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TWO NEW SPECIES OF THE GENUS *HERIADES* FROM THE NORTH PACIFIC ISLANDS

(Hym., Megachilidae)

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The genus *Heriades* is one of the least known bee genera in the North Pacific Islands. This fact may be attributed chiefly to the rarity of the species. Thus, only two species have hitherto been recorded, *Heriades paganensis* YASUMATSU (1942) from the Mariana Islands and *H. plumosa* KROMBEIN (1950) from the Palau Islands. Recently we have had the good fortune to examine a series of Hymenopterous specimens collected in some of the North Pacific Islands and found two new species of the genus *Heriades* which are described below.

It is a pleasure to acknowledge the continuous encouragement of Professor T. ESAKI, in whose laboratory the study has been made. Dr. KARL V. KROMBEIN, of the U. S. National Museum, has kindly made comparisons with the type material in his trust and has provided useful comments in this connection. For the opportunity of examining material we are indebted to the following persons: Dr. C. WATANABE, Mr. S. ASAHINA, Mr. T. OKUTANI and Mr. I. FUJIYAMA.

Key to the species of the genus *Heriades* from the North Pacific Islands

- 1, Plumose pubescence of vertex, dorsum of thorax and abdominal tergites ochraceous or fulvous 2
- Plumose pubescence of these areas white to creamy 3
- 2, Pubescence ochraceous to creamy. Plumose pubescence present on disks of apical tergites. Margin of clypeus not tuberculate. Inner margin of mandibles very deeply, almost semicircularly incurved basal to the inner apical tooth *plumosa* KROMBEIN
- Pubescence fulvous. Moderately dense, appressed, short plumose pubescence absent anterior to the apical bands of fourth to sixth tergites. Margin of clypeus rather definitely tuberculate. Inner margin of mandible very shallowly concave *fulvohispidus* n. sp.
- 3, Plumose pubescence lacking on disks of all tergites. Apical margin of clypeus not noticeably thickened but slightly crenulate. Punctures on head almost as large as those on disk of mesonotum *fuijyamai* n. sp.
- Plumose pubescence present anterior to the apical bands on almost all tergites. Apical

margin of clypeus thickened, upper edge of that portion not crenulate. Punctures on disk of mesonotum minute and very much smaller than those on head
..... *paganensis* YASUMATSU

Heriades (Michenerella) fulvohispidus n. sp.

Female. Black; apex of mandibles reddish black, antennae brownish beneath, the apical margin of the basal two tergites rather broadly but slightly pale reddish brown, legs somewhat reddish brown or brownish black, three terminal segments of tarsi ferruginous. Wings brownish dusky, tegulae pale ferruginous. Pubescence fulvous, somewhat paler on head. Pronotum, tubercles, margins of mesonotum, axillae, scutellum and metanotum densely covered with erect or suberect hair. First to fifth tergites each with a broad, apical, whitish fulvous band of dense hair (those on the basal two tergites somewhat narrowed in the middle). Scopa bright fulvous.

Head, seen in profile, with eyes as wide as genae. Labrum with a median basal tubercle. Mandibles with two, close, rather distinct carinae, the inner one curving inward at a point a little basal to the middle of mandible and disappearing at the basal third, inner margin of mandibles very shallowly concave basal to the inner apical tooth. Apical margin of clypeus with a weak emargination a little wider than the base of clypeus, clypeus with a pair of small tubercles on the sides of the apical emargination together with a small median tubercle. Punctures on clypeus exceedingly small and close, those on the basal half of clypeus about as large and coarse as those on the supraclypeal area, but conspicuously finer than those on front, vertex, and so on.

Mesonotum closely punctured, punctures small, a little smaller than those on front. Median, longitudinal groove of mesonotum long and deep. Axillae rounded, not armed.

Punctures on the basal half of the first and second tergites about as large as, but a little sparser than, those on the disk of mesonotum, those on the rest much finer, those on the third to fifth coarse but closer than those on the first and second, confluent longitudinally. Punctures on abdomen rather small for the size of the insect.

Length of body: 6–6.5 mm.

Holotype: ♀, 30. vi. 1932, Hahajima (Hillsborough Island of the Coffin group), Bonin Islands, Mr. E. ASAHINA leg., preserved in the collection of Kyushu University, Fukuoka.

Paratypes: 2 ♀ ♀, viii. 1905, Bonin Islands, preserved in the collection of Hokkaido University, Sapporo.

Habitat: Bonin Islands (about 143°E, 27°N).

This species is nearest to *Heriades plumosa* KROMBEIN from the Palau Islands. Dr. KROMBEIN kindly informed YASUMATSU of the following noteworthy characters of the present species by comparison of the holotype of *fulvohispidus* and the female allotype of *plumosa*: 1—Plumose pubescence lacking on disks of apical tergites, 2—Punctuation everywhere correspondingly sparser, so that the form from the Bonins is much shinier—the differences in density of punctuation between the two species is most marked on clypeus, supraclypeal area, front, mesoscutum and mesopleuron.

Heriades (Michenerella) fujiyamai n. sp.

Female. Black with white pubescence. Pubescence on the sides of mesonotum,

margin of scutellum and on tubercles denser. First to third tergites each with a narrow, apical, white hair band (band of the first tergite very thin medially in the holotype, broadly interrupted in the paratype), fourth and fifth tergites without hair bands, but with usual dense small pubescence all over the surface. Wings greyish dusky.

Head, seen in profile, thick, with eyes as wide as genae. Labrum with an inconspicuous basal tubercle. Mandibles with two, close, weak carinae, diverging toward the base at a point about one-third the distance from the base to the apex of mandible, inner carina obsolete near the base, inner margin of mandible very shallowly concave basal to the inner apical tooth. Apical margin of clypeus with a truncation a little wider than the base of clypeus, not noticeably thickened but slightly crenulate. Punctures on the basal part of clypeus conspicuously larger than those on the apical part of clypeus, nearly as coarse as (in the holotype) or a little finer than (in the paratype) those on supraclypeal area.

Mesonotum and scutellum moderately densely punctured. Axillae not dentate.

Punctures on the basal half of the first tergite the largest (a little larger than those on scutellum), becoming conspicuously finer toward the apex, those on the basal half of the second tergite about as large as those on scutellum, becoming finer apically, those on the third tergite nearly as large as those on the second. Punctures on the first to third tergites not close, those on the remaining tergites coarse and close. Punctures on the sides of each tergite, especially on the basal three tergites, conspicuously larger and coarser than those on the disk of tergites.

Length of body : about 6.5 mm. (Holotype), 5.5 mm. (Paratype).

Holotype : ♀, 7. viii. 1948, Mitsune, Hachijo Island, Mr. I. FUJIYAMA leg.

Paratype : ♀, 5. viii. 1948, Kônominato, Hachijo Island, Mr. I. FUJIYAMA leg.

Both types are preserved in the collection of Kyushu University.

Habitat : Hachijo Island (about 139°E, 33°N).

This species is named in memory of Mr. FUJIYAMA, noted for his extensive survey of the insect fauna of Hachijo Island.

This species is very closely allied to *Heriades sauteri* COCKERELL of Formosa, but some definite differences are found between the species. *Sauteri* has the head with eyes much wider than genae seen in profile. The inner margin of the mandibles is subparallel to its outer margin in *sauteri*, while the inner and outer margins are apparently divergent apically in *fuijyamai* (the mandibles of *sauteri* are narrower than those of *fuijyamai*). The punctures on the front of *sauteri* are much deeper and definitely larger than those of *fuijyamai*.