

Doyl

Coleoptera

1947 HSE

1602

DISTRIBUTIONAL AND BIOLOGICAL NOTES ON THE  
SPECIES OF THE SUBGENUS MELANOPHILA  
OCCURRING IN WESTERN NORTH AMERICA  
(Coleoptera: Buprestidae)

BY W. F. BARR AND E. G. LINSLEY  
*University of California, Berkeley*

*Melanophila* (*Melanophila*) constitutes a unique group of Buprestidae because adults of this subgenus are attracted to fire, smoke and acrid fumes, frequently in large numbers and often from considerable distances. As a result they are popularly known as smoke beetles. A number of biological observations have been made on various forms, but since the species have not been easily distinguished and their distribution not understood, many such observations have either gone unpublished, or have been made on incorrectly determined material. Thus many of the early distributional and biological records concerning *Melanophila* (*Melanophila*) are questionable or incorrect.

Obenberger (1928) and Sloop (1937) have done much to clarify the status of the species in this subgenus and it is now possible to add to the distributional and biological knowledge of this group, as well as to summarize and correct certain previous records.

The data used in this report were gathered from material in the collections of the California Academy of Sciences, the University of California and those of the writers.

MELANOPHILA (MELANOPHILA) CONSPUTA LeConte

*Melanophila consputa* LeConte, 1857, Rep. Pac. Explora., 12:44.

This species has been previously recorded from Oregon, California, and Arizona. However, it is apparently rather widely distributed over western North America, following the range of its host species of conifers. These hosts are recorded as *Pinus ponderosa*, *P. murrayana*, *P. radiata*, *P. torreyana*, *P. attenuata*, *P. contorta* and *Libocedrus decurrens*. Sloop (1937) reports a specimen "in the larval channel under bark of *Eucalyptus globulus*," but this record has not since been confirmed. Specimens have been

examined from the following new or more exact localities: Chiloquin, Klamath County, Oregon, July 23, 1922 (F. C. Clark); Esmeralda County, Nevada, June 12, 1908 (F. W. Nunenmacher) and Cananea, Dist. Arizpe, Sonora, Mexico.

Burke (1919), Chamberlin (1924), Van Dyke (1926, 1928), Linsley (1933, 1943), and Keen (1938) record this species as being attracted to fires and smelters.

MELANOPHILA (MELANOPHILA) NOTATA ELEGANS Sloop

*Melanophila notata elegans* Sloop, 1937, Univ. Calif. Pub. Ent., 7(1):7.

This subspecies was described from specimens collected at Douglas, Arizona, which is located at the extreme southern border of the state. A specimen from Cananea, Dist. Arizpe, Sonora, Mexico, extends the range to the southwest for some 50 miles. Nothing is known of its host plants, but it is believed to breed in pines.

MELANOPHILA (MELANOPHILA) ACUMINATA (De Geer)

*Buprestis acuminata* De Geer, 1774, Mem. Hist. Ins., 4:133.

*Melanophila acuminata* has had a number of species confused with it. It has now been established that *M. acuminata* is holarctic in its distribution, breeding only in coniferous trees such as pines, firs, and spruces. In western North America it ranges from Alaska at least as far south as Central California. Linsley's record (1933) from Douglas, Arizona, was based upon *M. occidentalis* Obenberger (see below).

MELANOPHILA (MELANOPHILA) OCCIDENTALIS Obenberger

*Melanophila occidentalis* Obenberger, 1928, Archiv. Naturg., 92(A):209.

This species was described from material which was merely labeled "California," and has since been recorded more specifically from Orange County, California (Sloop, 1937), Southwestern Oregon (Beer, 1940), and Berkeley, California (Linsley, 1943). It appears, however, to occupy a rather wide range over western North America as may be seen from the following locality records:

Washington: Heartline, June 30, 1940 (H. P. Chandler).

Oregon: Klamath Falls, July 7, 1934 (Van Dyke); Grants Pass, June 2, 1939 (F. M. Beer).

Utah: Garfield, June 28, 1922 (Van Duzee).

California: Siskiyou County; McCloud, Siskiyou County, July 3, 1914 (Van Dyke), July 23, 1918; Castle Crags, Shasta County, July 19, 1921 (Van Dyke); Davis, September 19, 1930 (F. H. Wymore); Antioch, July, 1936 (E. S. Ross); Brentwood, July 28, 1936 (Van Dyke); Berkeley, September 27, 1921 (Van Duzee), November 21, 1911 (J. C. Bridwell); San Francisco, October, 1918, October 6, 1931 (J. A. Kusche); Carmel, October 25, 1915 (L. S. Slevin); Dos Palos, Merced County, July 10, 1946 (K. S. Hagen); Los Angeles County; Claremont, October 22, 1927 (T. Craig); Lytle Creek, San Bernardino County, June 8, 1928 (Van Dyke); Needles, June 12, 1940 (W. F. Barr); Herkey Creek, San Jacinto Mountains, June 20, 1940 (E. G. Linsley); Idyllwild, June 29, 1928 (Van Dyke); Indio (E. G. Linsley, J. W. MacSwain); Blythe, May 16, 1937 (M. A. Embury); June 22-25, 1946 (W. F. Barr, E. G. Linsley, J. W. MacSwain, R. F. Smith), August 24, 1946 (W. F. Barr); Ripley, Riverside County, July, 1946 (W. F. Barr); Palo Verde, Imperial County, August 17, 21, 1946 (W. F. Barr, P. D. Hurd); Poway, San Diego County (Blaisdell).

Arizona: Jerome (Bruder); Ehrenberg, June 17, 1946 (W. F. Barr, E. G. Linsley, J. W. MacSwain, R. F. Smith), Douglas, June 7, 1930 (E. G. Linsley); "Arizona" (O. Dietz).

Lower California: Five miles north of Mission San Vicente, September 20, 1941 (E. S. Ross and G. E. Bohart).

Sloop (1937) lists its host as "oak" and the specimen from Herkey Creek in the San Jacinto Mountains, Riverside County, California, was collected from *Quercus kelloggii*. Beer (1940) records *Quercus garryana*, *Q. californica* and *Arbutus menziesii* as additional hosts. Linsley (1943) has recorded the species on partially burned eucalyptus. Several of the specimens from Palo Verde, Imperial County, California, were swept from *Larrea glutinosa tridentata* and *Tamarix*. The specimens from Dos Palos, Merced County, California, and Ripley, Riverside County, California, were swept from alfalfa.

Apparently this is the only member of this subgenus known to breed regularly in broad-leaved trees and shrubs in western North America. This fact may explain some of the records of *Melanophila* (*Melanophila*) spp. from non-coniferous areas in this region. A factor correlated with the numerous hosts of *M. occidentalis* is the wide range this species occupies.

*M. occidentalis* was frequently observed in the Palo Verde Valley in southeastern California during the summer of 1946. On

June 21 a stockpile of creosoted railroad ties and poles in the town of Blythe caught fire and burned and smoldered for several hours during the afternoon. Large numbers of *M. occidentalis* were attracted to the area because of the fire and for the next few nights they were very abundant about lights in the town. At the extreme southern end of the valley, below Palo Verde, Imperial County, a number of specimens were taken at light on the nights of August 17 and 21. No known recent fires had occurred at this locality. Across the Colorado River at Ehrenberg, Arizona, examples were also occasionally taken at lights throughout the summer. The predominant trees and shrubs in this valley are *Tamarix*, *Acacia*, *Prosopis*, *Parkinsonia*, *Larrea*, *Pluchea* and *Atriplex*.

Linsley (1933) has recorded this species (as *M. acuminata*) about lights at Douglas, Arizona, where it was attracted in considerable numbers by the fumes of a smelter plant.

*M. occidentalis* and *M. acuminata* are closely related. However, the general distribution and hosts of the two are quite distinct. *M. occidentalis* apparently occurs most commonly in southwestern United States although its range extends northward into the state of Washington; it breeds in broad-leaved trees and shrubs. *M. acuminata* occurs throughout the Holarctic Region and breeds in coniferous trees. The ranges of the two species overlap along the Pacific Coast from central California to Washington.

#### MELANOPHILA (MELANOPHILA) ATROPURPUREA Say

*Melanophila atropurpurea* Say, 1836, Trans. Am. Philos. Soc. (2)11:213.

Horn (1882) records this species from "Oregon to Texas in the mountain regions," Linsley (1933) from the San Francisco Bay Region, Doane et al (1936) from Kansas to the Pacific States, and Sloop (1937) from Arizona, Texas and Utah. Horn and Van Dyke were confusing two and probably three species: the Kansas, Texas and Arizona(?) specimens were undoubtedly *M. atropurpurea* while the others from Oregon and California(?) were either *M. acuminata* or *M. occidentalis* or both. Linsley's record also involves one or both of these latter species. The only specimens of the true *M. atropurpurea* seen by the writers were from Oracle, Arizona (Oslar), Texas (O. Dietz), and Fort Sam Houston, Texas.

Sloop lists the hosts of this species as *Pinus ponderosa*, Douglas fir and true firs. However, none of these trees extend their range

into parts of Texas where *M. atropurpurea* is known to occur. It is reasonable to assume that this species has additional hosts and that some of the above records may be based on incorrectly determined material.

Doane et al (1936) list Monterey cypress, incense cedar, oak, and mountain mahogany as hosts. However, judging from the distribution of these plants two different species are probably involved, *M. acuminata* in the first two cases and *M. occidentalis* in the last.

#### LITERATURE CITED

- BEER, F. M. 1940. Notes on some Buprestidae of southwestern Oregon. Pan-Pac. Ent., 16(1):13-16.
- BURKE, H. E. 1919. Biological notes on some flatheaded bark-borers of the genus *Melanophila*. Jour. Econ. Ent., 12:105-108.
- CHAMBERLIN, W. J. 1924. Notes on the Buprestidae of Oregon with descriptions of new species. Jour. New York Ent. Soc., 32:186-195.
- DOANE, R. W., E. C. VAN DYKE, W. J. CHAMBERLIN, and H. E. BURKE. 1936. Forest Insects. xii & 463 pp., McGraw-Hill, New York.
- HORN, G. E. 1882. Revision of the species of some genera of Buprestidae. Trans. Am. Ent. Soc., 10:101-112.
- KEEN, F. P. 1928. Insect enemies of California pines and their control. Calif. Div. Forestry, Bull. 7, pp. 1-113.
1939. Insect enemies of western forests. U.S.D.A. Misc. Pub. 273, pp. 1-209.
- LINSLEY, E. G. 1933. Some observations on the swarming of *Melanophila*. Pan-Pac. Ent., 9(3):138.
1943. Attraction of *Melanophila* beetles by fire and smoke. Jour. Econ. Ent., 36:341-342.
- OBENBERGER, J. 1928. Opuscula Buprestologica I. Archiv. Naturg. 42(A):209-210.
- RICKSECKER, L. E. 1885. [Habits of some California beetles]. Entom. Amer., 1:96-98.
- SLOOP, K. D. 1937. A revision of the North American buprestid beetles belonging to the genus *Melanophila*. Univ. Calif. Pub. Ent., 7(1):1-20.
- VAN DYKE, E. C. 1926. Buprestid swarming. Pan-Pac. Ent., 3:41.
1928. *Melanophila consputa* LeC. Pan-Pac. Ent., 4:113.