

The Entomological Review, No. 2 (1015) is devoted to the memory of E.S. Sugonyaev (1931–2014). On February 4, 2014 a Leading Researcher of the Zoological Institute, Russian Academy of Sciences, Doctor of Science in Biology, Professor Evgenii Semenovich Sugonyaev passed away. He was one of the best entomologists of our time, a well-known chalcidologist, a specialist in plant protection of the worldwide level, a bright and interesting personality who continued scientific research till his last hour and even managed to publish a very interesting book of memoirs about his life and creative activities.

In Memory of the Friend: New Species of Parasitoid Wasps of the Family Encyrtidae (Hymenoptera, Chalcidoidea) from Montenegro

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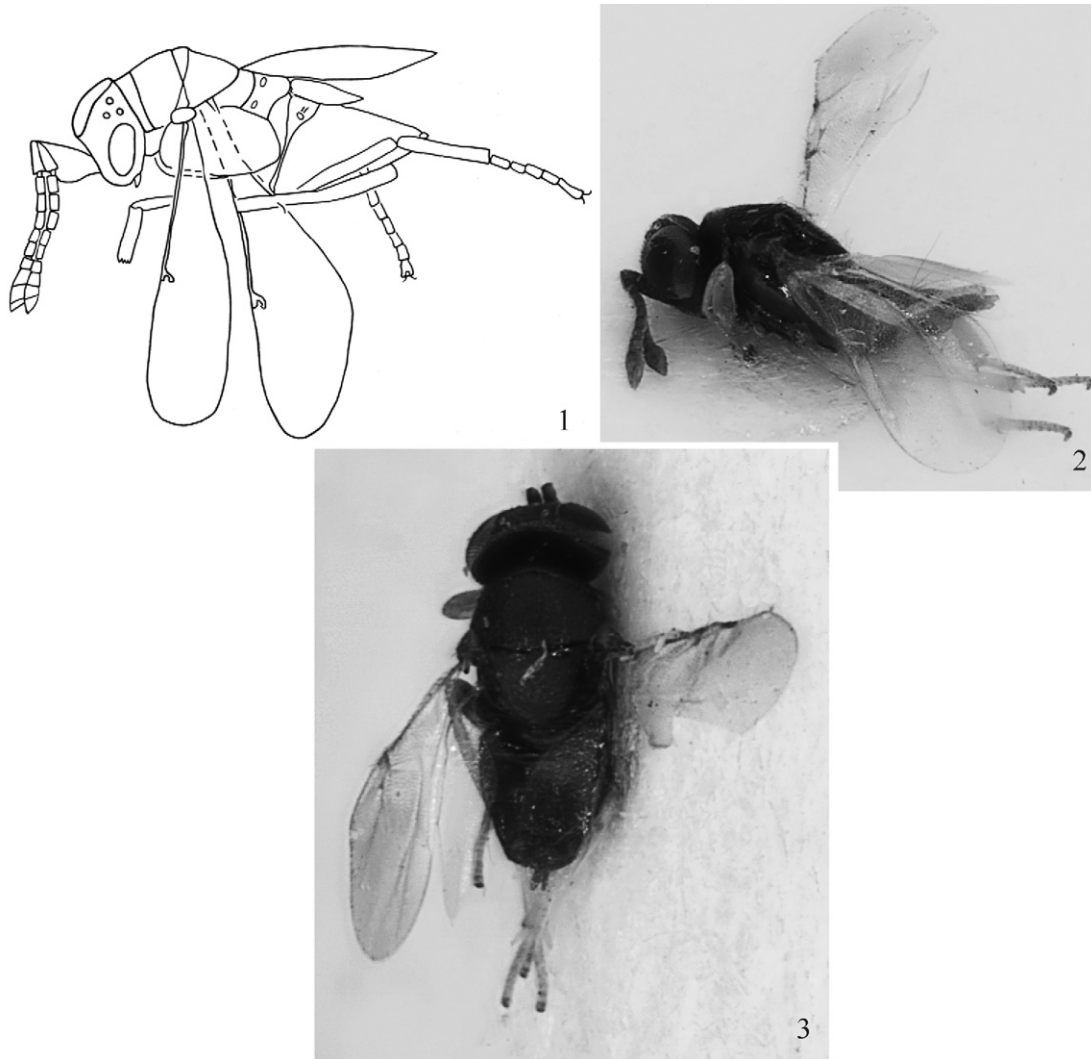
Abstract—Brief personal reminiscences dedicated to the famous Russian entomologist, Professor Evgenii Semenovich Sugonyaev (1931–2014), are published. *Anagyrus sugonjaevi* sp. n. and *Psyllaephagus eugenii* sp. n. are described from Montenegro.

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This paper is dedicated to the memory of the outstanding scientist and my good friend, Professor Evgenii Semenovich Sugonyaev. Our scientific collaboration has lasted for almost 60 years! We grew interested in entomophages and biological plant protection simultaneously: myself, in 1951 in Adzharia under the supervision of E.M. Stepanov (see Trjapitzin, 2010), Evgenii, in 1952 in the subtropical zone of Krasnodar Territory, where he worked under the supervision of M.N. Nikolskaya, V.A. Shchepetilnikova, and B.M. Chumakova (Sugonyaev, 2011). At that time, the development of means of biological control of the codling moth *Laspeyresia pomonella* (L.) in the European part of the USSR became an important problem. In the opinion of A.S. Danilevsky, efficient parasites of this pest were likely to be found in the mountains of Middle Asia where several endemic species of wild apple trees occur. Evgenii wanted to visit Middle Asia and look for such parasites. He shared this dream during one of our first meetings in 1955, to which I replied that I had started collecting encyrtid wasps in Leningrad Province since 1954 and had already found some interesting species right near the Zoological Institute building. Evgenii, however, considered the northern encyrtid fauna to be depauperated. On June 23, 1955, on my suggestion we went to Shuvalovo Park in the outskirts of Leningrad. There, he climbed

a tall spruce, cut some shoots off, and found the mealybug *Phenacoccus piceae* Loew, from which the encyrtid wasp *Tetracnemoidea piceae* (Erdős, 1946) emerged. This species had been described from spruce in Hungary but its host had been unknown. The finding filled Evgenii with enthusiasm. We had some decent dry wine in a café near the Finlyandsky railroad station to strengthen our friendship.

At that time, Academician G.Ya. Bey-Bienko encouraged research of the insects of Leningrad Province. Under his influence and under the supervision of N.S. Borkhsenius, E.M. Danzig collected scale insects while E.S. Sugonyaev collected their parasites. However, he did not give up his dream of visiting Middle Asia. Later, E.S. Sugonyaev and E.M. Danzig thoroughly studied the consortia of psyllids and scales associated with saxaul (Sugonyaev, 1968; Danzig and Sugonyaev, 1969). In Mongolia E.S. Sugonyaev discovered and described a new subfamily Mongolocampinae (family Tetracampidae) on *Nitraria* spp. As an expert in chalcid wasps, he also studied Aphelinidae and Trichogrammatidae. Important directions of his research were studies of the life cycles of parasites and their hosts and development of the scientific basis for integrated pest management on cotton fields in Afghanistan and Middle Asia, on rice in Vietnam, and in the orchards in Krasnodar Territory.



Figs. 1–3. *Anagyrus sugonjaevi* sp. n. (1) and *Psyllaephagus eugenii* sp. n. (2, 3): (1, 2) lateral view; (3) dorsal view.

E.S. Sugonyaev was not only a true naturalist (not a very common trait among taxonomists) but a variously gifted person. He wrote poetry, had fine drawing skills and a nice baritone, and was keen on mountain climbing, downhill skiing, and diving. He always dressed tastefully and had good manners. We disagreed on certain matters but this was no obstacle to our friendship and collaboration. Unlike many entomologists of his generation, he was sensitive to the modern life and could find his place in it. I can only regret that with the demise of such experts as E.S. Sugonyaev, research into the biological control of forest and agricultural pests may be discontinued at the Zoological Institute.

This communication contains the descriptions of two new species of encyrtid wasps from the genera *Anagyrus* Howard, 1986 and *Psyllaephagus* Ashmead,

1900. The type specimens are kept in the collections of the Zoological Institute of the Russian Academy of Sciences, St. Petersburg.

***Anagyrus sugonjaevi* Trjapitzin, sp. n. (Fig. 1)**

Description. Female. Body compact, not flattened. Head as high as wide. Occiput margin concave. Inner margins of eyes distinctly diverging anteriorly, almost reaching occiput margin posteriorly. Smallest width of vertex about 1/3 the greatest width of head (6 : 17); combined median length of vertex and frons almost twice their width. Ocelli arranged in equilateral triangle; distance from posterior ocelli to eye margins equal to that between ocelli and to that from ocelli to occiput margin; distance from anterior ocellus to upper margin of facial depression approximately half the length of vertex and frons. Upper margin of facial depression in

dorsal view uniformly concave except for lateral parts. Median facial protrusion convex. Toruli positioned directly under the level of lower eye margins; distance between toruli approximately equal to that from toruli to mouth edge. Scape narrowing basally, twice as long as wide, rounded and widest in the middle; pedicel 0.4 times as long as scape, its length 1.7–2.0 times its apical width, and 1.3–1.4 times as long as 1st funicular segment; the latter twice as long as wide; 2nd funicular segment somewhat shorter than 1st, 1.5 times as long as wide; 3rd segment shorter than 2nd (5 : 6), longer than wide (5 : 4); 4th and 5th segments slightly longer than wide, 6th segment quadrate; clava twice as long as wide, about as long as two preceding funicular segments combined. Malar space 1/4 greatest eye diameter. Width of mouth opening about 3/8 maximum head width. Mandibles small. Pronotum very short, its width 6.0 times median length, one-third as long as mesoscutum; the latter twice as wide as long. Scutellum as long as mesoscutum, somewhat wider than long. Mesopleura not reaching base of metasoma. Lateral parts of metanotum large, triangular. Wings not shortened. Fore wing 1.8 times as long as wide; costal cell very narrow, its width about 1/16 the wing width; marginal vein almost punctiform, only by 1/4 longer than wide; radial vein slightly curved, 3.0 times as long as marginal vein, positioned at about 60° to anterior wing margin; postmarginal vein half as long as radial vein. Metasoma somewhat longer than mesosoma; tergite III (1st visible tergite) occupying about 1/11 the metasoma length; pygostyles situated near base of gaster; lateral margins of metasoma straight, converging to pointed apex of gaster at 45°. Ovipositor sheath barely exerted.

Vertex and frons yellow brown, darkened inside ocellar triangle. Facial depression and genae black; malar spaces black brown anteriorly (near eyes), black posteriorly. Radicle black; scape black on both outer and inner sides, with white transversal preapical band on either side; pedicel black in basal half, white in apical half; 1st funicular segment black, 2nd–6th funicular segments and clava white. Dorsum of body and tegulae black but scutellum brownish, especially in its apical part. Lateral parts of pronotum light brown, mesopleura light brown with black anterior margins. Lateral metanotal sclerites, metasoma, and ovipositor sheath black. Fore wings not darkened. Legs yellow, in places brownish; fore and middle coxae partly darkened, hind coxae black. Fore tarsi dark brown.

Vertex and frons finely areolate. Scape, malar spaces, median facial protrusion, and mouth edge with rather deep areolate sculpture. Dorsal part of pronotum, mesoscutum, axillae, and scutellum areolate and with fine punctation. Lateral parts of pronotum and mesopleura reticulate.

Mesosoma dorsally with very short pale hairs. Costal cell of fore wing and part of that wing distal to lineal calva pubescent; lineal calva extending only to half wing width. Body length 1.2 mm.

Male unknown.

Material. Holotype: female, **Montenegro**, Petrovac, sea coast, road to a monastery, pine forest, on shrubs (*Vaccinium?*), 24.IX.2009 (V.A. Trjapitzin).

Comparative diagnosis. The new species is similar in coloration to *Anagyrus nigricorpus* Shafee, Alam et Agarwal, 1975, known only from India where it was reared from the mealybug *Peliococcus* sp. on *Prosopis spicegera* L. (family Fabaceae) (Shafee et al., 1975). The new species differs from *A. nigricorpus* in the scape strongly narrowing basally, the 1st funicular segment completely black, and a clava shorter, twice as long as wide. In the female of *A. nigricorpus* the scape is weakly narrowing in the basal part, the 1st funicular segment is light apically, and the clava is 3.0 times as long as wide.

Psyllaephagus eugenii Trjapitzin, sp. n. (Figs. 2, 3)

Description. Female. Margin of occiput concave. Smallest width of vertex less than half maximum width of head (14 : 33). Vertex and frons as long as wide. Apical angle of ocellar triangle somewhat larger than 90°; distance between posterior ocelli larger than distance from them to anterior ocellus (8 : 4–5) and distance from them to eye margins shorter than ocellus diameter. Toruli positioned above level of lower eye margins. Scape 3.0 times as long as wide, 2.0 or more times (12 : 5) as long as pedicel. Length of pedicel 1.3–2.0 times its apical width, pedicel as long as 1st and 2nd funicular segments combined; 4th and 5th funicular segments somewhat longer than wide, 6th segment square; clava 3-segmented, oval, wider than 6th funicular segment, 2.25 times as long as wide, with segments separated by transverse sutures. Mesoscutum 1.7 times as wide as long. Scutellum almost flat, as long as wide and as long as mesoscutum. Wings not shortened. Length of fore wing 2.7 times its maximum width; costal cell very narrow; marginal vein punctiform; radial vein longer than postmarginal one (7 : 3).

Mesotibial spur shorter than 1st tarsomere. Propodeum very short medially. Metasoma 6/7 as long as mesosoma. Exserted part of ovipositor sheath 0.13 times as long as metasoma.

Vertex and frons green blue, shiny. Genae, face, and malar spaces dark blue. Radicle, scape, and pedicel black; funicle brownish black; clava blackish brown. Palps yellow. Mesosoma dorsally with strong blue luster. Postspiracular sclerites brownish yellow. Tegulae dark with brownish yellow bases. Sides of mesothorax purple-bluish green with strong luster. Fore wings not darkened. Legs yellow but coxae and hind femora (except base and apex) black. Metanotum, propodeum, and metasoma black with bronze luster. Exserted part of ovipositor sheath dark.

Vertex and frons with finely areolate sculpture and very fine punctation, similar to that on mesoscutum. Scutellum with somewhat coarser areolation and punctation. Mesopleura reticulate. Mesoscutum with very short pale hairs. Body length 1.2 mm.

Male unknown.

Material. Holotype: female, **Montenegro**, Durmitor, V. Kalica, 20.VIII.1986 (L. Mihailović).

Comparative diagnosis. The new species is close to *Psyllaephagus procerus* (Mercet, 1921), described from Spain (Mercet, 1921, as *Metaprionomitus*) and recorded from Italy, Hungary, Russia (Voronezh Prov., Crimea), Moldova, Pridnestrovian Moldavian Repub-

lic, Turkey, Georgia, Armenia, Azerbaijan, and Mongolia. *Psyllaephagus procerus* is a parasitoid of various Psylloidea, including *Psyllopsis fraxini* L. on ash (*Fraxinus*). The female of *Ps. eugenii* differs from that of *Ps. procerus* in the absence of coarse punctation on the vertex and frons and in metallic blue, rather than green (in *Ps. procerus*), body luster.

REFERENCES

1. Danzig, E.M. and Sugonyaev, E.S., "The Use of Insect-Induced Galls and Other Plant Lesions by Some Arthropods as Ecological Niches under the Desert Conditions," Entomol. Obozr. **48** (1), 116–124 (1969).
2. Mercet, R.G., "Himenópteros fam. encírtidos," in *Fauna Ibérica* (Madrid, 1921), pp. 1–732.
3. Shafee, S.A., Alam, S.M., and Agarwal, M.M., "Taxonomic Survey of Encyrtid Parasites (Hymenoptera: Encyrtidae) in India," Publ. Aligarh Muslim Univ. Zool. Ser. Ind. Ins. Types **10**, 1–125 (1975).
4. Sugonyaev, E.S., "New Species of Chalcid Wasps (Hymenoptera, Chalcidoidea) Parasitizing Psyllids and Scales (Homoptera, Psylloidea, Coccoidea) from the Deserts and Semi-Deserts of Central Asia and Kazakhstan," Entomol. Obozr. **47** (3), 589–604 (1968).
5. Sugonyaev, E.S., *Journeys in Search of Insects (Insecta). Ex autopsia* (Russian Entomol. Society, St. Petersburg, 2011) [in Russian].
6. Trjapitzin, V.A., *The Fate of an Entomologist (Remembrance about Eugenií Mikhailovich Stepanov)* (KMK Sci. Press, Moscow, 2010) [in Russian].