* Hatch”; “HOL-0028”; “COL-16635” [synonym of *Tachynus quebecensis* Robert].

Tachinus dilatatus. Hatch 1957: UWPB, 16: 117. [Fig. 2Y] Allotype ♀. Labels: “ORE: Anthony Lake Blue Mts. 7000 ft. June 25, 1952. B. Malkin”; “Del 1954 H. Houk”; “ALLOTYPE ♀ *Tachinus dilatus* 1954-M. Hatch”; “HOL-0057”; “COL-16664”.

Tachinus paradisi. Hatch 1957: UWPB, 16: 118. [Fig. 2AA] Allotype ♀. Labels: “Mt. Rainier, WASH. Paradise Park July 19, 1949 M.H. Hatch”; “ALLOTYPE ♀ *Tachinus paradisi* 1954-M. Hatch”; “*Tachinus dilatus* Hatch det. J.M. Campbell ’87”; “HOL-0059”; “COL-16666” [synonym of *Tachinus dilatatus* Hatch].

Tachinus stacesmithi. Campbell 1973: Memoirs of the Entomological Society of Canada, 90: 59–60. [Fig. 1AC] Holotype ♂. Labels: “Creston, B.C. 26.xi.1933 G. Stace Smith”; “under cover meadow 1750 ft.” [round, blue label] “*Tachinus* C.H. Seevers 1945 ♂”; “Sp. nov. ♂”; “C.A. Frost Collection 1962”; “HOLOTYPE *Tachinus stacesmithi* Campbell”; “HOL-0029”; “COL-16636”.

T. stacesmithi. Campbell 1973. [Fig. 2AB] Allotype ♀. Labels: “Creston, B.C. 10.v.1951 G. Stace Smith”; “Ex. *Populus trichocarpa*”; “4670 ♀”; “*Tachinus pallipes* Grav. ♀ 4670 M. Hatch – 1955”; “Ex. G. Stace Smith collection purchased 1960”; “*Tachinus stacesmithi* Campbell ALLOTYPE”; “HOL-0060”; “COL-16667”.

Tachinus varian.s Hatch 1957: UWPB, 16: 119. [Fig. 2Z] Allotype ♀. Labels: “Boyer Ore 4/11/36”; “DEL 1952 H. Houk”; “ALLOTYPE ♀ *Tachinus varians* 1951-M. Hatch”; “*Tachinus contortus* Hatch det. J.M. Campbell ’87”; “HOL-0058”; “COL-16665” [synonym of *Tachinus contortus* Hatch].

Tachyporus stacesmithi. Campbell 1979: Memoirs of the Entomological Society of Canada, 109: 37–39. [Fig. 1AE] Holotype ♂. Labels: “Creston 30.vii.1956 G. Stace Smith”; “4678”; “Ex. G. Stace Smith collection purchased 1960”; “HOLOTYPE ♂ *Tachyporus stacesmithi* desig. 1976 J.M. Campbell CNC No.”; “UBCZ”; “HOL-0031”; “COL-16638”.

T. stacesmithi. Campbell 1979. [Fig. 1AF] Allotype ♀. Labels: “Creston, B.C. 27.x.1951 G. Stace Smith”; “river bank”; “Ex. G. Stace Smith collection purchased 1960”; “ALLOTYPE ♀ *Tachyporus stacesmithi* desig. 1976 J.M. Campbell CNC No.”; “UBCZ”; “HOL-0032”; “COL-16639”.

Unamis columbiensis. Hatch 1957: UWPB, 16: 56. [Fig. 1P] Type ♂. Labels: “Sanca, B.C. 31.iii.1933 G. Stace Smith”; “on moss, stream bank”; “*Unamis truncata* Csy.? over 3433? J.W Greer 1948 over”; “TYPE ♂ *Unamis columbiensis* 1951-M.H. Hatch”; “*Unamis columbiensis* Hatch”; “HOL-0016”; “COL-16623”.

Tenebrionidae

Hymenorus megops. Hatch 1965: UWPB, 16: 185. [Fig. 2J] Type. Labels: “McMinnville Ore vi-14-1942 KM & DM Fender”; “TYPE *Hymenorus megops*

1960-M. Hatch"; "*Hymenorus sinuatus* Fall Det. J.M. Campbell 19__"; "HOL-0042"; "COL-16649".
Hymenorus setosus. Hatch 1965: UWPB, 16: 185. [Fig. 2I] Type. Labels: "ORE.: Rogue Rv. N.F. Beaver Sulphur F.C. Aug. 10, 1950 K.M. Fender"; "TYPE *Hymenorus setosus* 1960-M. Hatch"; "HOL-0041"; "COL-16648".
Telesicles magnus. Hatch 1965: UWPB, 16: 185. [Fig. 2K] Type. Labels: "Seattle, Wash. vii 28"; "TYPE *Telesicles magnus* 1960-M. Hatch"; "*Hymenorus sinuatus* Fall Det. J.M. Campbell"; "HOL-0043"; "COL-16650".

TRICHOPTERA

Limnephilidae

Limnephilus whiteheadi. Nimmo 1991: Proceedings of the Entomological Society of Washington, 93: 499–500. [Fig. 3E] Holotype ♂. With genitalia in vial on pin, labels: "Cowichan L. 5.ix.1949 G.S. Brown"; [pink label] "HOLOTYPE ♂ *Limnephilus whiteheadi* Nimmo"; "HOL-0068"; "TRI-1236".
Psychoglypha adamantina. Nimmo 2012: Occasional Papers on Trichoptera Taxonomy, 2: 1–73. [Fig. 3F] Holotype ♂. Specimen in ethanol, labels: "BC, Diamond Head Trail, 3500' walking on snow, 0°C 2.i.1983 S.G. Cannings"; HOL-0090"; "TRI-1700".
P. adamantina. Nimmo 2012. [Fig. 3G] Holotype ♀ [presumably allotype]. Specimen in ethanol, labels "BC, Diamond Head Trail, 3500' walking on snow, 0°C 2.i.1983 S.G. Cannings"; HOL-0091"; "TRI-1701".

DIPTERA

Anthomyiidae

Anthomyia canningsi Griffiths 2001: Flies of the Nearctic Region, 8: 1–160. [Fig. 3H] Holotype. With genitalia in vial on pin, labels: [round red] "Holotype"; "YT, Old Crow 3.vii.1983 R.A. Cannings"; "Malaise trap, top of open S-facing bluff"; "*Anthomyia canningsi* Griff. Det. GCD Griffiths"; "HOL-0071"; "ANT-0001".
Delia notobata. Griffiths 1991: Flies of the Nearctic Region, 8. [Fig, 3I] Holotype. With genitalia in vial on pin, labels: [round red] "Holotype"; "YT, Bluefish ridge 67°09'N 140°37'W 2600' 2.vii.1983 R.J. Cannings"; "*Delia notobata* Griffiths det. GCD Griffiths"; "HOL-0072"; "ANT-0002".

Therevidae

Thereva kristinae. Holston and Irwin 2005: Studia Dipterologica Supplement, 13. [Fig. 3J] Holotype ♂. Labels: "Robson, B.C. 10.viii.1967 H.R. Foxlee"; "THEREVIDAE M.E. Irwin Specimen #76346"; "U.B.C.Z. (Spencer Mus.) Dept. Zool. Brit. Columbia Needham to Irwin Loan#96481 July 1996" [red label] "HOLOTYPE ♂ *Thereva kristinae* Holston & Irwin K.C. Holston & M.E. Irwin, 2003"; "HOL-0073"; "THE-0559".

HYMENOPTERA

Sphecidae

Crabro canningsi. Finnamore 1988: The Canadian Entomologist, 120: 859–865. [Fig. 3K] Holotype ♂. Labels: "YT, Fish Creek 69°27'N 140°19'W 3.vii.1984 S.G. Cannings"; "HOLOTYPE *CRABRO CANNINGSI* FINNAMORE"; "HOL-0069"; "HYM-2641".

C. canningsi. Finnamore 1988. [Fig. 3L] Allotype ♀. Labels: "YT, Firth River 69°13'N 140°03'W 25.vi.1984 S.G. Cannings"; "ALLOTYPE *CRABRO CANNINGSI* FINNAMORE"; "HOL-0070"; "HYM-2642".

HEMIPTERA

Cicadellidae

Colladonus arctostaphyli. Downes 1952: The Canadian Entomologist, 84: 253. [Fig. 3N] Holotype ♂. Labels: "Malahat, B.C. 18.viii.1950 W. Downes"; "HOLOTYPE *Calladonus arctostaphyli* Downes"; "Ex. W. Downes collection donated 1958"; "HOL-0064"; "HOM-0004."

C. arctostaphyli. Downes 1952. [Fig. 3O] Allotype ♀. Labels: "Malahat, B.C. 18.viii.1950 W. Downes"; "ALLOTYPE *Calladonus arctostaphyli* Downes"; "Ex. W. Downes collection donated 1958"; "HOL-0065"; "HOM-0005."

Colladonus atriflavus. Downes 1952: The Canadian Entomologist, 84: 253. [Fig. 3M] Holotype ♀. Labels: "Malahat, B.C. 19.ix.1950 W. Downes"; "HOLOTYPE *Colladonus atriflavus* Downes"; "Ex. W. Downes collection donated 1958"; "HOL-0063"; "HOM-0003."

Delphacidae

Achrotile distincta. Scudder 1963: The Canadian Entomologist, 95: 168. [Fig. 3M] Type ♂. Labels: "Westwick L. Cariboo, B.C. 25.v.1959 G.G.E. Scudder 33/59"; "TYPE *ACHROTILE DISTINCTA* Scudder"; "HOL-0061"; "HOM-0001."

Laccocera lineata. Scudder 1963: The Canadian Entomologist, 95: 174. [Fig. 3N] Type ♂. Labels: "Chilcotin, B.C. 30.v.1959 G.G.E. Scudder"; "TYPE *LACCOCERA LINEATA* Scudder"; "HOL-0062"; "HOM-0002."

Corixidae

Cenocorixa columbiensis. Lansbury 1960: Proceedings of the Entomological Society of British Columbia. 57: 38. [Fig. 3R] Holotype ♂. Labels: "Pond U.B.C. 12.x.1928 G.J. Spencer" [red ink] "*Cenocorixa columbiensis* Lansbury ♂ Holotype det. I. Lansbury 1960" [pink label] "TYPE"; "HOL-0066"; "COR-3611" [synonym of *Cenocorixa blaiselli* Hungerford].

Cenocorixa downesi. Lansbury 1960: Proceedings of the Entomological Society of British Columbia, 57: 40. [Fig. 3T] Type ♂ with genitalia on slide. Labels on pin: "Stanley Park 8.x.1925 T.T. W.M." [red ink] "*Cenocorixa downesi* TYPE Lansbury det. I. Lansbury 1960" [pink label] "TYPE"; "HOL-0087"; "COR-1148"; and labels on slide: "Canada, B.C. Stanley Park 8.x.1925 T.T.W.M. *CENOCORIXA DOWNESI* NOV. SP. Lansbury TYPE"; "*Cenocorixa andersoni* Hung. Det. A. Jansson 1970" [synonym of *Cenocorixa andersoni* Hungerford].

Cenocorixa hungerfordi. Lansbury 1960: Proceedings of the Entomological Society of British Columbia, 57: 36. [Fig. 3S] Holotype ♂, allotype ♀, paratype ♀ on one pin with holotype ♂ genitalia on slide. Labels on pin: "Kamloops, B.C. 29.vii.1945 G.J. Spencer" [red ink] "*Cenocorixa hungerfordi* Holotype ♂, Allotype ♀, Paratype ♀ det. I Lansbury 1960" [pink label] "TYPE"; "*Cenocorixa bifida* (Hung.) Det. A. Jansson 1970"; "HOL-0067"; "COR-1302"; and labels on slide: "HOLOTYPE ♂ *Cenocorixa hungerfordi* Lansbury det. I. Lansbury 1960 Kamloops, B.C. 29.vii.1945 G.J. Spencer"; "*Cenocorixa bifida* (Hung.) Det. A. Jansson 1970" [current combination *Cenocorixa bifida hungerfordi* Lansbury].

Rhopalidae

Arhyssus longirostratus. Chopra 1968: Annals of the Entomological Society of America, 61: 629–655. [Fig. 3U] Holotype. Labels: "Yakima Wash. 27.vii.1923 W.D."; "Ex. W. Downes collection donated 1958"; "HOLOTYPE *Arhyssus longirostratus* Chopra"; "HOL-0089"; "RHO-0002".

PSOCODEA

Menoponidae

Amyrsidea minuta. Emerson 1961: The Florida Entomologist, 44: 117–118. [Fig. 3V] Holotype ♂ and allotype ♀ on same slide. Labels: "on Peacock Vancouver, B.C. Oct. 15.1949 G.J. Spencer, Colr. from K.C. Emerson"; "*Amyrsidea minuta* Emerson ♂ ♀ Jan 1961 Holotype ♂ Allotype ♀ K.C. Emerson"; "HOL-0082"; "PHT-0001".

Austromenopon spenceri. Timmermann 1956: Bonner Zoologische Beitrage, 7: 192. Type ♂ [Fig. 3W], allotype ♀ [Fig. 3X], and paratype ♂ on same slide. Labels: "*Lobipes lobatus* 223(3) Kamloops. British Columbia, 21.viii.1934. G.J. Spencer. Types"; "*Austromenopon spenceri* Timmermann 1956 Type ♂, Allotype ♀, Paratype ♂"; "HOL-0083"; "PHT-0002".

Eureum spenceri. Emerson and Pratt 1956: Journal of the Kansas Entomological Society, 29: 21–28. [Fig. 3AA] Holotype ♂ on slide. Labels: "Ex. A.O.U. 422 ♂ *Nephoecetes niger borealis* (Kennerly) Black Swift, 2juv. New Denver B.C. Week May/June 1941 Coll. J. Hatter In DeFaure's sol. G.J. Spencer"; "*Eureum spenceri* Emerson & Pratt Holotype ♂ K.C. Emerson"; "HOL-0085"; "PHT-0004".

E. spenceri. Emerson and Pratt 1956. [Fig. 3AB] Allotype ♀ on slide. Labels: "[smudged] A.O.U. 422 [not smudged] Black Swift *Nephoecetes niger borealis* Vancouver, B.C. G.J. Spencer Nov. '31 Bish. # 22779 U.S. Bur. Entomology 1935 H.S.P."; "*Eureum spenceri* Emerson & Pratt Allotype ♀ K.C. Emerson"; "HOL-0086"; "PHT-0005".

Philopteridae

Physconelloides spenceri. Emerson and Ward 1958: Journal of the Kansas Entomological Society, 31: 239–240. Holotype ♂ [Fig. 3Y] and allotype ♀ [Fig. 3Z] on same slide. Labels: "CANADA: Brit. Col., Vancouver 6.x.1952. Coll. D. Pres. G.J. Spencer R.W. 1711"; "*Physconelloides spenceri* Emerson & Ward Ex. *Columba fasciata* Holotype ♂ Allotype ♀ C.P."; "HOL-0084"; "PHT-0003".

Figure 1. Type material in the Beaty Biodiversity Museum – Spencer Entomological Collection (BBM-SEC). Coleoptera organised numerically by BBM-SEC accession numbers: **A**, HOL-0001 (*Bembidion gordoni* Lindroth, 1963); **B**, HOL-0002 (*Catops mathersi* Hatch, 1957); **C**, HOL-0003 (*Ptomaphagus thomomysi* Hatch, 1957); **D**, HOL-0004 (*Colladonus arctostaphyli* Downes, 1952); **E**, HOL-0005 (*Colladonus arctostaphyli* Downes, 1952); **F**, HOL-0006 (*Colon tibialis* Hatch, 1957); **G**, HOL-0007 (*Colon vancouverense* Peck and Stephan, 1996); **H**, HOL-0008 (*Siagonium stacesmithi* Hatch, 1957); **I**, HOL-0009 (*Paralispinus rufescens* Hatch, 1957); **J**, HOL-0010 (*Achrolocha leechi* Hatch, 1957); **K**, HOL-0011 (*Paradeliphrum inflatum* Hatch, 1957); **L**, HOL-0012 (*Anthobium sinuosum* Hatch, 1957); **M**, HOL-0013 (*Olophrum leechi* Hatch, 1957); **N**, HOL-0014 (*Olophrum quesneli* Hatch, 1957); **O**, HOL-0015 (*Arpedium columbiense* Hatch, 1957); **P**, HOL-0016 (*Unamis columbiensis* Hatch, 1957); **Q**, HOL-0017 (*Phlaeopterus stacesmithi* Hatch, 1957); **R**, HOL-0018 (*Phlaeopterus kootenayensis* Hatch, 1957); **S**, HOL-0019 (*Ancyrophorus columbiensis* Hatch, 1957); **T**, HOL-0020 (*Bledius bowronensis* Hatch, 1957); **U**, HOL-0021 (*Lathrobium guppyi* Hatch, 1957); **V**, HOL-0022 (*Lobrathium impressimum* Hatch, 1957); **W**, HOL-0023 (*Philonthus forcipatus* Hatch, 1957); **X**, HOL-0024 (*Philonthus crestonensis* Hatch, 1957); **Y**, HOL-0025 (*Philonthus stacesmithi* Hatch, 1957); **Z**, HOL-0026 (*Philonthus confertoides* Hatch, 1957); **AA**, HOL-0027 (*Quedius raphiroides* Hatch, 1957); **AB**, HOL-0028 (*Tachinus acutus* Hatch, 1957); **AC**, HOL-0029 (*Tachinus stacesmithi* (male) Campbell, 1973); **AD**, HOL-0030 (manuscript name - *Tachinus septelobus* Hatch); **AE**, HOL-0031 (*Tachyporus stacesmithi* Campbell, 1979); **AF**, HOL-0032 (*Tachyporus stacesmithi* Campbell, 1979).

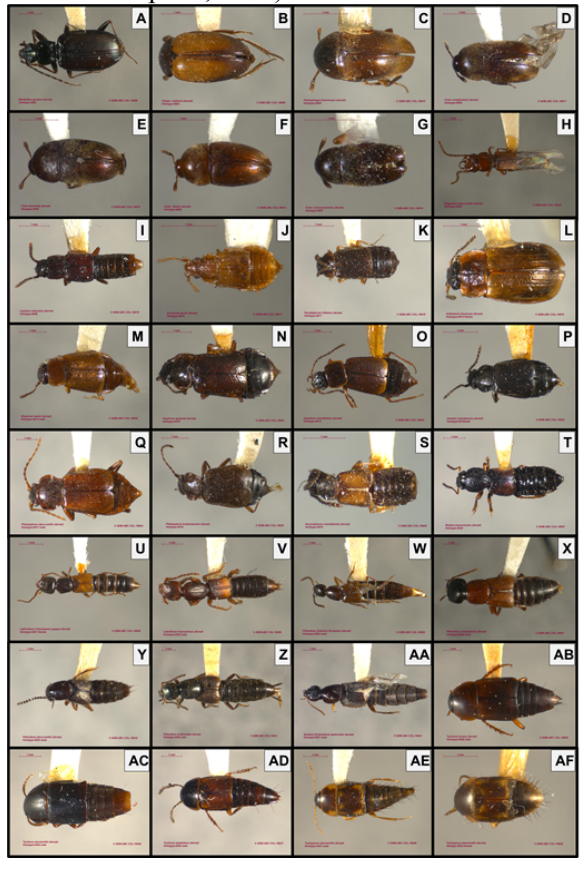
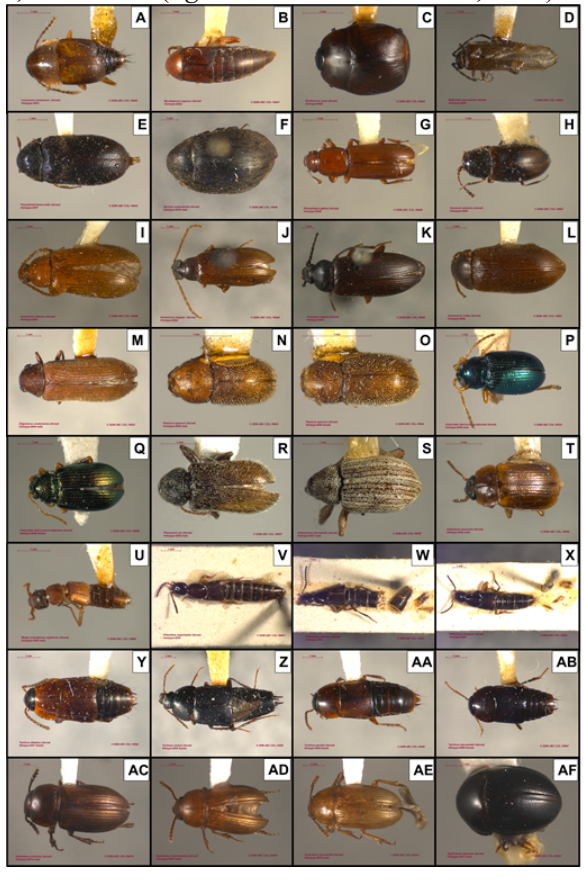


Figure 2. Type material in the Beaty Biodiversity Museum – Spencer Entomological Collection (BBM-SEC). Coleoptera organised numerically by BBM-SEC accession numbers: **A**, HOL-0033 (*Sepedophilus carissimus* Hatch, 1957); **B**, HOL-0034 (*Mycetoporus rugosus* Hatch, 1957); **C**, HOL-0035 (*Gnathoncus rossi* Hatch, 1961); **D**, HOL-0036 (*Malthodes stacesmithi* Fender, 1954); **E**, HOL-0037 (*Pseudohadrotoma kaliki* Beal, 1967); **F**, HOL-0038 (*Byrrhus caribooensis* Hatch, 1961); **G**, HOL-0039 (*Rhizophagus galbus* Bousquet, 1990); **H**, HOL-0040 (*Atomaria melanica* Hatch, 1961); **I**, HOL-0041 (*Hymenorus setosus* Hatch, 1965); **J**, HOL-0042 (*Hymenorus megops* Hatch, 1965); **K**, HOL-0043 (*Telesicles magnus* Hatch, 1965); **L**, HOL-0044 (manuscript name - *Hymenorus creber* Hatch; **M**, HOL-0045 (*Oligomerus crestonensis* Hatch, 1961); **N**, HOL-0046 (*Plesiocis spenceri* Hatch, 1961); **O**, HOL-0047 (*P. spenceri* Hatch, 1961); **P**, HOL-0048 (*Chalcoides sculpturata* Lazorko, 1974); **Q**, HOL-0049 (*Chalcoides sculpturata* Lazorko, 1974); **R**, HOL-0050 (*Pityomacer pix* Kuschel, 1989); **S**, HOL-0051 (manuscript name - *Anthonomus stacesmithi* Hatch); **T**, HOL-0052 (*Anthonomus sinuosum* Hatch, 1957); **U**, HOL-0053 (*Sunius rugithorax* Hatch, 1957); **V**, HOL-0054 (manuscript name - *Philonthus impertubilis* Tottenham); **W**, HOL-0055 (manuscript name - *Philonthus pollinctus* Tottenham); **X**, HOL-0056 (manuscript name - *Philonthus sclopetus* Tottenham); **Y**, HOL-0057 (*Tachinus dilatatus* Hatch, 1957); **Z**, HOL-0058 (*Tachinus varians* Hatch, 1957); **AA**, HOL-0059 (*Tachinus paradisi* Hatch, 1957); **AB**, HOL-0060 (*Tachinus stacesmithi* (female) Campbell, 1973); **AC**, HOL-0074 (*Hydnobius contortus* Hatch, 1957); **AD**, HOL-0075 (*Hydnobius crestonensis* Hatch, 1957); **AE**, HOL-0076 (*Hydnobius stacesmithi* Hatch, 1957); **AF**, HOL-0077 (*Agathidium obtusum* Hatch, 1957).



LEPIDOPTERA

Geometridae

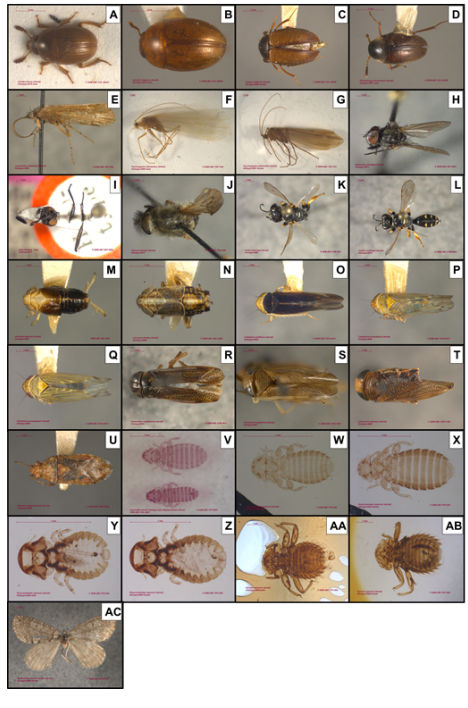
Hydriomena macdunnoughi. Swett 1918: The Canadian Entomologist, 50: 296. [Fig. 3AC] Allotype ♀ with genitalia on slide. Labels on pin: [pink] "489"; "168"; "Atlin BC vi.11.1914" [red] "Type" [red] "Type"; "♀ Allotype Swett Lent to McDunnough 27.xi.52 M.D. at Nova Scotia Museum revising *Hydriomena* see correspondence"; "*Hydriomena macdunnoughi* Swett ♀ Allotype"; "Slide No. Hyd 489 ♀"; "E.H. Blackmore Collection No. –489"; "HOL-0088"; "GEO-0775"; and label on slide: "Slide No. B.C. Hyd 489 ♀ *Hydriomena macdunnoughi* Sw. Atlin B.C. Allotype".

DISCUSSION

Apart from the published type specimens detailed above, additional material with apparent manuscript names is deposited in the BBM-SEC (label data and images: see Supplementary material, File S2). Included in the material presented here are the following unpublished names: *Anthonomus stacesmithi* Hatch (Coleoptera: Curculionidae) (Fig. 2S), *Leiodes vesperus* Hatch (Coleoptera: Leiodidae) (Fig. 3B), *Philonthus impertubilis* Tottenham (Fig. 2V), *Philonthus pollinctus* Tottenham (Fig. 2W), *Philonthus sclopetus* Tottenham (Fig. 2X) (Coleoptera: Staphylinidae), *Tachinus septelobus* Hatch) (Coleoptera: Staphylinidae) (Fig. 1AD), and *Hymenorus creber* Hatch (Fig. 2L) (Coleoptera Tenebrionidae). We highlight this material here to encourage experts in these groups to borrow this material to consider the status of these specimens and the validity in recognising these species. The manuscript names found in the BBM-SEC attributed to "Tottenham" (*P. impertubilis*, *P. pollinctus*, and *P. sclopetus*) were from the Stace-Smith collection purchased by UBC in 1960 but have no year on the determination. Presumably, this author is the Staphylinidae expert C.E. Tottenham, whose publications (*e.g.,* Tottenham 1939a, 1939b, 1940, 1945, 1949a, 1949b, 1955, 1956, 1961) make no mention of these species. According to Herman (2001), Tottenham dealt mainly with British and Afrotropical *Philonthus*, so it may be that these specimens from British Columbia are indeed new species that went unpublished and forgotten, and an expert in the Staphylinidae should examine them. The other manuscript names, attributed to M.H. Hatch (*i.e.*, *T. septelobus*, *A. stacesmithi*, *L. vesperus*, and *H. creber*), were never included in Hatch (1953, 1957, 1961, 1965, 1971), although they may have been initially misidentified by Hatch as new species and not changed upon publication.

In addition to the specimens listed herein, several unpublished Hemiptera holotypes were found in G.G.E. Scudder's personal material upon his death in 2023. Experts are now reviewing these new species and drafting descriptions for publication. The unpublished Scudder holotypes, currently housed in the BBM-SEC, may ultimately reside in other collections, so their data have been omitted from this list of types in the BBM-SEC.

Figure 3. Type material in the Beaty Biodiversity Museum – Spencer Entomological Collection (BBM-SEC). Coleoptera organised numerically by BBM-SEC accession numbers: **A**, HOL-0078 (*Leiodes tenuis* Hatch, 1957); **B**, HOL-0079 (manuscript name - *Leiodes vesperus* Hatch); **C**, HOL-0080 (*Catops mathersi* Hatch, 1957); and **D**, HOL-0081 (*Ptomaphagus thomomysi* Hatch, 1957). Trichoptera organised numerically by BBM-SEC accession numbers: **E**, HOL-0068 (*Limnephilus whiteheadi* Nimmo, 1991); **F**, HOL-0090 (*Psychoglypha adamantina* (male) Nimmo, 2012); and **G**, HOL-0091 (*Psychoglypha adamantina* (female) Nimmo, 2012). Diptera organised numerically by BBM-SEC accession numbers: **H**, HOL-0071 (*Anthomyia canningsi* Griffiths, 2001); **I**, HOL-0072 (*Delia notobata* Griffiths, 1991); and **J**, HOL-0073 (*Thereva kristinae* Holston and Irwin, 2005). Hymenoptera organised numerically by BBM-SEC accession numbers: **K**, HOL-0069 (*Crabro canningsi* (male) Finnamore, 1988); and **L**, HOL-0070 (*Crabro canningsi* (female) Finnamore, 1988). Hemiptera organised numerically by BBM-SEC accession numbers: **M**, HOL-0061 (*Achrotile distincta* Scudder, 1963); **N**, HOL-0062 (*Laccocera lineata* Scudder, 1963); **O**, HOL-0063 (*Colladonus atriflavus* Downes, 1952); **P**, HOL-0064 (*Colladonus arctostaphyli* Downes, 1952); **Q**, HOL-0065 (*Colladonus arctostaphyli* Downes, 1952); **R**, HOL-0066 (*Cenocorixa columbiensis* Lansbury, 1960); **S**, HOL-0067 (*Cenocorixa hungerfordi* Lansbury, 1960); **T**, HOL-0087 (*Cenocorixa downesi* Lansbury, 1960); and **U**, HOL-0089 (*Arhyssus longirostratus* Chopra, 1968). Psocodea organised numerically by BBM-SEC accession numbers: **V**, HOL-0082 (*Amyrsidea minuta* Emerson, 1961); **W**, HOL-0083 (*Austromenopon spenceri* (male) Timmermann, 1956); **X**, HOL-0083 (*Austromenopon spenceri* (female) Timmermann, 1956); **Y**, HOL-0084 (*Physconelloides spenceri* (male) Emerson and Ward, 1958); **Z**, HOL-0084 (*Physconelloides spenceri* (female) Emerson and Ward, 1958); **AA**, HOL-0085 (*Eureum spenceri* (male) Emerson and Pratt, 1956); and **AB**, HOL-0086 (*Eureum spenceri* (female) Emerson and Pratt, 1956). Lepidoptera organised numerically by BBM-SEC accession numbers: **AC**, HOL-0088 (*Hydriomena macdunnoughi* Swett, 1918).



Primary type specimens are important standards of reference when comparing individuals of a species to ensure that they have no material differences from the name-bearing type. However, since the late 18th and early 19th centuries, type specimens have been housed in private and public natural history collections (Farber 1978); their precise location therefore often is unknown. Further complicating the issue of a "type" specimen is the shifting use of the term — some authors designated multiple types to illustrate the variability in a species, while contemporary use of type fixes the name to a single specimen for nomenclatural stability. The paratype designation is commonly used to indicate variability, and the term "syntype" is used when multiple types, rather than a single holotype, are used. Much like Britton and Stanbury (1980), Hennessey (1990), Obrecht and Huber (1993), Brock (1998), and Li *et al.* (2015), our goal was to document the type specimens in the BBM-SEC and inform interested taxonomists of the current location of these important specimens. The BBM-SEC encourages taxonomic study of the many specimens from throughout British Columbia, the Yukon, and Alaska.

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