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会

規

昆虫学の同好者は、誰でも本会に入会することが出来る。

本会は、適宜談話会(当分年二回)を開き、また採集会を行なう。

本会は会誌を年2回発行し、会員は自由にこれに寄稿することが出来る(ただし当分1印刷ページにつき全文のものは500円だけ、図は1論文1個とし、それ以上の分は原則として著者負担とする。原稿の形式を本誌既出論文に準じ、編集係宛送付のこと。)

入会の希望者は、郵便連絡地(勤め先または住所)を明記の上、福井市文京3丁目福井大学教育学部生物学教室生物研究刊行会あて所定の年会費(750円)を添えて申込まれたい。

SOME HYMENOPTERA FROM QUELPART ISLAND, SOUTH KOREA

By K. TSUNEKI

(Biological Laboratory, Fukui University)

濟州島の蜂

九州大学教授白水隆博士は、今夏(1968)一隊を率いて朝鮮半島の南東沖にある濟州島に調査行を実施された。この島は中央に1950 mの漢拏山がそびえ、屋久島とともに高山を持つ小形の離島として、早くから生物学者の注意をひいていたが、植生の研究が深く行なわれているのに対して、昆虫の調査は余り進められていない。特にアナバチ科の膜翅類については、故岡本半次郎博士(1924)が、チョウセンギングチバチの名のもとに *Paralus flavipes varius* Sickmann (同博士は *P. saishuensis* n. sp. として扱っている) を記録し、他にクロアナバチ、ジガバチ、ギングチバチを報じているだけである。その後の韓国学者の記録(金昌煥, 1963; 趙福成, 1963)はいずれも、その再録にすぎない(後者はジガバチを2つの学名で2種に扱っている)。

白水博士は私のために、特に蜂に注意されて、少なからぬ材料を集めてくださった。その結果は下記の如くで、南鮮からの初記録(§印)はもちろん、朝鮮からの初記録(*印)も少なくない。さらにツチスガリ3種の中の2種までが新種であった。

なおジガバチについては、高度を確めた多数の標本(28♀♀4♂♂)を採ってくださったが、これは私がジガバチの生態分布論の中で、濟州島の材料が高度不明で論議の対象とならぬと述べたことを頭におかれて、特に注意してくださったのに違いない。ここに同博士のご好意に対し深謝の意を表する次第である。

さて、そのジガバチであるが、調査の結果は、それが高度600~800 mの地で得られたものであるにもかかわらず、全部サトジガバチであった。これは日本の材料について私が得た結果とははだしく違っている。この島にはヤマジガバチはおらず、したがって、それとの高度別の住みわけも見られないようである。これはサトジガバチが高地にも住むという事実とともに、ヤマジガバチの出現あるいは分布について興味ある示唆を与えるもので、日本にも同様な例があるかどうかを調べることは、今後の研究課題の1つである。

Recently Professor T. Shirôzu of Kyushu University sent me a series of specimens of solitary wasps for study which he and his party collected this summer (1968) during their Scientific Expedition to Quelpart Island. The Island lies off the southeast coast of the Korean Peninsula, the insect fauna of which has not fully been studied. As to Sphecidae of the Island only four species have been recorded by H. Okamoto (1924), namely, *Sphex argentatus* F. (under the name of *S. umbrosus* Chr.), *Ammophila sabulosa* L., *Paralus flavipes varius* Sickm. (under the name *Paralus saishuensis* Okamoto) and *Ectemnius continuus* F.

The material sent by Dr. Shirôzu comprised 12 species of Sphecidae and one species of Chrysididae, including some species new to S. Korea, new to Korea and new to science, the former two were respectively marked with § and * in the following list of the species.

Of the specimens those of *Ammophila* were particularly of interest. Probably because Dr. Shirôzu retained in his memory the account on the *Ammophila* of this Island which I published in relation to the ecological distribution of two subspecies of *A. sabulosa* in Japan abundant specimens, all with the record of height of the locality, were included in the material. These specimens which were captured on Mt. Hanna (1950 m) at the height of 600-800 m above the level of the sea belonged all to *A. sabulosa nipponica* n. sp. The fact is quite contrary to the rule found in Japan where, so far investigated, the range of distribution of

this subspecies is confined to the lowland area, usually below 300 m and the higher area is occupied by the other subspecies, the mountain race, *A. sabulosa infesta* Sm.

If the fact regarding the distribution of *A. s. nipponica* on Mt. Hanna is due to the absence of *A. s. infesta* on the Island it seems to suggest that in the habitat segregation between the two subspecies of *A. sabulosa* observed in Japan the biological coaction is more important factor than the physical environmental differences of their habitats.

In Korea a similar fact as found on Mt. Hanna was also observed with respect to the distribution of *Ammophila* spp. in the district of Mt. Kaya, where apparently occurs only *A. s. nipponica*, though the exact height of the distribution is unrecorded. This is not due to the absence of *A. s. infesta* in Korea. Certainly in my cabinets are preserved some specimens of this subspecies which I myself collected in Korea, though the height of the localities is also unrecorded. However, it is also certain that this subspecies is apparently rare in Korea. But the present state of our knowledge on the distribution of the two subspecies in Korea is too meagre to say anything about the ecological distribution of the two subspecies in Korea.

List and descriptions of the species examined

1. *Sphex (Prionyx) subfuscatus* Dahlbom, 1845 ツヤハラアナバチ
2 ♀♀, Kinneikutsu, 25. VII. 1968, S. Hasegawa leg.
This species has been known from Europe to South Korea. But the occurrence of this species on this Island seems interesting. It forms the easternmost record of distribution of the species.
- § 2. *Sphex (Isodontia) nigellus* Smith, 1856 コクロアナバチ
1 ♀, Cheju-City, 24. VII. 1968, S. Hayakawa leg.; 1 ♀, Kinneikutsu, 25. VII. 1968, T. Doi leg.
This species is widely distributed over the South- and East Asiatic regions and parts of Australia. But the actual record of the specimen from Korea has been confined to the Central region only.
3. *Ammophila (Ammophila) sabulosa nipponica* Tsuneki, 1967 サトジガバチ
15 ♀♀ 3 ♂♂, Mt. Hanna (Kannonji, 600 m), 12, 13. VII. 1968, T. Shirôzu leg.;
8 ♀♀, Mt. Hanna (Kannonji-Shiitakegoya, 800 m), 13. VII. 1968, T. Shirôzu leg.; 5 ♀♀, 1 ♂, Mt. Hanna (Shiitakegoya, 800 m), 13. VII. 1968, T. Shirôzu leg.
4. *Sceliphron (Chalybion) inflex* Sickmann, 1895 ルリジガバチ
1 ♀, Cheju-City, 24. VII. 1968, S. Hayakawa leg.
The taxonomic account on this species was given on page 6 of Etizenia, No. 26 (1967).
- *5. *Trypoxylon obsonator* Smith, 1873 ジガバチモドキ
1 ♀, Cheju-City, 22. VII. 1968, Y. Nishida leg.
- § 6. *Trypoxylon pacificum* Gussakovskij, 1932 コシプトジガバチモドキ
1 ♂, Mt. Hanna (Shiitakegoya, 800 m), 15. VII. 1968, T. Shirôzu leg.
- *7. *Trypoxylon clavicerum exiguum* Tsuneki, 1956 ケシジガバチモドキ
4 ♀♀, Mt. Hanna (Shiitakegoya, 800 m), 14, 15. VII. 1968, T. Shirôzu leg.
- *8. *Pemphredon (Pemphredon) japonicus* Matsumura, 1912 オオアリマキバチ

1 ♀, Mt. Hanna (Shiitakegoya, 800 m), 15. VII. 1968, T. Shirôzu leg.

*9. *Cerceris nipponensis* Tsuneki, 1961 ニッポンツチスガリ

1 ♂, Mt. Hanna (Kannonji, 600 m), 12. VII. 1968, T. Shirôzu leg.

Up to the present this species has been recorded from the Islands of Tsushima and Yakushima, northern half of Honshu and Hokkaido, but not from Kyushu.

Recent knowledge made it easy to separate this species in the male sex from the closely allied one, *C. carinalis* Pérez (see p. 58) which has been believed very difficult, or sometimes even impossible.

10. *Cerceris shirozui* sp. nov.

Closely resembles in structure and general punctuation to *C. rybyensis* L., but is distinctly different in the maculation of the abdomen and in the form of the pygidial area. The sculpture on the area dorsalis is also more or less different.

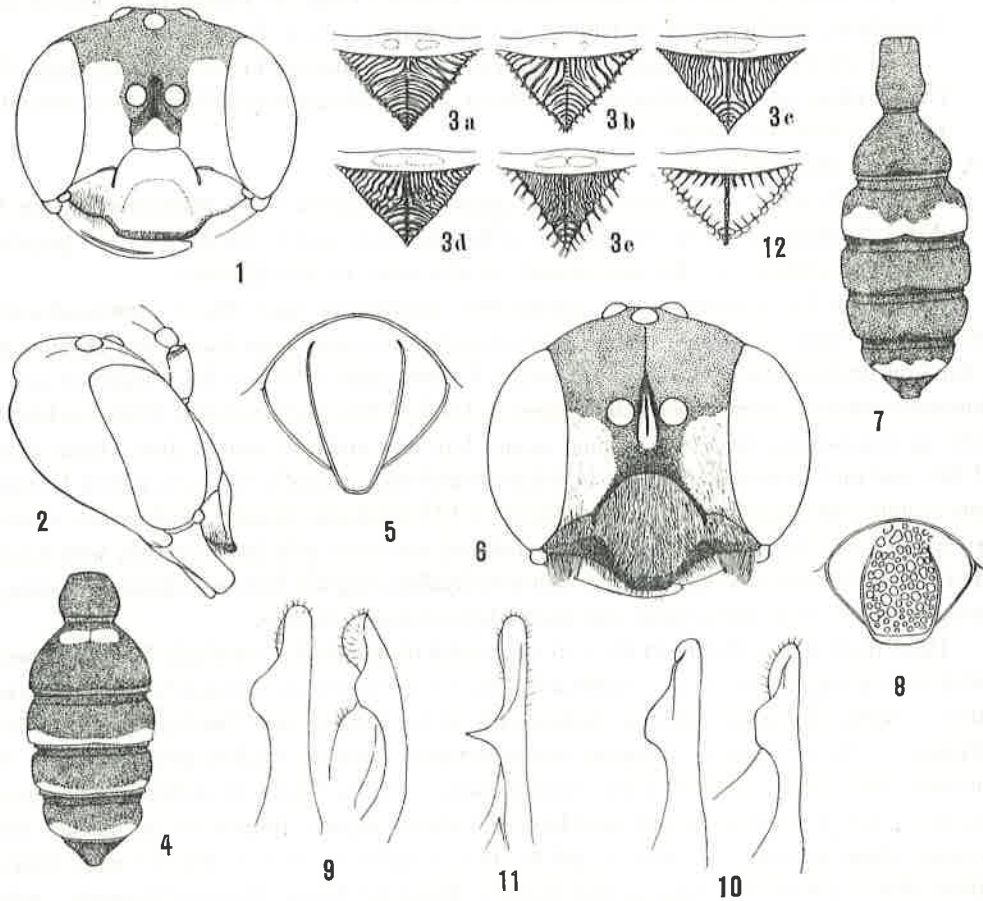
♀. Length 9.5-10.5 mm. Black, yellow are: Maculae on face (Fig. 1), antennal scape except apical ring, (pronotum immaculated), tegulae of wings except inside, two maculae or a band on postscutellum, two spots on tergite 1, sometimes medianly fused together into a transverse marking, narrow bands on tergites 3, 4 and 5 (Fig. 4), legs except following black: Fore and mid coxae, basal 2/3 of hind coxae, fore and mid trochanters above, basal mark of fore and mid femora, sometimes hind femora on inside (usually the area reddish ferruginous); joint 2 of antennae wholly black, joints 3-12 ferruginous beneath, dark brown above, articulations of mid and hind legs slightly reddish, hind tarsi pale brown above, with apical joint markedly darker. Wings slightly yellowish hyaline, slightly darkened throughout except base, especially so at apex, veins and stigma ferruginous to brown.

Head from above OOD : POD = 15 : 12, width of postocellus relatively 5.5, ocelli provided with an impression on each outer side. Head in front: Fig. 1, distance between tentorial pits* (= width of clypeus) : distance between one of the tentorial pits** and eye (oculo-clypeal distance) = 24 : 12, length of clypeus : antenno-clypeal distance : ocello-antennal distance (in the same scale) 28 : 13 : 19; oculo-antennal distance : width of antennal socket : interantennal distance = 13 : 7 : 6, interantennal keel high and sharp; clypeal impression on median lobe occupies about anterior 2/3 (Figs. 1 and 2). Head in profile: Fig. 2. Antenna with joint 3 (from above) 1.6 times as long as wide at apex (distinctly shorter than in *rybyensis*), joint 7 slightly wider than long. Pronotum with sides rounded, with medio-anterior region widely impressed; mesopleuron with scrobal furrow broad and deep, with upper and lower areas roundly raised (as in *rybyensis*), area dorsalis on propodeum: Fig. 3. Abdomen: Fig. 4, tergite 1 distinctly wider than long. Pygidial area: Fig. 5, its surface in profile gently curved. Sternite 2 with platform at base, apical margin of which rounded and reaching 2/5 of the incassate area of the segment; sternite 5 on each side roundly swollen, sternite 6 with apical incision deep, sinus rounded, without lateral teeth. Legs formed as in *rybyensis*, hind coxa with an acute longitudinal carina on the inside.

Punctuation very similar to that of *rybyensis*, distinctly finer than in *hortivaga*, on upper frons longitudinally closely punctate-striate, punctures on clypeal impressed area somewhat stronger than in *rybyensis* in general, longitudinally lengthened; sculpture on area

* Measured at the inner margin. ** Measured at the outer margin.

dorsalis much more distinct than in this, anteriorly obliquely or longitudinally and posteriorly transversely arcuately striate, always without the smooth area on disc, but in density considerably varied (Fig. 3, a-e, cf. Fig. 12, that of *rybyensis*); pygidial area finely or



Figs. 1-5. *Cerceris shirozui* Tsuneki, sp. nov. (♀).

1 and 2, Head, 3 (a-e), Sculpture of propodeum, 4, Abdomen, 5, Pygidial area.

Figs. 6-9. *Cerceris saishuensis* Tsuneki, sp. nov. (♂).

6, Head, 7, Abdomen, 8, Pygidial area, 9, Paramere of male genitalia.

Fig. 10. *Cerceris nipponensis* Tsuneki, ♂. Paramere of male genitalia.

Fig. 11. *Cerceris carinalis* Pérez, ♂. Paramere of male genitalia.

coarsely irregularly wrinkled with surface very minutely coriaceous, very frequently carrying a few distinct punctures at base. Hairing as in *rybyensis* generally, on body comparatively long and sparse, whitish, in some places slightly brownish, on lateral lobes of clypeus silvery, comparatively abundant, on anterior portion close and produced beyond anterior margin.

♂. Unknown.

Holotype: ♀, Quelpart Island, Mt. Hanna (Kannonji, 600 m), 13. VII. 1968, T. Shirôzu leg. (Coll. Tsuneki)

Paratypes: 4 ♀♀, the same place, 12, 13. VII. 1968, T. Shirôzu leg. (Coll. Tsuneki).

11. *Cerceris saishuensis* sp. nov.

Based on a single male specimen which somewhat resembles *C. carinalis* Pérez, ♂, but the head seen in front much wider, punctures especially on head and thorax markedly finer and the maculation on the clypeus and legs different.

♂. Length about 7 mm. Black, with following yellow: Facial and clypeal maculae (Fig. 6), outer half of tegulae, a band on tergites 3 and 6 (Fig. 7), postero-lateral marks on sternite 3, a broken streak on anterior side of antennal joint 1, fore and mid legs from apex of femora apically except inside of tibiae, mid trochanters on outside, hind trochanters wholly and base and underside of hind tibiae. Flagellum beneath broadly ferruginous, above dark brown, fore and mid tarsi pale brown apically, rest of hind tibiae and tarsi dark brown. Wings hyaline, apically clouded, veins and stigma dark brown.

Head from above, OOD : POD \div 12 : 9 (postocellus relatively 4.5), outside impression of postocelli narrow and less deep. Head in front: Fig. 6, width of median lobe of clypeus : oculo-clypeal distance = 21 : 7, ratio between oculo-antennal distance, width of antennal socket and interantennal distance 9 : 6 : 4, that between length of clypeus, clypeo-antennal distance, antenno-ocellar distance 25 : 12 : 16. Head in profile with temple as wide as eye. Antenna with joint 3 about 1.5 times as long as wide at apex, joint 7 slightly longer than wide, ultimate joint normally attenuate toward apex. Pronotum transverse, with sides roundly convergent anteriorly, with antero-lateral corners provided with a transverse short carina that runs down on the pronatal side, without median furrow or impression, mesopleuron without precoxal tooth, with scrobal furrow broadly opened; area dorsalis on propodeum distinctly marked off by furrows, in form equilateral triangle, disc roundly raised, with medial fine furrow on posterior half only. Abdomen: Fig. 7, tergite 1 about 1.5 times as long as wide at its maximum width. Pygidial area: Fig. 8; sternite 2 with basal area distinctly raised, but not well outlined, each sternite with apical membranous margin comparatively broad (markedly broader than in *carinalis*). Genitalia generally similar to those of *C. carinalis*, but the paramere in the dorsal view (Fig. 9; left side, seen vertical to the surface; right side, slightly from inside) with apical area broader, lamellate, half-rolled ventrally. In *carinalis* (Fig. 10) the area not enlarged, not rolled ventrally, but rather like the rounded end of a stick. (In *nipponensis* — Fig. 11 — apical area longer, slenderer, with a large strong tooth on the inside.)

Punctures on vertex mediocre with intervals somewhat smaller than punctures and scattered with micropoints, a patch of area locating postero-lateral to the postocelli impunctate and polished, upper frons more finely closely rugoso-punctate, lower frons on yellow maculated areas finely rugoso-punctate, mixing somewhat larger rounded punctures, median lobe of clypeus finely closely covered with hair-bearing punctures. Punctures on mesonotum, scutellum and postscutellum mediocre, sparse, mixing micropoints, on area dorsalis fine and sparse, with surface shining; mesopleuron coarsely rugoso-reticulate. Punctures on tergite 1 mediocre, irregularly distributed, generally sparse, on 2 slightly larger and closer, with intervals smaller than punctures and mixed with micropoints, on 3 and 4 as on 1, much sparser, mixed with a few micropoints, on 5 and 6 finer, sparser, mixing more abundant micropoints, pygidial area irregularly (in both size and distribution) punctate-subreticulated. Basal platform on sternite 2 at base and on sides coarsely punctured, with interspaces mi-

nutely coriaceous, on medio-apical portion finely rugoso-striate; incassate areas of remaining sternites finely, moderately closely covered with hair-bearing punctures, mixed apically with somewhat larger ones. Lower frons and clypeus covered with fine silky white hairs, apical hair tuft on lateral lobe of clypeus narrow, silky yellow in colour.

♀. Unknown.

Holotype: ♂, Quelpart Island, Mt. Hanna (Kannonji, 600 m), 12. VII. T. Shirôzu leg. (Coll. Tsuneki).

*12. *Crossocerus (Coelocrabro) pauxillus* Gussakovskij, 1932 スギハラギングチ

1 ♀, Mt. Hanna (Ryuzinkaku, 1600 m), 17. VII. 1968, T. Shirôzu leg.

Hitherto known from the Ussuri regions and Japan (with Chishima), one of the northern delivatives, in Honshu rarely discovered at the high altitude of northern half. The locality of the specimen seems to indicate that it is one of the Alpine insects in the Island.

13. *Chrysis (Chrysis) ignita* Linné, 1758 リンネセイボウ

2 ♂♂, Mt. Hanna (Shiitakegoya, 800 m), 15. VII. 1968, T. Shirôzu leg.; 1 ♀,

Mt. Hanna (Shiitakegoya-Ryuzinkaku, 1600 m), 16. VII. 1968, T. Shirôzu leg.

Detailed study will be made in future.

**Notes on the Nesting Biology of the Formosan Race of
Sphex haemorrhoidalis Fabr.**

By K. Tsuneki

In my previous paper on the biology of the East-Asiatic species of *Sphex* (s. lat.) (Mem. Fukui Univ. II, 13 (1) : 13-78, 1963) I dealt with the Korean representative of this species (pp. 41-48). The inhabitants of the same species in Formosa possess much more brightly orange-coloured wings and much more broadly red-ornamented legs and no doubt belong to a different geographical race. The race is broadly distributed all over the Island and one of the most flourishing and the commonest large-sized solitary wasps occurring there. It is therefore very frequent that the field workers see the wasps dig or close their burrows. Of such encounters I, assisted by Mr. B. S. Chang, dug and examined eight instances among many found on the laneside in Kentin Park, S. Formosa. The result showed that, despite the marked change in coloration, the mode of life in the Formosan race was just the same as in the Korean representative, namely: (1) The nest structure is the same as given in Fig. 9 of the above cited paper, the cell being $40 \times 25 \times 20$ mm in the standard dimensions; (2) the temporal closure of the nest is very elaborate, packing tightly the outer $1/2 \sim 2/3$ of whole the length of the tunnel which is about 10 cm and fairly steep in inclination; (3) the debris dug out of the nest is not levelled; (4) in all the nest at which the wasp is working the egg has already hatched out and sometimes fairly grown, giving evidence that the progressive provisioning is the rule in this species, at least in East Asia; (5) the prey are the insects of Tettigoniidae, including *Hexacentrus unicolor* Serville, mixing nymph and adult and male and female.