

# *Etizenia*

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*Occasional Publication of the Biological Laboratory  
Fukui University, Japan*

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No. 1.

THE TRIBE GORYTINI OF JAPAN AND KOREA  
(HYMENOPTERA, SPHECIDAE)  
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JANUARY 30, 1963

# THE TRIBE GORYTINI OF JAPAN AND KOREA

(HYMENOPTERA, SPHECIDAE)

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No special investigation has ever been made concerning the taxonomy and distribution of the Tribe Gorytini occurring in Japan and the adjacent regions. This is quite out of the surprising fact, since the similar is still usually true in many groups of animals in this and the adjacent countries which remain even now in quite an uncultivated state in such fundamental aspects of the biological science. With regard to Japan only three species have formerly been recorded by J. Pérez, M. Yano and K. Yasumatsu and as to the East Asiatic regions some fragmental records were found in the faunal treatises by O. Radoszkovsky, V. Gussakovskij and K. Yasumatsu and in the classical monographic work of A. Handlirsch.

The material used in the present study attained about 350 in number, but was quite incomplete in constitution, comprising sometimes too many of the same species and sometimes lacking one of the sexes of certain species. Strictly, therefore, it is not as yet the time to arrange them in a key. But to do so seems to me profitable, not only to the future investigators, but also to myself in grasping them exactly by their distinguishing characters. The key thus made is therefore quite incomplete and needs much to be supplemented in future.

In carrying out the present study I am much indebted to Dr. K. Takeuchi (Kyoto), for his generous kindness in placing at my disposal a good number of specimens of his collection. For some interesting specimens I am also indebted to Messrs E. Tanaka (Mashiko) and I. Togashi (Tsurugi). To the above-mentioned colleagues I express my heartiest thanks.

The fundamental bases of the taxonomy of this group of wasps were placed by Anton Handlirsch in his *Monographie der mit Nysson and Bembex verwandten Grabwespen* (1887-1895). Although the taxonomists' opinions on the systematic level of the group changed later more or less his method of classification is still followed in the main by the present-day investigators. In the present study I mainly followed his method, but at the same time the characters utilized recently by J. de Beaumont were also taken into consideration. As to the taxonomic rank of the division I followed chiefly K. V. Krombein (1951), with due regard to the characters of the wing venation and the structure of other parts of the body.

## Key to the species

♀ ♀

- 1 Front tarsi not provided with strong spines on outer margin, mesopleuron provided with anterior transverse (epicnemial) carina, the carina not turned posteriorly, 2nd abdominal sternite transversely deeply excavated at base (in hind wing apex of anal cell ending far before base of cubital nervure, inner orbital lines subparallel) ..... Genus *Argogorytes* Ashmead, 1889 ..... 2
- Front tarsi provided with strong spines on outer margin, mesopleuron with anterior transverse (epicnemial) carina, the carina arcuately turned posteriorly and running on the lower portion up to above the base of mid coxa (sometimes the longitudinal part of the carina quite obsolete in middle), 2nd abdominal sternite not deeply excavated at base ..... 3
- 2 Pygidial area triangle in form, broad, with apex rounded, its surface densely covered with stiff dark brown hairs (2nd sternite at base scattered sparsely with gross punctures; head, antennae and legs black, sometimes with two yellow spots on clypeus), length 12.0-17.0

mm. Japan, Korea, the Ussuri region and Saghalien (Pl. I, Fig. 1)

***Argogorytes mystaceus grandis* (Gussakovskij, 1933) (conj. nov.)**

- Pygidial area sublanceolate (Pl. II, Fig. 3), medianly distinctly but bluntly keeled, without covering hairs (2nd sternite at base with gross shallow indistinct punctures scattered, antennal flagella beneath partly and tarsi of legs wholly dark brown, clypeus always with two yellow spots and postscutellum always maculated), length 12-13 mm. Hokkaido and Honshu (Pl. I, Fig. 4)

***Argogorytes nipponis* sp. nov.**

- 3 In hind wing anal nervure ending at base of cubital nervure ..... 4
- In hind wing anal nervure ending distinctly before or beyond base of cubital nervure ... 5
- 4 The 1st abdominal segment narrow, subpetiolate, with ante-apical region incrassate and with apex markedly constricted, inner orbital lines slightly divergent towards clypeus, antennae long, filiform, 3rd joint more than 6 times as long as wide at apex, metapleuron not excavated - (Genus *Lestiphorus* Lepeletier, 1832)

The 1st tergite with a transverse furrow in front of the apical margin, longitudinal striae on area cordata ending slightly before apex of the area (Pl. II, Fig. 1), length 12.0-13.0 mm. Honshu, Hokkaido and Korea (the Ussuri region?) (Pl. I, Fig. 10)

***Lestiphorus bilunulatus yamatoni* subsp. nov.**

- The 1st abdominal segment normal or at least not constricted at apex, inner orbital lines slightly convergent towards clypeus, antennae short, very slightly claviform, 3rd joint about twice as long as wide at apex, metapleuron largely impressed - (Genus *Hoplisoides* Gribodo, 1888, see also ♂)

Clypeus on anterior margin markedly inclined towards apex, the area impunctate and polished, longitudinal part of mesopleural carina on its anterior portion slightly produced laterally, forming a distinct angle, mesosternum with two lateral tubercles (area cordata isosceles triangle in form; longitudinally finely, slightly divergently striate, rest of the area of propodeum including the sides rather sparsely punctured with medium-sized points, pygidial area closely covered with aciculate punctures; a line along inner and outer orbits of eyes, pronotum, a patch on mesopleuron, a band on scutellum and on each of abdominal tergites 1-4 and legs largely, yellow or reddish yellow), length 9.0-12.0 mm. N. China, S. Manchuria and Korea

***Hoplisoides distinguendus* (Yasumatsu, 1939)**

- 5 Anal cell of hind wing ending far before base of cubital nervure (inner orbital lines subparallel, thorax or abdomen partly red) ..... Genus *Dienoplus* Fox, 1893 ..... 6
- Anal cell of hind wing ending distinctly beyond base of cubital nervure (inner orbits of eyes more or less convergent towards clypeus, thorax and abdomen black, usually adorned with yellow) - Genus *Gorytes* (s. str.) Latreille 1804 ..... 7
- 6 Body black with 1st and 2nd segments of abdomen red (an elongate triangular macula along inner orbits of eyes, supraclypeal area, sides of clypeus, middle of mandibles yellowish white, head and thorax with some brownish maculae, abdomen with white maculae, legs partly brown), length 7.5 mm. Japan (Honshu) (Pl. I, Fig. 12; Pl. II, Fig. 12)

***Dienoplus tumidus japonensis* subsp. nov.**

- Thorax except area cordata and meso- and metasterna red, head and abdomen black (inner orbital lines dirty white, a band on tergites 2 and 5 white), length 5.0-6.0 mm. Palaearctic region including N. China, Mongolia, Korea (?) and Japan (?)

***Dienoplus laevis* (Latreille, 1792)**

- 7 Mesopleural longitudinal carina rather obsolete in its middle portion; antennae, legs and apical segment of abdomen largely testaceous (antennae slender, 3rd joint seen from beneath more than 5 times as long as wide at apex, whole the body above closely covered with long ferruginous pubescence, metapleural suture deeply grooved on lower 2/3, 2nd abdominal segment suddenly widened as compared with the 1st (Fig. 5); clypeus, mandibles except apex, maculae on face, pronotum, humeral angles, a lateral spot on mesonotum, a band on scutellum, a band on 1st and 2nd tergites orange yellow, more or less ferruginous, area cordata longitudinally closely striate, rest of propodeum sparsely punctured), length about 11 mm. Japan and Korea (Pl. II, Figs. 6 and 10)

*Gorytes* (s. str.) *fulvohirtus* sp. nov.

- Mesopleural carina thoroughly distinct, apical portion of abdomen not testaceous ..... 8
- 8 Inner orbits of eyes only slightly convergent toward clypeus, antenno-ocular distance nearly as great as diameter of antennal socket ..... 9
- Inner orbits of eyes markedly convergent towards clypeus, antenno-ocular distance distinctly less than as great as diameter of antennal socket (antennae comparatively thick, 3rd joint less than 4 times as long as wide at apex, metapleuron with strong striae on upper portion) ..... 12
- 9 Antennae with 3rd joint seen from beneath about 3.5 times as long as wide at apex (metapleuron with distinct striae on upper portion; labrum and clypeus black, the latter with small yellow maculae; pronotum and scutellum yellow-banded, mesopleuron with a macula, abdominal tergites 1-4 each with a band), length 10 mm. Europe, N. Africa and Korea

*Gorytes* (s. str.) *quadrifasciatus* (Fabricius, 1804)

- Antennae with 3rd joint seen from beneath more than 4 times as long as wide at apex ... 10
- 10 Labrum and a large part of clypeus black, metapleuron with fine weak striae (sometimes indistinct) on upper portion (vertex very minutely and densely punctured, mat; abdomen with 4 yellow bands, hind legs without yellow maculae), length 12.0-13.0 mm. Korea (Pl. I, Fig. 8)

*Gorytes* (s. str.) *radoszkowskyi* Handlirsch, 1888

- Labrum and at least greater part of clypeus yellow, metapleuron with distinct striae on upper portion ..... 11
- 11 Mesonotum with comparatively gross punctures, partly confluent and rugose (a broad macula along inner orbits of eyes, antennal scape beneath, front and mid legs largely in front, a narrow band on each of tergites 1-3 — on 1 medianly broadly interrupted — yellow, flagella beneath ferruginous yellow, thorax wholly black), length 10-14 mm. Hokkaido and Honshu (Pl. I, Fig. 3)

*Gorytes* (s. str.) *tricinctus* (Pérez, 1905)

- Mesonotum only finely and sparsely punctured, with close micropoints between (maculae on clypeus and lower face, scape beneath, pronotum, a spot on mesopleuron, rarely a short band on scutellum, a band on each of tergites 1-5, sometimes two spots on area pygidialis, all legs largely, yellow; flagella beneath yellow towards base and ferruginous towards apex), length 9.5-13.0 mm. Korea, the Ussuri region and Hokkaido (Pl. I, Fig. 2; Pl. II, Fig. 7)

*Gorytes* (s. str.) *koreanus* Handlirsch, 1888

- 12 Oculo-antennal distance less than half as great as diameter of antennal socket, pygidial area longitudinally closely rugoso-striate, propodeum outside area cordata sparsely weakly punctured, with very feeble indistinct rugae, antennal flagella above largely ferruginous at least on apical half (head and thorax with rich yellow maculae, abdominal tergites 1-5 each

with a band, legs broadly yellow), length 11.0-13.5 mm. The Ussuri region, Korea, N. China, Japan (Honshu and Hokkaido) (Pl. I, Fig. 7; Pl. II, Fig. 4)

***Gorytes* (s. str.) *eous* Gussakovskij, 1933**

- Oculo-antennal distance about 2/3 as great as diameter of antennal socket, area pygidialis sparsely punctured, propodeum outside area cordata coarsely reticulate or strongly rugoso-striate, antennal flagella above black ..... 13
- 13 Abdominal tergites 1-3 each with apical band, head and thorax above with very close micropoints, more or less glossy, mesonotum with indistinctly outlined comparatively gross punctures scattered, sometimes partly confluent, labrum always yellow, antennae beneath yellow, length 10-13 mm. Japan (Hokkaido and Honshu) (Pl. I, Fig. 5)

***Gorytes* (s. str.) *aino* sp. nov.**

- Abdominal tergites 1-4 each with apical band, head and thorax above minutely punctured, granulate and opaque, mesonotum without gross punctures, labrum varied in coloration, antennal scape black, flagella beneath ferruginous or dark brown, length 11.0-13.5 mm. Korea, Hokkaido and Saghalien (Pl. I, Fig. 11)

***Gorytes* (s. str.) *hakutozanus* sp. nov.**



- 1 Epicnemial carina on mesopleuron extending to thorax beneath and connected with transverse carina of mesosternum, without longitudinal carina on mesopleuron, 2nd abdominal sternite transversely deeply excavated at base (in hind wing apex of anal cell ending far before base of cubital nervure) ..... Genus ***Argogorytes*** Ashmead, 1899

(The male of the two species of this genus occurring in our region has not as yet been captured. ... See Addendum, p. 20.)

- Epicnemial carina on mesopleuron turns posteriorly on lower portion, representing longitudinal carina, sometimes feeble and obsolete in middle, 2nd sternite not deeply excavated at base ..... 2
- 2 Anal cell in hind wing ending just at base of cubital nervure ..... 3
- Anal cell in hind wing ending distinctly before or beyond base of cubital nervure ..... 4
- 3 The 1st abdominal segment narrow, subpetiolate, with apex constricted, inner orbits subparallel ..... Genus ***Lestiphorus*** Lepeletier, 1832

(The male of the species known from our regions has not as yet been captured.)

- The 1st abdominal segment normal, at least not constricted at apex, face slightly convergent towards clypeus, antennal joints short, stout and modified, metapleuron distinctly impressed, clypeus with a bundle of long hairs on each side at apex, whole the body distinctly punctured — Genus ***Hoplisoides*** Gribodo, 1888

Apical margin of clypeus broadly inclined, black and shining, propodeum sparsely punctured, with area cordata longitudinally striate, ends of occipital carina dentate, mesopleural carina produced into a short tooth at antero-ventral corner, mesosternum with a short tooth on each side (head and thorax richly yellow-maculated, abdomen with 5 yellow bands, legs broadly reddish yellow), length 8.5-10.0 mm. N. China, S. Manchuria and Korea (Pl. II, Figs. 9 and 11)

***Hoplisoides distinguendus* (Yasumatsu, 1939)**

- 4 Anal cell in hind wing ending far before base of cubital nervure, inner orbits of eyes subparallel, antennae somewhat modified, thorax or abdomen partly red ..... Genus ***Dienoplus*** Fox, 1893 ..... 5

- Anal cell in hind wing reaching far beyond base of cubital nervure, inner orbits markedly convergent towards clypeus, antennae simple, body without reddish portion ..... Genus *Gorytes* (s. str.) Latreille, 1804 ..... 6

- 5 Thorax black, abdominal segments 1 and 2 red (face, clypeus and abdomen with white or whitish maculae or bands), length 5-6 mm. Japan (Honshu)

*Dienoplus tumidus japonensis* subsp. nov.

- Thorax broadly red, abdomen black (head and abdomen with white maculae or bands), length 5-6 mm. Europe, N. Africa, Turkestan, E. Mongolia, N. China, Korea (?) and Japan (?)

*Dienoplus laevis* (Latreille, 1792)

- 6 Base of 1st tergite of abdomen above with several distinct longitudinal striae between the two strong normal caniane (upper portion of metapleuron distinctly striate) ..... 7  
 - Base of 1st tergite of abdomen above without striae between the two normal carinae ... 8  
 7 Mesonotum posteriorly rather coarsely rugoso-punctate, antennal joints 3-8 (rarely 9 also) carinated (clypeus black, sometimes with small yellow maculae, labrum black, abdomen usually with 3 (sometimes 2 or 4) yellow bands), length 9-12 mm. Japan (Honshu and Hokkaido)

*Gorytes* (s. str.) *tricinctus* (Pérez, 1905)

- Mesonotum sparsely scattered with medium-sized punctures, antennal joints 3-10 carinated (clypeus and labrum yellow, thorax with yellow maculae, abdomen usually 5 (sometimes 4) yellow bands), length 8-12 mm. Korea, the Ussuri region and Hokkaido (Pl. II, Fig. 8)

*Gorytes* (s. str.) *koreanus* Handlirsch, 1888

- 8 Propodeum outside area cordata (except the regions close to the area) feebly rugose and punctate, the sculpture very indistinct on outline (mesonotum with sparse medium-sized punctures, 3rd joint of antennae 2.3-2.5 times as long as wide at apex, sometimes flagella largely yellowish red, joints 3-8 with a carina, striae on upper portion of metapleuron obsolete, at least very feeble, clypeus yellow, labrum black, face and thorax yellow-maculated, abdomen usually with 5 (sometimes 6) yellow bands, legs broadly yellow and ferruginous), length 8.5-11.0 mm. The Ussuri region (?) and Japan (Honshu and Hokkaido) (Pl. I, Fig. 9; Pl. II, Fig. 5)

*Gorytes* (s. str.) *eous* Gussakovskij, 1933 (The Japanese race)

- Propodeum more strongly and distinctly sculptured ..... 9  
 9 Antennal flagella beneath ferruginous (antennal joints 3-8 with a carina) ..... 10  
 - Antennal flagella wholly black ..... 11  
 10 Labrum yellow (upper front glossy, without ground microsculpture, and scattered with very feeble medium-sized points; flagellar joints of antennae without bright spot on posterior margin, sculpture of propodeum distinct up to the peripheral regions; clypeus yellow, thorax fairly well maculated, abdomen with 4 (constant ?) bands), length 8.5 mm. Korea

*Gorytes* (s. str.) *takeuchii* sp. nov.

- Labrum black (upper front half mat, with coriaceous microsculpture and scattered with fairly distinct medium-sized points, several middle joints of flagellum with a bright spot on each posterior margin, sculpture on propodeum weak and indistinct on peripheral regions; metapleuron with fine striae on upper portion; 2nd tergite with fine but distinct punctures sparsely scattered (clypeus yellow, thorax well maculated, abdomen with 5-6 bands), length 9.0-10.3 mm. Korea

*Gorytes* (s. str.) *eous* Gussakovskij, 1933 (The Korean race)

- 11 Mesonotum with very fine, close and uniform punctures all over, without mixing larger

punctures (antennal joints 3-8 with a carina, metapleuron with very feeble striae on upper portion, clypeus and labrum yellow, thorax immaculated, abdomen with 3-4 yellow bands), length 9.0-9.5 mm. Korea, Hokkaido and Saghalien

*Gorytes* (s. str.) *hakutozanus* sp. nov.

- Mesonotum besides the ground microsculpture with medium-sized punctures scattered ... 12  
12 Antennal joints 3-10 with a carina, metapleuron on upper portion with strong distinct striae reaching mesopleural suture, pronotum yellow, hind legs with yellow maculae (clypeus black, usually with yellow maculae, abdomen with 3-4 yellow bands), length 8.0-10.0 mm. Europe, N. Africa (?) and Korea

*Gorytes* (s. str.) *quadrifasciatus* (Fabricius, 1804)

- Antennal joints 3-6 with a carina, striae on upper portion of metapleuron usually obsolete, if distinct they do not reach mesopleural suture, pronotum black, hind legs usually black (clypeus black, abdomen usually with 4 yellow bands), length 7-8 mm. Japan (Hokkaido and Honshu) (Pl. I, Fig. 6)

*Gorytes* (s. str.) *aino* sp. nov.

## DESCRIPTIONS AND RECORDS OF EACH SPECIES

### 1. *Argogorytes mystaceus grandis* (Gussakovskij, 1933) (conj. nov.)

*Gorytes grandis* Gussakovskij, Ark. Zool., 24 A, No. 10, p. 28, 1933; — : Yasumatsu, Ins. Jap. Ill. Icon., p. 372, Pl. 166, Fig. 649 (1), 1939; Icon. Ins. Jap., Ed. II, p. 1470, Fig. 4244, 1950; — : Takeuchi, Col. Ill. Ins. Jap., II, p. 137, Pl. 61, Fig. 968, 1955.

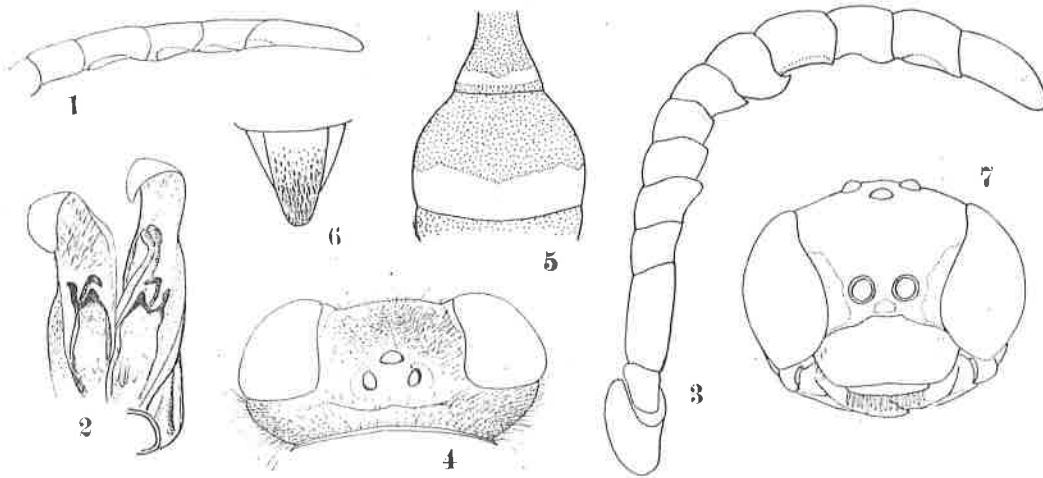
In his description the original author compared the characters of his *grandis* with those of European *mystaceus* and said "*G.* (s. str.) *mystaceus* L. similis, sed major, pedibus omnino nigris, thorace abdomineque minus flavo-variegatis, sternitoque 2° multo minus fortiter foveolato differt". From this comparison we can see that the differences concern only a matter of degree and moreover of slight degree. In my comparison of both the European and Asiatic forms I could confirm the accuracy of his description. Further, to me it seems that the pygidial area in *grandis* is relatively somewhat broader and the antennal joints also relatively somewhat longer. But such differences are also very slight. Judging from such characters of *grandis* I thought it reasonable to sink the Asiatic representative to a geographical race of the European species.

*Specimens examined*: 12 ♀♀ Honshu (Niigata Pref., Nikko, Akakura, Ikaho, Mt. Haku, Fukui Pref. — Koike and Katsuyama —, and Mt. Ohdaigahara); 1 ♀, Kyushu (Mt. Sobo); 3 ♀♀, Hokkaido (Jozankei); 1 ♀, Saghalien (Manui) and 3 ♀♀, Korea (Mt. Hakuto, Tonei and Gyokusenji). Late May to August. 1926-61.

*Distribution*: Japan (Honshu, Kyushu, Hokkaido), Korea, the Ussuri region and Saghalien.

*Remarks*. The Length of most specimens is about 14-15 mm, but some small specimens (irrespective of localities) measure about 11-12 mm. All the specimens from Saghalien, Hokkaido and Korea bear two yellow maculae on the clypeus, while those from Japan proper (Honshu) are completely immaculated on the area. Except for the pronotum the thorax-complex is always completely black (Pl. I, Fig. 1). Legs wholly black, with the tarsi dark brown. The punctures on the 2nd sternite is comparatively gross and sparse, but usually much shallower and somewhat more indistinct as compared with the European specimens.

The male of this subspecies remains still undiscovered. (See Addendum, p. 20)



**Figs. 1-7.** 1, *Dienoplus tumidus japonensis* ssp. nov., ♂, apical five joints of antenna. 2, Ibid., genitalia. 3, *Hoplisoides distinguendus* (Yasumatsu), ♂, antenna. 4, *Gorytes* (s. str.) *fulvohirtus* sp. nov., ♀, head seen from above. 5, Ibid., basal two segments of abdomen. 6, Ibid., pygidial area. 7, *Gorytes* (s. str.) *aino* sp. nov., ♀, head seen in front.

## 2. *Argogorytes nipponis* sp. nov.

This species (Pl. I, Fig. 4) is very similar in general characters to the preceding *grandis*. But it differs distinctly from it in the characters of the pygidial area. In this and other characters the present species seems more closely allied to *G. stenopyga* Hdl. known from Celebes and Luzon, but it can be distinguished therefrom at least by the sculpture on the mesopleuron and propodeum, by the form of the abdominal segments and also by maculation. Further, in the general characters including that of the pygidial area the species seems closest to the S. E. Asiatic *Gorytes tonkinensis* Yasumatsu, 1943, but differs from it in the form of the cubital cell of the forewing and in the general sculpture and punctuation.

♀. Length 12.8 mm in the holotype (10-13 mm in general). Black. Two maculae on clypeus, pronotum, a macula on postscutellum, 2 lateral spots on posterior margin of abdominal tergite 1, a narrow band on 2 and 3 yellow; tarsi somewhat brownish. In forewing radial cell and the adjacent regions fairly strongly clouded, with a small pale unclouded spot near stigma as in *grandis*. Clypeus, antennae (3rd joint 2.3 times as long as wide at apex), states of inner orbital lines and location of ocelli very similar in structure (and in sculpture) to those of *mystaceus*, but generally more stoutly built and the head is somewhat thicker seen in profile and punctures on vertex and upper front much finer. Strictly the lateral margin of clypeus somewhat different in form. In this species the median area more distinctly bordered on each side, forming an oblique carina above the true (somewhat lamellar) lateral margin which is more markedly depressed than in *mystaceus*. On the thorax-complex mainly the sculpture alone somewhat different: Punctures on mesonotum and mesopleuron finer, foveae in episternal groove coarser, posterior inclination of propodeum somewhat more flattened and more distinctly enclosed above by carinae, and the sculpture on propodeal sides before stigmatal lines more obsolete. Generally, however, the structure of the thorax more robust and relatively wider at the mesothorax. Area cordata distinctly margined by grooves, longitudinally coarsely striate, with median groove transversely costate at least on posterior half; rest of the dorsal part of the segment mainly longitudinally



coarsely, somewhat rugosely striate, posterior inclination less strongly and irregularly and sometimes rather indistinctly rugoso-reticulate, with distinct median furrow. In fore wing 2nd recurrent nervure received by 2nd cubital cell at about 4/5 from base of the cubital nervure of the cell, not interstitial to 2nd transverse cubital nervure as in *G. tonkinensis*, and 3rd cubital cell longer than wide, having the upper nervure only slightly shorter than the lower (in *tonkinensis* distinctly shorter). General structural characters of abdomen very similar to those of *mystaceus* except pygidial area, which is narrow, parallel-sided with apex rounded, its sides well carinated and medial area longitudinally bluntly raised up to before apex, with the surface smooth and polished, impressed area along margin sparsely but strongly aciculate-punctate (Pl. II, Fig. 3). Sternite 2 at base (posterior to the transverse excavation) sparsely punctured, the punctures comparatively gross, but very shallow and vague in outline.

♂. Unknown.

*Holotype*: ♀. Nikko, 22. VII. 1936, K. Tsuneki leg.

*Paratypes*: 12 ♀♀, Honshu (Nikko, Mt. Haku, Koike, Renge-spa, Tsuta-Hot Spring, Kamikochi) and Hokkaido (Jozankei, Akan, Akanuma, Hakodate), VII-VIII. 1916-61.

*Distribution*: Japan (Honshu and Hokkaido).

### 3. *Dienoplus tumidus japonensis* subsp. nov.

Genus *Dienoplus* Fox, 1893 (*Harpactus*, *Harpactes*, *Arpactus*, *Arpactes* of many authors, with some exceptions)

? *Harpactus laevis*: Iwata, Kontyu, 11, p. 404, 1937 (Biol.)

♀. This subspecies (Pl. I, Fig. 12; Pl. II, Fig. 12) differs from the nominate race in the sculpture of propodeum, especially of area cordata, in the punctuation of abdomen and somewhat in colour.

(1) Propodeum. Area cordata wholly rugoso-striate, anteriorly obliquely, posteriorly rather transversely so, between the rugae the surface more finely rugulose. Outside the distinctly enclosed area cordata the surface strongly rugoso-reticulate; posterior inclination medianly carinate, with a small impunctate polished area on both sides of the carina, upper portion of the inclination transversely arcuately rugoso-striate or rugoso-reticulate.

(2) Punctures on abdomen. Basal two segments with punctuation similar to the nominate race, the remaining segments very finely punctulate, pygidial area nearly equilateral triangle in form, sparsely punctured with medium-sized points.

(3) Antennae. First joint (scape) nearly twice as long as 3rd, the latter slightly longer than 4th and about 2.2 times as long as wide at apex.

(4) Coloration. Black with basal two segments of abdomen red. Mandibles in middle rather broadly, anterior portion of clypeus (medianly darker), labrum anteriorly, front tibiae in front and front tarsi beneath somewhat brownish white; triangular maculae along lower inner orbits and scapes in front dirty white; laterally enlarging apical band on tergite 2 and comparatively large 3 spots on 5 white, anteriorly slightly yellowish. In our specimens apical 3 joints of antennae not yellowish. Apical spot of mid femora, insides of mid and hind tibiae and tarsi of the same pairs of legs brown; a spot along top of eyes and a line along upper posterior orbits ferruginous brown. Sometimes a vague lateral spot on pronotum, on scutellum and on postscutellum dark brown.

♂. The new subspecies differs from the nominate race at least in the structure of the antennae, namely our specimens show a more marked modification in some segments than in the original race, as given in Fig. 1. But the structure of the genitalia well agrees with that

of the European specimen.

(1) Coloration. Similar to ♀, but the maculae on face and clypeus somewhat more yellowish and on clypeus much broader, only the middle of anterior margin and middle of the disc transversely fuscous. Antennal flagella beneath and the joints from 10th distally ferruginous. Pronotum, scutellum and postscutellum immaculated and legs much broadly (including femora) ferruginous. Brown maculae along top of eyes sometimes lacking and the line along upper outer orbits sometimes whitish.

(2) Morphology. Clypeus on anterior margin more broadly and more markedly emarginate than in ♀, antennal joint 10 fairly strongly obliquely excavated beneath, 11 more slightly so, joints 10-13 beneath at base gently swollen, progressively feebler in degree towards apex, terminal joint slightly bent and attenuate apically. Propodeum similar in form to ♀, medianly longitudinally distinctly grooved up to apex of the segment, the surface finely feebly obliquely rugulose. In sculpture on other parts of the segment similar to ♀. Punctures on mesonotum and basal two segments of abdomen relatively much larger than in ♀ and the tergites of the following segments also distinctly (but finely and sparsely) punctured. Genitalia : Fig. 2. Length 5.7-6.3 mm.

*Holotype* : ♀. Hossaka, Fukui Pref., 23. K. 1954, K. Tsuneki leg.

*Paratypes* : 1 ♀, *ibid.* ; 2 ♂♂, *ibid.* ; 1 ♂, the same place, 28. W. 1959. leg. K. Tsuneki.

*Distribution* : Japan (Honshu).

*Remarks.* The wasps of this subspecies are the inhabitants of the river beach, consisting mainly of fine grains of sand and scattered with grass. Dr. Iwata (1937) reported his observations on the biology of a species of the sand wasp nesting in a similar place of the river Ina, Osaka Pref., which was referred to *Harpactus laevis* Latreille (det. K. Yasumatsu). According to his comment, however, the wasp had the thorax completely black in colour. I could not examine the specimen, but the facts that no specimen of *laevis* having such a coloration has ever been known from any locality of the Palaearctic region (the specimens of N. China and E. Mongolia collected by me belonged to the typical race !) and that the colour of the thorax, the habitat and the biology of the wasp observed by him well agree with those of *tumidus* are considered to permit the presumption that the wasp belonged to the same species as the one dealt with here.

#### 4. *Dienoplus laevis* (Latreille, 1792)

*Gorytes laevis* : Yasumatsu, Mushi, 14, p. 110 (Peking and Apaka — Inner Mongolia)

The occurrence of this species in Japan is quite doubtful, as was interpreted above. But it seems probable that the species will be found from Korea in future, since it has been known from the adjacent locations.

#### 5. *Lestiphorus bilunulatus yamatonis* subsp. nov.

? *Gorytes bilunulatus* : Handlirsch, Sitz. Akad. Wiss. Wien, 97 (1), p. 453, 1888 (Korea).

? *Gorytes (Lestiphorus) bilunulatus* : Gussakovskij, Ark. Zool., 24 A, 10, p. 29, 1933 (The Ussuri region).

*Gorytes bilunulatus* : Yasumatsu, Icon. Ins. Jap., Ed. II, p. 1471, Fig. 4245, 1950 (Japan)

The present subspecies (Pl. I, Fig. 10) differs from the nominate race in the sculpture of the area cordata on the propodeum and somewhat in coloration. It also quite resembles *Gorytes (Lestiphorus) pacificus* Gussak. in the sculpture of the area cordata and in the structure of the 1st abdominal segment, but is separable therefrom by the difference in maculation of the abdomen

and in the general punctuation.

♀. Length 11.5 mm in the type (generally 11.0–12.7 mm). Black. Basal half of mandibles externally, clypeus except apical and lateral margins and 2 medio-basal maculae, lower face (elongate triangular maculae along inner orbits of eyes, supraclypeal- and interantennal areas), scapes of antennae in front, flagella beneath (apically dark yellow) except basal half of 3rd antennal joint, a large lunate macula on each side of tergite 2 and legs largely yellow (front and mid legs: apex of coxae, femora beneath and at base and on inner apical half, tibiae in front broadly, inside of metatarsi, broadly yellow; tarsi yellow but slightly ferruginous. Hind legs: Tibial spurs and tarsi beneath dark brownish).

Morphology. 3rd cubital cell of fore wing subromboidal, with upper and lower nervure subequal in length (the lower very slightly longer than the upper). Area cordata on propodeum well limited, longitudinally finely striate, the striae long, attaining about 4/5 of the area from base, apical 1/5 smooth (Pl. II, Fig. 1); rest of the segment finely and fairly closely punctured. Other characters well agree with those of the typical race.

♂. Unknown.

*Holotype*: ♀, Nikko, 9. VIII. 1955. K. Tsuneki leg.

*Paratypes*: 1 ♀, Nikko, date unknown, leg. by E. Tanaka; 1 ♀, Mt. Haku, 11. VIII. 1959. I. Togashi leg.

*Distribution*: Japan (Honshu), Korea (?), the Ussuri region (?).

#### 6. *Hoplisoides distinguendus* (Yasumatsu, 1939)

*Gorytes* (*Harpactus*) *distinguendus* Yasumatsu, Trans. Kansai Ent. Soc., 9 (2), p. 12, 1939 (♀) (Manchuria); Mushi, 14, p. 111, 1942 (♀) (Peking); Note Ent. Chin., 10 (1), p. 18, 1943 (♀, ♂) (E. China, Inner Mongolia)

This species (Pl. II, Fig. 11. ♂) is the closest relative of *Hoplisoides gazagnairei* (Handlirsch, 1893) and may be a geographical race of this species. But *distinguendus* shows the following differences at least from the descriptions of the previous authors (Handlirsch, 1893, 95, de Beaumont, 1952).

(1) Convergence of inner orbital lines rather slight, oculo-antennal distance more than as large as the diameter of antennal socket. (♀).

(2) Mesosternal transverse carina and lateral tooth on longitudinal carina of mesopleuron below, as in *gazagnairei* in ♀, but in ♂ the tooth nearly as marked as in the species compared, but the mesosternal transverse carina not reaching the tooth as in ♀.

(3) Punctures on mesonotum mediocre and sparse, the interspaces on an average 2–3 times as large as the points, posteriorly slightly closer. Punctuation on propodeum similar, but the punctures slightly larger, not rugoso-punctate nor subreticulate, the sides of the segment before stigmal line also sparsely punctured.

(4) In ♂ 6th ventral plate of abdomen normal, not convex nor tuberculate.

(5) Clypeus anteriorly in middle not particularly produced, though very similar in structure (♂) (Pl. II, Fig. 9)

(6) Antennal flagella in ♂ similar in structural pattern, but the modification is much stronger (Fig. 3). (The figure given by the original author in 1943 seems to be based on a specimen less marked in modification than in those from Peking and Korea)

Coloration: (♀). Clypeus and labrum always black, a short line along inner and outer orbits of eyes at the symmetrical position yellowish, abdomen with 4 yellow bands. (♂) Clypeus and labrum yellow, except the anterior inclined polished region of clypeus, maculae along

inner orbits of eyes alone present, abdomen with 5 yellow bands. (♀ ♂) Base of mandibles externally, a band on pronotum, scutellum, a patch on mesopleuron behind humeral angles yellow, humeral angles always black. Legs reddish yellow, with coxae, trochanters and base of femora black. Fore wing with the area including radial, 2nd and 3rd cubital cells strongly clouded. Length 8.2-9.5 mm. (♂ ♀).

*Specimen* : 1 ♂, Korea (Shoyozan), 10. IX. 1943, K. Tsuneki leg. (Other specimens examined : 8 ♀♀ 2 ♂♂, North China — Peking —, VI, VII, IX. 1938, K. Tsuneki leg.)

*Distribution* : East China, Korea, Manchuria and Inner Mongolia.

*Remarks*. In the male specimen from Korea the tibiae and tarsi of legs are less reddish (rather more yellowish) than those in the specimens captured in Peking.

#### 7. *Gorytes* (s. str.) *fulvohirtus* sp. nov.

Genus *Gorytes* Latreille, 1804 (*Hoplissus* of most authors)

This species is characterized by the less convergent face, slender and long antennae, very obsolete longitudinal carina on mesopleuron, enlarged 2nd abdominal segment and markedly hairy body. It is also conspicuous among the Japanese and Korean representatives by its coloration.

♀. Length 11.0 mm. Black, closely covered with long pubescence. Pubescence on dorsal side of body generally fulvous and on abdominal segments 3-5 ferruginous to dark brown. Mandibles except apices, labrum, clypeus except vaguely outlined transverse brownish macula at base in middle, a line along middle of inner orbits (enlarged upwards), supraclypeal and antenno-clypeal areas, two fused maculae above the antennal sockets, a short line along outer orbits near the top of eyes, pronotum, humeral angles (anteriorly brownish), a spot at the short transverse keel on the lateral membranous margins of mesonotum, posterior half of scutellum, a medianly attenuate apical band on abdominal tergite 1, a broad apical band occupying about 2/5 of the segment on 2, orange yellow, slightly brownish on each marginal region. Antennae ferruginous, above slightly darker. Legs also ferruginous; coxae except apex, front and mid femora broadly on the posterior side, hind femora except apex, outer margin of all tibiae and tarsi more or less, dark brown, glossy. Apex of abdominal tergites 4, 5 and whole caudal segment somewhat reddish ferruginous brown, also glossy. Tegulae and lateral margins of mesonotum ferruginous. Wings slightly fulvo-hyaline; radial cell, 1st cubital cell except anterior region, 2nd wholly, inner and anterior region of 3rd and the region along apical part of medial nervure narrowly, clouded. Stigma ferruginous yellow and veins pale fulvous brown.

Head from above: Fig. 4. Ocellar region encircled by a distinct groove along the posterior and lateral margins, in front of median ocellus the surface broadly excavated, leaving a narrow carinate passage between this and each of postocelli. OOD nearly equal to POD. Upper front on each side of median excavation fairly markedly raised. Head seen in front: Pl. II, Fig. 6, supraantennal median carina attaining 2/5 from base of antennae towards front ocellus, remaining 3/5 represented by a distinct furrow running from the middle of the excavation in front of median ocellus, antenno-ocular distance slightly less than as great as diameter of antennal socket. Antennae long, filiform, very slightly thicker towards apex. The 3rd joint subequal in length to the 1st (scape) and 2nd combined, and slightly more than 5 times as long as wide at apex, the 4th about 3/5 as long as 3rd and nearly 3 times as long as wide at apex. On mesonotum 4 anterior scutal grooves distinct, median two reaching 2/3 of the segment, lateral margins membranous, with the posterior carina distinct and with the rounded end, not produced posteriorly, the furrows between mesonotum and scutellum and scutellum and postscutellum

strongly foveolate. Area cordata on propodeum (Pl. II, Fig. 2) nearly semicircular in form, apically in middle angulate, the surface slightly raised above the level of surrounding areas and well margined by the groove, the median furrow fine, fairly deep, extending through the posterior inclination to apex of the segment. Abdomen: Fig. 5. Pygidial area: Fig. 6. Legs normal, front tarsi strongly spinose, hind tibiae with sparse spines on outer margin.

Vertex glossy, nearly impunctate, upper front very minutely and closely punctured, mixed with somewhat larger scattered punctures, ocellar region with several comparatively gross punctures and numerous minute ones; lower front including inner orbital areas, supra- and antenno-clypeal areas practically impunctate and smooth. Clypeus with anterior half smooth and glossy, on posterior half punctured as on ocellar region and with sparse long hairs. Mesonotum fairly closely covered with fine hair-punctures, mixing a few somewhat gross ones, intervals between the latter much larger than points. Punctures on scutellum slightly larger and sparser, surface glossy; area cordata longitudinally closely and regularly striate, rest of the segment including the sides sparsely and weakly punctured, punctures shallow and indistinct on outline, with intervals on the average larger than points, the area before stigmatal line impunctate. Abdominal tergite covered with fine hair-punctures, the punctures on tergite 1 slightly larger and sparse, on 2 posteriorly very sparse, nearly impunctate, on 3-5 much closer. Pygidial area coarsely and closely aciculate-punctured, on medio-basal area punctures sparse, without hairs on all over. Sternite 2 covered sparsely with comparatively large and shallow punctures; 3, 4 and 5 with distinct, close, medium-sized ones on posterior portion, 6 wholly covered with strong punctures except median elongate triangular area which is impunctate and polished.

♂. Unknown.

*Holotype*. ♀, Koike, Fukui Pref., 11. VII. 1959. K. Tsuneki leg.

*Paratype*: 1 ♀, Keijo (Korea), 25. VII. 1943, S. Yamada leg. (Both in the coll. Tsuneki)

*Distribution*: Japan and Korea.

*Remarks*. In the Korean specimen the antennae and the legs are more broadly fulvous, the yellow bands on the abdomen are more brownish. Besides the maculae above described, the lateral areas of mesonotum close to the membranous margins bear respectively an elongate brown patch.

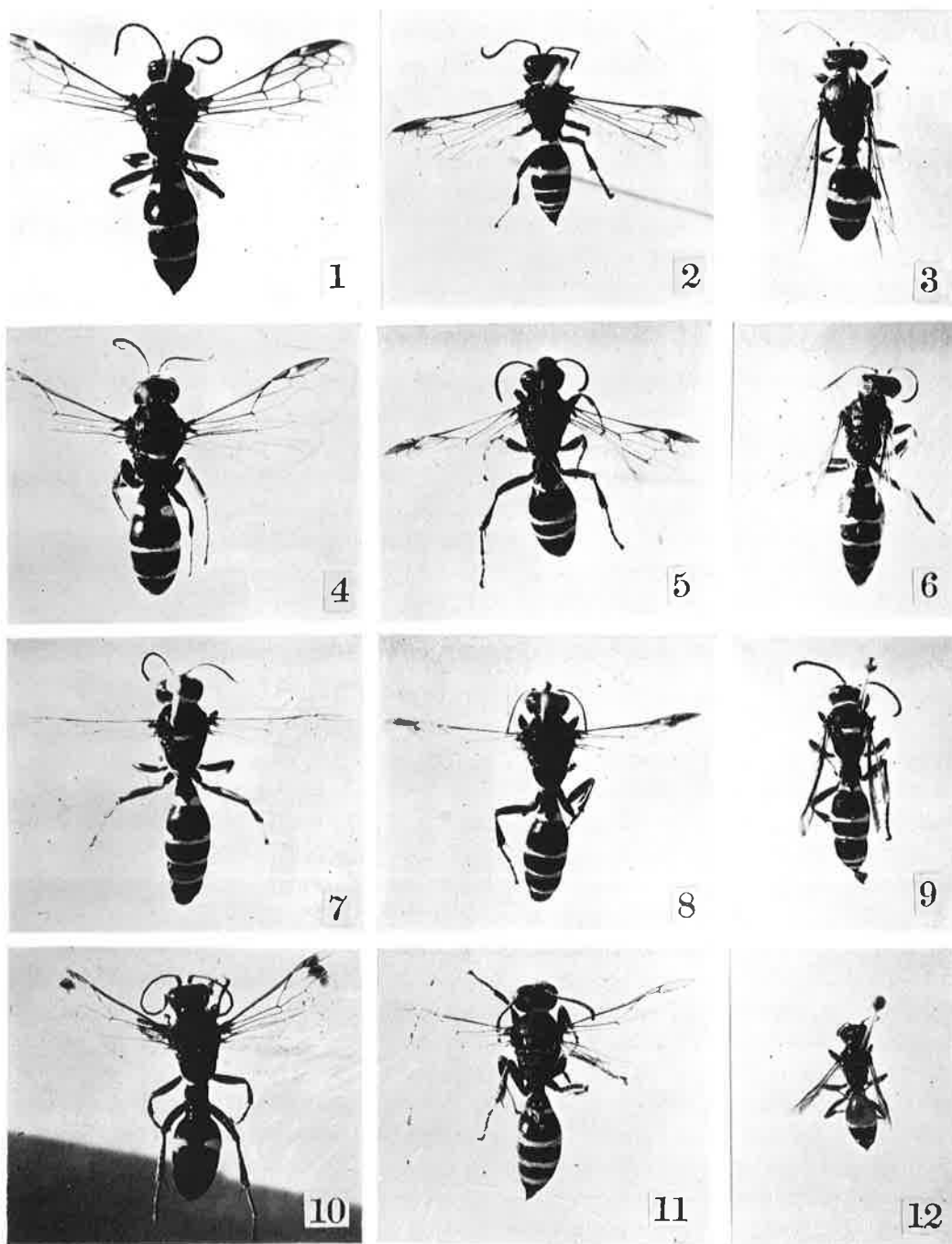
#### 8. *Gorytes* (s. str.) *tricinctus* (Pérez, 1905)

*Hoplisis tricinctus* Pérez, Bull. Mus. Paris, 11, p. 157, 1905 (♀)

Coloration: ♀. Black. Clypeus except narrow apical margin, labrum, a broad line along lower inner orbits of eyes, antennae beneath (apically slightly ferruginous), a medianly broadly

#### Explanation of Plate I

- Fig. 1. *Argogorytes mystaceus grandis* (Gussakovskij), ♀. Venation of right fore wing abnormal, with four cubital cells.
- Fig. 2. *Gorytes* (s. str.) *koreanus* Handlirsch, ♀.
- Fig. 3. *Gorytes* (s. str.) *tricinctus* (Pérez), ♀.
- Fig. 4. *Argogorytes nipponis* sp. nov., ♀.
- Fig. 5. *Gorytes* (s. str.) *aino* sp. nov., ♀.
- Fig. 6. *Ibid.*, ♂.
- Fig. 7. *Gorytes* (s. str.) *eous* (Gussakovskij), ♀.
- Fig. 8. *Gorytes* (s. str.) *radoszkowskyi* Handlirsch, ♀.
- Fig. 9. *Gorytes* (s. str.) *eous* (Gussakovskij), ♂.
- Fig. 10. *Lestiphorus bilunulatus yamatonis* ssp. nov., ♀.
- Fig. 11. *Gorytes* (s. str.) *hakutozanus* sp. nov., ♀.
- Fig. 12. *Dienoplus tumidus japonensis* ssp. nov., ♀.



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interrupted line in front of apical margin of tergite 1 (sometime completely lacking), a narrow marginal band on 2 and 3, inside of front and mid femora towards apex, tibiae and tarsi beneath of front and mid legs, yellow. Tibial spurs, tarsi above of anterior four legs and hind tarsi more or less brownish. Radial cell of fore wing clouded (Pl. I, Fig. 3).

♂. Clypeus usually black, rarely with irregular-shaped small maculae, inner orbital yellow lines usually lacking, sometimes remain vestigially; labrum black, thorax and propodeum black as in ♀. Yellow bands on abdomen usually on tergites 2 and 3, but rarely further on 1 (then broadly interrupted in middle) and 4. Antennal scape in front yellow, flagella beneath black, sometimes a brown spot on the underside of apical 5-6 segments. Legs nearly as in ♀.

Morphology : Antennal joint 3 nearly 4 times as long as wide at apex in ♀, nearly 2.5 times in ♂. Mesonotum rather coarsely but shallowly punctate, punctures mostly longitudinally confluent and subrugose (♀♂), mesopleuron on upper portion distinctly strongly striate (♀♂), area cordata coarsely regularly somewhat divergently striate, rest of the segment except the area before stigmal line strongly coarsely rugose or irregularly reticulate. Pygidial area sometimes sparsely, sometimes fairly closely aciculate-punctate with the medium-sized punctures, in the extreme case weakly rugoso-punctate.

*Specimens examined* : 19 ♀♀ 25 ♂♂, Honshu (Mt. Haku, Ichinose, Iwama, Koike, Renge-Spa and Nikko); 2 ♀♀, Hokkaido (Sounkyo and Ohnuma); VII. VIII. 1936-61.

*Distribution* : Japan (Hokkaido and Honshu)

*Remarks.* *G. tricinctus* Yano (nec. Pérez) is in reality *G. cous* Gussakovskij, and *G. tricinctus* Yasumatsu (nec Pérez) is also considered to be this species, since in *tricinctus* scutellum is always immaculated. (See p. 16.)

#### 9. *Gorytes* (s. str.) *koreanus* Handlirsch, 1888

*Gorytes Koreanus* Handlirsch, Sitz. k. Akad. Wiss. Wien, 97 (1), p. 471, 1888 (♀). (Korea) (*Gorytes* s. latr.)

*Gorytes koreanus* : Gussakovskij, Ark. Zool., 24 A, 10, p. 31, 1933 (♀♂). (The Ussuri region).

In colour, structure and punctuation the examples dealt with here well agree with the descriptions of previous authors (♀, Handlirsch; ♂, Gussakovskij), except the sculpture on the posterior inclination of the propodeum. However, this is probably due to that the original description was based upon a single specimen, since the specimens before me show a certain degree of variation in this respect.

Handlirsch described (♀) : "... der kleine, sehr schräg gestellte abschüssige Theil (des Mittelsegmentes) ist ähnlich wie bei *planifrons* durch eine deutliche, bogenförmige Leiste nach oben begrenzt, ...". Such arcuate carina is, however, usually lacking in my specimens (♀), but in some ones it is certainly observable and the degree of strength is varied. Therefore the specimen used by the original author might be the one of such variation. In ♂ the carina is usually well-defined.

Sculpture on propodeum outside area cordata (♀) is mainly longitudinally rugoso-striate, sometimes fairly finely and closely, sometimes fairly coarsely so; usually the rugae turn into coarse reticulation on posterior and lateral regions and sometimes one of the rugae forms the arcuate ridge. Metapleural striae in ♀ very distinct, but less coarse than in ♂.

Coloration : The original descriptions of both sexes dealt with the specimens 4-banded on abdomen. In my specimens 5-banded ones are rather usual in both sexes,

♀. Black. Most usual pattern of maculation on face : Pl. II, Fig. 7; a line on pronotum, very rarely a short narrow line on scutellum, a large macula on mesopleuron behind humeral

angle, 5 (rarely 4) bands on abdomen, sometimes 2 spots on pygidial area, a band on sternite 2 (sometimes even on 3 and rarely further on 4-5), a spot on front and mid coxae, inside of all femora more or less (in hind ones apex only), inside of all tibiae, all tarsi (apically brownish), yellow. Antennal flagella beneath yellow, apically ferruginous.

♂. Head in front with maculation (Pl. I, Fig. 8) similar to ♀, but the 2 supraantennal spots lacking, sometimes also supraclypeal area black, orbital maculae finer, labrum on peripheral regions sometimes brown or brownish black. Maculae on thorax and bands on abdomen similar to those of ♀. On legs maculae on femora smaller.

*Specimens examined*: 26 ♀♀ 16 ♂♂, Hokkaido (Jozankei, Oboro and Sounkyo), VII-VIII. 1944, 52, 58. K. Tsuneki leg.

*Distribution*: The Ussuri region, Korea and Hokkaido.

#### 10. *Gorytes* (s. str.) *eous* Gussakovskij, 1933

*Gorytes* (*Hoplisus*) *eous* Gussakovskij, Ark. Zool., 24 A, 10, p. 30, 1933 (Ussuri); —: Yasumatsu, Mushi, 14, p. 110, 1942 (Inner Mongolia).

*Gorytes tricinctus*: Yano (nec Pérez), Icon. Ins. Jap., Ed. I, p. 280, Fig. 543, 1932; Ibid., Ed. II, p. 1470, Fig. 4243, 1950.

? *Gorytes tricinctus*: Yasumatsu (nec Pérez), Ins. Jap. Ill. Icon., p. 372, Pl. 166, Fig. 649 (2), 1939.

In his original description the author said "*G. quinqueinto* Fb. similis, sed flagello in ♀ omnino testaceo, in ♂ maxime parte testaceo, segmentoque mediano subtilius rugoso differt." In the specimens dealt with here, however, the colour of the antennal flagella is considerably varied in both sexes. In the Japanese specimens it fluctuates in ♀ from "wholly reddish ferruginous except basal 2-3 joints above narrowly" to "beneath fulvous yellow and above wholly black" and in ♂ from "wholly testaceous except basal 4-5 joints above" to "wholly black with a dark testaceous spot on joints beneath of apical half". In ♀ broadly testaceous flagella are common but in ♂ the blackish ones are by far the most usual. Sculpture on propodeum other than area cordata is more distinctive, though it is also somewhat varied with the individual. Usually the portions extremely close to the area cordata are weakly obliquely striate, rest of the segment sparsely scattered with comparatively gross, shallow punctures which are very indistinct in outline and mixed posteriorly with some feeble indistinct rugae.

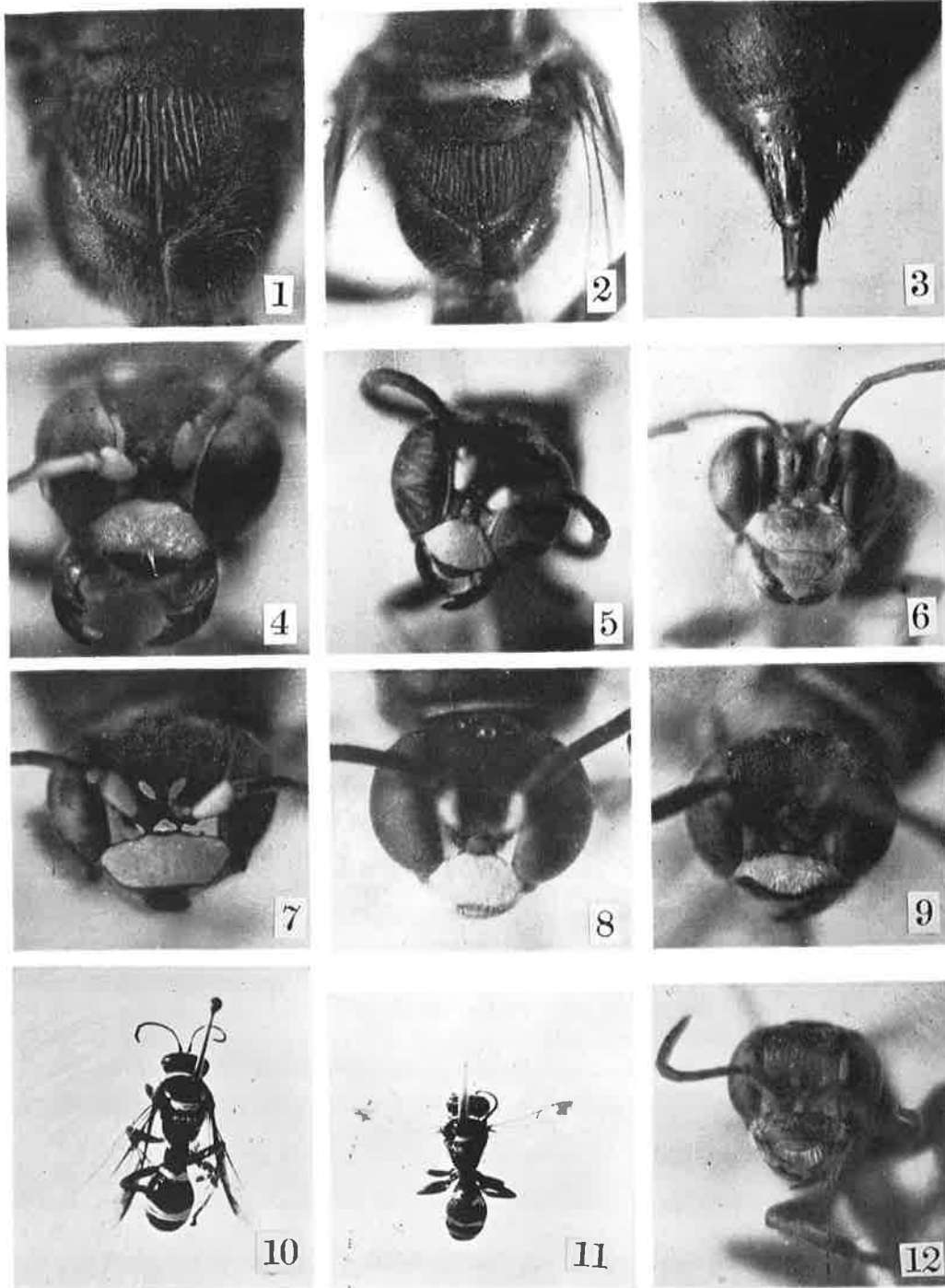
In ♀ 3rd antennal joint seen from beneath nearly 3.5 times as long as wide at apex, while in ♂ nearly twice as long as wide. Striae on upper portion of metapleuron usually incomplete in both sexes, feeble and quite obsolete.

On head, supraclypeal area always black; palpi, scape in front and inner orbital maculae yellow (♀♂); on thorax a line on pronotum and a band on scutellum (sometimes 2 spots

#### Explanation of Plate II

- Fig. 1. *Lestiphorus bilunulatus yamatonis* ssp. nov., ♀, area cordata.
- Fig. 2. *Gorytes* (s. str.) *fulvohirtus* sp. nov., ♀, area cordata.
- Fig. 3. *Argogorytes nipponis* sp. nov., ♀, pygidial area.
- Fig. 4. *Gorytes* (s. str.) *eous* (Gussakovskij), ♀, head seen in front.
- Fig. 5. Ibid., ♂, ibid.
- Fig. 6. *Gorytes* (s. str.) *fulvohirtus* sp. nov., ♀, head seen in front.
- Fig. 7. *Gorytes* (s. str.) *koreanus* (Handlirsch), ♀, head seen in front.
- Fig. 8. Ibid., ♂, ibid.
- Fig. 9. *Hoplisoides distinguendus* (Yasumatsu), ♂, head seen in front.
- Fig. 10. *Gorytes* (s. str.) *fulvohirtus* sp. nov., ♀.
- Fig. 11. *Hoplisoides distinguendus* (Yasumatsu), ♂.
- Fig. 12. *Dienoplus tumidus japonensis* ssp. nov., ♀, head seen in front.





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in ♂ always yellow (♀♂), in ♀ further humeral angles and a spot behind it on mesopleuron also yellow, in ♂ sometimes both the maculae present, sometimes mesopleural marking absent and rarely both completely absent. Legs usually more brightly maculated in ♀ than in ♂. (Pl. I, Figs. 7 and 9; Pl. II, Figs. 4 and 5)

*Specimens examined* : 18♀♀ 77 ♂♂, Honshu (Mt. Asahi, Mt. Haku, Ichinose, Iwama, Koike, Hatogayu, Nikko and Kazuwa); 1 ♀, Hokkaido (Sapporo); 1 ♀ 2 ♂♂, Korea (Kussho, Nanyo and Mozanrei).

*Distribution* : The Ussuri region, Inner Mongolia, Korea and Japan (Honshu and Hokkaido).

*Remarks*. The specimens from Korea considerably different in sculptural character from the Japanese specimens :

(1) Sculpture on propodeum slightly more distinct, especially in ♂ this is markedly so and it becomes difficult to separate them from some other species by this character alone.

(2) Striae on upper portion of metapleuron is also more distinct in both sexes (especially in ♂).

(3) Scattered fine punctures on 2nd tergite of abdomen more distinct.

Upon these difference the Korean specimens are considered to represent the other geographical race. Judging from the original description only it is uncertain to which of the two races the Ussuri specimens belong, or it may represent another race.

#### 11. *Gorytes* (s. str.) *quadrifasciatus* (Fabricius, 1804)

*Mellinus quadrifasciatus* Fabricius, Syst. Piezat. 298, 5, 1804 (♂).

*Gorytes quadrifasciatus* : Handlirsch, Sitz. Akad. Wiss. Wien, 97, S. 497, 1888.

*Gorytes* (s. str.) *quadrifasciatus* : Beaumont, Mitt. Schweiz. Ent. Ges., 26 (3), p. 171, 1953.

*Specimens examined* : 1 ♀, N. Korea (Kussho), 22. VII. 1943, K. Tsuneki leg.; 4 ♂♂, N. Korea (Nansetsu-rei), 19. VII. 1943, K. Tsuneki leg.

*Distribution* : Europe, N. Africa and Korea.

*Remarks*. The specimens from Korea generally well agree with the descriptions of the previous authors (as to the colour of the clypeus they rather better accord with the description of de Beaumont). From the specimens from Europe (det. by P. M. F. Verhoeff), they show slight differences in colour (see below) and in the venation of fore wing. The 2nd transverse cubital nervure in the above specimens runs straight. But other characters including the relative length of the antennal joints well agree with each other in both representatives.

Colour of the head : ♀. Clypeus black with a small maculae on upper lateral extremities, face entirely black (constant?). ♂. Clypeus usually with two yellow maculae varied in size, sometimes completely lacking; orbital striae fine, short, sometimes turn into small spots. Maculae on thorax : ♂. In many specimens scutellum always black, pronotal band sometimes very short, mesopleural macula behind the humeral angle always present.

#### 12. *Gorytes* (s. str.) *radoszkowskyi* Handlirsch, 1888

*Gorytes Radoszkowskyi* Handlirsch Sitz.-ber. k. Akad. Wiss. Wien, Math.-Naturw., Cl. Bd. 97, 1, p. 470, 1888.

Very similar to *G.* (s. str.) *quadrifasciatus* Fabr. I can not find any other essential differences than the following as was pointed out in the original description :

(1) Body larger (13.5 and 12.0 mm). (2) Antennae longer, the 3rd joint amply 4 times and 5th 3 times as long as broad at each apex (4.2- and 3.1-times respectively in the measure-

ment). (3) Metapleural striae finer, closer and feebler. (4) Wings with, besides radial cell, 2nd cubital cell and upper half of the 3rd clouded (in *4-fasciatus* radial cell only clouded). (5) Hind legs without yellow maculae (apex of femora, basal portion of tibiae externally ferruginous, tarsi dark brown). (6) Sculpture on propodeum other than area cordata mainly rugoso-striate (in *4-fasciatus* mainly rugoso-reticulate).

Coloration: ♀. A transverse band occupying upper half of clypeus with four small incisions from above, two oblique spots at above base of antennae, a spot beneath scape, a very short line in middle of pronotum, a large patch on mesopleuron behind humeral angle, 4 medianly attenuate bands on abdominal tergites (that on 2nd extending to ventral plate), apex of front femora, tibiae in front of front and mid legs, yellow. Tarsi of anterior 4 legs ferruginous yellow; antennal joints beneath, inner apical portion of mid and hind femora ferruginous to dark brown, hind tibiae and tarsi somewhat brownish.

*Specimens*: 1 ♀, N. Korea (Daihyori), 25. III. 1942, K. Tsuneki leg.; 1 ♀, M. Korea (Shoyozan), 2. III. 1943, K. Tsuneki leg.

*Distribution*: Korea.

*Remarks*. In one of the specimens the clypeus is black with two small yellow spots on the upper lateral corners and the pronotum is completely black. The male of this species remains still unknown.

### 13. *Gorytes* (s. str.) *aino* sp. nov.

In many respects this species (Pl. I, Figs. 5 and 6) somewhat resembles *G. 4-fasciatus* F., but is much larger in size, having the inner orbits much more strikingly divergent upwards (face much wider accordingly), the oculo-antennal distance slightly smaller (but much larger than in *5-fasciatus*), the antennae thicker and more robust and the different maculation on head and thorax.

♀. Length 9.5–13.0 mm. Black with the following portions yellow: Clypeus except anterior margin, labrum, palpi except base, supraclypeal area, broad inner orbital lines, scape in front widely, flagella beneath, a band at each apex of basal 3 tergites of abdomen (on 1st interrupted in middle), a spot at apex of femora, tibiae in front and tarsi (except hind pair) in front of all legs yellow. Wings slightly fuscous, stigma dark brown and radial cell markedly clouded; 1st and 2nd cubital cells and areas close to veins of anterior portion also somewhat clouded. Pubescence short, sparse and greyish white.

Head seen in front: Fig. 7, interorbital distance at vertex and at clypeus relatively 50 and 32 (in *4-fasciatus* 45 and 35 under the same scale), an impressed line running from median ocellus forwards sometimes indistinctly defined, oculo-antennal distance slightly smaller than the diameter of antennal socket (ratio about 2/3), clypeus seen in profile roundly raised towards apex. Antennal joint 3 seen from above 3.7 times (in the widest view 3.2 times) as long as wide at apex, joints 10 and 11 nearly as long as wide (in *4-fasciatus* F. longer than wide). On mesonotum anterior 4 scutal furrows comparatively deep and well defined. On propodeum area cordata equilateral triangle in form, widest at base and distinctly margined by fine carinae, in length it is nearly as large as posterior inclination which is flattened but not bordered above by carinae. Abdomen normal, pygidial area triangular with apex narrowly rounded and with lateral carinae straight.

Vertex and upper front very finely and closely punctured and mixed with slightly larger points sparsely scattered. The surface fairly glossy in contrast to the opaque state in *4-fasciatus*. Supraclypeal area impunctate and glossy, clypeus similarly sculptured as on upper front, but

the mixed punctures sparser and slightly larger and characterized further by a few gross punctures arranged behind the anterior margin. Mesonotum half-mat, with very fine close and feeble punctures, posteriorly the surface not strongly subrugoso-punctate with medium-sized confluent punctures. Scutellum and postscutellum coarsely foveolate on anterior margin, the former with weak thick striae on posterior half and the latter with coarse, more distinct ones on posterior 2/3. Area cordata coarsely longitudinally, slightly divergently striate, the striae straight and regular, median furrow crenate, rest of the segment up to the stigmal furrows strongly coarsely reticulate (on the sides posteriorly transversely striate). Abdomen impunctate, pygidial area sparsely grossly aciculate-punctate, sternites 4 and 5 with sparse fine points on posterior portion, hypopygium with scattered medium-sized aciculate punctures.

♂. Length 8.3–9.2 mm. Body covered with short whitish pubescence, especially well defined on clypeus. Black. Clypeus variedly maculated yellow, sometimes on basal 1/2 or 1/3, sometimes as 2 spots, large or small; inner orbital lines, rarely a spot on supraclypeal area and a spot on antennal scape yellow; thorax immaculated, bands on abdomen and maculae on legs as in ♀.

Head seen in front, with antenno-ocular distance half as great as diameter of antennal socket, antennal joint 3 seen from above 2.3 times as long as broad at apex, joint 12 about 1.7 times as long as wide, carinae distinctly defined on joints 3–6, on joint 4 lenticular. Sculpture generally similar to that of ♀, but on vertex almost lacking the mixed medium-sized punctures, on postscutellum the longitudinal striae strong and extended over whole the length of the area, and striae on area cordata sometimes feebly rugose.

*Holotype*: ♀, Hokkaido (Jozankei), 5. VIII. 1945. K. Tsuneki leg.

*Paratypes*: 5 ♀♀, Hokkaido (Jozankei, 17. VII. 1946; Sounkyo, 7. VIII. 1944 and 16. VIII. 1945. K. Tsuneki leg.); 5 ♀♀, Honshu (4 ♀♀, Nikko, 22. VIII. 1954, E. Tanaka leg.; 1 ♀, Aomori Pref. — Aoni —, 7. VII. 1951, R. Narumi leg.); 8 ♂♂, Hokkaido (Jozankei, 26. VI. 2. VII. 1951. K. Tsuneki leg.); 1 ♂, Honshu (Nikko, date unknown. E. Tanaka leg.).

*Distribution*: Japan (Hokkaido and northern regions of Honshu).

#### 14. *Gorytes* (s. str.) *hakutozanus* sp. nov.

Closely allied to *G. aino* m., differing chiefly in the sculpture of the head and thorax and somewhat in maculation, in ♂ further difference is observed in the state of the antennal carina. In the key by de Beaumont (1953) the male of this species runs straight to *G. schlettereri* Hdl. But it can be distinguished from this species at least by the different punctuation on the head and mesonotum. While the female goes close to *laticinctus* Lep., but it is distinctly different from this in the punctuation and sculpture of body, especially of the pygidial area.

♀. Length 12.5–13.0 mm. Black. Clypeus (with varying extents of blackish area on anterior portion), labrum (sometimes black on peripheral regions and sometimes completely black), inner orbital narrow maculae, a band on each of basal 4 tergites of abdomen (on 1st medianly broadly interrupted), yellow. Front tibiae in front brownish yellow; scape beneath at apex, flagella beneath, tegulae, a streak on mid tibiae, tarsi largely of front and mid legs ferruginous; palpi yellowish or ferruginous or dark brown; wings apically slightly fuscous, stigma ferruginous, radial cell distinctly darkened.

Head seen in front with inner orbits of eyes fairly markedly divergent upwards, ratio of interocular distances at vertex and at base of clypeus 50 : 31, oculo-antennal distance slightly less than as great as antennal socket (ratio 6 : 8), clypeus seen in profile roundly raised towards apex, antennae stout as in *aino*, 3rd joint seen from above (narrowest view) 3.3 times,

seen from side (broadest view) 2.8 times as long as broad at apex, penultimate joint slightly longer than wide. On mesonotum anterior scutal grooves fine and weak, furrows at anterior and posterior margins of scutellum foveolate, area cordata on propodeum equilateral triangle, margined laterally with very fine carina only, not accompanied with the groove and not raised above the surrounding areas, posterior inclination flattened, but not bordered above by carinae. Pygidial area elongate triangular, rounded at apex, with the apical width larger than in *aino*. Hind tibiae with sparse spines in 2 rows.

Vertex, upper front and mesonotum uniformly, minutely and very densely punctured, with the surface opaque; clypeus finely closely punctured, with gross punctures scattered on anterior portion, each carrying a long hair. Postscutellum on posterior margin crenate; area cordata longitudinally regularly striate with median furrow costate, the striae usually fine and close, but sometimes fairly coarse. Usually they extend to the outside of area cordata, only being cut by the fine marginal carina of the area. Main trend of sculpture on propodeum is striate, partly rugoso-striate and only near the sides of posterior inclination rugoso-reticulate, the area anterior to the stigmal groove impunctate and polished. Metapleuron practically without striae. Abdominal tergites impunctate. Area pygidialis with aciculate gross punctures mainly on the marginal regions.

♂. Length 11.0 mm. Black. Clypeus except anterior marginal line, labrum, a spot on mandibles at base, a spot on supraclypeal area, inner orbits, a band on each of basal 3 tergites (on 1st widely interrupted in middle), yellow; legs maculated as in ♀.

Head seen in front with ratio of interocular distances at vertex and at base of clypeus 40 : 24 (under the same scale as used in ♀), oculo-antennal distance slightly less than as great as diameter of antennal socket (ratio 5 : 6). Antennal joint 3 in the narrowest view 2.7 times as long as broad at apex, in the widest view nearly twice as long as broad, penultimate joint about 1.5 times as long as broad; carinae defined on joints 3-8, on 8 short, only on basal half. Sculpture on head and mesonotum as in ♀, area cordata with lateral carinae slightly arcuate, striae coarser than in ♀, rest of the segment more coarsely and in the broader extent rugose or rugoso-reticulate, but the general feature similar to that of ♀, especially as to the fine carina enclosing the area cordata.

*Holotype*: ♀, N. Korea (Nansetsu-rei), 24. VII. 1943. K. Tsuneki leg.

*Paratypes*: 7 ♀♀, N. Korea (Mt. Hakuto, 4. VIII. 1942; Nansetsu-rei, 19-24. VII. 1943; Daitaku, 21. VII. 1943. K. Tsuneki leg.); 1 ♀, Hokkaido (Sounkyo, 3. VII. 1951. K. Tsuneki leg.); 1 ♀, Saghalien (Takinosawa, 8. VII. 1930. K. Takeuchi leg.); 1 ♂, M. Korea (Shoyozan, 14. V. 1942. K. Tsuneki leg.); 1 ♂, Hokkaido (Sounkyo, 20. VI. 1946. K. Tsuneki leg.)

*Distribution*: Korea, Hokkaido and Saghalien.

# 15. *Gorytes* (s. str.) *takeuchii* sp. nov.

This species is very similar to *G.* (s. str.) *5-cinctus* Fabr., but differs from it mainly in the following points:

(1) Antennal joints relatively longer. (2) In the bipunctuation on the front the gross punctures very much shallower and indistinct, and the surface more glossy. (3) Labrum completely yellow. (4) Crenation on postscutellum strong and distinct.

♂. Length 8.5 mm. Black. Clypeus (with pale brown membraneous fringe of anterior margin), labrum, palpi, basal half of mandibles externally, supraclypeal area wholly which on the sides extends upwards along inner orbits of eyes up to about 3/5 of its length, scapes of

antennae in front, pronotum, humeral angles, a spot behind them on mesopleurons, a band on scutellum, a narrow band on tergites 1-4\*, apex of femora, tibiae in front of all legs, and front and mid tarsi, orange yellow. Antennal flagella beneath and wing veins ferruginous; hind tarsi dark brown. Wings slightly clouded throughout with radial cell markedly darker and stigma yellowish.

General morphology is similar to that of *G. quinquecinctus*. Antennal joint 3 in the narrowest view 2.5 times (in the broadest view 2.2 times) as long as wide at apex, penultimate joint 1.5 times (in *5-cinctus* about 1.2 times) as long as broad, joints 3-8 with a carina (in *5-cinctus* carina on joints 3-9 or 10). Metapleural striae practically absent, only a few short extensions of costae of the metapleural furrow defined on upper portion. The form and the sculpture of area cordata and rest of the segment as in the compared species.

♀. Unknown.

*Holotype*: ♂, N. Korea (Kazan), 5. VI. 1936, K. Takeuchi leg. (Coll. Takeuchi Ent. Lab., Kyoto)

*Distribution*: Korea.

*Remarks*. This species may be a subspecies of *G. cinquecinctus* F., but was placed at the specific rank basing chiefly upon the characters of the antennae.

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\* Because of putrefaction before mounting the abdominal bands are quite indistinct, those on tergites 3 and 4 are only hardly visible and that on 5 becomes completely invisible.

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### Addendum

During the proof reading I could examine four specimens of *Argogorytes mystaceus grandis* (Guss.) collected in Kyushu, of which one was a male. It allowed me to add the following descriptions :

*Argogorytes mystaceus grandis* (Gussakovskij), ♂

Length 12.3 mm. Similar to ♀, but head and thorax closely covered with long grayish white pubescence, the pubescence on lower front and clypeus slightly thicker and with silvery lustre; apical three tergites with close ferruginous golden somewhat stiff hairs, hairs on sternites longer, somewhat thicker, sparser and grayish white. Clypeus with two yellow spots, front and mid tibiae externally, hind tibiae at base externally and basal 2/3 of mid metatarsi yellow; maculae on pronotum and abdomen as in ♀. Antennal joints 3-13 subequal in length, 3 about 2.5 times as long as wide at apex, apical 4-5 joints slightly bent, no carina on any joint, ultimate joint subtruncate at apex; without medio-apical impression on scutellum; 2nd sternite with the basal excavation acuter, punctures coarser, more distinct and more broadly (up to near apical margin) scattered; 7th tergite with small pygidial area.

All the characters above described quite parallel and close to the sexual differences in the nominate race.

The following will be of use in separating this from *nipponis* (♂) :

- 1' Vertex finely fairly closely punctured, area cordata enclosed by very fine impressed broken line (broken by carinae), posterior inclination not bordered above by a curved carina ..... *A. mystaceus grandis* Gussakovskij)
- Vertex almost impunctate, area cordata enclosed by broader broken furrow, posterior inclination bordered above by a curved carina. .... *A. nipponis* Tsuneki