

## Description and karyotype of a new species of *Baryscapus* Foerster, 1856 (Hymenoptera: Eulophidae) from Kazakhstan

### Описание и кариотип нового вида рода *Baryscapus* Foerster, 1856 (Hymenoptera: Eulophidae) из Казахстана

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КЛЮЧЕВЫЕ СЛОВА: Hymenoptera, Eulophidae, новый вид, кариотип.

ABSTRACT: *Baryscapus orgyiae* Kostjukov, sp.n. is described. The new species differs from *B. endemus* (Walker, 1838) by having much longer costal cell in relation to marginal vein, which, in turn, is shorter in relation to stigmal vein. The diploid karyotype of *B. orgyiae* sp.n. contains four pairs of large meta- and submetacentric chromosomes, another pair of shorter metacentrics, and a pair of very small acrocentric chromosomes, thus showing  $2n = 12$  and  $NF = 22$ .

РЕЗЮМЕ: Описан *Baryscapus orgyiae* Kostjukov, sp.n. От морфологически сходного *B. endemus* (Walker, 1838) новый вид отличается более длинной костальной ячейкой по отношению к маргинальной жилке, которая, в свою очередь, короче по отношению к стигмальной. Диплоидный кариотип *B. orgyiae* sp.n. содержит четыре пары крупных мета- и субметацентрических хромосом, еще одну пару более коротких метацентриков и пару очень маленьких акроцентрических хромосом, таким образом демонстрируя  $2n = 12$  и  $NF = 22$ .

Studying of parasitic wasps from Kazakhstan has resulted in detection of a new species of Eulophidae belonging to the genus *Baryscapus* Foerster, 1856. The description of its external morphology and karyotype is given below. Following abbreviations are used in the text:  $C_1$ – $C_3$  — claval segments 1–3,  $F_1$ – $F_4$  — funicular segments 1–4, OD — major diameter of lateral ocellus, OOL — oculo-ocellar length (shortest distance between lateral ocellus and eye margin), POL — postero-ocellar length (shortest distance between lateral ocelli), M — marginal vein, SM — submarginal vein, ST — stigmal vein,  $2n$  — diploid chromosome number, NF — arm number. Chromosome preparations were obtained from ovaries of adults using a standard technique for studying chromosomes in adult females of parasitic wasps [Gokhman, Quicke, 1995].

*Baryscapus orgyiae* Kostjukov, sp.n.  
Fig. 1.

DESCRIPTION. Female. Head 1.07 breadth of mesosoma, 2.0X broader than long, 1.03X broader than high; temples 0.17 eye length; POL 1.8 OOL, OOL 1.5 OD. Eyes 1.45X as long as broad. Malar space 0.7 eye length; malar sulcus weakly curved. Mouth 1.25 malar space. Scape 1.07X longer than eye, not reaching median ocellus; pedicel 1.85X as long as broad, equals to anelli plus  $F_1$ ;  $F_1$  1.1X as long as broad, 1.3X broader than pedicel;  $F_2$  1.3X as long as broad, 1.2X broader than  $F_1$ ;  $F_3$  1.2X as long as broad, 0.9 length and 1.0 width of  $F_2$ ; clava 2.3X as long as broad, 1.2X broader than  $F_3$ , 1.08 length of  $F_2$  plus  $F_3$ ;  $C_1$  1.2X as broad as long, 1.2X longer than  $C_2$ , 0.8 length of  $F_3$ ;  $C_2$  1.5X as broad as long;  $C_3$  plus terminal spine 1.3X as long as broad, equals to  $C_2$ . Mesosoma 1.6X longer than wide, 1.16X as high as broad. Mid lobe of mesoscutum 1.08X as long as broad, median line complete, very distinct, mesoscutum with a row of 4 setae on each side and a second partial row of 2 setae. Scutellum 1.2X as broad as long, moderately convex, submedian lines distinct, approximately equidistant from each other and sublateral lines; space enclosed by submedian lines 3.0X as long as broad; anterior setae behind middle, posterior setae slightly longer than anterior ones, somewhat shorter than distance between submedian lines; distance between anterior and posterior setae 0.4 that between anterior setae and margin of scutellum; distance between placoid sensilla and posterior setae 1.9 that between sensilla and anterior setae. Dorsellum 2.4X as broad as long. Propodeum medially 1.2 length of dorsellum, its median carina distinct, broadening conspicuously towards hind margin of propodeum; spiracles separated by 0.3 their diameter from metanotum and by 1.8 their diameter from hind margin of propodeum; callus with 6 setae. Hind femora 3.7X as long as broad. Forewing 2.2X as long as broad; costal cell 5.0X longer than broad, 1.3 length of M; SM with 2 dorsal setae; M as long as SM, 2.0 length of ST, with 10 frontal setae; ST thin proximally; frontal setae of M 0.3–0.4 length of ST, cilia 0.05–0.1 length of ST. Metasoma longish-oval, 1.6X as long as broad, 1.4 length of mesosoma and 1.06 length of mesosoma plus head, 1.2X broader than mesosoma; last

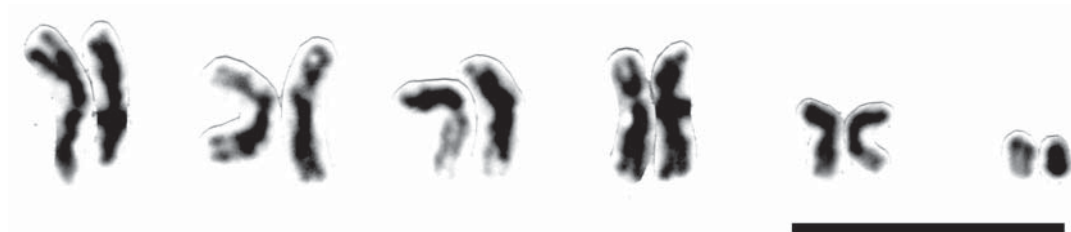


Fig. 1. Karyogram of *Baryscapus orgyiae* sp.n. (paratype female). Scale bar indicates 10  $\mu$ m.

Рис. 1. Кариограмма *Baryscapus orgyiae* sp.n. (паратип, самка). Паратип, самка. Масштаб 10  $\mu$ m.

Table 1. Distinction features of *Baryscapus endemus* (Walker, 1838) and *B. orgyiae* sp.n.  
Таблица 1. Отличительные признаки *Baryscapus endemus* (Walker, 1838) и *B. orgyiae* sp.n.

<i>B. endemus</i> (Walker, 1838)	<i>B. orgyiae</i> sp.n.
females	
1. Head 2.2–2.5X as broad as long	1. Head 2.0X as broad as long
2. Costal cell about as long as or slightly shorter than M	2. Costal cell 1.3X longer than M
3. M 2.35–3.2 length of ST	3. M 2.0 length of ST
4. Metasoma 1.9–3.2X as long as broad, last tergite about as long as or slightly longer than broad	4. Metasoma 1.6X as long as broad, last tergite distinctly broader than long
males	
5. Funicular segments 1.6–2.0X as long as broad	5. Funicular segments 1.0–1.16X as long as broad

tergite 1.8X as broad as long, distance between cerci 2.0 length of last tergite.

Body and coxae bright green, tegulae black with greenish metallic tint, antennae brown, proximal 0.66 of mid femora and basal 0.75 of hind femora black with green metallic tint, distal 0.33 of mid femora and apical 0.25 of hind femora yellow, tibia yellow, 1<sup>st</sup>–3<sup>rd</sup> tarsal segments yellow, 4th segment fuscous. Wings hyaline, veins yellow, proximal part of ST subhyaline, stigma testaceous.

Body length 1.8 mm.

Male. Differs from female by following features. Malar sulcus moderately curved. Sensory plaque obvious, its length 0.75 that of scape. Funicle with 4 segments, F<sub>1</sub> as long as broad, F<sub>2</sub> 1.1X longer than broad, F<sub>3</sub> 1.16X as long as broad, F<sub>4</sub> 1.07X longer than broad. Clava 3.5X as long as broad, equals in length to F<sub>2</sub> + F<sub>3</sub> + F<sub>4</sub>, slightly narrower than funicle; both C<sub>1</sub> and C<sub>2</sub> 1.2X as long as broad, C<sub>3</sub> 1.45X as long as broad, with a terminal spine. Callus with 4 setae. M of forewing with 6 frontal setae. Metasoma 2.3X as long as broad, 0.8 length of head plus mesosoma, 0.6 breadth of mesosoma.

Body length 1.4 mm.

DIFFERENTIAL DIAGNOSIS. *Baryscapus orgyiae* sp.n. is most similar to *B. endemus* (Walker, 1838) [Graham, 1991] from which it differs by several characters (Table 1).

MATERIAL EXAMINED. 2 ♀♀, 1 ♂. Holotype ♀, Kazakhstan, border of Aktyubinsk and Gouriev areas, Aktologai, 23.VI.1998, A. Dantchenko leg. Paratypes: 1 ♀, 1 ♂, same data as holotype. Types are deposited in the Zoological Museum, Moscow State University (Moscow, Russia).

HOST. All material reared from a caterpillar of *Orgyia* sp. (Lepidoptera: Orgyiidae).

KARYOTYPE. The diploid karyotype of *B. orgyiae* sp.n. contains three pairs of long metacentric chromosomes, a pair of submetacentrics similar in size to the first three, another pair of shorter metacentric chromosomes, and a pair of very small acrocentrics, thus showing 2n = 12 and NF = 22 (Fig. 1). The karyotype of *B. orgyiae* sp.n. resembles those of several other Eulophidae including *Tetrastichus* Haliday, 1844 s. l. (e.g. *Oomyzus* Rondani, 1870 and at least some species of *Aprostocetus* Westwood, 1833 [Gokhman, unpublished]). However, chromosome sets of two other karyologically studied members of the genus *Baryscapus* from North America, *B. megachilidis* (Burks, 1963) and especially of *B. gigas* (Burks, 1943) [Goodpasture, 1974] are also very similar to that of *B. orgyiae* sp.n.

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