

# *Etizenia*

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THE GENUS *TACHYTES* PANZER OF JAPAN AND KOREA  
(HYMENOPTERA, SPIECIDAE)  
BY K. TSUNEKI

MARCH 30, 1964

**THE GENUS *TACHYTES* PANZER OF JAPAN AND KOREA**  
(HYMENOPTERA, SPHECIDAE)

By K. TSUNEKI

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The present study has touched the taxonomy of a group of wasps hitherto remained uninvestigated of Japan and Korea. As a result it was revealed that only five species of the genus *Tachytes* Panzer (1806) occur in these countries excepting the southern islands of the Riukius. Of the five two are hitherto well-known species (*T. sinensis* Sm. and *T. modestus* Sm.) and belong to the group of the southern origin. While the remaining three are undescribed species, two of which are probably also southern delivatives, since they have some close relatives among the Indian representatives but not among the central and western palaeartic congeners. On the other hand, one of the new species (*T. nipponicus*) is uncertain with respect to its delivation, since although it is very similar in general to the European *T. etruscus* Rossi, yet it differs from this distinctly in the important character of the relative length of the interocular space on the vertex and rather close to some southern species as far as the structural characters are concerned.

Besides the above there is a species known from Okinawa under the name, *T. sinensis* var. *purpureipennis* Mats. et Uch. I have not the chance to examine the specimen of this so-called varietas, but according to the description, though very brief, it seems highly probable that it belongs to a species other than *sinensis*.

In view of the geographical distribution it seems of interest that the species occurring in Japan have the same or closely allied species in Korea, China and India, but not such in the Riukius (apart from the above stated doubtful species), Formosa and the Philippines as far as our present knowledge goes. To give the definite conclusion as to the northward distribution of the genus by land, however, a more extensive and thorough collection is necessary.

**Notes on some characters**

In examining the characters it is desired to use the fresh specimens. In the worn out examples, especially in the female, the clypeus is usually deformed through the digging work of her nesting activities and the colour of the hairs of the body is sometimes faded. In separating the species of our region, (1) the relative length of the interocular space at the vertex (usually as against antennal joint 3), (2) the form of the antennal joints (usually represented by the third), (3) the structure of the male genital organ, play the important rôle. But the colour of hairs and bristles of the body, the form of the clypeus and the characters of the propodeal impression (situated at the apex in the middle of the dorsal aspect) and sometimes the colour of the legs also becomes the next important, sometimes even definite, clues in classification. Of these, apart from the above mentioned remarks on clypeus and hairs, the character of the propodeal impression is sometimes fairly markedly varied with individual and the fact must always be taken into consideration.

**KEY TO THE SPECIES**

♀      ♀

- 1 Abdomen with only two bands of silvery pile distinct (interocular space at vertex subequal

in length to antennal joint 3, the latter 2.7 times as long as broad at apex, clypeus: Fig. 1, propodeal impression: Fig. 2, pygidial area: Fig. 3, with glittering dark brown bristles, in some light nearly blackish, hairs on face and clypeus golden, wings markedly flavescent), length 18-23 mm. India, North China, Korea and Japan (except Hokkaido)

*Tachytes sinensis* Smith, 1856

- Abdomen with four (rarely three) distinct bands of pile ..... 2
- 2 Interocular space at vertex distinctly greater in length than antennal joint 3 ..... 3
- Interocular space at vertex subequal in length to antennal joint 3 ..... 4
- 3 Greater part of legs bright ferruginous (head and thorax rich in appressed golden pubescence, interocular space at vertex 1.3 times as long as antennal joint 3, the latter nearly twice as long as broad at apex, clypeus: Fig. 10, pygidial area: Fig. 11, with bristles dark brown, in some light cupreous golden, wings pale flavescent), length 11-15 mm. India, Burma, China, Korea and Japan (except Hokkaido and the Ryukyus) *Tachytes modestus* Smith, 1856
- Greater part of legs black (face and clypeus with appressed silvery, somewhat brassy pubescence, interocular space at vertex nearly twice as long as antennal joint 3, the latter twice as long as broad at apex (Fig. 40), clypeus: Fig. 38 or 39, pygidial area: Fig. 41, with dark brown bristles, wings very slightly yellowish), length 13-15.5 mm. Japan (Hokkaido and Honshu)

*Tachytes latifrons* sp. nov.

- 4 Pygidial area (Fig. 19) with bright golden bristles, basally somewhat paler, clypeus with a mammiform protuberance at apex in middle (Fig. 17) (pile on face and clypeus pale yellow or brassy, antennal joint 3 equal in length to interocular space at vertex and 2.7 times as long as broad at apex, wings pale yellowish, legs with each articulation and large extent of tarsi ferruginous), length 14-20 mm. Korea and Japan (Kyushu and Honshu)

*Tachytes nipponicus* sp. nov.

- Pygidial area with dark brown (in some light bright coppery) bristles, clypeus without medial protuberance at apex..... 5
- 5 Hairs on face and clypeus pale golden, pile of abdominal bands silvery, length 17-18 mm (antennal joint 3 nearly as long as interocular space on vertex and 2.7 times as long as broad at apex, clypeus: Fig. 1, pygidial area: Fig. 3, wings strongly yellowish, legs black with golden pile) Korea and N. China

*Tachytes sinensis* Smith (continental form)

- Hairs on face and clypeus silvery white, with only a slight brassy lustre, pile of abdominal bands more or less brassy, length 11-13 mm (characters of antennal joint 3 the same as above, clypeus: Fig. 27 or 28, pygidial area: Fig. 29, wings almost clear hyaline, very slightly yellowish, legs with whitish pile, only on tibiae externally and tarsi beneath the pile golden) Korea and Japan (Kyushu, Shikoku and Honshu)

*Tachytes fruticis* sp. nov.

♂ ♂

- 1 Abdomen with two or three (usually two distinct and thorough) bands of silvery pile (hairs on face and clypeus golden, interocular space at vertex nearly half the length of antennal joint 3 which is slightly longer than 4 and 2.6 times as long as wide at apex, clypeus: Fig. 4, pygidial area: Fig. 5, with silvery or slightly brassy hairs, 8th sternite: Fig. 6 (ventral view), Genitalia: Figs. 7, 8 and 9, wings strongly flavescent, legs black), length 15-20 mm. India, N. China, Korea and Japan (except Hokkaido) *Tachytes sinensis* Smith, 1856

- Abdomen with four distinct bands of pile ..... 2
- 2 Interocular space at vertex distinctly more than antennal joint 3 in length..... 3
- Interocular space at vertex subequal to or less than antennal joint 3 in length..... 4

3 Tibiae and tarsi of legs ferruginous, interocular space at vertex 1.2 times as long as antennal joint 3 which is 2.1 times as long as wide at apex (head and thorax with rich golden pile, clypeus: Fig. 12, pygidial area: Fig. 13 covered with silvery or pale brassy hairs, 8th sternite: Fig. 14 (dorsal view), genitalia: Figs. 15 and 16, wings flavo-hyaline), length 12-14 mm. India, Burma, China, Korea and Japan except Hokkaido and the Ryukyus)

***Tachytes modestus* Smith, 1856**

- Legs black, only tarsi partly ferruginous, interocular space nearly twice the length of antennal joint 3 which is 1.8 times as long as wide at apex (hairs on clypeus and face brassy-golden, clypeus: Fig. 42, pygidial area: Fig. 43, with brassy hairs, 8th sternite: Fig. 22, genitalia: Figs. 45-48, wings almost clear hyaline), length 10-13 mm. Japan (Hokkaido and Honshu)

***Tachytes latifrons* sp. nov.**

4 Mandibles in middle and front tibiae and all tarsi at least largely ferruginous, interocular space at vertex less than antennal joint 3 (frons and clypeus covered with brassy hairs, clypeus: Figs. 20, 21, pygidial area: Fig. 22, covered with silvery or pale brassy hairs, 8th sternite: Fig. 23, genitalia: Figs. 24-26, wings pale yellowish), length 12-18 mm (usually 15-16 mm). Korea and Japan (Kyushu and Honshu)

***Tachytes nipponicus* sp. nov.**

- Mandibles and legs black, interocular space at vertex subequal to antennal joint 3 (frons and clypeus covered with golden to brassy hairs, pile of abdominal bands more or less brassy, clypeus: Fig. 30, pygidial area: Figs. 31, 32, 8th sternite: Fig. 33, genitalia: Figs. 34-37, wings clear hyaline, very slightly yellowish), length 10-12 mm. Korea and Japan (Kyushu, Shikoku and Honshu)

***Tachytes fruticis* sp. nov.**

DESCRIPTIONS OF THE SPECIES

***Tachytes sinensis* Smith, 1856**

*Tachytes sinensis* Smith, 1856, p. 299; ——— : Bingham, 1897, p. 189; ——— : Tsuneki, 1959, p. 79.

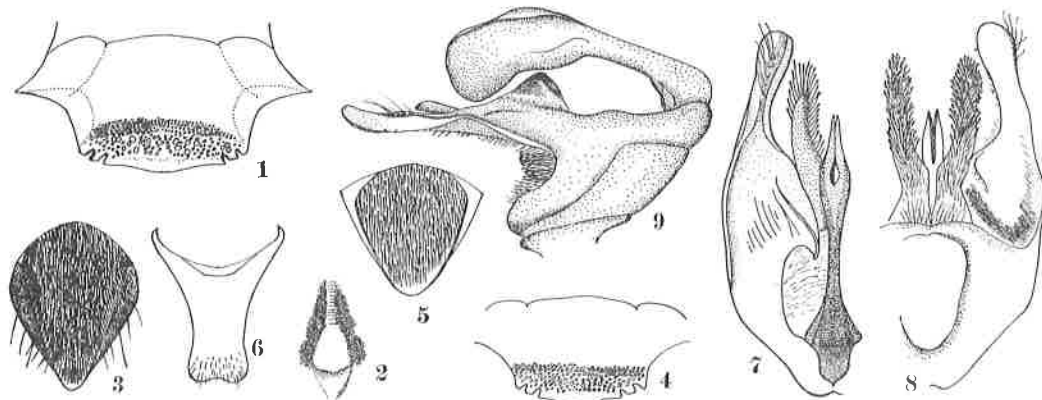
*Tachytes (Tachytes) sinensis* : Kohl, 1884, p. 407.

*Tachytes japonica* Kohl, 1888, p. 142. (SYNONYM NOV.)

? *Tachytes sinensis* : Sickmann, 1895, p. 215.

*Tachytes saundersi* : Matsumura (nec Smith), 1911, p. 120; 1930, p. 22; 1931, p. 21.

*Tachytes etruscus* : Tsuneki (nec Rossi), 1946, p. 165.



**Figs. 1-9.** *Tachytes sinensis* Smith. 1-3, ♀; 4-9, ♂. 1 and 4, clypeus. 2, Propodeal impression. 3 and 5, pygidial area. 6, 8th sternite (ventral view). 7-9, genitalia; 7, dorsal, 8, ventral and 9, lateral view.

♀. Length 18–23 mm, usually 20–22 mm. Totally black, with a bronzy tone on head and thorax; wingtegulae externally and wingveins ferruginous, spurs and spines of legs pale brownish. Pilosity on frons and clypeus golden, comparatively long, appressed, mixing some erected which are nearly as long as antennal joint 1; on pronotum (medially interrupted), scutellum, outer face of all tibiae and tarsi, and posterior margins of mesonotum short, appressed and golden, the last mentioned hair ornament visible in oblique light only; similar dense pile on mandible at base externally blackish, only in certain light golden; the pile bands on abdomen silvery, on tergites 2 and 3 complete and distinct, on 1 and 4 usually invisible, detectable on lateral areas only by close examination; pilosity on other regularly haired areas including antennal joint 1 yellow, mixing short appressed and long erected, the former in some light with more or less golden shimmer. Bristles on pygidial area dark brown, in some light nearly blackish.

Clypeus: Fig. 1, apical margin usually impunctate, punctures on medial area apically sparse. Vertex with interocular space subequal to antennal joint 3 (ratio  $24 : 26 \pm 0.5$ ) and slightly less than the length between postocellar pit and supposed postmarginal line of eyes (ratio  $24 : 28$ ), the surface without a medial longitudinal furrow, instead with a fine impunctate line, antennal joint 3 slightly longer than 4 and 2.7 times as long as wide at apex, mandibular excavation strong and distinct, galea of maxilla suboval, about  $2/5$  times as long as antennal joint 1. Propodeum dorsally from base to apex of the impression nearly as long as antennal joints 3 and 4 combined, the impression (Fig. 2) flattened, smooth, without lustre, posteriorly slightly roundly impressed, the surface regularly minutely reticulate, on posterior aspect, besides the reticulation, laterally obliquely, fairly closely rugoso-striate, the striae usually extending to latero-posterior areas of dorsal aspect, but sometimes not distinct. Pygidial area: Fig. 3. Punctuation on abdomen without note-worthy distinction. In forewing relative length of abscissae of radial nervure:  $4 > 3 \geq 1 > 2$ .

♂. Length usually 17–18 mm. Coloration and pilosity as in ♀, but hairs on thorax and legs somewhat paler yellowish and less strong on tibiae and pygidial area, those on mandibles at base externally golden and beneath tarsi very dense and golden, on pygidial area silvery, sometimes with a brassy shine. Clypeus: Fig. 4, galea rounded, slightly elongate, less than as long as antennal joint 1, palpi not slender and long; interocular space on vertex very narrow, about half the length of antennal joint 3, without medial furrow as in ♀, only rarely with a microscopic fine impressed line on anterior half. Propodeal character as in ♀; pygidial area: Fig. 5, 8th ventral plate: Fig. 6 (ventral view). In genitalia in the dorsal view paramere excavated at the apical portion somewhat in a spoon-shape, carrying a few long hairs in a row, the excavation extending posteriorly in a fine discoloured groove along the outer margin (Fig. 7), on the inner medial area runs a strong carina obliquely which is triangular in the lateral view (Fig. 9), seen from beneath (Fig. 8) diagitus on apical half provided with dense tuft of tubercular hairs, on basal portion with fine simple hairs, paramere also with tubercular hairs in a L-shaped zone at base, penis valve as given in Figs. 7 and 9.

*Specimens examined*: 17 ♀♀ 28 ♂♂, Japan (Honshu: Prefs. Tochigi, Saitama, Ishikawa, Fukui, Mie, Kyoto; Shikoku: Kochi; Kyushu: Fukuoka), VII, VIII, IX. 1933–63, K. Tsuneki leg. 1 ♀, Korea (Shoyozan), 4. VIII. 1943, K. Tsuneki leg.

*Distribution*: India, North China, Korea and Japan (excepting Hokkaido).

*Remarks*. *Tachytes sinensis* var. *purpureipennis* Mats. et Uch. from Okinawa is described to have the following characters: (1) All legs with the exception of coxae and trochanters yellow red; mid and hind femurs only at base blackish brown. (2) Forewings completely and

hind wings externally deep brown, the former with a strong purplish shadow in certain light. As given in the reference list the senior author of the varietas is used to identify *sinensis* erroneously with *saudersi*. The fact, together with the remarkable character of the varietas, seems sufficient to make one suppose that the specimens dealt with by them must belong to other species than *sinensis* Sm.

A specimen captured in Korea (its nesting biology was observed and published under the name of *T. etruscus* Rossi; see Tsuneki, 1946, p. 165 and Pulawski, 1962, p. 317) is a worn out female, having the abraded clypeus and faded colour of hairs. Besides, it is an exceptionally small specimen, measuring only 16 mm and has the following differences from the Japanese specimens of *sinensis*: (1) Legs with articulations, hind tibia except inside and all tarsal joints apically ferruginous, (2) abdominal hair band on tergites 2, 3 and 4 complete and distinct, on 1 only medially somewhat broadly interrupted, (3) propodeal impression nearly equilateral triangle in form, flattened and gently convex towards apex, with weak fine irregular rugae on the raised area. Such differences together with the lack of necessary literature and the comparable specimen of *etruscus* at that time might lead to misidentification.

### *Tachytes modestus* Smith, 1856

*Tachytes modesta* Smith, 1956, p. 299; ——— : Cameron, 1889, p. 136; ——— : Bingham, 1897, p. 190; ——— : Yano, 1932, p. 276; 1950, p. 1477; ——— : Tsuneki, 1963, p. 48.

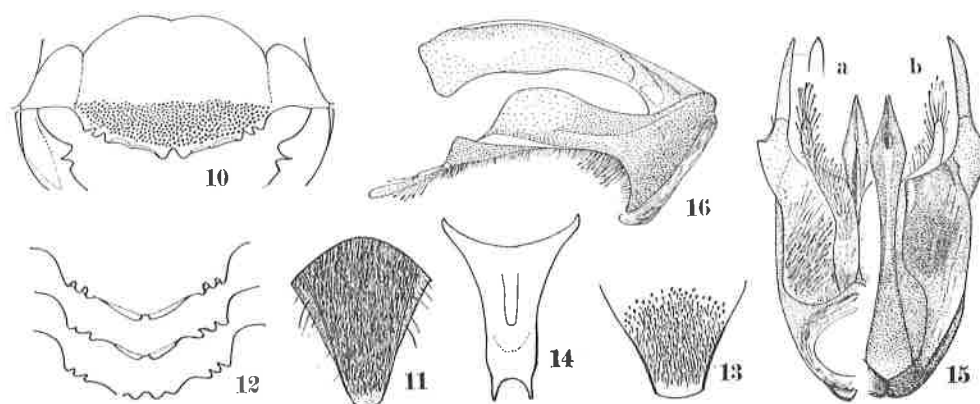
*Tachytes (Tachytes) modesta* : Kohl, 1884, p. 404.

*Tachytes modestus* : Yasumatsu, 1930, p. 32; 1939, p. 375.

♀. Length usually 12–14 mm. Black, mandibles on basal half, palpi and tegulae of wings ferruginous, legs from about middle of femora apically reddish yellow; wings flavo-hyaline, veins ferruginous to brown. Head normally covered with dense golden pubescence; on thorax appressed golden pile on pronotum, lateral and posterior margins of mesonotum and postscutellum very conspicuous; medio-anterior two patches on mesonotum, mesopleuron, posterior margin of scutellum and postscutellum also with appressed golden pile, but less striking than on the above mentioned areas; four bands on abdomen distinct and silvery, bristles on pygidial area dark brown, in some light cupreously glittering. Vertex with interocular space 1.3 times as long as antennal joint 3 which is nearly twice as long as wide at apex and subequal to 4, the surface medianly distinctly finely furrowed; clypeus: Fig. 10, galea long, as long as antennal joint 1 and reaching anteriorly to the apex of glossa in the normal posture, propodeal impression elongate triangular, degree of elongation more or less varied, with the surface flattened, almost polished, sometimes the area gently raised posteriorly and always with the apex medianly narrowly, not strongly, roundly produced; propodeal pile is so dense that the ground sculpture almost invisible, microsculpture on 2nd sternite completely reaching the posterior margin.

♂. Length 12–14 mm, similar to ♀, but the pile on pygidium silvery, propodeal impression sometimes roundly excavated, sometimes flattened and rarely medianly feebly raised. Clypeus: Fig. 12, more or less varied; pygidial area: Fig. 13, 8th sternite: Fig. 14 (dorsal view); genitalia: Figs. 15 and 16, paramere at the inner area of the central region markedly incrassate and raised (Fig. 16), tuberculous hairs not abundant, growing sparsely on the apical half of diagitus and scattered among simple hairs at the base of paramere beneath (Fig. 15a). In fore wing length ratio of abscissae 1–4 of radial nervure most usually 2 : 1 : 1 : 1.2; the longer tibial spur of hind leg distinctly surpassing the apex of the following metatarsus.

*Specimens examined*: 48 ♀♀ 73 ♂♂, Japan (Honshu ——— Saitama, Tochigi, Fukui,



**Figs. 10-16.** *Tachytes modestus* Smith, 10 and 11, ♀; 12-16, ♂. 10 and 12, clypeus. 11 and 13, pygidial area, 14, 8th sternite (dorsal view). 15 and 16, genitalia; 15a, ventral, 15b, dorsal and 16, lateral view.

Ishikawa, Mie; Shikoku — Kochi, Ehime; Kyushu — Fukuoka), VII, VIII, IX. 1930-63, K. Tsuneki leg. 1 ♀, Korea (Seoul), 11. VII. 1941, K. Tsuneki leg.

*Distribution:* India, Burma, North China, Korea and Japan (except Hokkaido and the Riu-kius).

***Tachytes nipponicus* sp. nov.**

? *Tachytes sinensis*: Sickmann 1895, p. 215.

? *Tachytes etruscus*: Yasumatsu, 1942, p. 113.

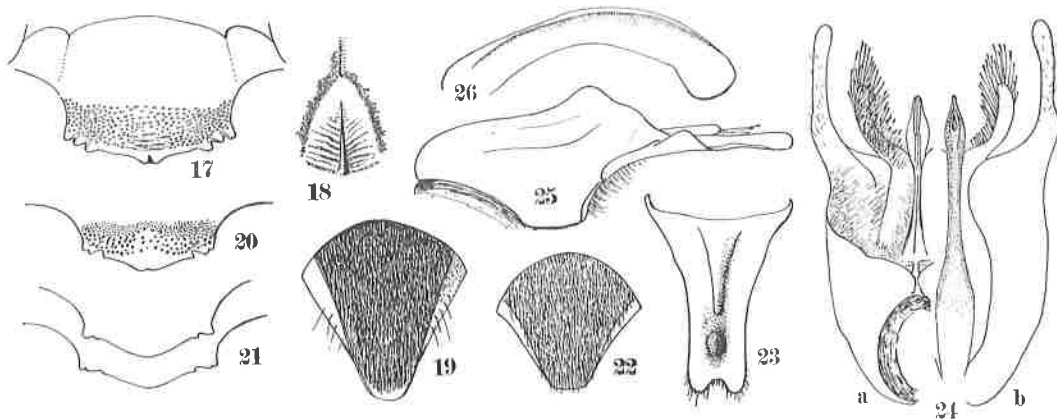
The present species is apparently very close to the European congener, *T. etruscus* Rossi as well as the Siberian *T. sibiricus* Gussakovskij. It differs, however, from either of them mainly in that the interocular space on the vertex is relatively much narrower.

♀. Length 18.0 mm (varying from 15 to 20 mm). Bronzy black with the following portions ferruginous: Middle of mandibles, palpi, wingtegulae, articulations of legs, front tibiae largely, mid tibiae in part, all tarsi (posterior four with more or less dark stains), tibial spurs and spines of legs. Wings except the apical clear region distinctly yellowish, veins ferruginous. Frons and clypeus densely covered with long brassy hairs mostly appressed, short appressed pile on mandibles at base externally, postocular areas, pronotum, U-shaped peripheral regions on mesonotum, humeral angles, mesopleuron, short lateral lines of scutellum, post-scutellum, sides posteriorly of propodeum and legs pale brassy, in some places rather silvery; some of these areas with also long similar coloured hairs mixing; U-shaped peripheral ornaments of mesonotum only in oblique light distinct and always with a whirl of hairs anteriorly on each side; all four bands on abdomen distinct, silvery, with a more or less brassy shimmer; bristles on pygidial area brassy to golden; antennal joint 1 also pilose.

Clypeus: Fig. 17, galea of maxilla slightly less than as long as antennal joint 1, ratio of interocular space on vertex and 3rd antennal joint  $23 : 24 \pm 1$ , vertex medially finely furrowed up to the supposed line connecting the posterior margins of eyes, thence posteriorly a line formed of dense minute granules defined, but not impressed, antennal joint 3 slightly longer than 4 and 2.7 times as long as wide at apex. Most usual form of propodeal impression as given in Fig. 18, with the bottom slightly concave, medianly (usually posteriorly) finely carinate and fine carinulae radiating from the apical extremity which is somewhat produced seen from above. Pygidial area: Fig. 19. One of the tibial spurs of hind leg slightly longer than the

following basitarsal segment. In fore wing length ratio of abscissae 1-4 of radial vein most usually 1.2 : 1 : 1 : 2, sometimes  $2 \geq 3$  or  $1 = 2$ , the 2nd transverse cubital vein at the upper curving point most usually suddenly angularly turned with both abscissae running nearly straight.

Clypeus medio-anteriorly impunctate, but with coarse irregular transverse rugae, vertex finely closely punctured, punctures somewhat irregular in size with intervals microscopically finely sculptured, punctuation on mesothorax normal, propodeum on dorsal aspect finely punctate-reticulate, posterior aspect obliquely weakly finely closely, rather indistinctly rugosostriate, sides of the segment without rugae, but with sparse fine punctures; punctuation on ventral segments normal.



**Figs. 17-26.** *Tachytes nipponicus* sp. nov. 17-19, ♀; 20-26, ♂. 17, 20, 21, clypeus. 18, propodeal impression. 19, 22, pygidial area. 23, 8th sternite. 24-26, genitalia; 24a, ventral, 24b, dorsal and 25, lateral view; 26, penis valve.

♂. Length 12-18 mm, usually 15-16 mm. Very similar to ♀, differing in the following points:

Interocular space less than antennal joint 3 (ratio usually 4 : 3), the latter 2.5 times as long as wide at apex (dorsal view), antennal joints 4-7 beneath gently roundly swollen out and each joint comparatively slightly shorter. Clypeus: Fig. 20, more or less varied with the individual (Fig. 21), sometimes the anterior margin feebly reflected. The longer hind tibial spur slightly less than as long as the following basitarsal joint. Pygidial area: Fig. 22, at the sides as on disc so densely covered with silver bristles (sometimes with a faint brassy tint) that the lateral carinae usually invisible. 8th sternite: Fig. 23 (dorsal view), genitalia: Figs. 24-26, paramere not provided with long hairs towards apex, also without tuberculous hair at base, diagitus with such hairs on apical half only, side of paramere triangularly reflected towards middle (Fig. 25). In colour usually tibiae and tarsi of legs more extensively ferruginous, abscissa 3 of radial vein of fore wing usually longer than 2 and subequal to 1.

Holotype: ♂, Japan (Fukui Pref.), 14. X. 1963, K. Tsuneki leg.

Paratypes: 10 ♀♀ and 10 ♂♂, Japan (Fukui Pref.), 10-23. IX. 1953-62, K. Tsuneki leg.

*Other specimens examined:* 57 ♀♀ 173 ♂♂, Japan (Prefs. Fukui, Saitama, Tochigi, Fukuoka), VIII-X. 1930-63; 11 ♀♀ 24 ♂♂, Korea (Seoul, Shoyozan, Temmasan), VIII-IX, 1942-43, K. Tsuneki leg. (5 ♀♀ 10 ♂♂ from Fukuoka leg. M. Yano; 2 ♀♀ from Seoul leg. C. W. Kim.)



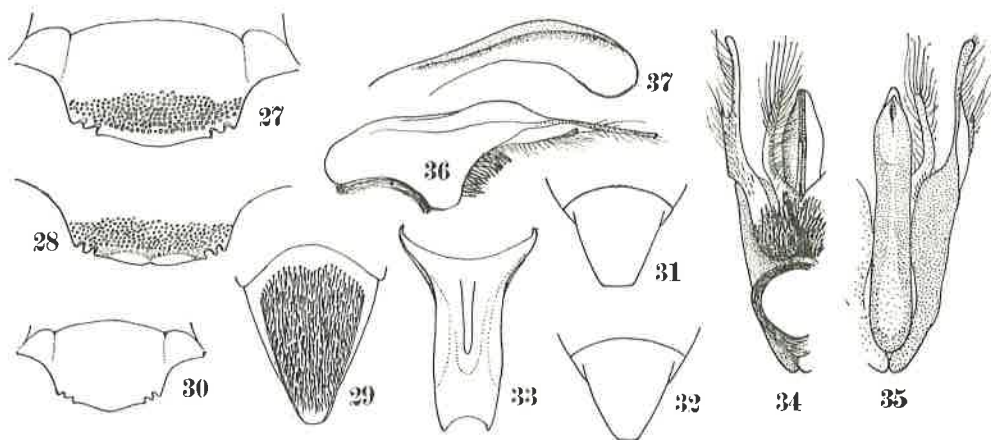
*Distribution*: Japan (Honshu and Kyushu) and Korea.

*Tachytes fruticis* sp. nov.

Structurally somewhat similar to the Philippine species, *T. bakeri* Williams, but much smaller and markedly different in the colour of hairs of the body and the bristles on the pygidial area.

♀. Length 11–13 mm. Black, palpi apically, wingtegulae externally, spines and claws of legs and wingveins ferruginous; mandibles apically and inwardly reddish brown, tegulae basally dark brown, wings pale yellowish. Pubescence on frons and clypeus silvery white, with very slight brassy shimmer. Short appressed pile and mixing long hairs on thorax and legs similar in colour to the above; generally pilosity not dense and sculpture on the sclerite well visible, the periferal ornamental hair bands of mesonotum indistinct, defined only in oblique light. Medianly interrupted four bands on abdomen silvery, sometimes with a yellowish tint, in the fresh specimens the bands extended to the ventral segments, pygidial bristles dark brown, thick hairs on outer margin of mid and hind tibiae golden.

Clypeus: Fig. 27 or 28, with punctuation somewhat varied, galea of maxilla very short, roughly semicircular, slightly less than half the length of antennal joint 1. Vertex with interocular space slightly more than antennal joint 3 (length ratio 22 : 18), also greater than the length between postocellar pit and supposed postmarginal line of eyes (ratio 22 : 14), with punctures irregular in size and sparse, with or without median furrow, when without the area inclined towards the postocellar impression. Antennal joint 3 nearly 3 times as long as wide at apex (dorsal view) and subequal to joint 4. Scutellum on posterior half and postscutellum medianly gently impressed, dorsal surface of propodeum also with medial impressed line ending at apex into the propodeal impression which is most usually slightly elongate triangle in form,



**Figs. 27-37.** *Tachytes fruticis* sp. nov. 27-29, ♀; 30-37, ♂. 27, 28, 30, clypeus. 29, 31, pygidial area; 32, variation. 33, 8th sternite. 34-37, genitalia; 34, ventral, 35, dorsal and 36, lateral view; 37, penis valve.

sometimes with outline indistinct, always provided with more or less longitudinal fine striae; the segment at base with longitudinal rugose striae, posteriorly turning soon into fine reticulation, posterior aspect similarly reticulate, in some light appearing feebly obliquely striate. Pygidial area: Fig. 29, with bristles dark brown. In fore wing abscissae of radial nervure with the following length relationships:  $4 > 1 > 3 > 2$ , 2nd transverse cubital vein normally curved.

♂. Length 10-12 mm. Very similar to ♀, generally the pile on frons and clypeus deeper golden and abdominal hair bands more strongly yellowish. Clypeus: Fig. 30, vertex with interocular space slightly more than antennal joint 3 (ratio 18 : 16-17), also wider than long (space between post-ocellar pit and supposed postmarginal line of eyes) (ratio 18 : 15). Antennal joint 3 slightly longer than 4 and nearly 2.7 times as long as wide at apex. Pygidial area: Fig. 31 (Fig. 32 exception), 8th sternite: Fig. 33 (dorsal view), genitalia: Figs. 34-37, tuberculous hair only at base of paramere and diagitus beneath (Fig. 34).

Holotype: ♂, Japan (Hatogayu, Fukui Pref.), 27. VIII. 1961, K. Tsuneki leg.

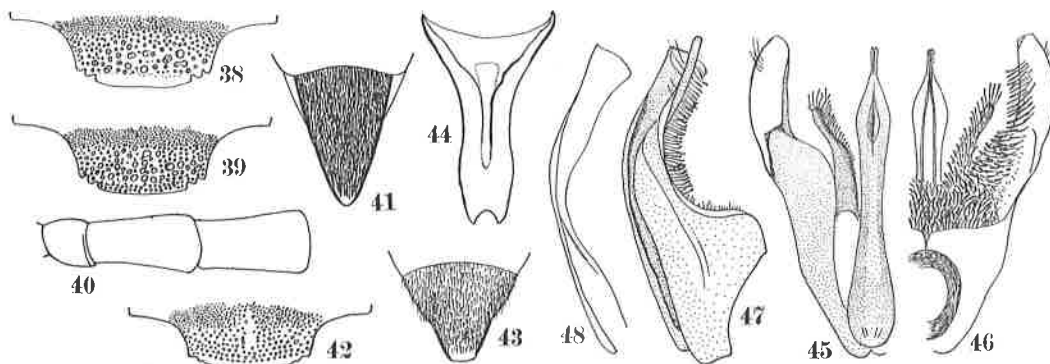
Paratypes: 10 ♀♀ 10 ♂♂, Fukui Pref., VIII-IX. 1953-63, K. Tsuneki leg.

*Other specimens examined*: 52 ♀♀ 48 ♂♂, Japan (Prefs. Tochigi, Saitama, Shizuoka, Niigata, Fukui, Mie, Ehime, Fukuoka), VIII-IX. 1929-63, leg. chiefly K. Tsuneki, partly M. Yano, H. Okuno, M. Matsuura, J. Minamikawa); 7 ♀♀ 3 ♂♂, Korea (Shoyozan, Temmasan), 11-30. VIII. 1942, 43. K. Tsuneki leg.

*Distribution*: Japan (except Hokkaido) and Korea.

#### *Tachytes latifrons* sp. nov.

No related species can be found among the members of the palaeartic species. The South Asiatic species, *T. tabrobanae* Cameron (1900) is considered somewhat resembling the present species in the relative length between the interocular space and 3rd antennal joint. But it is significantly smaller, with hair on the clypeus and pygidial area different in colour and the legs also otherwise maculated.



**Figs. 38-48.** *Tachytes latifrons* sp. nov. 38-41, ♀; 42-48, ♂. 38 and 42, clypeus; 39, variation. 40, antennal joints 2-4. 41 and 43, pygidial area. 44, 8th sternite. 45-48, genitalia; 45, dorsal, 46, ventral and 47 lateral view; 48, penis valve.

♀. Length 13-15.5 mm. Black, somewhat lustreless bronzy shade on thorax; tegulae of wings externally, tarsal joints beneath at apex, spurs and spines of legs ferruginous. Mandibles on the inner margin and clypeus at apex glittering reddish brown. Wings pale yellowish, veins ferruginous. Hairs on clypeus and frons brassy, rather golden upwards, short appressed hairs on temples, pronotum, femora beneath, apical margin of abdominal tergites 1-4, silvery, somewhat with pale brown tint, those on sides of thorax and propodeum pale yellow, long hairs on vertex, sides of thorax and propodeum yellowish; bristles on pygidial area dark brown, thick hairs on outer face of hind tibia silvery, gradually golden upwards. The hairs on vertex, mesonotum and propodeum so sparse that the ground sculpture well defined. The marginal hair bands on mesonotum even in fresh specimens inconspicuous, only defined on posterior

margin in oblique light.

Galea of maxilla as long as wide, approximately half the length of antennal joint 1 which is hairy beneath; clypeus: Fig. 38 (39 variation in punctuation), apical margin not incrassate, nor reflected, thin and sometimes semitransparent. Vertex broad, with ratio of width to length (between post-ocellar pit and supposed postmarginal line of eyes) approximately 3 : 1, medianly always distinctly furrowed, the furrow open, with both sides obliquely inclined towards the medial line, minimum interocular space nearly twice as long as antennal joint 3 (ratio 32: 17±1), which is about 1.2 times as long as wide at apex and slightly longer than joint 4 (Fig. 40). Scutellum without medial impression, postscutellum with a feeble one, propodeal impression slightly elongate triangular, distinctly margined, with bottom flattened and polished, without medial carinae nor elevation, in some specimens very feebly transversely striate. Pygidial area: Fig. 41. In fore wing length relation between abscissae of radial vein: 4>1>3>2. The longer one of the hind tibial spurs reaching slightly beyond apex of the following metatarsus.

♂. Length 10-13 mm. Very similar to ♀. Antennal joint relatively shorter, joints 4-8 beneath slightly roundly swollen. Interocular space at vertex amply twice the length of antennal joint 3 (ratio 30 : 14) which is twice as long as wide at apex. Propodeal impression similar, but frequently the surface posteriorly in middle gently convex, transverse striae sometimes very distinct, sometimes obsolete. Pygidial area: Fig. 43; 8th sternite: Fig. 44 (dorsal view); genitalia: Figs. 45-48, paramere comparatively broad, with a few long hairs near apex of dorsal side (Fig. 45), tuberculous hairs abundant beneath parameres and diagita (Figs. 46 and 47), penis valve: Figs. 45 and 48.

Holotype: ♂, Japan (Fukui Pref.), 12. VII. 1959, K. Tsuneki leg.

Paratypes: 10 ♀♀ 10 ♂♂, Japan (Fukui Pref. Nikko and Mt. Haku), VII, VIII, 1936-63, K. Tsuneki leg.

*Other specimens examined*: 2 ♀♀ 36 ♂♂, Japan (Hokkaido, Ishikawa, Niigata, Aomori) K. Tsuneki, H. Okuno and K. Shimoyama leg.).

*Distribution*: Japan (Hokkaido and Honshu).

#### Application to Pulawski's key (1962) on palaeartic species

The species dealt with in this paper, if applied to the key by W. J. Pulawski on palaeartic species, produce the following results:

(1) *Tachytes sinensis* Sm. ♀ at No. 26, ♂ at No. 16. respectively comes to a deadlock, chiefly on account of the difference of the propodeal sculpture.

(2) *Tachytes modestus* Sm. ♀ at No. 23, ♂ at No. 16 meets respectively a deadlock.

(3) *Tachytes nipponicus* sp. nov. Both sexes run straight to *Tachytes etruscus* Rossi with a little query. This is utterly due to that the character of the vertex is not taken into account in the key.

(4) *Tachytes fruticis* sp. nov. ♀ at No. 26, ♂ at No. 16, comes respectively to a deadlock.

(5) *Tachytes latifrons* sp. nov. The same result as in the preceding species.

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