

Notes on Australian *Isodontia* (Hymenoptera: Sphecidae)

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Abstract: The Australian species of *Isodontia* Patton are keyed and their synonymy and distribution are reviewed. *I. vidua* is synonymized with *I. obscurella*. *I. albata* spec. nov. is described and figured.

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Introduction

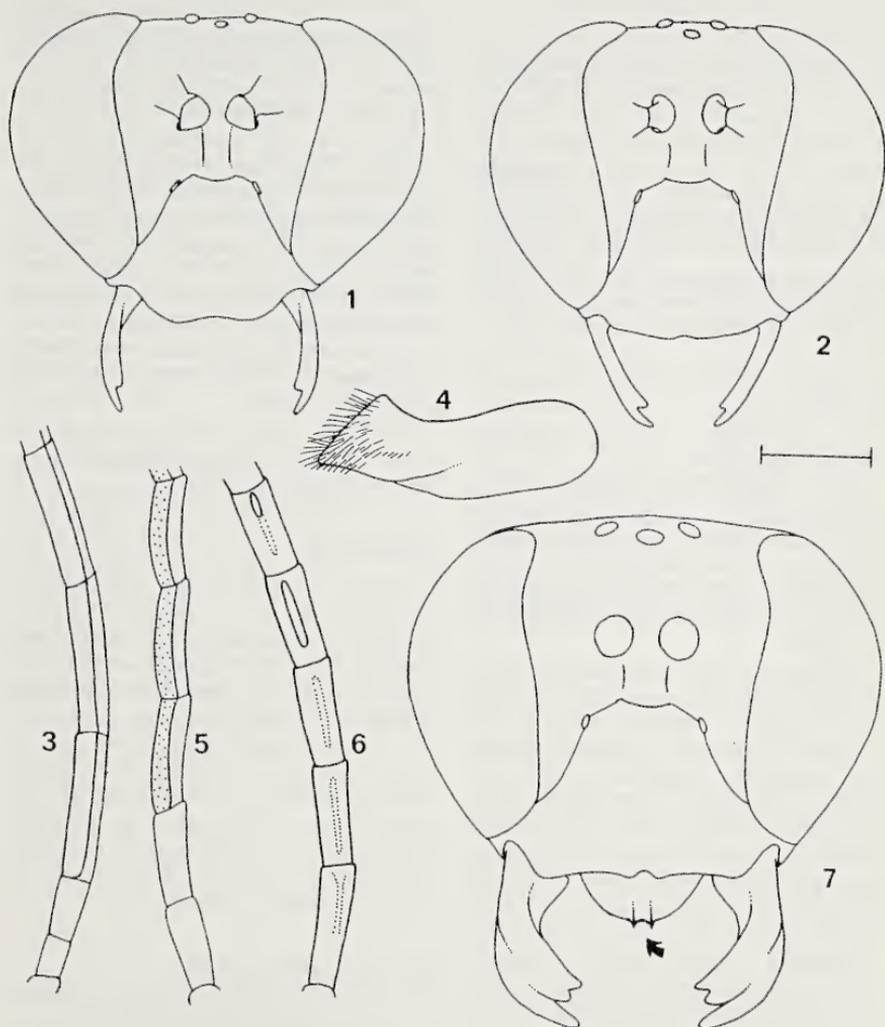
In the course of a study of the Indo-Australian *Sphex* and *Isodontia* (Hymenoptera: Sphecidae), I had the opportunity to study primary types and many other specimens of the Australian representatives of these genera. While the Malesian species of these genera will be treated elsewhere (Hensen, 1991), this paper summarizes the results of these studies, as far they pertain to Australian *Isodontia*.

Specimens mentioned in this paper are preserved in the following museums, with the abbreviations used given in parentheses. Natural History Museum, London, England (NHML); Naturhistorisches Museum Wien, Austria (NMW); Oxford University Museum, Oxford, England (OUM); Nationaal Natuurhistorisch Museum, Leyden, The Netherlands (NNML). An exclamation mark behind such an abbreviation indicates that a type has been examined by the author.

Key to species

- 1 ♂♂ 2
- ♀♀ 5
- 2. Mandibles unusually slender, approximately straight, bidentate (fig. 1); flagellomere III longer than I + II combined, flagellomeres III-VI with broad flat placoids *albata* spec. nov.
- Mandibles stout, curved, tridentate (cf. fig. 7); flagellomere III shorter than I + II

- combined, flat placoids absent or only on flagellomeres IV and V 3
- 3. Flagellum with convex, papillate sensory areas, without flat placoids (fig. 5) *aurifrons* (Smith)
- Flagellum with flat placoid on fourth segment (fig. 6) 4
- 4. Basal part of mandibles red; wings brownish with violaceous effulgence; mesoscutum with oily shine *sepicola* (Smith)
- Mandibles black; wings clear, apically infuscate; mesoscutum black, without oily shine *obscura* (Smith)
- 5. Mandibles unusually slender, approximately straight (fig. 2); labrum simple, without carinae apically *albata* spec. nov.
- Mandibles stout, curved (fig. 7); labrum with a pair of short projecting carinae apically 6
- 6. Flagellomere I as long as II; flagellum with longitudinal ridges *aurifrons* (Smith)
- Flagellomere I longer than II; flagellum without longitudinal ridges 7
- 7. Wings brownish, with violaceous shine; mesoscutum with oily shine *sepicola* (Smith)
- Wings clear, apically infuscate; mesoscutum black, without oily shine *obscura* (Smith)



Figs. 1-8. *Isodontia*. 1-4. *I. albata* spec. nov. 1, head of ♂; 2, head of ♀; 3, antenna of ♂; 4, genitalia of ♂, lateral view. 5, *I. aurifrons*, antenna of ♂. 6-7, *I. obscurella*. 6, antenna of ♂; 7, head of ♀. 1-3, 5-7: scale-line = 1 mm, 4: scale-line = 0.5 mm.

Isodontia albata spec. nov.
(Figs. 1-4)

Diagnosis

This species belongs in the *diodon*-group (Hensen, 1991), of which it is the single Australian representative. It is most similar to *I. egens* Kohl, occurring in New Guinea and the Bismarck Islands. The male of *albata* differs from *egens* in the relative lengths of the proximal flagellomeres, the presence of fringes of yellowish setosity on the posterior sternites, and slightly in the shape of the genitalia. Females of the two species cannot be distinguished on morphological grounds, so far.

Description

Male. – Body length 15.0-16.0 mm, length of forewing 11.0-11.5 mm.

Head. – Black. Facial tomentum silvery, erect setosity white. Clypeus as long as wide, with vague median carina; interocular distance across vertex as long as interocular distance across clypeus; relative lengths of flagellomeres I-III 1: 1.7: 3.5; flagellomeres III-VI with broad flat placoid.

Mesosoma. – Black, mesoscutum with fine oily shine. Wings light brownish hyaline, apically infuscated. Conspicuous silvery tomentum present on pronotum, sides of mesoscutum, metanotum, mesopleuron, sides and declivity of propodeum; erect setosity white. Mesoscutum densely and rather coarsely punctate, punctures on disc 0.5-1.0 diameter apart; propodeal dorsum shiny, reticulate-punctate, with faint transverse striae anteriorly.

Metasoma. – Black, posterior margins of tergites narrowly brown. Posterior tergites with conspicuous appressed white pilosity; sternite V-VIII with fringes of pale yellow setosity. Petiolus 1.15-1.25 times as long as hind tibia; eighth sternite apically shallowly emarginate; gonostyle in lateral view not constricted in the middle, with apicodorsal angle almost a right angle, apicoventral angle sharp.

Female. – Body length 15.5-17.5 mm, length of forewing 11.5-13.5 mm.

Head. – Black. Erect setosity white, darker on vertex; facial tomentum silvery. Clypeus 1.15 times as long as wide, with vague median carina; interocular distance across vertex as long as interocular distance across clypeus; relative lengths of flagellomeres I-III 1: 0.95: 1.

Mesosoma. – Black, mesoscutum with fine oily shine. Wings light brownish hyaline, apically infuscated. Conspicuous silvery tomentum present on pronotum, sides of mesoscutum, metanotum, mesopleuron, sides and declivity of propodeum; erect setosity white, darker on vertex. Mesoscutum densely and rather coarsely punctate, punctures on disc 0.5-1.0 diameter apart; propodeal dorsum shiny, reticulate-punctate, with transverse striae superimposed anteriorly.

Metasoma. – Black, posterior margins of tergites narrowly brown. Petiolus 1.15-1.2 times as long as hind basitarsus.

Type material

Holotype. – ♂, "Cairns, 4.02", "Australia, R. E. Turner Coll., B. M. 1966-578" (NHML). Paratypes. – Australia: 1 ♂, 3 ♀, Cape York (NMW); 4 ♂, 5 ♀, N. Queensland (NHML; NNML); 5 ♂, 4 ♀, same data as holotype (NHML); 1 ♀, North Queensland, "*Sphex nigella*" [Turner's handwriting] (NHML); 1 ♂, 2 ♀, N. Queensland, Kuranda, F. P. Dodd (NHML, NNML); 2 ♀, N. Queensland, Kuranda, 1100 ft., 3.v-20.vi.1913, R. E. Turner (NHML); 11 ♀, N. Queensland, R. C. L. Perkins coll. (NHML); 2 ♀, 2 ♂, Cairns, (NNML); 1 ♂, N. Queensland (NNML).

Isodontia aurifrons (Smith)

Sphex aurifrons Smith, 1859: 157, lectotype, ♀ – Indonesia, Aru (OUM!) [designated by Hensen, 1991].
Sphex abditus nugentii Turner, 1910: 343, 345, holotype, ♀ – Australia, Cairns (NHML!).

Distribution. – Continental Asia from Southern India and Sri Lanka to China and Malaysia, Indonesia, Philippines, New Guinea, Queensland.

Additional synonymy of this widely distributed species is given by Hensen (1991).

Isodontia obscurella (Smith)

Sphex obscurellus Smith, 1856: 251, lectotype, ♂ - Tasmania (NHML!) [present designation].

Sphex vidua Smith, 1856: 248, lectotype, ♀ - Australia (OUM!) [present designation] [syn. n.].

Distribution. - This species occurs throughout the Australian continent, and on Tasmania.

Note. - This species has often been identified as *Isodontia xanthognatha* (Pérez) (= *I. nigella*) (Smith, 1856), nec Lichtenstein, 1796). The latter species occurs on the Asiatic mainland, and is indeed quite similar to *obscurella*. However, with their strongly disjunct distributions in mind it seems more adequate to regard them as separate species.

Isodontia sepicola (Smith)

Sphex sepicola Smith, 1859: 158, lectotype, ♀ - Aru (OUM!) [designated by Hensen (1991)].

Sphex albohirtus Turner, 1908: 466, lectotype, ♀ - Australia, Queensland, Cairns, Mackay (NHML!) [designated by Hensen (1991)].

Distribution. - This species occurs in New Guinea, and on the neighbouring islands (Aru islands, Solomon islands, Mysol), and in Aus-

tralia, where it is restricted to Northern Queensland.

Note. - The morphology and coloration of the Australian specimens I have seen seem rather unstable. It may be that this population as a whole is a product of intergradation between Australian *obscurella* and New Guinean *sepicola*.

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