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**A NEW SPECIES OF THE GENUS *RAPHIGLOSSA* S.S. SAUNDERS, 1850  
(HYMENOPTERA: VESPIDAE: EUMENINAE *SENSU LATO*)  
FROM TURKMENISTAN**

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**Summary.** *Raphiglossa rasnitsyni* Fateryga, **sp. n.** is described from Turkmenistan. The new species resembles *R. eumenoides* S.S. Saunders, 1850 in its body size and proportions of the metasomal tergum 1 but strongly differs from it by having a narrow propodeal concavity which is less wide than the metasomal tergum 1 at base, anterior margin of clypeus deeply emarginated and with a single tooth at center in the female, and male genitalia with reduced parameral spine (gonostylus), digitus lacking posterior process, and robust aedeagus broadened (in lateral view) towards the apex and curved dorsally.

**Key words:** solitary wasps, taxonomy, Palaearctic region.

**A. В. Фатерыга. Новый вид рода *Raphiglossa* S.S. Saunders, 1850 (Hymenoptera: Vespidae: Eumeninae *sensu lato*) из Туркменистана // Дальневосточный энтомолог. 2021. N 437. С. 24-30.**

**Резюме.** Из Туркменистана описан *Raphiglossa rasnitsyni* Fateryga, **sp. n.** По размерам тела и пропорциям первого тергума метасомы новый вид напоминает *R. eumenoides* S.S. Saunders, 1850, но четко отличается от последнего задней вогнутой частью пропедума, которая уже основания первого тергума метасомы, глубоко вырезанным передним краем клипеуса с одним зубцом в центре у самки и гениталиями самца с редуцированным выростом парамер (гоностилем), дигитусом без направленного кзади отростка и широким эдеагусом, расширяющимся (при рассмотрении сбоку) к вершине и загнутым сверху.

**INTRODUCTION**

*Raphiglossa* S.S. Saunders, 1850 is a small genus of solitary wasps in the subfamily Raphiglossinae (*sensu* Bank *et al.*, 2017). The genus was last time revised by Giordani Soika (1974). Ten species of *Raphiglossa* have been recognized up to date. Five of them are Afrotropical, known from West, Central, South, and East Africa, as well as Madagascar, and five are Palaearctic, distributed from the Mediterranean Basin to Central Asia (Carpenter *et al.*, 2010; Gusenleitner, 2013).

Bionomics of the genus *Raphiglossa* are not typical of the solitary vespidae wasps (*Eumeninae s. l.*). Nesting of three species was reported: *R. eumenoides* S.S. Saunders, 1850 (Saunders, 1850), *R. natalensis* Smith, 1857 (Meade-Waldo, 1913, as *R. flavoornata* Cameron, 1905, see Carpenter *et al.*, 2010; Gess & Gess, 2014), and *R. spinosa* (Fabricius, 1804) (= *R. zethoides* de Saussure, 1852) (Ferton, 1912). Females of *R. eumenoides* and *R. natalensis*

excavate nest burrows in pithy stems (Saunders, 1850; Meade-Waldo, 1913; Gess & Gess, 2014) while that of *R. spinosa* was reported to modify a preexisting cavity in a reed stalk by gnawing a pass through an internode (Ferton, 1912). In all cases, the wasps use unbonded building materials to seal a cell. These materials are packed sand, pellets of dry soil, or gravel particles brought into the nest from outside with the mouthparts, as well as plant pith and fibers scraped off with the mandibles within the burrow. Provision is usually tightly packed weevil larvae (Coleoptera: Curculionidae); however, *R. natalensis* was reported to hunt on caterpillars (Meade-Waldo, 1913) but these data were not confirmed by further studies on the same species known at present as weevil-larva hunter (Gess & Gess, 2014). Three-year diapause of the prepupa is reported for *R. natalensis* (Meade-Waldo, 1913). Adult wasps of the genus *Raphiglossa* do not leave the nest in a pithy stem through the cell partitions, but each one gnaws an emergence hole in the lateral wall of its cell with the mandibles (Saunders, 1850; Meade-Waldo, 1913; Gess & Gess, 2014). An egg of *R. spinosa* was reported to be glued to the cell wall without a thread (Ferton, 1912). That was, however, a single observation which needs further confirmation. Adult wasps have an extremely elongated proboscis composed of glossa, galeae, and paraglossae (Mauss et al., 2019). They visit flowers of various plants but predominately in the family Asteraceae on which they stand on the capitula taking up nectar with their extended proboscis (Gess & Gess, 2014; Mauss et al., 2019).

In this paper, a new species of *Raphiglossa* from Turkmenistan is described.

## MATERIAL AND METHODS

Studied specimens are deposited in the collection of the Federal Scientific Center of the East Asia Terrestrial Biodiversity of the Far East Branch of the Russian Academy of Sciences, Vladivostok, Russia [FSCV]. Photographs (except those of the male genitalia) were taken in FSCV with an Olympus DP74 digital camera attached to an Olympus SZX16 stereomicroscope. Multifocus images were created from stacks of photographs using Helicon Focus 6 Pro software. Male genitalia were extracted after re-softening the specimens and were then boiled in 10% NaOH for 5 min. After that, they were rinsed in 80% ethanol and only then stored and studied in glycerin. Photographs of the male genitalia were taken with a Canon EOS RP camera and a Sigma 105 mm macro lens with a Yongnuo YN-14EX macro flash. Final illustrations were post-processed for sharpness, contrast, and brightness using Adobe Photoshop CS2 software. The morphological terminology follows Yamane (1990). In morphological descriptions, the letter “F” refers to antennal flagellomeres, the letter “T” to metasomal terga, and the letter “S” to metasomal sterna.

## TAXONOMY

### Genus *Raphiglossa* S.S. Saunders, 1850

*Raphiglossa* Saunders, 1850: 71–74; Meade-Waldo, 1913: 45; Bequaert, 1918: 29–30, 270–271; Giordani Soika, 1970: 28–32; 1974: 111–132; van der Vecht & Fischer, 1972: 1–2; Kurzenko, 1978: 370; 1982: 94; Gusenleitner, 1988: 714–715; 2000: 60; 2013: 75; Carpenter et al., 2010: 219–222; Fateryga et al., 2019: 31; 2021: 53.

*Rhaphidoglossa* de Dalla Torre, 1894: 7, unjustified emendation of *Raphiglossa* S.S. Saunders, 1850.

Type species: *Raphiglossa eumenoides* S.S. Saunders, 1850, by subsequent designation of Ashmead, 1902: 206.

DIAGNOSIS. Representatives of the genus can be distinguished from the closely related genus *Psiliglossa* S.S. Saunders, 1872 by having T1 petiolate, much longer than wide (versus sessile, shorter than wide), maxillar palpi with three segments (versus six), and mid tibia with one spur (versus two). They can be distinguished from another closely related genus *Elisella* Giordani Soika, 1974 by having relatively short mesosoma with scutellum shorter than wide (versus nearly as long as wide) and campaniform T1, with maximal width at apex (versus fusiform, with maximal width at a distance from apex).

SPECIES INCLUDED. *Raphiglossa bytinskii* Giordani Soika, 1974 (Israel), *R. eumenoides* S.S. Saunders, 1850 (Albania, Greece, Bulgaria, Armenia, Azerbaijan, Turkey, Lebanon, Iran), *R. flavoornata* Cameron, 1905 (Nigeria, Democratic Republic of Congo, Angola, Zambia, Mozambique, Zimbabwe, South Africa, Tanzania), *R. formosa* Kostylev, 1940 (Azerbaijan, Syria, Iran, Tajikistan), *R. irana* Giordani Soika, 1970 (Iran), *R. lemuriae* Giordani Soika, 1941 (Madagascar), *R. natalensis* Smith, 1857 (Chad, Democratic Republic of Congo, Mozambique, South Africa), *R. rasnitsyni* Fateryga, **sp. n.** (Turkmenistan), *R. septentrionalis* Giordani Soika, 1989 (Togo), *R. spinosa* (Fabricius, 1804) (Morocco, Algeria, Tunisia, Libya, Israel), *R. tibetica* Giordani Soika, 1974 (Gambia, Ivory Coast, Ghana, Togo, Nigeria, Chad, Sudan, Ethiopia).

***Raphiglossa rasnitsyni* Fateryga, sp. n.**

<http://zoobank.org/NomenclaturalActs/93CA870C-8A9A-4A94-9FCC-637DB005E902>

Figs 1–13

TYPE MATERIAL. Holotype: ♀, Туркмения / 15 км З Фирюзы / Чули / Курзенко [Turkmenistan: 15 km W Firjuza, Chuli, leg. Kurzenko] 10 VI 1988 // Holotypus ♀ / *Raphiglossa rasnitsyni* / Fateryga <red label> [FSCV] (Figs 1–4). Paratype: ♂, Туркмения / 3 км С Фирюзы / Вановский / Курзенко [Turkmenistan: 3 km N Firjuza, leg. Vanovsky & Kurzenko] 9 VI 1988 // Paratypus ♂ / *Raphiglossa rasnitsyni* / Fateryga <red label> [FSCV] (Figs 5–13).

DESCRIPTION. *Female*. Body length (from head to apical margin of tergum 2) 11 mm; fore wing length 10 mm.

Head as wide as long in frontal view. Clypeus 1.5× as wide as long; its apical emargination 0.4× as deep as wide, taking about 1/2 of clypeal width, with single short blunt tooth at center. Vertex convex, longer than upper portion of compound eye, without cephalic foveae; distance between lateral ocellus and occiput 2.4× as distance between lateral ocelli. Pronotum without pronotal foveae, pronotal carina distinct, forming slightly acute, near rectangular angles at anterolateral corners of pronotum. Epicnemial carina strongly developed. Tegula nearly rounded posteriorly, with indistinct angle adjacent to parategula. Scutellum evenly convex. Metanotum dorsally strongly impressed at center. Propodeum without shelf; propodeal concavity narrow, 0.7× as wide as T1 at base, with median carina along its entire length. Propodeal valvula entire, unevenly rounded and forming blunt angle dorsoposteriorly. T1 0.4× as wide as long in dorsal view, evenly rounded in lateral view except its apex where slightly concave near posterior margin. T2–T5 evenly convex, with very narrow apical lamellae. S2 in lateral view very slightly concave at center; posterior margins of S2–S5 with lamellae similar to those on corresponding terga. T6 and S6 narrowed towards blunt apex.

Clypeus reticulately, predominately longitudinally rugose, with shining interstices. Frons deeply punctured with shining interstices exceeding puncture diameter except black areas around antennal foveae where punctures larger and interstices matt, with distinct microsculpture. Gena punctured similarly as yellow part of frons but somewhat sparser. Vertex deeply irregularly punctured, with largest punctures approximately 2/3 as large as diameter of lateral ocellus and largest interstices exceeding puncture diameter. Dorsal and lateral parts of pronotum punctured as gena except dorsal black spots punctured similarly to vertex and anteriolateral black areas punctured similarly to areas around antennal foveae. Scutum punctured as coarse as vertex but punctures sometimes evidently arranged in longitudinal rows. Tegula shining, with few small punctures. Scutellum punctured similarly to yellow parts of pronotum. Mesepisternum punctured in its yellow part as yellow parts of pronotum and in its black part as vertex. Epicnemium matt, with microsculpture and few indistinct shallow punctures. Mesepimeron with punctures and indistinct longitudinal wrinkles in its upper part and with microsculpture below. Metanotum punctured as scutellum. Metapleuron longitudinally rugose with rows of punctures between wrinkles and matt interstices with microsculpture. Dorsolateral parts of propodeum punctured similarly to scutellum while lateral parts rather reticulate similarly to

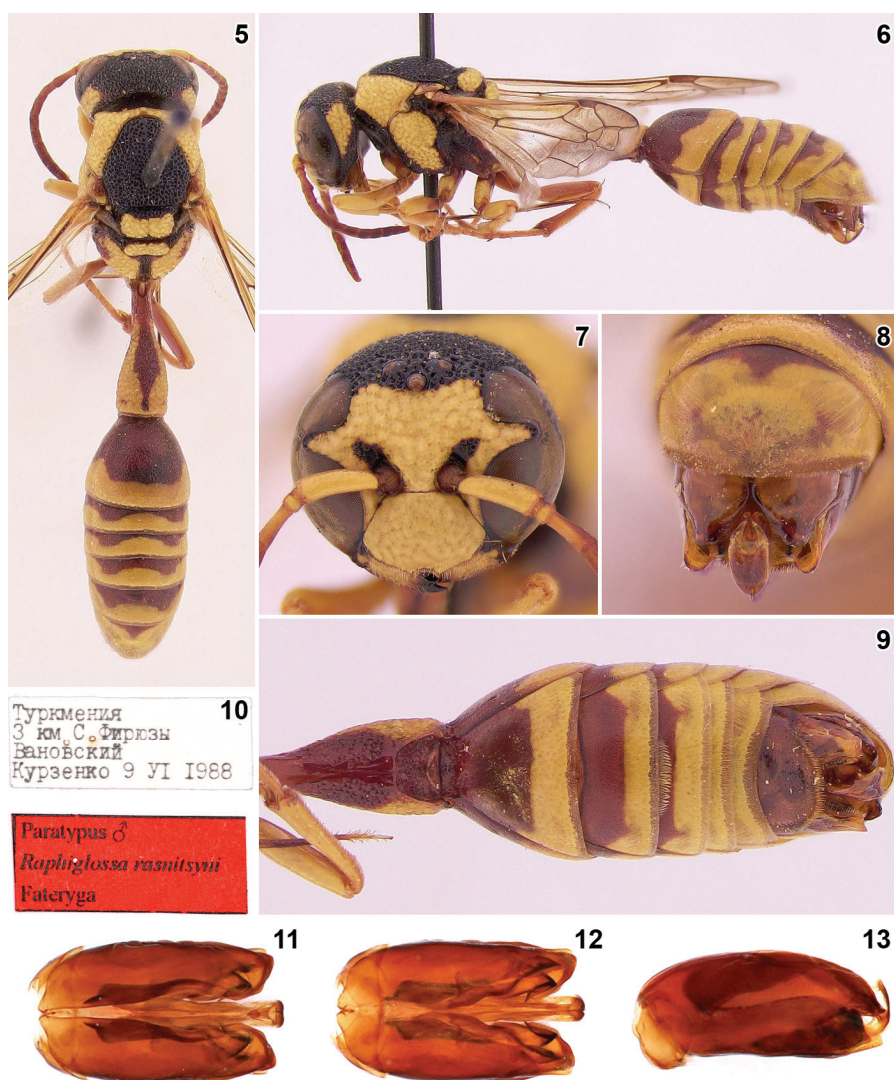
clypeus except transversely strigate black areas adjacent to valvula. Propodeal concavity transversely strigate, matt. T1 with dense irregularly scattered punctures, interstices exceed puncture diameter, rather shining. S1 matt, with indistinct sculpture. T2 with finer and sparser punctures than on T1, interstices reach several puncture diameters, with indistinct microsculpture. S2 with larger and somewhat sparser punctures than on T2, microsculpture more distinct. Punctuation on T3–T6 finer than on T2, become indistinct towards apex of metasoma. Punctuation on S3–S6 become finer and denser towards apex of metasoma so that S6 completely matt and shagreened.

Setation weakly developed. Mandible with few strait pale setae as long as maximal diameter of flagellum. Posterior margins of T6, S4, and S5, as well as entire S6 with pale setae as long as diameter of F1 at base.



Figs 1–4. *Raphiglossa rasnitsyni* Fateryga, **sp. n.**, ♀, holotype: 1 – habitus, dorsal view; 2 – habitus, lateral view; 3 – head, frontal view; 4 – labels.

Black with largely developed yellow pattern on clypeus (except black lateral margins), frons (except black areas around antennal foveae), gena (except ferruginous lower margin), scapus, dorsal and lateral parts of pronotum (except two dorsal black spots and anteriolateral black areas), most part of mesepisternum and upper part of mesepimeron, scutellum, metanotum, dorsolateral parts of propodeum, lateral parts of propodeum (except black areas adjacent to valvula), fore legs (except black coxae and ferruginous tarsi), mid legs (except dorsal black spots on coxae and ferruginous tarsi), hind legs (except dorsal black spots on coxae, trochanters, and femora and ferruginous tarsi), T1 (except ferruginous dorsal midline and ventral margins), T2 (except large basal ferruginous spot), apical bands on T3–T5, nearly entire T6 (except black anterior margin), apical bands on T2–T4, lateral spots on T5. Mandible (except black teeth), lower margin of gena, pedicel, entire F1–F3, F4–F9 ventrally, tarsi, dorsal midline on T1, ventral margins of T1, and large basal spot on T2 ferruginous. Wings slightly fuscous.



Figs 5–13. *Raphiglossa rasnitsyni* Fateryga, *sp. n.*, ♂, paratype: 5 – habitus, dorsal view; 6 – habitus, lateral view; 7 – head, frontal view; 8 – apex of metasoma, dorsal view; 9 – metasoma, ventral view; 10 – labels; 11 – genitalia, dorsal view; 12 – genitalia, ventral view; 13 – genitalia, lateral view.

*Male.* Body and fore wing length as in female. Structure resembles female but head 1.2× as wide as long in frontal view. Clypeus 1.4× as wide as long; its apical emargination very small, 0.3× as deep as wide, taking about 1/5 of clypeal width, without tooth at center. Distance between lateral ocellus and occiput 2.0× as distance between lateral ocelli. F11 slightly curved and bluntly pointed apically. T6 and S6 similar to previous segments. T7 with broadly and evenly rounded apex. S7 rather flat, with rectangularly rounded apex. Genitalia as in Figs 11–13.

Parameral spine (gonostylus) reduced. Digitus without posterior process, curved anteroventrally, with acutely pointed distal lobe. Aedeagus robust, curved dorsally and broadened in lateral view towards apex.

Punctuation as in female but clypeus distinctly punctured with deep sparse punctures and shining interstices exceeding puncture diameter. T7 punctured similarly to preceding terga. S7 with very small but distinct punctures and rather shining interstices exceeding puncture diameter, with indistinct microsculpture.

Setation as in female but S4–S6 with broad basal fringes of dense appressed pale setae, in normal position hidden under preceding sterna. Posterior margins of these sterna, as well as those of T7 and S7 with sparse pale appressed setae, shorter than in female.

Coloration generally resembles female but mandible yellow (except black teeth), clypeus without black margins, pedicel and anterior face of F1 yellow, dorsal parts of pronotum without black spots, dorsolateral parts of propodeum with basal ferruginous spots, black color on entire legs and metasoma replaced by ferruginous (except anterior face of fore tarsi with yellow spots). T7 nearly entirely yellow (except ferruginous anterior margin). S7 completely ferruginous.

DISTRIBUTION. Turkmenistan (Alah Prov.).

BIONOMICS. Unknown.

DIAGNOSIS. The new species resembles *Raphiglossa eumenoides* S.S. Saunders, 1850 in its body size and proportions of T1 but strongly differs from it by having a narrow propodeal concavity which is less wide than T1 at base (versus approximately as wide as T1 at base), anterior margin of clypeus deeply emarginated and with a single tooth at center in the female (shared with Afrotropical species of the genus; versus not deeply emarginated and with two teeth at center in *R. eumenoides*), and male genitalia with reduced parameral spine (gonostylus), digitus lacking posterior process, and robust aedeagus, broadened in lateral view towards the apex (all three characters of genitalia shared with *R. formosa* Kostylev, 1940) and curved dorsally (unique feature; versus curved ventrally in *R. formosa*, according to Giordani Soika, 1974) (in *R. eumenoides*, parameral spine present, digitus has a posterior process, and aedeagus is narrow and curved ventrally).

ETYMOLOGY. The new species is dedicated to Alexandr P. Rasnitsyn, a famous Russian entomologist, in recognition of his great contributions to the systematics of Hymenoptera.

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