

Two New Wasps from Melanesia and Notes on a Third Recently Introduced into Hawaii (Hymenoptera: Sphecidae)

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(Presented by Mr. Van Zwaluwenburg at the meeting of August 9, 1948)

The new species described herein are based on material in the U. S. National Museum and loans received from the Hawaiian Sugar Planters' Association through E. C. Zimmerman and from the British Museum (Natural History) through R. B. Benson. Dr. F. X. Williams and Mr. Benson of the last two institutions respectively have very kindly compared specimens of *Pison* with species in the collections under their care.

Pison insulare Smith

Pison insularis Smith, 1869. Trans. Ent. Soc. London, p. 297. (♀; New Hebrides; type in British Museum.)—Turner, 1916. Proc. Zool. Soc. London, p. 626. (Treated as specifically distinct from *priscum* Turner.)

Pison insulare Smith, Dalla Torre, 1897. Cat. Hym. 8: 711.—Turner, 1908. Proc. Zool. Soc. London, p. 510. (Comp. with *insulare priscum*, n. subsp. from Australia.)—Cheesman, 1937. Ann. Mag. Nat. Hist. (10)20: 203. (♀, ♂; Malekula, Espiritu Santo, Erromango, Tanna, Aneytioum, Efate and Gaoua, all islands in New Hebrides; addit. descr.).

Pison sp., Weber, 1948. Proc. Hawaii. Ent. Soc. 13: 222. (Kawaiiki Trail, Koolau Mts., Oahu.)

In November 1947 P. W. Weber collected four large *Pison* females on Oahu, T. H., which were subsequently submitted to me for identification. Comparison of these specimens with material available from other islands of the Pacific established that these constituted a recent introduction from New Hebrides, being conspecific with a female from Espiritu Santo, New Hebrides, in my personal collection.

The question as to what name should be applied to this species was a puzzle. Only one *Pison insulare* Smith, had been described from New Hebrides, but Williams (1945. Proc. Hawaii. Ent. Soc. 12: 442) had identified as *insulare* a species from New Caledonia which was quite distinct from the New Hebridean and Hawaiian material mentioned above. Both Williams and I had considered that my specimen from New Hebrides was an undescribed species. However, when this supposed new species turned up in Hawaii late in 1947 further investigation seemed desirable. The descriptions of *insulare* by Smith and Cheesman did not definitely eliminate the New Caledonian species from consideration as true *insulare*, so I sent specimens of each species to Mr. Benson for comparison with Smith's type. He reports (in litt.) "As you suggest the form

from New Hebrides and Hawaii is the true *P. insulare* and the New Caledonian form differs from this in its much denser punctation of propodeum and first tergite." He states further that the species from New Caledonia differed from all others in the British Museum on gross punctation.

Mr. Weber (in litt.) states that the Hawaiian specimens were taken slightly north of the center of Oahu removed from any point of importation, and says further that, "... the wasps could easily have been here for some time and spread that far without being detected. A similar case in point is that of *Chalybion bengalense* which was first recorded from the southwest coast of Oahu at Nanakuli, and shortly after was observed in Manoa Valley, some thirty miles distant." Therefore, *insulare* Smith appears to be an established member of the Hawaiian fauna with the known distribution limited to various islands of the New Hebrides group and Oahu, T. H.

The comparatively large size (♀, 9.5-11 mm. long) readily distinguishes *insulare* from other *Pison* occurring in Hawaii except *hospes* Smith. It is more polished than *hospes*, comparatively much more sparsely punctate (disk of mesoscutum with punctures separated by several times the width of a puncture, middle of dorsal surface of propodeum practically impunctate), only the first two tergites have apical bands of silvery pubescence, and the median lobe of the apical margin of the clypeus in the female is broadly rounded rather than triangular.

I have examined the following material:

NEW HEBRIDES. 1 ♀; Espiritu Santo; September 28-October 7, 1943 (J. G. Franclemont) [KVK]. 2 ♂; same data, but September 1944 (K. L. Knight) [USNM]. 1 ♀; Malekula; January 1930 (L. E. Cheesman) [BM].

HAWAII. 2 ♀; Kawaiiki Trail, Oahu; November 2, 1947 (P. W. Weber). 2 ♀; Anahulu Trail, Oahu; November 30, 1947 (P. W. Weber) [USNM and PWW].

***Pison novocaledonica*, new species**

Pison insulare Williams, 1945. Proc. Hawaii. Ent. Soc. 12: 442, pl. 24, figs. E, G, H; pl. 25, fig. H. (Misident. of Smith species.)

Structurally this species comes closer to *hospes* Smith than to *insulare* Smith, agreeing with the former in the subopaque integument and relatively stronger and closer punctation. *P. hospes* differs from *novocaledonica* in the following important particulars: Median impunctate produced area of clypeus triangular; frontal groove from anterior ocellus evanescent; transverse rugae of posterior surface of propodeum stronger and sparser; sternites much more closely punctate, especially the second; only extreme apex of wing infumated.

Type: ♂; St. Louis, New Caledonia; November 26, 1944 (Wilfred Crabb). (U. S. National Museum, Type No. 58814.)

Male—Length 9.5 mm. Black, subopaque except metapleuron, propodeum and abdominal sternites which are shining; tip of mandible dark castaneous, apex of tegula somewhat lighter. Vestiture shining, silvery, short, suberect on head and thorax, decumbent on legs and abdomen, abdominal tergites one to four with noticeable hair bands apically; tibial calcaria black. Wings with apical two-thirds of forewing and apical third of hind wing rather strongly infumated, stigma and veins fuscous.

Head: Impunctate median produced area of clypeus pentagonal in shape; shortest distance between eyes at lower ends (across middle of clypeus) greater than shortest distance between eyes on vertex (5:3); front finely granulate upon which is superimposed moderately large, shallow punctures separated from each other by slightly more than the width of a puncture, a median longitudinal groove running from anterior ocellus two-thirds of distance to antennal insertions and terminating there in a short polished streak (the vestige of frontal tubercle); vertex with punctures somewhat smaller and separated by slightly less than the diameter of a puncture; ocellular distance half the diameter of a posterior ocellus and less than postocellar distance (5:8).

Thorax: Mesoscutum with punctures about same size as on front, mostly separated by slightly less than width of a puncture; scutellum and postscutellum with smaller punctures, those of former rather sparse in center, those on latter almost contiguous; mesopleuron with punctures somewhat larger than on mesoscutum and about equally spaced; metapleuron punctate-rugulose above and with scattered minute punctures below; dorsal surface of propodeum with a well-developed median longitudinal crenulate groove, laterad of this with punctures arranged more or less in oblique rows and with a faint indication of rugulae, the punctures about as large as on mesoscutum and many of them separated by about the width of a puncture; posterior surface transversely ruguloso-punctate, median impression on upper part moderately broad; lateral surface with subcontiguous punctures becoming somewhat denser to the rear; groove separating lateral from dorsal and posterior surfaces well-marked and extending anteriorly almost to spiracle.

Abdomen: Tergites one to five slightly constricted apically, the fifth very faintly so; puncturation slightly finer than that of postscutellum, punctures of first tergite separated by two or more times the width of a puncture, the density increasing on succeeding tergites, those on the fifth separated by less than twice the width of a puncture; sternites correspondingly much more sparsely punctate, the second with only a few scattered ones discally, laterally with closer ones, the density increasing on succeeding ones; intermediate sternites simple, not tuberculate or ridged, the third to fifth slightly constricted apically; hypopygium shallowly emarginate apically, the lateral angle short, broad, rounded, medianly near apex with a semicircular, rounded impression bordered posteriorly by the apical row of dark stout setae.

Wings: Forewing with petiole of second submarginal cell about as long as height of cell; first recurrent vein interstitial with first transverse cubital, second recurrent vein received in second submarginal cell just before tip.

Male paratypes vary in length from 7.0 to 10.5 mm. and differ from the type in the following structural details: Frontal tubercle usually higher and more elongate; occasionally the median groove on dorsal surface of propodeum bisected in part or entirely by a carina; sometimes the first recurrent is received just before the apex of first submarginal cell; and sometimes the second recurrent is interstitial with the second transverse cubital.

Allotype: ♀; same data as type. (USNM.)

Female—Length 8 mm. (apical abdominal segments somewhat retracted). Similar to type male except as follows: Median impunctate produced area of clypeus broadly rounded; shortest distance between eyes at lower ends (across middle of clypeus) proportionately greater as compared to shortest distance between eyes on vertex (3:2); frontal tubercle higher, more elongate;

ocellocular space one-fourth the diameter of a posterior ocellus, and one-third the postocellar distance; dorsal surface of propodeum lacking any indication of oblique rugulae; groove separating lateral from dorsal and posterior surfaces of propodeum well-marked, but not extending so far forward; only tergites one to three with noticeable apical bands of silvery hair; only first four tergites slightly constricted at apex, the sternites not constricted; second recurrent interstitial with second transverse cubital.

Female paratypes vary in length from 8.5 to 11.0 mm. and differ from the allotype in the following structural details: Median groove on dorsal surface of propodeum rarely bisected by a carina; recurrent nervures occasionally received slightly before the first and second transverse cubitals respectively.

Paratypes: 32 ♂, 30 ♀, all New Caledonia, as follows:

1 ♂, same data as type; 1 ♂, Noumea, October 6, 1944 (Wilfred Crabb); 1 ♀, same data, but December 12, 1944; 1 ♀, Plum Farm, January 3 (W. P. Cockerell) [USNM].

2 ♂ (P. D. Montague); 1 ♀, Noumea, January 20, 1914 (P. D. Montague); 1 ♀, same data, but January 24, 1914; 1 ♂, Bourail, December 1930 (L. E. Cheesman) [BM].

1 ♂, 1940 (F. X. Williams); 1 ♀, Noumea, August 18, 1940 (F. X. W.); 1 ♀, same data, but August 28, 1940; 1 ♀, same data, but September 9, 1940; 1 ♂, same data, but September 17, 1940; 1 ♀, same data, but September 23, 1940; 1 ♂, same data, but September 24, 1940; 1 ♂, same data, but October 13, 1940; 2 ♀, same data, but October 18, 1940; 1 ♂, same data, but October 19, 1940; 1 ♀, same data, but October 1940; 1 ♀, near Noumea, September 12, 1940 (F. X. W., reared from cocoon in mud cell of *Eumenes*); 2 ♂, 1 ♀, hills behind Noumea, October 16, 1940 (F. X. W.); 1 ♂, same data, but October 19, 1940; 1 ♂, 3 ♀, Hienghene, October 4, 1940 (F. X. W.); 1 ♀, same data, but October 5, 1940; 1 ♂, same data, but October 6, 1940; 2 ♂, 2 ♀, Thi River Valley, November 1, 1940 (F. X. W.); 2 ♂, 1 ♀, same data, but November 6, 1940; 2 ♀, same data, but November 8, 1940; 1 ♂, St. Louis, August 17, 1940 (F. X. W.); 1 ♀, same data, but September 25, 1940; 3 ♂, 2 ♀, same data, but October 14, 1940; 1 ♂, same data, but October 29, 1940; 2 ♂, 1 ♀, Nakety, October 9, 1940 (F. X. W.); 1 ♂, 1 ♀, Bonjou District, September 13, 1940 (F. X. W.); 1 ♂, Oua Tom, September 19, 1940 (F. X. W.); 1 ♂, same data, but September 20, 1940; 1 ♂, Prony Bay, October 22, 1940 (F. X. W.); 2 ♀, Nepoui Valley, July 1940 (F. X. W.); 2 ♂, 1 ♀, Isle of Pines, October 24, 1940 (F. X. W.) [HSPA].

Male and female paratypes also have been deposited in the collections of the California Academy of Sciences, American Museum of Natural History, and Museum of Comparative Zoology.

***Psen* (*Psen*) *cheesmanae*,¹ new species**

Specimens of this undescribed species were included among some New Guinea and Solomon Islands material sent me by Mr. Benson several years ago. Since I am not including New Hebrides in my

work on the wasps of New Guinea and Solomon Islands I take this opportunity to describe the present form.

Psen bryani Perkins and Cheesman (1928. Ins. Samoa, Part V, Hym., Fasc. 1 : 28) from Samoa is the only other true *Psen* known from the islands of the Melanesian subregion. Endemic species of this genus might be expected to occur on other large island groups of this subregion, such as Fiji and New Caledonia, but as yet none has been collected.

The present species, known only from the male, is distinguished from the male of *bryani* by the following characters: Hind tarsi testaceous (said to be almost black in *bryani*); petiole of first abdominal segment twice as long as first tergite (stated to be one and one-half times as long in *bryani*); and fasciculate hairs at apices medianly of third and fourth sternites extending about one-fifth the width of sternites (said to be one-third in *bryani*).

Type: ♂; [Espiritu] Santo, New Hebrides; August-September 1929 (L. E. Cheesman) [British Museum (Natural History)].

Male—Length 10 mm. Black, the tarsi testaceous; head and thorax, except metapleuron, semi-mat, metapleuron and abdomen shining. Vestiture shining, silvery, very dense on clypeus and front beneath antennae obscuring the puncturation, decumbent except on vertex, dorsum of thorax and propodeum, and longer on mesopleuron and propodeum than elsewhere; fasciculate hairs at apices of third and fourth sternites yellowish. Wings hyaline, veins fuscous, venation apparently as in *bryani*.

Head: Edge of clypeus thickened medianly, slightly emarginate there, not at all strongly produced; frontal carina terminating between antennae in a low rounded, cariniform tubercle; antenna slightly clavate toward tip, tyloides absent, pedicel not hidden in apex of scape, first flagellar segment longer than second or third, but somewhat shorter than second and third together; front above antennae with small punctures, those beneath anterior ocellus about as close to one another as the diameter of a puncture, those on vertex much sparser, usually separated by at least twice the width of a puncture; ocellular distance very slightly less than postocellar distance (9:10).

Thorax: Pronotum not dentate laterally; mesoscutum with punctures larger than those on vertex, denser anteriorly and separated by about the diameter of a puncture, sparser posteriorly and separated usually by at least twice that distance; scutellum with punctures as on mesoscutum, but more scattered; postscutellum with minute close punctures; disk of mesopleuron with minute, extremely sparse punctures; metapleuron glabrous, impunctate, enclosure on dorsum of propodeum with about ten strong, radiating rugae, lateral surface punctate, posterior surface punctate and with large, irregular reticulations.

Abdomen: Petiole of first segment convex above, laterally with a series of sparse pale hairs, twice as long as first tergite; fasciculate yellowish hairs at apices medianly of third and fourth sternites extending over about one-fifth the width of segments.

Paratype: ♂; Malekula, New Hebrides; December 1929 (L. E. Cheesman) [BM]. Deposited in U. S. National Museum.

The paratype differs from the type in the following details: Length 11 mm.; interantennal tubercle larger; hind legs missing so coloration of tarsi of type cannot be confirmed.

¹ For Miss L. E. Cheesman, collector of many interesting Hymenoptera on the Pacific islands.