

A new subgenus of the genus *Doggerella* Quicke, Mahmood  
et Papp, 2011 (Hymenoptera: Braconidae: Braconinae)  
from the Russian Far East

Новый подрод рода *Doggerella* Quicke, Mahmood et Papp, 2011  
(Hymenoptera: Braconidae: Braconinae) с Дальнего Востока  
России

K.G. Samartsev  
К.Г. Самарцев

Zoological Institute of the Russian Academy of Sciences, Universitetskaya Nab. 1, St.-Petersburg 199034 Russia. E-mail: k.samartsev@gmail.com.

Зоологический институт Российской академии наук, Университетская наб. 1, Санкт-Петербург 199034 Россия.

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**Ключевые слова:** Hymenoptera, Braconidae, Braconinae, новый подрод, Палеарктика.

**Abstract.** In the genus *Doggerella* Quicke, Mahmood et Papp, formerly known only from the Afrotropical Region, the new subgenus *Lelejobracon* **subgen.n.** with one species from the Russian Far East is described, illustrated and discussed. The genus *Doggerella* is reported in the Palaearctic Region for the first time.

**Резюме.** В роде *Doggerella* Quicke, Mahmood et Papp, который ранее был известен только из Афротропической области, описывается, иллюстрируется и обсуждается новый подрод *Lelejobracon* **subgen.n.** с одним видом с Дальнего Востока России. Род *Doggerella* впервые указывается для Палеарктики.

## Introduction

*Bracon chasanicus* Tobias, 2000 was originally described in the key to the *Bracon* Fabricius, 1804 species of the Russian Far East [Belokobylskij, Tobias, 2000]. Examination of the type and additional material of this genus revealed its belonging to a new subgenus of recently described genus *Doggerella* Quicke, Mahmood et Papp, 2011, which is known to be distributed in the Afrotropical Region.

The current paper presents the first record of this genus from the Palaearctic Region, and erects a new subgenus for the Russian species.

## Material and methods

The morphological nomenclature follows Belokobylskij and Maetô [2009]; wing measurements are made as defined in Mahmood et al. [2011]. The studied specimens including types are deposited in Zoological Institute of the Russian Academy of Sciences (St. Petersburg, Russia).

## Taxonomic part

### *Doggerella* Quicke, Mahmood et Papp, 2011

*Doggerella* Quicke, Mahmood et Papp, 2011: 2 (type species: *Doggerella turneri* Mahmood, Quicke et Papp, 2011); Yu et al., 2012.

### *Doggerella* (*Lelejobracon*) **subgen.n.**

**Type species.** *Bracon chasanicus* Tobias, 2000.

**Etymology.** The subgenus is named in honor of Prof. Arkadiy Stepanovich Lelej.

**Description.** Head. Anterior and lateral sides of antennal sockets elevated. Eyes with short sparse setae. Clypeus with low rim ventrally. Malar suture absent. Maxillary palp approximately as long as transverse diameter of eye.

Antennae 24–29-segmented, not swollen, about 0.8 times as long as fore wing. Scape becoming higher apically, apico-laterally emarginate, its ventral side longer than dorsal side. Apical segment tapered, with small spine.

Mesosoma. Transverse pronotal sulcus smooth and deep. Notauli distinctly but weakly impressed. Prescutellar depression crenulate. Middle lobe of mesoscutum evenly covered by short setae, notauli and scutellum with long setae. Metanotum and propodeum without longitudinal carinae.

Wings evenly setose. Radial cell of fore wing not shortened. First abscissa of basal vein forming distinct angle with second abscissa and almost right angle to costal vein. Nervulus interstitial. In hind wing, second abscissa of longitudinal anal vein (outside of submedial cell) present; costal vein with three hamuli; basal vein interstitial.

Legs. Fore tibia with longitudinal and transverse apical rows of thick spines; middle tibia with rows of thinner spines; hind tibia without spines, weakly swollen. Basal lobe of claw projecting, large and weakly pointed, with long ventral spine and thick bristles basally.

Metasoma. First tergite behind spiracles parallel-sided; its median area with crenulate margin. Second tergite distinct-

ly longer than third tergite. Second suture deep, weakly sinuate and weakly crenulate. Second metasomal tergite without sublateral longitudinal grooves, antero-lateral areas of third tergite almost indistinct. Metasomal tergites evenly setose, without transverse subapical grooves, with somewhat desclerotised posterior edges. Apex of ovipositor thin and sharp, without dorsal nodus and ventral serration.

Sculpture. Most part of body smooth; frons and face granulate.

**Comparative diagnosis.** *Lelejobracon* subgen.n. is similar to *Doggerella* s. str. in having a ventrally protruding scape, a completely smooth and thinly pointed ovipositor, one large and some smaller spines on the base of tarsal claws [see Fig. 1, e on p. 15 in Mahmood et al., 2011], the occurrence of pale-coloured patches on face (in *D. azhari* Mahmood, Quicke et Papp, 2011, *D. cohaerens* Mahmood, Quicke et Papp, 2011, *D. longitergita* Mahmood, Quicke et Papp, 2011 and *D. shaheena* Mahmood, Quicke et Papp, 2011). The differences between two subgenera are given below.

1. Metasoma smooth or with sparse medio-basal punctation on second tergite and very weakly shagreened sculpture on apical tergites (Fig. 4). Third to sixth metasomal tergites without transverse subapical grooves, with somewhat desclerotised posterior edges. Sublateral longitudinal impressions on second tergite indistinct and anterolateral areas on third to sixth tergites not separated. Mesosoma, vertex, temple and legs smooth (Figs 2, 3, 5) ..... *Lelejobracon* subgen.n.
- Metasoma strongly and completely sculptured, foveolate to granulate. Third to sixth metasomal tergites with strongly sclerotised posterior edges and usually with transverse, crenulate subapical grooves (except *D. landingi* and *D. shaheena*). Second tergite with distinct sublateral longitudinal impressions, anterolateral areas separated at least on third tergite. Mesosoma, vertex, and temple usually widely or completely granulate; coxa and femur often granulate or shagreened ..... *Doggerella* s. str.

*Doggerella (Lelejobracon) chasanica*  
(Tobias, 2000), **comb.n.**

Figs 1–15.

*Bracon chasanicus* Tobias, 2000: 148; Yu et al., 2012.

**Type material.** Holotype: ♀, «Приморский край, 10 км С Посьета, лес, 30.V.1979, Белокобыльский» (Russia, Primorskiy Territory, 10 km N of Posyet, forest, 30.V.1979, Belokobylskij), «Holotypus *Bracon chasanicus* Tobias». Paratypes: «Приморский край, 10 км С Посьета, лес, 29.V.1979, Белокобыльский» (Primorskiy Territory, 10 km N of Posyet, forest, 29.V.1979, Belokobylskij), «Paratypus *Bracon chasanicus* Tobias», 1♀, «Приморский край, окр. Хасана, дубняк, 26.V.1979, Зиновьев» (Primorskiy Territory, near Khasan, oak forest, 26.V.1979, Zinovjev), «Paratypus *Bracon chasanicus* Tobias», 1♀.

**Additional material.** Russia, *Amur Province*: 25 km N of Svobodnyy, Chernovka, Bol'shaya Pera River, forest edges, mixed forest, 31.VII–2.VIII.2003 (S. Belokobylskij), 2♀; *Primorskiy Territory*: 15 km S of Slavyanka, Ryazanovka, oak forest, glades, 3.IX.1995 (S. Belokobylskij), 1♀, 10 km ESE of Posyet, Gvozdevo, forest, forest edges, glades, 9.VIII.2013 (S. Belokobylskij), 1♀.

**Redescription.** Female. Body length 2.3–3.5 mm; fore wing length 3.0–3.7 mm.

Head. Width of head in dorsal view 1.4–1.6 times its median length. Head roundly narrowed or convergent behind

eyes (dorsal view). Transverse diameter of eye (dorsal view) 1.3–1.4 times longer than temple. Occiput weakly and arcuately concave. OOL 2.4–2.9 times Od; POL 1.2–1.5 times Od; OOL 1.7–2.1 times POL. Longitudinal diameter of eye (lateral view) 1.4–1.5 times longer than its transverse diameter. Transverse diameter of eye (lateral view) 1.3–1.7 times longer than temple; hind margins of eye and of temple parallel and somewhat convergent ventrally. Face width 1.0–1.1 times its height with clypeus, 1.6–1.8 times larger than width of hypoclypeal depression. Setae on lower part of face as long as on clypeal margin. Hypoclypeal depression 1.5–1.7 times as wide as distance from depression to eye. Malar space 0.6–0.7 times as long as base of mandible; longitudinal diameter of eye 3.8–4.3 times longer than malar space (front view). Head below eyes (front view) roundly narrowed.

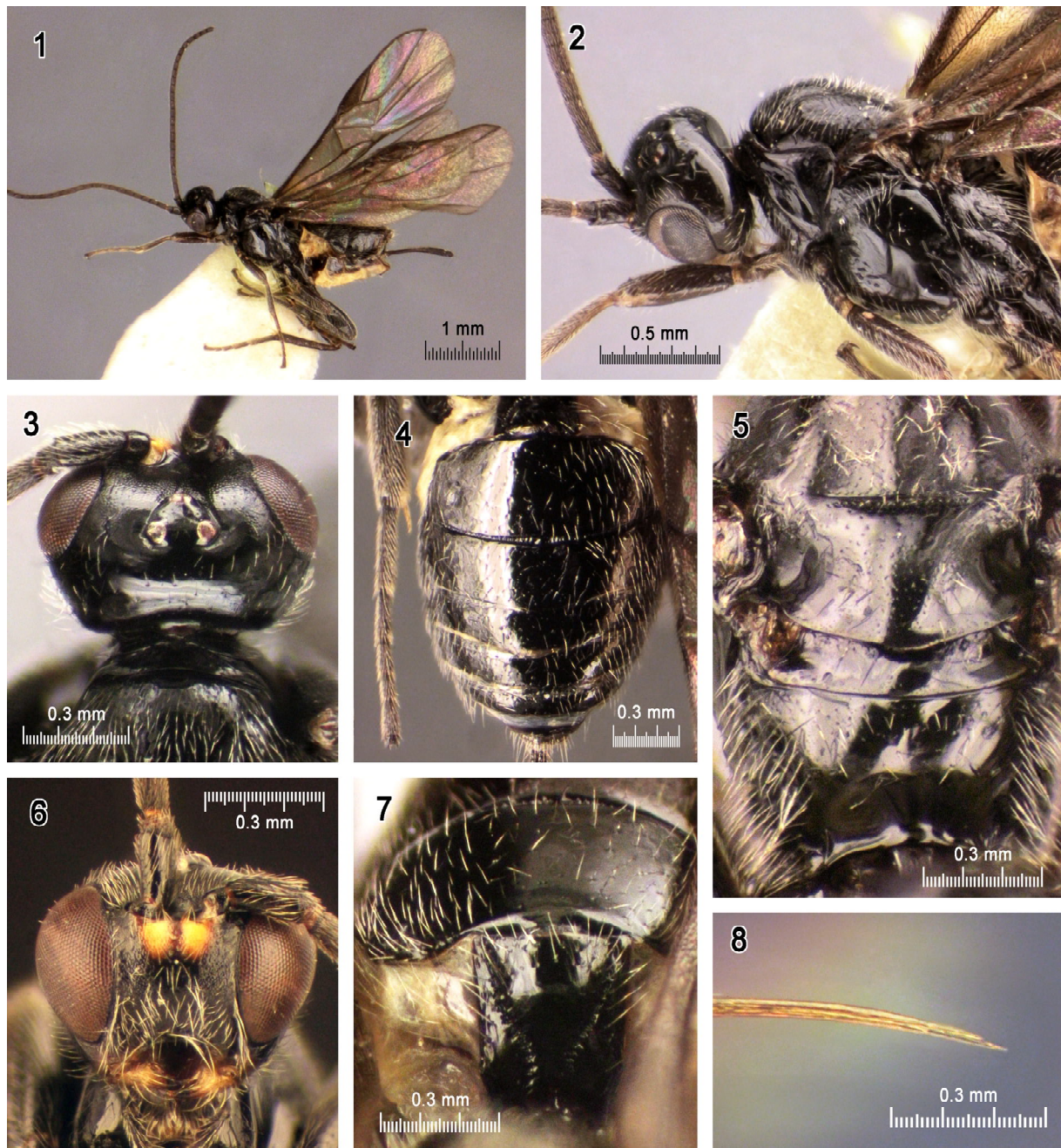
Antennae 24–29-segmented, about 0.8 times as long as fore wing. First flagellar segment 1.6–2.1 times longer than its apical width, a little longer than second segment. Middle flagellar segments 1.5–1.9 times longer than wide. Penultimate segment 1.7–2.0 times longer than wide.

Mesosoma 1.45–1.55 times longer than maximum height. Transverse pronotal sulcus smooth and deep. Mesoscutum 0.85–0.95 times as wide as its median length (dorsal view), 1.0–1.1 times as wide as head. Prescutellar depression crenulate, very short, less than 0.1 times as long as scutellum.

Wings. Fore wing 1.05–1.35 times longer than body, 2.8–3.2 times longer than its maximum width. Pterostigma 2.6–3.8 times longer than broad; radial vein arised before middle of pterostigma (basal part of pterostigma 0.65–0.85 times as long as apical part). Metacarp 1.3–1.4 times longer than pterostigma, 6.0–11.0 times longer than distance from apex of radial cell to apex of wing. First radial abscissa 0.8–1.1 times as long as maximum width of pterostigma. Second radial abscissa 1.6–2.2 times longer than first abscissa, 0.45–0.60 times as long as third abscissa, 1.1–1.4 times longer than first radiomedial vein. First abscissa of cubital vein 2.2–2.7 times longer than nervulus. Second abscissa of basal vein 4.0–5.0 times longer than first abscissa, 0.6–0.7 times as long as first abscissa of medial vein, 2.0–2.4 times longer than recurrent vein, 1.8–1.9 times longer than nervulus. Second abscissa of medial vein 0.15–0.30 times as long as first radiomedial vein, 0.3–0.7 times as long as recurrent vein. In hind wing, second abscissa of longitudinal anal vein (distally of submedial cell) present.

Legs. Fore femur 3.5–3.9 times longer than wide. Fore tibia 1.0–1.1 times as long as fore femur, 0.7–0.8 times as long as fore tarsus. Hind femur 2.9–3.2 times longer than wide. Hind tibia 1.30–1.45 times longer than hind femur, its inner spur 0.4–0.5 times as long as hind basitarsus. Hind tarsus marginally longer than hind tibia. Hind basitarsus 1.7–1.9 times longer than second segment and 2.2–2.4 times longer than fifth segment (without pretarsus).

Metasoma. Median area of first tergite with crenulate margin, 0.7–0.8 times as wide as apical width of tergite. Median length of first tergite (if measured from petiolar process) 1.05–1.15 times or (if measured from spiracles) 0.8–0.9 times as large as its apical width. Apical width of first tergite 0.85–0.95 times median length of second tergite. Second tergite 1.8–2.1 times wider between spiracles than its median length, 1.3–1.5 times longer than third tergite. Ovipositor sheath as long as hind tibia, 0.6–0.8 times as long as metasoma, 0.25–0.30 times as long as fore wing.



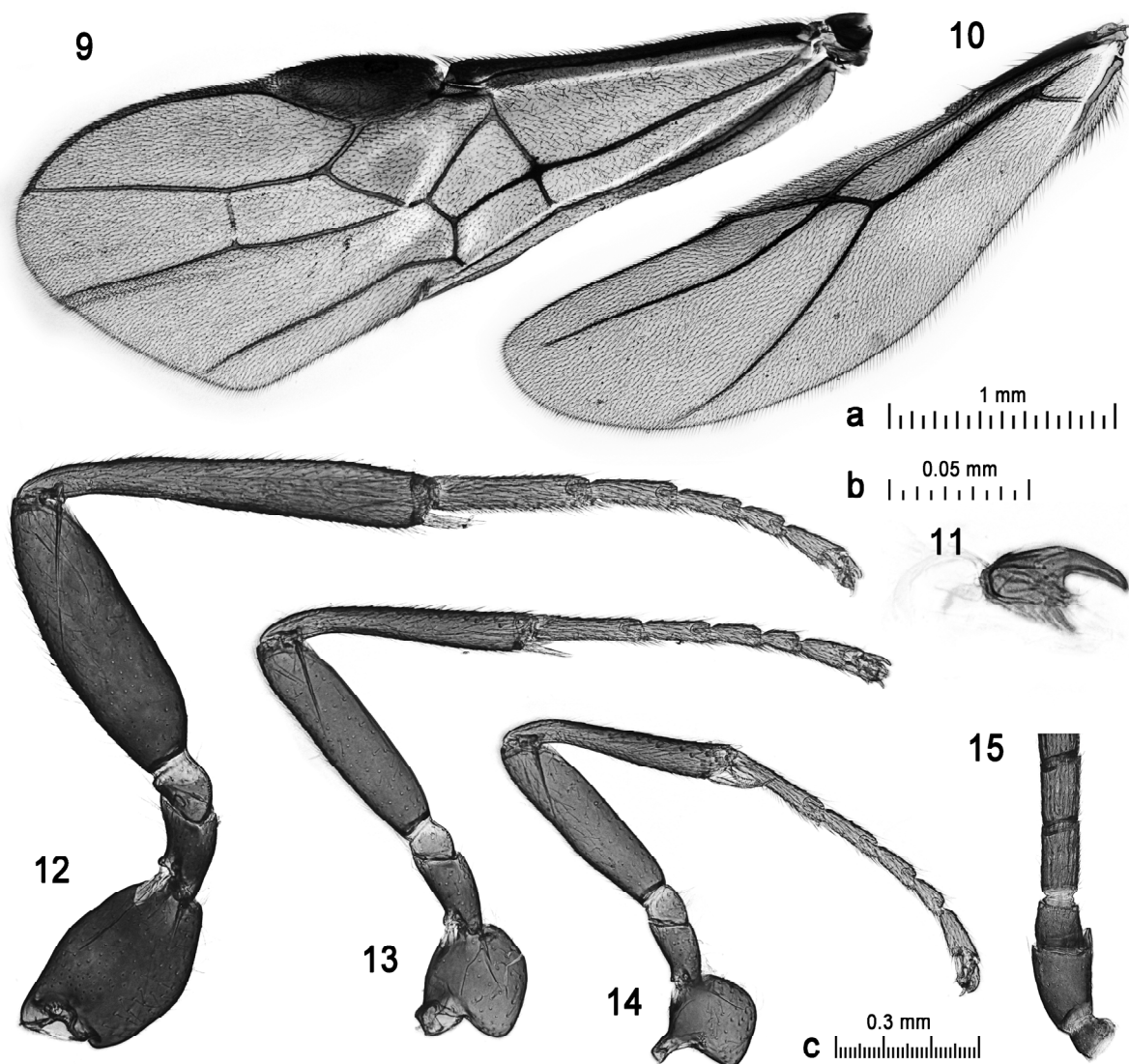
Figs 1–8. *Doggerella (Lelejobracon) chasanica* (1, 2 — holotype, 3–8 — additional female): 1 — habitus, lateral view; 2 — mesosoma, lateral view; 3 — head, dorsal view; 4 — metasoma, dorsal view; 5 — metanotum and propodeum, dorsal view; 6 — head, front view; 7 — first metasomal tergite; 8 — apex of ovipositor.

Рис. 1–8. *Doggerella (Lelejobracon) chasanica* (1, 2 — голотип, 3–8 — дополнительная самка): 1 — общий вид сбоку; 2 — мезосома сбоку; 3 — голова сверху; 4 — метасома сверху; 5 — метанотум и проподеум сверху; 6 — голова спереди; 7 — первый тергит метасомы; 8 — вершина яйцеклада.

**Sculpture.** Body mainly smooth. Frons and face granulate, but smoothed anteriorly to malar space; malar space finely granulate. Metanotum completely smooth. Propodeum completely smooth, without apicomedial rugae. Second metasomal tergite sometimes with sparse punctures mediobasally. Third to sixth tergites with weak traces of shagreened sculpture, most wide on fourth tergite.

**Colour.** Most part of body black. Face below antennal sockets with two bright yellowish-orange or yellowish-brown patches. Mandibles and tibial spurs rusty or brownish. Membranous areas of metasoma and usually hind margins of third to sixth tergites whitish or pale yellow. Wings darkened, pterostigma and veins dark brown.

Male. Unknown.



Figs 9–15. *Doggerella (Lelejobracon) chasanica*, female: 9 — fore wing; 10 — hind wing; 11 — claw of middle leg; 12 — hind leg, front view; 13 — middle leg, front view; 14 — fore leg, front view; 15 — base of right antenna, lateral view. Scale bars: a — for Figs 9, 10; b — for Fig. 11; c — for Figs 12–15.

Рис. 9–15. *Doggerella (Lelejobracon) chasanica*, самка: 9 — переднее крыло; 10 — заднее крыло; 11 — коготок средней ноги; 12 — задняя нога спереди; 13 — средняя нога спереди; 14 — передняя нога спереди; 15 — основание левого усика сбоку. Масштабная линейка: а — к рис. 9 и 10; б — к рис. 11; с — к рис. 12–15.

## Discussion

The fact, that *D. chasanica* was initially described in the genus *Bracon*, points out the classification problems in Braconinae caused by the lack of apomorphic characters in the largest Palearctic genus *Bracon* [Belshaw et al., 2001] and by the wide convergence of diagnostic characters within the subfamily. It seems pertinent therefore to discuss the occurrence of diagnostic characters complicating the definition of the new subgenus, in related genera.

According to the key for Old World genera of Braconinae [Quicke, 1987], the taxon described here may

run to either of two groups of genera, depending on the shape of claws. Accepting the claws having the basal lobes protruding and pointed, an identification comes to genus *Bracon* and two genera of *Plesiobracon* group of genera, namely *Braconella* Szépligeti, 1906 and *Craetocnema* Szépligeti, 1914 (recently described *Doggerella* also belongs here). If to assume that the shape of tarsal claws is variable, then the disregard of this character in Quicke's key leads to the genus *Cyanopterus* Haliday, 1835.

In general, *D. chasanica* fits into *Bracon* habitus, although some of its characters are unique for the latter. The characters that probably not occur among the mem-

bers of *Bracon* are the ventrally protruding scape and somewhat protruding ventrolateral mandibular condylus (except for subgenus *Ophthalmobracon* Tobias, 1957, which status is questionable). The most uncommon characters are: the even pilosity of mesoscutum, the smooth apex of ovipositor, the square face, contrastingly light-coloured apices of metasomal tergites, and well-developed second abscissa of longitudinal anal vein (outside of submedial cell).

The middle lobe of mesoscutum is evenly pilose in *Bracon* (*Asiabracon*) *heberola* Papp, 2012, *B. (Pappobracon)* *nodulosus* Papp, 1998, *B. (Uncobracon)* *tricoloratus* Tobias, 2000, *B. imbricatellus* Tobias, 2000, *B. kunashiricus* Tobias, 2000 and *B. sulciferus* Tobias, 2000. More sparse and less uniform pilosity is characteristic of other species of *Uncobracon*, as well as for *B. brevicealcaratus* Tobias, 1957, *B. steppecola* Tobias, 2000 and *B. virgatus* Marshall, 1897.

The apex of ovipositor in *Asiabracon* Tobias, 1957, *Foveobracon* Tobias, 1961, *Palpibracon* Papp, 2012, and *Uncobracon* Papp, 1996 show a degree of reduction of the nodus. In *Orientobracon* Tobias, 2000, the nodus is absent, but the upper valve is expanded apically. The representatives of all of the mentioned subgenera have distinct apicoventral serrations on ovipositor. Females of *B. biroicus* Papp, 1990, *B. concavus* Tobias, 1957 and *B. jacobsoni* Telenga, 1936, apparently forming a single species group of small granulate wasps, have the ovipositor apex completely smooth, although less pointed in comparison with *D. chasanica*. In *B. nomas* Tobias, 1961, the apex of ovipositor (which is much longer than body) is more similar: completely smooth and thinly pointed.

In many *Bracon* species, dark coloration on the metasoma occurs in patches extending from the centers of the tergites and sometimes leaving light stripes of the ground colour at the apices of tergites. However, the type of coloration, where tergal edges are pale independently of the ground colour of the metasoma, is found only in *B. biroicus*, *B. brevicealcaratus* Tobias, 1957, and *B. (Sculptobracon)* *yakui* Watanabe, 1937.

In *Bracon*, a square face in females occurs only in *B. (Ophthalmobracon)* *ophthalmicus* Telenga, 1933, *B. (O.) nocturnus* (Tobias, 1962) and *B. (O.) singaporensis* Szépligeti, 1905. In most species, the second abscissa of longitudinal anal vein of hind wing is absent or very short, but it is somewhat longer in *B. (Foveobracon)* *megapterus* Wesm., 1838 and *B. (Pappobracon)* *nodulosus* Papp, 1998, and relatively long and thickened only in *B. badachshanicus* Tobias et Saidov, 1997. In the latter species, and also in *B. nomas*, the lobes of tarsal claws bear thick bristles at the base. A very few *Bracon* species lack a pointed basal lobe to the claws and so will not run properly in Quicke's [1987] key. However, morphology of tarsal claws is unknown for many *Bracon* species.

Members of *Cyanopterus* Haliday also have a habitual similarity with *Lelejobracon* in the fore wing venation, the shape of head and scape and of body in general, the smoothness of mesosoma and usually meta-

soma, the presence of thick spines on the base of claw lobes in most species, and by the protruding ventrolateral mandibular condylus. However, it differs in the presence of lateral grooves or anterolateral areas and usually a mid-basal area on second metasomal tergite, the always glabrous middle lobe of mesosutum, the absence of second abscissa of longitudinal anal vein, and in the usually smooth face [granulate in *C. (Ipobracon)* *bohayicus* Belokobylskij, 2000 and *C. (I.) differens* (Telenga, 1936), the latter also having the basal lobe of claws protruding and pointed]. Nevertheless, in different members of *Cyanopterus* the elongation of ovipositor apex, the smoothing of dorsal nodus and the reduction of ventral serrations occurs. The nodus is completely absent *C. (I.) nigrator* (Zetterstedt, 1838) and *C. (I.) kusarensis* (Abdinbekova, 1973), and in *C. (I.) penini* Belokobylskij, 2000, *C. (I.) hinoemataensis* Belokobylskij, 2000, and *C. (I.) extricator* (Nees, 1834) have also no ventral serrations. Females of the latter species also have short ovipositor and square face.

*Lelejobracon* is most similar to a peculiar group of genera comprising *Braconella*, *Cratocnema* and *Doggerella*. These taxa are known from Africa so far, although a *Doggerella* specimen from Iran was recently wrongly identified as *Bracon (Habrobracon)* *nigricans* (Szépligeti, 1901) (sic!) by Ameri et al. [2014; see Fig. 11 on page 366]. The common characters for the four taxa are: the middle lobe of mesoscutum is evenly pilose, the second abscissa of longitudinal anal vein of hind wing is well developed (indicated for *Cratocnema* by Quicke [1985]), the shape of claws is similar, ventrolateral mandibular condylus is somewhat protruding, the presence of subapical transverse grooves on metasomal tergites three to five (except for *Cratocnema*), the square faces, the pale-coloured apical margins on metasomal tergites, and the absence of mid-longitudinal carinae on the metanotum. *Lelejobracon* differs in having a smooth metasoma (it is completely and evenly foveolate or rugulose-granulate in the three genera) and mesosoma (it is granulate in *Braconella* and *Doggerella*). In addition, it differs from *Braconella* and *Cratocnema* in having a ventrally produced scape and by the absence of a dorsal nodus and ventral serrations at the apex of ovipositor. *Braconella* also has the hind femur with ventral tooth of varying extent. According to Belshaw et al. [2001], *Cratocnema* is characterised by no or one hamulus in hind wing and apex of fore tibia without a transverse row of spines; these characters need verification.

Thus, *Lelejobracon* shares a nearly complete offset of diagnostic characters with *Doggerella*, and the few differences seem best regarded as representing intrageneric variation.

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