

***Opatroides punctulatus* Brullé now established in California
(Coleoptera: Tenebrionidae)**

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Abstract. *Opatroides punctulatus* Brullé, 1832 (Coleoptera; Tenebrionidae; Opatrini), is reported established for the first time in the New World in California near Sacramento. A key to distinguish *Opatroides* from species of similar genera is provided, with images and a brief diagnosis of *O. punctulatus*. The potential spread and pest status of the beetle should be monitored.

Key Words. California, darkling beetles, exotic species, *Opatroides*, soil fauna, Tenebrionidae, turf insects.

INTRODUCTION

The discovery and first identifications of *Opatroides punctulatus* Brullé in North America, as reported here, were collected on December 16, 2007 in small numbers along with three species of *Blapstinus* (*B. discolor* Horn, 1870; *B. dilatatus* LeConte, 1851 and *B. brevicollis* LeConte, 1851), all occurring with argentine ants, *Linepithema humilis* (Mayr, 1868) (Hymenoptera: Formicidae). These were collected along the west bank of the Sacramento River in Yolo County, California, under separate bits of small wood or other debris. This locality is very close to the deep water channel which allows cargo ships to access the port of Sacramento in West Sacramento (Yolo County). Later in December additional identifications were made by us for specimens posted on the WWW in December 2007 by W. Chatfield-Taylor (<http://bugguide.net/node/view/162753>) and J. McClarin (<http://bugguide.net/node/view/175227/bgimage>). New collections in March and April 2008 showed that the beetle was abundant in the Sacramento area occurring in four counties. This warranted a search for any undetermined specimens collected earlier to perhaps elucidate where and when the insect became established, resulting in a single specimen which had been taken (by two of the authors) in December 2003 near the first locality above.

Opatroides punctulatus is abundant in Europe (Greece, Italy, Russia & Malta), North Africa (Algeria, Egypt Lybia, Morocco & Tunisia), and Asia (Iraq, Jordan, Israel, Lebanon, Kazakhstan, Yemen, Cyprus, Syria, Turkey, Saudi Arabia, India). Undoubtedly, this insect was introduced with cargo from the Mediterranean or Middle East. In California, it is found under stones, leaf litter, scraps of wood, paper and fabrics on sandy clay soil in open disturbed sites. Like many tenebrionids including *Blapstinus*, *Opatroides punctulatus* are facultative opportunistic ant associates.

METHODS AND MATERIALS

Following the discovery of the first *Opatroides* specimens in the Sacramento area, identification was confirmed by comparison with previously determined specimens in museum collections. A search for additional California specimens in other collections, and by examination of field sites where *O. punctulatus* and other related beetles were likely to occur, produced the material listed below. Specimens are deposited in the collections of the authors' respective collections/institutions and the California State Collection of Arthropods, Sacramento, the Canadian National Collection, Ottawa.

Specimens Examined (label data given verbatim, followed by numbers of specimens in parentheses). CALIFORNIA: Yolo County, NW of Sacramento at Sac. River levee, 14 December 2003 / Under stones among leaf litter on sandy soil, W. E. Steiner, R. L. Aalbu et al. (1); CALIF., Yolo Co., Sacramento River levy [levee], XII-16-07 38°28'59"N, 121°33'04.4"W, 25'elevation, K. Kanda, R. Aalbu, Colls. (10); same locality except 9 March 2008, collected by P. Bouchard and R. Aalbu (10); Sacramento County, Bannister Park, December 27, 2007 (1) W. Chatfield-Taylor [bugguide]; El Dorado County, Cool, December 26, 2007, "quite a few" J. McClarin [bugguide]; CALIFORNIA: Sacramento County, Arden area, levee at American River, 38°34'N, 121°22'W, 10 April 2008 / W. E. Steiner, J. M. Swearingen, M. E. Epstein collectors (12); CALIFORNIA: Sacramento County, Nimbus Dam at American River, 38°38'N, 121°13'W, 14 April 2008, coll. W. E. Steiner & J. M. Swearingen (23); CALIFORNIA: Sacto. Co., Sacramento, The Pocket, levee at Sacto. River, 38°30'N, 121°33'W, 19 April 2008 / W. E. Steiner, J. M. Swearingen, R. L. Aalbu, collectors (2); CALIFORNIA: Sutter Co., levee at Sacto. River near Rio Ramaza Marina, 38°45'N, 121°35'30"W, 18 April 2008, coll. W. E. Steiner & J. M. Swearingen (11).

DISCUSSION

Diagnosis: *Opatroides punctulatus* (Fig. 1) is similar in size (7–9 mm long) and appearance to species of *Blapstinus* with which it often occurs. Eyes are divided by the epistomal canthus in both genera, and body color in many *Blapstinus* species is also black. *Opatroides punctulatus* can be recognized by the epipleura abruptly ending before the apex of the elytra (Fig. 2) and the head abruptly narrowing behind the eyes. Male genitalia are shown in Fig. 3.

The following changes to key "Q" (Opatrini), couplet 7, from the Tenebrionidae chapter (Aalbu et al. 2002) in American Beetles Vol. 2 will accommodate *Opatroides*:

- 7(6). Protibiae produced dorsally at apex to a tooth-like process (see Aalbu & Triplehorn 1985, Fig. 3); body laterally fimbriate. *Ulus*
- Protibiae without produced tooth-like process dorsally at apex; body not laterally fimbriate 7a
- 7a(7). Epipleura reaching elytral apex; head gradually rounded or straight behind eye; surface usually with some pubescence *Blapstinus*
- Epipleura abruptly ending before apex of elytra (Fig. 2); head abruptly narrowing behind eye, angulate; surface without pubescence. *Opatroides*

One species, *O. punctulatus* Brullé, 1832, introduced to California (Sacramento region).

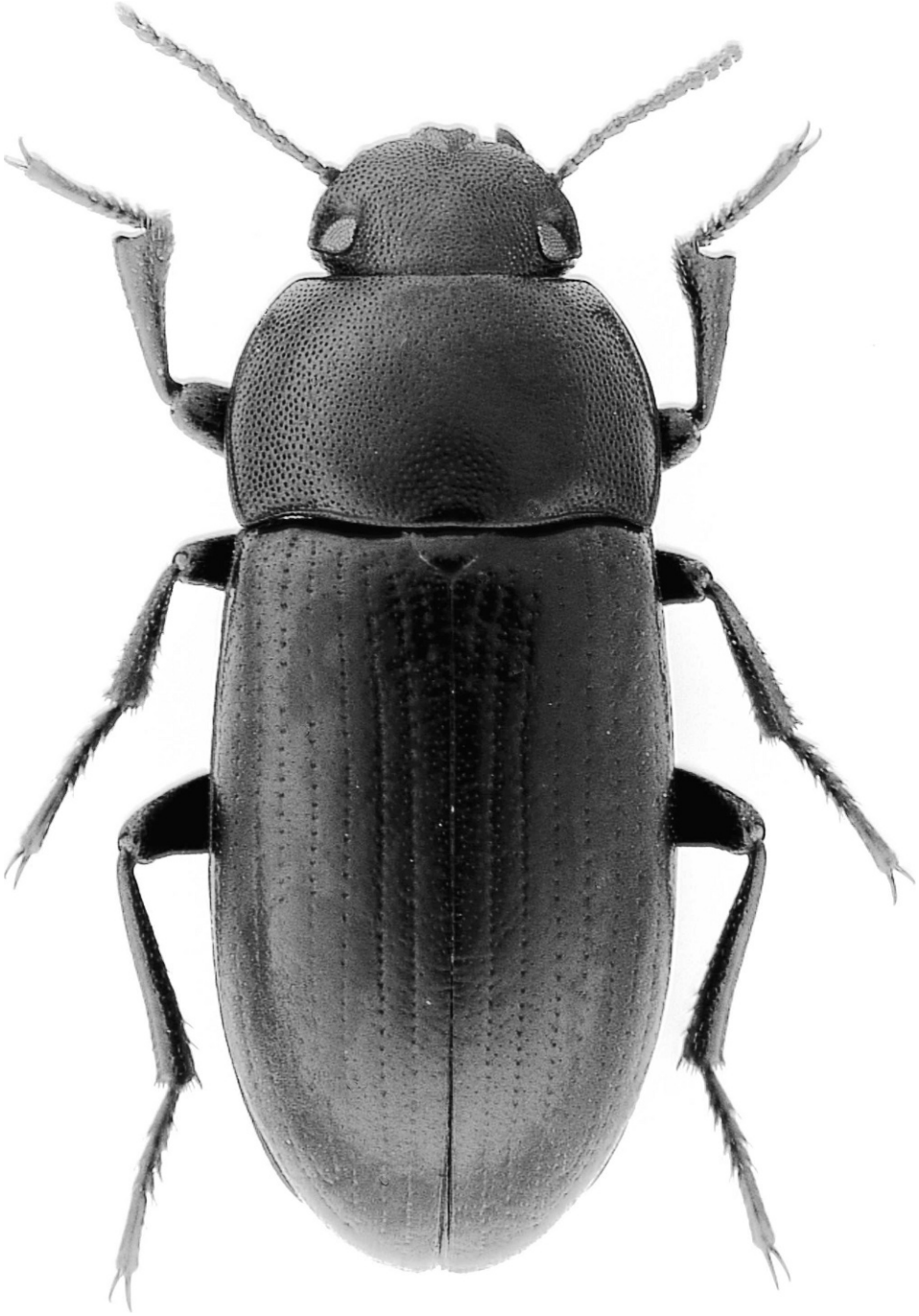


Figure 1. *Opatroides punctulatus*, dorsal view. Total body length 8.5 mm.



Figure 2. *Opatroides punctulatus*, abdominal and elytral apex, oblique ventral view, showing epipleuron ending abruptly before apex.

Figure 3. *Opatroides punctulatus*, male genitalia, dorsal view of tegmen. Length 2.6 mm.

CONCLUSIONS

Opatroides punctulatus will likely become a common insect of lawns and turf in residential areas of central California and its spread to other regions should be monitored. Agricultural pest status may also need study; members of the related genera *Ulus* and *Blapstinus* have been known to damage seedlings (see papers discussed by Steiner 2003) in the southwestern states. In a translation from Russian, Medvedev (1968) lists *O. punctulatus* among “pests of consequence” and uses the common name, “cotton beetle” and adds that “In Transcaucasia and Soviet Central Asia the adult beetles and larvae damage melons, pumpkins, cotton, tobacco, cereals, vine, young seedlings. In Tadjikistan, it is found in granaries and barns.” In addition, *Opatroides punctulatus* was listed as a pest of cereals, cotton, grapes, melons, mulberry trees, pumpkins, soybeans and tobacco in the countries of Cyprus,

India, Libya, Turkey and Russia (“USSR”) by Allsopp (1980) and a “dominant potential pest” of cotton in Russia (Sugonyaev 1994). The true pest status of *Opatroides* and necessity of taking control measures should be carefully evaluated. Like most tenebrionid beetles or false wireworms, *Opatroides* larvae are general feeders which may gnaw and feed on subsurface roots and seedlings. Economic damage may result only if these larvae become very abundant.

ACKNOWLEDGMENTS

We thank Phil Ward (Univ. of Calif., Davis) for confirmation of the ant identification and Will Chatfield-Taylor and Jim McClarin for the additional locality information. Jil M. Swearingen, Patrice Bouchard and Marc E. Epstein assisted in collecting specimens in March and April 2008.

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Received 31 Aug 2008; Accepted 1 Mar 2009; Publication date 30 Dec 2009.