

Studies on North American Bees of the Genus *Hylaeus*. 6. An Adventive Palaearctic Species in Southern California (Hymenoptera: Colletidae)

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Abstract.—Studies on North American bees of the genus *Hylaeus*. 6. An adventive Palaearctic species in Southern California (Hymenoptera: Colletidae). Roy R. Snelling. *Bull. Southern California Acad. Sci.*, 82(1):12-16, 1983. *Hylaeus* (*Spatulariella*) *punctatus* (Brullé) is a common, widespread bee in the western Palaearctic Region, occurring in the countries bordering the Mediterranean Sea. This paper records *H. punctatus* from Playa del Rey, Los Angeles County, California; this is the first record for both the subgenus and species in the Western Hemisphere. Figures and descriptive notes are provided to aid in the separation of this bee from other North American species of *Hylaeus*.

While collecting bees and other Hymenoptera in conjunction with a general survey of the biota of the Ballona Creek area of Playa del Rey, Los Angeles County, California, I found an unusual hylaeine bee to be abundant. These specimens proved to be *Hylaeus* (*Spatulariella*) *punctatus* (Brullé, 1832), a common species in the Mediterranean area of the Palaearctic Region. Dathe (1980) gave the distribution as "Mediterranean, also sporadic in Central Europe." Warncke (1972) recorded the species from France, Corsica, Sicily, Italy, Dalmatia, Serbia, Monte Negro, Greece, Macedonia and Bulgaria, and its presence in Spain was noted by Ceballos (1956). In addition, the subspecies, *H. p. longimacula* (Allken, 1936) has been described from Lebanon and is known from Greece and Turkey as well. The collections of the Natural History Museum of Los Angeles County include specimens of *H. punctatus* from Cyprus, Czechoslovakia, Austria and Greece.

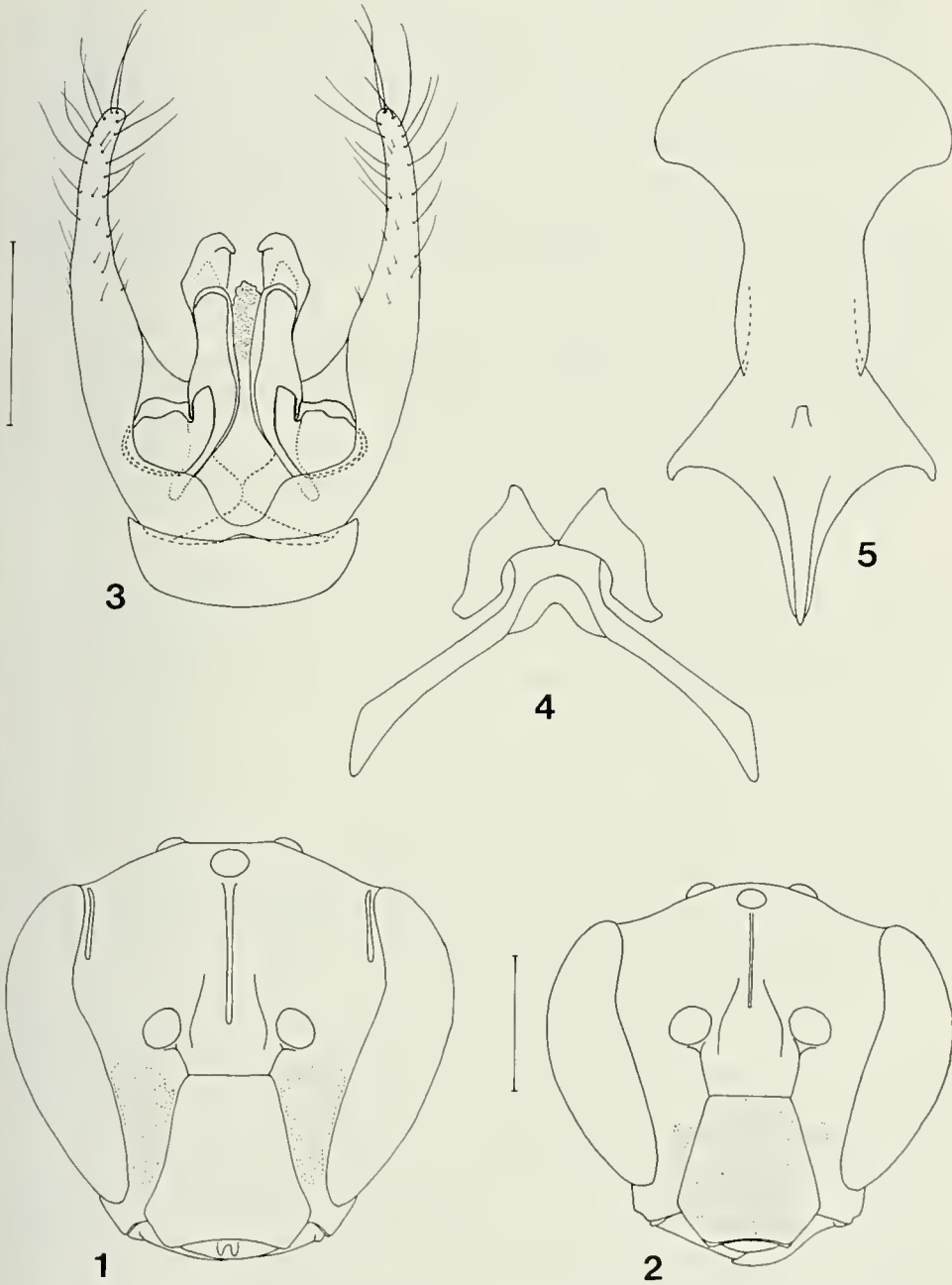
The first specimen taken at Playa del Rey, a male, was collected on 9 June 1981, on flowers of *Brassica geniculata* (Cruciferae). Three additional males were taken on flowers of *Apium graveolens* (Umbelliferae) on 11 June 1981. By late July 1981, specimens of both sexes were abundant, mostly on *Foeniculum vulgare* (Umbelliferae). All of these plants are adventive from the western Palaearctic Region.

Systematics

No representative of the subgenus *Spatulariella* Popov, 1939, has been previously reported from the New World. In my key to the Nearctic subgenera of *Hylaeus* (Snelling 1966), male *Spatulariella* will run to couplet 6 where it fails to agree with either lug. The following modification may be made to that key to include male *Spatulariella*:

5. Apical process of sternite 8 with numerous branched hairs along lateral margins; distal lobes of sternite 7 rounded apically *Hylaeana* Michener
- Apical process of sternite 8 bare, or with several branched hairs on apical

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Figs. 1-5. *Hylaeus (Spatulariella) punctatus*. 1, Female head, frontal view; 2, Male head, frontal view; scale line = 0.50 mm; maculate areas stippled. 3, Male genital capsule, ventral view; 4, male seventh sternite; 5, male eighth sternite; scale line (Figs. 3-5) = 0.25 mm.

- margin; distal lobes of sternite 7 acute (Fig. 4) or narrowly rounded apically 5'
- 5'. Distal process of sternite 8 flat, broadly spatulate (Fig. 5) and visibly protruding from genital opening; gonostyli slender, extending much beyond apices of penis valves (Fig. 3) *Spatulariella* Popov
- Distal process of sternite 8 narrow, not at all distally flattened and spatulate; gonostyli stout and hardly surpassing apices of penis valves 6

In that portion of the key treating females, the subgenus *Spatulariella* will run to couplet 13 where it does not agree well with either alternative. To accommodate *Spatulariella* the key may be modified thus:

12. Punctures of horizontal area of tergite 1, and usually of tergite 2 as well, dense and distinct; facial fovea usually ending midway between eye and ocellus; posterior declivity of basal triangle of propodeum separated from horizontal face by distinct transverse carina *Paraprosopis* Popov
- Punctures of tergites 1 and 2 fine, usually separated by two or more times a puncture diameter; if denser, *then* apical margin of tergite 2 reflexed upward; facial fovea usually ending nearer eye than ocellus, rarely attaining midpoint; posterior declivity of basal triangle of propodeum separated from horizontal face by a carina or not 2'
- 12'. Anterior face of mesepisternum separated from lateral face by distinct lamelliform carina *Spatulariella* Popov
- Anterior face of mesepisternum abruptly rounded into lateral face, no carina present 3

Both sexes of *Spatulariella* possess a distinct lamelliform carina between the anterior and lateral faces of the mesepisternum, perhaps the best recognition characteristic by which to differentiate *Spatulariella* from the native Nearctic groups. Some species of the Neotropical subgenus *Hylaeopsis* Michener, 1964, also have a carinate mesepisternum. In that subgenus, however, the pronotal collar is transversely carinate or crested and the oblique propodeal carina is present and sharply defined. Neither condition is true of *Spatulariella*.

The male face marks are somewhat variable in the specimens from Playa del Rey. In most, the clypeus is mostly pale yellowish, with black along the apical margin and very narrowly black along the lateral margin below the tentorial pit (Fig. 2). Lateral face marks terminate truncately a little above the level of the base of the clypeus and rarely extend laterad to the inner eye margin. In a few males the clypeus has only a broad, longitudinal, median bar and there are no lateral marks. The mandible, labrum and scape are consistently without pale marks.

Most of the Playa del Rey females have well developed lateral face marks which fill most of the area between the clypeus and the eye, extending along the inner eye margin to about the level of the middle of the antennal socket (Fig. 1). A preapical, median clypeal spot is present in many specimens. A few individuals have the lateral face mark much reduced and the clypeus always wholly black.

In general, these specimens match most closely the color variant found in southern Europe (Italy and Greece), rather than the darker form present in Austria and Czechoslovakia. The lateral face marks of the female do not extend far up the inner eye margins as they do in the subspecies *H. p. longimaculata*.

Since *Hylaeus* females have a propensity for nesting in a wide variety of preformed cavities in wood and other materials, it is hardly surprising that the species has been introduced into the New World. Indeed, the surprise is that more species of *Hylaeus* have not been similarly introduced. Apparently, only one other Palearctic species, *H. (H.) bisinualus* Foerster, 1871, has been successful; this species occurs over much of the United States (Snelling 1970, 1975) and is the only other hylaeine collected at Playa del Rey.

Various other wood- or twig-nesting bees have from time to time been introduced into the United States and become established. *Megachile (Eutricharaea) pacifica* (Panzer) and *Lithurge (L.) chrysurus* (Fonscolombe) are two megachilids so introduced. Presumably, the former species was introduced sometime during, or shortly after, World War II (Hurd 1979); once established, the species spread rapidly and is now an important pollinator of alfalfa. *Lithurge chrysurus* was reported from New Jersey by Roberts (1978) where it appears to be a recently adventive species. The anthophorid species, *Ceratina dallatorreana* Friese, 1896, was first collected in central California in 1949. This Mediterranean species is now firmly established in California and is extending its range (Daly 1966).

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