

**To the knowledge of the mutillid and bradynobaenid wasps of Iran
(Hymenoptera: Mutillidae, Bradynobaenidae)**

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**К познанию мутилид и брадинобенид Ирана
(Hymenoptera: Mutillidae, Bradynobaenidae)**

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Abstract. Twenty-two species in thirteen genera of Mutillidae and two species in one genus of Bradynobaenidae from Iran are recorded. Three new species: *Dentilla osteni* sp. n., *Smicromyrme standfussorum* sp. n. and *Trogaspidia tobiasi* sp. n. are described and figured. The genus *Eotrogaspidia* Lelej and six species: *Eotrogaspidia dives* (Smith), *Ephutomma angustata* (Skorikov), *Physetopoda portschinskii* (Radoszkowski), *Smicromyrme minuta* Lelej, *Neotrogaspidia hammeri* (Suárez), and *Macroocula sinaica* (Invrea) are firstly recorded for Iran. New synonymy is proposed: *Eotrogaspidia dives* (Smith, 1855) (comb. n.) = *Mutilla fumipennis* Bingham, 1897 (syn. n.) = *Mutilla adscripta* Nurse, 1903 (syn. n.). New combinations are proposed: *Smicromyrme kermanensis* (Lelej, 1984) (comb. n.) and *Trogaspidia villosa* (Fabricius, 1775) (comb. n.).

Key words. Hymenoptera, Mutillidae, Bradynobaenidae, Iran, new species, new synonyms.

Резюме. Для Ирана указываются 22 вида из 13 родов сем. Mutillidae и 2 вида из 1 рода сем. Bradynobaenidae. Описываются 3 новых для науки вида: *Dentilla osteni* sp. n., *Smicromyrme standfussorum* sp. n. и *Trogaspidia tobiasi* sp. n. Род *Eotrogaspidia* Lelej и 6 видов: *Eotrogaspidia dives* (Smith), *Ephutomma angustata* (Skorikov), *Physetopoda portschinskii* (Radoszkowski), *Smicromyrme minuta* Lelej, *Neotrogaspidia hammeri* (Suárez) и *Macroocula sinaica* (Invrea) указываются впервые для Ирана. Предложена новая синонимия *Eotrogaspidia dives* (Smith, 1855) (comb. n.) = *Mutilla fumipennis* Bingham, 1897 (syn. n.) = *M. adscripta* Nurse, 1903 (syn. n.) и новые комбинации: *Smicromyrme kermanensis* (Lelej, 1984) (comb. n.) и *Trogaspidia villosa* (Fabricius, 1775) (comb. n.).

Ключевые слова. Hymenoptera, Mutillidae, Bradynobaenidae, Иран, новые виды, новые синонимы.

Zusammenfassung. Für den Iran werden 22 Mutilliden-Arten in 13 Genera und 2 Bradynobaeniden-Arten in einer Gattung nachgewiesen. Drei neue Arten werden beschrieben und durch Zeichnungen dokumentiert: *Dentilla osteni* sp. n., *Smicromyrme standfussorum* sp. n. und *Trogaspidia tobiasi* sp. n. Eine Gattung *Eotrogaspidia* Lelej und 6 Arten werden für das Land erstmals nachgewiesen: *Eotrogaspi-*

dia dives (Smith), *Ephutomma angustata* (Skorikov), *Physetopoda portschinskii* (Radoszkowski), *Smicromyrme minuta* Lelej, *Neotrogaspidia hammeri* (Suárez) und *Macroocula sinaica* (Invrea). Neue Synonyme werden vorgeschlagen: *Eotrogaspidia dives* (Smith, 1855) (comb. n.) = *Mutilla fumipennis* Bingham, 1897 (syn. n.) = *M. adscripta* Nurse, 1903 (syn. n.). *Smicromyrme kermanensis* (Lelej, 1984) (comb. n.) und *Trogaspidia villosa* (Fabricius, 1775) (comb. n.) werden als neue Kombinationen vorgeschlagen.

Stichworte. Hymenoptera, Mutillidae, Bradynobaenidae, Iran, neuen Arten, neuen Synonymen.

Introduction

Traditionally, the mutillid fauna of Iran is been included in studies of Central Asia (Skorikov, 1935; Lelej, 1985), but there has been no work specifically devoted to the Mutillidae or Bradynobaenidae for Iran. Sixty-seven species in twenty-one genera of Mutillidae (Lelej, 2002) and seven species in three genera of Bradynobaenidae (Pagliano, 2002) are recorded for this country. Twenty-two mutillid species and two bradynobaenid species are listed below, among them three new species, one genus, and six species that are new for Iran are recorded. The distribution data for mutillid species are taken from Lelej (2002), for bradynobaenid species — from Pagliano (2002).

This paper based on the material collected by T. Osten (Staatliches Museum für Naturkunde in Stuttgart [SMNS]) (281 specimens) in Iran mainly by Malaise and light traps. This material is deposited in SMNS, but some specimens are also in the collection of the Institute of Biology and Soil Science, Vladivostok [IBSS]. Additional material from the Zoological Institute, St. Petersburg [ZISP, curator S.A. Belokobylskij], National Museum of Natural History, Smithsonian Institution, Washington DC (curator K.V. Krombein) and Institute of Biology and Soil Science, Vladivostok has been studied also.

List of the species

Family Mutillidae

Subfamily Pseudophotopsidinae Bischoff, 1920

I. Genus *Pseudophotopsis* André, 1896

Type species: *Agama komarovii* Radoszkowski, 1885 (designated by Ashmead, 1903).

1. *Pseudophotopsis caucasica* (Radoszkowski, 1885).

Material. Iran, Fars, Zagros Mts., 25 km W Shiraz, 25–27 IV 1999 (J. Rejsek), 1 ♀.

Distribution. Afghanistan, Iran, Turkmenistan, Azerbaijan, Armenia, Georgia, Turkey, Palestine, Cyprus.

2. *Pseudophotopsis irana* (Skorikov, 1935).

Material. Iran, Hormozgan, Kuhla-Ye Gem, 25 km NW Bandar-e Abbas, 27°22'N, 56° 11' E, 1450 m, 21 V 2001 (T. Osten), 1 ♂; Minab, 27° 08' N, 57° 05' E, 80 m, 22–24 V 2001 (T. Osten), 6 ♂; 10 km W Gavbandi, 27° 16' N, 52° 58' E, 1450 m, 28 V 2001 (T. Osten), 20 ♂; Golestan, 3 km S Marave Tappe (Atrek), 37° 54' N, 55° 56' E, 250 m, 28 VI 2001 (T. Osten), 5 ♂.

Distribution. Afghanistan, Iran, Tajikistan, Uzbekistan, Turkmenistan, South Kazakhstan, India (Rajasthan).

3. *Pseudophotopsis kermana* Skorikov, 1935.

Material. Iran, Fars, 30 km SE Sarvestan, 29° 09' N, 53° 23' E, 1800 m, 4 VI 2001 (T. Osten), 1 ♂.

Distribution. Iran.

Subfamily Mutillinae Latreille, 1802

II. Genus *Ronisia* Costa, 1858

Type species: *Ronisia torosa* Costa, 1858, junior synonym of *Mutilla brutia* Petagna, 1787 (monobasic).

4. *Ronisia brutia duplex* (Radoszkowski, 1885).

Material. Iran, Golestan, 10 km E Ata Abad, 37° 0' N, 54° 40' E, 2–3 VII 2001 (T. Osten), 1 ♀.

Distribution. North Iran, Turkmenistan, Azerbaijan, Armenia, Georgia, Turkey.

III. Genus *Dentilla* Lelej, 1980

Type species: *Mutilla erronea* André, 1902 (original designation).

5. *Dentilla beludzhanica* Lelej, 1985.

Material. Iran, Bucher, Teng-e Fariab, 29° 26' N, 51° 33' E, 750 m, 1 VI 2001 (T. Osten), 1 ♂.

Distribution. Iran.

6. *Dentilla dichroa* (Sichel et Radoszkowski, 1870).

Material. Iran, Hormozgan, Kuhla-Ye Gem, 25 km NW Bandar-e Abbas, 27° 22' N, 56° 11' E, 1450 m, 21 V 2001 (T. Osten), 15 ♂; Sichoran, 20 km E Siachou, 27° 34' N, 56° 18' E, 830 m, 25 V 2001 (T. Osten), 20 ♂; 10 km W Gavbandi, 27° 16' N, 52° 58' E, 1450 m, 28 V 2001 (T. Osten), 36 ♂; Bucher, Teng-e Fariab, 29° 26' N, 51° 33' E, 750 m, 1 VI 2001 (T. Osten), 4 ♂; Fars, 30 km SE Sarvestan, 29° 09' N, 53° 23' E, 1800 m, 4 VI 2001 (T. Osten), 2 ♂; 5 km S Sumaq, 31° 0' N, 52° 47' E, 2200 m, 5 VI 2001 (T. Osten), 2 ♂.

Distribution. Afghanistan, Iran, Turkmenistan, Iraq, Palestine, Egypt (Sinai).

7. *Dentilla irana* Lelej, 1985.

Material. Iran, Hormozgan, Sichoran, 20 km E Siachou, 27° 34' N, 56° 18' E, 830 m, 25 V 2001 (T. Osten), 2 ♂; Bucher, Teng-e Fariab, 29° 26' N, 51° 33' E, 750 m, 1 VI 2001 (T. Osten), 2 ♂; Fars, 30 km SE Sarvestan, 29° 09' N, 53° 23' E, 1800 m, 4 VI 2001 (T. Osten), 3 ♂.

Distribution. Iran.

8. *Dentilla osteni* Lelej, sp. n.

Diagnosis. The male of new species differs from Palaearctic species with large ocelli by large apical lobe beneath of mandible. By the wide median clypeal process the new species is similar with *Dentilla zarudnyi* Lelej and *D. saharica* (Giner) but differs, except mandible shape, by elongate body, and by elongate gastral segment 1 (the length less its maximum width in *D. zarudnyi* and *D. saharica*).

Description. Male. Length 7.2–10.0 mm. Frons, vertex, occiput and gastral segments 2–5(6) dark brown, other parts of head including mandibles, thorax, tegulae, gastral segment 1 and (6)7 yellowish red; antennae, palps and legs paler than thorax; mandibles with dark denticles; mid- and hind spurs whitish. Wings hyaline with pale yellow veins, forewing (distalward of cells) slightly infusate, more darkened to the anterior margin. Body and legs clothed with subappressed short and scattered long erect pale pubescence; gastral segments 2–6 with rare apical whitish fringe; felt lines on tergum 2 and sternum 2 yellowish.

Head width 1.2 times larger than thorax width including tegulae. Clypeus deeply concave with wide median process anteriorly (the process width twice larger its width, anterad elevated with two tubercles) and short weak basal median carina, clypeal surface sparsely finely punctate. Scape distinctly bicarinate beneath, upper ridge visible basally. Ocelli large, ratio postocellar distance: oculo-ocellar distance is 0.75; postocellar distance equal to posterior ocellus maximum diameter; distance between posterior ocellus and posterior head margin equal to oculo-ocellar distance. Frons with deep longitudinal median furrow. Antennal segment 3 length 1.25 times its width, 2.5 times antennal segment 2, and 0.45 times antennal segment 4, the latter 1.1 times antennal segment 5. Antennal sockets with arcuated carina. Mandible quadridentate with strong curved upper carina, with large tooth beneath near the base, its height equal to minimum distance between emargination and upper mandibular carina, with large apical lobe beneath (Figs 1, 2); all inner denticles more or less equal, basal denticle carinated ventrally, subbasal one with hair tuft ventrally. Vertex and genae with sparse punctures, frons with a few shallow rugae.

Mesosoma elongate, pronotal width 1.2 times larger than propodeal width (on spiracle line). Scutum with well-developed parascutal carinae. Metasternal process without denticles. Posterior coxae carinate inside. Tegulae slightly protruded beyond scuto-scutellar suture, shining, glabrous, with a few punctures inside. Propodeum elongate, reticulate with median dorsal longitudinal cell distinctly carinated posterad. Relative length of *R*-abscissae is 1.6 : 1.0 : 2.0 : 2.6.

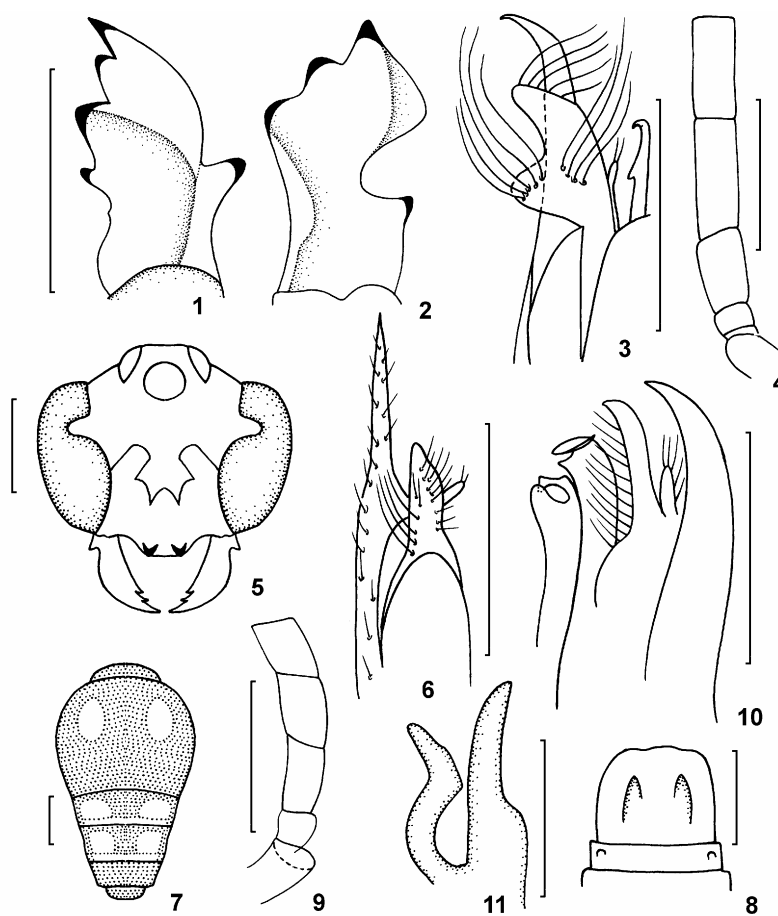
Gastral segment 1 carinate beneath, its length 1.2 times its maximum width; segment 2 with long lateral felt lines on tergum and very short ones on sternum; tergum 2 with dense large punctures, disk and posterior margin with rare small ones. Tergum 7 weakly rounded apically, with large dense punctures and indistinct median impunctate line. Genitalia as in Fig. 3.

Female unknown.

Material. Holotype: ♂, Iran, Hormozgan, 10 km W Gavbandi, 27° 16' N, 52° 58' E, 28 V 2001 (T. Osten) (SMNS). Paratypes. 9 ♂ with the same label (SMNS, IBSS).

Distribution. Iran (Hormozgan).

Etymology. This species is dedicated to Till Osten, who collected mutillids and bradynobaenids in Iran.



Figs 1–11. *Dentilla osteni* sp. n., ♂ (1–3), *Smicromyrme standfussorum* sp. n., ♂ (4–6), and *Trogaspidia tobiassi* sp. n. (7–11). 1, 2 — mandible (1 — dorsal view, 2 — lateral view); 3, 6, 10 — male genitalia (3, 6 — ventral-inner view, 10 — ventral-lateral view, digitus not figured); 4, 9 — male antennal segments 1–5; 5 — head; 7 — female gaster; 8 — male gastral sterna 7 and 8, ventral view; 11 — volsella, ventral-inner view (setae and paracuspis not figured). Scale line 1.0 mm; Fig. 11 — 0.5 mm.

9. *Dentilla zarudnyi* Lelej, 1985.

Material. Iran, Hormozgan, 10 km W Gavbandi, 27° 16' N, 52° 58' E, 1450 m, 28 V 2001 (T. Osten), 58 ♂.

Distribution. Afghanistan, Iran, Turkmenistan (Badkhyz).

IV. Genus *Ephutomma* Ashmead, 1899

Type species: *Mutilla incerta* Radoszkowski, 1877, currently regarded as a synonym of *Ephutomma turcestanica* (Dalla Torre, 1897) (original designation).

10. *Ephutomma angustata* (Skorikov, 1935).

Material. Iran, Golestan, 3 km S Marave Tappe (Atrek), 37° 54' N, 55° 56' E, 250 m, 28 VI 2001 (T. Osten), 3 ♂; 10 km E Ata Abad, 37° 0' N, 54° 40' E, 2–3 VII 2001 (T. Osten), 1 ♂.

Distribution. Iran (**new record**), Tajikistan, Uzbekistan, Turkmenistan, Kyrgyzstan, South Kazakhstan.

V. Genus *Nemka* Lelej, 1985

Type species: *Mutilla viduata* Pallas, 1773 (original designation).

11. *Nemka pondicherensis* (Sichel et Radoszkowski, 1870).

Material. Iran, Hormozgan, Minab, 27° 08' N, 57° 05' E, 80 m, 22–24 V 2001 (T. Osten), 1 ♀.

Distribution. South Iran, East India.

VI. Genus *Physetopoda* Schuster, 1949

Type species: *Physetopoda insularis* Schuster, 1949, junior synonym of *Mutilla rubrocincta* Lucas, 1849 (original designation).

12. *Physetopoda portschinskii* (Radoszkowski, 1888).

Material. Iran, Hormozgan, Kuhla-Ye Gem, 25 km NW Bandar-e Abbas, 27° 22' N, 56° 11' E, 1450 m, 21 V 2001 (T. Osten), 6 ♂; Kerman, Kuimurgak, 13 VIII 1898 (N. Zarudny), 1 ♂.

Distribution. Iran (**new record**), Turkmenistan, Kazakhstan, Azerbaijan, Armenia, Russia (south of the European part).

VII. Genus *Skorikovia* Ovchinnikov, 2002

Type species: *Mutilla elongata* Radoszkowski, 1885 (original designation).

13. *Skorikovia pallipes* (Lelej, 1985).

Material. Iran, Hormozgan, 10 km W Gavbandi, 27° 16' N, 52° 58' E, 1450 m, 28 V 2001 (T. Osten), 1 ♂.

Distribution. Iran (Khorasan, Hormozgan).

VIII. Genus *Smicromyrme* Thomson, 1870

Type species: *Mutilla rufipes* Fabricius, 1787 (original designation).

14. *Smicromyrme (Astomyrme) minuta* Lelej, 1985.

Material. Iran, Golestan, 3 km S Marave Tappe (Atrek), 37° 54' N, 55° 56' E, 250 m, 28 VI 2001 (T. Osten), 5 ♂.

Distribution. Iran (**new record**), Turkmenistan, Uzbekistan, Kyrgyzstan.

15. *Smicromyrme (Erimyrme) kermanensis* (Lelej, 1984), comb. n.

Paramyrme kermanensis Lelej, 1984: 110, ♂ [holotype: ♂, Iran, Kerman, strana Ge, Kishi-Kadzhou, 28 III–2 IV 1901 (N. Zarudny); ZISP; examined].

Material. Iran, Hormozgan, Sichoran, 20 km E Siachou, 27° 34' N, 56° 18' E, 830 m, 25 V 2001 (T. Osten), 1 ♂.

Distribution. Iran (Kerman, Sistan-Baluchistan, and Hormozgan).

Remarks. The genitalia has not been examined for original description (Lelej, 1984) and when it was done for identification of current specimen the generic position of this species was changed.

16. *Smicromyrme (Erimyrme) standfussorum* Lelej, sp. n.

Diagnosis. A new species belongs to subgenus *Erimyrme* Lelej with tridentate mandibles and concave clypeus in the males. The male of new species differs from all Palaearctic *Smicromyrme* species by brownish red gastral segment 2. By this character *S. standfussorum* is similar with Afrotropical group of *Smicromyrme*. Most species of this group distributed in South Africa. *S. andreinii* (Magretti) is the nearest species from Eritrea, but male of new species differs from it by lacking of pale band on gastral tergum 3 and by lesser size (body length 17.0–18.0 mm in *S. andreinii* vs. 8.8–10.4 in *S. standfussorum*).

Description. Male. Length 8.8–10.4 mm. Body black with gastral segment 1, gastral segment 2 except posterior border of tergum, gastral tergum 7 and gastral sternum 8 brownish red; anterior border of clypeus and tegulae brownish red; antennae brownish red, somewhat darker dorsally; mandibles brownish-red with black denticles; palps brownish red; legs brownish red with brown or black femora and apical 2/3 of tibiae; mid- and hind spurs whitish. Wings hyaline with brown veins, forewing (distalward of cells) slightly infusate, more darkened to the anterior margin. Body and legs clothed with subappressed short and scattered long erect pale pubescence; gastral segments 2–6 with apical rare whitish fringe denser on gastral tergum 2; felt lines on tergum 2 and sternum 2 golden.

Head width 0.8 times of thorax width including tegulae, convergent just behind the eyes (dorsal view) and occipital carina visible above. Clypeus weakly concave, anterad with two tubercles and short weak basal median carina; clypeal surface shiny, laterally punctate. Scape distinctly bicarinate beneath. Ocelli large (Fig. 5), ratio postocellar distance : oculo-ocellar distance is 1.6; anterior ocellus diameter more than twice larger than distance between anterior and posterior ocelli, distance between posterior ocellus and posterior head margin 1.4 times of oculo-ocellar distance. Frons with deep longitudinal median furrow. Antennal segment 3 length 1.5 times its width, 3.6 times antennal segment 2, and 0.6 times antennal segment 4, the latter 1.1 times antennal segment 5 (Fig. 4). Antennal sockets with arcuated carina. Mandible tridentate with curved upper carina, with large tooth beneath near the base, its height equal to minimum distance between emargination and upper mandibular carina. Frons and vertex with coarse dense deep punctures and rugae.

Mesosoma elongate, its length 1.6 times larger than maximum pronotal width. Scutum with well-developed parascutal carinae. Posterior coxae carinate inside. Tegulae not protruded beyond scuto-scutellar suture, shining, glabrous, with a few punctures inside. Propodeum elongate, reticulate with large cells and with median dorsal longitudinal cell carinated posterad. Relative length of *R*-abscissae 2.0 : 1.6 : 2.5 : 2.7.

Gastral segment 1 carinate beneath, its length 0.8 times maximum width; segment 2 with long lateral felt lines on tergum and very short ones on sternum; tergum 2 with dense large punctures, weakly swollen preapically. Tergum 7 weakly rounded apically, with large dense punctures. Genitalia as Fig. 6.

Female unknown.

Material. Holotype: ♂, Iran, Hormozgan, Sichoran, 20 km E Siachou, 27° 34' N, 56° 18' E, 830 m, 26 V 2001 (T. Osten) (SMNS). Paratypes. 1 ♂ with the same label (IBSS); Iran, Busher, Teng-e Fariab, 29° 26' N, 51° 33' E, 750 m, 1 VI 2001 (T. Osten), 1 ♂ (SMNS).

Distribution. Iran (Hormozgan, Busher).

Etymology. This species dedicated to Lisa and Klaus Standfuss who kindly and selflessly supported Mutillidae research by A.S. Lelej in his difficult time.

IX. Genus *Eotrogaspidia* Lelej, 1996

Type species: *Mutilla auroguttata* Smith, 1855 (original designation).

This genus distributed throughout the Oriental region and expanded to China and Iran (**new record**).

17. *Eotrogaspidia dives* (Smith, 1855), comb. n.

Mutilla dives Smith, 1855: 32 [♀, type locality: India, syntypes in the Natural History Museum (coll. W.W. Saunders)].

Mutilla fumipennis Bingham, 1898: 118 [♂, type locality: Deesa (India, Gujarat)], **syn. n.**

Mutilla adscripta Nurse, 1903 [♀, type locality: Deesa (India, Gujarat)], **syn. n.**

Material. Iran, Sistan-Baluchistan, Kahir, 60 km NW Chabachar, 35° 44' N, 50° 23' E, 16 V 2001 (T. Osten), 1 ♂, 1 ♀; Hormozgan, Minab, 27° 08' N, 57° 05' E, 80 m, 22–24 V 2001 (T. Osten), 1 ♂, 2 ♀.

Distribution. Iran (**new record**) (Sistan-Baluchistan, Hormozgan), India.

Remarks. Based on the collecting of male *E. fumipennis* and female of *E. adscripta* in Iran in two different sites at the same time we decided that they are the opposite sexes of the same species, which have been described separately from the same place (Deesa) in India. Nurse has collected the syntypes of both species (Bingham, 1898; Nurse, 1903). The female of *E. adscripta* (Nurse) well agree with the description of *Mutilla dives* Smith described from India (no additional data). In the copy of Nurse's (1903) paper which first author received from late B. Petersen, the synonymy of *M. fumipennis* Bingham and *M. adscripta* Nurse under *M. dives* Smith has been hand-written by B. Petersen, who study many type specimens of Oriental Mutillidae. Based on additional material from Iran we accept here the synonymy proposed by B. Petersen.

X. Genus *Neotrogaspidia* Lelej, 1996

Type species: *Mutilla pustulata* Smith, 1873 (original designation).

18. *Neotrogaspidia hammeri* (Suárez, 1959).

Material. Iran, Gilan, 5 km NW, Kalacay (Strand), 37° 06' N, 50° 22' E, 18 VI 2001 (T. Osten), 1 ♀.

Distribution. Iran (**new record**), South-West Turkmenistan, Azerbaijan, Armenia, Palestine, Cyprus.

XI. Genus *Trogaspidia* Ashmead, 1899

Type species: *Mutilla medon* Smith, 1855 (original designation).

19. *Trogaspidia (Chilotropidia) fedtschenkoi* (Radoszkowski, 1877).

Material. Iran, Golestan, Sud-e Eskandar, 37° 11' N, 54° 34' E, 4 VII 2001 (T. Osten), 1 ♂, 1 ♀.

Distribution. North Iran, Turkmenistan, Uzbekistan, Tajikistan, South Kazakhstan, Kyrgyzstan, Azerbaijan. Skorikov (1935) has recorded this species for Iran.

Remarks. This species belongs to subgenus *Chilotropidia* Nonveiller [type species — *Trogaspidia tuberculifera* Bischoff, 1920 (original designation)]. From two names: *Chilotropidia* (Nonveiller, 1995: 349, 354, 358) and *Chilospidia* (Nonveiller, 1995: 353, 354, 356) published in one paper we choose the former.

20. *Trogaspidia (Acutitropodia) tobiasi* Lelej, sp. n.

Trogaspidia catanensis var. *klugiana* (non André, 1902): Skorikov, 1935: 311, ♂.

Trogaspidia catanensis var. *ehrenbergi* (non Bischoff, 1920): Skorikov, 1935: 311, ♀.

Diagnosis. Based on the collecting male and female at the same place and close resemblance both to the corresponding sexes of related species in the subgenus *Acutitropodia* (*Trogaspidia villosa*, *T. aurata*) which are known in both sexes we decided that sexes described below are opposite ones of the same species.

The male of *Trogaspidia tobiasi* is very similar to African *T. aurata* Bischoff (type species of subgenus *Acutitropodia* Nonveiller) by the yellow-orange gastral coloration, but differs by weak longitudinal carina of clypeus (transversal preapical carina in *T. aurata*), by white pubescence on frons and weak one on pronotum (golden dense pubescence on frons, vertex, pronotum, scutum, and propodeum dorsally in *T. aurata*). By the clypeus shape, by head and mesosoma pubescence as well as by gastral coloration the male of *T. tobiasi* is very similar to *T. villosa* (Fabricius) (**comb. n.**) from Sri Lanka and S. India but differs by the yellow-orange gastral tergum 7 and gastral sternum 8 (almost black in *T. villosa*), by wide shiny clypeal area (small shiny triangle in *T. villosa*), by very large shallow cells on propodeal dorsum (deep cells which somewhat larger than ones on posterior propodeal surface in *T. villosa*), by larger dis-

tance between the apices of gastral sternum 8 carinae (distance between apices less than that from apex to lateral border in *T. villosa*).

The female of *T. tobiassi* differs from one of *T. aurata* by spotted gastral terga 3 and 4 (interrupted band in *T. aurata*), by the disposition of basal spots on gastral tergum 2 which divided from the tergal base by more than half spot diameter (closed to tergal base in *T. aurata*). By the many characters, especially gastral pale design, the female of *T. tobiassi* close to one of *T. villosa*, but differs by apical part of pygidial area which has fine reticulation (shiny in *T. villosa*), by unicolor brown legs (brown legs with red 2/3 of basal part of mid and hind femora in *T. villosa*), by long mesosoma (ratio of length mesosoma to minimum width 1.8 times in *T. tobiassi* vs. 1.5 times in *T. villosa*), by weakly curved of anterior pronotal border (strongly curved in *T. villosa*).

Description. Male. Length 10.4–13.8 mm. Body black with gaster yellow-orange except brown segment 1; mandible reddish brown preapically; palps brownish red; mid and hind spurs whitish. Wings dark fuscous with brown veins. Body and legs clothed with subappressed short and scattered long erect white pubescence, denser on frons and humeral pronotal parts, scutum, tegulae and scutellum basally with subappressed black setae; terga 2–7 and sterna 2–8 with golden scattered pubescence, denser on tergum 2 posterad and terga 3–7; felt lines on tergum 2 golden.

Head distinctly transversal, width 1.5 times its height (from anterior clypeal border to postocellar line), rounded and convergent just behind the eyes. Clypeus with median longitudinal carina which ending by weak transversal setose preapical groove, clypeal surface mostly shiny, laterally punctate. Scape distinctly bicarinate beneath, intercarinate groove shiny. Ocelli medium-sized, ratio postocellar distance : oculo-ocellar distance is 1.0; anterior ocellus diameter twice larger than distance between anterior and posterior ocelli, distance between posterior ocellus and posterior head margin 1.6 times of oculo-ocellar distance. Antennal segment 3 length 1.7 times antennal segment 2, and slightly larger than antennal segment 4, the latter equal to antennal segment 5 (Fig. 9). Antennal sockets with arcuated carina. Mandible bidentate with curved upper carina, with large tooth beneath near base, its height slightly less than minimum distance between emargination and upper mandibular carina. Frons and vertex with dense punctures.

Mesosoma elongate, its length 1.8 times maximum pronotal width. Scutum with well-developed parascutal carinae, scutellum swollen with conical elevation which is not protruded over posterior border. Posterior coxae carinate inside. Tegulae shining, glabrous, with a few punctures inside. Propodeum elongate, posterior surface shallow, dorsal surface with median parallel-sided longitudinal cell ending by elevated tubercle and sublateral curved carina, space between carina and median cell with reticulation, cells much larger than ones on posterior surface. Relative length of *R*-abscissae 2.0 : 3.0 : 2.6 : 3.5.

Gastral segment 1 carinate beneath, its median length 0.8 times maximum width; segment 2 with long lateral felt lines on tergum; tergum 2 slightly swollen, disc shiny with a few small punctures, other parts with dense larger punctures. Tergum 7 with median glabrous band which swollen preapically and ending before posterior tergal border. Gastral sternum 8 (hypopygium) with sublateral longitudinal carina, its apex elevated and directed backwards; gastral sternum 7 with small lateral tubercle (Fig. 8). Genitalia and volsella as Figs 10, 11.

Female. Length 8.0 mm. Head and gaster dark brown, mandible red with dark apex; antennae dark brown, antennal socket red; mesosoma pale red; legs unicolor brown, gastral segment 1 and gaster ventrally reddish brown.

Frons, vertex and legs with sparse erect and subappressed white setae; mesosomal dorsum with sparse yellowish setae; genae, malar space, mandible, scape, legs, propodeal hind surface, gastral tergum 1, terga 2–5 laterally and gaster ventrally with silver setae. Tergum 2 with two silver spots, terga 3 and 4 with silver spots also (Fig. 7). Sterna 2–5 posterad with fringe of long, subappressed silver setae. Felt lines of gastral tergum 2 golden. Tergum 6 laterally with long dense yellowish pygidial fringes. Other parts of gastral terga with black pubescence.

The ratio of longitudinal eye diameter to distance between eye and mandible base is 3.9. Clypeus strongly elevated basally with a basal median tubercle and transverse concave preapical glabrous furrow, which is bordered above by carina. Hypostomal carina with 2 triangle tubercles. Antennal segment 3 length 1.5 times its maximum width, 1.5 times length of antennal segment 4, the latter 0.8 times length of antennal segment 5. Frons, vertex and genae densely punctate.

Humeral angles not prominent, lowered, pronotal sides weakly divergent posterad, with lateral denticle; anterior pronotal border weakly convex; relative width of thorax at humeral angles, greatest width of pronotum, anterior spiracles, posterior spiracles and maximum propodeal width, 4.3 : 4.7 : 4.7 : 4.4 : 4.7. Propodeum abruptly slopes to the gastral base. Mesosoma dorsum coarsely confluent punctate, scutellar scale not very wide; propodeal dorsum and upper part of posterior slope even tuberculate, lateral margin of propodeum tuberculate.

Gastral sternum 1 with longitudinal emarginate carina. Tergum 2 with dense small punctures mixed with sparse large ones, sternum 2 with sparse very large punctures. Pygidial area of tergum 6 wide, carinated in apical half, with striae convergent to apex, apical third finely reticulate.

Material. Holotype: ♂, Iran, Khorasan, Margu, 16 VI 1901 (N. Zarudny), "*Trogaspidia catanensis* var. *klugiana* André, Skorikov det." (ZISP). Paratypes. Iran, Khorasan, Margu, 16 VI 1901 (N. Zarudny), "*Trogaspidia catanensis* var. *ehrenbergi* Bischoff, Skorikov det.", 1 ♀ (ZISP); Sistan-Baluchistan, Bampur, 23 V 1955 (D. Steinberg), 1 ♂ (ZISP); Kahir, 60 km NW Chabahar, 35° 44' N, 50° 23' E, 15 V 2001 (T. Osten), 3 ♂ (SMNS, IBSS); Hormozgan, Minab, 27° 08' N, 57° 05' E, 80 m, 22–24 V 2001 (T. Osten), 1 ♂ (SMNS).

Distribution. Iran (Khorasan, Sistan-Baluchistan, Hormozgan). This species has been recorded for Iran under mistaken names (Skorikov, 1935).

Remarks. First author examined 69 males and 21 females (two pairs have the label “flying in copula”) of *Trogaspidia villosa* (Fabricius), identified by B. Petersen and C. O'Toole, in the National Museum of Natural History, Smithsonian Institution (Washington). Most males have the label “Comp. with holotype *Trogaspidia villosa* (Fabr.), male, C. O'Toole det., 1987”. *T. villosa* (Fabricius) belongs to subgenus *Acutitropidia* Nonveiller.

Etymology. The specific name dedicated to Vladimir Ivanovich Tobias, world authority in braconids, who curated the study of mutillid wasps as well.

Subfamily Dasylabrinae Skorikov, 1935

XII. Genus *Tricholabiodes* Radoszkowski, 1885

Type species: *Mutilla pedunculata* Klug, 1829, junior synonym of *Mutilla semistriata* Klug, 1829 (designated by Ashmead, 1903).

21. *Tricholabiodes bactrianus* Suárez, 1967.

Material. Iran, Fars, 5 km S Sumaq, 31° 0' N, 52° 47' E, 2200 m, 6 VI 2001 (T. Osten), 1 ♂.

Distribution. Iran, Turkmenistan.

22. *Tricholabiodes asiaticus* Radoszkowski, 1885.

Material. Iran, Hormozgan, Minab, 27° 08' N, 57° 05' E, 80 m, 22–24 V 2001 (T. Osten), 7 ♂; 10 km W Gavbandi, 27° 16' N, 52° 58' E, 1450 m, 28 V 2001 (T. Osten), 1 ♂.

Distribution. Iran, Turkmenistan, Uzbekistan, Tajikistan, South Kazakhstan.

Family Bradynobaenidae

Subfamily Apterogyninae André, 1899

I. Genus *Macroocula* Panfilov, 1954

Type species: *Apterogyna morawitzi* Radoszkowski, 1888 (original designation).

1. *Macroocula morawitzi* (Radoszkowski, 1888).

Pagliano, 2002: 166.

Material. Iran, Hormozgan, Minab, 27° 08' N, 57° 05' E, 80 m, 22–24 V 2001 (T. Osten), 2 ♂.

Distribution. Turkmenistan, Uzbekistan (Panfilov, 1954), Pakistan, Afghanistan, Iran, Israel, Egypt, Ethiopia, Libya, Somali, Sudan (Pagliano, 2002).

2. *Macroocula sinaica* (Invrea, 1963).

Pagliano, 2002: 191.

Material. Iran, Hormozgan, 10 km W Gavbandi, 27° 16' N, 52° 58' E, 1450 m, 28 V 2001 (T. Osten), 47 ♂.

Distribution. Iran (**new record**), Oman, Saudi Arabia, Jordan, Egypt.

Remarks. The body length of males is 8.0–12.8 mm. Forewings hyaline, weakly but distinctly infusate in apical 2/3, pterostigma brown.

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