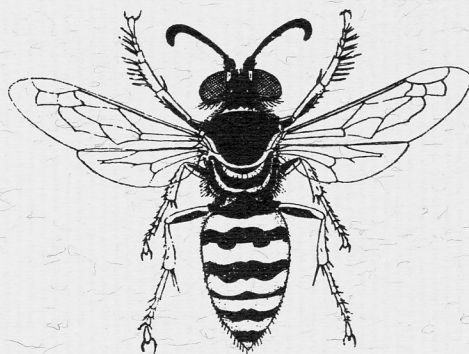


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M I S H I M A

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A REFERENCED LIST OF THE SPECIES OF THE SPHECIDAE, CHRYSIDIDAE, SCOLIIDAE
AND MUTILLIDAE HITHERTO KNOWN FROM THE RYUKYU ARCHIPELAGO, WITH
THE DISTRIBUTION TABLE (HYMENOPTERA)

By K. TSUNEKI

The Ryukyu Archipelago is situated between Formosa and Kyushu, Japan, lying roughly between lat. 24 N - lon. 123 E and lat. 31 N - lon. 131 E, consisting of more than 60 islands, large and small. Geographically the Archipelago is divided into several Groups, namely, from the south: Yayeyama-Group (main islands from the south-west: Yonakuni, Iriomote and Ishigaki), Miyako-Group (Irabu and Miyako), Okinawa-Group (Kerama-Minor group, Kumeshima, Okinawa), Amami-Group (Yoron, Okinoerabu, Tokunoshima and Amami-Oshima), Tokara-Group (many small islands) and Yakushima-Tanegashima Group. Sometimes the Yayeyama-G. and the Miyako-G. are called together the Sakishima-Group.

The fauna of the Archipelago is interesting from its geographical situation, meteorological condition and especially its geological origin. Zoo-geographically it lies at the border zone of the Oriental and Palaearctic Regions. Meteorologically it is, beside the intermediate area between the tropical and temperate climates, in the usual course of the typhoons and geologically it was formed by the isolation of the eastern peripheral region of the old Asiatic Continent.

Many of the islands are densely covered with woods, retaining considerably broadly the virgin forest as yet, conserving a fair number of the primitive types of the animals and some exaggerators like to call the Islands "Eastern Galapagos".

As to the insects, too, a considerable number of the endemic species have been discovered among the representatives of the Ryukyus and it is also known that some species are common to the continental fauna, but are unknown either from Formosa or from Japan. When the continental insect fauna will have been studied in more detail the number of such continental species will more increase, possibly by being discovered from the now endemic species.

But, as to the Hymenoptera the study of the insect fauna of the Ryukyus itself remains quite incomplete as yet in comparison with those of Formosa and Japan. The fact will be well realized when one sees the distribution table of the species of the Ryukyus. No single species has been recorded from the Island of Tanegashima! and the Tokara Group and only one species from Yonakuni. The study of the main island of Okinawa is also very inadequate. The fauna of her northern half remains almost blank. Of the species known from this Island the remarkable ones are confined to the collections of Kuroiwa and Sakaguti dealt with by Matsumura and Uchida in 1926 and to the collections of the American entomologists after War II. The fact is a surprising matter to us.

Japan is a poor country. There is no national museum of natural history to preserve the type specimens as yet. She gives no economical help to such fundamental study as the faunal investigation. Almost all such studies have been performed through the volunteers' activities at the expense of their own time and money. Certainly, therefore, the insufficiency of the faunal investigation of the Ryukyu Archipelago depends mainly upon the heavy economical as well as the temporal charge of the investigators. This is as much increased by the lack of the traffic facilities to many of the islands, especially to the small ones. Notwithstanding, to me it seems that the interest in the faunal study of the Ryukyu Archipelago is increasing among the hymenopterists of Japan. So I prepared a paper in Japanese to give them for their reference the present state of our distributional knowledge of the species of the solitary wasps. This is the translation of the paper for the world hymenopterists.

In the following list of the references to each species they are confined as a rule to the original ones and directly relating to the Ryukyus, except some particular ones.

LIST OF THE SPECIES

I. S p h e c i d a e

1. Ampulex dentata Matsumura et Uchida, 1926

Ampulex dentata Matsumura et Uchida, Ins. Matsumurana (Sapporo), 1 (1): 38 (2 ♀, Is. Okinawa).

Ampulex dentata: Tsuneki, SPJHA, 23 (present No.): 15, 1982.

Remarks. See p. 15 of the present Publication.

2. Ampulex tridentata Tsuneki, 1982

Ampulex dentata: Yasumatsu (nec Matsumura et Uchida), Ann. Zool. Jap., 15 (1): 34, 1935 (2 ♀, Ishigaki); -- Tenthredo, 1 (2): 187, 1936 (2 ♀ 1 ♂, Ishigaki; 1 ♂, Amami-Ohshima).

Ampulex dentata: Tsuneki, Trans. Shikoku Ent. Soc., 9 (9): 110, 1968 (1 ♀ 1 ♂, Amami-Ohshima; -- SPJHA, 23: 16, 1982 (2 ♀, Yayeyama-G.; 1 ♀, Ishigaki; 2 ♀, Iriomote).

Remarks. See p. 16.

3. Ampulex dissector (Thunberg, 1822)

Ampulex japonica: Yano, Icon. Ins. Jap., Ed. I: 289, 1932 (Ryukyus).

Ampulex amoena: Yano (et Yasumatsu), Ibid., Ed. II: 1472, 1950 (Ryukyus).

Remarks. Yano recorded this species to occur in the Ryukyus without substantial data and Yasumatsu only altered the scientific name in Edition 2 of the Iconographia without touching the Yano's account of this species, although he did not record this species from the Ryukyus in his 1936 monograph of the Ampulicidae.

Certainly, the occurrence of this species in the Ryukyus is quite doubtful. Future confirmation is necessary.

4. Dolichurus amamiensis Tsuneki et Iida, 1964

Dolichurus amamiensis Tsuneki et Iida, Akitu (Kyoto), 11: 41 (3 ♀ Amami-Ohshima, 1 ♀ Tokunoshima).

Dolichurus amamiensis: Tsuneki, Trans. Shikoku Ent. Soc., 9 (4): 111 (1 ♀ Amami, 1 ♀ Tokunoshima, 1 ♀ Ishigaki).

Dolichurus amamiensis: Tano, Life Study (Fukui), 16 (1-2): 24 (1 ♀ 2 ♂ Iriomote).

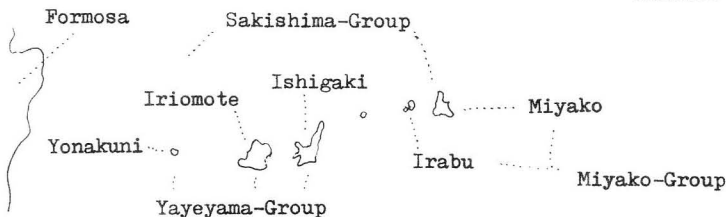
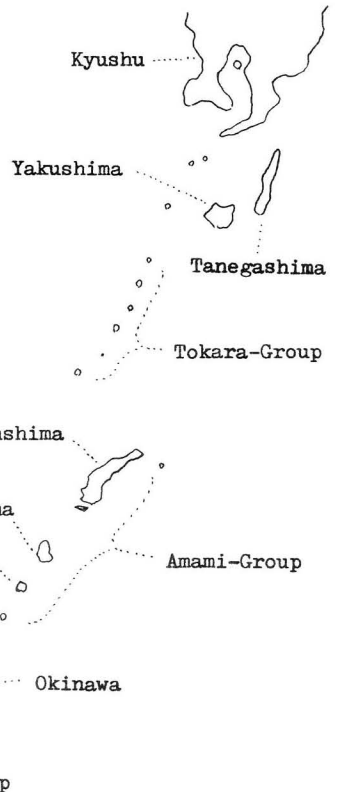
5a. Sphex (Sphex) argentatus argentatus

Fabricius, 1787

Sphex umbrosus: Matsumura, Thous. Ins. Jap. Suppl. III: 117, 1911 (Okinawa).

Sphex umbrosus: Matsumura et Uchida, Ins. Mats., 1 (1): 40, 1926 (Okinawa, Ishigaki, Miyako, Iriomote).

Sphex (Sphex) umbrosus: Yasumatsu, Tenthredo, 2 (1): 54, 1938 (2 ♂ Okinawa,



1

4 ♀ 2 ♂ Ishigaki, 1 ♀ Miyako).

Sphex (Sphex) argentatus fumosus: Tsuneki, Life Study, 6 (1): 6 (25 ♀ 18 ♂, Amami).

Sphex (Sphex) argentatus: Tsuneki, Kontyu, 35 (4): 382, 1967 (1 ♀ 2 ♂ Amami, 1 ♂ Okinoerabu, 1 ♀ Ishigaki, 1 ♀ Iriomote).

Sphex (Sphex) argentatus argentatus: Tsuneki, Life Study, 13 (1): 24, 1969 (2 ♀ Okinoerabu); -- Haneda, Hym. Comm., 14: 1982 (1 ♀ 3 ♂, Amami).

Sphex (Sphex) argentatus: Tano, Ibid., 16 (1-2): 22, 1972 (4 ♀ 10 ♀ Ishigaki, 4 ♀ 1 ♂ Iriomote); -- Murota, Ibid., 17 (3-4): 111, 1973 (7 ♀ 6 ♂ Amami, Tokunoshima and Okinoerabu). -- Tsuneki, SPJHA, 23: 46, 1982 (3 ♂ Okinawa).

5b. Sphex (Sphex) argentatus fumosus Kohl, 1890

Sphex (Sphex) argentatus fumosus: Tano, Life Study, 8 (3): 38, 1964 (3 ♀, Yakushima).

Sphex (Sphex) argentatus: Tsuneki, Kontyu, 35 (4): 382, 1967 (1 ♀, Yakushima).

6. Sphex (Sphex) diabolicus flammitrichus Strand, 1913

Sphex flammitrichus: Matsumura et Uchida, Ins. Mats., 1 (1): 40, 1926 (1 ♀, Okinawa).

Sphex fulvohirtus: Yasumatsu, Mushi, 7 (2): 63, 1934 (1 ♀, Yakushima).

Sphex (Sphex) flammitrichus: Yasumatsu, Tenthredo, 2 (1): 61, 1938 (1 ♀ Miyako, 2 ♀ 2 ♂ Ishigaki).

Sphex (Sphex) flammitrichus: Tsuneki, Life Study, 6 (1): 6, 1962 (52 ♀ 25 ♂, Amami);

-- Tano, Ibid., 8 (3): 38, 1964 (1 ♀ 4 ♂ Yakushima); -- Tsuneki, Kontyu, 35 (4):

382 (1 ♂ Yakushima); -- Tano, Life Study, 16 (1-2): 22, 1972 (2 ♀ 1 ♂ Ishigaki,

1 ♀ 2 ♂ Iriomote); -- Murota, Life Study, 17 (3-4): 101, 1973 (5 ♀ 5 ♂ Amami).

Sphex diabolicus flammitricus: Haneda, Hym. Comm., 14: (3 ♀ 6 ♂ Amami).

7. Sphex (Sphex) sericeus lineolus Lepeletier, 1845

Sphex aurulentus: Matsumura et Uchida, Ins. Mats., 1 (1): 39, 1926 (2 ♀, Okinawa).

Sphex (Sphex) aurulentus: Yasumatsu, Tenthredo, 2 (1): 69, 1938 (listed).

Sphex (Sphex) sericeus lineolus: Tsuneki, SPJHA, 23: 46, 1982 (3 ♀ 1 ♂ Okinawa).

8. Isodontia nigella (Smith, 1856)

Sphex nigripes: Matsumura et Uchida, Ins. Mats., 1 (1): 39, 1926 (1 ♀, Okinawa).

Sphex nigripes Sm. var. muticus: Matsumura et Uchida, Ibid., p. 39, 1926 (♀ ♂, Okinawa, Ishigaki).

Sphex nigellus: Yasumatsu, Ann. Zool. Jap., 15: 35, 1935 (1 ♀, Iriomote).

Sphex (Isodontia) nigellus: Yasumatsu, Tenthredo, 2 (1): 99 (1 ♀ 2 ♂ Amami, 2 ♂ Ishigaki, 1 ♀ Iriomote); -- Tsuneki, Life Study, 6 (1): 6, 1962 (8 ♀ 8 ♂ Amami); --

Tano, Life Study, 8 (3): 38, 1964 (1 ♀ 2 ♂ Yakushima); -- Tsuneki, Kontyu, 35 (4):

383, 1967 (1 ♀ 4 ♂ Yakushima, 1 ♀ 2 ♂ Amami, 1 ♀ 1 ♂ Okinoerabu, 2 ♀ 1 ♂ Iri-

omote); -- Tsuneki, Life Study, 13 (1): 24 (1 ♀ 1 ♂ Okinoerabu); -- Tano, Ibid.,

16 (1-2): 22, 1972 (2 ♀ 3 ♂ Ishigaki, 8 ♀ 18 ♂ Iriomote); -- Murota, Ibid., 17

(3-4): 101, 1973 (12 ♀ 19 ♂ Amami, Tokunoshima, Okinoerabu).

Isodontia nigella: Haneda, Hym. Comm., 14, 1982 (8 ♂ Amami). -- Tsuneki, SPJHA, 23: 46 (1 ♂ Okinawa).

9. Prionyx viduatus (Christ, 1791)

Sphex platynotus: Matsumura, Thous. Ins. Jap. Suppl. 4: 177, 1912 (♀ Okinawa); -- Matsumura et Uchida, Ins. Mats., 1 (1): 39, 1926 (2 ♀ Okinawa).

Sphex viduatus: Yasumatsu, Ann. Zool. Jap., 15: 36, 1935 (1 ♀ Iriomote).

Sphex (Parasphex) viduatus: Yasumatsu, Tenthredo, 2 (1): 87, 1938 (1 ♀, Yonakuni); --

Tsuneki, Life Study, 6 (1): 6, 1962 (9 ♀ 2 ♂ Amami); -- Tsuneki, Kontyu, 35 (4):

383, 1967 (1 ♂ Iriomote).

Sphex (Prionyx) viduatus: Tsuneki, Etizenia, 26: 4, 1967 (listed); -- Tano, Life Stud.,

16 (1-2): 22, 1972 (2 ♀ 2 ♂ Iriomote); -- Murota, Ibid., 17 (3-4): 101, 1973 (1 ♂,

Tokunoshima).

10. Ammophila atripes formosana Strand, 1913

Ammophila atripes: Matsumura et Uchida, Ins. Mats., 1 (1): 41, 1926 (many ♀ ♂, Okinawa, Kumejima, Ishigaki).

Ammophila basalis: Matsumura et Uchida, Ibid., p. 41, 1926 (1 ♀, Okinawa).

Ammophila clavus: Tsuneki, Kontyu, 35 (4): 383, 1967 (3 ♀ 4 ♂ Ishigaki).

Ammophila (Ammophila) clavus taiwans Tsuneki, Etizenia, 26: 15, 1967 (8 ♀ 3 ♂ Ishigaki, 1 ♀ 1 ♂ Miyako).

Ammophila clavus formosana: Tano, Life Study, 16 (1-2): 22, 1972 (8 ♀ 14 ♂ Ishigaki, 2 ♂ Iriomote).

11. Ammophila infesta Smith, 1873

? Ammophila infesta: Matsumura et Uchida, Ins. Mats., 1 (1): 41, 1926 (2 ♀, Okinawa)

Ammophila infesta: Yasumatsu, Mushi, 7 (2): 65, 1934 (2 ♀ Yakushima).

Ammophila sabulosa infesta: Tano, Life Study, 8 (3): 38, 1964 (2 ♀ 3 ♂ Yakushima).

Remarks. The occurrence of this species on the central and southern islands of the Ryukyus is quite doubtful.

12. Ammophila sabulosa nipponica Tsuneki, 1967

? Ammophila infesta: Yasumatsu, Mushi, 7 (2): 63, 1934 (♀ Yakushima)

Remarks. There is no definite record of this species from the Ryukyus. But there is high possibility of the occurrence of this species in the Yakushima-Tanegashima-Group.

13a. Sceliphron (Sceliphron) madraspatanum kohli Sickmann, 1894

13b. Sceliphron (Sceliphron) madraspatanum formosanum Van der Vecht, 1957

In the following list of references the name without asterisk shows ssp. kohli, with one asterisk ssp. formosanum, while that with two asterisks means that the two races are mixed:

Okinawa, Miyako* and Ishigaki*)

Sceliphron madraspatanum? : Matsumura et Uchida, Ins. Mats., 1 (1): 40, 1926 (many ♀ ♂,)

Sceliphron madraspatanum* : Yasumatsu, Ann. Zool. Jap., 15: 35, 1935 (2 ♀ Ishigaki, p. 36, 1 ♀, Iriomote).

Sceliphron tubifex: Yasumatsu, J. Fukuoka Nat. Hist. Soc., 2 (1): 165, 1936 (2 ♂ Yakushima).

Sceliphron madraspatanum : Tsuneki, Life Study, 6 (1): 7, 1962 (many ♀ ♂ Amami).

Sceliphron madraspatanum: Tano, Ibid., 8 (3): 38, 1964 (9 ♀ 4 ♂ Yakushima).

Sceliphron madraspatanum** : Tsuneki, Kontyu, 35 (4): 385, 1967 (3 ♀ 2 ♂ Amami, 3 ♀ Okinoerabu, 3 ♀ Yoron); -- Tsuneki, Life Study, 13 (1): 24, 1969 (4 ♀ Okinoerabu).

Sceliphron madraspatanum formosanum* Tano, Life Study, 16 (1-2): 23, 1972 (7 ♀ 1 ♂ Ishigaki, 7 ♀ 29 ♂ Iriomote).

Sceliphron madraspatanum : Murota, Life Study, 17 (3-4): 101, 1973 (43 ♀ 33 ♂ Amami, Tokunoshima, Okinoerabu). -- Tsuneki, SPJHA, 23: 46, 1982 (1 ♀ 1 ♂ Okinawa).

Sceliphron madraspatanum kohli: Haneda, Hym. Comm., 14, 1982 (4 ♀ 6 ♂ Amami).

Remarks. According to my observation almost all the specimens from the AmamiOhshima have not the yellow mark on the scutellum (of 39 ♀ 13 ♂, only 2 ♂ have a small mark on the scutellum), the same is also the case with the specimens from Tokunoshima, Okinoerabu and Okinawa, though material is insufficient, while, according to Tano (1972) in the specimens from the Yayeyama-Group the greater part have the mark there (of 14 ♀ 30 ♂, 14 ♀ 24 ♂ have the mark, though in 5 ♀ 8 ♂ the mark is rather small). In the Formosan specimens of this species all have the mark on the scutellum, while in the Japanese specimens only rarely the mark is present (of 16 ♀ 30 ♂, 2 ♀ 8 ♂ have the mark, but in 1 ♀ 3 ♂ of which the mark is very obscure).

14. Sceliphron (Prosceliphron) deforme taiwanum Tsuneki, 1971

Sceliphron deforme: Matsumura et Uchida, Ins. Mats., 1 (1): 40, 1926 (2 ♀, Okinawa).

Sceliphron deforme taiwanum Tsuneki, Etizenia, 53: 6, 1971 (Formosan ♀ ♂).

15. Chalybion japonicum (Gribodo, 1883)

Chalybion violaceum: Matsumura et Uchida, Ins. Mats., 1 (1): 41, 1926 (many ♀ ♂, Okinawa and Ishigaki).

Sceliphron inflexum: Yasumatsu, Mushi, 7 (2): 63, 1934 (1 ♂ Yakushima); -- Yasumatsu, Ann. Zool. Jap., 15 (1): 34, 1935 (1 ♀ Ishigaki).

Sceliphron (Chalybion) inflexum: Tsuneki, Life Study, 6(1): 6, 1962 (3 ♀ 6 ♂ Amami); -- Tano, Ibid., 8 (3): 38, 1864 (many ♀ ♂ Yakushima); -- Tano, Ibid., 16 (1-2): 23, 1972 (1 ♀ 1 ♂ Ishigaki); -- Murota, Ibid., 17 (3-4): 101 (8 ♀ 8 ♂ Amami, Okinoerabu)

Chalybion japonicum punctatum: Bohart and Menke, World Sphecid., p. 103, 1976 (listed).

Chalybion japonicum: Tsuneki, SPJHA, 23: 7, 1982 (taxonomic discussion).

Chalybion japonicum: Haneda, Hym. Comm., 14, 1982 (5 ♀ Amami).

Remarks. As to taxonomy see p. 7 of the present No. The use of ssp. punctatum Kohl for the southern form is incorrect and, furthermore, as far as the Formosan and the Ryukyuu specimens are concerned, the subspecific treatment is unnecessary.

16. Chalybion bengalense (Dahlbom, 1845)

Sceliphron bengalense: Tsuneki, Etizenia, 65: 3, 1973 (1 ♂, Okinawa).

Chalybion bengalense: Tsuneki, SPJHA, 23: 8, 1982 (the present No.).

17a. Psen (Psen) exaratus santaro Yasumatsu, 1942

Psen santaro Yasumatsu, Mushi, 14 (2): 94, 1942 (2 ♂ Amami).

Psen (Psen) exaratus: Tsuneki, Life Study, 6 (1): 6, 1962 (1 ♀ Amami).

Psen (s. str.) santaro: Tsuneki, Ibid., 6 (3): 40, 1962 (ssp. of exaratus?)

Psen (Psen) exaratus santaro: Tsuneki, Etizenia, 14: 1, 1966 (2 ♀ Amami).

Psen (Psen) exaratus santaro: Murota, Life Study, 17 (3-4): 101, 1973 (1 ♀ Amami).

17b. Psen (Psen) exaratus intermedius Tsuneki, 1966

Psen (Psen) exaratus intermedius Tsuneki, Etizenia, 14: 4, 1966 (1 ♂ Okinawa); -- Tsuneki, Kontyu, 36: 55, 1968 (1 ♂ Okinawa).

18. Psen (Psen) opacus gressitti Tsuneki, 1966

Psen (Psen) opacus gressitti Tsuneki, Etizenia, 14: 7, 1966 (1 ♀ Amami).

19. Psen (Psen) hirashimai Tsuneki, 1966

Psen (Psen) hirashimai Tsuneki, Etizenia, 14: 7, 1966 (1 ♂ Amami); -- Tsuneki, Kontyu, 36: 56, 1968 (1 ♂ Amami).

20. Psen (Psen) caocinnus Tsuneki, 1973

Psen (Psen) aurifrons Tsuneki, Mem. Fac. Lib. Arts, Fukui Univ. II, Nat. Sci., 9: 63, 1959 (♀ ♂, Japan).

Psen (Psen) caocinnus Tsuneki, Life Study, 17 (3-4): 113, 1973.

Psen (Psen) caocinnus: Haneda, Hym. Comm., 14: 1982 (1 ♂ Amami).

21. Psenulus carinifrons iwatai Gussakovskij, 1934

Psenulus iwatai: Tano, Life Study, 16 (1-2): 24, 1972 (5 ♀ 14 ♂ Okinawa).

22. Polemistus annulicornis Tsuneki, 1966

Passaloecus annulicornis Tsuneki, Etizenia, 14: 19, 1966 (1 ♂ Tokunoshima).

23. Stigmus (Stigmus) shirozui Tsuneki, 1964

Stigmus (Stigmus) shirozui Tsuneki, Etizenia, 6: 6, 1964 (1 ♂ Amami).

24. Larra (Larra) amplipennis (Smith, 1873)

Larra amplipennis: Tsuneki, Life Study, 6 (1): 2, 1962 (13 ♀ 1 ♂ Amami).

Larra amplipennis sanguinea: Tsuneki, Etizenia, 17: 8, 1966 (1 ♂ Iriomote, ♀ ♂ Amami).

Larra amplipennis: Tsuneki, Kontyu, 35 (4): 388, 1967 (1 ♂, Iriomote); -- Tano, Life Study, 16 (1-2): 23, 1972 (12 ♀ 2 ♂ Iriomote); -- Murota, Ibid., 17 (3-4): 102, 1973 (1 ♀ 1 ♂); -- Haneda, Hym. Comm., 14, 1982 (2 ♂ Amami).

25. Larra (Larra) carbonaria (Smith, 1858)

Larra carbonaria: Tsuneki, Etizenia, 17: 9, 1966 (1 ♂ Miyako, 1 ♀ Okinawa, 1 ♀ Tokunoshima); -- Tsuneki, Life Study, 13 (2): 25, 1969 (1 ♂ Okinoerabu); -- Haneda, Hym. Comm., 14, 1982 (1 ♀ Amami). -- Tsuneki, SPJHA, 23: 47, 1982 (1 ♂ Okinawa).

26. Larra (Larra) luzonensis Rohwer, 1919

Larra luzonensis: Tsuneki, Etizenia, 17: 9, 1966 (2 ♂ Ishigaki); -- Tano, Life Study, 16 (1-2): 23, 1972 (15 ♀ 29 ♂ Iriomote).

27. Liris (Liris) aurulentus (Fabricius, 1787)

Tachytes sinensis: Matsumura, in Kuroiwa's Prov. list Hym. in Loochoo, p. 4, 1908.

Tachytes sinensis Sm. var. purpureipennis Matsumura et Uchida, Ins. Mats., I (1): 42, 1926 (many ♀ ♂, Okinawa and Ishigaki).

Liris (Liris) aurulenta: Tsuneki, Etizenia, 17: 1, 1966 (5 ♀ 2 ♂ Ishigaki, 6 ♀, Okinoerabu); -- Tsuneki, Kontyu, 35 (4): 388, 1967 (6 ♀ Okinoerabu).

Liris aurata: Tsuneki, Life Study, 6 (1): 5, 1962 (3 ♀ 9 ♂ Amami).

Liris aurulenta: Tano, Life Study, 16 (1-2): 23, 1972 (2 ♀ Ishigaki, 1 ♀ 1 ♂ Iriomote).

Liris (Liris) aurulenta: Murota, Life Study, 17 (3-4): 101, 1973 (27 ♀ 16 ♂ Amami, Okinoerabu).

Liris aurulentus: Haneda, Hym. Comm., 14, 1982 (1 ♀ 2 ♂ Amami).

28. Liris (Leptolarra) docilis (Smith, 1873)

Notogonia laboriosa: Matsumura et Uchida, Ins. Mats., 1 (1): 43, 1926 (SYN. NOV.) (♀ ♂, Okinawa, Ishigaki, Miyako).

Motes tisiPHONE: Tsuneki, Life Study, 6 (1): 5, 1962 (10 ♀ 7 ♂ Amami).

Liris (Notogonidea) subtessellata docilis: Tsuneki, Kontyu, 32 (2): 221, 1964; -- Tano, Life Study, 8 (3): 38, 1964 (2 ♀ 1 ♂ Yakushima).

Liris (Notogonidea) docilis: Tsuneki, Etizenia, 17: 1, 1966 (8 ♀ 3 ♂ Iriomote, 6 ♀ 3 ♂, Ishigaki, 1 ♂ Miyako, 2 ♀ 4 ♂ Okinawa, 1 ♂ Okinoerabu, 1 ♀ 3 ♂ Tokunoshima, 1 ♀ Amami).

Liris (Dociliris) docilis: Tsuneki, Kontyu, 35 (4): 389, 1967 (2 ♀ 2 ♂ Iriomote, 1 ♂ Okinoerabu, 1 ♀ 1 ♂ Tokunoshima); -- Tano, Life Study, 16 (1-2): 23, 1972 (1 ♂ Okinawa, 2 ♀ 1 ♂ Ishigaki, 4 ♀ 6 ♂ Iriomote); -- Murota, Ibid., 17 (3-4): 102, 1973 (35 ♀ 12 ♂ Amami).

Liris docilis: Haneda, Hym. Comm., 14, 1982 (4 ♀ 16 ♂ Amami).

Remarks. Through the courtesy of Dr. S. Takagi I could examine the four female specimens that were identified by S. Matsumura with laboriosa Smith (with his determination labels). All were collected in Okinawa Is., two by Kuroiwa and two by Sakaguchi and they were all, as have been presumed, Liris docilis (Smith). No other record of laboriosa is there from the Ryukyus and so this species must be removed from the fauna of the Archipelago.

29. Liris (Leptolarra) subtessellata (Smith, 1856)

Liris (Notogonidea) subtessellata: Tsuneki, Etizenia, 17: 2, 1966 (2 ♂ Ishigaki).
Liris (Dociliris) subtessellata: Tano, Life Study, 16 (1-2): 23, 1972 (♀ ♂ Yayeyama-G.).
Liris (Leptolarra) subtessellatus: Tsuneki, SPJHA, 23: 47, 1982 (1 ♀ Miyako, 1 ♂ Ishigaki, 1 ♀ Iriomote).

30. Liris (Leptolarra) rohweri formosanus Tsuneki, 1973

Liris (Notogonidea) rohweri: Tsuneki, Etizenia, 17: 2, 1966 (4 ♀ 1 ♂ Iriomote, 3 ♀ 1 ♂ Ishigaki, 1 ♂ Okinawa)
Liris (Dociliris) rohweri: Tsuneki, Kontyu, 35 (4): 387, 1967 (1 ♀ 1 ♂ Iriomote).
Liris (Dociliris) rohweri: Tano, Life Study, 16 (1-2): 23, 1972 (21 ♀ 7 ♂ Iriomote).
Liris (Leptolarra) rohweri formosanus: Tsuneki, SPJHA, 23: 47, 1982 (1 ♂ Ishigaki).

31. Liris (Leptolarra) surusumi Tsuneki, 1966

Liris (Notogonidea) surusumi Tsuneki, Etizenia, 17: 4, 1966 (2 ♀ Ishigaki).
Liris (Dociliris) surusumi: Tsuneki, Ibid., 20: 28, 1967 (♀ ♂, Formosa).

32. Liris (Leptolarra) deplanatus binghami Tsuneki, 1967

Motes n. sp., Tsuneki, Life Study, 6 (1): 5, 1962 (1 ♀ Amami).
Liris (Notogonidea) deplanata binghami Tsuneki, Etizenia, 18: 1, 1967 (27 ♀ 1 ♂ Amami).
Liris (Dociliris) deplanata binghami: Tano, Life Study, 16 (1-2): 23, 1972 (1 ♀ 1 ♂ Ishigaki, 2 ♂ Iriomote); -- Murota, Ibid., 17 (3-4): 101, 1973 (18 ♀ Amami).
Liris deplanatus binghami: Haneda, Hym. Comm., 14, 1982 (16 ♂ Amami).

33a. Liris (Leptolarra) festinans festinans (Smith, 1859)

Larra nigricans: Matsumura in Kuroiwa's Prov. list Hym Loochoos, p. 4, 1908.
† Notogonia tristis: Matsumura et Uchida, Ins. Mats., 1 (1): 42, 1926 (1 ♀ 1 ♂ Okinawa).
Motes japonicus: Tsuneki, Life Study, 6 (1): 5, 1962 (1 ♀ 1 ♂ Amami).
Liris (Notogonidea) japonica: Tsuneki, Kontyu, 32 (2): 221, 1964.
Liris (Notogonidea) japonica: Tsuneki, Etizenia, 17: 8, 1966 (2 ♀ Iriomote, 2 ♀ 1 ♂ Ishigaki, 2 ♀ 1 ♂ Okinawa, 1 ♀, Yoron, 1 ♂ Okinoerabu, 2 ♀ 1 ♂ Tokunoshima).
-- Tsuneki, Kontyu, 35 (4): 389, 1967 (1 ♀ Iriomote, 1 ♀ Yoron, 1 ♀ 1 ♂ Tokunoshima).
Liris (Nigliris) japonica: Tano, Life Study, 16 (1-2): 24, 1972 (2 ♂ Ishigaki, 7 ♀ 11 ♂ Iriomote, 2 ♀ Okinawa). -- Murota, Ibid., 17 (3-4): 102, 1973 (12 ♀ Amami, Tokunoshima, Okinoerabu).
Liris (Leptolarra) festinans festinans: Tsuneki, SPJHA, 23: 47, 1982 (1 ♀ Okinawa, 1 ♀ Ishigaki)
Liris festinans: Haneda, Hym. Comm., 14, 1982 (2 ♀ 7 ♂ Amami).

33b. Liris (Leptolarra) festinans japonicus (Kohl, 1884)

Liris japonica: Tano, Life Study, 8 (3): 38, 1964 (1 ♀ 1 ♂ Yakushima).

34. Liris (Pitaliris) iriomotensis Tsuneki, 1972

Liris (Cratolarra) iriomotensis Tsuneki, Etizenia, 59: 19, 1972 (1 ♂ Iriomote).
Liris (Cratolarra) sp., Tano, Life Study, 16 (1-2): 24, 1972 (1 ♂ Iriomote).

35a. Tachytes sinensis sinensis Smith, 1856

Tachytes sinensis: Tano, Life Study, 8 (3): 38, 1964 (1 ♂ Yakushima).

35b. Tachytes sinensis yaeyamanus Tsuneki, 1972

Tachytes sinensis: Tsuneki, Etizenia, 17: 10, 1966 (1 ♂ Ishigaki)

Tachytes sinensis yaeyamanus Tsuneki, Etizenia, 59: 18, 1972 (1 ♂ Iriomote).
Tachytes sinensis yaeyamanus: Tsuneki, SPJHA, 23: 46, 1982 (6 ♂ Ishigaki).

36. Tachytes modestus Smith, 1856

Tachytes modestus: Yano, Icon. Ins. Jap., Ed. I: 276, 1932 (Ryukyus).
Tachytes modestus: Tano, Life Study, 8 (3): 38, 1964 (9 ♀ 11 ♂ Yakushima).

Remarks. Except the vague record by Yano there is no definite record of the occurrence of this species in the central and the southern Ryukyus. Further confirmation is necessary.

37a. Tachysphex nigricolor nigricolor (Dalla Torre, 1897)

Tachysphex japonicus: Tsuneki, Life Study, 6 (1): 2, 1962 (13 ♀ 12 ♂ Amami-Oshshima);
-- Tano, Ibid., 8 (3): 38, 1964 (1 ♀ Yakushima); -- Tsuneki, Etizenia, 17: 14
(1 ♀ Okinawa)
Tachysphex bengalensis japonicus: Tsuneki, Etizenia, 65: 7, 1973 (Amami, Okinoerabu).
Tachysphex nigricolor nigricolor: Tsuneki, SPJHA, 23: 46, 1982 (5 ♂ Okinawa).
Tachysphex nigricolor: Hameda, Hym. Comm., 14, 1982 (13 ♀ 14 ♂ Amami).

37b. Tachysphex nigricolor yaeyamanus Tsuneki, 1971

Tachysphex bengalensis yaeyamanus Tsuneki, Etizenia, 55: 20, 1971 (2 ♀ 6 ♂ Ishigaki, 7 ♀ Iriomote); -- Tano, Life Study, 16 (1-2): 24, 1972 (2 ♀ 6 ♂ Ishigaki, 9 ♀ 6 ♂ Iriomote); -- Tsuneki, Etizenia, 65: 7, 1973 (Ishigaki, Iriomote).
Tachysphex bengalensis yaeyamanus: Bohart and Menke, World Sphecid., p. 274, 1976.
Tachysphex nigricolor yaeyamanus: Tsuneki, SPJHA, 23: 47, 1982 (1 ♂ Ishigaki).

38. Tachysphex formosanus Tsuneki, 1971

Tachysphex formosanus: Tsuneki, Etizenia, 55: 21, 1971 (6 ♀ 6 ♂ Ishigaki, 19 ♀ 33 ♂ Iriomote); -- Tano, Life Study, 16 (1-2): 24, 1972 (same material).

39. Tachysphex changi Tsuneki, 1971

Tachysphex changi: Tsuneki, Etizenia, 55: 20, 1971 (3 ♂ Ishigaki, 2 ♂ Iriomote).
-- Tano, Life Study, 16 (1-2): 24, 1972 (same material).

40. Tachysphex nambui Tsuneki, 1973

Tachysphex nambui Tsuneki, Etizenia, 65: 5, 1973 (1 ♀ Iriomote).

41. Lyroda japonica Iwata, 1933

Lyroda japonica: Tano, Life Study, 8 (3): 38, 1964 (1 ♂ Yakushima).

42. Pison punctifrons Shuckard, 1838

Pison fabricator: Yasumatsu, Ann. Zool. Jap., 14: 265, 1933 (1 ♀, Ishigaki).
Pison punctifrons: Yasumatsu, Ibid., 15: 236, 1935 (2 ♂ Amami, 1 ♂ Ishigaki); -- Yasumatsu, Festschr. E. Strand, 5: 83, 1939 (Amami, Ishigaki); -- Tsuneki, Life Study 6 (1): 5, 1962 (32 ♀ 41 ♂ Amami); -- Hameda, Hym. Comm., 14, 1982 (2 ♀ Amami).
Pison (Pison) punctifrons: Tsuneki, Kontyu, 36 (1): 56, 1968 (1 ♀ 2 ♂ Okinoerabu, 1 ♀ Tokunoshima); -- Tano, Life Study, 8 (3): 38, 1964 (1 ♀ Yakushima); Ibid., 16 (1-2): 24, 1972 (2 ♂ Iriomote); -- Murota, Life Study, 17 (3-4): 101, 1973 (7 ♀ 16 ♂ Amami, Okinoerabu).

43. Trypoxylon thaianum dubiosum Tsuneki, 1964

Trypoxylon sp. No. 3, Tsuneki, Life Study, 6 (1): 6, 1962 (54 ♀ 3 ♂ Amami).

Trypoxylon dubiosum Tsuneki, Etizenia, 6: 4, 1964 (same ♀ ♂ as above).

Trypoxylon dubiosum: Tsuneki, Ibid., 13: 6, 1966 (♀ ♂ Amami); -- Tsuneki, Life Study, 13 (1-2): 25, 1969 (1 ♀ Okinoerabu); -- Murota, Ibid., 17 (3-4): 101, 1973 (27 ♀ 8 ♂, Amami).

Trypoxylon thalianum dubiosum: Tsuneki, SPJHA, 7: 62, 1978; Ibid., 15: 12, 1981; Ibid., 17: 9, 1981; -- Haneda, Hym. Comm., 14, 1982 (3 ♀ Amami).

Remarks. This species has not been found from Formosa, but it is known from N. China (Peking). The occurrence of it in the Amami-Group of the Ryukyus seems to be very interesting, especially because it has not been collected in the southern Groups of the Archipelago.

44. Trypoxylon schmiedeknechti Kohl, 1906

Trypoxylon schmiedeknechti: Tsuneki, SPJHA, 15: 12, 1981 (2 ♀ Iriomote); Ibid., 17: 9, 1981 (same material).

Remarks. This species is common in Formosa and has long been known under the name of T. subpileatum Strand, but has not been discovered in the Ryukyus until recently when it was collected from one of the southernmost islands of the Archipelago.

45. Trypoxylon petiolatum Smith, 1857

Trypoxylon bicolor: Matsumura, in Kuroiw's Prov. List Hym. Loochoos, p. 4, 1908.

Trypoxylon bicolor: Matsumura et Uchida, Ins. Mats., 1 (1): 41, 1926 (5 ♀ Okinawa).

Trypoxylon obsonator: Tsuneki, Life Study, 6 (1): 5, 1962 (17 ♀ 3 ♂ Amami); -- Tsuneki, Etizenia, 13: 10, 1966 (2 ♀ 1 ♂ Okinoerabu, 1 ♀ Tokunoshima, 1 ♀ Okinawa); -- Tsuneki, Kontyu, 36 (1): 55, 1968 (1 ♀ Tokunoshima); -- Tsuneki, Life Study, 13 (1-2): 25, 1969 (1 ♂ Okinoerabu); -- Tano, Life Study, 16 (1-2): 24, 1972 (1 ♀ Ishigaki, 1 ♀ Iriomote); -- Murota, Ibid., 17 (3-4): 101, 1973 (5 ♀ 1 ♂ Amami, Okinoerabu).

Trypoxylon petiolatum: Tsuneki, SPJHA, 8: 6, 1978 (Ryukyus); Ibid., 15: 30 (4 ♀ 1 ♂ Okinawa, 6 ♀ Iriomote); Ibid., 17: 63, 1981 (♀ ♂ Okinawa, Iriomote); -- Haneda, Hym. Comm., 14, 1982 (1 ♀ Amami).

46a. Trypoxylon formosicola inornatum Matsumura et Uchida, 1926

Trypoxylon inornatum Matsumura et Uchida, Ins. Mats., 1 (1): 42, 1926 (3 ♀ Okinawa).

Trypoxylon formosicola: Yasumatsu, Trans. Nat. Hist. Soc. Formosa, 28 (183): 447, 1938.

Trypoxylon formosicola inornatum: Tsuneki, Etizenia, 22: 5, 1967; -- Tsuneki, SPJHA, 15: 34, 1981 (9 ♀ Okinawa, type specimen examined); -- Ibid., 17: 81, 1981.

46b. Trypoxylon formosicola amamiense Tsuneki, 1964

Trypoxylon sp. No. 1, Tsuneki, Life Study, 6 (1): 5, 1962 (2 ♀ 3 ♂ Amami).

Trypoxylon amamiense Tsuneki, Etizenia, 6: 2, 1964 (6 ♀ 2 ♂ Amami).

Trypoxylon inornatum: Tsuneki, Ibid., 13: 7, 1966 (do.); -- Tsuneki, Kontyu, 36 (1): 54, 1968 (1 ♀ Amami, 1 ♀ Tokunoshima).

Trypoxylon formosicola amamiense: Tsuneki, SPJHA, 15: 35, 1981; -- Tsuneki, Ibid., 17: 81, 1981.

47. Trypoxylon ryukyuense Tsuneki, 1966

Trypoxylon sp. No. 2, Tsuneki, Life Study, 6 (1): 6, 1962 (4 ♀ Amami, nec 4 ♂).

Trypoxylon ryukyuense Tsuneki, Etizenia, 13: 8, 1966 (5 ♀ Amami).

Trypoxylon responsum ryukyuense: Tsuneki, Ibid., 22: 7, 1967; Kontyu, 36 (1): 54, 1968 (1 ♀ Amami, 1 ♀ Tokunoshima); -- Murota, Life Study, 17 (3-4): 101, 1973 (1 ♀ Amami).

Trypoxylon regium ryukyuense: Tsuneki, SPJHA, 15: 49, 1981 (5 ♀ Amami).

Trypoxylon ryukyuense: Tsuneki, SPJHA, 17: 80, 1981.

48. Trypoxylon petioloides isigakiense Tsuneki, 1973

Trypoxylon isigakiense Tsuneki, Etizenia, 65: 11, 1973 (1 ♀, Ishigaki).
Trypoxylon petioloides isigakiense: Tsuneki, SPJHA, 15: 42, 1981; -- Tsuneki, Ibid., 17: 70, 1981; -- Tsuneki, Ibid., 23: 48, 1982 (1 ♂, Ishigaki, Mt. Omoto).

49. Trypoxylon takasago kumaso Tsuneki, 1966

Trypoxylon kumaso Tsuneki, Etizenia, 13: 12, 1966 (1 ♀ Okinawa).
Trypoxylon takasago kumaso: Tsuneki, SPJHA, 15: 37, 1981 (1 ♀ 1 ♂ Okinawa); -- Tsuneki, Ibid., 17: 82, 1981

50. Trypoxylon okinawanum Tsuneki, 1966

Trypoxylon koshunicon okinawanum Tsuneki, Etizenia, 13: 18, 1966 (1 ♀ Ishigaki, 1 ♀ Iriomote).
Trypoxylon okinawanum: Tsuneki, SPJHA, 15: 19, 1981 (♀ revision); -- Tsuneki, SPJHA, 17: 38, 1981 (2 ♀ Ishigaki, 1 ♀ Iriomote).

51. Trypoxylon iriomotense Tsuneki, 1981

Trypoxylon iriomotense Tsuneki, SPJHA, 15: 22, 1981 (1 ♀ Iriomote); -- Tsuneki, Ibid., 17: 9, 1981 (listed).

52. Ectemnius (Metacrabro) chrysites (Kohl, 1892)

Crabro (Crabro) chrysites: Yasumatsu, Mushi, 14 (2): 87, 1942 (2 ♀ Amami).
Ectemnius (Metacrabro) chrysites: Tsuneki, Life Study, 6 (1): 7, 1962 (1 ♀ Amami).

53. Ectemnius (Hypocrabro) confinis (Walker, 1871)

Crabro (Solenius) laevigatus: Yasumatsu, Mushi, 14 (2): 88, 1942 (1 ♀ Amami).

54a. Ectemnius (Hypocrabro) schlettereri (Kohl, 1888), ssp.

Ectemnius (Hypocrabro) schlettereri: Tsuneki, Etizenia, 15: 7, 1966 (1 ♂ Amami).
Ectemnius (Hypocrabro) schlettereri: Tsuneki, Kontyu, 36 (1): 57, 1968 (1 ♂ Amami).
Ectemnius (Hypocrabro) sakaguchii: Murota, Life Study, 17 (3-4): 101, 1973 (8 ♀ 2 ♂ Amami).

Ref.: Ectemnius (Hypocrabro) schlettereri ssp., Tsuneki, SPJHA (=Special Publications of the Japan Hymenopterists Association), 4: 1-12, 1977.

Remarks. According to my 1966 paper above listed the specimens collected in the Island of Amami-Ohshima show the characters that are intermediate between those of Japan Proper (= ssp. japonicus Tsuneki) and Island of Okinawa (= ssp. sakaguchii below treated), with somewhat stronger inclination towards sakaguchii, namely, clypeus is slightly narrower in the median produced area than in japonicus, interocular distance at clypeus also slightly narrower and sculpture is generally much feebler, punctures on abdomen generally finer and in maculation it has postscutellum carrying two transverse yellow maculae (this is quite exceptional to japonicus, because among about 150 male specimens of this subspecies no such maculated one is present). But the specimen examined was but a single and variations were unknown and so the subspecific treatment was not made. When I studied the local races of this species in Eastern Asia (see above Ref.) I could not examine the Amami specimen. At present, too, no specimen of this Island is there at my hand and their taxonomic status can not definitely be given here.

54b. Ectemnius (Hypocrabro) schlettereri sakaguchii (Matsumura et Uchida, 1926)

Crabro sakaguchii Matsumura et Uchida, Ins. Mats., 1 (1): 38, 1926 (1 ♀ Okinawa).
Ectemnius (Hypocrabro) schlettereri sakaguchii: Tsuneki, Etizenia, 15: 7, 1966 (1 ♀ Okinawa); -- Tsuneki, SPJHA, 4: 11, 1977 (2 ♀ 2 ♂ Okinawa); -- Tsuneki, Ibid., 23: 48,

1982 (1 ♀ Okinawa).

54c. Ectemnius (Hypocrabro) schlettereri ishigakiensis Tsuneki, 1972

Ectemnius (Hypocrabro) schlettereri ssp., Tano, Life Study, 16 (1-2): 1972 (1 ♂ Ishigaki).

Ectemnius (Hypocrabro) schlettereri ishigakiensis Tsuneki, Etizenia, 59: 19, 1972 (do.).
-- Tsuneki, SPJHA, 4: 12, 1977 (do.).

55. Ectemnius (Cameronitus) albomaculatus Tsuneki, 1966

Ectemnius (Cameronitus) albomaculatus Tsuneki, Etizenia, 15: 9, 1966 (1 ♀, Amami).

56. Ectemnius (Clytochrysus) cavifrons nipponensis Tsuneki, 1972

Ectemnius (Clytochrysus) cavifrons: Tano et Tsuneki, Life Study, 13 (1-2): 34, Table, 1969 (Yakushima).

57. Crossocerus (Cuphopterus) hakusanus Tsuneki, 1954

Crossocerus (Cuphopterus) hakusanus: Tsuneki, Etizenia, 15: 6, 1966 (1 ♂ Amami).
-- Tsuneki, Kontyu, 36 (1): 57, 1968 (1 ♂ Amami)

58. Crossocerus (Blepharipus) hirashimai Tsuneki, 1966

Crossocerus (Coelocrabro) hirashimai Tsuneki, Etizenia, 15: 5, 1966 (2 ♂ Amami); --
Tsuneki, Kontyu, 36 (1): 57, 1968 (do.).

59. Crossocerus (Blepharipus) barbipes (Dahlbom, 1837)

Crabro (Coelocrabro) barbipes: Yasumatsu, Mushi, 7 (2): 63, 1934 (1 ♀ Yakushima).

60. Crossocerus (Crossocerus) emarginatus (Kohl, 1898)

Crabro (Crossocerus) pacificus: Yasumatsu, Mushi, 14 (2): 89, 1942 (1 ♂ Yakushima).

61. Rhopalum (Rhopalum) bohartorum Tsuneki, 1966

Rhopalum (Rhopalum) bohartum Tsuneki, Etizenia, 15: 15, 1966 (1 ♀ Ishigaki).
Rhopalum (Rhopalum) bohartorum Tsuneki, Etizenia, 30: 25, 1968 (nom. emend.).

62. Nippononysson rufopictus Yasumatsu et Moidl, 1936

Nippononysson rufopictus: Yasumatsu, Icon. Ins. Jap., Ed. II: 1470 (incl. Amami).
Nippononysson rufopictus: Tsuneki, Trans. Shikoku Ent. Soc., 9 (4): 110 (1 ♂, Amami: Mt. Yuwandake).

63. Gorytes ishigakiensis Tsuneki, 1982

Gorytes ishigakiensis Tsuneki, SPJHA, 23: 48, 1982 (1 ♂ Ishigaki).

64. Bembix niponica Smith, 1873

Bembix niponica: Tano, Life Study, 8 (3): 38, 1964 (4 ♀ Yakushima).

65. Bembix formosana Bischoff, 1913

Bembix formosana: Tsuneki, Etizenia, 65: 3, 1973 (1 ♀ Ishigaki).

66. Bembecinus bimaculatus (Matsumura et Uchida, 1926)

Stizus bimaculatus Matsumura et Uchida, Ins. Mats., 1 (1): 43, 1926 (1 ♀ Ishigaki).
Stizus okinawanus Sonan, Trans. Nat. Hist. Soc. Formosa, 18 (97): 265, 1928 (1 ♀, Okinawa).

Bembecinus tridens: Tsuneki, Etizenia, 8: 14, 1965; -- Tsuneki, Kontyu, 35 (4): 387, 1968 (2 ♀ 1 ♂ Ishigaki, 3 ♀ Iriomote, 1 ♂ Yoron).

Bembecinus tridens bimaculatus: Tsuneki, Kontyu, 35: 388, 1967 (Yaeyama-G.).

Bembecinus tridens okinawanus: Tsuneki, Ibid., p. 388, 1967 (Okinawa-G.).

Bembecinus ryukyuensis Tsuneki, Etizenia, 31: 21, 24, 25, 1968.

Bembecinus okinawanus: Tsuneki, Ibid., 31: 22, 25, 1968.

Bembecinus bimaculatus: Tsuneki, Etizenia, 56: 8, 1971 (84 ♀ 99 ♂ Yayeyama-Group).

Bembecinus bimaculatus: Tano, Life Study, 16 (1-2): 23, 1972 (39 ♀ 45 ♂ Ishigaki, 45 ♀ 54 ♂ Iriomote); -- Tsuneki, SPJHA, 23: 49, 1982 (1 ♀ 4 ♂ Iriomote, 4 ♀ 6 ♂ Okinawa).

Remarks. As to the morphological as well as colorific variations in characters in this species see my 1971 paper (Etizenia, 71, pp. 8-15). Students with scanty material have been perplexed by its remarkable variation in characters.

67a. Bembecinus hungaricus japonicus (Sonan, 1934)

Bembecinus hungaricus: Tano, Life Study, 8 (3): 38, 1964 (27 ♀ 13 ♂ Yakushima).

67b. Bembecinus hungaricus amamiensis Tsuneki, 1965

Bembecinus hungaricus: Tsuneki, Life Study, 6 (1): 7, 1962 (23 ♀ 16 ♂ Amami).

Bembecinus hungaricus amamiensis Tsuneki, Etizenia, 8: 16, 1965 (22 ♀ 19 ♂ Amami).

-- Murota, Life Study, 17 (3-4): 101, 1973 (76 ♀ 36 ♂ Amami); -- Haneda, Hym. Comm., 14, 1982 (8 ♀ 3 ♂ Amami).

68. Bembecinus tanoi Tsuneki, 1971

Bembecinus tanoi Tsuneki, Etizenia, 56: 14, 1971 (1 ♀ Iriomote); -- Tano, Life Study, 16 (1-2): 23, 1972 (same ex.).

69. Bembecinus nambui Tsuneki, 1973

Bembecinus nambui Tsuneki, Etizenia, 65: 3, 1973 (1 ♂, Yoron).

70a. Cerceris hortivaga Kohl, 1880

Cerceris harmandi: Yasumatsu, Mushi, 7 (2): 63, 1934 (1 ♀ Yakushima).

Cerceris hortivaga: Tano, Life Study, 8 (3): 38, 1964 (3 ♀ Yakushima).

70b. Cerceris hortivaga amamiensis Tsuneki, 1961

Cerceris hortivaga amamiensis Tsuneki, Mem. Fac. Lib. Arts Fukui Univ. Ser. II, Nat. Sci., 13 (1): 30, 1961 (1 ♀ Amami); -- Haneda, Hym. Comm., 14, 1982 (10 ♀ 1 ♂ Amami).

71. Cerceris japonica Ashmead, 1904

Cerceris japonica: Yasumatsu, Mushi, 7 (2): 63, 1934 (1 ♀ Yakushima).

Cerceris rybyensis japonica: Tano, Life Study, 8 (3): 38, 1964 (1 ♀, Yakushima).
Cerceris japonica: Tsuneki, Life Study, 11 (3-4): 45, 1967.

72. Cerceris albofasciata (Rossi, 1790)

Cerceris albofasciata: Tano, Life Study, 8 (3): 38, 1964 (11 ♀ Yakushima).

73. Cerceris variaesimilis Moidl, 1926

Cerceris spinicollis: Tsuneki, Trans. Shikoku Ent. Soc., 9 (4): 107, 1968 (1 ♂ Okinawa, 1 ♂ Miyako).

Cerceris variaesimilis: Tsuneki, Etizenia, 44: 21, 1970

74. Cerceris geboharti Tsuneki, 1969

Cerceris boharti Tsuneki (nec Scullen), Trans. Shikoku Ent. Soc., 9 (4): 107, 1968 (3 ♂ Okinawa).

Cerceris geboharti Tsuneki, Life Study, 13 (3-4): 39, 1969 (do.).

75. Cerceris okumurai Tsuneki, 1968

Cerceris okumurai Tsuneki, Etizenia, 27: 1, 1968 (1 ♀ Amami); Life Study, 12 (3-4): 65, 1968.

Cerceris okumurai: Murota, Life Study, 17 (3-4): 101, 1973 (1 ♀ Amami); -- Haneda, Hym. Comm., 14, 1982 (7 ♀ Amami).

76. Cerceris tokunosimana Tsuneki, 1973

Cerceris tokunosimana Tsuneki, Etizenia, 65: 7, 1973 (2 ♂ Tokunoshima).

II. C h r y s i d i d a e

1a. Chrysis (Trichrysis) formosana formosana Mocsáry, 1912

Chrysis (Trichrysis) formosana: Tano, Life Study, 16 (1-2): 22, 1972 (2 ex. Iriomote).

1b. Chrysis (Trichrysis) formosana amamiensis ssp. nov.

Chrysis (Trichrysis) sp., Tsuneki, Life Study, 6 (1): 2, 1962 (8 ♀, Amami).

Chrysis (Trichrysis) sp., Murota, Ibid., 17 (3-4): 101, 1973 (9 ♀, Amami).

♀. Length 4.5-7.0 mm. Differs from the typical race occurring in Formosa mainly in colour. Golden or coppery golden effulgence almost lacking and much less greenish and much more bluish; violaceous or purplish-black are ocellar area, posterior inclination of vertex and behind eyes, nape region, 2 marks on pronotal collar, its median furrow, median lobe of mesoscutum, a mark on scutellum, disc of gastral tergites 1 and 2 broadly, median part of ante-series incrassation of tergite 3.

Transverse carina above cavitas facialis distinct, medianly depressed, from lateral ends of which sometimes rugosed carina obscurely emitted towards fore ocellus to enclose the frontal flat area, but sometimes the carinae quite indistinct, pronotum acutely edged and carinated on lateral margins, seen from above the lateral margins strongly bisinuate, tergite 3 transversely strongly depressed at base and markedly raised above series of foveae, foveae 3-4 on one side, large and deep; slightly apart from this series one or two smaller ones usually present further latero-anteriorly. Apical teeth strong and distinct, wider than long, not acutely pointed at apex, with interspace emarginate and at its median area weakly roundly produced. ♂, unknown.

Holotype: ♀, Is. Amami-Onshima: Shimmura, 27. VI. 1961, K. Tsuneki leg.

Paratypes: 7 ♀, same Island: Akaogi, Kachiura, Gusuku, Simmura and Yuwan, 27. VI.-7. VII. 1961, K. Tsuneki leg.

2. Chrysis (Chrysis) ignita Linné, 1761

Chrysis ignita: Tano, Life Study, 8 (3): 37, 1964 (7 ♀ Yakushima).

3. Chrysis (Chrysis) fuscipennis fuscipennis Brullé, 1846

Chrysis (Tetrachrysis) fuscipennis: Matsumura et Uchida, Ins. Mats., 1 (1): 51, 1926 (3 ♀ Ishigaki).

Chrysis (Tetrachrysis) fuscipennis var. murasaki Uchida, Ibid., 1 (3): 155, 1927 (incl. Is. Okinawa).

Chrysis (Chrysis) fuscipennis: Tsuneki, Life Study, 6 (1): 2, 1962 (3 ♀ 2 ♂ Amami).

Chrysis (Chrysis) fuscipennis fuscipennis: Tano, Ibid., 16 (1-2): 1972 (1 ex. Ishigaki, 2 ex. Iriomote); -- Murota, Ibid., 17 (3-4): 100, 1973 (4 ♀ 3 ♂ Amami, Tokunoshima, Okinoerabu); -- Haneda, Hym. Comm., 14, 1982 (1 ♂ Amami).

Remarks. In his 1927 paper Uchida recorded the Okinawa within the distribution range of ssp. murasaki. But this is incorrect. The specimens from the Central and Southern Ryukyus belong to the typical form, although those from the Amami-Oshshima are somewhat more bluish than the nominate race.

4. Chrysis (Pentachrysis) lusca Fabricius, 1804

Chrysis (Pentachrysis) lusca: Matsumura et Uchida, Ins. Mats., 1 (1): 51, 1926 (1 ♀, Ishigaki); -- Uchida, Ibid., 1 (3): 152, 1927 (Okinawa s. Ryukyus); -- Tsuneki, Life Study, 6 (1): 2, 1962 (67 ♀ 1 ♂ Amami); -- Tano, Ibid., 16 (1-2): 22, 1972 (1 ♀ Iriomote); -- Murota, Ibid., 17 (3-4): 100, 1973 (34 ♀ Amami, Okinoerabu); -- Haneda, Hym. Comm., 14, 1982 (1 ♀ Amami).

5. Chrysis (Pyria) fasciata vicaria Mocsáry, 1913

Chrysis (Hexachrysis) vicaria: Matsumura et Uchida, Ins. Mats., 1 (1): 51, 1926 (3 ♀ 1 ♂ Okinawa and Ishigaki); -- Uchida, Ibid., 1 (3): 152, 1927 (Okinawa).

Chrysis (Hexachrysis) fasciata vicaria: Tsuneki, Life Study, 6 (1): 2, 1962 (73 ♀ 40 ♂ Amami); -- Tsuneki, Etizenia, 3: 6, 1963 (Ryukyus); -- Murota, Life Study, 17 (3-4): 100, 1973 (6 ♀ 2 ♂ Amami); -- Haneda, Hym. Comm., 14, 1982 (2 ♀ Amami).

6. Chrysis (Pyria) principalis Smith, 1874

Chrysis (Hexachrysis) principalis: Murota, Life Study, 17 (3-4): 101, 1973 (34 ♀ 4 ♂ Amami-Oshshima).

7. Stilbum cyanurum f. splendidum Fabricius, 1775

Stilbum cyanurum var. amethystinum: Matsumura et Uchida, Ins. Mats., 1 (1): 50, 1926 (1 ♀ Okinawa); -- Uchida, Ibid., 1 (3): 151, 1927 (Okinawa).

III. S c o l i i d a e

1a. Scolia (Carinoscolia) melanosoma melanosoma (Saussure, 1859)

Scolia okinawana Matsumura (nom. nud.), in Kuroiwa's Prov. List Hym. Loochoos, p. 8, 1908 (Okinawa).

Scolia carbonaria: Matsumura, Thous. Ins. Jap. Suppl. 3: 125, 1911 (Okinawa); -- Matsumura, Ill. Thous. Ins. Jap. Ed. 2, Hym., p. 25, 1930 (Okinawa).

Scolia carbonaria: Matsumura et Uchida, Ins. Mats., 1 (1): 43, 1926 (1 ♀ Okinawa).
Scolia redtenbacheri: Matsumura et Uchida, Ibid., p. 44, 1926 (nec Saussure) (2 ♀ 1 ♂ Okinawa and Ishigaki).
Scolia (Carinoscolia) melanosoma: Uchida, J. Fac. Agr. Hokkaido Imp. Univ., 32 (6): 242, 1934 (1 ♀ Ishigaki, 3 ♀ Okinawa).
Scolia (Carinoscolia) melanosoma: Yasumatsu, Ann. Zool Jap., 15: 34, 1935 (1 ♀ Ishigaki); -- Uchida, Faun. Jap. 10 (9: 1), Scol., p. 19, 1936 (Okinawa, Ishigaki).
Scolia (Carinoscolia) fascinata f. nipponensis: Yasumatsu, Kontyu, 21: 47, 1954.
Scolia (Carinoscolia) melanosoma melanosoma: Tsuneki, Etizenia, 62: 20, 1972 (1 ♂, Tokunoshima).
Scolia (Carinoscolia) melanosoma melanosoma: Murota, Life Study, 17 (3-4): 100, 1973 (1 ♀, Okinoerabu).

Specimen newly examined: 1 ♀, Tokunoshima, 24. VI. 1961, H. Kamiya.

1b. Scolia (Carinoscolia) melanosoma fascinata Smith, 1873

No reliable record of this species is there from the Ryukyus. Taxonomic references:
Discolia signatifrons Pérez, Bull. Mus. Paris, 11: 86, 1905.
Discolia fasciatus: Matsumura, Thous. Ins. Jap. Suppl. III, p. 121, 1911.
Scolia vittifrons: Yano, Icon. Ins. Jap., Ed. I, p. 319; Ed. II, p. 1449, 1952.
Scolia (Carinoscolia) vittifrons: Uchida, J. Fac. Agr. Hokkaido Imp. Univ., 32 (6): 242, 1934; -- Uchida, Faun. Nipp., 10, Scoliidae, p. 20, 1936.
Scolia (Carinoscolia) fascinata: Yasumatsu, Kontyu, 21: 47, 1954.
Scolia (Carinoscolia) melanosoma fascinata: Tsuneki, Etizenia, 21, 1972.

Remarks. It is doubtful whether the typical form of this subspecies really occurs in the Ryukyu Archipelago or not. Certainly fasciata: Okajima recorded from the Amami-Oshima is quite doubtful in identification (Yasumatsu presumed that it might be hoozanensis Betrem). The nearly allied representatives known from the Yakushima are all S. hoozanensis Betrem. This species may occur on the Island Tanegashima, but nothing has been known regarding the Hymenopterous fauna of this Island.

2. Scolia (Carinoscolia) hoozanensis Betrem, 1928

Scolia vittifrons f. hoozanensis: Yasumatsu, Kontyu, 11 (6): 395 (2 ♂ Yakushima), 399 (2 ♀ 1 ♂ Amami), 1937.
Scolia (Carinoscolia) fascinata f. hoozanensis: Yasumatsu, Kontyu, 21: 48, 1954 (2 ♀ 6 ♂ Yakushima, 2 ♀ 1 ♂ Amami-Oshima).
Scolia (Carinoscolia) fascinata hoozanensis: Tsuneki, Life Study, 6 (1): 1, 1962 (2 ♀ 6 ♂ Amami).
Scolia (Carinoscolia) hoozanensis: Tsuneki, Etizenia, 62: 22, 1972 (same as above).
 -- Murota, Life Study, 17 (3-4): 100, 1973 (20 ♀ 5 ♂ Amami, Okinoerabu);
 -- Haneda, Hym. Comm., 14, 1962 (2 ♀ Amami).

Remarks. S. hoozanensis Betrem has long been treated by the Japanese entomologists as a colour form of fascinata Smith. It is now considered, however, that the latter is a colour form of melanosoma Saussure, because forma nipponensis Uchida of fascinata is completely identical with melanosoma and fascinata is smoothly connected with melanosoma through various intermediate forms. While, hoozanensis and melanosoma are sympatric in the Ryukyus and Formosa without intermediate forms between them.

3. Scolia (Scolia) historionica japonica Smith, 1873

Scolia japonica: Tano, Life Study, 8 (3): 37, 1964 (1 ♀ Yakushima).
Scolia (Scolia) historionica japonica: Tsuneki, Etizenia, 62: 23, 1972 (incl. Yakushima).

4. Scolia (Discolia) decorata ventralis Smith, 1873

Scolia historionica: Tano, Life Study, 8 (3): 37, 1964 (2 ♀ 4 ♂ Yakushima).
Scolia (Discolia) decorata ventralis: Tsuneki, Etizenia, 62: 25, 1972 (2 ♀ 2 ♂ Yakushima).

5. Scolia (Discolia) yayeyamensis Matsumura et Uchida, 1926

- Scolia yayeyamensis Matsumura et Uchida, Ins. Mats., 1 (1): 44, 1926 (2 ♀ Yayeyama).
Scolia (Scolia) yayeyamensis: Uchida, J. Fac. Agr. Hokkaido Imp. Univ., 32 (6): 245, 1934 (1 ♀ Yayeyama, 1 ♀ Ishigaki); -- Uchida, Faun. Nipp., 10, Scoliidae, p. 22, 1936 (Ishigaki).
Scolia yayeyamensis: Yasumatsu, Kontyu, 21: 48-50, 1954.
Scolia (Discolia) yayeyamensis: Tsuneki, SPJHA, 23: 51, 1982 (1 ♀ 6 ♂ Ishigaki).

6. Scolia (Discolia) oculata Matsumura, 1911

- Scolia oculata: Tano, Life Study, 8 (3): 37, 1964 (1 ♀ Yakushima).
Scolia (Discolia) oculata: Tsuneki, Etizenia, 62: 28, 1972 (incl. 1 ♀ Yakushima).

7. Scolia (Discolia) quadripustulata formosensis Betrem, 1928

- Scolia 4-pustulata: Matsumura, Thous. Ins. Jap. Suppl. 3: 123, 1911 (incl. Okinawa).
-- Matsumura, Ill. Thous. Ins. Jap., II, Hym., p. 24, 1930 (Okinawa).
Scolia quadripustulata: Matsumura et Uchida, Ins. Mats., 1 (1): 44, 1926 (many ♀ ♂, Okinawa, Ishigaki, Kumejima, Seihoto (=Iriomote)).
Scolia (Scolia) 4-pustulata (f. formosensis) - 1 ♂ Okinawa - and f. bipunctata - 1 ♂ Yayeyama: Uchida, J. Fac. Agr. Hokkaido Imp. Univ., 32 (6): 247, 1934.
Scolia 4-pustulata (formae): Uchida, Faun. Nipp., 10, Scoliidae, p. 26-27, 1936 (incl. Ryukyus).
Scolia (Scolia) 4-pustulata: Yasumatsu, Ann. Zool. Jap., 15: 34, 1935 (1 ♀ 1 ♂ Ishigaki).
Scolia (Scolia) quadripustulata: Tsuneki, Life Study, 6 (1): 1, 1962 (11 ♀ 86 ♂ Amami).
Scolia (Discolia) quadripustulata formosensis: Tsuneki, Etizenia, 62: 30, 1972 (11 ♀ 82 ♂ Amami, 1 ♀ 1 ♂ Ishigaki, 2 ♂ Iriomote). -- Murota, Life Study, 17 (3-4): 100, 1973 (23 ♂ Amami and Tokunoshima); -- Haneda, Hym. Comm., 14, 1982 (1 ♀ 3 ♂ Amami).

8. Scolia (Discolia) sinensis Saussure et Sichel, 1864

- Scolia (Scolia) sinensis: Tsuneki, Life Study, 6 (1): 1, 1962 (1 ♀ Amami).
Scolia (Discolia) sinensis: Tsuneki, Etizenia, 62: 37, 1972.

9. Scolia (Discolia) kuroiwaie Matsumura et Uchida, 1926

- Scolia kuroiwaie Matsumura et Uchida, Ins. Mats., 1 (1): 45, 1926 (1 ♀ 2 ♂ Okinawa, Ishigaki); -- Uchida, Faun. Nipp., 10, Scoliidae, p. 37, 1936 (Yayeyama).
Scolia (Scolia) kuroiwaie: Uchida, J. Fac. Agr. Hokkaido Imp. Univ., 32 (6): 249, 1934 (1 ♀ Okinawa, 1 ♂ Ishigaki, 1 ♂ Yayeyama).
Scolia (Scolia) erythrocephala kuroiwaie: Tsuneki, Life Study, 6 (1): 2, 1962 (5 ♀ 16 ♂ Amami).
Scolia (Discolia) kuroiwaie: Tsuneki, Etizenia, 62: 40, 1972 (same material as above).

10. Campsomeris (Megacampsomeris) grossa matsumurai Betrem, 1941

- Elis grossa: Matsumura et Uchida, Ins. Mats., 1 (1): 46, 1926 (4 ♀ 2 ♂ Okinawa).
? Elis grossa: Okajima, 1928 (Amami).
Campsomeris grossa: Tano, Life Study, 8 (3): 37, 1964 (2 ♂ Yakushima).
Campsomeris (Megacampsomeris) grossa ssp. Murota, Ibid., 17 (3-4): 100, 1973 (1 ♀ 5 ♂ Amami).

11. Campsomeris (Megacampsomeris) schultessi Betrem, 1928

- Elis quadrifasciata: Matsumura et Uchida, Ins. Mats., 1 (1): 46, 1926 (4 ♀ 3 ♂ Okinawa, Kumejima).

Campsomeris schultessi f. betremi Uchida, J. Fac. Agr. Hokkaido Imp. Univ., 32 (6): 254, 1934.

Campsomeris (Megacampsomeris) schultessi betremi: Tsuneki, Life Study, 6 (1): 2, 1962 (1 ♂ Amami).

Campsomeris (Megacampsomeris) schultessi: Tsuneki, Etizenia, 62: 3, 1972 (incl. 1 ♀ 5 ♂ Yakushima)

12. Campsomeris (Megacampsomeris) prismatica (Smith, 1855)

Elis prismatica: Matsumura et Uchida, Ins. Mats., 1 (1): 45, 1926 (many ♀, Okinawa).

Campsomeris prismatica: Uchida, J. Fac. Agr. Hokkaido Imp. Univ., 32 (6): 259 (incl. Okinawa)

Remarks. As to the taxonomic problems see Tsuneki, 1972 (Etizenia, 62). This species is common in Japan and Formosa, but as there is no other record than those listed above - somewhat doubtful - further confirmation of its occurrence in the Ryukyus seems necessary.

13. Campsomeris (Megacampsomeris) binghami Betrem, 1928

Campsomeris binghami: Yasumatsu, Mushi, 7 (2): 64, 1934 (2 ♂ Yakushima).

14a. Campsomeris (Megacampsomeris) mojiensis mojiensis Uchida, 1934

Campsomeris mojiensis Uchida, J. Fac. Agr. Hokkaido Imp. Univ., 32 (6): 257, 1934.

Campsomeris testaceipes: Yasumatsu, Mushi, 7 (2): 64, 1934 (8 ♂ Yakushima).

Campsomeris testaceipes: Tano, Life Study, 8 (3): 37, 1964 (1 ♀ 4 ♂ Yakushima).

Campsomeris (Megacampsomeris) mojiensis: Tsuneki, Etizenia, 62: 12, 1972 (incl. 2 ♀ 8 ♂ Yakushima).

Remarks. As to the taxonomic confusion between C. mojiensis and so-called C. testaceipes of the Japanese authors see Tsuneki, 1972 (Etizenia, 62), pp. 10-13. To those who can read Japanese the account given on pages 47-48 of the Life Study, 16 (1-2), 1972, will be of much use.

14b. Campsomeris (Megacampsomeris) mojiensis ryukyuana Tsuneki, 1972

Elis aurentata: Matsumura (nec Smith), Thous. Ins. Jap. Suppl. III, p. 128 (w. Okinawa). -- Matsumura, Ill. Thous. Ins. Jap., II, Hym., p. 28, 1930; -- Matsumura et Uchida, Ins. Mats., 1 (1): 26, 1926 (many ♀, Okinawa).

Campsomeris testaceipes: Uchida (nec Cameron), J. Fac. Agr. Hokkaido Imp. Univ., 32 (6): 258 (incl. 6 ♀ 4 ♂ Okinawa, 1 ♂ Erabu). -- Uchida, Faun. Nipp., 10, Scoliidae, p. 57 (Ryukyu).

Campsomeris testaceipes: Yasumatsu, Ann. Zool. Jap., 15: 34, 1935 (1 ♂ Ishigaki); -- Yasumatsu, Kontyu, 11 (6): 399, 1937 (1 ♀ 2 ♂ Amami)

Campsomeris (Megacampsomeris) testaceipes: Tsuneki, Life Study, 6 (1): 2, 1962 (2 ♀ 25 ♂ Amami).

Campsomeris (Megacampsomeris) mojiensis ryukyuana Tsuneki, Etizenia, 62: 12, 1972 (1 ♀ 2 ♂ Tokunoshima, 23 ♂ Amami). -- Murota, Life Study, 17 (3-4): 100, 1973 (14 ♀ 54 ♂ Amami and Tokunoshima); -- Haneda, Hym. Comm., 14, 1982 (8 ♂ Amami).

15a. Campsomeris (Campsomeriella) annulata annulata (Fabricius, 1793)

Campsomeris annulata: Uchida, J. Fac. Agr. Hokkaido Imp. Univ., 32 (6): 256, 1934 (partim); -- Uchida, Faun. Nipp., 10, Scoliidae, p. 49, 1936 (partim).

Campsomeris annulata: Yasumatsu, Mushi, 7 (2): 64, 1934 (3 ♂ Yakushima); -- Tano, Life Study, 8 (3): 37, 1964 (2 ♀ Yakushima).

15b. Campsomeris (Campsomeriella) annulata sakaguchii Uchida, 1934

Elis annulata: Matsumura et Uchida, Ins. Mats., 1 (1): 45, 1926 (many ♀ ♂, Okinawa, Mi-

yako, Ishigaki); -- Uchida, 1934, p. 256 (partim); -- Uchida, 1936, p. 49 (partim).
Campsomeris sakaguchii Uchida, J. Fac. Agr. Hokkaido Imp. Univ., 32 (6): 260 (12 ♀ 5 ♂
 Okinawa, 1 ♂ Ishigaki, 1 ♂ Yayeyama); -- Uchida, 1936, p. 62 (Okinawa).
Campsomeris annulata: Yasumatsu, Kontyu, 11 (6): 399, 1937 (Amami).
Campsomeris (Dielis) annulata sakaguchii: Tsuneki, Life Study, 6 (1): 2, 1962 (8 ♀ 7 ♂
 Amami).
Campsomeris (Campsomeriella) annulata sakaguchii: Tsuneki, Etizenia, 62: 19, 1972 (8 ♀
 7 ♂ Amami, 2 ♂ Ishigaki); -- Murota, Life Study, 17 (3-4): 100, 1973 (27 ♀ 3 ♂,
 Amami, Tokunoshima, Okinoerabu); -- Tsuneki, SPJHA, 23: 52, 1982 (1 ♀ Miyako, 2 ♀
 Ishigaki, 2 ♂ Okinawa); -- Haneda, Hym. Comm., 14, 1982 (1 ♀ 5 ♂ Amami).

16. Campsomeris (Campsomeriella) quadrifasciata sauteri Betrem, 1928

Elis quadrifasciata: Matsumura et Uchida, Ins. Mats., 1 (1): 26, 1926 (4 ♀ 3 ♂ Okinawa
 Kumejima).
Campsomeris sauteri: Uchida, J. Fac. Agr. Hokkaido Imp. Univ., 32 (6): 256, 1934 (3 ♀,
 Okinawa).
Campsomeris (Campsomeris) sauteri: Tsuneki, Life Study, 6 (1): 2, 1962 (1 ♀ 3 ♂ Amami).
Campsomeris (Campsomeriella) quadrifasciata sauteri: Tsuneki, Etizenia, 62: 17, 1972
 (1 ♀ 3 ♂ Amami, 1 ♀ 1 ♂ Ishigaki); -- Murota, Life Study, 17 (3-4): 100, 1973
 (3 ♀ Amami); -- Tsuneki, SPJHA, 23: 52, 1982 (4 ♀ 2 ♂ Miyako).

General Remarks

Uchida in his 1934 paper recorded a species called Campsomeris limbata (Saussure) in the distribution table to occur in the Ryukyus, but in the text this species is included only in the fauna of Formosa and excluded from that of the Ryukyus. Therefore, it is not treated in the present paper.

IV. M u t i l l i d a e

1. Trogaspidia pustulata (Smith, 1873)

Timula insidiator: Tsuneki, Life Study, 6 (1): 1, 1962 (5 ♂ Amami).
Timula insidiator: Tano, Ibid., 8 (3): 37, 1964 (3 ♀ 6 ♂ Yakushima).
Trogaspidia pustulata: Murota, Ibid., 17 (3-4): 100, 1973 (3 ♂ Amami).
Trogaspidia pustulata: Haneda, Hym. Comm., 14, 1982 (1 ♀ Amami).

2a. Trogaspidia fukudai fukudai Tsuneki, 1972

Trogaspidia fukudai Tsuneki, Etizenia, 61: 14, 1972 (1 ♀, Yakushima).

2b. Trogaspidia fukudai tokunosimana Tsuneki, 1973

Trogaspidia fukudai tokunosimana Tsuneki, Etizenia, 65: 24, 1973 (1 ♀, Tokunosima).

3. Smicromyrme yakushimensis Yasumatsu, 1934

Smicromyrme yakushimensis Yasumatsu, Mushi, 7 (2): 64, 1934 (1 ♀ Yakushima)

4. Smicromyrme alberici (Zavattari, 1913)

Smicromyrme alberici: Tsuneki, Etizenia, 65: 23, 1973 (1 ♀, Ishigaki).

5a. Smicromyrme fukudai fukudai Tsuneki, 1972

Smicromyrme fukudai Tsuneki, Etizenia, 61: 24, 1972 (1 ♂ Yakushima).

5b. Smicromyrme fukudai tokunosimana Tsuneki, 1973

Smicromyrme fukudai tokunosimana Tsuneki, Etizenia, 65: 24, 1973 (1 ♂ Tokunosima).

6. Smicromyrme hageni (Zavattari, 1913)

Mutilla discreta: Matsumura et Uchida, Ins. Mats., 1 (1): 50, 1926 (1 ♂, Ishigaki).
Smicromyrme hageni: Yasumatsu, Trans. Nat. Hist. Soc., Formosa, 28 (183): 447, 1938
(Ishigaki).

7. Squamulotilla ardescens (Smith, 1873)

Squamulotilla ardescens ssp., Murota, Life Study, 17 (3-4): 100, 1973 (1 ♀ Amami).

Species Distribution Table in the Ryukyu Archipelago

Species	Ta	Ya	To	A	To	O	Yo	O	Ku	Mi	I	I	Yo	Ri	Ya	Ja	Fo
	ne	ku	ka	ma	ku	ki	ro	ki	me	ya	si	ri	na	u	ye	pa	r
	ga	si	ra	mi	no	no	n	na	si	ko	ga	o	ku	ki	ya	n	mo
	si	ma			si	era		wa	ma		ki	mo	ni	u	ma	sa	
	ma				ma	bu					te						
1. <u>Ampulex dentata</u>								0									
2. <u>A. tridentata</u>				0						0	0				0		
3. <u>A. dissector</u>														?	0	0	
4. <u>Dolichurus amamiensis</u>				0	0					0	0						0
5a. <u>Spheg argentatus</u>				0	0	0		0		0	0	0					0
5b. <u>S. argent. fumosus</u>		0															0
6. <u>S. diab. flammitricus</u>		0		0				0		0	0	0		0		0	0
7. <u>S. sericeus lineolus</u>								0									0
8. <u>Isodontia nigella</u>		0		0	0	0		0		0	0			0		0	0
9. <u>Prionyx viduatus</u>				0	0			0				0	0				0
10. <u>Ammophila atr. formosanus</u>								0	0	0	0	0					0
11. <u>A. infesta</u> Smith		0						?									0
12. <u>A. sabulosa nipponica</u>		0															0
13a. <u>Sceliphron madr. kohli</u>		0		0	0	0		0		.	.	.					0
13b. <u>S. madraspat. formosanum</u>										0	0	0					0
14. <u>S. deforme taiwanum</u>								0									0
15. <u>Chalybion japonicum</u>		0		0	0			0		0							0
16. <u>Ch. bengalense</u>								0									0
17a. <u>Psen exaratus santaro</u>				0													
17b. <u>P. ex. intermedius</u>								0									
18. <u>P. opacus gressitti</u>				0													
19. <u>P. hirashimai</u>				0													
20. <u>P. caocinnus</u>				0													0
21. <u>Psenulus carinifr. iwatai</u>								0									0
22. <u>Polemistus annulicornis</u>					0												
23. <u>Stigmus shirozui</u>				0													
24. <u>Larra amplipennis</u>				0								0					0
25. <u>L. carbonaria</u>				0	0	0		0		0							0
26. <u>L. luzonensis</u>										0	0						0
27. <u>Liris (Liris) aurulentus</u>				0	0			0		0	0						0
28. <u>L. (Leptolarra) docilis</u>		0		0	0	0		0		0	0	0					0
29. <u>L. (L.) subtessellatus</u>										0	0						0
30. <u>L. rohweri formosanus</u>								0		0	0	0					0
31. <u>L. surusumi</u>										0							0
32. <u>L. deplanatus binghami</u>				0						0	0						0
33a. <u>L. festinans festinans</u>				0	0	0	0	0		0	0						0
33b. <u>L. f. japonicus</u>		0															0
34. <u>L. (Pit.) iriomotensis</u>												0					
35a. <u>Tachytes sinen. sinensis</u>		0															0
35b. <u>T. s. yaeyamanus</u>										0	0						
36. <u>T. modestus</u>				0										?			0
37a. <u>Tachysphex nigricolor</u>		0		0		0		0									0
37b. <u>T. n. yaeyamanus</u>												0	0				
38. <u>T. formosanus</u>												0	0				0
39. <u>T. changi</u>												0	0				0
40. <u>T. nambui</u>												0					
41. <u>Lyroda japonica</u>		0															0
42. <u>Pison punctifrons</u>		0		0	0	0		0		0	0						0
43. <u>Trypoxylon thai. dubiosum</u>				0		0											
44. <u>T. schmiedeknechti</u>													0				0
45. <u>T. petiolatum</u>				0	0	0		0		0	0						0
46a. <u>T. formosicola inornatum</u>								0									0
46b. <u>T. f. amamiense</u>				0	0												
47. <u>T. ryukyuense</u>				0	0												
48. <u>T. petioloid. isigakiense</u>											0						0
49. <u>T. takasago kumaso</u>								0									0
50. <u>T. okinawanum</u>												0	0				

Species	Ta	Ya	To	A	To	O	Yo	O	Ku	Mi	I	I	Yo	Ri	Ya	Ja	Fo
	ne	ku	ka	ma	ku	ki	ro	ki	me	ya	si	ri	na	u	ye	pa	r
	ga	si	ra	mi	no	no	n	na	si	ko	ga	o	ku	ki	ya	n	mo
	si	ma			si	era	wa	ma	ki	mo	ni	te		u	ma	sa	
	ma				ma	bu											
51. <u>Trypoxylon iriomotense</u>												0					
52. <u>Ectemnius chrysites</u>					0												0
53. <u>E. confinis</u>					0												
54a. <u>E. schlettereri</u> ssp.					0												
54b. <u>E. schl. sakaguchii</u>								0									
54c. <u>E. schl. ishigakiensis</u>											0						
55. <u>E. albomaculatus</u>					0												
56. <u>E. cavifrons nipponensis</u>				0												0	o
57. <u>Crossocerus hakusanus</u>					0											0	o
58. <u>C. hirashimai</u>					0												
59. <u>C. barbipes</u>				0												0	
60. <u>C. emarginatus</u>				0												0	
61. <u>Rhopalum bohartorum</u>											0						
62. <u>Nippononysson rufopictus</u>					0											0	
63. <u>Gorytes ishigakiensis</u>											0						
64. <u>Bembix niponica</u>				0												0	0
65. <u>B. formosana</u>											0						0
66. <u>Bembecinus bimaculatus</u>							0	0			0	0		0			
67a. <u>B. hungaricus japonicus</u>				0												0	o
67b. <u>B. h. amamiensis</u>					0												
68. <u>B. tanoi</u>											0						
69. <u>B. nambui</u>							0										
70a. <u>Cerцерis hortivaga</u>				0												0	
70b. <u>C. h. amamiensis</u>					0												
71. <u>C. japonica</u>					0											0	
72. <u>C. albofasciata</u>				0												0	
73. <u>C. variaesimilis</u>									0	0						0	0
74. <u>C. gebharti</u>									0								
75. <u>C. okumurai</u>					0												
76. <u>C. tokunosimana</u>						0											
77. <u>C. yuwanensis</u>					0												
1a. <u>Chrysis formosana</u>												0					0
1b. <u>C. f. amamiensis</u>					0												
2. <u>C. ignita</u>				0												0	
3. <u>C. fuscipennis</u>					0			0		0	0					o	0
4. <u>C. lusca</u>					0		0		0	0						0	0
5. <u>C. fasciata vicaria</u>					0			0		0							0
6. <u>C. principalis</u>					0												0
7. <u>Stilbum cyanurum splendid.</u>								0								o	0
1a. <u>Scolia melanosoma</u>						0	0		0					0		0	?
1b. <u>S. m. fascinata</u>				?												0	
2. <u>S. hoozanensis</u>					0		0										0
3. <u>S. historianica japonica</u>					0											0	
4. <u>S. decorata ventralis</u>					0											0	
5. <u>S. yayeyamensis</u>											0				0		
6. <u>S. oculata</u>					0											0	
7. <u>S. 4-pustulata formosensis</u>					0			0	0		0	0		0	0		0
8. <u>S. sinensis</u>					0											0	0
9. <u>S. kuroiwaе</u>					0			0		0				0	0	0	
10. <u>Campsomeris grossa matsum.</u>				0	0			0						0	0	0	
11. <u>C. schultessi</u>				0	0			0	0							0	
12. <u>C. prismatica</u>								0								0	0
13. <u>C. binghami</u>					0												0
14a. <u>C. mojiensis mojiensis</u>				0												0	
14b. <u>C. m. ryukyuana</u>					0	0		0		0	0			0			

Species	Ta	Ya	To	A	To	O	Yo	O	Ku	Mi	I	I	Yo	Ri	Ya	Ja	Fo	
	ne	ku	ka	ma	ku	ki	ro	ki	me	ya	si	ri	na	u	ye	pa	r	
	ga	si	ra	mi	no	no	n	na	si	ko	ga	o	ku	ki	ya	n	mo	
	si	ma		si	era	wa	ma	ki	mo	ni	te		u	ma	sa			
	ma			ma	bu													
15a. <u>Campsomeris annulata</u>	0															0	0	
15b. <u>C. a. sakaguchii</u>			0	0	0			0	0	0	0			0	0			
16. <u>C. 4-fasciata sauteri</u>								0	0	0	0			0			0	
1. <u>Trogaspidia pustulata</u>	0		0														0	
2. <u>T. fukudai</u>	0			0														
3. <u>Smicromyrme yakushimensis</u>	0																	
4. <u>S. alberici</u>										0							0	
5a. <u>S. fukudai</u>	0																	
5b. <u>S. f. tokunosimana</u>					0													
6. <u>S. hageni</u>										0							0	
7. <u>Squamulotilla ardescens</u>				0													0	
<hr/>																		
Sphecidae	76 spp.	0	22	0	36	15	13	2	25	1	7	29	29	1			33	42
Chrysididae	7 spp.	0	1	0	5	0	1	0	4	0	0	3	1	0			4	6
Scoliidae	16 spp.	0	9	0	9	2	3	0	9	3	2	7	2	0			12	7
Mutillidae	7 spp.	0	4	0	2	1	0	0	0	0	0	2	0	0			2	2
T o t a l	106 spp.	0	36	0	52	18	17	2	38	4	7	41	32	1			51	57

Remarks.

In the table 0 indicates that the species or the subspecies concerned has been collected, . in the case of subspecies shows that it partly occurs as variation and o in the columns of Japan and Formosa means that different subspecies is present.

Of the species above tabulated those that are endemic to the Ryukyus, or rather to the Island concerned, are as follows:

Ampulex dentata, Ampulex tridentata, Psen hirashimai, Polemistus annulicornis, Liris iriomotensis*, Tachysphex nambui, Trypoxylon ryukyuense*, Trypoxylon okinawanum, Trypoxylon iriomotense, Ectemnius albomaculatus, Crossocerus hirashimai, Rhopalum bohartorum, Gorytes ishigakiensis, Bembecinus bimaculatus, Bembecinus tanoi, Bembecinus nambui, Cerceris gebharti, Cerceris okumurai, Cerceris tokunosimana, Scolia yayeyamensis, Trogaspidia fukudai, Smicromyrme yakushimensis, Smicromyrme fukudai. Addition: Cerceris yuwanensis.

* Liris iriomotensis may be a subspecies of Liris pitamawa and Trypoxylon ryukyuense may be a subspecies of Trypoxylon regium.

The following are the endemic subspecies:

Psen exaratus santaro, Psen exaratus intermedius, Psen opacus gressitti, Tachytes sinensis yaeyamanus, Tachysphex nigricolor yaeyamanus, Trypoxylon formosicola amamiense, Trypoxylon thaianum dubiosum, Trypoxylon petioloides isigakiense, Trypoxylon takasago kumaso, Ectemnius schlettereri sakaguchii, Ectemnius schlettereri ishigakiense, Bembecinus hungaricus amamiensis, Cerceris hortivaga amamiensis, Campsomeris mojiensis ryukyuana, Campsomeris annulata sakaguchii, Smicromyrme fukudai tokunosimana, Trogaspidia fukudai tokunosimana and Chrysis formosana amamiensis.

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CERCERIS YUWANENSIS SP. NOV. FROM THE ISLAND AMAMI-OHSHIMA, THE RYUKYUS

(HYMENOPTERA, SPHECIDAE)

By K. TSUNEKI

The present species (δ) belongs to the sinensis-strandi group, having long, petiole-like gastral segment 1, not well outlined and only weakly raised basal platform of gastral sternite 2, finely sparsely punctured area dorsalis and non-carinated hind coxa. It is characterized also by the apical form of clypeus, somewhat moniliformed antennal flagellum, large somewhat sparse punctures and distinctive maculae, especially of the gastral segments.

δ . 9.0 mm. Black; lemon yellow are facial maculae (Fig. 1), A1 (dorsal apical area brownish), A2 largely beneath, mandible at base on outer side, tongue of mouth parts (palpi brownish), broad band on collar not reaching tubercle, scutellum, post-scutellum (lateral carinae black), a mark on epimeral area of mesopleuron just behind tubercle, broad bands on G2, 3 and 6, medianly strongly constricted broad band on GS2 (rather a pair of large triangular marks medianly contiguous), fairly large lateral marks on GS3 (interspace brown), a large triangular mark on fore coxa beneath, mid coxa except extreme base and above, hind coxa except basal area above and apical carinae, trochanters wholly, rest of fore and mid legs except small basal mark of each femur above (larger and more brownish on fore femur), dark brown mid tibial spines and spur and brownish mid T2, 3 and 4, hind femur at apex (fairly brownish) and apical half beneath, and hind tibia except short basal and large apical marks above. Rest of mandible translucent brown, with a light ferruginous spot near middle on outer side, A3-6 brown beneath, apically darker, A11, 12 at apical area beneath, A13 wholly beneath brown, apically brighter. Wings very slightly darkened hyaline and somewhat yellowish, apical margin broadly clouded, radial cell and its outer posterior area somewhat more markedly so. Apical fringe of lateral area of clypeus pale yellow, in oblique light silverily shining (with somewhat golden tint). Hairs soft and long, markedly longer on ocellar area and dorsum of G1, pale yellowish grey, different in colour under light condition.

Head from above transverse, HW:HL (at eye) =100:54, occipital margin roundly strongly emarginate, relative width at its lateral ends 48, HW:IODv=100:58, inner orbits slightly convergent anteriorly, at verge

