LIST OF MONTANA SCOLYTIDAE (COLEOPTERA) AND
NOTES ON NEW RECORDS

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ABSTRACT.—Listed are 96 species of Scolytidae (Coleoptera) from Montana. Eighteen species reported from Montana for the first time are: Scierus pubescens Swaine, Hylastinus obscurus (Marsham), Hylastinus aculeatus Say, Hylastinus californicus (Swaine), Hylastinus criddei (Swaine), Pseudohylastinus grandatus (LeConte), Dendroctonus punctatus LeConte, Phloeosinus hoferi Blackman, Phloeosinus pinu Swaine, Carphophorus pinicolens Wood, Scolytus subscaber LeConte, Ips grandicollis (Eichhoff), Trypodendron betulace Swaine, Trypodendron retusum (LeConte), Trypodendron populi Hopkins, Procyphalus mucronatus (LeConte), Pittyophthorus alpinensis G. Hopping, and Gnathotrichus denticulatus Blackman.

Montana, third largest of the contiguous 48 states, with elevations ranging from 555 to 3,901 m, is diverse ecologically and has flora representative of vaster areas around it. This circumstance has resulted in the occurrence of numerous scolytid species there. Ninety-six species are listed herein, including 18 species new to the state. Judging from published distributions of scolytids in Montana and from vegetation that grows in surrounding states and Canadian provinces, we believe additional species will doubtless be found in Montana.

Of the new records, only one species, Hylastinus obscurus (Marsham), is known not to be native to Montana. Another of the new Montana species, Hylastinus aculeatus Say, appears to be distributed throughout the range of green ash in the eastern half of Montana. This tree commonly exhibits progressive branch killing, which suggests to us that a fungus may be associated with the beetle. We recommend that this possibility be studied because of the importance of green ash as an ornamental tree.

Our source of published records of Montana scolytids is Wood (1982). Other records were obtained from the collections at Montana State University, USDA Forest Service Region One, Montana Division of Forestry, and by our collections.

Measurements of host trees are in metric units, as are distances from landmarks, although the latter are invariably in miles on labels of pinned museum specimens. Names of collectors are given as per labels or as stated in the literature. The numbers of known pinned adult specimens follow the collection data. Specimens deposited in the University of Idaho, William F. Barr Entomological Museum, are designated UI-WFBM. Other depositories are USDA Forest Service, Region One, Missoula (FS-R1); Montana State University, Bozeman (MSU); Montana Division of Forestry, Missoula (MDF); and State University of New York (SUNY).

SPECIES NEW TO MONTANA

Subfamily Hylesininae

Scierus pubescens Swaine

BIOLOGY.—Monogynous, unstudied. Infests Abies lasiocarpa and Picea engelmannii (Wood 1982).


Hylastinus obscurus (Marsham)

BIOLOGY.—Monogynous. Infests the root crown of red clover in the spring. It is less common in other clovers. Overwinters as larvae or adults in the roots. There is one generation each year (Wood 1982).

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**Pseudohylesinus granulatus** (LeConte)

**Biology.** Monogynous. Infests the base and roots of weakened true firs, Douglas-fir, and western hemlock. Egg galleries are short and transverse. A two-year life cycle is reported in northern Washington (Furniss and Carolin 1980).


**Dendroctonus punctatus** LeConte

**Biology.** Monogynous. Infests basal stem and roots of boreal spruces.


**Phloeosinus hoferi** Blackman

**Biology.** Monogynous. Unstudied. Infests bark of small branches and twigs of dying trees (Wood 1982).


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*Phloeosinus pini* Swaine

**Biology.**—Monogynous. Specimens have been reared from spruce branches and from a broken top of jack pine (Wood 1982).


*Carphoborus pinicolens* Wood

**Biology.**—Polygynous. Infests unthrifty or injured seedlings and broken branches of pines. Healthy seedlings on poor sites have also been killed by this beetle (Wood 1982).


**Subfamily Scolytinae**

*Scolytus subscaber* LeConte

**Biology.**—Monogynous. Breeds in shaded-out branches and tops of suppressed or over-mature trees. Egg galleries form a rounded E-shape and are typically impregnated with resin. Larval mines are hidden in phloem at first, then appear on the phloem inner face, extending in any direction (Wood 1982).

**Distribution and Notes.**—Canada: B.C.; USA: Calif., Ida., Ore., Wash. Montana: Roaring Lion Creek, 9 km S of Hamilton, Ravalli Co., 19-VII-1988, *Abies grandis*, M. M. Furniss and J. B. Johnson (1 ♀ UI-WFBM). Infesting a 3–4-cm-diameter bayonet-top of a 30-cm-diameter suppressed tree. Typical galleries also noted in 2½–4-cm-diameter broken branches on ground at this locality.

*Ips grandicollis* (Eichhoff)

**Biology.**—Breeds in slash, small branches, and vacant spaces among galleries of more aggressive bark beetles. Hosts include virtually all pines within its range. In the South, six or more generations occur per year; fewer probably occur in Montana.


*Trypodendron betulae* Swaine

**Biology.**—Monogynous. Tunnels are constructed by females radially through bark into sapwood. The main tunnel branches at close intervals, left or right, in the same plane. Eggs are laid in niches oriented above and below the gallery. Larvae excavate short cradles in which they develop and feed on ambrosia fungus. Males are active in keeping the tunnels clean and aerated.

1 ♂ UI-WFBM). Infesting 6-cm-diameter stem of a dying tree; a larva was present in one cradle.

Trypodendron retusum (LeConte)

BIOLOGY.—Monogynous. Infests stems of dying *Populus* spp; galleries are constructed radially at first, then follow growth rings transversely. Larvae develop in cradles aligned in single series above and below the transverse galleries. They feed on ambrosia fungus introduced by the parents (Wood 1982).


Trypodendron populi Hopkins

BIOLOGY.—The monogynous female excavates an irregular, 2-cm-long gallery just beneath the bark surface of stems or branches of standing, unhealthy, or dying trees. The galleries and larval mines do not show on the inner surface of the bark. One to one and one-half generations per year occur in Utah, overwintering as larvae; eggs are present in July (Petty 1977).


Gnathotrichus denticulatus Blackman

BIOLOGY.—Monogynous. Galleries are initiated by males and extend radially into xylem from which transverse tunnels follow the growth rings. Larvae develop in cradles excavated by them and feed primarily on ambrosia fungus introduced by the parents (Wood 1982).

red foliage. *Dendroctonus valens* LeConte larvae and *Ips calligraphus* (Germar) adults also present.

**MONTANA SCOLYTIADA**

**Hylesini**
- *Hylastes annecetus* LeConte
- *Hylastes pubescens* Say
- *Hylastes reticulatus* Wood
- *Hylastes rugipennis* piniflex (Fitch)
- *Hylastes s. subsofiatus* (Mannerheim)
- *Hylastes gracilis* LeConte
- *Hylastes longicollis* Swaine
- *Hylastes macer* LeConte
- *Hylastes nigritus* (Mannerheim)
- *Hylastes ruber* Swaine

**Hylesiini**
- *Alnapogus aspericollis* (LeConte)
- *Hylesinus obscurus* (Marsham)
- *Hylesinus acutus* Say
- *Hylesinus californicus* (Swaine)
- *Hylesinus cridddii* (Swaine)

**Tomiscini**
- *Tomiscus montanus* Blackman
- *Pseudoleuconus granulatus* (LeConte)
- *Pseudoleuconus n. nebulosus* (LeConte)
- *Dendroctonus brevicomis* LeConte
- *Dendroctonus murrayae* Hopkins
- *Dendroctonus ponderosa* Hopkins
- *Dendroctonus pseudotsugae* Hopkins
- *Dendroctonus punctatus* LeConte
- *Dendroctonus rufipennis* Kirby

**Phloeotribini**
- *Phloeotribus lecontei* Schedl

**Phloeosinini**
- *Phloeosinus hoferi* Blackman
- *Phloeosinus piniflex* Swaine
- *Phloeosinus punctatus* LeConte

**Hyphocerini**
- *Chaetocerena heterodoxa* (Casey)

**Polygraphini**
- *Carphophorus carri* Swaine
- *Carphophorus pinicolea* Wood
- *Carphophorus ponderosa* Swaine
- *Polygraphus rufipennis* Kirby

**Scolytinae**

**Scolytini**
- *Scolytus laris* Blackman
- *Scolytus monticola* Swaine
- *Scolytus multistriatus* (Marsham)
- *Scolytus opacatus* Blackman
- *Scolytus pinetorum* (Swaine)
- *Scolytus rugulosus* (Müller)
- *Scolytus subsacer* LeConte
- *Scolytus tuii* Swaine
- *Scolytus unispinus* LeConte
- *Scolytus ventralis* LeConte

**Crypturgini**
- *Crypturgus borealis* Swaine

**Dryocoetini**
- *Dryocoetes affaber* (Mannerheim)
- *Dryocoetes autographus* (Ratzeburg)
- *Dryocoetes betulae* Hopkiss
- *Dryocoetes confusus* Swaine
- *Dryocoetes sechelti* Swaine

**Ipini**
- *Pityogenes carinatus* (LeConte)
- *Pityogenes fossifrons* (LeConte)
- *Pityogenes knechteli* Swaine
- *Pityogenes lasiocarpi* (Swaine)
- *Pityogenes minutus* (Swaine)
- *Pityogenes ornatus* (Swaine)
- *Orthotomicus caudatus* (Eichhoff)
- *Ips b. borealis* Swaine
- *Ips calligraphus* (Germar)
- *Ips emarginatus* LeConte
- *Ips grandicollis* (Eichhoff)
- *Ips integer* (Eichhoff)
- *Ips latidens* (LeConte)
- *Ips mexicanus* (Hopkins)
- *Ips montanus* (Eichhoff)
- *Ips perterbatus* (Eichhoff)
- *Ips piliferus* utahensis Wood
- *Ips pini* Say
- *Ips p. plastographus* (LeConte)
- *Ips tridentis* engelmanni Swaine
- *Ips woodi* Thatcher

**Xyletineri**
- *Trypodendron betulae* Swaine
- *Trypodendron lineatum* (Olivier)
- *Trypodendron retusum* (LeConte)
- *Trypodendron rufiarsis* Kirby

**Xyleborini**
- *Xyleborus intrinser* Blandford

**Cryptophila**
- *Cryptophila r. ruficollis* Hopkins
- *Trypodendron populi* Hopkiss
- *Procryptophila macronata* (LeConte)

**Cortylini**
- *Conophthorus ponderosa* Hopkins
- *Pityophthorus absonus* Blackman
- *Pityophthorus alpinensis* G. Hopping
- *Pityophthorus aquilus* Blackman
- *Pityophthorus boycei* Swaine
- *Pityophthorus confertus* Swaine
- *Pityophthorus confinis* (LeConte)
- *Pityophthorus digestus* (LeConte)
- *Pityophthorus fuscus* Blackman
- *Pityophthorus murrayae* Blackman
- *Pityophthorus nitisus* Swaine
- *Pityophthorus pseudotsugae* Swaine
- *Pityophthorus tuberculatus* Eichhoff
- *Pityophthorus sculpis* Bright
- *Gnathotrichius denticulatus* Blackman
- *Gnathotrichius retusus* (LeConte)

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LITERATURE CITED


