A CATALOG OF THE COLEOPTERA OF AMERICA NORTH OF MEXICO

FAMILY: CURCULIONIDAE
SUBFAMILY: PISSODINAE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURE HANDBOOK NUMBER 529-143d

PREPARED BY AGRICULTURAL RESEARCH SERVICE

FAMILIES OF COLEOPTERA IN AMERICA NORTH OF MEXICO

Fascicle[1]	Family	Year issued
1	Cupedidae	1979
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3	Carabidae	
4	Rhysodidae	1985
5	Amphizoidae	1984
6	Haliplidae	
8	Noteridae	
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66	Nosodendridae	
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69	Ptinidae	
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72	Lyctidae	
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97	Coccinellidae	
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119	Mycteridae	
120	Pyrochroidae	1983
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123	Oedemeridae	
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125	Mordellidae	1986
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132	Bruchidae	
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134	Nemonychidae	
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138	Allocorynidae	
140	Brentidae	
141	Platypodidae	1979
142	Scolytidae	
143	Curculionidae	1983
144	Stylopidae	
145	Fossil Coleoptera	

[1] Missing numbers are those assigned in the computer program to families not found in the United States and Canada.

A CATALOG OF THE COLEOPTERA OF AMERICA NORTH OF MEXICO

FAMILY: CURCULIONIDAE
SUBFAMILY: PISSODINAE

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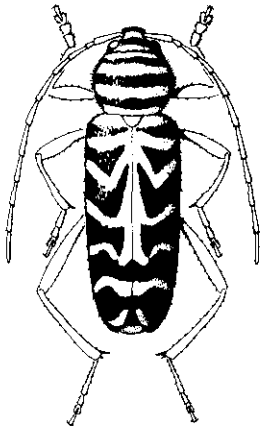

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UNITED STATES DEPARTMENT OF AGRICULTURE

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PREPARED BY AGRICULTURAL RESEARCH SERVICE

FOREWORD

Many species of beetles are important pests of agricultural crops, stored food products, forests, wood products and structures, and fabrics. Many other species, in contrast, are beneficial in the biological suppression of pest arthropods and weeds, as well as in the decomposition of plant detritus, animal carcasses, and dung. Part of our national responsibility to American agriculture is to provide correct identification of species of American beetles so that appropriate controls can be applied.

Most information about animal species, whether agricultural, biological, or experimental, is filed under the species' scientific names. These names are therefore the keys to retrieval of such information. Because some species have been known by several names, a complete listing of these names for each species is necessary.

For the user of scientific names, an up-to-date taxonomic catalog providing currently accepted names and pertinent bibliographic and distributional data is an indispensable tool. Although taxonomic literature is constantly changing to reflect current work, the traditional published taxonomic catalog remains static with updating left to the individual user until it is revised. Production of catalogs in the past has been laborious with long printing delays resulting in data that are obsolete before being published. However, the computer now provides the capability of storing, updating, and retrieving taxonomic data; rapid publication through computer-driven typesetting machinery; and a greater degree of currentness and flexibility.

All 124 fascicles in this catalog of the beetles of America north of Mexico are produced by an original group of computer programs, designed and written during a pilot project by personnel of the Systematic Entomology Laboratory and the Communications and Data Services Division, Agricultural Research Service.

The published information is stored on computer tape, is updated periodically to reflect taxonomic progress in the family, and is available in a data base for computer searching.

R. D. Plowman
Administrator
Agricultural Research Service

PREFACE

The Coleoptera, or beetles, are represented in the world by about 220,000 described species, of which about 24,000 occur in the United States and Canada. A comprehensive taxonomic catalog of beetles for this area has not been available except the series of world-based "Coleopterorum Catalogus" volumes (1909-present, Junk, Berlin). The Leng "Catalogue of the Coleoptera of America North of Mexico" (J. D. Sherman, Jr., Mt. Vernon, NY), which was published in 1920 with supplements to the end of 1947, is a checklist. However, it has served professional and amateur alike for nearly 60 years as the principal source of scientific names of beetles. Since 1947, many new taxa have been described and many changes in status and nomenclature have appeared in numerous scattered publications, but little effort has been made to summarize these changes.

This catalog will supplant the Leng catalog and supply additional essential information. It is produced by an original suite of storage, retrieval, and printing programs written especially for automated taxonomic catalogs.

The catalog for each family is published as a separate fascicle with its introductory text, bibliography, and index. Each family is numbered as listed, but the order of issuance of fascicles is not necessarily in numerical sequence. The publishing of separate fascicles makes data available shortly after they are assembled. Computer tapes for each fascicle are maintained for updating and necessary reprinting.

The information on each family is the responsibility of the respective author or authors. The editors modify it only to correct obvious errors and to make it conform to the requirements of the computer programs.

No original proposal for a new name, taxon, status, or classification is given, such data having been previously published, but new host and distributional data are often listed. The rules of "The International Code of Zoological Nomenclature" are followed.

The geographic scope of this catalog includes the continental United States, Canada, Greenland, and the associated continental islands. Names of taxa found only in other regions are excluded. If the range of a species extends outside these geographic limits, this fact is indicated. Inside the back cover is a map of the 12 faunal regions based on historical and faunal criteria to simplify distribution recordings. Two-letter Postal Service style abbreviations are used for States and Provinces, and faunal regions are indicated in each distribution record by a diagonal line between groups of abbreviations.

It is not the purpose of this catalog to present a complete scheme of higher classification within the order. The familial makeup is somewhat intermediate between that of R. H. Arnett in "The Beetles of the United States" (1960-62, Catholic University Press, Washington, DC) and that of R. A. Crowson in "The Natural Classification of the Families of Coleoptera" (1967, Biddles Ltd., Guildford, England). Modifications of these two systems are largely those advocated by J. F. Lawrence based in part on suggestions by taxonomic specialists for certain families.

Generic groups and higher categories within the family are arranged phylogenetically as indicated by the author of the particular fascicle, and species group names with their respective synonyms are arranged alphabetically.

Names referable to incertae sedis and nomen dubium are listed separately at the end of the nearest applicable taxon with notations as to their status.

Each available name is followed by its author, date proposed, and page number referring to the complete bibliographic citation containing the original description. Following each generic name are the type-species and method of its designation, necessary explanatory notes, and pertinent references on immature stages, taxonomy, redescription, ecology, and keys. After the specific name entry are the original genus (if different from the present

placement), type-locality, geographical distribution by State, Province, and broad extralimital units, explanatory notes, pertinent references to immature stages, taxonomy, redescription, and ecology, depository of type-specimen and its sex, and hosts.

In addition to the list under the map of faunal regions (inside back cover), the following abbreviations are used in this catalog:

ABBREVIATIONS, GENERAL

Amer. Bor.—America Borealis
Amer. Sept.—America Septentrionalis
Autom.—Automatic
C. Amer.—Central America
Co.—County
Cosmop.—Cosmopolitan
Design.—Designated
F.—Female
Holarc.—Holarctic
Isl.—Island
M.—Male
Mex.—Mexico
Monot.—Monotypy
Mus.—Museum
N. Amer.—North America
Orig. des.—Original designation
Preocc.—Preoccupied
S. Amer.—South America
Sp.—Species
Subseq. monot.—Subsequent monotypy
Subsp.—Subspecies
Taut.—Tautonymy
Univ.—University
USA—United States of America
Var.—Variety
W. Ind.—West Indies

MUSEUMS IN THE UNITED STATES AND CANADA[1]

AMNH—American Museum of Natural History, New York
ANSP—Academy of Natural Sciences Philadelphia, PA
BPBM—Bernice P. Bishop Museum, Honolulu
BYUC—Brigham Young University, Provo, UT
CASC—California Academy of Sciences, San Francisco
CISC—University of California, Berkeley
CNCI—Canadian National Collections, Ottawa
CUIC—Cornell University, Ithaca, NY
CWOB—C. W. O'Brien Collection, Tallahassee, FL
DHKC—D. H. Kistner Collection, Chico State College, CA
ELSC—E. L. Sleeper Collection, Long Beach, CA
FMNH—Field Museum of Natural History, Chicago, IL
FSCA—Florida State Collection, Gainesville,
HAHC—H. & A. Howden Collection, Ottawa, Canada
ICCM—Carnegie Museum, Pittsburgh, PA
INHS—Illinois Natural History Survey, Urbana
JGEC—J. G. Edwards Collection, San Jose, CA
KMFC—K. M. Fender Collection, McMinnville, OR
KSUC—Kansas State University, Manhattan
LACM—Los Angeles County Museum, CA
LSUC—Louisiana State University, Baton Rouge
MCZC—Museum of Comparative Zoology, Harvard University, Cambridge, MA
MSUC—Michigan State University, East Lansing
NCSM—North Carolina State University, Raleigh
NYSM—New York State Museum, Albany
OSEC—Oklahoma State University, Stillwater
OSUC—Ohio State University, Columbus
OSUO—Oregon State University, Corvallis

[1]Abbreviations for U.S. and Canadian museums abridged from Arnett, R. H., Jr., and Samuelson, G. A., 1969, "Directory of Coleoptera Collections of North America (Canada Through Panama)," Cushing-Malloy, Ann Arbor, MI, 123 pp.

PMNH—Peabody Museum, Yale University, New Haven, CT
PSUC—Pennsylvania State Museum, University Park
PURC—Purdue University, West Lafayette, IN
RUIC—Rutgers University, New Brunswick, NJ
SEMC—Snow Museum, University of Kansas, Lawrence
SJSC—San Jose State College, CA
SLWC—S. L. Wood Collection, Provo, UT
SMSH—Stovall Collection, University of Oklahoma, Norman
TAMU—Texas A. & M. University, College Station
UCDC—University of California, Davis
UICM—University of Idaho, Moscow
UMMZ—University of Michigan, Ann Arbor
UMRM—University of Missouri, Columbia
USNM—U.S. National Museum of Natural History, Washington, DC
WSUC—Washington State University, Pullman

MUSEUMS IN FOREIGN COUNTRIES

BMNH—British Museum (Natural History), London
GUHC—Glasgow University, Hunterian College, Scotland
HMOX—Hope Museum, Oxford, England
HNHM—Hungarian Natural History Museum, Budapest
IPZE—Institut Pflanzenschutzforschung Zweigstelle, Eberswalde, East Germany
IRSB—Institut Royal Sciences Belgique, Brussels
MFNB—Museum für Naturkunde (Humboldt), Berlin
MGFT—Museum G. Frey, Tutzing, Munich, West Germany
MHNL—Museum d'Histoire Naturelle, Lyon, France
MNHP—Museum National d'Histoire Naturelle, Paris
MNSL—Museum of Natural Sciences, Leipzig, East Germany
MZBS—Museum Zoologia, Barcelona, Spain
NHRS—Naturhistoriske Riksmuseet, Stockholm
NMPC—Narodni Museum, Prague, Czechoslovakia
SCUT—Spinola College, University of Turin, Italy
SMTD—Staatliches Museum für Tierkunde, Dresden, East Germany
UNAM—Universidad Nacional Autonoma, Mexico City
UZMC—University Zoological Museum, Copenhagen, Denmark
UZMH—University Zoological Museum, Helsinki, Finland
ZMAS—Zoological Museum, Academy of Sciences, Leningrad
ZMPA—Zoological Museum, Polish Academy of Sciences, Warsaw
ZMUL—Zoological Museum, University of Lund, Sweden
ZMUM—Zoological Museum, University of Moscow
ZSBS—Zoologische Sammlung Bayerischen Staates, Munich, West Germany

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We thank the following members of the Communications and Data Services Division, ARS: Sandra Strauss, Mary Goldenbaum, and Marianne Kingston for designing and writing the computer programs, and Margaret Seldin for developing the editing system. We also thank Elaine Jamison for the data entry necessary for each fascicle.

R. D. Gordon, editor in chief
J. R. Dogger, associate editor
Systematic Entomology Laboratory, Agricultural Research Service
Washington, DC

CONTENTS

Family CURCULIONIDAE

Subfamily PISSODINAE Bedel 1888

By Lois B. O'Brien

The Pissodinae are medium-sized, elongate-oval, subcylindrical, brown or black weevils, with an obvious pattern of white, black, and brown scales. The larvae develop in tunnels in and under bark of terminals, branches, trunks, roots, and root collars of conifers and feed on phloem tissue. *Pissodes*, especially the white pine weevil (*P. strobi*) and the lodgepole terminal weevil (*P. terminalis*), are of economic importance, deforming and killing coniferous trees in the United States.

Although this is a small subfamily of 12 genera and approximately 73 species, it is found in all biogeographic regions of the world (O'Brien and Wibmer, 1978). *Pissodes*, the only U. S. and Canadian genus, is holarctic, with extensions into the Neotropics in Mexico, Guatemala, El Salvador, and the West Indies (O'Brien and Wibmer, 1982). At present the number of valid species in the United States and Canada is uncertain. The most recent revisors, Smith and Sugden (1969), used cytological or cross-breeding techniques and were able to examine previously described morphological species, of which they synonymized 10. One more, *P. approximatus*, has been synonymized by Phillips et al. (1987) as a synonym of *P. nemorensis*. O'Brien and Thompson (1986) discovered that the type of *Curculio striatulus* Fabricius (1755) is a *Pissodes*, the senior synonym of *dubius* Randall. Thus 21 valid species remain in North American *Pissodes*, 10 of which have been cross-bred & examined cytologically.

Smith and Sugden (1969) reported that the species they recognized could be identified by a combination of morphological characters, host, and breeding site, except *P. approximatus* and *P. schwarzi*, which might be separated cytogenetically in their zones of breeding sites and geographical overlap (*Pinus contorta* root collars in Alberta, Canada).

It is regrettable that living material reared from hosts was not available to Smith and Sugden for *costatus* Mannerheim; *ochraceus* and *robustus* Van Dyke; and *barberi, burkei, californicus, coloradensis, fiskei, murrayanae, puncticollis*, and *webbi* Hopkins. They are listed as valid species in this catalog, but their status is still questionable.

Two monotypic New World genera, *Dorytomorpha* (Hustache, 1929) from Guadeloupe and *Laccoproctus* (Schoenherr, 1843) from Mexico and Guatemala, generally have been considered Pissodinae, although Vanin and Reichardt (1976) state *Laccoproctus* is not Pissodinae and *Dorytomorpha* should be reexamined. O'Brien (in press) places these genera in subfamilies other than Pissodinae.

The genus *Pissodes* was erected in 1817 by Germar to include three European species. The species *pini* from Europe and Siberia was designated as type of the genus by Schoenherr in 1825. Pissodini was separated from Hylobiinae and Erirhinini by Bedel in 1888 and raised to subfamily by Hopkins in 1911. *P. strobi*, the first North American species, was described from Maine by Peck in 1817. Hopkins (1911) published a key to adults, grouped larvae and pupae morphologically, and discussed the site of attack and hosts for the U. S. species. He listed European species with their distribution and host. Smith and Sugden's work is described above.

The Pissodinae are very closely related to the Hylobiinae. They have been demoted to a tribe of Molytinae by Kuschel in Wibmer and O'Brien (1986) and Kuschel (1987).

This manuscript was received July, 1979 and updated in May, 1988.

Tribe PISSODINI Bedel 1888

Genus PISSODES Germar

Pissodes Germar, 1817: 340. Type-species: *Rhynchaenus pini* Linnaeus (design. by Schoenherr, 1825: 582).

IMMATURE STAGES: Burke and Anderson, 1976: 72; Anderson, 1947; Viedma, 1963: 262; Hopkins, 1911: 23 (larvae, pupae).

REDESCRIPTION: Hopkins, 1911: 11; Blatchley, 1916: 178; Hatch, 1971: 311.

KEYS: Hopkins, 1911: 30; Blatchley, 1916: 179.

affinis Randall, 1838: 24. ME; BC OR/ MN WI MI ON QB/ NF/ NY PA/ ME NH MA.

curriei Hopkins, 1911: 65, pl. VI, fig. 30. BC: Kaslo.

TYPE DEPOSITORY: USNM.
SEX OF TYPE: M.
IMMATURE STAGES: Thomas, 1964: 1418 (keys to larvae of *approximatus* and *affinis*).
TAXONOMY: Smith and Sugden, 1969: 147.
REDESCRIPTION: Hopkins, 1911: 64, pl. IV, fig. 29 and pl. VI, fig. 29; Blatchley, 1916: 183; Hatch, 1971: pl. 34, fig. 8.
HOST: *Pinus resinosa* (Thomas, 1964: 417), *P. contorta, P. monticola* (Smith and Sugden, 1969: 147).

barberi Hopkins, 1911: 45. CA: Humboldt Co., Bair's Ranch, Redwood Crk.; WA OR/ CA.

TYPE DEPOSITORY: USNM.
SEX OF TYPE: F.

burkei Hopkins, 1911: 62, pl. IV, fig. 25. CO: above Ouray, 9,000'-10,000', Mineral Pt. Trail; WA OR/ MT/ WY UT CO.

TYPE DEPOSITORY: USNM.
SEX OF TYPE: F.
HOST: *Abies lasiocarpa*, in thick bark on living and dying trees.

californicus Hopkins, 1911: 53. CA: Yosemite Valley; CA.

TYPE DEPOSITORY: USNM.
SEX OF TYPE: F.
HOST: *Pinus ponderosa*, in thick bark on living trees, causing serious scars.

coloradensis Hopkins, 1911: 60. CO: Leadville; SD/ CO.

TYPE DEPOSITORY: USNM.
SEX OF TYPE: F.
HOST: *Picea canadensis* and *P. engelmanni* (Hopkins, 1911: 59).

costatus Mannerheim, 1852: 353. Sitka Isl.; AK/ BC WA OR.

TAXONOMY: Hopkins, 1911: 57.
REDESCRIPTION: Hopkins, 1911: 57.
HOST: *Picea sitchensis*, in thick bark on dying and felled trees and stumps (Hopkins, 1911).

fasciatus LeConte, 1876: 143. OR; BC WA OR ID/ CA/ WY.

TAXONOMY: Smith and Sugden, 1969: 147; Hopkins, 1911: 56, pl. III, fig. 16 and pl. XVII.
REDESCRIPTION: Hatch, 1971: pl. 37, fig. 5; Hopkins, 1911: 56, pl. III, fig. 16 and pl. XVII.
HOST: Reared from *Pseudotsuga menziesii*.

fiskei Hopkins, 1911: 59, pl. III, fig. 18; pl. XII. NH: Franconia; YK/ BC/ AB SK MB/ ON QB/ NB/ ME NH.

TYPE DEPOSITORY: USNM.
SEX OF TYPE: F.
TAXONOMY: Smith and MacDonald, 1972: 789, figs. 2-6.
REDESCRIPTION: Blatchley, 1916: 182; Smith and MacDonald, 1972: 789; Stewart and Bright, 1982: 447, figs. 1-11.
HOST: *Picea rubens* and *P. mariana*, in thick bark on logs and trunks of small, standing trees (Hopkins, 1911: 35, 59); reared from black spruce slash (Smith and MacDonald, 1972: 795).

murrayanae Hopkins, 1911: 60. OR: Wallowa; WA OR.

TYPE DEPOSITORY: USNM.
HOST: *Pinus murrayana*, in thin bark (Hopkins, 1911: 60).

nemorensis Germar, 1824: 318. KY; AB MB/ WI MI ON QB/ MO IN KY/ NY PA MD DC WV VA/ ME NH MA CT/ TX/ AL GA SC NC FL.

TYPE DEPOSITORY: USNM.
SEX OF TYPE: F.

approximatus Hopkins, 1911: 49, pl. VI, fig. 7: pl. XV. MA: Lynn Woods.

TYPE DEPOSITORY: USNM.
SEX OF TYPE: F.

canadensis Hopkins, 1911: 51. MB: Winnipeg.

TYPE DEPOSITORY: USNM.
SEX OF TYPE: F.

deodarae Hopkins, 1911: 52. GA: Experiment.

TYPE DEPOSITORY: USNM.

IMMATURE STAGES: Boeving, 1929: separates from larvae of *P. strobi*; Thomas, 1964: 1418 (keys).

TAXONOMY: Smith and Sugden, 1969: 147; Hopkins, 1911: 51; Dietrich, 1931: 872; Phillips et al, 1987: 467

REDESCRIPTION: Blatchley, 1916: 181; Hopkins, 1911: 51, fig. 8 and pl. XV, fig. C.

HOST: Reared from *Picea glauca, P. mariana, P. pungens* and *P. excelsa*; reared from boles and root collars of *Pinus banksiana, P. elliotti, P. palustris, P. pungens, P. resinosa, P. serotina, P. strobus, P. sylvestris* and *P. taeda*; and *P. virginiana*; "*Cedrus deodara*, in living branches, tops and terminals, causing serious injury" (Hopkins, 1911: 53)

ochraceus Van Dyke, 1927: 12. CA: Plumas Co., Meadow Valley; CA.

TYPE DEPOSITORY: CASC.

puncticollis Hopkins, 1911: 60, pl. IV, fig. 20. WV: Randolph Co.; WV.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

REDESCRIPTION: Blatchley, 1916: 182.

HOST: *Picea rubens*, in dying bark on felled and standing trees.

radiatae Hopkins, 1911: 55, pl. III, fig. 15. CA: Del Monte; WA OR ID/ CA NV.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

TAXONOMY: Smith and Sugden, 1969: 147.

REDESCRIPTION: Hatch, 1971: pl. 37, fig. 4.

HOST: Reared from year-old growth and boles of *Pinus radiata*; collected on *P. sylvestris, P. attenuata, P. murrayana* (Hatch, 1971: 311-313).

robustus Van Dyke, 1927: 11. CA: Humboldt Co., Camp 20, Hammond Lumber Company; CA.

TYPE DEPOSITORY: CASC.

rotundatus LeConte, 1876: 143. "Lake Superior"; AK/ BC/ WI MI/ NY PA/ ME NH MA.

alascensis Hopkins, 1911: 61. AK: Koyukuk River, Arctic Circle.

TYPE DEPOSITORY: USNM.

nigrae Hopkins, 1911: 59. NH: Webster.

TYPE DEPOSITORY: USNM.

TAXONOMY: Smith and Sugden, 1969: 147; Hopkins, 1911: 61, pl. IV, fig. 24; Smith and MacDonald, 1972: 785, figs. 2-6.

REDESCRIPTION: Hopkins, 1911: 61, pl. IV, fig. 24; Blatchley, 1916: 182, Smith and MacDonald, 1972: 785, figs. 2-6.

HOST: Reared from boles of *Picea engelmanni, P. glauca, P. mariana, Pinus banksiana, P. contorta, P. monticola, P. strobus* and *Tsuga heterophylla* (Smith and Sugden, 1969: 147), probably on *Picea rubens* (Hopkins, 1911: 61).

schwarzi Hopkins, 1911: 50. CO: Veta Pass; BC WA OR ID/ AB MT SD/ CA/ CO/ AZ.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

yosemite Hopkins, 1911: 53. CA: Yosemite Valley.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: M.

TAXONOMY: Smith and Sugden, 1969: 147.

REDESCRIPTION: Hatch, 1971: pl. 37, fig. 3.

HOST: Reared from bole of *Larix occidentalis* and from boles and root collars of *Pinus albicaulis, P. contorta, P. flexilis, P. lambertiana, P. monticola, P. ponderosa, Picea engelmanii, P. glauca, P. mariana* and *P. pungens*.

similis Hopkins, 1911: 44, pl. III, fig. 1. NC: Black Mountain; BC WA/ QB/ UT/ ME NH/ NC.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

utahensis Hopkins, 1911: 45. UT: Park City.

TYPE DEPOSITORY: USNM.

SEX OF TYPE: F.

TAXONOMY: Smith and Sugden, 1969: 147.

REDESCRIPTION: Blatchley, 1916: 180.

HOST: Reared from witches broom on *Abies balsamea*; collected on *A. fraseri*.

striatulus Fabricius, 1775: 129 (*Curculio*) (recognized as valid name by O'Brien and Thompson, 1986). NF; BC WA OR ID/ MN MI ON QB/ NF/ NY/ ME NH MA/ NC.

TYPE DEPOSITORY: BMNH.
SEX OF TYPE: F.

dubius Randall, 1838: 24. ME.

fraseri Hopkins, 1911: 63, fig. 9; pl. VI, fig. 28. NC: Pisgah Mt., 5000 ft.

TYPE DEPOSITORY: USNM.
SEX OF TYPE: F.

piperi Hopkins, 1911: 62, pl. IV, VI, XVII. WA: Mt. Rainier.

TYPE DEPOSITORY: USNM.
SEX OF TYPE: F.

IMMATURE STAGES: Hopkins, 1911: pl. V, fig. A (larva) and text fig. 8.
TAXONOMY: Smith and Sugden, 1969: 147; O'Brien and Thompson, 1986: 199.
REDESCRIPTION: Hopkins, 1911: 63, pl. IV, fig. 27; Blatchley, 1916: 183; Hatch, 1971: pl. 37, fig. 7.

strobi Peck, 1817: 208, pl. II, figs. 1-3 (*Rhynchaenus*). ME; BC WA OR ID/ AB MT/ MN WI MI ON/ CO/ NB/ NY PA DC WV/ ME NH MA CT/ MS NC.

engelmanni Hopkins, 1911: 47, pl. VI, fig. 5. ID: Smith's Ferry.

TYPE DEPOSITORY: USNM.
SEX OF TYPE: F.

sitchensis Hopkins, 1911: 47, pl. V, fig. B, pl. XIII. WA: Hoquiam.

TYPE DEPOSITORY: USNM.
SEX OF TYPE: F.

IMMATURE STAGES: Hopkins, 1911: pl. V, fig. B (pupa), figs. 5, 6 and 7 (larva); Boeving, 1929 (larvae); Anderson, 1947 (larva); Peterson, 1951: C22 and C23 (larva).
TAXONOMY: Hopkins, 1911: 48; Smith and Sugden, 1969: 147.
REDESCRIPTION: Hopkins, 1911: 48, pls. III, VI, XIV and text figs. 1, 2; Blatchley, 1916: 180, fig. 63.
ECOLOGY: Harman and Kulman, 1967: 1 (parasites and predators).
HOST: Reared from year-old growth of *Picea engelmanni, P. glauca, P. mariana, P. pungens, P. sitchensis, P. excelsa,* and *Pinus banksiana, P. contorta, P. pungens P. resinosa, P. rigida, P. strobus* and *P. sylvestris*; collected on *Picea rubens.*

terminalis Hopping, 1920: 133, fig. 15 (type series contains males and females). CA: Plumas Co., Chester; CA/ CO.

TYPE DEPOSITORY: CASC (syntypes).
TAXONOMY: Smith and Sugden, 1969: 147.
REDESCRIPTION: Hatch, 1971: pl. 37, fig. 6.
HOST: Reared from leaders of *Pinus banksiana* and *P. contorta.*

webbi Hopkins, 1911: 54. AZ: Santa Catalina Mts.; AZ NM.

TYPE DEPOSITORY: USNM.
SEX OF TYPE: F.
HOST: Reared from thick bark of *Pinus strobiformis*; from bark of *P. scopulorum* and *P. murrayana (contorta)* (Hopkins, 1911: 54).

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INDEX

Names are indexed as follows:

CAPITALS: All names for taxa above the generic level;

Boldface: Valid generic and subgeneric names;

Roman: Valid specific and subspecific names;

Italics: All invalid names such as synonyms, nomina nuda, and extra-limital taxa even though valid.

Parentheses around an author's name indicates that the specific name has been transferred from its original genus. The generic name following the author's name indicates the present placement of the species. Synonyms of species-group names are listed with the original spelling.

AB Alberta
AK Alaska
AL Alabama
AR Arkansas
AZ Arizona
BC British Columbia
CA California
CO Colorado
CT Connecticut
DC District of Columbia
DE Delaware
FL Florida
GA Georgia
GL Greenland
IA Iowa
ID Idaho
IL Illinois
IN Indiana
KS Kansas
KY Kentucky
LA Louisiana
MA Massachusetts
MB Manitoba
MD Maryland
ME Maine
MI Michigan
MN Minnesota
MO Missouri
MS Mississippi
MT Montana
NB New Brunswick
NC North Carolina
ND North Dakota
NE Nebraska
NF Newfoundland
NH New Hampshire
NJ New Jersey
NM New Mexico
NS Nova Scotia
NT Northwest Territories
NV Nevada
NY New York
OH Ohio
OK Oklahoma
ON Ontario
OR Oregon
PA Pennsylvania
PE Prince Edward Island
PM St. Pierre-Miquelon
PQ Quebec
RI Rhode Island
SC South Carolina
SD South Dakota
SK Saskatchewan
TN Tennessee
TX Texas
UT Utah
VA Virginia
VT Vermont
WA Washington
WI Wisconsin
WV West Virginia
WY Wyoming
YT Yukon Territory