

# *Etizenia*

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**CERCERIS FROM THE WESTERN PACIFIC AREAS  
(HYMENOPTERA, SPHECIDAE)**

BY K. TSUNEKI

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**CERCERIS FROM THE WESTERN PACIFIC AREAS**  
**(HYMENOPTERA, SPHECIDAE)\***

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The genus *Cerceris* in the western Pacific areas after the appearance of the Dalla Torre's Catalogus has been studied by some investigators. As for the South Asiatic species R. E. Turner in 1912 dealt with all the Indian representatives known to him up to that time. Later, however, from India and the adjacent territories a considerable number of the species have been described. As for the western Pacific areas the species fragmentarily described from the early part of the 19th century up to the present reach also a considerable number. They were, however, left unarranged as a whole. Only the South Chinese and the Formosan species were arranged by J. Giner Mari in 1942 and 43 respectively, as far as examined by him, and recently the Javanese species by J. van der Vecht (1964). The work by the last mentioned author is very clear-cut, solving many entangled problems arisen by the previous authors. As for the north-eastern Palaearctic species I attempted the arrangement in 1961. But as most of the species described by the previous investigators were grasped through the literature only the results were not always decisive. It is our hope to bring together the detailed informations on all the species hitherto described from the regions concerned to arrange into a dichotomic table in order to make easy the further investigation. Except for some particular persons, however, such an attempt will be impossible, as far as the species of the Southeast Asiatic regions are concerned, since the literature can not provide us with the necessary informations. In the following, therefore, the species name alone known from the regions related here, without reference to the synonymies, will be listed:

**From India since 1913:**

*rejecta* Turner, 1917; *renominata* Turner, 1917 (nom. n. for *opulenta* Turner, 1912); *expulsa* Turner, 1920; *salai* Giner Mari, 1954.

**From S. E. Asiatic regions:**

*ferox* Smith, 1856 (Sumatra); *pictiventris* Dahlbom, 1845 (Java); *praedata* Smith, 1860 (Bachian); *tumulorum* Smith, 1865 (Gilolo); *annandali* Bingham, 1903 (Malay); *ligea* Bingham, 1903 (Perak); *lanata* Cameron, 1907 (Abu, = *vigilans* Smith); *metatarsalis* Turner, 1926 (Thailand); *varia*, *variaesimilis*, *roepkei*, *trimaculata*, *obtusdentata* Moidl, 1926 (Java); *polybioides* Pendlebury, 1927 (Malay); *langkaskae*, *kedahae* Pagden, 1934 (Malay); *rybyensis thaiiana* (= *pictiventris* Dahlbom); *fukaii basiferruginea* (= *variaesimilis* Moidl), *bituberculata*, *maculiceps*, *nagamasa*, *spiniventris* Tsuneki, 1963 (Thailand); *boschmai*, *luchti*, *vulcanica*, *radjmandalae*, *hilbrandi*, *bantamensis* van der Vecht, 1964 (Java). (As for loc. nov. see van der Vecht, 1964)

**From Borneo, Celebes, New Guinea:**

*fuliginosa* Smith, 1856 (Celebes); *sepulchralis* Smith, 1857 (Borneo), *crassidens*, *latidens*, *excavata* Cameron, 1902-03 (Borneo); *papuana* Cameron, 1906 (New Guinea, = *pictiventris immolator* Smith, 1864); *malayana* Cameron, 1903 (Borneo, = *pictiventris malayana*); *celebensis*, *pseudotridentata*, *umbinifera* Moidl, 1926 (Celebes)

**From China, mostly South China:**

*fervida* Smith, 1856 (China); *instabilis* Smith, 1856 (China, India, Ceylon); *pygmaea* Saussure, 1867 (China); *sinensis*, Smith, 1856 (China); *unifasciata* Smith, 1856 (China); *zona-*

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*lis* Smith, 1852 (China); *tonkinensis* Turner, 1919 (Tonking); *lativentris*, *biplicatula*, *quadricornis*, *sternodonta* Gussakovskij, 1938 (Kiangsu, or China austro-orientali); *coelicola*, *confusus*, *dubitabilis*, *klapperichi*, *stockleini*, *spinicollis*, *erronea*, *rhoti*, *martialis*, *caelebus*, *mickeli*, *diabolicus*, *fukiensis*, *kwangtsehiana* Giner Mari, 1942 (S. China).

**From the Philippines, Formosa and the Ryukyus:**

*vafra* Bingham, 1895 (Philippines); *luzonensis* Crawford, 1910 (Philippines); *angularis* Cockerell, 1914 (Philippines); *spiniger* Rohwer, 1919 (Philippines); *fukaii* Rohwer, 1911 (Formosa, = *luzonensis* Crawford); *hexadonta*, *formosana*, *trichobunda*, *novarae formosicola* (= *pictiventris formosicola*) Strand, 1913 (Formosa); *strandii*, *fukaii superflua* Giner Mari, 1943 (Formosa); *hortivaga amamiensis* Tsuneki, 1961 (Ryukyus); *okumurai*, Tsuneki, 1968 (Ryukyus); *boharti* Tsuneki, 1968 (Ryukyus). (As for loc. nov. see Giner Marri, 1943)

**The present paper** includes the descriptions of the following new species and new subspecies, new combinations and new synonymies:

New species and subspecies:

*ruficornis saghaliensis* (Saghalien), *yenpingensis* (M. China), *tienchiao* (N. China), *szechuana* (M. China), *crassicollis* (S. China), *strandii koulingensis* (Kouling, China), *yunnanensis* (S. China), *pleuralis*, *dowi*, *samarensis* (Philippines).

New combination:

*sternodonta fukiensis* Giner.

New synonymies:

*formosana* Strand, 1913 → *hortivaga* Kohl. *hunchuz* Shestakov, 1927 and *mickeli* Giner Mari, 1942 → *rufipes evecta* Shestakov. *gegen* Tsuneki, 1961 → *tiendang* Tsuneki, ♂. *tiendang* Tsuneki, ♂, 1961 (nec ♀) → *tienchiao* sp. nov. *spinicollis* Giner, 1942 → *variaesimilis* Maidl. *fukaii basiferruginea* Tsuneki → *variaesimilis* Maidl. *rybyensis thaiana* Tsuneki, 1963 → *pictiventris* Dahlbom.

The material used in the present study was sent through Dr. H. A. Scullen, Professor Emeritus of Oregon State University, from various Institutions and Museums of U. S. A., to whom I express my hearty thanks.

*Abbreviation to the source of the material*

- AM .... American Museum of Natural History.  
 CA .... California Academy of Sciences.  
 CU .... Cornell University.  
 MCZ .... Museum of Comparative Zoology, Harvard University.  
 MU .... University of Minesota.  
 PA .... Academy of Natural Sciences of Philadelphia.  
 SC .... Private collection of Dr. Herman A. Scullen.  
 USC .... Utah State University.  
 USM... United States National Museum.

*Abbreviation to body parts used in the descriptions:*

WH .... Width of head. OOD, POD. OCD .... Oculocellar distance, postocellar distance, ocellocipital distance. IOD .... Interocular distance. OAD. WAS, IAD .... Oculo-antennal distance, Width of antennal socket, Interantennal Distance. OTD, ITD .... Oculo-tentorialpit distance, Intertentorialpits distance. LC .... Length of clypeus. ACD, AOD .... Antenno-clypeal distance, Antenno-ocellar distance (always the length vertically seen).

In the description the abdominal segments were counted in the usual fashion, not including the propodeum.

Regarding the literature I am much indebted to Dr. J. P. van Lith, Rotterdam, and to Dr. S. C. Biswas, State Paper Room of British Museum, to whom I express my appreciation.

## I. SPECIMENS FROM JAPAN, SAGHALIEN AND MANCHURIA

### 1. *Cerceris hortivaga* Kohl, 1880

*Cerceris hortivaga*: Tsuneki, Mem. Fac. Lib. Arts, Fukui Univ., II, 11 (1): 9, 15, 24, 28, 36, 1961 (Japan, Korea, North China).

*Cerceris harmandi*: Auctt. nec Pérez, 1905. (See also p. 5.)

*Specimens examined*: 1 ♀, Sapporo, 27. VII. 1923, E. C. Van Dike leg. (CA); 1 ♀, Tokyo, V-VIII. 1953, D. C. Blodget leg. (CA); 2 ♀♀ 1 ♂, Hikosan, Kyushu, 22. VIII. 1949, K. Yasumatsu leg. (SC); 2 ♀♀, Hikosan, Kyushu, 29. VIII. 1950, K. Yasumatsu leg. (SC); 1 ♀, Oturo (? Otaru), Yezo, VIII. 1910, V. Kühne leg. (CA).

*Remarks*. In the Japanese specimens of this species the pronotum and the 2nd abdominal tergite are almost always lacking the yellow maculae, only very rarely the pronotum carries two small spots.

*Distribution*: See p. 6.

### 2. *Cerceris japonica* Ashmead, 1904

*Cerceris japonica* Ashmead, Jour. N. Y. Ent. Soc., 12 (2): 66, 1904 (Japan, Mitsukuri leg.)

*Cerceris interruptus* Matsumura, Thous. Ins. Jap. Suppl. 4: 168, 1912.

*Cerceris lybyensis japonica*: Tsuneki, Mem. Fac. Lib. Arts, Fukui Univ. II, 11 (1): 30, 1961.

*Cerceris japonica*: Tsuneki, Life Study, 11 (3-4): 45, 1967.

*Specimen examined*: 1 ♀, Fukuoka, Kyushu, VII. 1963. (SC).

*Distribution*: Japan.

### 3. *Cerceris carinalis* Pérez, 1905

*Cerceris carinalis* Pérez, Bull. Mus. Paris, 11: 153, 1905 (Yokohama).

*Cerceris carinalis*: Tsuneki, Mem. Fac. Lib. Arts, Fukui Univ., II, 11 (1): 32, 1961.

*Specimen examined*: 1 ♀, Hikosan, Kyushu, 29. VIII. 1950, K. Yasumatsu leg. (SC).

*Distribution*: Japan.

### 4. *Cerceris arenaria* (Linné, 1758)

*Cerceris quinquecincta* Ashmead (nec Fabricius, 1787), Jour. N. Y. Ent. Soc., 12: 66, 1904.

*Cerceris arenaria*: Tsuneki, Mem. Fac. Lib. Arts, Fukui Univ., II, 11 (1): 26, 41, 49, 63, 1961 (Japan, Korea, N. China, Manchuria, E. Mongolia).

*Specimen examined*: 1 ♀, Yokohama, 31. VIII. ?. Harrington leg. (PA).

*Remarks*. This specimen is lacking the abdomen.

*Distribution*: Throughout Palaearctic Region.

### 5. *Cerceris ruficornis saghaliensis* subsp. nov.

(*Cerceris ruficornis*: Tsuneki, Mem. Fac. Lib. Arts, Fukui Univ., II, 11 (1): 44, with synonymy)

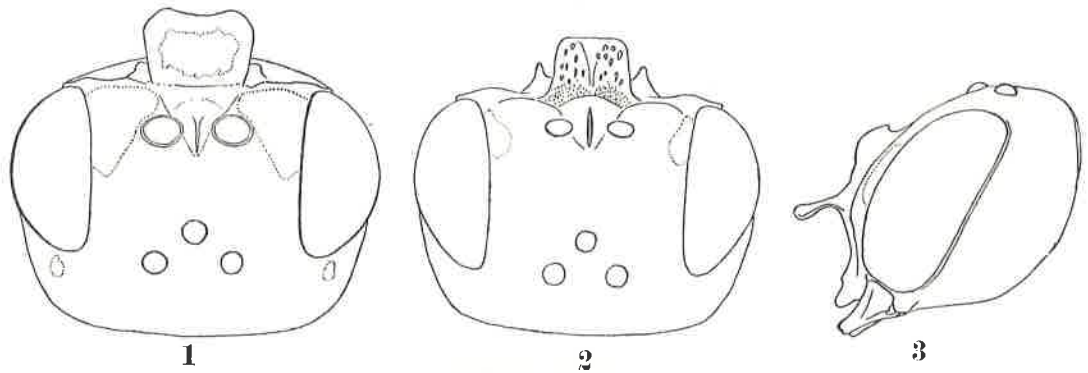
The present subspecies differs from the typical form as follows:

♀. Slightly larger (13.5 mm) and more robust; maculae on body white, similar in pattern except immaculate pronotum, but generally slightly less developed and smaller, antennal flagella beneath yellow, somewhat ferruginous and more clearly outlined; legs slightly darker, with basal dark portion more broadly extended. Clypeal lamina shorter, with ratio of width to length approximately 5 : 3, apical margin rounded and medianly emarginate, the sides slightly divergent

anteriorly (Fig. 1, seen vertical to the lamina). Clypeus below the lamina arcuately, very distinctly striate. Punctuation generally similar, but somewhat stronger; the longitudinal striae on the sides of pronotum and on metapleuron stronger and coarser, punctures on mesonotum turning into rugae posteriorly. (longitudinal carina on inner margin of hind coxa defined, but very weak on median area. Hypopygium with lateral tooth.)

♂. Slightly larger (12.0 mm) and more robust. Maculae on head and wing tegulae orange yellow, but those on postscutellum and abdomen white; upper temples, pronotum and abdominal segment 1 lacking maculae and the maculae on tergite 6 represented by two small spots. Black maculae on front and mid femora more broadly extended. Supra-clypeal area relatively broader and more rounded, the striae on the sides of pronotum and metapleurons stronger and coarser as in ♀; punctures on abdomen slightly more remotely distributed.

Measurements (♀): WH : IOD=87 : 46, OAD : WAS : IAD=12 : 8.5 : 6, OTD : ITD=12 : 25, LC : ACD : AOD=24 : 13 : 23, width of upper margin of median lobe of clypeus relatively 12.



Figs. 1-3. 1. *Cercheris ruficornis saghaliensis* subsp. nov., ♀.

2-3. *Cercheris eversmanni* Schulz, ♀.

1-2. Head seen vertically to the surface of lamina. 3. Head seen in profile.

Holotype: ♀, Toyohara, Saghalien, VIII. 1910, J. C. Thompson leg. (CA).

Paratype: ♂, the same place and date, J. C. Thompson leg. (CA).

*Remarks.* In the male specimen the apical margin of sternite 6 is provided with a dense (but not long) tuft of brownish silky hairs on each side and the median lobe of the clypeus bears a small discoloured window medianly slightly above the middle, and with the apical margin bluntly tridentate and pitchy black in colour, very distinctly outlined.

The typical form of this species has been known to occur as far eastwards as Korea. But the specimen was represented by the male sex only. Judging from the fact that in the present subspecies the racial differences are comparatively weakly represented by the male it seems probable that the Korean specimen belongs to another subspecies.

*Distribution:* Europe, Turkestan, N. China, Korea. First record from Saghalien.

#### 6. *Cercheris eversmanni* Schulz, 1912

*Cercheris cornuta* Eversmann, (nec Fabricius, 1787), Bull. Soc. Imp. Nat. Moscou, 22 (4): 406, 1849.

*Cercheris cornuta:* Dalla Torre (nec Fabricius), Cat. Hym., 8: 456, 1897.

*Cercheris eversmanni* Schulz, Berliner Ent. Zeitschr., 57: 91, 1912.

*Cercheris eversmanni:* Beaumont, Ann. Soc. Ent. France, 119: 67, 1950.

*Specimen examined:* 1 ♀, Weisohn, Manchuria, 31. VIII. 1923, E. C. Van Dyke leg. (CA).

*Remarks.* Maculae of body white except the yellowish ones on tegulae; clypeal lamina wholly

black, a macula on upper temple very minute, pronotum and first abdominal segment immaculate, postscutellum with two transverse maculae; antennal flagella black, only joints 3 and 4 beneath somewhat brownish. Clypeal lamina seen vertical from above: Fig. 2, seen in profile: Fig. 3, the lamina medianly carinate, median lobe below the lamina smooth and polished. Punctuation and sculpture as in the European specimens. Hind coxa with longitudinal carina, hypopygium with lateral tooth.

In my previous paper I dealt with *Cerceris teranishii* known from Japan as a subspecies of this species. Recently, however, it was found that such a treatment was improper and the species returned to its original status.

*Distribution*: Europe. This is the first definite record of the species from Asia.

## II. SPECIMENS FROM CHINA AND N. VIETNAM

### 1. *Cerceris bicincta* Klug, 1835

*Cerceris bicincta*: Tsuneki, Mem. Fac. Lib. Arts, Fukui Univ., II, 11 (1): 41, 49, 57 and 65. (North China, Korea, Manchuria, E. Mongolia) (with other synonyms).

*Cerceris bicincta*: Tsuneki, Etizenia. 9: 35-36 (biol.).

*Specimens examined*: 2 ♀♀, Mouchow, Szechuen, China, 9. VI. 1924, D. C. Graham leg. (USM).

*Remarks*. In the East-Asiatic specimens of this species the maculae on abdominal tergites 3 and 5 are much more broadly emarginate in front. Hence the bands appear much narrower than in the European representatives.

*Distribution*: Europe, Turkestan, N. and M. China, Korea, Manchuria, E. Mongolia.

### 2. *Cerceris hortivaga* Kohl, 1880

*Cerceris hortivaga*: Tsuneki, Mem. Fac. Lib. Arts, Fukui Univ., II, 11 (1): 36, 1961.

*Cerceris formosana* Strand, Arch. Naturg., Abt. A, 1913, (7): 159, 1913 (♀); ———: Yasumatsu, Festschr. 60 Geburtst. E. Strand, 1: 495, 1963 (♀♂).

? *Cerceris (Apiratryx) dubitabilis* Giner Mari, Eos, 18: 119, 1942 (♀♂).

? *Cerceris (Apiratryx) Klapperichi* Giner Mari, Eos, 18: 121, 1942 (♀♂).

*Cerceris (Apiratryx) klapperichi formosana* (!): Giner Mari, Arbeit. morphol. taxon. Ent. Berlin Dahlem, 10 (213): 172, 1943.

*Specimens examined*: 1 ♀, Nanking, 20. VI. 1923, E. C. Van Dyke leg. (CA); 1 ♀, Chengtu, Szechuan, 29. V. 1927 (Cornell, Lot. 784) (CU); 1 ♀, Chengtu, Szechuan, 30. V. 1929 (ditto); 2 ♀♀, Chengtu, Szechuan, 31. V. 1929 (ditto); 1 ♀, Chengtu, Szechuan, 1. VI. 1929 (ditto); 1 ♂, Yenping, Spring, 1915 (AM); 1 ♂, Nanking, 17. IX. 1923, E. C. Van Dyke leg. (CA).

*Remarks*. This species is very variable in the maculation of the thorax and abdomen and also in the sculpture of the area dorsalis. As given elsewhere in this paper in the Japanese specimens the pronotum and the 2nd abdominal tergite are usually without maculae, while in the specimens from Korea and North China the areas usually carry maculae and the maculae are markedly varied in degrees of development. In the specimens observed the maculation is rather close to that of the specimens from Europe, N. China and Korea. Among the 6 ♀♀ 2 ♂♂ specimens examined here:

Pronotum and postscutellum maculated: 2 ♀♀.

Pronotum and postscutellum immaculated: 4 ♀♀ 2 ♂♂.

Second tergite at base maculated: 6 ♀♀ 2 ♂♂.

Second tergite with a narrow apical band (not the membranous margin): 1 ♀.

Second tergite with a apico-lateral small spot on each side: 1 ♂.

Third and fifth (in ♂ third and sixth) tergites with yellow band and fourth (in ♂ fourth and fifth) with a broken or incomplete narrow band: 6 ♀♀ 2 ♂♂.

In some specimens the caudal segment is ferruginous or dark ferruginous. Macula on the third tergite always more or less incised or emarginated in front.

*Cerceris formosana*, *C. dubitabilis*, and *C. klapperichi* are considered to have been given to these variations.

In my previous paper (1961) I thought *Cerceris unifasciata* Smith as a synonym of the present species. But it has a yellow macula on each side of the posterior inclination of the pro-podeum, while in *C. hortivaga*, in so far as my examination goes, there has been found no such an instance. In this paper, therefore, I dealt with the species as distinct from *hortivaga*.

*Distribution*: Europe, North China, Korea and Japan, and Szechuan is the southernmost record of distribution of this species in East Asia.

### 3. *Cerceris pictiventris formosicola* Strand, 1913

*Cerceris novarae* var. *formosicola* Strand, Arch. Naturg., Abt. A, 79 (7): 161, 1913 (♀♂, Formosa).

*Cerceris (Apiratryx) formosicola*: Giner Mari, Arb. morphol. taxon. Ent. Berlin-Dahlem, 10 (2-3): 170 (♀♂, Formosa).

*Cerceris pictiventris formosicola*: Van der Vecht, Zool. Meded., 39: 354, 1964.

*Specimens examined*: 3 ♂♂, Chengtu, Szechuan, 21. V., 13. VI, 17. VI. 1929 (CU).

*Remarks*. The somewhat conically producing supra-clypeal area is a character in common with the female of various races. Other characters well agree with the descriptions given first by Strand and later by Giner Mari except that abdominal sternites 2-4 always with a yellow spot on each side. In one specimen, however, postero-lateral portions of tergites 2 and 4 are maculated with a yellow transverse marking, and sternite 5 also with a yellow spot on each side. The platform on sternite 2 distinctly margined with the perpendicular wall, reaching posteriorly about middle of the incrassate area of the segment.

*C. p. formosicola* differs from *C. p. pictiventris* in that both median lobe of clypeus at base and supra-clypeal area comparatively more highly raised. The specimen from the Continental China is slightly less developed in this respect, but distinctly closer to *formosicola* than to the nominate race.

*Distribution*: Formosa. This is the first record from the Continent. The nominate species is widely distributed over S. E. Asia and New Guinea, including several subspecies.

### 4. *Cerceris kwangtsehiana* Giner Mari, 1942

*Cerceris kwangtsehiana* Giner Mari, Eos, 18: 143, 1842 (Kwangtseh) (♀).

*Specimen examined*: 1 ♀, Wangshan, 5. VIII. 1935, T. C. Ma leg. (SC).

*Remarks*. The specimen well agrees in characters with the detailed description given by the original author. Some supplementary notes:

Antenna: Fig. 5. Head in front: Fig. 4. On the lower area of clypeus there are a pair of lamellate processes having a longitudinal thick carina on each surface near the medial line. The state must be a primitive form of the clypeal lamina variously developed in some other species. Anterior margin of clypeus proper medianly widely produced, with the margin broadly roundly emarginate and with the lateral corners roundly produced; slightly apart from the denticular corner a short, less strong, but distinct tooth is observed (Fig. 4). On the medio-apical areas of abdominal tergites 1-4 an impression is distinctly observed, instead of "una foseta centro-apical

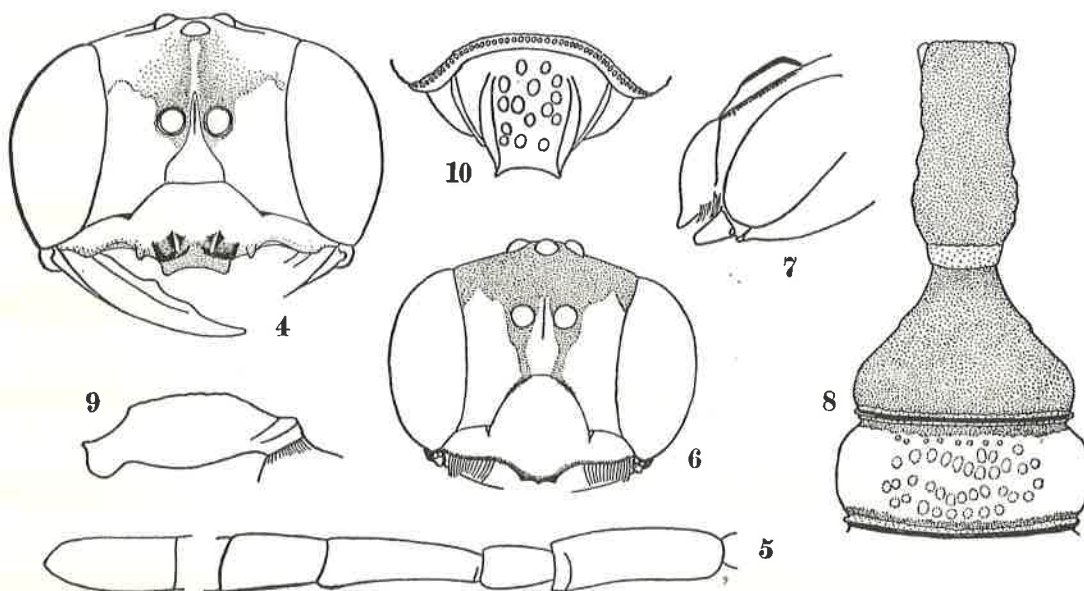
que sólo se repite en el 2o'' Hind coxa without longitudinal carina on inner side. The structure of hypopygium unobservable. Measurements:

OOD : POD : OCD = 16 : 10 : 23 (postocellus relatively 6). WH : IOD = 102 : 51 (at antennal base). AOD : WAS : IAD = 14 : 7 : 7. OTD : ITD = 12 : 31, LC : ACD : AOD = 23 : 12 : 22.

*Distribution*: China (Central coastal region).

##### 5. *Cerceris yepingensis* sp. nov.

This species (♂) is closely related in many characters including the markedly lengthened 1st abdominal segment to *Cerceris caelebs* Giner Mari, but is different from it in the structure and punctuation of the clypeus and somewhat also in coloration. The species is characterized by that the area dorsalis is simply punctured, sternite 2 without distinct platform at the base, only vaguely raised, yet the abdomen not regularly yellow banded, petiole markedly lengthened and sternite 7 simple, not particularly haired.



Figs. 4-10. 4-5. *Cerceris kwangtsehiana* Giner, ♀.

6-10. *Cerceris yepingensis* sp. nov., ♂.

4. Head seen in front. 5. Antenna. 6. Head seen in front. 7. Head seen in profile. 8. Basal 3 tergites of abdomen. 9. Petiole of abdomen seen in profile. 10. Pygidial area.

On the other hand, this species seems close to *Cerceris vulcanica* Van der Vecht known from Java, but differs from it in the punctuation of the body (not duplipunctate). Further, abdominal tergite 2 in this species completely black.

♂. Length about 10 mm. Black, variegated with yellow and brown. Yellow: Mandibles except marginal areas and apex (dark brown), clypeus except apical margin (brown), supra-clypeal area and interantennal carina, sides of lower frons extending inwards but not reaching the supra-clypeal yellow (Fig. 6), a spot on upper outer orbit, antennal joint 1 in front, medianly broadly interrupted band on pronotum, posterior margin of humeral angles\* and wing tegulae\*, two vague spots on scutellum\*, postscutellum\*, two large irregular-shaped maculae on posterior aspect of propodeum, abdominal tergite 3 nearly wholly, a line near posterior margin of tergites 4\*, 5\* and 6\*, tergite 7\* nearly wholly, fore and mid tibiae in front and hind tibiae in front



narrowly on basal half (portions with an asterisk more or less brownish). Ferruginous: Palpi, antennal flagella beneath, both ends of all femora and fore tarsi beneath. Dark brown: Antennae above, all coxae, all trochanters above, all femora, fore and mid tibiae externally, hind tibiae largely and all tarsi. Wings hyaline, slightly fuscous, radial cell and its outer area markedly darkened, veins and stigma dark brown. Lower frons and clypeus closely covered with half erected, moderately long silvery pubescence, markedly close among the members of this genus (but not so much as in Crabroninae) and closer by degrees toward apex where the surface hardly visible; anterior tufts of lateral lobes silky yellow, not particularly broad (Fig. 6).

Head wider than thorax, OOD : POD : OCD=14 : 8 : 13, postocellus relatively 6. Head seen in front: Fig. 6, inner orbits subparallel, slightly divergent in both directions, WH : IOD=83 : 42, OAD : WAS : IAD=12 : 6 : 7, OTD : ITD=9 : 27, LC : ACD : AOD=32 : 13 : 18, width of apical margin of median lobe measured between outer margins of lateral teeth only 11, median lobe of clypeus markedly convex (Fig. 7), without the raised ridge in middle, the convexity ends slightly before the level of anterior margin of lateral lobes, thence median lobe produced low anteriorly (Fig. 7), anterior margin narrow and distinctly tridentate (Fig. 6), interantennal carina high, transparent on top, ending upwards with the yellow mark there. Head in profile with eye much wider than temple. Antennal joints 3, 4 and 5 with relative length approximately 13, 10 and 9, joint 3 about 2.5 times (narrowest view, in widest view 2.3 times) as long as broad at apex, succeeding joints gradually slightly wider and shorter, but even penultimate joint slightly longer than wide, ultimate joint as long as joint 3, not bent, nor particularly haired, normally suddenly narrowed at apex, no tyloidea on any joint. Pronotum without median furrow, with lateral margins roundly convergent anteriorly, with angles rounded, antero-lateral vertical carinae not particularly strong; mesopleuron with scrobal furrow broad and deep, with upper and lower portions markedly roundly raised, the latter without precoxal tubercle. On propodeum area dorsalis triangular, with lateral furrows shallow, gently rounded out and coarsely crenate or foveolate, with disc markedly roundly convex, without medial furrow, only with a very fine weak impressed line observable in oblique light only; sides of the segment with a slightly obliquely inclined longitudinal furrow on lower portion, from base of mid coxa to about middle of the segment, with the lower margin sharply outlined. Abdominal tergites 1 and 2: Fig. 8, the former about twice as long as wide across, its lateral view: Fig. 9. Pygidial area: Fig. 10. Sternite 2 with a small platform at base, the area only gently raised, without distinct outline, succeeding sternites without particular character, sternite 7 not provided with tufts of hairs. Wing venation normal. Hind coxa without longitudinal carina on inner side.

Vertex and upper frons punctate-reticulate with moderate-sized punctures, on oculocellar line punctures about 5 in number, on lower frons punctures similar in size, but sparse, with intervals closely covered with hair-bearing minute points; clypeus finely closely punctured with hair-bearing points; punctures on mesonotum and scutellum larger than on vertex, with more or less interspaces carrying also minute points, mesopleuron coarsely reticulate, metapleuron with upper portion longitudinally coarsely striate, lower portion nearly smooth; propodeum very coarsely punctured, subreticulate, area dorsalis finely punctured, punctures partly transversely rugosely confluent, sides of the segment coarsely reticulate on posterior half, very finely punctured and rugoso-punctured on anterior half. Abdominal tergites coarsely punctured, subreticulate, on tergites 1 and 2 punctures larger, with more or less intervals, pygidial area coarsely sparsely punctured, with intervals minutely coriaceous; sternites smooth and polished, with large punctures scattered on posterior portion of each segment.

♀. Unknown.

Holotype: ♂, Yenping, China, 7. IX. 1917 (Coll. American Museum, Ac 5148).

6. *Cerceris sternodonta fukiensis* Giner Mari (conj. nov.)

? *Cerceris fervida* Smith, Cat. Hym. Ins. Brit. Mus., 4: 455, 1856 (♀, N. China).

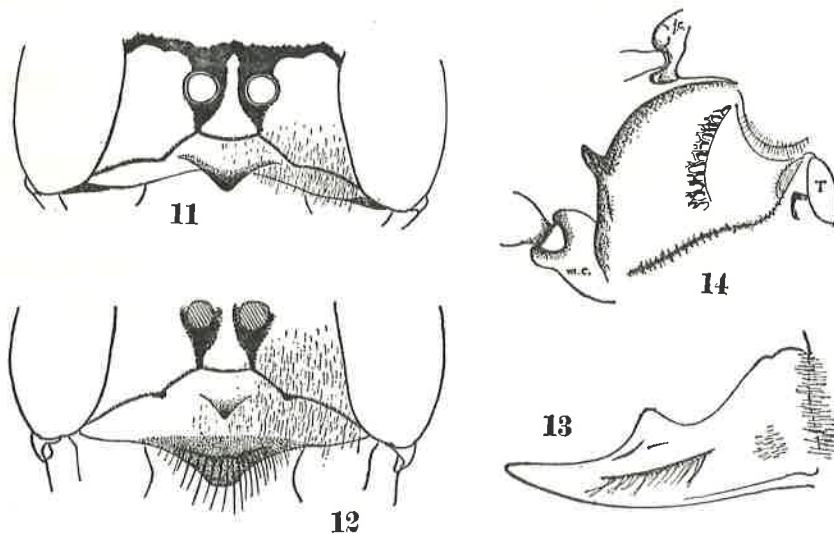
*Cerceris sternodonta* Gussakovskij, Ark. Zool. 30 A, No. 15: 10, 1938 (Kiangsu).

*Cerceris* (s. str.) *fukiensis* Giner Mari, Eos, 18: 140, 1942 (♀♂, Shaowu and Kwangtseh).

*Specimens examined*: 2 ♀♀, Yenping, China, 6. VII. 1917. VII. 1920 (AM); 1 ♀, Wuchow, Kwangsi, China, V. 1939, G. Lin leg. (MCZ); 1 ♂, Hanoi, Indo-China, IV-V. 1917, V. Demange (CU); 1 ♂, Yenping, China, 6. VI. 1917 (AM); 1 ♂, Wuchow, Kwangsi, China, V. 1939, G. Lin leg. (MCZ); 1 ♂, Chengtu, Szechuan, China (CU).

*Remarks.* *Cerceris fukiensis*, a comparatively large black species with a few yellow maculae, was described as a valid species, but it is considered a colour variation of *C. sternodonta* Gussakovskij (1938) known from Kiangsu. *C. sternodonta* is much more brightly maculated than in *fukiensis*, with the abdomen broadly ferruginous. In reality, however, it is uncertain whether the different coloration in *sternodonta* s. str. is geographically constant or not. But in the present state of our knowledge it seems inevitable to deal with it as such.

The characters of the specimens (♀♂) well agree with the descriptions of Gussakovskij as well as Giner Mari, except some colorific distinctions. In the males the narrow yellow band on tergite 6 is usually absent, only in one specimen it is represented by a small spot. In one specimen from Chengtu, Szechuan, yellow maculae are more developed than in others: A spot on upper temple behind eye, a spot near lateral angle of pronotum, two spots on medio-apical area of tergite 2, latero-posterior transverse line on tergite 4, medianly interrupted narrow band on tergite 5 before apex, a broad band on tergite 6, the band on tergite 3 much broader than usual, occupying 3/4 of the incrassate area of the segment; legs in pattern of maculation similar, but each macula much more broadly extended. The form of the apical portion of the antenna is as given by the authors above mentioned, but the tyloidea usually on joints 10-13 as given by Gussakovskij, not on joints 12 and 13 as mentioned by Giner Mari, in the specimen from Hanoi joint 9 also carried the tyloidea. This specimen is also different from others in some respect: The size is larger, about



Figs. 11-14. *Cerceris sternodonta fukiensis* Giner., ♀.

11. Head seen vertically to the lamina. 12. Head seen in front. 13. Mandible.  
14. Mesopleural tooth (T: Tegula, f.c.: fore coxa, m.c.: mid coxa).

15 mm in length and the area dorsalis on the propodeum is very coarsely obliquely striate on the sides, with the medio-basal region almost without sculpture, smooth and polished. Measurement of this specimen: OOD : POD : OCD = 19 : 14 : 23, postocellus relatively 7.5, WH : IOD = 120 : 54, OAD : WAS : IAD = 13 : 9 : 10, OTD : ITD = 10 : 39, LC : ACD : AOD = 45 : 18 : 30, upper margin of median lobe of clypeus relatively 14, apical margin of the the median lobe measured between outer margin of the lateral teeth relatively 17 (therefore the apical margin very narrow); antennal joint 3 in the narrowest view 2.7 times, in the widest view only 2.3 times as long as wide at apex. Hind coxa without longitudinal carina on inner margin.

In the female specimens lower frons and clypeus seen obliquely from above (vertical to the lamina); Fig. 11, seen in front; Fig. 12, the areas fairly closely covered with half-erected silvery hairs, median lobe provided with a row of long bristles above the anterior margin, the dotted area of the clypeus in Fig. 12 brown; but the apical portion of the triangular lamina rather red; mandible with a stout tooth on inner margin toward middle; mesopleural tooth as given in Fig. 14 (T, tegula, f.c., fore coxa, m.c., mid coxa), seen obliquely from above. posterior processes of hypopygium markedly broad, lateral tooth very short, unobservable without removing the tuft of hairs. Hind coxa without distinct longitudinal carina on inner side.

As to the problematical species, *C. fervida* Smith, an adequate discussion was already given by Giner Mari. But it seems to me that there is still a possibility that they are conspecific.

#### 7. *Cerceris rufipes evecta* Shestakov, 1922

*Cerceris tuberculata* var. *bicornuta* Sickmann, Zool. Jahrb., Abt. Syst., 8 (2): 204, 1895 (N. China).

*Cerceris evecta* Shestakov, Ann. Mus. Zool. Acad. Sci. Russ., 23: 3, 1922; ———: Gussakovskij, Ark.

Zool., 30 A, 15: 15, 1938; ———: Yasumatsu, Mushi, 14 (2): 107, 1942.

*Cerceris hunchuz* Shestakov, Soc. ent., 42: 31, 1927.

*Cerceris* (s.str.) *mickeli* Giner Mari, Eos, 18: 136, 1942 (S. China) {SYN. NOV.}.

*Cerceris rufipes evecta*: Tsuneki, Mem. Fac. Lib. Arts, Fukui Univ., II, 11 (1): 53, 63, 70, 1961 (N. China and Inner Mongolia).

*Specimen examined*: 1 ♂, Yenping, China, 18. VII. 1917. (AM).

*Remarks*. In his paper published in 1927 on *tuberculata* (= *rufipes*) group of *Cerceris* Shestakov used the form of the clypeal lamina of the female as the key character to separate the species, namely, the running state of the lateral margins and the state of emargination of the anterior margin. According to my observation of the specimens from N. China (Peking — 7 ♀♀) and East Mongolia (Apaka — 4 ♀♀), both I believe to belong to subsp. *evecta*, these characters are not always reliable. Generally speaking, in the Peking population the lateral margins are divergent anteriorly and deeply subtriangularly incised in front, while in the Apaka population the sides are subparallel and the anterior emargination slightly shallower and rounded. But, among the Peking specimens some have the lamina similar in form to that of Mongolia and there is a considerable variation in the divergency of the sides and in the depth and form of the anterior emargination. The same is also true with the Apaka specimens. Among them one has the lamina fairly markedly divergent anteriorly, but one has, to the contrary, the lamina slightly convergent anteriorly. The anterior emargination is also in one specimen fairly deep and triangular. Further, the relative width at the base or at the apex to the length of the lamina is quite inconstant. In the same paper Shestakov also used the relative width between the base and apex of the pygidial area. But this character is quite variable among the specimens of the same locality. Some have the area subequal in width at the base and at the apex, while some others have the area slightly or considerably wider at the base than at the apex. Followed faithfully his classification the members of the same population will be separated into several subspecies or species.

As for the coloration I pointed out that it is considerably varied ( $\text{♀}\text{♂}$ ), sometimes according to the locality of the specimens, sometimes simply among specimens of the same locality. At least with respect to the Apaka specimens the latter sort of variation is greater than in the former.

The specimen examined here belongs to a bright coloured form, very similar in the pattern of maculation and in its colour tone to some form of my specimens from East Mongolia (Tsuneki, 1961, p. 70). On the other hand, the specimen completely agrees in structural characters with the description of *Cerceris mickeli* Giner. This author compared his species with *C. tuberculata* (= *rufipes*) and *C. evecta*, yet he considered his species distinct. According to my opinion, however, the differences he gave are not sufficient enough to separate species and *mickeli* is only a colour form of *Cerceris rufipes evecta*.

The female of *mickeli* is rather similar in colour to some specimen of E. Mongolia, while the male to that of N. China. The fact seems to be another evidence that colour is quite incredible.

#### 8. *Cerceris tiendang* Tsuneki, 1961

*Cerceris tiendang* Tsuneki, Mem. Fac. Lib. Arts, Fukui Univ., II, 11 (1): 51, 1961 ( $\text{♀}$ , Peking).

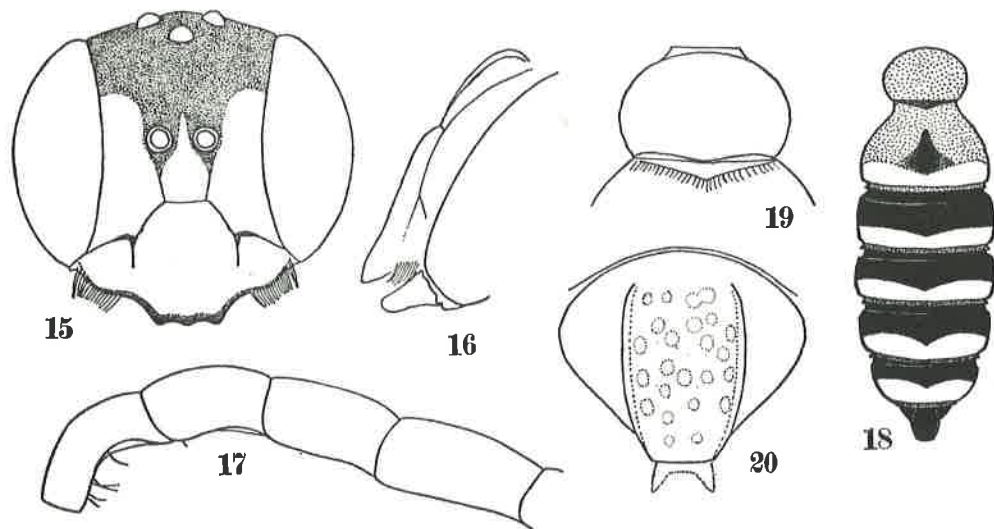
*Cerceris gegen* Tsuneki, Ibid., 11 (1): 69, 1961 ( $\text{♂}$ , Inner Mongolia) (SYN. NOV.).

*Specimens examined*: 1  $\text{♀}$ , Peking; VIII. 1932, G. Lin (MCZ); 1  $\text{♂}$ , Peking, date unknown, G. Lin leg. (MCZ).

**Remarks.** (1) *Colour variation in ♀*. It was a great surprise to me to find in this species a specimen that differs so markedly in coloration from the type, in spite of the fact that it is the inhabitant of the same locality. In the type specimen abdominal segments 1 and 2, and the sides of tergite 3 ferruginous, and sternites 3-5 deep brownish, posteriorly much darker; legs wholly ferruginous except coxae, trochanters and base of femora of front legs and base of coxae of mid and hind legs which are dark brownish. While in the specimen before me the abdomen wholly black, with 3 pairs of white lateral markings similar to those of the type, and all the legs from base up to 2/3 of femora black. Further, it has a pair of small dark brown spots on the black cone of the clypeus. The differences are very striking, but both the specimens are captured in Peking, hence must belong to the same population, and must be considered showing a simple variation. Structurally and sculpturally, however, I can find no difference whatever.

(2) *Notes on the male*. In my previous paper on *Cerceris* of N. E. Asia I combined with a query a male specimen from the same locality having a fairly different coloration with the female of *C. tiendang*, basing mainly on the structural distinctions. Upon having a glimpse of the male specimen that has a very similar coloration to that of the type of *C. tiendang* ( $\text{♀}$ ) and, moreover, that came from the same locality, I was greatly interested in comparing their structural characters in detail. As a result of the close examination I arrived at the conclusion that the specimen must represent the true male of *C. tiendang*. In the course of the examination I became aware of that it was nothing else than the species known as *C. gegen* Tsuneki, compiled upon two male specimens captured in E. Mongolia. At the time of writing the remote separation of the localities of the specimens arrested to combine the specimens. But now it has been shown that they are sympatric. Thus the name, *C. gegen* has come to be suppressed as a synonym of *C. tiendang*.

(3) *Redescription of the male*. Length 9.3-10.2 mm. Black, variegated with yellow and ferruginous. Cream yellow: Mandibles except apical third, clypeus except apex, supra-clypeal area, interantennal carina, large inner-orbital maculae reaching inwards clypeus and supra-clypeal area and upwards slightly above upper end of interantennal carina (Fig. 15 ... dotted area black),



Figs. 15-20. *Cerceris tiendang* Tsuneki. ♂.

15. Head seen in front. 16. Head seen in profile. 17. Antenna. 18. Abdomen.  
19. Petiole of abdomen. 20. Pygidial area.

antennal scape except the dorsal brownish streak, a spot on upper temple behind eye, two large maculae on pronotum, wingtegulae, postscutellum, medianly narrowed ante-apical bands on abdominal tergites 2-6 and postero-lateral maculae on sternites 2-4. Orange yellow: Legs except front coxae (black) and all tarsal joints 2-5 (ferruginous). Ferruginous: Flagellum of antennae beneath and joint 3 and ultimate joint nearly wholly, wing veins, tarsi of legs except basitarsi (front tarsi paler), abdominal segment 1 wholly, 2 wholly except apical yellow and a triangular dark brown on disc, narrow apical margin of each segment (Fig. 18, dotted area ferruginous) and base of sternite 3. Wings markedly yellowish, apically slightly clouded.

Head from above twice as broad as long in middle, with occipital margin roundly emarginate, with ocelli located in a broad triangle,  $OOD : POD : OCD = 12 : 12 : 20$ . Head seen in front: Fig. 15, median lobe of clypeus gently raised and broadly flattened, with a comparatively broad discoloured window, seen in profile: Fig. 16, apical margin tridentate, supra-clypeal area comparatively large, interantennal carina short, ending soon above the level of upper edge of antennal sockets, but connecting with one of the rugae on frons. Measurements as follows:  $WH : IOD = 87 : 42$ ,  $OAD : WAS : IAD = 11 : 7 : 6$ ,  $OTD : ITD = 11 : 25$ , width of upper margin of median lobe relatively 11,  $LC : ACD : AOD = 33 : 15 : 21$ . Antennal joint 1 nearly as long as joint 3, joint 3 nearly 2.5 times (dorsal view) as long as wide at apex, joint 4 by  $1/6$  shorter than joint 3, subsequent joints progressively reducing in length up to penultimate joint, apical 4 joints: Fig. 17, head seen in profile with temple less than as wide as eye. Pronotum with lateral margins strongly convergent anteriorly, without median impression, the area (collar) comparatively thick, approximately  $1/3$  as long in middle as mesonotum, mesopleuron with scrobal furrow broad and deep, but not well outlined; on propodeum area dorsalis triangular, gently roundly raised, posterior aspect very weakly excavated. Abdomen: Fig. 18, petiole wider than long (ratio 4 : 3), with sides rounded (Fig. 19), pygidial area: Fig. 20, sternite without basal platform, sternites 3-6 each with an ante-apical row of comparatively long fine and sparse hairs, sternite 6 without lateral tufts of hairs, nor any lateral processes, apical fringe of hairs on sternite 7 short, close, whitish and not curved. Hind coxa with longitudinal carina as in ♀, wing venation normal.

Head above coarsely punctate-reticulate, on sides posteriorly transversely rugoso-reticulate,

on upper frons longitudinally rugoso-striate, mixing punctures in between. Lower frons sparsely, clypeus much more sparsely punctured with medium-sized punctures, the former mixing a minute points between. Thorax similarly coarsely reticulato-punctate as on vertex, on mesonotum punctures longitudinally confluent and posteriorly substriate, on scutellum posteriorly punctures sparse, metapleuron longitudinally fairly closely striate; area dorsalis rather coarsely, very strongly and radiately striate, with furrows between striae about 13 in number, rest of the segment coarsely reticulate. Abdominal tergite 1 coarsely subreticulate, on the subsequent tergites punctures progressively smaller and sparser, on tergite 5 intervals between punctures generally as large as punctures; pygidial area coarsely sparsely punctured, with intervals minutely coriaceous; on sternites punctures medium-sized and sparse, mixing minute points in between.

*Distribution*: N. China and E. Mongolia.

#### 9. *Cerceris tienchiao* sp. nov.

*Cerceris tiendang* Tsuneki, ♂, nec ♀, Mem. Fac. Lib. Arts, Fukui Univ., II, 11 (1): 17 (key), 52 (description), 1961 (Peking).

As a result of the new combination of sexes of *Cerceris tiendang* the male of the first published combination has become to be separated from this species. To the separated male a new name was given as above.

Detailed description and figures of the new species were already given in the original text. Measurements: OOD : POD : OCD = 12 : 9 : 14 (postocellus relatively 4), WH : IOD = 71 : 36, OAD : WAS : IAD = 11 : 5 : 6, OTD : ITD = 8 : 22, upper margin of medial lobe of clypeus relatively 8, LC : ACD : AOD = 28 : 9 : 20.

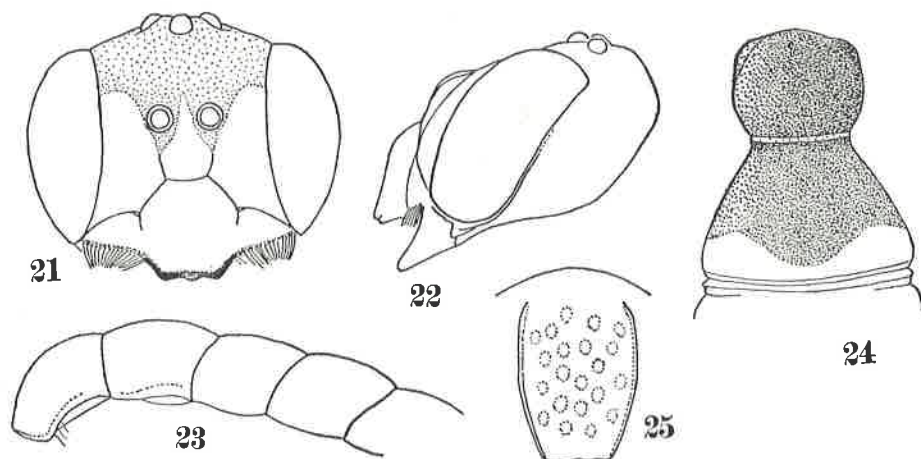
Holotype: ♂, Peking, 4. VII. 1938, K, Tsuneki leg. (Coll. Tsuneki).

#### 10. *Cerceris szechuana* sp. nov.

This species (♂) is closely related in structure as well as in colour to *Cerceris flavilabris* (Fabr.) (= *ferreri* Van der Linden) of the northern Palaearctic Region, but is different from it in that the antennal joints towards middle are much shorter, the median lobe of the clypeus is much more strongly convex and the area dorsalis of the propodeum is almost equilateral triangular, and more finely and longitudinally striate, with the apical portion smooth and polished. The present species is also considered similar to *Cerceris diabolicus* Giner Mari (1942), known from Kwantseh, but can be distinguished from it by the much more convex clypeus and less strong and less dense punctuation. Further, *diabolicus* must be different from the present species in the colour of the antennae (in being black in colour), in the sculpture of the area dorsalis (more sparsely obliquely striate) and in the form of the pygidial area (twice as long as broad).

♂. Length about 9.5 to 10.0 mm. Black, variegated mainly with yellow. Cream yellow: Mandibles except apical 2/5, clypeus except apical margin, supra-clypeal area, interantennal carina except broad edge, inner orbital maculae filling lower face (Fig. 21). Orange yellow: Antennal scape largely, a spot on upper temple behind eye, two large maculae on pronotum, tegulae of wings, postscutellum, medianly narrowed bands on tergites 2-6 (on 2-4 the bands extended forwards at the lateral ends), similar bands on sternites 2-5, legs except: front coxae, greater part of mid coxae and hind coxae at base. Apical margin of median lobe of clypeus dark brown, laterally somewhat paler. Antennae ferruginous, beneath much paler and above apically narrowly darkened; pygidial area ferruginous to dark brown. Legs with femora and hind tibiae slightly brownish, but glossy. Wings faintly clouded and somewhat yellowish, veins yellow to pale brown except dark brown subcosta and media.

Head from above with ratio of width to length in middle about 2 : 1, with temples nearly



Figs. 21-25. *Cercheris szechuana* sp. nov., ♂.  
 21. Head seen in front. 22. Head seen in profile. 23. Antenna. 24. Basal 2 segments of abdomen. 25. Pygidial area.

straightly convergent posteriorly and with occipital margin roundly emarginate, OOD : POD : OCD = 11 : 9 : 18, ocelli similar in size, relatively 4. Head seen in front: Fig. 21, inner orbits divergent towards clypeus, median lobe of clypeus fairly strongly convex (Fig. 22), with disc flattened, highest at the line of tentorial pits, interantennal carina short, but continued upwards for some distance as one of the surface striae. Head seen in profile: Fig. 22, with eye as wide as temple. Measurements: WH : IOD = 73 : 37, OAD : WAS : IAD = 10 : 6 : 5.5, OTD : ITD = 9.5 : 22, LC : ACD : AOD = 25 : 12 : 18, upper margin of median lobe relatively 10. Relative length of antennal joints 1-6: 14, 6, 13, 10.5, 10, 9.5, joints 3 and 7 approximately 2.5 times and 1.4 times as long as wide at each apex (dorsal view), ultimate joint (Fig. 23) nearly as long as penultimate joint, but narrower, slightly bent, with apex truncate and provided beneath with a few fine short hairs near apex, apical 6 joints beneath with a glossy tyloidea respectively, those of joints 8-10 rather weak (Fig. 23). Pronotum with lateral corners rounded, without medial furrow, vertical carina in front of lateral angle separated from the angle by a weak furrow and somewhat obliquely running down, mesopleuron with scrobal furrow broad and deep, but not well outlined, without precoxal tooth. Area dorsalis in form complete equilateral triangle, gently convex and medianly deeply furrowed, propodeum from about middle of area dorsalis roundly inclined posteriorly, posterior aspect with the median impression fairly deep. Abdominal segments 1 and 2: Fig. 24, 1 very slightly wider than long, 2 with relative width to WH 51 : 73, sternite 2 without basal platform, pygidial area: Fig. 25, sternite 6 without particular protuberances at the sides, also without the tufts of hairs, sternite 7 with the apical fringe of hairs, laterally long, medianly gradually short, dense and curved inwards. Legs with hind coxa longitudinally carinated on inner margin, basal lobe of hind wing about 1/6 of the anal cell.

Median lobe of clypeus with medium-sized close punctures on upper portion, on the rest punctures sparse, especially on the sides, lateral lobes more finely and more closely punctured; on face punctures medium-sized, close, with minute points scattered between, punctures on vertex slightly coarse, closer, subreticulate, on ocellar region and middle of upper frons fine, irregular, partly longitudinally rugoso-striate. On mesonotum punctures as coarse as on vertex, anteriorly close, elongate and longitudinally confluent, on the disc and posteriorly shallow and much sparser. Propodeum coarsely rugoso-reticulate, area dorsalis longitudinally (not obliquely) finely and close-

ly striate, the striae obsolete posteriorly. Punctures on abdominal tergites progressively sparser, weaker and finer posteriorly, on each tergite medianly comparatively closer and laterally and posteriorly much sparser and larger, tergite 1 reticulato-punctate, 2 subreticulate on the disc, on tergite 4 punctures larger than intervals, but on the yellow banded area intervals larger. Pygidial area strongly sparsely punctured, with interspaces minutely coriaceous. Hairs on face yellow, fine, not long except the apical fringes of lateral lobes, on vertex, temples, thorax and 1st abdominal tergite pale yellowish brown, long and sparse.

Holotype: ♂, Mowchow, Szechuan, China, 9. VII. 1924, D. C. Graham (1400-4500) (USM).

Paratype: 1 ♂, the same place, 3. VII. 1924, D. C. Graham (1500-4500 ft.) (USM).

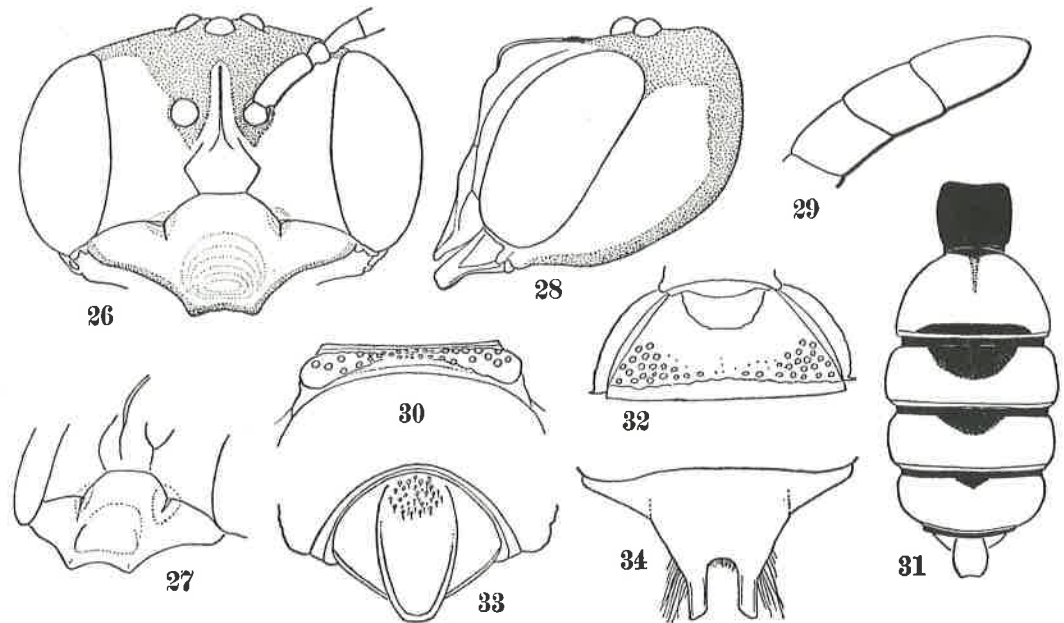
#### 11. *Cerceris crassicollis* sp. nov.

The colour of the specimen is considered heavily changed probably by the cyanide vapour and the discrimination between yellow and ferruginous is almost impossible except some maculae on the head. The description on the colour below given, therefore, depends largely upon the presumption from certain areas remained unchanged.

♀. Length 12.8 mm. Black with rich yellow or orange maculae: Mandibles except the apical third, clypeus except apical margin, supra-clypeal area, interantennal carina, maculae along inner orbits occupying whole the space of the lower face, a large macula on temple, nearly as large as eye and reaching below base of mandible, antennal joint 1 except apex, collar of pronotum, humeral angles and both sides of prothorax except a dark brown patch in front of humeral angle, scutellum and postscutellum largely, a large macula on mesopleuron partly interrupted at the scrobal furrow and extending irregularly to mesosternum, an elongate macula on upper portion of metapleuron, metasternum, two large maculae on propodeum occupying the greater part of the segment (except area cordata, median stripe on posterior aspect and anterior border of the sides), abdominal segments as given in Fig. 31, sternite 2 medianly and a patch in middle on the border between 3 and 4. Legs yellow except base of front and mid coxae, but femora externally somewhat brownish. Apical margin of whole the clypeus pale glossy brown, and antennal flagella ferruginous except the dark brown upper side of apical portion. Wings hyaline, slightly yellowish, subcosta dark brown, stigma brown, rest of veins yellow, apically brownish.

Head above, OOD : POD : OCD = 20 : 12 : 23, head in front: Fig. 26, OAD : WAS : IAD = 16 : 9 : 9, interantennal carina comparatively long, reaching near front ocellus, median lobe of clypeus about as long as wide (ratio of width to length 30 : 31, OTD : ITD = 18 : 30), hardly raised and broadly roundly excavated on its anterior 2/3, the areas around tentorial pits comparatively broadly impressed, thus the surface appearing to have 3 impressions (medio-apical large and latero-posterior small ones, Figs. 26, 27); head in profile: Fig. 28, with eye about as thick as temple. Antennal joints with relative length: 20, 6, 12, 10, 9, 9, 9, 9, 9, 8.5, 8 and 11, joint 3 about 1.7 times as long as wide at apex, joints of middle portion slightly longer than wide, ultimate joint (Fig. 29) not bent, no tyloidea on any joint. Pronotum with collar well developed, seen from above with anterior margin broadly, very gently emarginate, with sides markedly roundly incrassate, hence the median area appears somewhat depressed (Fig. 30), scrobal furrow on mesopleuron broad and deep, without tooth or tubercle in front of mid coxa. Area dorsalis triangular, distinctly margined by comparatively broad crenate furrows, with median furrow broad, deep and also crenate, extending up to posterior aspect and reaching apex of the segment as a fine groove. Abdomen: Fig. 31, tergite 1 slightly wider than long (42 : 36), with apical lamellate fringe very short, not erected high, tergite 2 approximately semicircular, with relative width to head 85 : 105, pygidial area (Fig. 33) linguinate, without angles postero-laterally, with





Figs. 26-34. *Cerceris crassicollis* sp. nov., ♀.

26. Head seen in front. 27. Clypeus seen obliquely from above. 28. Head seen in profile. 29. Antenna (apical 3 joints). 30. Pronotum. 31. Abdomen. 32. Platform of abdominal sternite 2. 33. Pygidial area. 34. Hypopygium.

surface gently convex on anterior 2/3 and gently concave or rather flattened on posterior 1/3, marginal areas slightly raised externally, ending in feeble carinae on both side; sternite 2 with very low basal platform, but with posterior margin well defined in posterior view (Fig. 32), sternite 5 with postero-lateral area incrassate, but not toothed, sternite 6 with a pair of well marked tufts of hairs apically, but without lateral teeth (Fig. 34). Basal lobe of hind wing approximately 1/3 as long as anal cell. Legs normal, hind coxa with longitudinal carina on inner side.

Vertex coarsely reticulato-punctate, temples more coarsely but somewhat sparsely punctured, punctures on frons medially finer and closer, laterally longitudinally confluent and subrugose, on lower frons laterally coarse but sparse (with distinct intervals), on supra-clypeal area and median lobe of clypeus finer and sparser (intervals mostly twice as large as punctures). Punctures on pro- and mesonotum as coarse as those on vertex, but not always uniform in size, on mesonotum anteriorly close, subreticulate, on middle and posterior portions sparse and coarse, on the disc intervals nearly as large as punctures and scattered closely with micropoints, not glossy; punctures on mesopleurons close and reticulate, on propodeum strong, coarse, subreticulate; area dorsalis with 3-4 medium-sized well outlined rounded punctures on each half of the disc, intervals scattered with abundant micropoints, not glossy. Punctures on abdominal tergite 1 as large as those on vertex, but rather sparse, on central area intervals nearly as large as punctures, on tergites 2-5 punctures progressively slightly smaller posteriorly, but everywhere subreticulate, tergite 6 very sparsely coarsely punctured, with intervals very minutely coriaceous, area pygidialis basally with a few small hair-bearing punctures, subsequent region up to 2/5 from base also with hair-bearing, but much finer points scattered, remaining apical 3/5 glabrous, punctureless, but with surface velvety, not glossy; sternite 2 with coarse punctures spico-laterally, punctuation on sternites 3-5 similar, but the punctured area slightly more extended inwards, sternite 6 impunctate,

minutely coriaceous. Head, thorax and abdomen fairly closely covered with short white pubescence, pubescence on anterior margin of lateral lobes of clypeus longer, closer; on vertex and abdominal tergite 1 mixing a few longer brownish hairs; pygidial area on both sides surrounded with a row of short, thick, curved hairs.

Holotype: ♀, Loto-shan, Kiangsu, China, 8. VI. 1925, Arthur Hertig leg. (MU).

*Remarks.* This species belongs to the group having the 2nd sternite with a basal platform and is characterized by the structure of the clypeus and of the collar of the pronotum, by the sculpture on the area dorsalis and especially on the pygidial area, and can be separated from the known species by the combination of these characters.

In the Schletterer's key this species runs straight to *C. dacica* Schletterer, known from Mongolia, but differs therefrom at least in the structure of the clypeus, pronotum and punctuation on mesonotum and pygidial area. *C. koshantshikovi* Shestakov (1914), known from Transcaspiya, seems to be close to the present species, as far as the description is concerned. But it differs from the present species at least in the structure of abdominal sternite 5. Further, the fact that in his description no mention was made as to the structure of the pronotum and the punctuation of the pygidial area seems to indicate that there are no such remarkable characters in his species as observed in the present species. In the Vecht's key this species goes to blind alley at No 4.

This species is also somewhat similar to *C. dubitabilis* Giner Mari (1942), described from Shaowu and Kuatun, but is different from this at least in the structure of pronotum, in the sculpture of area dorsalis and markedly so in the maculation of the body.

## 12. *Cerceris strandi* Giner Mari, 1943

*Cerceris strandi* Giner Mari, Arb. morphol. Taxon. Ent., 10 (4): 215, 1943 (Formosa).

This species known from Formosa is an interesting one in that its lamina of the clypeus is represented by two dentate processes developed slightly behind the anterior margin and is considered closely related to *Cerceris biplicatula* Gussakovskij described from Kiangsu.

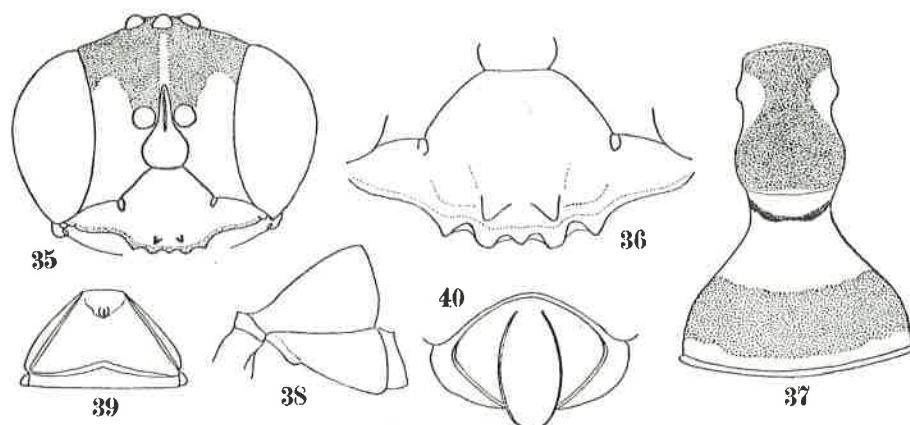
Some supplementary notes on the characters:

Clypeus seen in front: Fig. 36, lamina is a pair of triangular teeth, with outer margins of the pair nearly parallel and the distance between the teeth approximately as great as OTD, disc flattened and on the area of lamina slightly depressed, while supra-clypeal area somewhat roundly raised. Apical margin of the clypeus quinquedentate, the medial three blunt and more or less lamellate, while the outer pair rather acute (ditto). Antennal joint 3 about 2.5 times as long as wide at apex.

### *Subspecies koulingensis* nov.

The new subspecies differs from the typical form in the following points:

(1) Inner orbits more strongly divergent towards clypeus (Fig. 35). (2) 2nd ventral plate of abdomen with a primitive platform, represented by a triangular tuberculate elevation (Fig. 38, lateral view; Fig. 39, ventral view). (3) Abdominal segment 1 not merely subcylindric (in the original description 'subcilindrico', but according to his figure it is almost completely cylindric), but markedly constricted across middle, apical smooth lamellate margin lunate in form, very long in middle (Fig. 37). (3) Pygidial area broader with sides rounded, without latero-apical corners (Fig. 40). (4) Area dorsalis (lisa con un micropuncteado y los lados definidos por unas depressiones punctiformes) triangular, gently roundly raised, with transverse rugae, weak on the disc and strong on the lateral furrows, with abundant fine to middle-sized points between, median furrow fine, very weak, but well defined in oblique light. (5) Punctuation similar, but with abundant micropoints on intervals on mesonotum. (6) Coloration much brighter:



Figs. 35-40. *Cerckeris strandi koulingensis* subsp. nov., ♀.

35. Head seen in front, 36. Clypeus, 37. Basal 2 segments of abdomen, 38. Second segment of abdomen (lateral view), 39. Ditto (ventral view), 40. Pygidial area.

Black, yellow are: Anterior aspect of head very broadly (Fig. 35), basal 3/5 of mandibles, a pair of transverse maculae on vertex, a large irregular-shaped macula on temple reaching base of mandible, antennal joint 1 largely, anterior margin of neck region of pronotum, collar of the same extending to posterior margin of humeral angles, a large macula on lateral aspects of the same (partly brownish), wing tegulae, two large spots on scutellum, postscutellum wholly, two large maculae on mesopleuron, mesosternum in part, metasternum wholly, two very large maculae on propodeum occupying greater part of the segment except area cordata and median line of posterior aspect, abdominal segment 1 wholly except a pot-shaped black macula on tergite (Fig. 37), tergite 2 as given in Fig. 33, ante-apical band on tergites 3, 4 and 5, each extending at the sides to full length of the segment where more or less ferruginous, similar but much narrower band on sternites 3, 4 and 5, all extremely narrowed medianly. Legs yellow with following black: Base of all coxae, femora above except apex of front and mid pairs; femora above broadly, apex of tibiae and whole tarsal joints of hind pair. Ferruginous to brown: Apices of clypeal teeth, apical margin of clypeus, antennal joint 1 apically, flagellar joints except upper side of joints 3-8 (dark brown), anterior margin and median line of pronotal collar, a pair of stripes and lateral margins of mesonotum (dark brown), apical band of abdominal tergite 2 except lateral portions, anterior margins of apical yellow bands on tergites 3-5 that extend on each side into a brown macula, segment 6 wholly, margins of yellow maculae on sternites, stigma and veins of wings except the dark brown costa. Wings more or less yellowish, slightly darkened all over, more strongly so on apical portion.

Measurements. WH : IOD = 87 : 41, OOD : POD : OCD = 14 : 7 : 17, AOD : WAS : IAD = 12 : 6 : 6, OTD : ITD = 10 : 29, LC : ACD : AOD = 27 : 12 : 22, width to length of abdominal segment 1 30 : 43, relative width of segment 2 to head 65 : 87.

Holotype: ♀, Kou-Ling, China, 10. VII. 1918, J. Heyrè-Bazin leg. (CU).

*Remarks.* The general characters of the specimen closely resembles those of *Cerckeris biplicatula* Gussakovskij, but according to the description and figure of this species, the structure of the clypeus in the present subspecies, though apparently similar, distinctly differs from that of *biplicatula*.

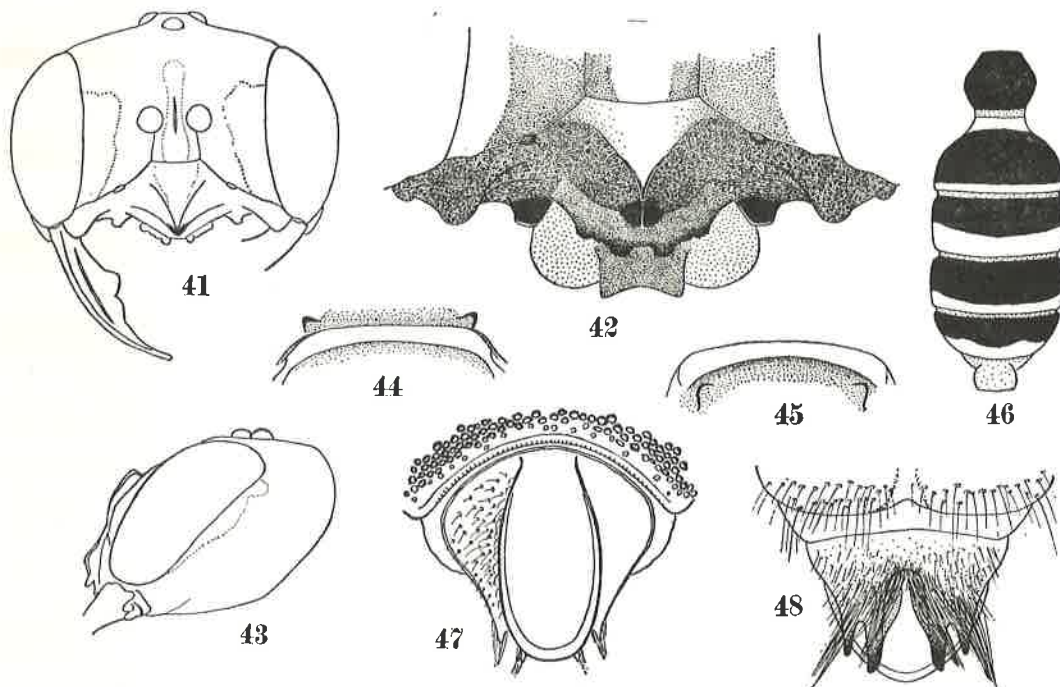
### 13. *Cerckeris yunnanensis* sp. nov.

A species belonging to the group having the 2nd sternite of abdomen without the platform.

Very characteristic in the structure of the clypeus.

♀. Length 11.5 mm. Black variegated with yellow, partly ferruginous. Yellow: Mandibles on basal half externally, upper triangular area of clypeus, median line of face including supra-clypeal area and interantennal carina, maculae along inner orbits (Fig. 41) and along outer orbits (Fig. 43), medianly interrupted arcuate band on vertex, antennal joint 1 largely, collar of pronotum, postscutellum, apical bands on abdominal tergites 1-5 (Fig. 46), base of tergite 2, front and mid legs from tip of femora apically except inside of mid tibiae, and apex of femora and base of tibiae of hind legs. Ferruginous to brown: Antennal joints 2, 3 wholly, 4, 5 and 12 beneath and apex of 12, wing tegulae, wing veins basally, costa and stigma, caudal abdominal segment wholly and apical margins of tergite 1 and of sternites 2-5. Antennal joint 1 may be ferruginous, legs also may be more or less ferruginous (the specimen heavily cyanized and the yellow portion above listed are largely turned brownish). Head wholly and body above with pale brownish hairs, on face and clypeus hairs generally whitish, mixing longer brownish ones, on clypeus except the triangular area fairly close, pygidial area fringed laterally with a row of curved hairs, hairs on abdominal sternites ferruginous, on apical margin of sternite 5 somewhat closer and longer, on each side of sternite 6 long and very dense, medial sinus of the sternite also closely fringed with long hairs.

On vertex  $OOD : POD : OCD = 17 : 8 : 17$ , ocellar width relatively 5.5. Head in front: Fig. 41,  $WH : IOD = 87 : 50$ , inner orbits distinctly divergent towards clypeus,  $OAD : WAS : IAD = 14 : 6 : 8$ ,  $OTD : ITD = 12 : 29$ ,  $LC : ACD : AOD = 17 : 7 : 21$ . Mandible with two stout teeth on inner margin towards middle. Clypeus formed of two parts, anterior marginal area (depressed, flattened and smooth and polished except lateral portions) and main area (raised, punctured and opaque). The former about 1/4 of total clypeus in length and provided on anterior margin with



Figs. 41-48. *Cerceris yunnanensis* sp. nov., ♀.

41. Head seen in front. 42. Structure of clypeus. 43. Head seen in profile. 44. Collar of pronotum seen from above. 45. Ditto, seen in front. 46. Abdomen. 47. Pygidial area. 48. Hypopygium.

3 pairs of blunt teeth, the median two small and the outer one stout and large (Fig. 42); the latter at base in middle provided with a flattened triangular area, yellow in colour, with its anterior produced end attenuate apically where the surface gutter-like grooved and margined on both sides with carinae; the grooved area inclined anteriorly and connected with the semicircular polished protuberance (in Fig. 42 shown with black) which is medianly carinate; between the main and marginal areas there is an inclined area upper border of which very distinct, forming the lateral edge of the triangular area (Figs. 41, 42 and 43). Labrum large, consisting of medial and lateral parts, the former subquadrate, thick and blackish, finely, closely punctured, while the latter semicircular, thin and rather membranous, pale brown in colour and finely coriaceous (Fig. 42). Head seen in profile (Fig. 43) with temple slightly more than as wide as eye (ratio 27 : 23), without tooth on lower portion. Relative length of antennal joints 2, 3, 4, 5, 7, 11 and 12 approximately 6, 13, 9, 9, 8, 8 and 13, joints 3 and 7 respectively 2.3 times and 1.2 times as long as wide at apex, ultimate joint slightly less than twice as long as wide at base. Collar of pronotum transversely rounded, vertical carinae at antero-lateral corners very marked, strong and high, in dorsal view rather dentiform (Fig. 44), in frontal view: Fig. 45. Mesopleuron without the formal precoxal tooth, but the precoxal area distinctly impressed to receive the mid coxa, the margin of the impression markedly carinated, especially highly so on dorsal margin. Area cordata on propodeum isosceles triangular, distinctly marginated on each side by fine carina and furrow, disc roundly raised, without well defined median groove, posterior aspect nearly flattened and medianly broadly and shallowly excavated. Abdominal tergite 1 slightly wider than long, with sides strongly rounded out and provided with a feeble tubercle on medio-anterior area, tergite 2 with relative width to head 67 : 87, medio-apical small impression on tergite 1 distinct, similar but much more imperfect impressions defined on tergites 2-4; posterior lamellate margin of tergite 1 comparatively broad, not vertically reflected, those of tergites 2-5 short and reflected; pygidial area (Fig. 47) with posterior margin rounded, without angles, sternite 2 without basal platform, posterior incassation before apex of each sternite not strong, only laterally more or less so, hypopygium with two pairs of apical processes (Fig. 48). Legs with hind coxa without longitudinal carina on inner margin, with spines on external margins of mid and hind tibiae very strong.

Vertex rather finely, irregularly, partly rugosely reticulate, sculpture finer towards frons and occiput, temples finely rugoso-reticulate, sides of face duplipunctate, with comparatively large punctures sparsely scattered and intervals closely filled with very minute points, supra-clypeal area with a few punctures on anterior portion, rest of the area and interantennal elevation minutely coriaceous, not glossy, except the semitransparent carina on top. Clypeus on basal triangle comparatively coarsely punctured on apical angulate portion and finely so on basal portion, punctures not close, and the surface fairly glossy, remainder of the clypeus except the marginal area duplipunctate, anterior marginal area medianly broadly polished, laterally minutely granulate, opaque. Pronotum on collar minutely weakly transversely rugoso-punctate, mesonotum longitudinally rugoso-reticulate, with meshes generally as large as on vertex, but anteriorly and laterally finer and on posterior margin longitudinally finely rugoso-striate; scutellum as on mesonotum, but slightly more finely so, mesopleuron rather coarsely reticulate. Propodeum comparatively finely closely punctured, subreticulate, with interval minutely closely punctate, area dorsalis longitudinally, somewhat radiately finely closely striate. Abdominal tergites duplipunctate, on tergite 1 punctures medially sparse and surface shining, on tergites 2-5 punctures posteriorly gradually weaker, but generally close, subreticulate, with micropoints between. Pygidial area weakly irregularly wrinkled, not glossy. Sternites sparsely, minutely and weakly punctured, punc-

tures on incassate area near each posteriorly margin slightly larger, stronger and hair-bearing.  
 Holotype: ♀ Kunning, Yunnan, China, 8. IX. 1945. J. R. Fowler leg. (USC).

#### 14. *Cerceris variaesimillis* Maidl, 1926

*Cerceris variaesimillis* Maidl, Zool. Meded., 9: 223, 1926 (♀, Java).

*Cerceris (Apiratryx) spinicollis* Giner Mari, Eos, 18: 126, 1942 (♀♂, Shaowu, Kwangtseh, China).  
 (SYN. NOV.); *Cerceris spinicollis*: Tsuneki, Trans. Shikoku Ent. Soc., 9 (4): 107, 1968.

*Cerceris fukaii basiferruginea* Tsuneki, Etizenia, 4: 28, 1963 (Thailand) (SYN. NOV.).

*Cerceris variaesimillis*: Van der Vecht, Zool. Meded., 39: 350 (♀), 352 (♂), 358, 1964.

*Specimen examined*: 1 ♂, Canton, China (Sugar cane), 27. VIII. 1935, K. C. L. leg. (SC).

*Remarks*. In the original description of *C. spinicollis* the reddish ferruginous colour of abdominal segment 1 in both sexes is emphasized. But this character is very variable in the male specimens, the reddish colour being confined very frequently to the ventral side (including base of sternite 2) only. In the male specimen from China as well as those from Formosa and Philippines the dorsal side of the segment largely black, only the posterior portion, sometimes lateral portions also, remains reddish (underside always reddish ferruginous).

In my previous paper dealing with the fossorial wasps from Thailand I erroneously treated a male specimen of this species as a subspecies of *Cerceris fukaii* which was later synonymized with *C. luzonensis* by Scullen and was known at that time to me through literature only. But according to the comparative study of the actual specimens it was clarified that the specimen should be placed under *variaesimillis* Maidl (= *spinicollis* Giner Mari) known from Java and Malaya. The male specimen of Thailand differs from those of China, Formosa and Philippines in that the dense hairs covering the lateral lobes of clypeus are golden in colour, instead of silvery.

*Cerceris variaesimillis* can be distinguished from *luzonensis* by the clypeal lamina much wider. Further it has the 1st and 2nd abdominal segments different in colour and the form of the 3rd and 5th tergites is also otherwise.

*Distribution*: Java, Malaya, Thailand, Eastern coast of China, Philippines and Formosa.

## II. SPECIMENS FROM FORMOSA AND THE PHILIPPINES

### 1. *Cerceris pictiventris formosicola* Strand, 1913.

References and distribution given in p. 6.

*Specimens examined*: 5 ♀♀, Formosa, Sauter leg. (AM).

*Remarks*. The basal platform on the 2nd sternite of the abdomen reaches posteriorly about half (3/7) of the segment in the above specimens.

### 2. *Cerceris variaesimillis* Maidl, 1926

References and distribution, see above.

*Specimens examined*: 1 ♀, Formosa, Sauter leg. (AM); 1 ♂, Rizal Prov., Luzon, Philippines, 23. IX. 1945, R. P. Dow leg. (MCZ).

*Remarks*. The species is new to the Philippines.

### 3. *Cerceris luzonensis* Crawford, 1910

*Cerceris luzonensis* Crawford, Proc. U. S. Nat. Mus., 38: 120, 1910 (♂, Philippines).

*Cerceris fukaii* Rohwer, Ibid., 39: 482, 1911 (Formosa, synonym after Scullen, 1960).

*Cerceris spiniger* Rohwer, Bull. Exp. St. Hawaii, Sug. Pl. Ass., Ent. Ser., 14 (2): 148, 1919 (in Williams'

Philippine wasp studies).

*Cerceris luzonensis*: Scullen, Pan Pacif. Ent., 36; 80, 1960 (synonym).

*Cerceris luzonensis*: Baltazar, Pacif. Ins. Monogr., 8: 351, 1960 (listed).

*Specimens examined*: 19 ♂♂, Ft. Stotsenburg, Pampanga Prov., Luzon (10 ♂♂, 31. X. 1945; 9 ♂♂, 1. XI. 1945), R. P. Dow leg. (MCZ).

*Remarks*. *Cerceris roepkei* Maidl seems close to the present species, but differs in the form of the clypeal lamina, in the feature of inner orbits, in the characters of the petiole and the 2nd sternite.

Notes on subsp. *fukaii* Rohwer. Recently Scullen synonymized *C. fukaii* Rohwer with the present species, basing on the comparizon of the type (both ♂). According to my comparative study of the specimens above listed with the Formosan representative (2 ♀♀ 12 ♂♂) captured by myself they are surely conspecific. But a certain degree of difference between the two populations could be observed which seems to justify their separation at the subspecific level. The differences are as follows:

(1) ♂. The Formosan population is generally larger in body size.

(2) ♂. Abdominal segment 1 is in Formosan population usually slightly longer than wide, at least as long as wide, while in the Philippine population distinctly wider than long.

I could not compare the female specimens.

Variation in maculation in the males of the Philippine population (one lacking the head, one lacking abdominal segments 5-7):

(a) Median lobe of clypeus with a yellow macula, 8 (large 2, medium-sized 3, small 3), without the macula, 10.

(b) Abdominal tergite 2 with a yellow macula on each side at apex, 13; without the macula, 6.

(c) Tergite 4 with latero-apical maculae, 18; without the maculae, 1.

(d) Tergite 5 with latero-apical maculae, 3; without the maculae, 15.

(e) Sternite 2 with two yellow lateral spots 7, without 12.

(f) Sternite 3 with a band, 12; with two lateral spots, 7.

(g) Sternite 4 with two lateral spots, 2; without the spots, 17.

The following constantly present: Two large face marks along inner orbits, two large spots on pronotum, postscutellum wholly except sides, a macula at base of tergite 2, a band on tergites 3 and 6.

The development of the maculae not always correlated among the areas above listed.

*Distribution*: Formosa and the Philippines.

#### 4. *Cerceris trimaculata* Maidl, 1926

*Cerceris trimaculata* Maidl, Zool. Meded., 9: 234, 1926 (♂, Java).

*Cerceris trimaculata*: Schultess, Rev. Suisse Zool., 42: 305, 1935 (♀♂, Java).

*Cerceris trimaculata*: Van der Vecht, Zool. Meded., 39: 350, 352, 356, 1964 (Java).

*Specimens examined*: 1 ♀, St. Stotsenburg, Pampanga Prov., Luzon, the Philippines, 4. X. 1945, R. P. Dow leg. (MCZ); 1 ♀ (both antennae lacking), Manila, date unknown, R. C. McGregor leg. (CU).

*Remarks*. This species is very closely related to *Cerceris variaesimillis* (= *spinicollis* Giner). But the following differences, besides those used in the key of Van der Vecht, can be observed (comparison between the female specimens occurring in Formosa and the Philippines):

1. Supra-clypeal area not raised (in *variaesimillis* distinctly raised upwards).

2. Lamina of clypeus similar in form as well as in colour, but its apical margin, that is,

the portion coloured black, not raised as in the compared species.

3. White pubescence covering the lamina much closer, almost concealing the punctuation (in *variaesimillis* sparser, the surface well visible).

4. Lamina duplipunctate as in *variaesimillis* (visible in oblique light), but the larger punctures comparatively finer and much sparser.

5. Mesopleuron with the two areas above and below the scrobal furrow much more highly roundly raised.

6. Abdominal segments 1 and 2 black on dorsal side, underside only reddish ferruginous.

7. Pygidial area similar in form, but in the lateral view more strongly curved (in the compared species nearly straight).

8. Yellow maculae on abdomen somewhat different in pattern: Tergite 2 always with a comparatively large transverse mcula on each side at apex (in *variaesimillis* always absent), bands on tergites 3 and 5 narrower, medianly much narrowed, occupying only about half of each tergite (in *v.s.* much broader, nearly wholly yellow, with only medio-basal area black).

Clypeal lamina: Fig. 49. Basal 3 tergites of abdomen: Fig. 50. Pygidial area: Fig. 51, its

lateral view: Fig. 52. Measurements:

WH : IOD = 64 : 32, OOD : POD : OCD = 11 : 8 : 12, OAD : WAS : IAD = 9 : 6 : 4, OTD : ITD = 7 : 20, LC : ACD : AOD = 13 (lamina) : 9 : 16, relative length to

width of petiole 22 : 22, relative width of tergite 2 to WH, 46 : 64. Area dorsalis

with very broad furrow in middle, all angles with a few crossing coarse striae, disc irregularly punctured, with surface quite uneven, lateral furrows coarsely crenate. Sternite 2 with a raised area at base,

subcircular, posteriorly reaching middle of the segment (not middle of the incrassate area), the area not so sharply outlined

posteriorly as in *variaesimillis*, bordered by a series of coarse punctures.

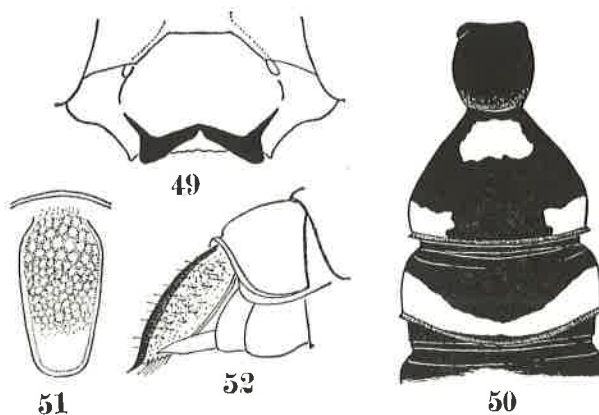
This species is also close to *Cerceris luzonensis*, ♀, but according to the comparison with the female specimens from Formosa it has the clypeal lamina much broader, more finely punctured and much more broadly (rather wholly except apex) yellow (in *luzonensis* only a marking), abdominal segment 1 relatively wider, and the tergites 1 and 2 without reddish coloration. In the structure of the head and in the maculation of the abdomen it seems also resembling *Cerceris erronea* Giner Mari known from China (Shaowu), but according to the description of this species, differs from it at least in having the platform on sternite 2 and in the maculation of the clypeus.

*Distribution*: Hitherto known from Java, new to the Philippines.

##### 5. *Cerceris pleuralis* sp. nov.

This species (♀) is characterized by the mesopleurons conically produced, the clypeus with lamina free only at apex, pronotum shortly transversely carinate on antero-lateral angles and ventral segment 2 with the platform at base. Very coarse oblique striae on area dorsalis and stumpy petiole are also characteristic.

♀. Length about 9.0 mm. Black with the following portions yellow: Mandibles except apex,

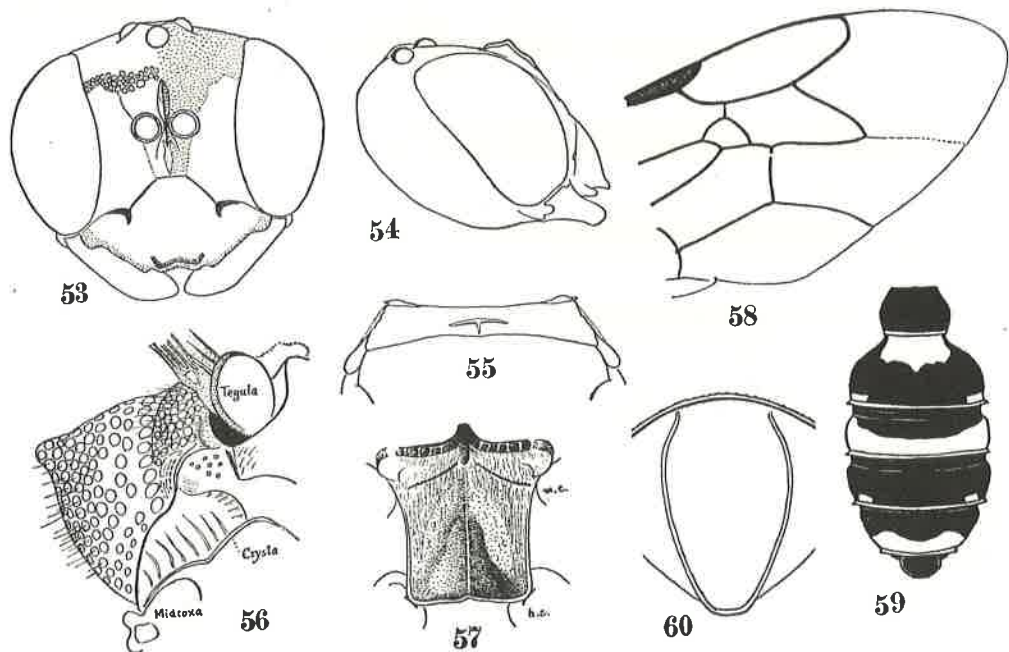


Figs. 49-52. *Cerceris trimaculata* Maidl, ♀.  
49. Clypeus. 50. Basal 3 tergites of abdomen. 51. Pygidial area. 52. Ditto, lateral view.



clypeus except apical margin of itself and of lamina, sides of lower frons reaching upper lateral margin of clypeus, median line of supra-clypeal area and a spot on upper portion of interantennal carina (Fig. 53), antennal scape wholly, medianly interrupted broad band on pronotum, tegulae of wings, two small brownish maculae on scutellum, postscutellum wholly, a large macula at base and a small one on each side of tergite 2, a broad apical band on tergite 3 (laterally widened to full length of the tergite), a small transverse macula on each side at apex of tergite 4, an apical band on tergite 5 (Fig. 59), lateral maculae on sternite 2, latero-basal transverse ones on 3 and 4; front and mid legs except greater part of coxae and femora above largely (much narrowed beneath) and hind legs on apex of caxae, trochanters and basal 3/5 of tibiae. Brown to dark brown: Mandibles at apex, antennal flagella above, apical membranous margin of each abdominal segment and hind tarsi. Black of femora and tibiae more or less brownish. Antennal flagella beneath ferruginous. Pitchy black of pedicels of antennae including their inserted portion is impressive. Wings hyaline, anterior margin including radial cell and its external area slightly darkened. Yellow portions of frons and clypeus covered with recumbent silvery pubescence, not so dense, but very marked in oblique light; similar pubescence also on temples below; hairs on temples, propodeum, 1st abdominal segment and femora of front and mid legs soft and long, on propodeum mixing shorter closer pubescence on posterior inclination and sides, pubescence on abdomen slightly shorter, hairs on sternite 5 and caudal segment more abundant and stiff, fringe of hairs of pygidial area stiff and curved, moderate in length.

Head from above with occipital margin gently roundly emarginate, width of emargination subequal to interocular distance, OOD : POD : OCD = 12 : 11 : 13, width of postocellus relatively 4.5, postero-lateral impression of each postocellus comparatively deep, accompanying smooth area around it, marginal carina of occiput not strong, running down but not reaching buccal carina



Figs. 53-60. *Cerceris pleuralis* sp. nov., ♀.

53. Head seen in front. 54. Head seen in profile. 55. Collar of pronotum.  
56. Mesopleuron (seen obliquely from above and behind). 57. Metasternum.  
58. wing venation. 59. Abdomen. 60. Pygidial area.

beneath head. Head in front: Fig. 53, with inner orbits roundly produced toward face, with minimum IOD somewhat below the lower margin of antennal sockets. WH : IOD=82 : 35, OAD : WAS : IAD=9 : 6.5 : 4, OTD : ITD=8 : 24, LC : ACD : AOD=22 : 11 : 18, tentorial pits very deep, upper margin of clypeus narrow, relatively only 7; apical margin of clypeus apparently bluntly 4-dentate (the specimen is worn out, with mandibles markedly worn down and abbreviated), and with a further small emargination in the range of each lateral lobe, lamina with apical margin triangularly emarginate. Head in profile (Fig. 54) with temple less than as broad as eye, antennal joint 3 twice as long as broad at apex (dorsal view), subsequent joints progressively slightly shorter and thicker apically, joint 7 about 1.2 times as long as wide at apex (dorsal view), joint 11 as long as wide. Pronotum from above: Fig. 55, upper ends of vertical carinae at anterolateral corners of collar run transverse for a short distance, disc with a near T-shaped distinct carinae in middle (constant?). Mesopleuron with subalar area above scrobal furrow only weakly swollen, while the episternal area below the furrow strikingly conically produced, with apex bluntly pointed (Fig. 56, dorso-posterior view), the form of the corn is similar seen from above or in front, precoxal carina also raised, with anterior end somewhat bluntly produced, mesosternum flattened, together with the lower surface of the cone forming a flat surface, metasternum: Fig. 57 (mc, mid coxa, hc, hind coxa). Area dorsalis obliquely inclined, with lateral furrows broad, and crossed with coarse striae of the disc, disc gently roundly raised and medianly distinctly furrowed, the furrow ends at the posterior angle in a small smooth impression, this angle less than 90°; posterior aspect broadly somewhat hollowed out. Abdomen: Fig. 59, tergite 1 with relative length to width 24 : 35, width of tergite 2 to WH : 67 : 82, pygidial area: Fig. 60, with surface gently curved in lateral view; sternite 2 with basal platform distinctly raised, but with outline not always distinct, in form broad triangle, with apex broadly rounded and not reaching posteriorly the middle of the incrassate area of the segment, subsequent sternites with sides almost without incrassation, also without median impression on sternite 5. Wing venation: Fig. 58; legs with front metatarsi slightly longer than, and mid and hind metatarsi as long as, three following joints united.

Vertex reticulate with moderate-sized punctures, intervallic carinae shining, upper frons longitudinally rugoso-reticulate with similar punctures, but the intervallic carinae minutely coriaceous, opaque, lower frons and clypeus duplipunctate, with larger punctures rather sparse; pronotum closely coarsely punctured, mesonotum, scutellum longitudinally, somewhat coarsely rugoso-reticulate, punctures on central areas sparse and longitudinally slightly elongate, with intervals more or less spaced and scattered with a few minute points, mesopleuron coarsely reticulate, the reticulation extending almost to central area of mesosternum. Propodeum coarsely reticulate, area dorsalis very coarsely striate, with 4 carinae on one side, laterally oblique and rather longitudinal towards middle (but divergent on apical portion). Abdominal tergites more closely, finely reticulate, on tergite 4 punctures distinctly larger than interspaces; sternites laterally closely, medianly sparsely punctured. Pygidial area irregularly reticulate with angulate, medium-sized punctures, the meshes posteriorly smaller (in the specimen the posterior portion worn out).

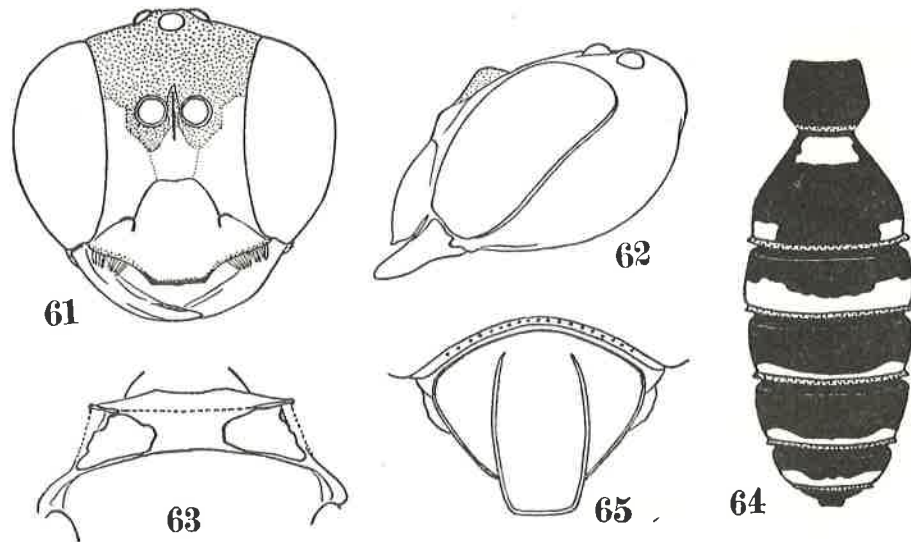
Holotype: ♀, Banqui, Luzon, XI. 1923, McGregor leg. (USM)

#### 6. *Cerceris dowi* sp. nov.

This species (♂), in the key of Turner (1912) concerning the Indian species comes to the first difficulty at No. 4, and if goes further in both directions meets with the inconsistency at Nos. 7 and 8. If followed Giner Mari (1942) dealing with the Chinese species it goes straight to *Cerceris coelicola* Giner. But according to the description of this species it differs from this not

only in the maculation of the abdomen and legs and in the cloudiness of the wings, but also in the relative development of the antennae, temples and the petiole of the abdomen. Further, in the key of the same author with the Formosan species, it comes to a deadlock at No. 4. In the key of Van der Vecht (1964) it has an inclination to go to *pictiventris*, since in this species supra-clypeal area somewhat more raised than interantennal carina, but not so distinct as in *pictiventris* (different from this species at a glance in the hairing on the clypeus). If it is disregarded it reaches *kedahae* Pagden, 1934, but from this species it differs distinctly in the sculpture of the area dorsalis, that is, the striae not longitudinal, but transverse. But the maculation of abdomen is very similar in both species. In other literature dealing with this genus from S. E. Asia (F. Smith, P. Cameron, F. Maidl and myself) none can be identical with the present species.

♂. Length 8.5 mm. Black, yellow mculated. Yellow: Head in front on lower half except apical margin of clypeus (Fig. 61), mandibles on basal half except peripheral areas, antennal joint 1 except apical brown, a large triangular macula on each side of pronotal collar, outer half of tegulae, a minute spot on subalar area of mesopleuron, two small spots on scutellum, postscutel-



Figs. 61-65. *Cerceris dowi* sp. nov., ♂.

61. Head seen in front. 62. Head seen in profile. 63. Pronotum. 64. Abdomen.  
65. Pygidial area.

lum wholly, two large maculae on postero-lateral areas of propodeum, maculae as given in Fig. 64 of abdominal tergites, a spot on each side at apex of sternites 2-4 (those on 2 very minute, on 3 large and narrowly connected with each other, on 4 medium-sized); apices of coxae of mid and hind legs, all trochanters wholly, roughly apical half of front and mid femora. front and mid tibiae wholly, basal 2/3 of hind tibiae, front tarsi wholly and mid basitarsi. Dark brown: Rest of mandibles, antennal flagella above (basally paler), mid tarsal joints 2-5, hind tarsi wholly. Antennal flagella beneath and medio-apical area of sternites 1 and 2 ferruginous. Wings slightly clouded, especially strongly darkened on radial cell and its external area, cubital cell 1 anteriorly more or less fuscous.

OOD : POD : OCD = 10 : 8.5 : 11, postocellus relatively 5, temples seen from above roundly convergent posteriorly. Head in front: Fig. 61, inner orbits divergent in both directions, somewhat stronger upwards, WH : IOD = 69 : 30, OAD : WAS : IAD = 7 : 6 : 4, OTD : ITD = 7 : 19, LC : ACD : AOD = 23 : 12 : 16. Clypeus with median lobe roundly, comparatively highly raised

(Fig. 62, lateral view), supra-clypeal area also raised upwards (ditto), interantennal carina comparatively short, suddenly lowered at apical end, thence continued as a carina to the impression in front of anterior ocellus; apical margin of median lobe very gently rounded, nearly truncate, with a tendency of median tooth, the lateral corners angulate, but not produced, lateral lobes with a fringe of hairs occupying about 3/5 of the lateral margin, comparatively less dense and not reflected. Head in profile with eye much wider than temple (Fig. 62). Antennal joint 3 about twice (in narrowest view) or 1.6 times (widest view) as long as wide at apex, joint 10 as long as wide, penultimate joint narrowed apically and the ultimate much narrower, no tyloidea on any joint. Pronotum: Fig. 63, mesopleuron with scrobal furrow deep, upper epimeral area more highly convex than the lower episternal area, but both not particularly markedly so, without precoxal tooth. Propodeum with area dorsalis distinctly strongly furrowed at base, on sides and in middle, and its apical angle deeply impressed. Abdomen: Fig. 64, petiole slightly wider than long, tergite 2 with relative width to WH 49 : 69, pygidial area: Fig. 65, basal platform on sternite 2 with sides subparallel, with apex rounded or rather low triangular, reaching about middle of the incassate area of the segment, apico-lateral areas of the succeeding sternites except hypopygium distinctly incassate, but not toothed, sternite 6 without medial impression, no particular tufts of hairs on sternites 6 and 7. Wing venation as in *C. pleuralis* (Fig. 58), but the length of the first section of the lower vein of cubital cell 3 varied between the right and left, in the right much shorter.

Punctures generally coarse and cribrate, on vertex medium-sized, on occiput transversely ruguloso-reticulate, on upper frons finer, with intervallic carinae microscopically sculptured, mat, on median lobe of clypeus somewhat coarser; on central area of mesonotum, somewhat longitudinally rugosely arranged, with more or less glittering interspaces, on mesopleuron, propodeum punctures much coarser; area dorsalis with lateral and medial furrows coarsely foveolate, with foveae on lateral furrows transversely elongate, extending on to disc, and the intervallic carinae between the foveae coarsely, somewhat rugosely crossing the disc, with the interspaces uneven, partly finely, irregularly punctulate. On abdominal tergites punctures also angulate, with more or less glittering interspaces posteriorly. Pygidial area coarsely punctured, with intervals shining, on apical portion punctures smaller, irregular in both size and distribution and intervals minutely coriaceous, mat; sternite 2 with platform minutely transversely microsculptured, lateral portions coarsely closely punctured, the area posterior to platform coarsely, but very weakly, rather sparsely punctured, punctures (rather impressions) longitudinally elongate with outline indistinct; on the remaining sternites a few coarse punctures on the lateral incassate areas, on the broad medial area of each sternite punctures practically absent.

Holotype: ♂, Rees Road, Rizal Prov., Luzon, Philippines, 23. IX. 1945, R. P. Dow leg. (MCZ).

*Remarks.* The posterior three bands on the abdominal tergites of the specimen are actually brownish yellow. But this is probably due to after change.

#### 7. *Cerceris samarensis* sp. nov.

? *Cerceris fuliginosa* F. Smith, Cat. Hym Ins. Brit. Mus., 4: 454, 1856 (Celebes).

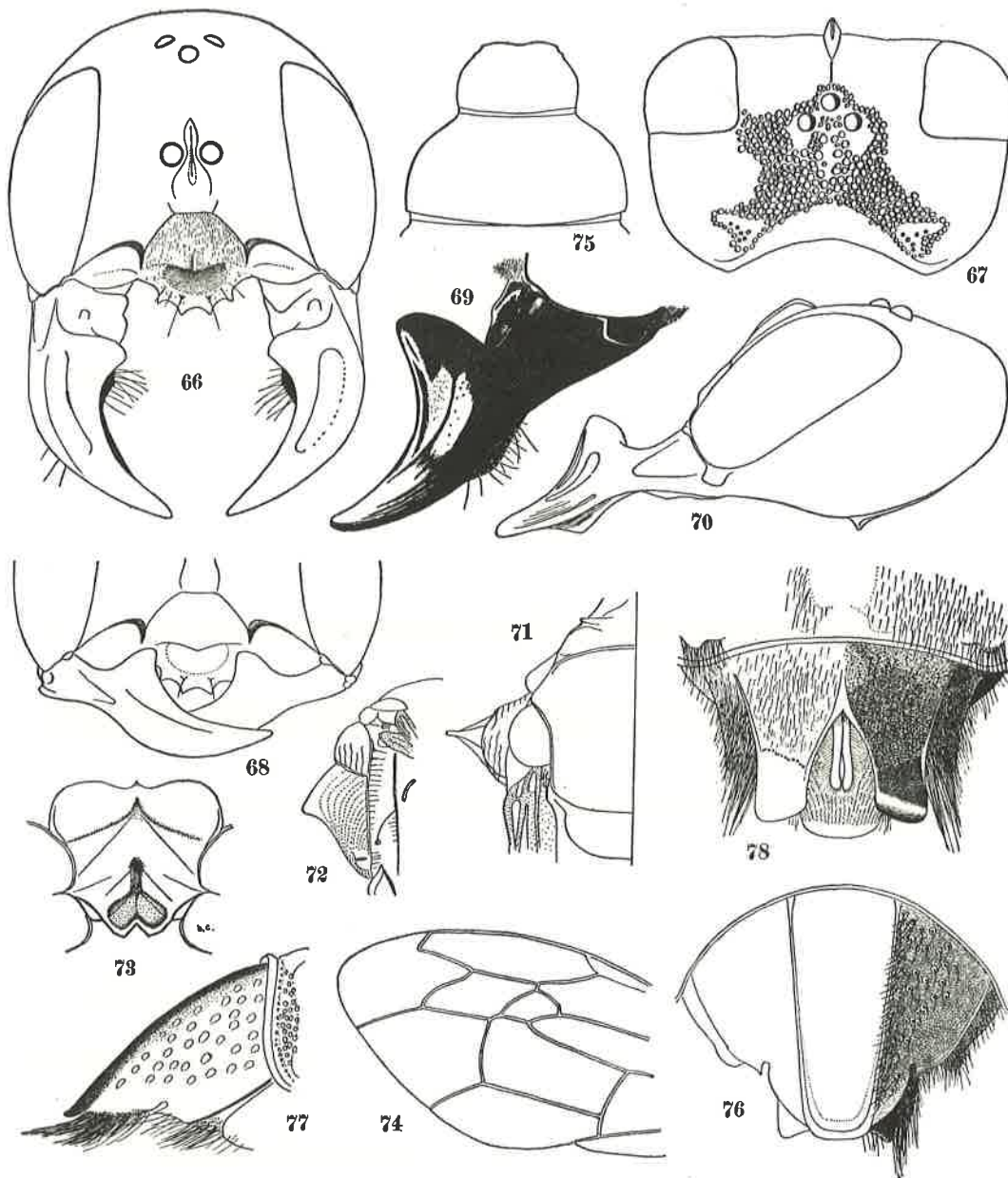
The present species generally well agrees in colorific and sculptural characters with the description of *Cerceris fuliginosa* F. Smith, known from Celebes, and may be conspecific with this. But the description does not touch upon the structural distinctions at all and it seems to me too venturesome to identify the specimens basing on such incomplete knowledge. At least the specimens before me much larger and with the striae on scutellum not so marked as given regarding

*fuliginosa.*

This species is characteristic in having the wholly black body, the extraordinarily well developed mandibles, very marked triangular process on the mesopleuron, short cinereous pubescence on the clypeus and longitudinally striated area dorsalis.

♀. Length 18.7 mm (paratype 16.0 mm). Wholly black, interantennal carina partly finely whitish, mandibles at base externally with an obscure patch of brownish white, articulations of legs more or less brownish. Wings strongly dark brown, with purplish iridescence, veins and stigma black. Head and thorax opaque, abdomen somewhat shining, mandibles (Fig. 69) highly polished. Lower frons and clypeus covered closely with soft appressed silvery pubescence, not so long, on the sides of thorax-complex similar but less glittering pilose observed. Abdominal tergite 6 (Fig. 76) except pygidial area covered with dark brown bristles, those on inner portions closer, longer, erected and curved, embracing the pygidial area from both sides, sternites covered with brown pubescence, mixing a few bristles on each apical margin, on sternite 5 pubescence closer and longer, mixing more abundant longer thicker bristles, especially on latero-posterior corners; on sternite 6 latero-apical tufts of bristles very conspicuous (Fig. 78).

Head from above: Fig. 67, OOD : POD : OCD = 25 : 16 : 58, relative width of postocellus 8.5, head seen in front: Fig. 67, inner margins of eyes markedly divergent towards clypeus, relative widths between IOD at anterior ocellus (minimum distance) and at base of mandibles 85 : 110, the space between anterior ocellus and upper end of interantennal carina only about twice as wide as anterior ocellus, sockets of antennae slightly more than as large as anterior ocellus, WH : IOD = 194 : 85 (at upper end of eyes), OAD : WAS : IAD = 27 : 13 : 11, interantennal carina high, in lateral view rounded, with obtuse angle slightly above middle (Fig. 70), top thoroughly semi-transparent, supra-clypeal area with lateral border indistinct by the dense silvery pubescence, the form of clypeus as given in Figs. 66 and 70, median lobe with upper half medianly feebly carinate, the carina somewhat stronger apically and fairly distinct, lower half markedly depressed, with the bordering area distinctly, more or less roundly inclined, but with no bordering edge at the shifting line to the upper as well as the lower parts, the surface of the depressed area of the lower half (dotted area in Fig. 66) smooth and polished, rest of the lower half forming the marginal zone, roundly produced anteriorly and provided with 4 equidistant teeth, slightly behind the medial pair the surface bears a pair of weaker angulate tubercles, from the bases of which a long stiff hair grows out, the tubercles located in a line with the lateral pair of the anterior teeth; lateral lobes too, markedly inclined anteriorly and medially, in order to receive the mandibles when folded (Fig. 68), but the surface of the area also covered with short silvery hairs. Mandibles extraordinarily large, monstrously developed (Fig. 66), seen perpendicularly in front: Fig. 69, with a stout medial tooth on inner margin, seen from beneath inner basal surface provided with a small rounded haired patch, partly seen in Fig. 69. Head seen in profile: Fig. 70, temple much wider than eye, with occipital carina complete, reaching peristomial carina which is highly raised at its posterior margin (seen in Fig. 70). Antennal joint 1 with relative length 35, joints 2, 3, 4, 5 and 7 respectively with relative length 8, 25, 18, 17 and 15, ultimate joint about 20, joint 3 approximately 2.3 times, joint 7 about 1.5 times as long as wide at apex, each joint longer than wide, ultimate joint slightly more than twice as long as wide at base, somewhat narrowed apically and slightly bent, with apex obliquely truncate, the truncated area smooth and polished, pale brown in colour. Collar of pronotum comparatively short, laterally rounded, with outer margins convergent anteriorly, and vertical carina at the angles originated slightly inside off the lateral margin, anterior border of the collar not marginated with carina, roundly inclined, without medial furrow, mesonotum with medio-anterior impressed line comparatively broad and distinct,



Figs. 66-78. *Cerceris samarensis* sp. nov., ♀.

66. Head seen in front. 67. Head seen from above. 68. Clypeus with mandibles closed. 69. Left mandible seen vertically to the inner tooth. 70. Head seen in profile. 71. Left mesopleuron seen from above. 72. Ditto, seen from behind. 73. Metasternum. 74. Wing venation. 75. Basal 2 abdominal segments. 76. Pygidial area. 77. Ditto, in lateral view. 78. Hypopygium.

reaching about middle of the scutum, scutellum medianly broadly shallowly excavated, postscutellum short, roundly highly raised, without impressed line in middle, left mesopleuron seen from above: Fig. 71, seen from behind: Fig. 72, epimeral area above the scrobal furrow roundly highly swollen, episternal area below the furrow produced into a large triangular process which is, from above middle apically, longitudinally compressed, thus the edge of the triangle forming a

transverse ridge and accompanying anterior and posterior triangular aspects, besides this large projection, a small precoxal tooth also defined; metasternum: Fig. 73 (h. c., hind coxa). Propodeum short, directly from base roundly, comparatively steeply inclined posteriorly, with area dorsalis also obliquely inclined; this area right-angled triangle in form, with apical angle attenuate and pointed, with lateral margins distinctly bordered by fine carinae which are gently sinuate and slightly swollen out, the disc somewhat roundly raised and without medial furrow, instead a medial carina, only at the apical angle feebly gutter-like impressed, the impression extending posteriorly and continued to the narrow weak median furrow of the posterior aspect, posterior aspect without the lateral carinae separating it from the sides. Abdominal segments 1 and 2: Fig. 75, segment 1 distinctly wider than long, with dorsal aspect very short, tergites 1-5 all with a medio-apical small impression; pygidial area: Fig. 76, markedly elongate, the surface in the lateral view gently roundly curved (Fig. 77); sternite 2 without platform at base, but medianly feebly carinated, without latero-posterior incassations, sternites 5 and 6 medianly comparatively broadly shallowly impressed (Fig. 78), sternite 5 with a short rounded lamellate protuberance on each side near apex, its apical margin more or less undulate (Fig. 78), sternite 6 with medio-apical incision deep, with sinus angulated (ditto). Hind coxae without carina on inside, all tibiae strongly spinose, spines on front tibiae only a few, on mid and hind tibiae more numerous, on hind tibiae external spines arranged in a row, each accompanying a longitudinal carina at base, mid tibiae slightly bent. In fore wing radial cell with apical portion somewhat more narrowed than usual, cubital cell 2 broader than high, receiving recurrent vein 1 beyond middle, recurrent vein 2 received by cubital cell 3 slightly apart from base (Fig. 74). In hind wing basal lobe small, about 1/4 of the anal cell.

Vertex and upper frons very closely punctured with medium-sized punctures, subreticulate, punctures on frons longitudinally, on sides of vertex and upper temples transversely more or less rugosely confluent, on vertex the area around front ocellus, the areas just behind each postocellus and the median line behind postocelli without puncture, polished, similar and broader punctureless areas defined on latero-posterior portions of vertex (Fig. 67). Punctures on basal half of clypeus irregular-shaped, very sparse, with intervals filled with minute points. Pronotum on anterior inclination longitudinally, finely, closely (in paratype rather strongly coarsely) striate, on dorsal aspect longitudinally, somewhat coarsely rugoso-punctate (in paratype rugoso-striate), mesonotum and scutellum longitudinally coarsely rugoso-punctate, rugae less strong on scutellum, postscutellum sparsely punctured; epimeral swollen area of mesopleuron generally longitudinally rugoso-striate, anterior aspect of episternal process transversely arcuately, finely, closely striate, mixing more or less strong striae, posterior aspect similarly striate, mixed sparsely with medium-sized, shallow punctures, metapleuron and anterior inclined area of propodeal side (including stigmata) longitudinally coarsely striate, but its strength uneven; propodeum on area dorsalis longitudinally, somewhat obliquely striate, striae on one half about 10 in number and gradually turning longitudinal towards median carina (in reality this is one of the carinae of the disc), rest of the segment obliquely rugoso-punctate, punctures close on dorsal portion, sparse on posterior portion and sides. Abdominal tergites more finely and sparsely punctured, punctures on tergite 1 irregular in size and distribution, on tergites 2-4 also irregular in distribution, but averaged intervals on 4 distinctly far larger than the punctures. Pygidial area marginated with fine weak carinae, the surface minutely irregularly wrinkled, mat, on extreme basal portion sparsely punctured, next basal area finely irregularly rugoso-punctate, intervals of these areas covered with microscopically minute coriaceous sculpture; sternites duplipunctate, larger punctures sparse and not well outlined, punctures generally closer posteriorly, on sternite 6 only the apical portions of the posterior processes smooth

and polished (Fig. 78).

Holotype: ♀, Samar Is., Philippines, 10. VI. 1924, McGregor et al. leg. (CU).

Paratype: 1 ♀, the same place, 21. VI. 1924, McGregor et al. leg. (CU).

*Remarks.* It seems that the mandibles in the larger specimen are much more developed than the proportional size of the body of the smaller specimen. The phenomenon is well-known among the Crabronid wasps, such as *Ectemnius martjanowi* F. Morawitz of the Palaearctic Region.

#### IV. SPECIMENS FROM THAILAND AND INDIA

##### 1. *Cerceris pictiventris pictiventris* Dahlbom, 1845

*Cerceris pictiventris* Dahlbom, Hym. Eur. etc., 1: 498, 1845 (♀).

*Cerceris malayana* Cameron, Jour. Str. Asiat. Soc., 39: 162, 1903 (♂).

*Cerceris malayana*: Maidl, Zool. Meded., 9: 236, 1926 (♀).

*Cerceris rybyensis thaiana* Tsuneki, Etizenia, 4: 26, 1963 (SYN. NOV.).

*Cerceris pictiventris pictiventris*: Van der Vecht, Zool. Meded., 39: 354, 1964 (♀♂).

*Specimens examined*: 1 ♀, Thailand (Bangkok), 26. V. 1955, Bolinger leg.; 4 ♂♂, the same data. (SC).

In my previous paper I dealt with the present species as a subspecies of *Cerceris rybyensis* (Linné). But the examination of the new specimens above listed, especially the males led me to the thought that *thaiana* should be dealt with as a good species and identical with *pictiventris* Dahlbom. It was proved by the fact that in the Turner's key (1912) dealing with the Indian species the female certainly runs straight to *rybyensis*, but the male to *tristis* Cameron with a slight difference on the way. The differences of this species from *rybyensis* in the female were given in fair detail in my previous paper, but the difference in the structure of supra-clypeal area must further be added. On this occasion the full description of both sexes will be given below.

♀. Length 8.5–9.0 mm. Black with the following portions pale yellowish white (yellowish tint slightly stronger on pronotum, abdomen and front legs): Mandibles except apical third, clypeus except apical margin, lower frons broadly, including supra-clypeal area and its sides except around and above antennal sockets (face marked as in *rybyensis*), a spot on each upper outer orbit, a spot on each side of pronotum, tegulae largely, a spot on episternum of mesopleuron below scrobal furrow (sometimes lacking), two spots on scutellum, postscutellum, a spot on each side of posterior inclination of propodeum (rarely lacking), a large macula at base of abdominal tergite 2, tergites 3 and 5 except each medio-basal triangular black patch, a large macula on each side of sternites 2–5, on 3–4 mostly fused into a broad band, fore and mid legs except coxae wholly, femora above largely and a spot on inside of tibiae, and hind legs on the following portions: coxae largely, trochanters wholly, a stripe on anterior face of femora, tibiae except apical 2/3 of outer margin, metatarsi except apex, remaining tarsal joints beneath and at base (rest of tarsi pale brown). Antennae chestnut brown, beneath ferruginous. Wings hyaline, slightly clouded, with a dark area outside radial cell, veins and stigma dark brown.

Head from above: OOD : POD : OCD = 13 : 10 : 12, postocellus relatively 5, larger than the space between front and post ocelli, (in *rybyensis* the space as large as ocellus), head seen in front generally similar to *rybyensis*, but with face relatively slightly narrower (minimum IOD occupies 48.7 % of total width of head, in *rybyensis* 53.0 %), but divergency towards clypeus and ratio of OAD : WAS similar (OAD : WAS : IAD = 10 : 5.5 : 6). Supra-clypeal area distinctly more highly raised, in lateral view the surface of the area forming an angle with basal surface



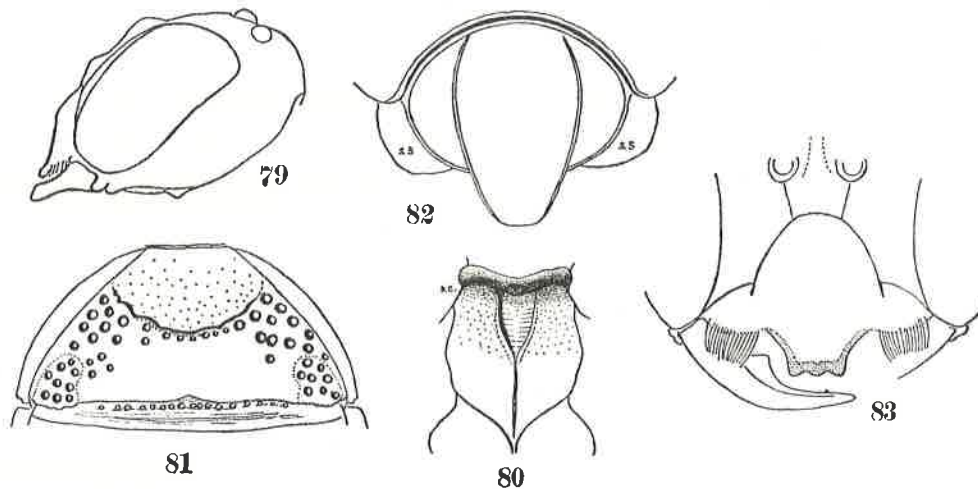
of clypeus (in *rybyensis* straight), median lobe of clypeus also more highly raised, anterior depression similar in relative extension (lateral view), but not hollowed out, merely flattened, with anterior margin slightly raised or reflected (Fig. 79, lateral view), with the width of the flattened area much narrower; interantennal carina broadly fringed with semitransparent membrane, somewhat broader than usual. Head in profile: Fig. 79, with temple distinctly narrower than eye (in *rybyensis* nearly equal). Collar of pronotum with dorsal aspect nearly flattened, not or gently raised across middle as in *rybyensis*, with anterior aspect steeply sloped, forming a blunt bordering edge with the dorsal aspect (in *rybyensis* not); mesopleuron with scrobal furrow much more distinctly outlined, especially upper border sharply edged, with the result that the epimeral area came to be different in appearance from that of *rybyensis*; without precoxal tooth; metasternum: Fig. 80, with apical portion medianly impressed and apex obliquely raised. Area dorsalis slightly more lengthened, nearly equilateral triangle, laterally distinctly margined with strongly crenate deep furrows, disc and median furrow formed as in *rybyensis*. Abdominal segment 1 slightly wider than long, with lateral margins gently rounded, with disc in lateral view also gently rounded, latero-anterior corners roundly excavated as in *rybyensis*. tergite 2 nearly semicircular also as in *rybyensis*, but relatively slightly shorter; pygidial area oval, with width at base nearly twice as large as at apex, with lateral margins much more roundly curved than in *rybyensis* (Fig. 82). Basal platform of sternite 2 (Fig. 81) distinctly roundly margined, the marginal line not smooth, slightly sinuate, reaching posteriorly about middle of the incrassate area of the segment, much longer and more rounded than in *rybyensis*; lateral ends of sternites 2, 3 and 4 not particularly swollen, on sternite 5 distinctly roundly raised, but not produced into teeth, median area of the sternite not so excavated as in *rybyensis*.

Punctuation also similar to that of *rybyensis* in general, but somewhat stronger and coarser, on lower frons and clypeus rather resembling *hortivaga*, but sparser; on mesonotum punctures relatively larger, subreticulate, with more or less intervals between where the surface smooth and shining, metapleuron longitudinally striate; area dorsalis mostly smooth and polished, with very minute points scattered, but sometimes posteriorly weakly striate, remaining areas of the segment subreticulate, with broader intervals than in *rybyensis*, especially on posterior portion of the sides only a few rounded punctures very sparsely scattered, this area distinctly impressed to receive hind femur at rest and strongly outlined in front (in *rybyensis* the area very small, less conspicuous), anterior portion of the sides without puncture, but not polished, this area also impressed together with metapleuron to receive mid femur, the impression much deeper and more conspicuous than in *rybyensis*. Punctures on abdomen larger than in the compared species, subreticulate, on tergite 4 punctures larger than the averaged intervals (here in *rybyensis* punctures sparser), pygidial area finely weakly wrinkled; sternite 2 with sparse medium-sized punctures on lateral portions and around platform, but medianly broadly impunctate, platform very sparsely punctured, punctures very fine and very weak, nearly impunctate.

♂. Length 5.7-7.5 mm, much smaller than *rybyensis*. In coloration similar to ♀, but abdominal tergite 6 also with a yellowish white band, broadly roundly excavated in front (in one specimen interrupted in middle). Among the 4 specimens examined all lacking the maculae on outer orbits and mesopleurons, while one lacking those of propodeum. As to sternites, two specimens carry lateral maculae on 2-5, of which those on 3 turned into a band in one of them, while one carries lateral spots only on tergites 2-4 and on 3 a band, in the remaining one lateral maculae confined to tergites 2 and 3 only.

Structure. Clypeus with a dense fringe of hairs on anterior margin of lateral lobes, somewhat golden in colour. The structure of clypeus generally similar to that of *rybyensis* ♂, but median

lobe relatively shorter (though itself longer than wide), with apical margin bluntly tridentate, sometimes fairly distinctly so, sometimes nearly truncate, supra-clypeal area raised higher upwards than in *rybyensis*, each ocellus uniform in size and larger than interspace between front and post ocelli as in ♀. Measurements: On vertex OOD : POD : OCD=10 : 9 : 13, postocellus relatively 4, on facial aspect WH : IOD=63 : 32, AOS : WAS : IAD=9 : 5 : 5, OTD : ITD=8 : 18, LC : ACD : AOD=20 : 13 : 16. Antennal joint 3 shorter, about 1.3 times as long as wide at apex, subequal to joint 4 or 5, joint 7 about as long as wide. Head in profile with eye wider than temple and occipital carina complete, both ends meet with each other beneath head, as in ♀. Area dorsalis as in ♀, but the furrow relatively broader and the area of disc quite narrow, lateral structure of thorax as in ♀. Petiole of abdomen nearly as long as wide, tergite 2 with relative width to head 45 : 63, general structure of abdomen similar to ♀ except pygidial area which is subrectangular, slightly longer than wide, with sides gently rounded, with apex truncate and wider than base, in lateral view the surface straight, not curved. Platform on sternite 2 more rounded than in ♀, somewhat longer than semicircular, reaching about middle of incrassate area of the sternite, no particular structure on sternites 6 and 7. Punctuation as in ♀, much coarser and stronger than in *rybyensis*.



Figs. 79-83. 79-82. *Cerceris pictiventris pictiventris* Dahlbom., ♀.  
83. *Cerceris humbertiana* Saussure, ♂.  
79. Head seen in profile. 80. Metasternum. 81. Abdominal sternite 2.  
82. Pygidial area. 83. Clypeus.

## 2. *Cerceris humbertiana* Saussure, 1867

*Cerceris humbertiana* Saussure, Reise Novara, Zool., II, Hym.: 97, 1867 (♀, Ceylon).

*Cerceris humbertiana*: Schletterer, Zool. Jahrb., 1887: 494 (listed).

*Cerceris humbertiana*: Bingham, Faun. Brit. Ind. Hym., 1: 303 (♀♂).

*Cerceris humbertiana*: Turner, J. Bombay Nat. Hist. Soc., 21: 491, 1912 (key and explanation).

*Specimen examined*: 1 ♂, S. India (Karikal Terr., Kurumbaragam, date unknown, P. S. Nathan leg. (MCZ).

*Remarks*. The male of this species is characteristic in having the median lobe of the clypeus very narrowly and markedly produced anteriorly, with the anterior margin strongly tridentate (Fig. 83) and the area dorsalis on the propodeum smooth and polished, with the median furrow almost lacking (vaguely visible in oblique light only). The specimen examined has the ground colour black and yellow maculated generally as given by Turner (1912), only apical half of the

abdominal tergite 1 ferruginous. Some variations and supplements:

Apical margin of clypeus pale brown, interantennal macula reaches upwards the front ocellus, macula on temple very large, occupying the greater part of the area, collar of pronotum very broadly maculated, mesopleuron with two large maculae, one on each of the two swollen areas separated by the scrobal furrow, the macula on lower part extended to mesosternum and broadly jointed with the macula from the other side, with a black median incision from behind, mesosternum posteriorly between mid coxae with a further pair of small maculae, metasternum also carrying similar maculae; two lateral maculae on propodeum very large, broad bands on tergites and sternites 2-5 medianly markedly narrowed, on tergite 6 entire, on sternites 4 and 5 medianly narrowly interrupted, sternite 6 immaculated.

Mandibles with a stout tooth on inner margin towards middle. Measurements: On vertex OOD : POD : OCD = 10 : 9 : 12, on head in front, WH : IOD = 63 : 32, OAD : WAS : IAD = 9 : 5 : 5, OTD : ITD = 7.5 : 19, LC : ACD : AOD = 24 : 8 : 15, median lobe with upper margin relatively 9, with anterior tridentate margin also 9. On mesopleuron precoxal carina distinct, with anterior end rather toothed. Antennal joint 3 as long as joint 4, or 5, about 1.8 times as long as wide at apex in dorsal view, in lateral view only 1.3 times so, joint 7 longer than wide (1.3 times in dorsal view), ultimate joint slightly bent and obliquely truncate at apex, but without the short hairs beneath. Abdominal tergite 1 with a small impression medio-apically, 2, 3 and 4 also with a similar impression, but less developed and rather indistinct; sternite 2 without platform; pygidial area about 1.5 times as long as maximum width, with sides gently rounded out and markedly reflected, the surface sparsely punctured, but basal portion smooth, polished and medianly bluntly carinated, apical portion minutely coriaceous, opaque and flattened. Wings hyaline, apical margin of fore wings strongly clouded, posteriorly paler, cubital cell 2 nearly isosceles triangular, with sides rounded, recurrent vein 1 interstitial to transverse cubital vein 1. Punctures on clypeus apparently fine and sparse, in reality very coarse and close, with intervallic carinae quite narrow (this is due to that the shallow peripheral portion of each puncture not well visible owing to the uniformly yellow coloration).

*Distribution:* Hitherto known from Ceylon and new to India.

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*Remarks.* As to the references relating to the Palaearctic Region see Tsuneki, 1961.