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TO THE KNOWLEDGE OF THE EAST ASIAN SPECIES OF THE TRIBE TROGASPIDIINI BISCHOFF, 1920 (HYMENOPTERA, MUTILLIDAE) WITH DESCRIPTION OF EIGHT NEW GENERA AND TWO NEW SPECIES

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Fourteen genera and 52 species are reviewed. Eight new genera: *Pagdenidia* gen. n. (type species: *Timulla mickeli* Pagden), *Orientidia* gen. n. (type species: *Mutilla proserpina* Smith), *Promecidia* gen. n. (type species: *P. yamanei* sp. n.), *Krombeinidia* gen. n. (type species: *K. peterseni* sp. n.), *Protrogaspidia* gen. n. (type species: *Mutilla volatilis* Smith), *Nonveilleridia* gen. n. (type species: *Mutilla bataviana* Andre), *Neotrogaspidia* gen. n. (type species: *Mutilla pustulata* Smith), *Eotrogaspidia* gen. n. (type species: *Mutilla auroguttata* Smith) and two new species: *Promecidia yamanei* sp. n. (Malaysia: Sarawak), *Krombeinidia peterseni* sp. n. (Sri Lanka) are described. The key to fifteen genera is given. The dividing of tribe to subtribes Trogaspidiina and Peterseniidiina subtrib. n. is proposed.

KEY WORDS: Mutillidae, mutillid wasps, Trogaspidiini, Oriental region, East Palaearctic, taxonomy.

А. С. Лелей. К познанию восточноазиатских видов трибы Trogaspidiini Bischoff, 1920 (Hymenoptera, Mutillidae) с описанием восьми новых родов и двух новых видов // Дальневосточный энтомолог. 1996. № 30. С. 1–24.

Дан обзор 14 родов и 52 видов. Описываются 8 новых родов: *Pagdenidia* gen. n. (типовой вид *Timulla mickeli* Pagden), *Orientidia* gen. n. (типовой вид *Mutilla proserpina* Smith), *Promecidia* gen. n. (типовой вид *P. yamanei* sp. n.), *Krombeinidia* gen. n. (типовой вид *K. peterseni* sp. n.), *Protrogaspidia* gen. n. (типовой вид *Mutilla volatilis* Smith), *Nonveilleridia* gen. n. (типовой вид *Mutilla bataviana* Andre), *Neotrogaspidia* gen. n. (типовой вид *Mutilla pustulata* Smith), *Eotrogaspidia* gen. n. (типовой вид *Mutilla auroguttata* Smith) и 2 новых вида: *Promecidia yamanei* sp. n. (Малайзия, Саравак), *Krombeinidia peterseni* sp. n. (Шри Ланка). Дается определительная таблица 15 родов. Предложено разделение трибы на подтрибы *Trogaspidiina* и *Peterseniina* subtrib. n.

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INTRODUCTION

For a long time the tribe Trogaspidiini was represented in Oriental region and East Palaearctic by genera *Trogaspidia* Ashmead, 1899 [*Timulla* (*Trogaspidia*) sensu Mickel] and *Radoszkowskii* Ashmead, 1903. Genus *Zeugomutilla* has been described by Chen (1957), genera *Taiwanomyrme* and *Zavatilla* by Tsuneki (1993a), genera *Peterseniidia* and *Indratilla* by me (Lelej, Yamane, 1992; Lelej, 1993). In this paper 14 genera of Trogaspidiini are reviewed and 8 of them are described as a new. The East Asian species of *Trogaspidia* will be given separately. Now the tribe Trogaspidiini includes 15 genera and more than 80 species in Oriental region and East Palaearctic. In spite of many new generic names proposed by Nonveiller (1995a, 1995b) for Afrotropical Trogaspidiini the subgenera *Trogaspidia* Ashmead and *Acutotropidia* Nonveiller, 1995 of the genus *Trogaspidia* are acceptable for Oriental fauna certainly.

SOURCES OF MATERIAL. Taxonomic data are based on the material collected in Vietnam by Russian scientists; on the specimens collected by various specialists during Soviet-Chinese expeditions in 1955-1957; on the collection of National Science Museum (Natural History), Tokyo and on the specimens collected by Prof. Sk. Yamane (Kagoshima University, Japan) in Malaysia and Indonesia. Valuable comparative material received from Dr. B. Petersen (Zoological Museum, Copenhagen). Asterisks (*) show new localities.

MATERIAL DEPOSITORIES. Institutional collections in which the examined material is deposited are abbreviated in the text as follows. IBPV – Institute of Biology and Pedology, Russian Academy of Sciences, Vladivostok; KU – Department of Biology, Kagoshima University, Japan; NSMT – National Science Museum (Natural History), Tokyo; ZIS – Zoological Institute, St. Petersburg; ZMMU – Zoological Museum of Moscow University, Moscow; USNM – United States National Museum of Natural History, Smithsonian Institution, Washington, D.C.

Tribe Trogaspidiini Bischoff, 1920

I consider that male and female characters which used by Mickel (1935) for dividing *Smicromyrme* and *Trogaspidia* [*Timulla* (*Trogaspidia*) sensu Mickel] in his key to the genera have the tribal level. The differences between tribes Trogaspidiini and Smicromyrmini as follows:

Males. Distance between origin of *RS* on vein *SC* and the base of the stigmatic cell scarcely greater or scarcely smaller than the length of stigmatic cell and almost equal to first abscissa of *RS* (almost equal to twice the length stigmatic cell and greater more than twice of first abscissa of *RS* in Smicromyrmini). Genitalia with asymmetrical or symmetrical penial valvae (always symmetrical in Smicromyrmini).

Females. Gastral tergum 2 ornamented with a pair of anterior pale pubescent spots transversely arranged or, if sometimes immaculate, the gastral integument entirely black (tergum 2 ornamented with one or three anterior pale pubescent spots transversely arranged or, if sometimes immaculate, the gaster dark metallic blue and the gastral tergum 2 with an apical fringe of pale pubescence in Smicromyrmini).

I propose here to divide the tribe Trogaspidiini into two subtribe: Peterseniina subtrib. n. (genitalia with symmetrical penial valvae) and Trogaspidiina Ashmead (genitalia with asymmetrical penial valvae).

Key to the Oriental and East Palaearctic genera of Trogaspidiini

1. Males (unknown for *Promecidia*). 2
 - Females (unknown for *Zavatilla*, *Nonveilleridia*, *Protrogaspidia* or unknown me in specimens for *Taiwanomyrme*) 15
2. Penial valvae of genitalia symmetrical. Scutellum not gibbous, usually without median carina. Gastral sternum 8 (hypopygium) usually without a pair of strong lateral carinae. (Subtribe Peterseniina subtrib. n.) 3
 - Penial valvae of genitalia more or less asymmetrical. Scutellum gibbous, usually with median longitudinal carina or narrow smooth line. Gastral sternum 8 usually with a pair of strong lateral carinae. (Subtribe Trogaspidiina) 10
3. Fore spurs spatulate (Fig. 3). Clypeus with lateral angles of the median area strongly elevated. 3. *Pagdenidia* gen. n.
 - Fore spurs simple. Clypeus with lateral angles of the median area at most weakly elevated. 4
4. Mandible not excised beneath, without large basal tooth 5
 - Mandible excised beneath, with large basal tooth 6
5. Gastral sternum 2 with longitudinal median carina elevated posterad. Gastral sternum 8 with transverse bisinuate basal carina. Head posterad convexly curved. Mandible tridentate with small lobe near the base beneath. Volsellar cuspis short. 1. *Zeugomutilla* Chen
 - Gastral sternum 2 with longitudinal median carina not elevated posterad. Gastral sternum 8 simple or with two longitudinal weak elevations. Head

- posterad rounded. Mandible bidentate, without any basal lobe beneath. Volsellar cuspis long, almost touching the gonostylus apex. 2. *Taiwanomyrme* Tsuneki
6. Apterous. Gonostylus curved down apically. Volsella short, a half of gonostylus length, ventrally with dense hairs which longer than basal gonostylus width. Gastral sternum 8 without any carina. Gastral tergum 1 with distinct short dorsum. 4. *Indratilla* Lelej
- Alates. 7
7. Gastral sternum 8 with basal median transverse carina. Scutellum with median carina on anterior inclination. 5. *Zavatilla* Tsuneki
- Gastral sternum 8 without basal transverse carina. Scutellum without median carina on anterior inclination 8
8. Volsella of genitalia without paracuspis, at most with weak setose tubercle in the emargination between cuspis and digitus 9
- Volsella of genitalia with distinct stick-like paracuspis in the emargination between cuspis and digitus (Fig. 9). Antennal segment 1 (scape) with deep glabrous furrow between carinae; antennal segment 3 distinctly longer than antennal segment 4 (Fig. 12) 8. *Krombeinidia* gen. n.
9. Antennal segment 1 (scape) with wide shallow densely punctate area between two carinae; antennal segment 3 longer or equal antennal segment 4. Thorax all or partly ferruginous 6. *Petersenidia* Lelej
- Antennal segment with narrow glabrous shiny area between two carinae; antennal segment 3 shorter than antennal segment 4 (Fig. 5). Thorax all black. 7. *Orientidia* gen. n.
10. Mandible not excised beneath, with weak basal tubercle. Penial valvae strongly modified, left one with two long hooks. 10. *Radoszkowskius* Ashmead
- Mandible excised beneath with large basal tooth or lobe 11
11. Scutellum slightly convex, without strong carina, at most with median smooth line. Volsella of genitalia without paracuspis 12
- Scutellum distinctly gibbous, with more or less defined median longitudinal carina. Volsella of genitalia with developed paracuspis 14
12. Gastral sternum 8 without strong lateral carinae. The length of gastral segment 1 greater than its maximal width 11. *Protrogaspidia* gen. n.
- Gastral sternum 8 with strong lateral carinae. The length of gastral segment 1 less than its maximal width 13
13. Antennal segment 1 with upper carina well-defined. Scutellum not gibbous, without median smooth line. Mid coxae flattened beneath, glabrous, polished and shiny, except posterior margin. Gastral sternum 2 longitudinally gibbous near the lateral margins 12. *Nonveilleridia* gen. n.
- Antennal segment 1 with upper carina visible in apical part only. Scutellum with median smooth line. Mid coxae punctate, setose, not flattened beneath. Gastral sternum 2 evenly convex laterally. 13. *Neotrogaspidia* gen. n.
14. Hind coxae beneath conspicuously flattened, clothed with very short erect dense pale pubescence (Fig. 20). Digitus small, stick-like 14. *Eotrogaspidia* gen. n.

- Hind coxae beneath convex, clothed with sparse pale pubescence. Digitus more or less developed. Oriental, Palaearctic and Afrotropical region
. . . *Trogaspidia* Ashmead, 1899 (type species: *Mutilla medon* Smith, 1855)
- 15. Thorax with transverse propodeal row of denticles. Inner margin of mandible with small basal denticle. Pygidial area carinated laterally, smooth and shiny 1. *Zeugomutilla* Chen
- Thorax without transverse propodeal row of denticles. Inner margin of mandible without basal denticle 16
- 16. Gastral tergum 6 without any pygidial area, convex, smooth, shiny, basal part of tergum punctate 17
- Gastral tergum 6 with more or less developed pygidial area, at least flattened area carinated laterally 18
- 17. Antennal segment 3 being 1.8 times its maximal width and 1.8 times as long as antennal segment 4 (Fig. 14). Anterior part of clypeus strongly bidentate 9. *Promecidia* gen. n.
- Antennal segment 3 being equal or less its maximal width and 1.1–1.3 times as long as antennal segment 4 (Fig. 6). Anterior part of clypeus not dentate 7. *Orientidia* gen. n.
- 18. Gastral tergum 2 strongly flattened, with three longitudinal carinae 4. *Indratilla* Lelej
- Gastral tergum 2 at most slightly flattened, without lateral longitudinal carinae. 19
- 19. Thorax broadest in pronotum 20
- Thorax broadest in propodeum 22
- 20. Clypeus anteriorly strongly bidentate. Pygidial area longitudinally rugose on the basal two-third, smooth and shiny apically
. 3. *Pagdenidia* gen. n.
- Clypeus anteriorly at most with two weak denticles. Pygidial area smooth, shiny, unsculptured. 21
- 21. Gastral tergum 2 without apical pale fascia, at most with pale fringe (Fig. 13) 6. *Petersenidia* Lelej
- Gastral tergum 2 with wide apical pale fascia (Fig. 10).
. 8. *Krombeinidia* gen. n.
- 22. Pygidial area irregularly rugose throughout
. 10. *Radoszkowskius* Ashmead
- Pygidial area longitudinally striate or irregularly rugose in basal half and smooth apically 23
- 23. Pygidial area longitudinally striate, at most apical part microgranulate or smooth *Trogaspidia* Ashmead
- Pygidial area irregularly rugose in basal half and smooth apically 24
- 24. Pale spots on gastral tergum 2 large, the distance between spots being 0.3 spot diameter 14. *Eotrogaspidia* gen. n.
- Pale spots on gastral tergum 2 small or feebly visible, the distance between spots being 1.0–2.0 spot diameters 13. *Neotrogaspidia* gen. n.

Subtribe Peterseniina Lelej, subtrib. n.

Type genus: *Petersenidia* Lelej, 1992.

DIAGNOSIS. MALE. Genitalia with penial valvae symmetrical. Volsella usually without paracuspis (well-defined in *Krombeinidia* gen. n.). Scutellum not at all gibbous, usually without median carina. Hypopygium usually without a pair of strong lateral carinae. FEMALE. Thorax broadest in pronotum. Pygidial area very often smooth, shiny, if carinated laterally then apical half glabrous, shiny.

GENERA INCLUDED. The subtribe includes Oriental and East Palaearctic *Zeugomutilla* Chen, *Taiwanomyrme* Tsuneki, *Pagdenidia* gen. n., *Indratilla* Lelej, *Zavatilla* Tsuneki, *Petersenidia* Lelej, *Orientidia* gen. n., *Krombeinidia* gen. n., *Promecidia* gen. n., Palaearctic *Artiotilla* Invrea, 1950 and Afrotropical *Peringueyella* Nonveiller, 1995.

1. Genus *Zeugomutilla* Chen, 1957

Zeugomutilla Chen, 1957: 157 (type species: *Zeugomutilla pycnopyga* Chen, 1957, by original designation).

SPECIES INCLUDED. *Z. pycnopyga* Chen, 1957, ♂ (China: Fujian, Yunnan) and *Z. saepes* (Chen, 1957), ♀ (China: Fujian, Guangdong). The review of the species see: Lelej (1992).

2. Genus *Taiwanomyrme* Tsuneki, 1993

Taiwanomyrme Tsuneki, 1993a: 44 (*Smicromyrme* subg.; type species: *Smicromyrme taiwana* Tsuneki, 1993, by original designation); Lelej, 1995: 2.

SPECIES INCLUDED. *T. taiwana* (Tsuneki, 1993), comb. n., ♂ (China: Taiwan); *T. friekae* (Zavattari, 1913), ♂; *T. saturnia saturnia* (Mickel, 1935), comb. n., ♂ (Malaysia: Malay Peninsula); *T. s. sanawagensis* (Mickel, 1935), comb. n., ♂ (Malaysia: Sabah, Sarawak); *T. rubrocyanea* (Mickel, 1935), comb. n., ♂ (Malaysia: Sabah); *T. bonihainensis* (Andre, 1896), comb. n., ♂ (Indonesia: Sulawesi); *T. impressa* (Chen, 1957), comb. n., ♂ (China: Jiangxi); *T. basirufa* (Chen, 1957), comb. n., ♂ ♀ (China: Jiangxi, Fujian, Zhejiang).

***Taiwanomyrme friekae* (Zavattari, 1913), comb. n.**

Mutilla friekae Zavattari, 1913: 35, ♂ [lectotype, designated by Mickel (1933b) – ♂, Formosa [Taiwan] (H. Sauter)].

Timulla (*Trogaspidia*) *friekae*: Mickel, 1933b: 410, ♂; 1935: 266, ♂.

Timulla (*Trogaspidia*) *friekae discrepans* Mickel, 1933b: 410, ♂ [holotype – ♂, Formosa [Taiwan], Taihorinsho, IX 1910 (H. Sauter)], synonymized with *friekae* by Chen (1957).

Trogaspidia friekae: Hammer, 1949: 10, ♂ (Jiangsu).

Smicromyrme friekae: Chen, 1957: 183, ♂.

MATERIAL (4 ♂). Taiwan: 2 ♂, 8.V 1925, 5.VII 1925 (T. Kano) [NSMT]; 1 ♂, Hokuto, 1929 (K. Sato) [NSMT]; 1 ♂, Taihoku, 1.VI 1929 (K. Sato) [NSMT].

RANGE. China (Jiangsu, Anhui, Zhejiang, Fujian, Taiwan).

REMARKS. Probably *T. taiwana* which differs from *T. friekae* by lemon yellow basal part of male mandible (brown in *T. friekae*) is the junior synonym of the latter.

3. Genus *Pagdenidia* Lelej, gen. n.

Type species: *Timulla (Trogaspidia) mickeli* Pagden, 1949.

DIAGNOSIS. MALE. Clypeus with lateral angles of the median area strongly elevated (Fig. 4). Antennal segment 1 with one or two carinae beneath. Antennal segment 3–5 more or less equal in length (Fig. 2). Scutellum evenly rounded, not at all gibbous. Gastral sternum 8 with incipient ridges or elongate tubercles. Tergum 7 with median glabrous widened posteriorly area. Volsella without paracuspis (Fig.1).

FEMALE. Margin of clypeus strongly bidentate, widely emarginate between the denticles. Antennal segment 3 nearly as long as the antenna segments 4 and 5 together. Scutellar scale well developed. Gastral tergum 2 with a pair of anterior pale spots and narrow pale fringe. Gastral tergum 3 with a fascia of appressed pale pubescence. Pygidial area well defined, finely, longitudinally rugose on the basal two-thirds, almost striate.

SPECIES INCLUDED. *Pagdenidia* gen. n. includes 7 species: *P. bicornuta* (Hammer, 1962), comb. n., ♂ (India: Sikkim); *P. sceva* (Cameron, 1904), comb. n., ♂ (India: Assam; Myanmar: Pegu); *P. stephani* (Magretti, 1892), ♂; *P. mickeli* (Pagden, 1949), comb. n., ♂, ♀ (South Thailand; Malaysia: Kedah, Pahang, Selangor); *P. erato* (Mickel, 1935), comb. n., ♂ (Malay-sia: Sabah, Sarawak); *P. selene* (Pagden, 1949), comb. n., ♂ (Indonesia: West Jawa); *P. sondaica* (Pagden, 1949), comb. n., ♂ (Indonesia: West and Central Jawa).

DISCUSSION. The males of *Pagdenidia* gen. n. easily distinguishable from other Trogaspidiini genera by spatulate fore spurs and by clypeus which has strongly elevated lateral angles of the median area. The female of *Pagdenidia* gen. n. resembles that of *Petersenidia* but strongly bidentate clypeus differs it from the latter.

ETYMOLOGY. The generic name is dedicated to H. Pagden, who studied the Oriental Mutillidae and proposed the *erato* group in the genus *Timulla*.

Pagdenidia stephani (Magretti, 1892), comb. n.

Mutilla stephani Magretti, 1892: 227, ♂ (syntypi – 7 ♂, Karen Hills [Myanmar], 900–1000 m, VI–VIII 1888); Bingham, 1897: 43, ♂.

Timulla (Trogaspidia) stephani: Pagden, 1949: 204, ♂.

MATERIAL. 1 ♂, China, Yunnan, 40 km SE Jinggu [Daze], 1000 m, 13.V 1957 (D. Panfilov) [ZMMU].

RANGE. Myanmar (Karen), China*.

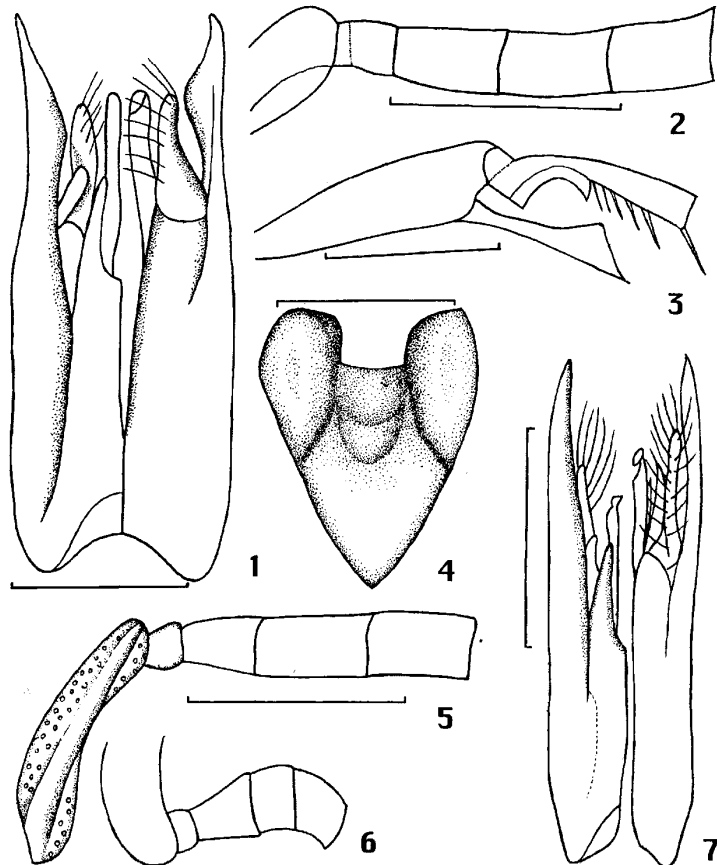
4. Genus *Indratilla* Lelej, 1993

Indratilla Lelej, 1993: 233 (type species: *Indratilla gynandromorpha* Lelej, 1993, by original designation).

SPECIES INCLUDED. *I. gynandromorpha* Lelej, 1993, ♂ (Sri Lanka) and *I. ceylonica* Lelej, 1993, ♀ (Sri Lanka). The review of the species see: Lelej (1993).

5. Genus *Zavatilla* Tsuneki, 1993

Zavatilla Tsuneki, 1993a: 42 (type species: *Mutilla gutrunae* Zavattari, 1913, by original designation); Lelej, 1995: 2.



Figs. 1-7. 1-4) *Pagdenidia stephani*, ♂: 1) genitalia (dorsal aspect at left, ventral at right); 2) antennal segments 1-5; 3) spur of fore leg; 4) clypeus; 5-7) *Orientidia proserpina*: 5) antennal segments 1-5, ♂; 6) do, ♀; 7) genitalia (dorsal aspect at left, ventral at right). Scale line = 1 mm.

SPECIES INCLUDED. *Z. gutrunae gurtunae* (Zavattari, 1913), comb. n., ♂ (China: Taiwan) and *Z. g. flavotegulata* (Chen, 1957), comb. n., ♂ (China: Jiangxi, Zhejiang, Fujian).

6. Genus *Petersenidia* Lelej, 1992

Petersenidia Lelej in Lelej, Yamane, 1992: 628 (type species: *Smicromyrme fukudai* Tsuneki, 1972, by original designation); Tsuneki et al., 1993: 2 (*Smicromyrme* subg.); Tsuneki, 1993a: 42 (*Smicromyrme* subg.); 1993b: 56.

DIAGNOSIS. MALE. Mesopleurae beneath without precoxal tubercle. Gastral sternum 2 laterally with trace of felt line (a few punctures in *P. fukudai*, lacking in *P. hylonome*). Tergum 7 with narrow median glabrous area. Volsella without paracuspis, at most with setose tubercle in the emargination between cuspis and digitus.

FEMALE. Clypeus with transverse preapical glabrous furrow limited above by curved carina and with basal tubercle. Antennal segment 3 being 1.1 its maximal width, 1.6 times as long as antennal segment 4. Longitudinal eye diameter 3.5 times shortest distance between eye and mandible. Thorax broadest in pronotum. Scutellar scale narrow. Gastral tergum 2 with two large anterior pale spots, without an apical pale fascia. Tergum 3 with a fascia of appressed pale pubescence. Pygidial area of tergum 6 elongated, carinated laterally, glabrous, shiny, unsculptured, with sparse pygidial fringes.

SPECIES INCLUDED. *P. fukudai* (Tsuneki, 1971), ♂ ♀ (Japan: Ryukyus); *P. rapa* (Zavattari, 1913), ♂; *P. hylonome* (Mickel, 1935), ♂ (Malaysia: Sabah, Sarawak); *P. stella* (Zavattari, 1913), comb. n., ♂ (Indonesia: Sumatra); *P. scaphella* (Chen, 1957), ♂; *P. psecas* (Mickel, 1935), comb. n., ♀ (Malaysia: Sabah, Sarawak); *P. macassarica* (Zavattari, 1913), ♀ (Indonesia: Sulawesi); *P. spiracularis spiracularis* (Chen, 1957), comb. n., ♀ (China: Zhejiang, Fujian); *P. spiracularis dilutemacula* (Chen, 1957), ♀. The review of *P. fukudai*, *P. hylonome*, *P. psecas*, *P. macassarica* is given in: Lelej, Yamane (1992), Lelej (in litt.).

DISCUSSION. The male and female of *Petersenidia* resemble those of *Krombeinidia* gen. n. and their diagnostic differences are given below.

Petersenidia rapa (Zavattari, 1913).

Mutilla rapa Zavattari, 1913: 36, ♂ [holotype – ♂, Taiwan, Taihorin, X 1910 (H. Sauter)].

Trogaspidia (*Timulla*) *rapa*: Mickel, 1933b: 408; 1935: 257, ♂ (Taiwan).

Smicromyrme rapa: Chen, 1957: 183, ♂ (Taiwan, Zhejiang); Tsuneki, 1972: 14, ♂ (Taiwan).

Petersenidia rapa: Lelej, Yamane, 1992: 628, ♂.

Smicromyrme (*Petersenidia*) *rapa*: Tsuneki, 1993b: 52, ♂ (Okinawa).

MATERIAL. Taiwan: 1 ♂, env. Taipei, Yang-ming Shan, 21.VI 1965 (R. Ishikawa) [NSMT].

RANGE. China (Zhejiang, Taiwan), Japan (Okinawa).

***Petersenidia spiracularis dilutemacula* (Chen, 1957), comb. n.**

Smicromyrme spiracularis dilutemacula Chen, 1957: 181, 195, ♀ (holotype – ♀, Taiwan, Taitung, 25.II–27.III 1919 (S. Inamura, J. Sonan, M. Yosino).

MATERIAL. Taiwan: 1 ♀, Palin, Fuhsing, 3.III 1978 (J. Itoh) [NSMT]; 1 ♀, Nantou, Tehwashe, Jihyuantan, 17.III 1979 (A. Shinohara) [NSMT].

RANGE. China (Taiwan).

REMARKS. This subspecies may be the opposite sex of *P. rapa*.

***Petersenidia scaphella* (Chen, 1957)**

Smicromyrme scaphella Chen, 1957: 178, 187, ♂ (holotype – ♂, Fujian, Shaowu, 1000 m, 27.X 1942).

Petersenidia scaphella: Lelej, Yamane, 1992: 629.

MATERIAL. Vietnam: 1 ♂, Ha Son Binh, Da Bac, Tuly, forest, 19.X 1990 (S. Belokobylskij) [ZIS].

RANGE. China (Jiangxi, Fujian, Zhejiang), Vietnam*.

7. Genus *Orientidia* Lelej, gen. n.

Type species: *Mutilla proserpina* Smith, 1858.

DIAGNOSIS. MALE. Antennal segment 3 being 1.3 times its maximal width and 0.75 times as long as antennal segment 4 (Fig. 5). Mesopleurae beneath without precoxal tubercle or elevation. Scutellum not at all gibbous, without glabrous median line. Gastral sternum 2 laterally with short felt line. Sternum 8 without any ridges or tubercles. Tergum 7 with median glabrous area. Volsella without paracuspis (Fig. 7).

FEMALE. Anterior margin of basal elevated part of clypeus with two weak tubercles. Scutellar scale narrow (scarcely visible in *O. dayak*). Gastral tergum 2 somewhat flattened with two anterior round pale spots, non fasciate apically. Tergum 3 with a fascia of appressed pale pubescence. Tergum 6 convex, glabrous, the shiny part not carinated laterally.

SPECIES INCLUDED. *O. proserpina* (Smith, 1858), comb. n., ♂ ♀ (Malaysia: Sabah, Sarawak; Indonesia: East Kalimantan; ?Philippines: Panay, Negros, Mindanao, Basilan); *O. dayak* (Lelej, 1995), comb. n., ♀ (Malaysia: Sarawak); *O. fortuita* (Mickel, 1934), comb. n., ♂ ♀ (Philippines: Sibuyan, Negros, Mindanao, Basilan, Palawan); *O. nigerrima* (Mickel, 1934), comb. n., ♂ (Philippines: Luzon, Samar, Birilan, Mindanao); *O. cavicola* (Tsuneki, 1993), comb. n., ♂ (Philippines: Mindanao); *O. emarginata* (Chen, 1957), comb. n., ♀ (China: Fujian); *O. obscurilamina* (Chen, 1957), comb. n., ♀ (China: Shanghai). The review of *O. proserpina*, *O. dayak*, *O. fortuita* is given in: Lelej (in litt.).

DISCUSSION. The male of *Orientidia* gen. n. resembles that of *Petersenidia* in having simple gastral tergum 8 and scutellum and their diagnostic characters are given in the key above. The female of *Orientidia* gen. n. is similar that of *Promecidia* gen. n. in lacking carinated pygidial area but easily differs by short antennal segment 3 (Fig. 6 vs. Fig. 14) and by anterior part of clypeus without strong denticles.

ETYMOLOGY. *Orientidia* is a combination of Latin *orientalis* (oriental) and *idia* (part of *Trogaspidia*).

8. Genus *Krombeinidia* Lelej, gen. n.

Type species: *Krombeinidia peterseni* sp. n.

DIAGNOSIS. MALE. Antennal segment 3 being 1.7 times its maximal width and 1.3 times as long as antennal segment 4 (Fig. 12). Thorax all black. Mesopleurae beneath without precoxal tubercles. Scutellum not at all gibbous, without glabrous median line. Gastral sternum 2 laterally without any trace of felt line. Sternum 8 without lateral ridges. Tergum 7 with narrow median glabrous area. Volsella with cuspis, digitus and developed paracuspis between them (Fig. 8, 9).

FEMALE. Anterior part of basal elevated part of clypeus without tubercles. Antennal segment 3 being 1.1 its maximal width, 1.5 antennal segment 4 (Fig. 11). Longitudinal eye diameter 3.3 times shortest distance between eye and mandible. Thorax broadest in pronotum. Scutellar scale distinct, narrow. Gastral tergum 2 with two large anterior pale spot and apical pale fascia. Tergum 3 with a fascia of appressed pale pubescence. Pygidial area of tergum 6 elongated, carinated laterally (not carinated in *griseomaculata*), glabrous, shiny, unsculptured, with sparse pygidial fringes.

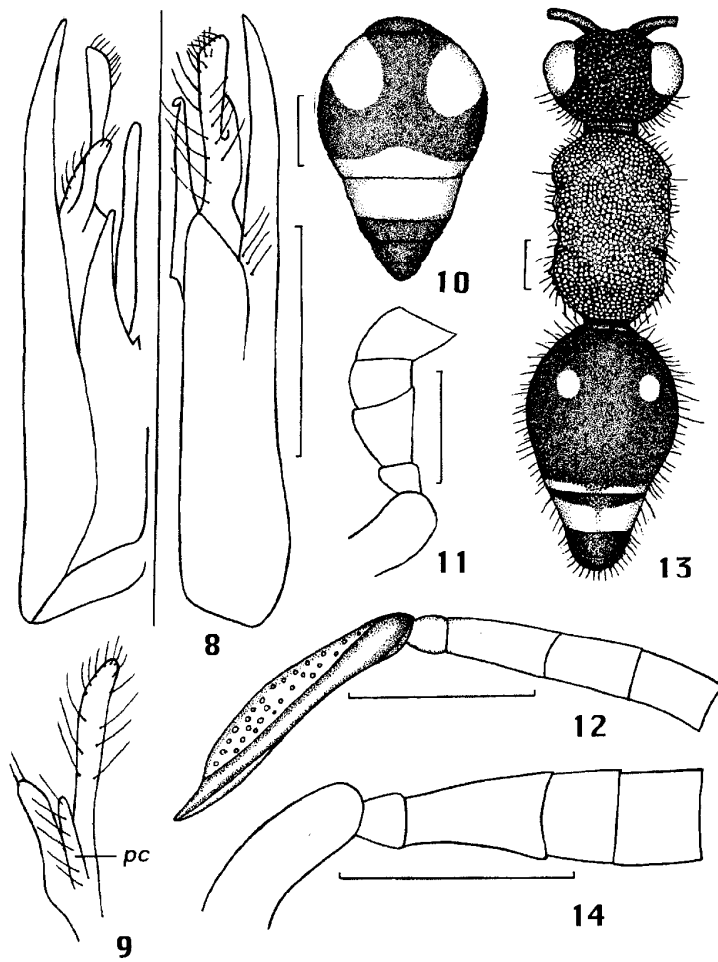
SPECIES INCLUDED. *K. peterseni* sp. n.; *K. subfossata* (Chen, 1957), ♂; *K. griseomaculata* (Andre, 1898), ♀; *K. depressicornis* (Mickel, 1935), comb. n., ♂ (Malaysia: Sabah, Sarawak); *K. ira* (Cameron, 1902), comb. n., ♂ (Malaysia: Sabah, Sarawak; Indonesia: West Java); *K. nallinia* (Zavattari, 1913), comb. n., ♂ (Indonesia: Jawa); *K. bagrada* (Cameron, 1902), comb. n., ♂ (Malaysia: Sarawak; Indonesia: East Kalimantan Prov.). The review of *K. depressicornis*, *K. ira*, *K. nallinia*, *K. bagrada* is given in: Lelej (in litt.).

DISCUSSION. The male of *Krombeinidia* gen. n. resembles that of *Petersenidia* and *Orientidia* gen. n. by the shape of hypopygium and scutellum but differs from both genera by the volsellar paracuspis; from the former by deep glabrous shiny area between two carinae on scape (shallow punctate in *Petersenidia*), by black thorax and gaster with some segments red (thorax all or partly ferruginous, gaster black in *Petersenidia*); from the *Orientidia* gen. n. by longer antennal segment 3 (shorter than antennal segment 4 in *Orientidia* gen. n.), by gastral tergum 2 without any trace of felt line (with short felt line in *Orientidia* gen. n.). The female of *Krombeinidia* gen. n. resembles that of *Petersenidia* by the glabrous pygidial area carinated laterally but differs by apical pale fascia on gastral tergum 2 (at most fringe in *Petersenidia*).

ETYMOLOGY. The name of this new genus is dedicated to Karl V. Krombein, famous expert in wasps, who collected and studied Oriental mutillids.

***Krombeinidia peterseni* Lelej, sp. n.**
(Figs 8–12).

TYPE MATERIAL (3 ♂, 2 ♀). Holotype - ♂, Sri Lanka, Kandy District,



Figs. 8-14. 8-12) *Krombeinidia peterseni* sp. n., paratypes: 8) genitalia (dorsal aspect at left, ventral at right); 9) volsella (*pc* - paracuspis); 10) gaster, ♀; 11) antennal segments 1-5, ♀; 12) do, ♂; 13, 14) *Promecidia yamanei* sp. n., paratype, ♀: 14) antennal segments 1-5. Scale line = 1 mm.

Kandy, Udawattakele, Sanctuary, 26–30.VII 1978 (K. Krombein, T. Wijesinha, V. Kulasekera, L. Jayawickrema) [USNM]. Paratypes: Sri Lanka, 1 ♂, Kandy, 2–13.VIII 1976 (S. Karunaratne) [USNM]; 1 ♂, Kandy, 850 m, forest, 28.IX 1982 (G. Medvedev) [ZIS]; 1 ♀, Amparai District, Ekgal Aru, Reservoir Jungle, 9–11.VI 1976 (K. Krombein, P. Karunaratne, S. Karunaratne) [USNM]; 1 ♀, Puttalam District, Wilpattu National Park, 8.X 1982 (G. Medvedev) [ZIS].

DESCRIPTION. MALE. Length 9.8–11.0 mm. Black, gastral segments 1–5 red; wings infuscated; mandibles brownish–red preapically; fore spurs brownish, mid- and hind spurs white. Body and legs clothed with appressed short and scattered long erect whitish pubescence; golden on red parts of gaster, denser on pronotum, mesopleurae, propodeal dorsum; mesoscutum, scutellum except posterior border, gastral terga 6–7 and gastral sterna 6–8 with sparse subappressed and scattered erect black setae; thorax laterally, propodeal dorsum, scutellum and metanotum laterally with appressed white micropubescence; gastral tergum 2 with lateral golden felt line; terga 1–5 and sterna 2–5 with apical golden fringe.

Relative width of head and thorax including tegulae 5.5 : 6.4. Clypeus clothed with dense whitish pubescence, median portion of the margin straight with weak glabrous submarginal concavity; median area triangular with strong central tooth, without lateral ridges and basal tubercle. Scape bicarinate beneath with deep glabrous furrow between carinae. Ocelli small, ratio postocellar distance:ocular–ocellar distance=0.8, postocellar distance is 2.6 times posterior ocellus diameters. Antennal segment 3 is 1.75 times its maximal width, 2.7 times as long as antennal segment 2, and 1.25 times as long as antennal segment 4, the latter is equal to antennal segment 5 (Fig. 12). Frons, vertex, occiput and genae densely punctate.

Mesoscutum with notauli reaching the level of tegulae anterad, with scarcely visible parapsidal lines, with well developed parascutal carinae. Scutellum simple, without longitudinal median glabrous line; prescutellar transverse fovea deep. Propodeum reticulate, dorsally with median elongate subparallel closed area, laterad with enlarged cells. Pronotum dorsally, mesoscutum, scutellum, mesopleurae, median portion of metanotum densely punctate. Metasternum longitudinally striate. Tegulae not protruding beyond axillae, microreticulate, subopaque, feebly rugose near the margin, with scattered punctures. Gastral segment 1 carinate beneath. Gastral segment 2 densely punctate, sparser on the disk of sternum and tergum and median apical area on tergum. Gastral segments 3–6 sparsely punctate. Last tergum densely punctate, with median narrow glabrous area reaching the apex. Sternum 8 densely punctate.

FEMALE. Length 5.0–6.5 mm. Head and gaster black, mandible red with dark apex; antenna brownish–red, flagellomeres above black; thorax red; legs red with darkened tibiae, palps pale brown, gaster ventrally brown.

Frons, vertex and thoracic dorsum with sparse erect black setae and subappressed reddish ones; pubescence on vertex dense recumbent, golden yellowish; genae, mandible, scape, legs, propodeal hind face, gastral tergum 1,

terga 2–5 laterally and gaster ventrally with whitish setae. Tergum 2 with two large anterior spots and broad apical fascia, tergum 3 with broad complete fascia of golden yellow pubescence (Fig. 10). Sterna 2–5 posterad with fringe of long, subappressed pale setae. Felt lines of gastral tergum 2 yellowish. Tergum 6 laterally with not dense pale pygidial fringes. Other parts of gastral terga with black pubescence.

The relation of longitudinal eye diameter to distance between eye and mandible base is 3.3–4.0. Clypeus strongly elevated basally with a basal median tubercle and transverse concave preapical glabrous furrow, the latter being bordered above by carina. Gena limited beneath by a weak ridge which ends at hypostomal carina as a tubercle. Antennal segment 3 is 1.1 times its maximal width, 1.4–1.5 times as long as antennal segment 4, the latter 0.8 times as long as antennal segment 5 (Fig. 11). Frons, vertex and genae densely sometimes coarsely punctate.

Humeral angles not prominent, lowered, seen from above pronotal sides more or less parallel, with lateral denticle; relative width of thorax at humeral angles, greatest width of pronotum, anterior spiracles, posterior spiracles and greatest propodeal width, 7.0(4.3) : 7.5(4.7) : 7.3(4.7) : 6.8(4.3) : 6.9(4.5). Propodeum abruptly sloping to the gastral base. Thoracic dorsum coarsely confluent punctate, with prescutellar row of denticles, propodeal dorsum and upper part of posterior slope even tuberculate, lateral margin of propodeum tuberculate.

Gastral sternum 1 with longitudinal straight carina. Tergum 2 somewhat flattened, sternum 2 basally concave. Gastral segment 2 densely punctate. Pygidial area of tergum 6 elongated, carinated laterally, glabrous, shiny, unsculptured, pygidial fringes with sparse setae.

RANGE. Sri Lanka.

DISCUSSION. The male of *K. peterseni* sp. n. resembles that of *K. subfossata* by the shape of genitalia and by microreticulate tegulae but differs by not swollen median basal part of gastral tergum 2 (swelling in *K. subfossata*), by strong central median tooth of clypeus (lacking in *K. subfossata*). The female of *K. peterseni* sp. n. resembles that of *K. griseomaculata* but easily differs by carinated pygidial area (not carinated in *K. griseomaculata*), by not emarginated pale apical fascia on tergum 2 (emarginated in *K. griseomaculata*).

REMARKS. Dr. B. Petersen, who studied a lot of specimens of this species collected in Sri Lanka and designated it as a new species, did not describe this species. Prof. K. Krombein informed me (pers. letter) that one pair of this species has been collected by him *in copula*.

ETYMOLOGY. This species is dedicated to Borge Petersen, expert in mutillid wasps, who passed away on January 18, 1996.

***Krombeinidia subfossata* (Chen, 1957), comb. n.**

Smicromyrme subfossata Chen, 1957: 178, 188, ♂ (holotype – ♂, Fujian, Shaowu, 1–10.IX 1943).

Petersenidia subfossata: Lelej, Yamane, 1992: 629, ♂.

MATERIAL. (8 ♂). China: 6 ♂, Yunnan, 30 km SW Jinping, 400 m, 17.IV–3.V 1956 (Huang Ke-ren et al.) [ZMMU]. Thailand: 1 ♂, Khao Chong, 26.VI 1965 (K. Morimoto) [NSMT]. Vietnam: 1 ♂, Gia Lai Con Tum, Buon Luoi, VII 1981 (L. Medvedev) [IBPV].

RANGE. China (Fujian, Yunnan*), Thailand*, Vietnam*.

REMARKS. This species may be the opposite sex of *K. griseomaculata*.

***Krombeinidia griseomaculata* (Andre, 1898), comb. n.**

Mutilla griseomaculata Andre, 1898: 22, ♀ (holotype – ♀, Cochin China [South Vietnam]).

Timulla (Trogaspidia) griseomaculata: Mickel, 1933a: 316; Yasumatsu, 1948: 72, ♀ (Zhejiang).

Smicromyrme griseomaculata: Chen, 1957: 190.

MATERIAL (5 ♀). North Thailand: 2 ♀, Fang, 12.VI 1965 [NSMT]. South Vietnam: Tho Thu Island (9°17'N, 103°28'E), 8–10.IV 1987 (V. Kuznetsov) [IBPV]; Con Dao Island (8°41'N, 106°37'E), 6.IV 1987 (V. Kuznetsov) [IBPV]; Indonesia: 1 ♀, West Jawa, Bogor, 4–8.XII 1985 (Sk. Yamane) [KU].

RANGE. South Vietnam, North Thailand*, Indonesia*.

9. Genus *Promecidia* Lelej, gen. n.

Type species: *Promecidia yamanei* Lelej, sp. n.

DIAGNOSIS. FEMALE. Antennal segment 3 slightly flattened. Anterior part of clypeus with two strong dents, the distance between them slightly more than between apical and basal tubercle. Mandible slender, with an inner preapical tubercle. Scutellar scale absent. Light gastral design as in Fig. 13. Gastral tergum 6 without any pygidial area, convex, smooth, shiny, basal part of tergum punctate, with long pale setae. MALE unknown.

SPECIES INCLUDED. *P. yamanei* sp. n. and *P. mamblia* (Cameron, 1902), comb. n., ♀ (Sabah, Sarawak). The review of *P. mamblia* is given in: Lelej (in litt.).

DISCUSSION. The females of new genus are similar to those of *Orientidia* gen. n. in lacking any distinct pygidial area, but easily distinguishable from them by very long antennal segment 3 (Fig. 14 vs. Fig. 6) and larger size.

ETYMOLOGY. *Promecidia* is a combination of *promec* (part of *Promecilla* Andre, 1903) and *idia* (part of *Trogaspidia*), with reference to the resemblance of the genus with both of them.

***Promecidia yamanei* Lelej, sp. n.**

TYPE MATERIAL. Holotype – ♀, Malaysia, Sarawak, Miri, Lambir National Park, Tower Region, 17.VIII 1995 (Sk. Yamane) [KU]. Paratype: 1 ♀, the same locality, 14.VIII 1995 (Sk. Yamane) [KU].

DESCRIPTION. FEMALE. Length 9.0–12.0 mm. Head and legs black, mandible black with preapical dark red part; thorax red, gaster dark metallic blue, antennal segments 4–12 beneath brown reddish.

Frons, vertex and thoracic dorsum with sparse subappressed and erect black setae; genae, mandible, scape, legs, propodeal hind face, gastral tergum 1, terga 2–5 laterally and gaster ventrally with pale setae. Tergum 2 with two small spots and narrow apical fascia interrupted medially, tergum 3 with broad complete fascia of golden pubescence (Fig. 13). Sterna 2, 3 with posterior narrow fascia of appressed golden pubescence; sterna 2–5 posterad with fringe of long, subappressed yellowish setae. Felt lines of gastral tergum 2 brownish. Tergum 6 basally with dense yellowish pygidial fringe. Other parts of gastral terga with black pubescence.

The relation of longitudinal eye diameter to distance between eye and mandible base is 4.7–4.8. Clypeus strongly elevated basally with a basal median tubercle and transverse concave preapical glabrous furrow, the latter being bordered above by two strong approached denticles. Gena limited beneath by a weak ridge which ends to hypostomal carina as a sharp tubercle. Antennal segment 3 being 1.8 times its maximal width, 2.5–2.7 times as long as antennal segment 2, 1.8–2.0 times as long as antennal segment 4, the latter 0.8–0.9 times as long as antennal segment 5 (Fig. 14). Frons, vertex and genae deeply densely punctate, punctures larger on genae.

Humeral angles rounded, lowered, seen from above pronotal sides diverging posterad with lateral denticle, but without lateral carina, mesonotum laterally crenulate; relative width of thorax at humeral angles, greatest width of pronotum, anterior spiracles, posterior spiracles and greatest propodeal width, 7.3 : 8.5 : 8.1 : 8.0 : 8.2. Propodeum rather long and gently sloping to the gastral base. Thoracic dorsum coarsely confluent punctate, propodeal dorsum and posterior face of propodeum even reticulate, lateral margin of propodeum tuberculate.

Gastral sternum 1 with longitudinal emarginate carina. Tergum 2 densely punctate (punctures larger and deeper laterally), gastral sternum 2 with dense separate punctures (sparser on disk). Pygidial area of tergum 6 convex, glabrous, shiny, not-carinated laterally. MALE unknown.

RANGE. Malaysia (Sarawak).

DISCUSSION. The female of new species differs from that of *P. mamblia* by lacking scutellar scale, black scape and femora (red in *P. mamblia*), by dark metallic blue gaster (black in *P. mamblia*).

ETYMOLOGY. The specific name is dedicated to Prof. Seiki Yamane, well-known hymenopterist, who collected this splendid species.

Subtribe Trogaspidiina Bischoff, 1920

Type genus: *Trogaspidia* Ashmead, 1899.

DIAGNOSIS. The differences between subtribes Trogaspidiina and Peter-senidiina are given in the key above.

GENERA INCLUDED. The subtribe includes widely distributed *Trogaspidia* Ashmead, 1899 (with Afro-tropical subgenera *Inflatispidia* Nonveiller, 1995; *Lobotropidia* Nonveiller, 1995; *Arcuatotropidia* Nonveiller, 1995; *Chilotropidia* Nonveiller, 1995; *Acutitropidia* Nonveiller, 1995) Oriental and East Palaearctic *Radoszkowskius* Ashmead; *Protrogaspidia* gen. n.; *Nonveilleridia*

gen. n.; *Neotrogaspidia* gen. n.; *Eotrogaspidia* gen. n.; Afrotropical *Carinotilla* Nonveiller, 1973; *Pseudolophotilla* Nonveiller, 1995; *Aureotilla* Bischoff, 1920; *Lophotilla* Bischoff, 1920; *Amblotropidia* Nonveiller, 1995, *Curvitropidia* Nonveiller, 1995; *Tuberoxotilla* Nonveiller, 1980; *Dentotilla* Nonveiller, 1977; *Chrysotilla* Bischoff, 1920; *Dolichomutilla* Ashmead, 1899; *Glossotilla* Bischoff, 1920; *Lobotilla* Bischoff, 1920, *Pristomutilla* Ashmead, 1903; *Trispi-
lotilla* Bischoff, 1920; Palearctic *Macromyrme* Lelej, 1984; Nearctic and Neotropic *Timulla* Ashmead, 1899.

10. Genus *Radoszkowskius* Ashmead, 1903

Type species: *Mutilla simplicifascia* Sichel et Radoszkowski, 1870, ♀ non ♂, by original designation.

In my other paper (Lelej, in litt.) I resurrected Ashmead's name *Radoszkow-skius* for four Oriental species including *R. merops* (Smith, 1861). O'Tolle (1975) includes *R. merops* (with description of unknown male) in his polytypic species *Timulla oculata* (F.). I consider that male and female characters, which used by O'Tolle in his key to the 14 subspecies of *T. oculata* have the specific level and all subspecies of *T. oculata* sensu O'Tolle (1975) must be regarded as a distinct species. For the more most of these "subspecies" are isolated geographically. The characters used by O'Tolle (1975) for the definition of *T. oculata* (F.) have generic level.

DISCUSSION. The male of *Radoszkowskius* easily differs from that of all genera of subtribe Trogaspidiina by the shape of mandible which not excised beneath and has a weak basal tubercle only and by strongly modified penial valvae. The females of *Radoszkowskius* differs from those of Trogaspidiina genera by the irregularly rugose sculpture of pygidium.

SPECIES INCLUDED. Besides four species included by me (Lelej, in litt.) and 14 species recorded by O'Tolle (1975) *R. leytensis* (Tsuneki, 1993), comb. n., ♂ (Philippines: Leyte) and *R. conversus* (Chen, 1957) must be added in this genus. So, 19 species are known in the genus *Radoszkowskius* totally.

Radoszkowskius oculata (Fabricius, 1804), comb. n.

Mutilla oculata Fabricius, 1804: 432, ♀ (holotype – ♀, China).

Timulla oculata oculata: O'Tolle, 1975: 232, ♀ (synonymy, keys).

MATERIAL. (17 ♂, 12 ♀). China: Guangdong, 5 ♂, Guangzhou, 28.VI 1990 (A. Lelej) [IBPV]; Yunnan, 4 ♂, 30 km SW Jinping, 400 m, 21–28.IV 1956 (Huang Ke-ren et al.) [ZMMU]; 2 ♀, N 1245, 1235 [South Yunnan, V–VI 1956 (D. Panfilov)] [ZMMU]; 1 ♂, Jingdong, 1170 m, 4.VII 1956 (K. Zagulyaev) [ZMMU]; Taiwan: 1 ♀, 25.XII 1925 (T. Kano) [NSMT]; 2 ♂, 1 ♀, Hokuto, 25.VI, 1.VII, 5.VII 1929 (K. Sato) [NSMT]; Shinka, 24.V 1929 (K. Sato) [NSMT]; 1 ♂, Chipon, 13.VIII 1936 [NSMT]. Vietnam: Prov. Quang Ninh, 2 ♀, Dang Kho Island, 20–23.III 1987 (V. Kuznetsov) [IBPV]; 2 ♂, 1 ♀, Phong Vong Island, 9–10.X 1990 (V. Kuznetsov) [IBPV]; 1 ♂, 1 ♀ (in copula), Thanh Lam Island, 13.X 1990 (V. Kuznetsov) [IBPV]; Prov. Hai Phong, 2 ♀,

20 km S Hai Phong, 19–20.V 1986 (A. Gorochoy) [ZIS, IBPV]; Prov. Phy Khanh, 1 ♀, 65 km N Nha Trang, 2.XII 1979 (L. Medvedev) [IBPV]; 1 ♀, Annam, Jong Dinh, 8.VIII 1909 (W. Pliginskiy) [ZIS].

RANGE. China (Beijing, Jiangsu, Zhejiang, Jiangxi, Hunan, Fujian, Taiwan, Guangdong, Yunnan*, Hainan), Hong Kong, Vietnam, Laos, Thailand, Myanmar, Cambodia, Malaysia (Malay Peninsula).

***Radoszkowskius conversus* (Chen, 1957), comb. n.**

Trogaspidia conversa Chen, 1957: 165, ♂ (holotype – ♂, Shanghai, 22.VII 1925).

MATERIAL. China: Taiwan, 2 ♂, Hokuto, 1.VII 1929 (K. Sato) [NSMT].

RANGE. China (Shanghai, Anhui, Fujian, Taiwan*).

***Radoszkowskius philippinensis* (Smith, 1855)**

Mutilla philippinensis Smith, 1855: 40, ♀ (holotype – ♀, Philippines).

Timulla oculata philippinensis: O'Tolle, 1975: 237, figs., ♀, ♂ (synonymy).

MATERIAL. Philippines: 1 ♂, Palawan, Sabang, 11–13.VII 1977 (Y. Kurosawa) [NSMT]. Indonesia: 1 ♀, East Kalimantan Prov., Kutai National Park, Sangkimah, 8.IX 1993 (Sk. Yamane) [KU].

RANGE. Philippines (Luzon, Polillo, Cebu, Negros, Panay, Mindanao, Mindoro, Balabac, Palawan), Indonesia*.

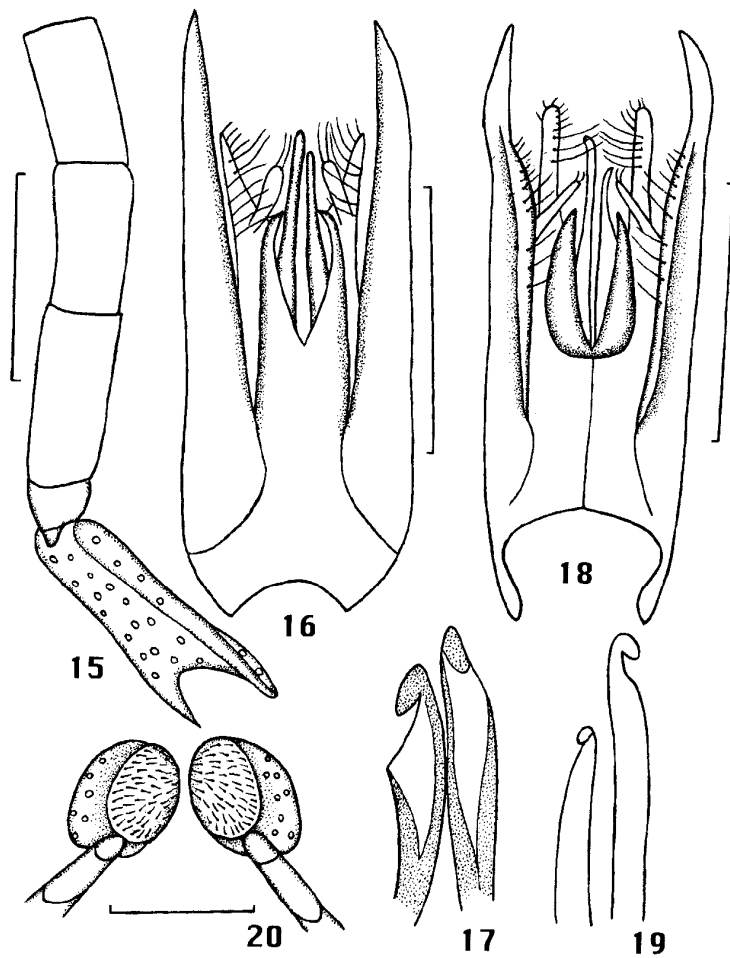
11. Genus *Protrogaspidia* Lelej, gen. n.

Type species: *Mutilla volatilis* Smith, 1859.

DIAGNOSIS. MALE. Antennal segment 3 being 2.4 times its maximal width, 3.8 times as long as antennal segment 2 and 1.2 times as long as antennal segment 4 (Fig. 15). Ocelli small, the ratio postocellar distance: ocellar–ocular distance = 0.5. Scape bicarinate beneath with shallow punctate furrow between carinae. Median portion of clypeal margin emarginate, strongly bidentate. Thorax black, wings infuscated. Mesoscutum with notauli reaching the level of tegulae anterad, parapsidal lines weak, parascutal carina well developed. Tegulae not protruding beyond axillae, smooth and shiny, sparsely punctate inside. Mesopleurae beneath without precoxal tubercles. Scutellum not at all gibbous, without glabrous median line. Propodeum elongate, dorsally with long median closed area. Gastral tergum 2 with lateral long felt line, sternum 2 laterally without any trace of felt line. Sternum 8 with two weak longitudinal swelling converging posterad. Tergum 7 with narrow median glabrous area reaching the apex. Genitalia with slightly asymmetrical penial valvae, volsella with digitus, short cuspis but without paracuspis (Fig. 16, 17).

FEMALE unknown.

SPECIES INCLUDED. *P. volatilis* (Smith, 1859), comb. n., ♂ (Indonesia: Sulawesi). Probably *Mutilla celebensis* Andre, 1905, ♂ ♀ (Indonesia: Sulawesi) belongs to this genus also. The review of *P. volatilis* is given in: Lelej (in litt.).



Figs. 15–20. 15–17). *Protrogaspidia volatilis*, ♂: 15) antennal segments 1–5; 16) genitalia, dorsal aspect; 17) penial valvae, ventral aspect; 18, 19) *Nonveilleridia bataviana*, ♂: 18) genitalia, dorsal aspect; 19) penial valvae, ventral aspect; 20) *Eotrogaspidia auroguttata*, ♂, hind coxae. Scale line = 1 mm.

DISCUSSION. The simple scutellum, elongated flagellomeres, sternum 8 without distinct lateral ridges, lacking paracuspis, slightly asymmetrical penial valvae characterize the genus *Protrogaspidia* gen. n. as a most ancestral among the subtribe Trogaspidiina.

ETYMOLOGY. *Protrogaspidia* is a combination of Greek prefix *pro-* (ancient, ancestral) and *Trogaspidia* with reference to the evolutionary position of new genus.

12. Genus *Nonveilleridia* Lelej, gen. n.

Type species: *Mutilla bataviana* Andre, 1909.

DIAGNOSIS. MALE. Ocelli small, the ratio postocellar distance: ocellar-ocular distance = 0.6. Scape somewhat flattened beneath, with two widely separated carinae, which coalesce at the apex to form a single ridge, area between the carinae polished with a few rugulosities. Median area of clypeus feebly concave, polished, with transverse submarginal fovea. Mesoscutum with notauli almost reaching the pronotum, with well defined parapsidal lines parascutal carina. Mesopleurae beneath with blunt precoxal swelling. Propodeum dorsally clothed by dense appressed argental pubescence, the sculpture not visible. Gastral tergum 2 with lateral long felt line, sternum 2 laterally without any trace of felt line, with lateral longitudinal gibbosity. Sternum 6 and 7 with lateral arcuate carina, sternum 8 with arcuate basal carina. Tergum 7 with median glabrous area not reaching the apex. Genitalia with slightly asymmetrical penial valvae, volsella with digitus, long cuspis but without paracuspis (Figs. 18, 19).

FEMALE unknown.

SPECIES INCLUDED. Type species only.

DISCUSSION. The male of new genus resembles that of Afrotropical *Carinotilla* Nonveiller, 1973, but differs by lateral longitudinal gibbosity on gastral tergum 2 (lacking in *Carinotilla*), by mid coxae without external tubercle (with an external apophyse in *Carinotilla*).

ETYMOLOGY. The name of this genus is dedicated to Guido Nonveiller, famous expert in mutillid wasps.

Nonveilleridia bataviana (Andre, 1909), comb. n.

Mutilla bataviana Andre, 1909: 177, ♂ (type – ♂, Jawa).

Timulla (Trogaspidia) bataviana: Mickel, 1935: 250, ♂; Pagden, 1949: 217, ♂.

MATERIAL. South Vietnam (probably Buon Luoi in Prov. Gia Lai Con Tum): 1 ♂ from stomach of frog (*Rana*) [IBPV].

RANGE. South Vietnam*, Indonesia (Jawa).

13. Genus *Neotrogaspidia* Lelej, gen. n.

Type species: *Mutilla pustulata* Smith, 1873.

DIAGNOSIS. MALE. Antennal segment 2 and apical part of scape with brush of pale setae; antennal segment 3 flattened, 1.7 times its maximal width, 2.0 times as long as antennal segment 2 and 1.2 times as long as antennal

segment 4. Scape curved apically, with lower carina, upper one visible in apical part, area above carina punctate. Clypeus widely transversely concave. Mesoscutum with notauli not reaching the pronotum, with defined parapsidal lines and parascutal carina. Mesopleurae beneath with blunt precoxal swelling. Scutellum with glabrous median line. Gastral sternum 2 laterally without any trace of felt line. Sternum 7 and 8 with lateral curved ridges. Tergum 7 with median glabrous longitudinal area. Genitalia with asymmetrical penial valvae, volsella with digitus, long cuspis but without paracuspis.

FEMALE. Antennal segment 3 being 1.7 its maximal width, 1.8 antennal segment 4. Longitudinal eye diameter 3.2 times shortest distance between eye and mandible. Thorax broadest in propodeum. Scutellar scale developed. Gastral tergum 2 with two anterior pale spots, without apical pale fascia. Pale fascia on tergum 3 entire or interrupted medially. Pygidial area of tergum 6 carinated laterally, irregularly rugose basally, microgranulose apically.

SPECIES INCLUDED. *N. pustulata* (Smith, 1873), comb. n., ♂ ♀ (Japan: Honshu, Kyushu, Tsushima, Yaku-shima, Tanega-shima, Amami-oshima, Bonin Is.; Korea; China: Sichuan, Jiangsu, Anhui, Zhejiang, Jiangxi, Hunan, Fujian, Guangdong*, Taiwan) and *N. hammeri* (Suarez, 1959), comb. n., ♂ ♀ (south-western Turkmenistan, Azerbaijan, Armenia, Cyprus, Palestine). The review of the species see: Lelej (1985); Lelej, Yamane (1992).

DISCUSSION. The male of *Neotrogaspidia* gen. n. belongs to the group of subtribe Trogaspidiina which has the simple scutellum and mandible excised beneath and their differences are given in the key above. From the females of subtribe Trogaspidiina which have the thorax broadest in propodeum and carinated pygidial area, *Neotrogaspidia* gen. n. differs by microgranulose polished apical half of pygidial area.

ETYMOLOGY. *Neotrogaspidia* is a combination of Greek *neos* (new) and *Trogaspidia*.

14. Genus *Eotrogaspidia* Lelej, gen. n.

Type species: *Mutilla auroguttata* Smith, 1855.

DIAGNOSIS. MALE. Antennal segment 2 and apical part of scape with brush of pale setae; antennal segment 3 flattened, 1.8 times its maximal width, 2.4 times as long as antennal segment 2 and 1.2 times as long as antennal segment 4. Scape curved apically, with two carinae beneath, area between carinae narrow, punctate. Clypeus polished, more or less concave. Mesoscutum with notauli not reaching the pronotum, with defined parapsidal lines and parascutal carina. Mesopleurae beneath with blunt precoxal swelling. Scutellum with median carina which ends to tubercle or elevation. Gastral sternum 2 laterally without any trace of felt line. Sternum 8 with lateral stright ridges. Tergum 7 with median glabrous longitudinal area not reaching the apex. Genitalia with more or less asymmetrical penial valvae, volsella with digitus, long cuspis and developed paracuspis.

FEMALE. Antennal segment 3 being 1.5 its maximal width, 1.4 antennal segment 4. Longitudinal eye diameter 3.1 times shortest distance between eye

and mandible. Thorax broadest in propodeum. Scutellar scale developed. Gastral tergum 2 with two large anterior pale spots, without apical pale fascia or fringe. Pale fascia on terga 3 and 4 interrupted medially. Pygidial area of tergum 6 carinated laterally, irregularly rugose basally, polished apically.

SPECIES INCLUDED. Besides the type species the genus *Eotrogaspidia* gen. n. includes *E. amans amans* (André, 1909), comb. n., ♂, ♀ (Indonesia: Jawa, Kangean), *E. amans oryzae* (Pagden, 1934), comb. n., ♂, ♀ (Malaysia: Malay Peninsula) and one undescribed species from China (Yunnan) and North Vietnam.

DISCUSSION. The males of *Eotrogaspidia* gen. n. differ from those of all genera of subtribe Trogaspidiina by hind coxae which clothed with very short pale pubescence. The female of *Eotrogaspidia* gen. n. most resembles that of *Neotrogaspidia* gen. n. in having similar shape of pygidial area but differs by very large spots on gastral tergum 2 (see in the key above).

ETYMOLOGY. *Eotrogaspidia* is a combination of *Eos* (Greek Goddess of daybreak) and *Trogaspidia*.

***Eotrogaspidia auroguttata* (Smith, 1855), comb. n.**

Mutilla auroguttata Smith, 1855: 52, ♀ (type – ♀, Hong Kong, not Brazil, see: Mickel, 1939).

Timulla (Trogaspidia) disparilis Mickel, 1933a: 398, ♂ [holotype – ♂, Formosa [Taiwan], Taihorin, VI 1910 (H. Sauter)]; synonymized with *E. auroguttata* by B. Petersen; 1933b: 314, ♂; 1935: 234, ♂.

Timulla (Trogaspidia) repraesentoides Mickel, 1933a: 411, ♀ [holotype – ♀, Hoozan, Formosa [Taiwan], II 1910 (H. Sauter)]; synonymized with *E. auroguttata* by B. Petersen; 1933b: 309, ♀; 1935: 254, ♀.

Trogaspidia disparilis: Chen, 1957: 168, ♂; Tsuneki, 1972: 8, ♂; 1993a: 48, ♂.

Trogaspidia auroguttata auroguttata: Chen, 1957: 171, ♀.

Trogaspidia auroguttata repraesentoides: Chen, 1957: 172, ♀; Tsuneki, 1972: 8.

MATERIAL (15 ♂, 13 ♀). China: Taiwan: 2 ♀, 17.I 1926 (T. Kano) [NSMT]; 2 ♂, Tainan, 12.VIII 1926 (S. Takano) [NSMT]; 1 ♂, Taihoku, 20.IX 1927 (K. Sato) [NSMT]; 3 ♂, Hori, 26.IV 1928, 28, 29.IV 1929 (K. Sato) [NSMT]; 2 ♂, Hokuto, 20.V 1929 (K. Sato) [NSMT]; 2 ♀, Hokuto, 5.VIII 1929 (K. Sato) [NSMT]; 4 ♂, Shinka, 24.V 1929 (K. Sato) [NSMT]; 1 ♂, Kagi, 25.V 1929 (K. Sato) [NSMT]; 1 ♀, Kuaru, 17.IV 1937 (K. Iwata) [NSMT]; 1 ♂, Chiuche, 8.V 1980 (Sk. Yamane) [IBPV], identified by B. Petersen as *Trogaspidia auroguttata*; Guangdong: 6 ♀, Chebaling Reserve, 20–21.VI 1990 (A. Lelej) [IBPV]; North Thailand: 1 ♂, 2 ♀, 7 km NW Fang, 30.X–2.XI 1979 (Zool. Mus. Copenhagen Exped.) [IBPV], identified by B. Petersen as *Trogaspidia disparilis*.

RANGE. China (Sichuan, Jiangsu, Zhejiang, Hunan, Fujian, Guangdong, Hainan, Taiwan), Hong Kong; North Thailand*. Records from Japan (Mickel, 1935) probably are erroneous.

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