

Sphecoidea Of Micronesia 4 Revision Of The Genus Pison Spinola Part 1 (Hymenoptera : Sphecidae)

Yasumatsu, Keizo
Entomological Laboratory, Department of Agriculture, Kyushu University

<https://doi.org/10.5109/22649>

出版情報 : 九州大学大学院農学研究院紀要. 10 (2), pp.133-150, 1953-09. Kyushu University
バージョン :
権利関係 :

SPHECOIDEA OF MICRONESIA. 4*
REVISION OF THE GENUS *PISON* SPINOLA. PART 1
(Hymenoptera : Sphecidae)

KEIZŌ YASUMATSU

It was Georg Semper (1905) who first reported the occurrence of the *Pison*-species† in Micronesia. Since the publication of my first paper (1937), in which I recorded four species of the genus, a good number of material have been accumulated owing to the elaborate expeditions to the main islands of Micronesia by Professor Teiso Esaki and his collaborators. During the course of my taxonomic study of the material, it became necessary to publish a revision of the genus *Pison* in Micronesia. Meanwhile Krombein (1949, 1950) published an extensive works on the Micronesian wasps and bees which were collected by some American entomologists chiefly during the years 1945-1949. In his first work Krombein recorded eleven species of *Pison*, of which three were new to science. The present paper is made as a supplement to Krombein's works together with a distributive study of the genus in the Pacific Islands and gives some new morphological data in the consideration of the affinity among the species.

In the first I desire to express my sincere gratitude to Professor T. Esaki for his very kind guidance in many ways rendered in the course of the present study. I am deeply indebted to Mr. Karl V. Krombein, of the U. S. National Museum, for the gift of specimens of two species which were not collected by us.

* Results of Professor T. Esaki's Micronesia Expeditions 1936-1940, No. 81.

† The species was recorded by Semper under the name *Pison rugosus* Smith, but, so far as my knowledge goes, this species is nothing but *Pison punctifrons* Shuckard.

ENUMERATION OF THE SPECIES AND THEIR DISTRIBUTION
IN THE PACIFIC ISLANDS

So far as I am aware, the following twenty species of *Pison* have been known in the Pacific Islands.

1. *Pison argentatum* Shuckard ...Westward from Madagascar eastward to Hawaii, and southward to Micronesia.
2. *Pison collare* Kohl.....New Britain.
3. *Pison esakii* YasumatsuMarianna Islands.
4. *Pison glabrum* KohlSamoa.
5. *Pison hospes* SmithWestward from Malaya eastward to Hawaii, and southward to Marquesas Islands.
6. *Pison ignavum* Turner.....Palau Islands, Australia, New Caledonia, Fiji, Samoa, Society Islands, Marquesas Islands.
7. *Pison impunctatum* Turner.....New Guinea, Society Islands, Marquesas Islands.
8. *Pison insulare* SmithNew Hebrides, Banks Islands, Hawaii.
9. *Pison iridipenne* Smith.....Marianna Islands, Palau Islands, Caroline Islands, Marshall Islands, Australia, Fiji, Samoa, Hawaii, Society Islands, Tuamotu Archipelago.
10. *Pison korrorense* Yasumatsu ...Palau Islands.
11. *Pison mariannense* Yasumatsu ..Marianna Islands.
12. *Pison nigellum* KrombeinCaroline Islands.
13. *Pison novocaledonica* Krombein..New Caledonia.
14. *Pison oakleyi* KrombeinMarianna Islands.
15. *Pison ponape* KrombeinCaroline Islands.
16. *Pison punctifrons* Shuckard ...Westward from N. W. India eastward to Marshall Islands.
17. *Pison strictifrons* Vachal.....New Caledonia.

18. *Pison tahitense* Saussure Marshall Islands, Ellice Islands, Australia (?), Fiji, Samoa, Tonga, Tahiti, Society Islands, Marquesas Islands.

19. *Pison tosawai* Yasumatsu Bonin Islands.

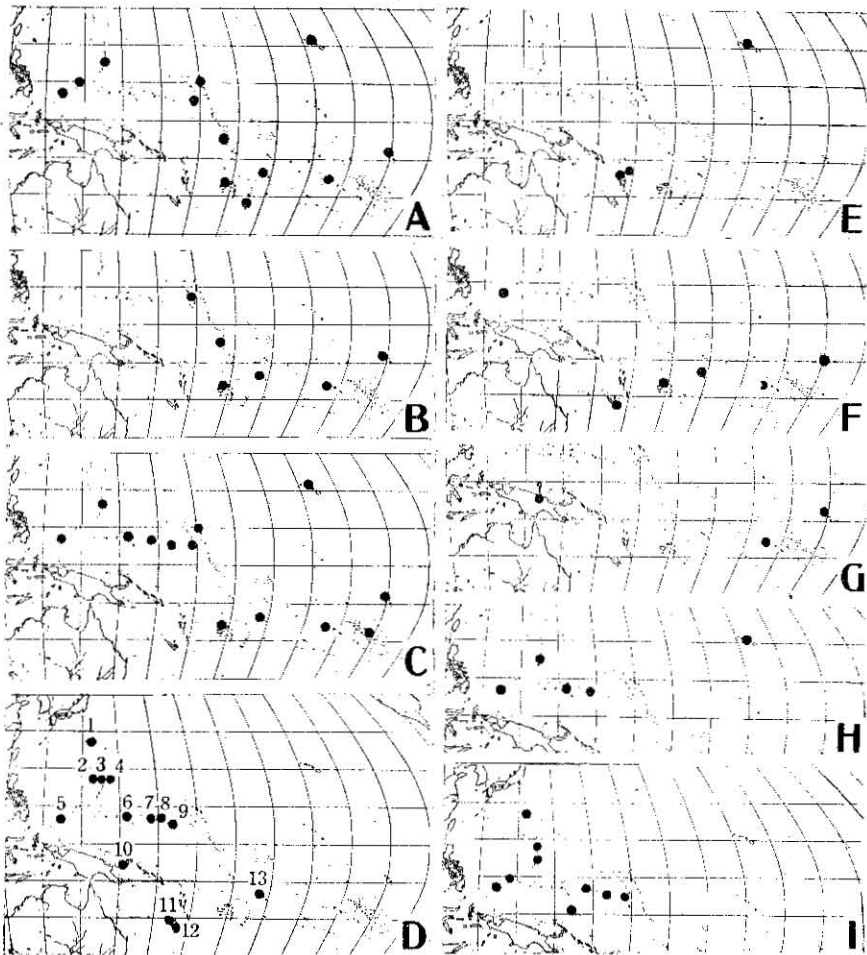


Fig. 1. Distribution of *Pison*-species in the Pacific Islands.

A: *hospes*, B: *tahitense*, C: *iridipenne*, D: Endemic species (1-*tosawai*, 2-*esakii*, 3-*mariannense*, 4-*oakleyi*, 5-*korrorense*, 6-*trukense*, 7-*ponape*, 8-*ponape*, 9-*nigellum*, 10-*collare*, 11-*novocaledonica*, 12-*strictifrons*, 13-*glabrum*), E: *insulare*, F: *ignavum*, G: *impunctatum*, H: *argentatum*, I: *punctifrons*.

20. *Pison trukense* YasumatsuCaroline Islands.

From the zoogeographical point of view the twenty *Pison*-species listed above may be classified into the following groups of different origins.

- Group I. *Pison* of the Indo-Malayian origin (1 species)
 *punctifrons*.
- Group II. *Pison* of the Polynesian origin (10 species)
- Subgroup 1. *Pison* of the Micronesian origin (7 species)
- Section A. *Pison* of the Bonin origin*tosawai*.
- Section B. *Pison* of the Marianna origin
 *esakii, oakleyi, mariannense*.
- Section C. *Pison* of the Caroline origin
 *nigellum, ponape, trukense*.
- Subgroup 2. *Pison* of the Polynesian (s. str.) origin (3 species)
 *glabrum, tahitense, impunctatum*.
- Group III. *Pison* of the Melanesian origin (6 species)
- Subgroup 1. *Pison* of the Palau origin*korrorense*.
- Subgroup 2. *Pison* of the southern islands origin
*strictifrons, novocaledonica, collare, insulare,*
ignavum (?).
- Group IV. *Pison* of the uncertain origin (3 species)
 *argentatum, hospes, iridipenne*.

Thus it may not be difficult to derive several peculiaristic characters concerning the *Pison*-fauna of the Pacific Islands from the above classification. There is no relation between the *Pison*-fauna of the Pacific Islands and those of the Australasian Region. This fact may well support the theory of Professor Esaki (1942, 1950), namely "the whole Pacific Islands except those closely situated to Australia and New Zealand and to the American Continents, should belong to the Oriental Region instead of to the Australian Region, so far as the insects are concerned." Of the twenty species 50 per cent are of the Polynesian origin and 30 per cent of the Melanesian one. Micronesia has the richest endemic fauna of the Pacific Islands. A very interesting fact is that in Micronesia there is found not a single endemic form which occurs throughout on all of the islands or even on two different island-groups. For example, *esakii, mariannense* and

oakleyi occur only in the Marianna Islands but in neither the Caroline nor the Palau Islands. *Korrorense* is found only in the Palau Islands but not in Yap Island which is situated close to the former. It is rather curious that not a single endemic *Pison*-species was ever found in Yap Island and also in Hawaii, where there have been differentiated many endemic species among other groups of insects. Next it is an important evidence that there is not a single species which is found both in Micronesia and Hawaii but not elsewhere. This phenomenon may be explained by the habitat of the Micronesian endemic species, i. e. *esakii*, *oakleyi*, *mariannense*, *ponape*, *nigellum* or *trukense*. These species are all inhabitants of the native forests presumably making their nests in the ground. The similar relation may exist in such species as *collare*, *glabrum*, *korrorense*, *novocaledonica*, *strictifrons* and *tosawai*. In 1911 R. E. Turner suggested the possibility of transportation of the *Pison*-species from one district to another writing as follows:—"Such of the species as having been observed build mud nest in holes in wood, key-holes, or similar situations, stocking their nests with small spiders, which paralysed by stinging. Owing to these habits the species are easily transported on ships, giving rise to a considerable extension of range in several species, such as *P. spinolae* and *P. argentatum*." The following species may belong to this category in relation to their mode of distribution: *argentatum*, *hospes*, *ignavum*, *impunctatum*, *insulare*, *iridipenne*, *punctifrons* and *tahitense*. Another peculiarity of the *Pison*-fauna in the Pacific Islands which must not be overlooked is that all are the black species and not a single representative of the light coloured species occurs in this area. •

The distribution of the Micronesian species is summarised in detail as follows:

1. Species occurring in the Marianna Islands—*argentatum*, *esakii*, *hospes*, *iridipenne*, *mariannense*, *oakleyi*, *punctifrons* (7 species).
2. Species occurring in the Palau Islands—*argentatum*, *hospes*, *ignavum*, *iridipenne*, *korrorense*, *punctifrons* (6 species).
3. Species occurring in the Caroline Islands—*argentatum*, *iridipenne*, *nigellum*, *ponape*, *punctifrons*, *trukense* (6 species).
4. Species occurring in the Marshall Islands—*hospes*, *iridipenne*, *punctifrons*, *tahitense* (4 species).

TIME OF OCCURRENCE OF MICRONESIAN *PISON*-SPECIES

As regards the time of occurrence of Micronesian *Pison*-species, it appears that almost all the species may occur throughout the year as given in the following table.

Table 1. Collecting data of Micronesian *Pison*-species.

Species	Month of capture of Micronesian <i>Pison</i> -species											
	i	ii	iii	iv	v	vi	vii	viii	ix	x	xi	xii
<i>argentatum</i>	●	●	●	●	●	●	●	●	●	●	●	●
<i>esakii</i>		●	●		●	●	●		●			
<i>hospes</i>		●	●	●	●		●	●	●			●
<i>ignavum</i>		●	●	●								
<i>iridipenne</i>	●	●				●	●	●			●	●
<i>korrorense</i>		●	●					●				
<i>mariannense</i>					●						●	
<i>nigellum</i>	●	●	●					●	●		●	
<i>oakleyi</i>				●	●	●					●	●
<i>ponape</i>	●	●	●				●	●			●	●
<i>punctifrons</i>	●	●	●	●	●	●	●	●			●	●
<i>tahitense</i>							●	●				
<i>trukense</i>				●								

SYSTEMATIC LIST OF THE SPECIES OF *PISON* IN MICRONESIA*Pison argentatum* Shuckard, 1837

Synonym: *P. fuscipalpis* Cameron, 1901.

Bridwell, Proc. Hawn. Ent. Soc., 4: 123 (Hawaii); Swezey, B. P. Bishop Mus. Bull., 172: 185 (Guam); Krombein, 1949, Proc. Hawn. Ent. Soc., 13: 403 (Mariana Islands—Guam; Caroline Islands—Truk, Ponape); Krombein, 1950, Proc. Hawn. Ent. Soc., 14: 139 (Yap).

Habitat in Micronesia: Marianna Islands—Saipan, Tinian, Rota, Guam; Palau Islands—Korror; Caroline Islands—Yap, Truk, Ponape.

Distribution: Madagascar, Mauritius, Tenasserim, Burma, Malaya, Borneo, Philippines, Marianna Islands, Palau Islands, Caroline Islands and Hawaii.

Specimens examined: 1♀, 10. xi. 1937, Garapan, Saipan,

Marianna Islands, Esaki leg.; 2♂♂ 1♀, 7. vii. 1939, Garapan, Saipan, Esaki leg.; 1♂, 4. v. 1940, Garapan—Sadog Tasi, Saipan, Yasumatsu et Yoshimura leg.; 2♂♂ 1♀, 7. v. 1940, Donni—Sadog Tasi, Saipan, Yasumatsu et Yoshimura leg.; 3♂♂ 2♀♀, 3. xi. 1937, Marupo—Hagoi, Tinian, Marianna Islands, Esaki leg.; 1♀, 5. xi. 1937, Tetêto—Tatâcho—Soŋsoŋg, Rota, Marianna Islands, Esaki leg.; 1♀, 10. v. 1939, Arabaketsu, Korrör, Palau Islands, S. Miyake leg.; 1♀, 25. viii. 1940, Arabaketsu, Korrör, Nagasawa leg.; 1♀, 10. ix. 1940, Arabaketsu, Korrör, Nagasawa leg.; 1♀, 17. i. 1938, Kolonia, Ponape, Caroline Islands, Esaki leg.; 1♂, 24. vii. 1939, Kolonia—Jokaji, Ponape, Esaki leg.

Pison esakii Yasumatsu, 1937

Yasumatsu, 1937, Mushi, 9: 129 (Marianna Islands); Yasumatsu, 1939, Festschr. 60. Geburtst. E. Strand, 5: 83; Krombein, Proc. Hawn. Ent. Soc., 13: 401 (Mariana Islands). *P. sp.* Fullaway, 1913, Proc. Hawn. Ent. Soc., 2: 283 (Guam); Sweczy, 1942, B. P. Bishop Mus. Bull., 172: 185 (Guam).

Habitat in Micronesia: Marianna Islands—Saipan, Tinian, Rota, Guam.

Distribution: Marianna Islands.

Specimens examined: 1♀, 11. iii. 1938, Tapôcho—Garapan, Saipan, Marianna Islands, Esaki leg.; 1♀, 1. vii. 1939, Garapan, Saipan, Esaki leg.; 12♀♀, 3. v. 1940, Matansha—Calabera, Saipan, Yasumatsu et Yoshimura leg.; 1♀, 6. v. 1940, Tapôcho, Saipan, Yasumatsu et Yoshimura leg.; 4♀♀, 12. v. 1940, Fanagam, Saipan, Yasumatsu et Yoshimura leg.; 1♀, 8. ii. 1936, Tatâcho—Soŋsoŋg, Rota, Marianna Islands, Esaki leg.; 1♀, 5. xi. 1937, Tetêto—Tatâcho—Soŋsoŋg, Rota, Esaki leg.

Pison hospes Smith, 1879

Smith, 1879, Jour. Linn. Soc. Zool., 14: 676 (Hawaii); Bridwell, Proc. Hawn. Ent. Soc., 4: 123 (Hawaii); Perkins et Cheesman, 1928, Insects of Samoa, 5, fasc. 1: 27 (Samoa); Cheesman, 1928, Ann. Mag. Nat. Hist., ser. 10, 1: 175 (Marquesas, Society Islands); Williams, 1932, B. P. Bishop Mus. Bull., 98: 151 (Marquesas); Krauss, 1944, Proc. Hawn. Ent. Soc., 12: 93 (Molokai); Williams, 1947, Occasional Pap., B. P. Bishop Mus., 18: 331; Krombein, 1949, Proc. Hawn. Ent. Soc., 13: 404 (Marshall Islands, Palau Islands); Krombein, 1950, Proc. Hawn. Ent. Soc., 14: 139 (Bikini-Atoll). *P. fuscipennis* Yasumatsu (nec Smith), 1937, Mushi, 9: 131 (Palau Islands); Yasumatsu, 1939, Festschr. 60. Geburtst. E. Strand, 5: 83.

Habitat in Micronesia: Marianna Islands—Saipan; Palau

Islands—Babeldaob, Korrer, Peliliu; Caroline Islands—Yap; Marshall Islands—Ailinglapalap-Atoll, Jaluit-Atoll, Wotje-Atoll.

Distribution: Cocos-Keeling Island, Singapore, Marianna Islands, Palau Islands, Caroline Islands, Marshall Islands, Fiji, Samoa, Tonga Islands, Ellice Islands, Society Islands, Marquesas Islands and Hawaii.

Specimens examined: 1 ♂, 5. v. 1940, Garapan—Sadog Tasi, Saipan, Marianna Islands, Yasumatsu et Yoshimura leg.; 1 ♀, 11. v. 1940, Chalan Canoa, Saipan, Yasumatsu et Yoshimura leg.; 1 ♀, 12. v. 1940, Fanagam, Saipan, Yasumatsu et Yoshimura leg.; 1 ♂, 7. ix. 1939, Nif—Guilifez, Yap, Caroline Islands, Esaki leg.; 1 ♂, 1 ♀, 8. ix. 1939, Guilifez—Rul, Yap, Esaki leg.; 1 ♀, 9. ix. 1939, Rul, Yap, Esaki leg.; 1 ♀, 13. ix. 1939, Rul, Yap, Esaki leg.; 1 ♂, 1 ♀, 26. viii. 1946, Airek, Ailinglapalap-Atoll, Marshall Islands, H. K. Townes leg.; 1 ♂, 23. ii. 1936, Marukyoku, Babeldaob, Palau Islands, Esaki leg.; 1 ♀, 1. iii. 1936, Airai, Babeldaob, Esaki leg.; 1 ♀, 26. ii. 1936, Ngarauo—Arukorum, Babeldaob, Esaki leg.; 1 ♂, 1 ♀, 7. ii. 1938, Ngardok—Ngarasumao, Babeldaob, Esaki leg.; 2 ♀♀, 11. ii. 1938, Ngardok—Ngarmisukan, Babeldaob, Esaki leg.; 1 ♂, 17. ii. 1936, Korrer, Korrer, Palau Islands, Esaki leg.; 1 ♀, 22. ii. 1936, Korrer—Arabaketsu, Korrer, Esaki leg.; 1 ♀, 22. xii. 1937, Arabaketsu, Korrer, Murakami leg.; 1 ♂, 28. iv. 1939, Arabaketsu, Korrer, Miyake leg.; 2 ♂♂, 9. viii. 1939, Korrer, Korrer, Esaki leg.; 2 ♀♀, viii. 1939, Korrer, Korrer, Esaki leg.; 1 ♀, 11. ix. 1940, Arabaketsu, Korrer, Nagasawa leg.

Pison ignavum Turner, 1908

Turner, 1908, Proc. Zool. Soc. London: 511 (Australia); Williams, 1932, B. P. Bishop Mus. Bull., 98: 152 (Marquesas); Williams, 1945, Proc. Hawn. Ent. Soc., 12: 440 (New Caledonia); Williams, 1947, Occasional Pap., B. P. Bishop Mus., 18: 330 (Fiji); Krombein, 1949, Proc. Hawn. Ent. Soc., 13: 404 (Palau Islands). *P. argentatum ignavum* Turner, 1916, Proc. Zool. Soc. London: 601 (Australia, Fiji); Perkins et Cheesman, Insects of Samoa, 5, fasc. 1: 28 (Samoa); Cheesman, 1928, Ann. Mag. Nat. Hist., ser. 10, 1: 177 (Marquesas, Society Islands).

Habitat in Micronesia: Palau Islands—Korrer.

Distribution: Palau Islands, Australia, New Caledonia, Fiji, Samoa, Society Islands and Marquesas Islands.

Specimens examined: 1 ♀, 11. iv. 1925, Papeiti, Tahiti, J. M. Clements leg.; 1 ♂, 2. ii. 1927, Papeiti, Tahiti, Clements leg.

Pison iridipenne Smith, 1879

Williams, 1932, B. P. Bishop Mus. Bull., 98: 152 (Marquesas); Krauss, 1944, Proc. Hawn. Ent. Soc., 12: 93 (Molokai); Williams, 1947, Occasional Pap., B. P. Bishop Mus., 18: 331; Krombein, 1949, Proc. Hawn. Ent. Soc., 13: 408 (Marshall Islands, Caroline Islands—Truk, Ponape, Palau Islands, Marianna Islands); Krombein, 1950, Proc. Hawn. Ent. Soc., 14: 139, figs. 28, 35, 37 (Saipan). *P. iridipennis* Smith, 1879, Jour. Linn. Soc. Zool., 14: 676 (Hawaii); Bridwell, Proc. Hawn. Ent. Soc., 4: 123 (Hawaii); Perkins et Cheesman, Insects of Samoa, 5, fasc. 1: 28 (Samoa); Cheesman, 1928, Ann. Mag. Nat. Hist., ser. 10, 1: 176 (Marquesas, Society Islands).

Habitat in Micronesia: Marianna Islands—Tinian; Palau Islands—Peliliu; Caroline Islands—Truk, Ponape, Kusaie; Marshall Islands—Ailinglapalap-Atoll, Jaluit-Atoll, Wotje-Atoll.

Distribution: Marianna Islands, Caroline Islands, Palau Islands, Marshall Islands, Australia, Fiji, Samoa, Hawaii, Society Islands, Bolabola Island, Tuamotu Archipelago and Marquesas Islands.

Specimens examined: 2 ♂♂ 1 ♀, 16. xi. 1937, Toloas-Erin, Truk, Caroline Islands, Esaki leg.; 1 ♂, 21. i. 1938, Toloas, Truk, Esaki leg.; 2 ♂♂, 10. vii. 1939, Toloas, Truk, Esaki leg.; 3 ♂♂ 2 ♀♀, 3. xii. 1937, Lelo, Kusaie, Caroline Islands, Esaki leg.; 4 ♂♂, 8. xii. 1937, Mwot—Utwe, Kusaie, Esaki leg.; 1 ♀, 18. vii. 1939, Ronkiti—One, Ponape, Caroline Islands, Esaki leg.; 1 ♀, 24. xi. 1937, Wotje-Atoll, Marshall Islands, Esaki leg.; 3 ♂♂ 2 ♀♀, 28. xi. 1937, Jabor, Jaluit-Atoll, Marshall Islands, Esaki leg.

Pison korrorense Yasumatsu, 1937

Krombein, 1949, Proc. Hawn. Ent. Soc., 13: 409; Krombein, 1950, Proc. Hawn. Ent. Soc., 14: 139, figs. 29, 31, 33. *P. korrorensis* Yasumatsu, 1937, Mushi, 9: 133 (Palau Islands); Yasumatsu, 1939, Festschr. 60. Geburtst. E. Strand, 5: 83.

Habitat in Micronesia: Palau Islands—Korrör.

Distribution: Palau Islands.

Specimens examined: 1 ♂ 1 ♀, 21. ii. 1936, Korrör, Korrör, Palau Islands, Esaki leg.; 1 ♀, 20. ii. 1938, Kajangel, Korrör, Esaki leg.; 1 ♂ 5 ♀♀, 25. viii. 1939, Korrör, Korrör, Esaki leg.

Pison mariannense sp. nov.

♂. Almost entirely black. Mandibles at the apex castaneous. Tibial calcaria black. Wings strongly infumated with brown and with violaceous reflections, stigma and veins fuscous.

Pubescence silvery, suberect on front, vertex and thorax,

decumbent on clypeus, genae and legs. The apical bands on first to fourth abdominal tergites narrower than those of *P. oakleyi*.

Front shagreened, dull, with sparsely scattered punctures, other portions of the body shining. Punctures on clypeus minute and dense. Punctures on ocellar triangle fine, on vertex fine becoming larger and coarser posteriorly. Impunctate clypeal lobe triangular in out line and higher than that of *oakleyi*. Frontal groove present, but weak, running from anterior ocellus half the distance towards antennal insertions and termination in a short carina. Punctures on the disk of mesonotum very sparsely scattered and slightly larger than those on the posterior portion of vertex. Punctures on mesopleuron comparatively large and coarse, the interspaces about as wide as the width of a puncture. Posterior margin of mesonotum with some short longitudinal wrinkles. Dorsum of propodeum with a distinct median carina except its extremities, some oblique wrinkles or striolae are starting from the base. Posterior surface of propodeum with the usual median impression and about eight or nine strong transverse rugae, not punctured. Lateral surface of propodeum only separated from dorsal surface by a carina and with punctures which are slightly smaller but denser than those on mesopleuron. Punctures on abdomen very minute, delicate and very much coarsely scattered, especially so on the second sternite. Tergites one to five slightly constricted at apices.

Postocellar line three-times the length of oculo-ocellar line. The diameter of posterior ocelli four-times the length of oculo-ocellar line. The diameter of posterior ocelli very slightly longer than or almost as long as postocellar line. Minimum width of front on vertex less than twice the length of the first flagellar segment.

Radial cell very short. Outer cellular line* divided into two straight lines. Petiole of second cubital cell subequal to height of the cell. Third cubital cell: lower side about three-times the length of the upper one. First recurrent nervure interstitial with the first transverse cubital nervure, second recurrent one also interstitial with the second transverse cubital one. Nervulus of fore wings distinctly antefurcal and oblique.

* A line connecting the apex of the radial cell, the third cubital cell and further the outer margin of the second discoidal cell.

Measurements. Length of body: ca. 7 mm. Length of fore wing: ca. 5.5 mm.

♀. Similar to ♂. Clypeal lobe not triangular in outline, but somewhat rounded. Frontal carina longer. Postocellar line twice

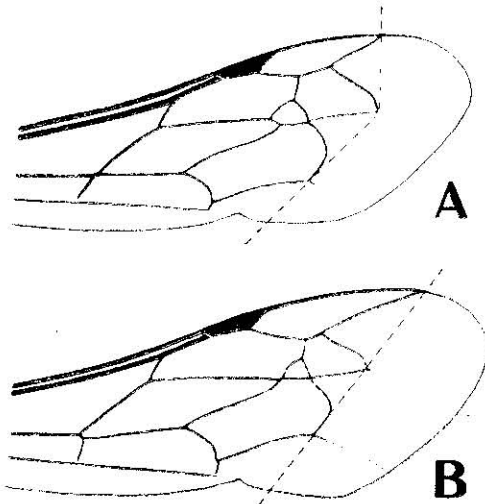


Fig. 2. Fore wings of *Pison mariannense* sp. nov. (A) and the other *Pison*-species (B).

as long as oculo-ocellar line. The diameter of posterior ocelli about twice the length of oculo-ocellar line. The diameter of posterior ocelli about 1.5-times the length of postocellar line. Minimum width of front on vertex about twice the length of the first flagellar segment.

Measurements. Length of body: ca. 8 mm. Length of fore wing: ca. 6 mm.

Habitat in Micronesia: Marianna Islands—Saipan, Rota.

Holotype: 1♂, 5. xi. 1937, Tetêto-Tatâcho-Soñgsoñg, Rota, Marianna Islands, Esaki leg.

Allotype: 1♀, 12. v. 1940, Fanagam, Saipan, Marianna Islands, Yasumatsu et Yoshimura leg.

Paratopotype: 1♂. *Paratype*: 1♀, 3. v. 1940, Matansha—Calabera, Saipan, Yasumatsu et Yoshimura leg.

This new species is quite distinct from all the known species of the genus *Pison* in having a characteristic venation of the fore wings.

Pison nigellum Krombein, 1949

Krombein, 1949, Proc. Hawn. Ent. Soc., 13: 401 (Ponape); Krombein, 1950, Proc. Hawn. Ent. Soc., 14: 139, figs. 26, 34, 36 (Ponape).

Habitat in Micronesia: Caroline Islands—Ponape.

Distribution: Caroline Islands.

Specimens examined: 6 ♀♀, 19. xi. 1937, Kolonia—Nat, Ponape, Caroline Islands, Esaki leg.; 9 ♀♀ 1 ♂, 11. i. 1938, Matalanim, Ponape, Esaki leg.; 1 ♀, 14. i. 1938, Nipit—Ronkiti, Ponape, Esaki leg.; 3 ♀♀, 15. i. 1938, Ronkiti—Paliker, Ponape, Esaki leg.; 1 ♀, 16. vii. 1939, Kolonia—Paliker, Ponape, Esaki leg.; 3 ♀♀, 17. vii. 1939, Paliker—Ronkiti, Ponape, Esaki leg.; 3 ♀♀, 18. vii. 1939, Ronkiti—One, Ponape, Esaki leg.; 1 ♀, 22. vii. 1939, Reitao—Oua—U, Ponape, Esaki leg.

Pison oakleyi Krombein, 1949

Krombein, 1949, Proc. Hawn. Ent. Soc., 13: 406 (Guam, Rota); Krombein, 1950, Proc. Hawn. Ent. Soc., 14: 139, figs. 27, 30, 32. *P. sp.* Fullaway, Proc. Hawn. Ent. Soc., 2: 283 (Guam); Swezey, 1942, B. P. Bishop Mus. Bull., 172: 185 (Guam).

Habitat in Micronesia: Marianna Islands—Pagan, Saipan, Rota, Guam.

Distribution: Marianna Islands.

Specimens examined: 3 ♂♂ 1 ♀, 24. iv. 1940, Soñgsoñg—Regusa, Pagan, Marianna Islands, Yasumatsu et Yoshimura leg.; 3 ♀♀, 8. v. 1940, Matansha—Calabera, Saipan, Marianna Islands, Yasumatsu et Yoshimura leg.; 1 ♀, 12. v. 1940, Fanagam, Saipan, Yasumatsu et Yoshimura leg.; 2 ♂♂, 5. xi. 1937, Tetêto—Tatacho—Soñgsoñg, Rota, Marianna Islands, Esaki leg.; 1 ♂ 1 ♀, 6. xi. 1937, Soñgsoñg—Taipingot, Rota, Esaki leg.; 1 ♀ (paratype), 17. v. 1936, Tarague, Guam, Marianna Islands, O. H. Swezey leg.; 1 ♂ (paratype), 19. xii. 1941, Talofoto, Guam, Swezey leg.

Pison ponape Krombein, 1949

Krombein, 1949, Proc. Hawn. Ent. Soc., 13: 405 (Ponape).

The male (hitherto unknown) differs from the female as follows:

♀	♂
Clypeal lobe rounded.	Clypeal lobe comparatively long and pentagonal in out line.
Postocellar line twice as long as oculo-ocellar line.	Postocellar line as long as oculo-ocellar line.

The diameter of posterior ocelli about three-times the length of oculo-ocellar line.	The diameter of posterior ocelli distinctly longer than oculo-ocellar line.
The diameter of posterior ocelli about 1.5-times the length of postocellar line.	The diameter of posterior ocelli very slightly longer than or almost as long as postocellar line.
Minimum width of front on vertex twice the length of the first flagellar segment.	Minimum width of front on vertex about 1.6-times the length of the first flagellar segment.

Allotype: 1 ♂, 12. i. 1938, Matalanim—Nipit, Ponape, Caroline Islands, Esaki leg.

Paratypes: 2 ♂♂, 8. xii. 1937, Mwot—Utwe, Kusaie, Caroline Islands, Esaki leg.

Habitat in Micronesia: Caroline Islands—Ponape, Kusaie.

Distribution: Caroline Islands.

Other specimens examined: 1 ♀, 15. xii. 1930, Kolonia, Ponape, Caroline Islands, S. Uchiyama leg.; 1 ♀, 7. vii. 1931, Kolonia, Ponape, Uchiyama leg.; 2 ♀♀, 19. xi. 1937, Kolonia—Nat, Ponape, Esaki leg.; 1 ♀, 29. xii. 1937, Kolonia—Paliker, Ponape, Esaki leg.; 1 ♀, 11. i. 1938, Matalanim, Ponape, Esaki leg.; 1 ♀, 14. i. 1938, Nipit—Ronkiti, Ponape, Esaki leg.; 2 ♀♀, 29. i. 1938, Kolonia, Ponape, Esaki leg.; 1 ♀, 16. vii. 1939, Kolonia—Paliker, Ponape, Esaki leg.; 2 ♀♀, 18. vii. 1939, Ronkiti—One, Ponape, Esaki leg.; 1 ♀, 22. vii. 1939, Reitao—Oua—U, Ponape, Esaki leg.; 1 ♀, 13. xii. 1937, Malem, Kusaie, Esaki leg.

Pison punctifrons Shuckard, 1837

Synonyms: *P. suspiciosus* Smith, 1858; *P. fabricator* Smith, 1869; *P. striolatum* Cameron, 1896; *P. lagunae* Ashmead, 1904; *P. javanum* Cameron, 1905.

Yasumatsu, 1937, Mushi, 9:134 (Palau Islands); Yasumatsu, 1939, Festschr. 60. Geburtst. E. Strand, 5:83; Krombein, 1949, Proc. Hawn. Ent. Soc., 13:400 (Marshall Islands, Caroline Islands, Mariana Islands); Krombein, 1950, Proc. Hawn. Ent. Soc., 14:139 (Ponape). *P. rugosus* Semper, 1905, Deutsche Ent. Zeitschr. „Iris“, 18:246 (Caroline Islands). *P. sp.* Fullaway, Proc. Hawn. Ent.

Soc., 2 : 283 (Guam). *P. lagunae* Swezey, 1942, B. P. Bishop Mus. Bull., 172 : 185 (Guam).

Habitat in Micronesia: Marianna Islands—Pagan, Agrigan, Saipan, Tinian, Guam; Palau Islands—Korrör, Babeldaob; Caroline Islands—Yap, Kapingamarangi-Atoll, Ponape, Kusaie; Marshall Islands—Yaluit-Atoll.

Distribution: N. W. India, Ceylon, Burma, Malaya, Sumatra, Java, S. and E. China, Philippines, Pescadores, Formosa, Ishigaki Island, Amami-Oshima, Japan, Bonin Islands, Marianna Islands, Palau Islands, Caroline Islands and Marshall Islands.

Specimens examined: 1♂, 23. iv. 1940, Laguna, Pagan, Marianna Islands, Yasumatsu et Yoshimura leg.; 2♂♂, 28. iv. 1940, Regusa—Tarague, Pagan, Yasumatsu et Yoshimura leg.; 1♀, 3. vii. 1939, Garapan, Saipan, Marianna Islands, Esaki leg.; 2♀♀, 7. v. 1940, Donni—Sadog Tasi, Saipan, Yasumatsu et Yoshimura leg.; 1♂, 2. iii. 1938, Korrör, Korrör, Palau Islands, Esaki leg.; 1♀, 24. iv. 1938, Korrör—Arabaketsu, Korrör, Esaki leg.; 1♀, 5. v. 1938, Korrör—Arabaketsu, Murakami leg.; 1♀, 25. viii. 1939, Korrör, Korrör, Esaki leg.; 1♀, 1933, Palau Islands, T. Yoshino leg.; 1♀, vi. 1928, Yap, Caroline Islands, A. Kariya leg.; 1♀, 18. xii. 1937, Malem, Kusaie, Caroline Islands, Esaki leg.; 2♂♂, 19. xi. 1937, Kolonia—Nat, Ponape, Caroline Islands, Esaki leg.; 1♀, 28. xii. 1937, Kolonia, Ponape, Esaki leg.; 1♀, 14. vii. 1939, Kolonia—Sankakuyama, Ponape, Esaki leg.; 3♂♂ 1♀, 28. xi. 1937, Jabor, Jaluit-Atoll, Marshall Islands, Esaki leg.

Pison tahitense Saussure, 1867

Synonym: *P. Rechargingeri* Kohl, 1908.

Saussure, 1867, Reise d. Novara, Zool., 2, Hym.: 65 (Tahiti); Perkins et Cheesman, 1928, Insects of Samoa, 5, fasc. 1 : 26 (Samoa); Cheesman, 1928, Ann. Mag. Nat. Hist., ser. 10, 1 : 175 (Marquesas, Society Islands); Williams, 1932, B. P. Bishop Mus. Bull., 98 : 152 (Marquesas); Williams, 1947, Occasional Pap., B. P. Bishop Mus., 18 : 331 (Fiji); Krombein, 1949, Proc. Hawn. Ent. Soc., 13 : 405 (Marshall Islands). *P. Rechargingeri* Kohl, 1908, Denkschr. Akad. Wiss. Wien, 81 : 309 (Samoa).

Habitat in Micronesia: Marshall Islands—Ailinglapalap-Atoll.

Distribution: Marshall Islands, Fiji, Samoa, Society Islands, Ellice Islands and Marquesas Islands.

Specimens examined: 1♂ 1♀, 16. vii. 1940, Tapatapao, Upolu, Samoa, C. H. Swezey leg.

Pison trukense sp. nov.

This species is closely related to *P. ponape* Krombein.

<i>ponape</i> ♂	<i>trukense</i> ♂
Wings clearly hyaline.	Outer half of fore and hind wings distinctly clouded with brownish colour.
Silvery pubescence on the postero-lateral portions of propodeum shorter.	Silvery pubescence on the postero-lateral portions of propodeum longer.
Dorsum of propodeum without a median carina, but the median sulcus deeper on entire length of surface.	Dorsum of propodeum with a very short basal carina, but the median sulcus shallower on entire length of surface.
Punctures on front sparse.	Punctures on front extremely sparse.
First recurrent nervure received at the first cubital cell just before the first transverse cubital nervure or just before the second cubital cell.	First recurrent nervure interstitial with the first transverse cubital nervure.
Third cubital cell: lower side about three-times the length of the upper one.	Third cubital cell: lower side about twice the length of the upper one.
Nervulus interstitial.	Nervulus slightly postfurcal.
Measurements of <i>trukense</i> ♂. Length of fore wing: ca. 7 mm.	Length of body: ca. 9 mm.
<i>trukense</i> ♂	<i>trukense</i> ♀
Clypeal lobe longer.	Clypeal lobe much broader.
Postocellar line as long as oculo-ocellar line.	Postocellar line twice the length of oculo-ocellar line.
The diameter of posterior ocelli distinctly longer than oculo-ocellar line.	The diameter of posterior ocelli more than twice the length of oculo-ocellar line.
The diameter of posterior ocelli very slightly longer than or almost as long as postocellar line.	The diameter of posterior ocelli nearly twice the length of postocellar line.
Minimum width of front on	Minimum width of front on

vertex about 1.3-times the vertex as long as the first length of the first flagellar segment. flagellar segment.

Measurements of *trukense* ♀. Length of body: ca. 9 mm. Length of fore wing: ca. 7 mm.

Habitat in Micronesia: Caroline Islands—Truk, Enderby-Atoll.

Holotype: 1♂, 12. iv. 1940, Olei, Tol, Truk, Caroline Islands, Yasumatsu et Yoshimura leg.

Allotype: 1♀, 10. iv. 1940, Sabote—Epin, Pata, Truk, Yasumatsu et Yoshimura leg.

Paratopotypes: 5♂♂ 1♀. *Paratypes*: 2♀♀, 21. i. 1938, Toloas, Truk, Esaki leg.; 2♀♀, 31. vii. 1939, Kuṭua, Toloas, Esaki leg.; 1♀, 10. vii. 1939, Toloas, Esaki leg.; 1♀, 5. iv. 1940, Sabote—Epin, Pata, Yasumatsu et Yoshimura leg.; 2♀♀, 6. iv. 1940, Oley—Foup, Tol, Yasumatsu et Yoshimura leg.; 1♀, 3. viii. 1939, Poloat, Enderby-Atoll, Caroline Islands, Esaki leg.

LITERATURE

- Arnold, G. 1944 The Sphegidae of Madagascar. Nat. Mus. South. Rhodesia.
- Ashmead, W. H. 1905 Additions to the recorded Hymenopterous fauna of the Philippine Islands, with descriptions of new species. Proc. U. S. Nat. Mus., 28: 957—971.
- Bingham, C. T. 1897 The fauna of British India, etc. Hymenoptera, 1: 217—222.
- Bridwell, J. C. 1919 Miscellaneous notes on Hymenoptera. With descriptions of new genera and species. Proc. Hawn. Ent. Soc., 4: 109—165.
- Cameron, P. 1898 Notes on a collection of Hymenoptera from Greymouth, New Zealand, with descriptions of new species. Mem. Manchester Lit. Phil. Soc., 42: 1—53.
- Cameron, P. 1905 On some Australian and Malay parasitic Hymenoptera in the museum of the R. Zool. Soc. "Natura artis magistra" at Amsterdam. Tijdschr. f. Ent., 48: 33—47.
- Cameron, P. 1909 Description of a new species of *Pison* and *Notogonia* from Borneo. Soc. entom., Steglitz, 24: 73—74.
- Cheesman, L. E. 1928 A contribution towards the insect fauna of French Oceania, pt. 3. Ann. Mag. Nat. Hist., ser. 10, 1: 169—194.
- Esaki, T. 1950 A zoogeographical consideration of the insect fauna in the Pacific Islands. VIII International Congress of Entom., Stockholm: 373—379.
- Fullaway, D. T. 1913 Report on a collection of Hymenoptera made in Guam, Marianne Islands. Proc. Hawn. Ent. Soc., 2: 282—290.
- Kohl, F. F. 1908 In Rechinger, K. Botanische und zoologische Ergebnisse einer wissenschaftlichen Forschungsreise nach den Samoa-Inseln, dem Neuguinea-

- Archipel und Salomon Inseln. VII. Hymenoptera. Wien, Denkschr. Ak. Wiss., 81 : 306—317.
- Kohl, F. F. 1912 Diagnose et description d'une nouvelle espèce de Sphegidae. Bull. Sci. Franco-Belgique, 46 : 84—86.
- Krauss, N. L. H. 1944 Notes on insects and other Arthropods from the islands of Molokai and Maui, Hawaii. Proc. Hawn. Ent. Soc., 12 : 18—94.
- Krombein, K. V. 1949 Two new wasps from Melanesia and notes on a third recently introduced into Hawaii (Hymenoptera: Sphecidae). Proc. Hawn. Ent. Soc., 13 : 361—365.
- Krombein, K. V. 1949 The Aculeate Hymenoptera of Micronesia. I. Scoliidae, Mutillidae, Pompilidae and Sphecidae. Proc. Hawn. Ent. Soc., 13 : 367—410.
- Krombein, K. V. 1950 The Aculeate Hymenoptera of Micronesia. II. Colletidae, Halictidae, Megachilidae, and Apidae. Proc. Hawn. Ent. Soc., 14 : 101—142.
- Maidl, F. 1925 Fauna Sumatrensis (Beitrag Nr. 11), Sphegidae (Hym.). Ent. Mitt., Berlin, 14 : 376—390.
- Perkins, R. C. L. and L. E. Cheesman 1928 Apoidea, Sphecoidea and Vespoidea. Insects of Samoa, V, Hymenoptera, fasc. 1 : 1—32.
- Rohwer, S. A. 1916 Descriptions of new species of Hymenoptera. Proc. U. S. Nat. Mus., 49 : 205—249.
- Semper, G. 1905 Beitrag zur Lepidopterenfauna des Karolinen-Archipels. Deutsche Entom. Zeitschr., "Iris", 18 : 245—267.
- Smith, F. 1858 Catalogue of Hymenopterous insects collected at Sarawak, Borneo; Mount Ophir, Malacca; and at Singapore by A. R. Wallace. Jour. Proc. Linn. Soc., Zool., 2 : 104.
- Smith, F. 1869 Description of new species of the genus *Pison*; and a synonymic list of those previously described. Trans. Ent. Soc. London, 1869 : 289—300.
- Swezey, O. H. 1942 Wasps of Guam. In Insects of Guam. I. B. P. Bishop Mus. Bull., 172 : 184—187.
- Townes, H. K. 1946 Results of an entomological inspection tour of Micronesia. Rpt. 14, U. S. Comm. Co. Econ. Surv. Micronesia : 48—51.
- Turner, R. E. 1908 Notes on the Australian fossorial wasps of the family Sphegidae; with descriptions of new species. Proc. Zool. Soc. London, 1908 : 457—535.
- Turner, R. E. 1911 Fossorial Hymenoptera from the Seychelles and other islands in the Indian Ocean. Trans. Linn. Soc. London, 14 : 367—374.
- Turner, R. E. 1916 Notes on the wasps of the genus *Pison*, and some allied genera. Proc. Zool. Soc. London, 1916 : 591—629.
- Turner, R. E. 1916 Notes on fossorial Hymenoptera. XIX. On new species from Australia. Ann. Mag. Nat. Hist., ser. 7, 17 : 116—136.
- Turner, R. E. 1917 Notes on fossorial Hymenoptera. XXV. On new Sphecoidea in the Brit. Mus. Ann. Mag. Nat. Hist., ser. 8, 19 : 104—113.
- Turner, R. E. 1917 Notes on fossorial Hymenoptera. XXVII. On new species in the British Museum. Ann. Mag. Nat. Hist., ser. 8, 19 : 317—326.
- Vachal, J. 1907 Hyménoptères de la Nouvelle-Calédonie rapportés par le Lieutenant Quod. Rev. ent., 26 : 113—123.

- Veitch, R. and W. Greenwood 1924 The food plants or hosts of some Fijian insects. Part ii. Proc. Linn. Soc. N. S. Wales, 49 : 153—161.
- Weber, P. W. 1948 A new *Pison*. Notes and exhibitions. December 8, 1947 Meeting. Proc. Hawn. Ent. Soc., 13 : 222.
- Weber, P. W. 1949 *Pison insulare* Smith. Notes and exhibitions. June 14, 1948 Meeting. Proc. Hawn. Ent. Soc., 13 : 332.
- Williams, F. X. 1932 The Sphegoid wasps of the Marquesas Islands. Marquesan Insects—I. B. P. Bishop Mus. Bull., 98 : 149—153.
- Williams, F. X. 1945 The Aculeate wasps of New Caledonia, with natural history notes. Proc. Hawn. Ent. Soc., 12 : 407—452.
- Williams, F. X. 1947 Aculeate wasps of Fiji. Occasional Papers of B. P. Bishop Mus., 17 : 317—336.
- Yasumatsu, K. 1935 The genus *Pison* Spinola of the Japanese Empire (Hymenoptera, Trypoxylonidae). Annot. Zool. Jap., 15 : 227—239.
- Yasumatsu, K. 1937 Sphecoidea of Micronesia. Mushi, 9 : 129—134, 1 pl.
- Yasumatsu, K. 1939 Notes supplementaires sur le genre *Pison* Spinola du Japon. Festschr. 60. Geburtst. E. Strand, 5 : 82—84.
- Yasumatsu, K. 1943 Distribution of the species of the genus *Pison* in Oceanic islands. Zool. Mag., Tokyo, 55 : 351 (abstract).