

AN ANNOTATED CATALOGUE OF THE SIPHONAPTERAN PRIMARY
TYPES IN THE CANADIAN NATIONAL COLLECTION OF INSECTS
(INSECTA: SIPHONAPTERA)¹

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Abstract.—Locality and host data are presented for the 41 primary types of species of fleas housed in the collection of the Centre for Land and Biological Resources Research, Agriculture Canada. Most have been described by the late G. P. Holland, but included are taxa described by M. A. Stewart (jointly with Holland), P. T. Johnson, H. E. Stark and J. Wagner. Most species are from Canada, but the United States, México, Brazil and New Guinea are also represented. Junior synonyms are included and their status indicated.

Key Words: Insecta, Siphonaptera, flea, ectoparasite, primary types, synonymy, birds, mammals, computerization

Throughout most of his productive life the late George P. Holland pursued the study of the siphonapteran ectoparasites of Canadian birds and mammals. As a result of these and related studies, he was able to develop the flea collection of the Canadian National Collection of Insects to the extent that today it ranks as one of the major collections in the world. Although he described new species from Mexico and New Guinea, and exchanged material with colleagues around the world, the strength of the collection lies in its representation of the Canadian fauna.

Shortly after Dr. Holland's tragic death in November of 1985, the collection was inventoried and a list of primary types was compiled. This list of specimens and their accompanying data have never been published in conformation with Recommendation 72G(4) of the third edition of the

International Code of Zoological Nomenclature (see Ride and Sabrosky 1985: 147).

Following is an annotated list of the 41 primary type specimens currently housed in the Canadian National Collection. Although allotypes are not primary types and are not usually included, most taxa listed here are also represented by them in the collection. Junior synonyms are listed as well as valid names. The five-digit computerization number for the species is included in brackets. All data given on the slide labels are presented. Supplemental information not included on the slide labels is also given in brackets. Names of hosts are updated following Sibley and Monroe (1990) for birds and Honacki et al. (1982) for mammals.

SPECIES ACCOUNTS

adversus Wagner, 1936a. *Megabothris* [93635]. Z. Parasitenk. 8: 656, fig. 4.

Canada, B.[ritish] C.[olumbia], Vancouver [49°13'N, 123°06'W], fr.[om] *Peromyscus* [= *Peromyscus*] *maniculatus austerus*,

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26.V.[19]35, G. J. Spencer [leg.], vial 353.5. Holotype ♀ (by monotypy), CNC No. 4550.

Remarks.—This is a junior synonym of *Megabothris* (*Amegabothris*) *abantis* (Rothschild, 1905) according to Holland (1942: 158).

aiyurensis Holland, 1969. [*Acanthopsylla*] [96907]. Mem. Ent. Soc. Canada 61: 18, figs. 11, 17, 19, 28.

New Guinea, Aiyura [06°20'S, 145°54'E], 6000' [= 1829 m], [from] *Eudromicia* [= *Cercartetus caudatus*], 28.IX.[19]57, G. P. Holland [leg.], No.: 58-7. Holotype ♂, CNC No. 9739.

Remarks.—This is a junior synonym of *Acanthopsylla enderleini* (Wagner, 1933) according to Mardon (1981: 117). The original description gives the date as 20.IX.57, which is evidently wrong since the slides are both marked 28.IX.57. Generic name not included on either slide.

arcuegens Holland, 1952. *Ceratophyllus* [95222]. Can. Ent. 84: 300, figs. 8–15.

Canada, Y.[ukon] T.[erritory], Rampart House [67°25'N, 140°59'W], [from] nest of *Petrochelidon* [= *Hirundo pyrrhonota*], IX.[19]51, J. E. H. Martin [leg.], No.: 51-295. Holotype ♂, CNC No. 6000.

Remarks.—Now treated as *Ceratophyllus* (*Ceratophyllus*) *arcuegens* Holland.

athabascaae Holland, 1952. *Malaraeus penicilliger* [95223]. Can. Ent. 84: 303, figs. 16–19.

Canada, N.W.T. [= Northwest Territories], Ft. Smith [60°01'N, 111°55'W], ex *Clethrionomys g.[apperi]* *athabascaae*, 29.IV.[19]48, W. F. [= W. A. Fuller leg.], file No. 3246. Holotype ♂, CNC No. 6001.

Remarks.—The slide also has "*Amalaraeus dissimilis atha.*" written on the holotype label. Holland (1963: 58) elevated this to a full species. Smit (1965: 483) decided that *M. penicilliger dissimilis* Jordan, 1938 was distinct from *M. penicilliger* and elevated it to full species rank with *athabascaae* as a subspecies. Holland (1985: 391)

still treated it as a full species, although Traub et al. (1983: 45) retained it as a subspecies of *A. dissimilis*.

barretti Holland, 1969. [*Papuapsylla*] [96925]. Mem. Ent. Soc. Canada 61: 44, figs. 114, 116–117, 119, 124, 130, 136, 213.

New Guinea, Mt Wilhelm [05°46'S, 144°59'E], 11400' [= 3475 m], [from] *Melomys* sp., 13.X.[19]57, G. P. Holland [leg.], No.: 58-27. Holotype ♂, CNC No. 9754.

Remarks.—The generic name is not included on the labels of either the holotype or the allotype.

calderwoodi Holland, 1979. *Ceratophyllus* [97924]. Can. Ent. 111: 717, figs. 9–12.

Canada, N.[ew] B.[runswick], Kouchibouguac Nat'l. Pk. [= National Park, ca. 46°55'N, 64°58'W], from *Petrochelidon* [= *Hirundo*] *pyrrhonota* nest, 7.IX.1977, G. Calderwood [leg.], 577-72. Holotype ♂, CNC No. 15896.

Remarks.—Now treated as *Ceratophyllus* (*Ceratophyllus*) *calderwoodi* Holland.

campestris Holland, 1949. *Callistopsyllus* [94936]. Canada Dept. Agric. Tech. Bull. 70: 98, figs. 120–121, map 14.

Canada, Alberta, Medicine Hat [50°03'N, 110°41'W], from *Peromyscus m.[aniculatus]* *osgoodi*, 6.VI.[19]40, G. P. Holland [leg.], File No.: 1827. Holotype ♂, CNC No. 5718.

Remarks.—Originally described as a full species. Redescribed and reduced to a subspecies, *Callistopsyllus terinus campestris* Holland, by Tipton et al. (1979: 359).

durangoensis Holland, 1965. *Anomiopsyllus* [96521]. Can. Ent. 97: 1056, figs. 7–8, 15, 18.

Mex[ico], D[uran]go [State], 3 mi. [5 km] W [ca. 24°01'N, 104°45'W], 6500' [= 1981 m], from mouse nest in yucca, *Peromyscus?*, 24.VI.1964, J. E. H. Martin [leg.], No. J-64-100. Holotype ♂, CNC No. 8934.

eudromiciae Holland, 1969. [*Acanthopsyl-*

la] [96909]. Mem. Ent. Soc. Canada 61: 20, figs. 15, 18, 22, 26, 32.

New Guinea, Aiyura [06°20'S, 145°54'E], 6000' [= 1829 m], [from] *Eudromicia* [= *Cercartetus caudatus*], 28.IX.[19]57, G. P. Holland [leg.], No.: 58-7. Holotype ♂, CNC No. 9741.

Remarks.—Generic name not included on either slide.

exsecatus Wagner, 1936b. *Megarathroglossus longispinus* [93639]. Can. Ent. 68: 196.

Canada, B.[ritish] C.[olumbia], Avola [51°74'N, 119°19'W], fr.[om] "squirrel" *Sciurus douglasii* [= *Tamiasciurus hudsonicus*], 2.IX.[19]32 [collector not given] (Vial 363). Holotype ♀, CNC No. 4112.

Remarks.—A junior synonym of *Megarathroglossus divisus* (Baker, 1898) according to Tipton et al. (1979: 384).

frustratus Johnson, 1957. *Polygenis* [95742]. Mem. Ent. Soc. Wash. 5: 161, pl. 86, figs. 1-3, 7, pl. 87, figs. 1, 3, 5.

Brazil, Brasilien, Nova Teutônia [Santa Catarina 27°03'S, 52°24'W, host unknown], VII.[19]42, F. Plaumann, No.: 55-6. Holotype ♂, CNC No. 21212.

fulleri Holland, 1951a. *Catallagia dacenkoi* [95113]. Can. Ent. 83: 157, figs. 1-7.

Canada, N.W.T. [= Northwest Territories], Ft. Smith [60°01'N, 111°55'W], from *Clethrionomys g.[apperi] athabasca*, 25.X.[19]47, W. A. Fuller [leg.], File No. 3209. Holotype ♂, CNC No. 5720.

Remarks.—Treated as a junior synonym of *Catallagia dacenkoi* Ioff, 1940 by Smit (1967: 83).

globata Holland, 1971. *Myodopsylla* [97101]. Can. Ent. 103: 95, figs. 1-4.

Mex[ico], Chis. [= Chiapas State], 7 mi. [ca. 11 km] E San Cristobal d. l. C. [de las Casas, ca. 16°45'N, 92°31'W, 7000' (2134 m), from] bats [*Myotis velifer* or *Tadarida brasiliensis intermedia*], 16.V.1969, J. E. H. Martin [leg.], No.: S-69-85. Holotype ♀, CNC No. 11551.

grahami Holland, 1979. *Nearctopsylla* [97922]. Can. Ent. 111: 713, figs. 1-3, 5.

Canada, Ont.[ario], Thunder Bay Dist.[ri]ct, Spruce Riv.[er] R[oa]d, Mi. 64 [ca. 49°28'N, 88°85'W], from *Martes a. americana*, 20.XII.[19]77, Bob Graham [leg.], No: S 78-11. Holotype ♂, CNC No. 15894.

gregsoni Holland, 1950. *Megabothris calcarifer* [95075]. Can. Ent. 82: 132, figs. 7-8.

United States, Alaska, Naknek [58°45'N, 157°00'W], ex *Microtus* sp., 28.VI.[19]48, J. D. Gregson [leg.], File No. 3276. Holotype ♂, CNC No. 5872.

Remarks.—Synonymized with the nominate form, *Megabothris calcarifer* (Wagner, 1913) by Holland (1985: 355).

jellisoni Holland, 1954. *Catallagia* [95435]. Can. Ent. 86: 383, figs. 1-7.

Canada, Alta.[= Alberta], Bow Pass [Rocky Mts, 105 km N Banff, Banff National Park, Peyto Lake Trail ca. 52°00'N, 116°10'W, 6500-7000' (1981-2137 m), just below vantage point at Bow Summit], from *Clethrionomys [gapperi]*, 10.X.[19]53, G. P. Holland [& O. Peck leg.], No.: 53.815. Holotype ♂, CNC No. 6131.

lari Holland, 1951b. *Ceratophyllus* [95123]. Can. Ent. 83: 282, figs. 5, 7, 9.

Canada, N.W.T. [= Northwest Territories, Whaleback Island], Great Slave Lake [ca. 62°00'N, 112°00'W], ex [nest of] *Larus* sp., 23.VI.1947, J. R. Vockeroth [leg.], 49-46. Holotype ♂, CNC No. 5952.

Remarks.—The original description gave the hosts as *Larus californicus* or *L. argentatus* nests. The species is now placed in the subgenus *Ceratophyllus*.

linsdalei Holland, 1957. *Hystrihopsylla* [95748]. Can. Ent. 89: 322, figs. 5, 18, 21, 26, 29.

United States, Calif.[ornia], Alameda Co.[unty], Berkeley Hills [37°53'N, 122°17'W], ex *Microtus* nest, 23.III.[19]54,

[V. J.] Tipton, [E.] Méndez, [G.] Loshbaugh [leg.]. Holotype ♂, CNC No. 6548.

Remarks.—Now considered a subspecies of *Hystrichopsylla occidentalis* Holland, 1949.

luluai Holland, 1969. [*Papuapsylla*] [96924]. Mem. Ent. Soc. Canada 61: 42, figs. 90, 107–109, 115, 118, 123, 128–129, 212.

New Guinea, [Papua], Komia [= Komy, near Mendi 06°13'S, 143°39'E], 7200' [= 2195 m, from] *Rattus* sp., 7.X.[19]57, G. P. Holland [leg.], No.: 58-25. Holotype ♂, CNC No. 9753.

Remarks.—Generic name not included on either slide.

markworthi Hubbard, 1949. *Peromyscopsylla hamifer* [94904]. Can. Ent. 81: 11, figs. [unnumbered].

Canada, Ont.[ario], Smoky Falls, near Kapuskasing [49°25'N, 82°26'W], from *Microtus pennsylvanicus*, 7.XI.[19]38, R. [V.] Whelan [leg.]. Holotype ♂, CNC No. 21246.

Remarks.—This is a junior synonym of *Peromyscopsylla hamifer hamifer* (Rothschild, 1906) according to Hopkins (1951: 542). The holotype was originally deposited in the Royal Ontario Museum of Zoology, Toronto.

martini Holland, 1965. *Anomiopsyllus* [96519]. Can. Ent. 97: 1054, figs. 1–3, 13–14, 17.

Mex[ico], Dur.[ango State], 10 mi. [17 km] W El Salto [ca. 23°45'N, 105°35'W, 9000' (2743 m), from] nest of *S.[ciurus] aberti* in hollow tree, 21.VI.1964, J. E. H. Martin [leg.], S-64-96. Holotype ♂, CNC No. 8932.

martini Holland, 1971. *Kohlsia* [97102]. Can. Ent. 103: 97, figs. 5–8.

Mex[ico], [Chiapas State, Chiapas] N Oax.[aca] hwy. [= highway] 175, [km 145, ca. 18°00'N, 95°58'W, 4000' (1219 m), from] *Oryzomys* sp., 22.V.1969, J. E. H. Martin [leg.], No.: S-69-78. Holotype ♂, CNC No. 11552.

Remarks.—In the original description, it is noted that this locality is in Chiapas State; in fact, the locality given is well within Oaxaca State.

mexicanus Holland, 1965. *Anomiopsyllus hiemalis* [96520]. Can. Ent. 97: 1056, figs. 4–5.

Mex[ico], Chi.[huahua State], Mesa del Huracan [29°40'N, 180°15'W, 7400' (2256 m), from] *Neotoma* nest, 21–25.VII.1964, J. E. H. Martin [leg.], S-64-102. Holotype ♂, CNC No. 8933.

Remarks.—Now considered to be a subspecies of *Anomiopsyllus nudatus* (Baker, 1898) according to Barnes et al. (1977: 169).

neotomae Holland, 1957. *Hystrichopsylla dippiei* [95746]. Can. Ent. 89: 316, figs. 4, 11, 13, 25, 28.

United States, California [Alameda County], Berkeley, Strawberry Canyon [37°53'N, 122°17'W], ex *Neotoma* nest, 23.XII.1952, R. Lee & V. J. Tipton [leg.]. Holotype ♂, CNC No. 6546.

Remarks.—The original description lists the date as 26.II.1954, and the collectors as E. Méndez and G. Loshbaugh. These data match those on three female paratypes and there is a male with a similar label collected by Lee and Tipton on 17.IV.1954.

occidentalis Holland, 1949. *Hystrichopsylla* [94934]. Canada Dept. Agric. Tech. Bull. 70: 76, pl. X, figs. 47–49, map 6.

Canada, B.[ritish] C.[olumbia], Mt Seymour [near] Northlands [Burrard Inlet, 49°25'N, 122°57'W, 3400' (1036 m)], ex *Clethrionomys gapperi* ssp., 14.VI.[19]47, G. P. Holland [leg.], File No. 3052. Holotype ♂, CNC No. 5716.

pacifica Holland, 1949. *Peromyscopsylla hesperomys* [94938]. Canada Dept. Agric. Tech. Bull. 70: 176, pl. XL, figs. 319–321, 324a–e, map 41.

Canada, B.[ritish] C.[olumbia], Vancouver, U.B.C. [= University of British Columbia] Campus [49°13'N, 123°06'W], ex *Pero-*

myscus m.[aniculatus] austerus, 3.X.[19]43 [H. D. Fisher leg.]. Holotype ♂, CNC No. 5719.

paraterinus Wagner, 1940. *Callistopsyllus* [94033]. Z. Parasitenk. 11: 465, figs. 5–6.

Canada, B.[ritish] C.[olumbia], N.[orth] F.[ork of] Eagle River [= Perry River, ca. 50°55'N, 119°69'W, from] *Peromyscus maniculatus* (prob.) *artemisiae* (Rhodes), 28.V.[19]34, E. R. B.[uckell leg.], Vial N 57. Holotype ♂ (by monotypy), CNC No. 21217.

Remarks.—The determination label on this slide reads: “*Callistopsyllus paraterinus* Wagn. (= ?*terinus* Roths.), Jul. Wagner det.” This is now treated as a synonym of the nominate subspecies, *Callistopsyllus terinus terinus* (Rothschild, 1905) according to Holland (1949: 97). The original description gives the date as 24.V.34, but the holotype slide is clearly labeled 28.V.34.

petrochelidoni Wagner, 1936a. *Ceratophyllus* [93634]. Z. Parasitenk. 8: 655, fig. 2.

Canada, B.[ritish] C.[olumbia], Kamloops [50°39'N, 120°24'W], fr.[om] *Petrochelidon lunifrons lunifrons* [= *Hirundo pyrrhonota*], VII.[19]34, G. J. Spencer [leg.], Vial AOU 612.2. Holotype ♂, CNC No. 4551.

Remarks.—The data given in the original description for the holotype and allotype are reversed; the holotype is from Kamloops as noted above. Although we are not routinely recording allotypes, it should be noted that the allotype of this species was taken from the same host species, from Chilcotin, ca. 51°50'N, 123°00'W, British Columbia, 10.VIII.1930, by G. J. Spencer, and is also deposited in the collection. It is annotated “vial 512.1 (or 612.1)” in Wagner’s handwriting.

pygmaeus Wagner, 1936b. *Megarathroglossus* [93642]. Can. Ent. 68: 196, pl. 11, fig. 4.

Canada, B.[ritish] C.[olumbia], Nicola [50°16'N, 120°69'W], fr.[om] *Neotoma cinerea occidentalis*, 25.VIII.[19]32 [E.

Hearle? leg.] (vial 351). Holotype ♂, CNC No. 4113.

Remarks.—A junior synonym of *Megarathroglossus spenceri* Wagner, 1936 according to Hopkins and Rothschild (1962: 383).

rauschi Holland, 1960. *Ceratophyllus* [96036]. Can. Ent. 92: 792, figs. 6–8, 10.

Canada, Yukon [Territory], 30 mi. [48.3 km] N Stewart R.[iver] Crossing [on Klondike Highway, ca. 63°25'N, 136°45'W], ex nest of flicker [= *Colaptes auratus*], 16.VIII.1959, [G. P.] Holland & [J. E. H.] Martin [leg.], No.: 59-224. Holotype ♂, CNC No. 7154.

Remarks.—The original description gave the locality as the Stewart River crossing on the Alaska Highway. G. Haas (in litt.) indicated that “Alaska Highway” should read “Klondike Highway.”

rauschi Holland, 1979. *Rhadinopsylla* (*Microcropsylla*) [97923]. Can. Ent. 111: 716, figs. 6–7.

Canada, Sask.[atchewan], Cypress Lake, S. of Cypress Hills [49°28'N, 109°30'W, from] *Peromyscus maniculatus* [osgoodi], 24–26.X.[19]76, R. L. R.[ausch leg.], No.: S 77-39. Holotype ♂, CNC No. 15895.

scapani Wagner, 1936a. *Neopsylla* [93636]. Z. Parasitenk. 8: 657, fig. 5.

Canada, B.[ritish] C.[olumbia], Vancouver [49°13'N, 123°06'W], fr.[om] *Scapanus orarius orarius*, IV.1933, G. J. Spencer [leg.], vial 14.1. Holotype ♂, CNC No. 4552.

Remarks.—Now known as *Epitedia scapani* (Wagner, 1936).

scopulorum Holland, 1952. *Ceratophyllus* [95221]. Can. Ent. 84: 297, figs. 1–7.

Canada, Yukon Territory, Rampart House [67°25'N, 140°59'W, from] nest of *Petrochelidon* [= *Hirundo pyrrhonota*], 24–26.X.[19]76, R. L. R.[ausch leg.], No.: S 77-39. Holotype ♂, CNC No. 15895.

septentrionalis Stewart & Holland, 1940. *Aetheopsylla* [94017]. Can. Ent. 72: 41, figs. 1–2.

Canada, B.[ritish] C.[olumbia], Wigwam Mine [ca. 35 km south of Revelstoke, ca. 51°42'N, 118°12'W], ex *Marmota monax petrensis* Howell, 21.V.1939, E. R. Buckell [leg.], File No. 1505-a. Holotype ♀, CNC No. 4986.

Remarks.—Both the genus and the species were treated as junior synonyms of *Oropsylla* (*Oropsylla*) *arctomys* (Baker, 1904) by Jellison (1945: 90).

sinuatus Holland, 1965. *Anomiopsyllus* [96522]. Can. Ent. 97: 1058, figs. 9–10, 16, 19.

Mex[ico], Dur.[ango State], 30 mi. [= 48 km] W. Durango [ca. 24°02'N, 105°22'W], 8000' [= 2438 m], from *Peromyscus* nest, 5.VI.1961, J. E. H. Martin [leg.], No. 61-111. Holotype ♂, CNC No. 8935.

Remarks.—The original description notes the altitude as 6500' (1981 m).

spenceri Wagner, 1936a. *Thrassis* [93632]. Z. Parasitenk. 8: 655. [published 26.IX.1936].

Canada, B.[ritish] C.[olumbia], Birch Island [Granite Mtn, 51°36'N, 119°55'W], 7000' [2134 m], from hoary marmot (Alpine) *Marmota* sp. [= *caligata*], 12.VIII.[19]31, Eric Hearle [leg.] (vial 67). Holotype ♂, CNC No. 4111.

Remarks.—This species was again described as new, under the same name, by Wagner in Can. Ent. 68: 197, pl. 11, figs. 5, 7a (published 3.X.1936) based on the same specimens. Therefore, the latter *spenceri* is a junior objective synonym of the former.

spenceri Wagner, 1936b. *Megarhroglossus* [93641]. Can. Ent. 68: 196, pl. 11, figs. 2, 3.

Canada, Br.[itish] C.[olumbia], Nicola [50°16'N, 120°69'W], fr.[om] *Ochotona princeps* (*fenisex* ?), 26.VIII.1932, E.[ric] H.[earle leg.], N. 352, vial N 49. Holotype ♀, CNC No. 21248.

Remarks.—In this same paper Wagner described *M. similis* from Beaverdell, Brit-

ish Columbia, from *Neotoma cinerea occidentalis*, 23.XI.1930, G. J. Spencer leg. The male specimen, labeled "Typus," was illustrated by Wagner in pl. II, fig. 1. It is in the Wagner Collection in the Zoologisches Museum (ZMH 1797) in Hamburg, Germany, and was designated Lectotype by Smit and Wright (1965: 40).

spinata Holland, 1949. *Hystrichopsylla* [94935]. Canada Dept. Agric. Tech. Bull. 70: 77, pl. X, figs. 50–52, map 6.

Canada, B.[ritish] C.[olumbia], Vancouver [University of British Columbia Campus, ca. 49°13'N, 123°06'W], ex *Spilogale g.[racilis] olympica*, 16.X.[19]36, G. P. H.[olland leg.] Holotype ♂, CNC No. 5717.

Remarks.—Now considered a subspecies of *Hystrichopsylla dippiei* Rothschild, 1902.

truncata Holland, 1957. *Hystrichopsylla dippiei* [95747]. Can. Ent. 89: 318, figs. 8, 14, 23.

Canada, B.[ritish] C.[olumbia], Okanagan Ldg. [= Landing, 50°12'N, 119°22'W], *Peromyscus m.[aniculatus] artemesiaae*, 15.IX.[19]50, J. D. Gregson [leg.]. Holotype ♂, CNC No. 6547.

tundrensis Holland, 1945. *Ceratophyllus* [94501]. Can. Ent. 76: 242, figs. 1–3.

Canada, N.W.T. [= Northwest Territories], Baker Lake [64°10'N, 95°30'W, from] Arctic weasel, *Mustela arctica* [= *erminea*], 27.VIII.1937 [C. H. D. Clarke leg.]. Holotype ♂, CNC No. 5544.

vancouverensis Stark, 1957. *Thrassis spenceri* [95718]. J. Parasitol. 43: 334, pl. II, figs. 7–12.

Canada, B.[ritish] C.[olumbia], Vancouver Isl[an]d, Mt Washington [ca. 49°86'N, 125°67'W], ex Marmot [= *Marmota vancouverensis*], 30.VIII.[19]43, G. C. C.[arl], File No. 2371. Holotype ♂, CNC No. 21247.

Remarks.—Now considered a synonym of *Thrassis spenceri spenceri* Wagner, 1936 according to Stark, 1970: 39.

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