

## EMESINAE FROM AFGHANISTAN (HETEROPTERA: REDUVIIDAE)

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This paper is the first report on the thread-legged bugs (Heteroptera: Reduviidae: Emesinae) of Afghanistan. *Proguithera inexpectata* sp. n., the first species of the *Guithera–Lutevula* genus group from the Palaearctic Region is described and figured. A key for the identification of the species of *Proguithera* and related genera is presented. *Gardena insperata* PUTSHKOV, 1988 is recorded first from Afghanistan. The phallus of the species is figured. With 16 figures.

Key words: Heteroptera, Reduviidae, Emesinae, *Proguithera*, *Gardena*, new species, new record

### INTRODUCTION

Our knowledge on the Heteroptera fauna of Afghanistan is rather insufficient. Most of the earlier publications were listed by HOBERLANDT (1984), and important recent works were published on certain families by HOBERLANDT (1961, 1984), ŠTUSÁK and STEHLÍK (1979), KERZHNER (1987) and HOBERLANDT and ŠVIHLA (1990). However, in respect of many groups of Heteroptera, Afghanistan is almost *terra incognita*. Particularly, the Reduviidae fauna of the country is very poorly known, and – apart from the paper of HOBERLANDT (1961), in which 15 species are listed – only a few data were published on it. No species of the subfamily Emesinae has been recorded from the country hitherto (PUTSHKOV & PUTSHKOV 1996).

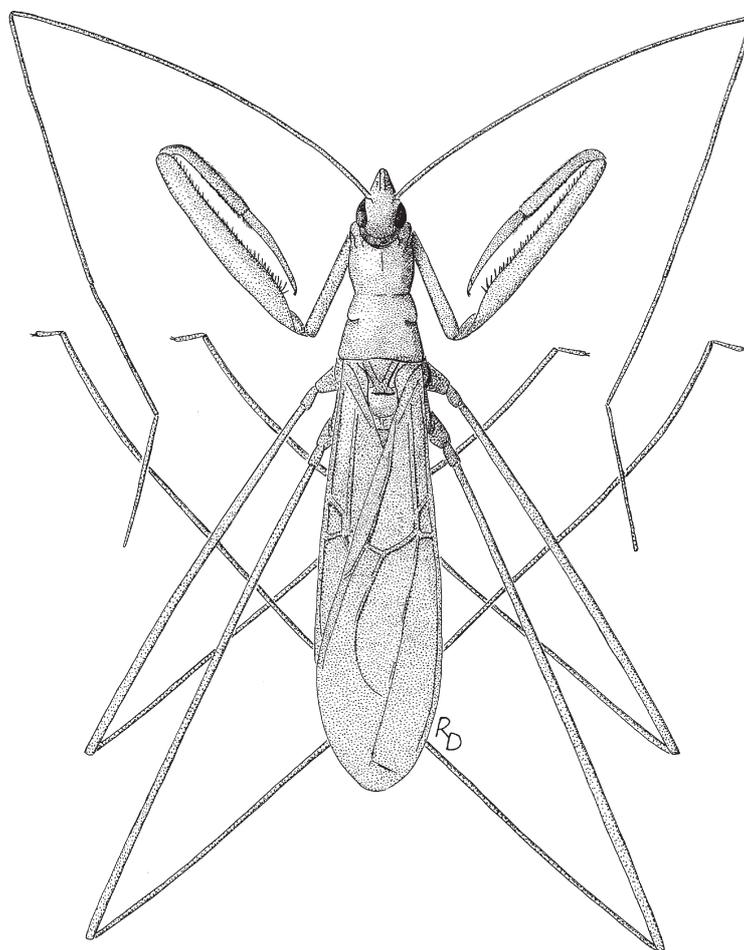
While identifying Reduviidae of the Hemiptera Collection of the Naturhistorisches Museum Wien (NHMW), I found two remarkable emesine specimens collected in the southern mountainous region of Afghanistan (both from the same locality). One of them represents a new species and the other species is new to the fauna of Afghanistan.

### MATERIALS AND METHODS

This study was based on two specimens deposited in the Naturhistorisches Museum Wien, Austria. The external structures were examined under a stereoscopic microscope. Drawings were made by using a camera lucida. Male genitalia were dissected after a short boiling in 10% KOH solution. Measurements were taken by using a micrometer eyepiece.

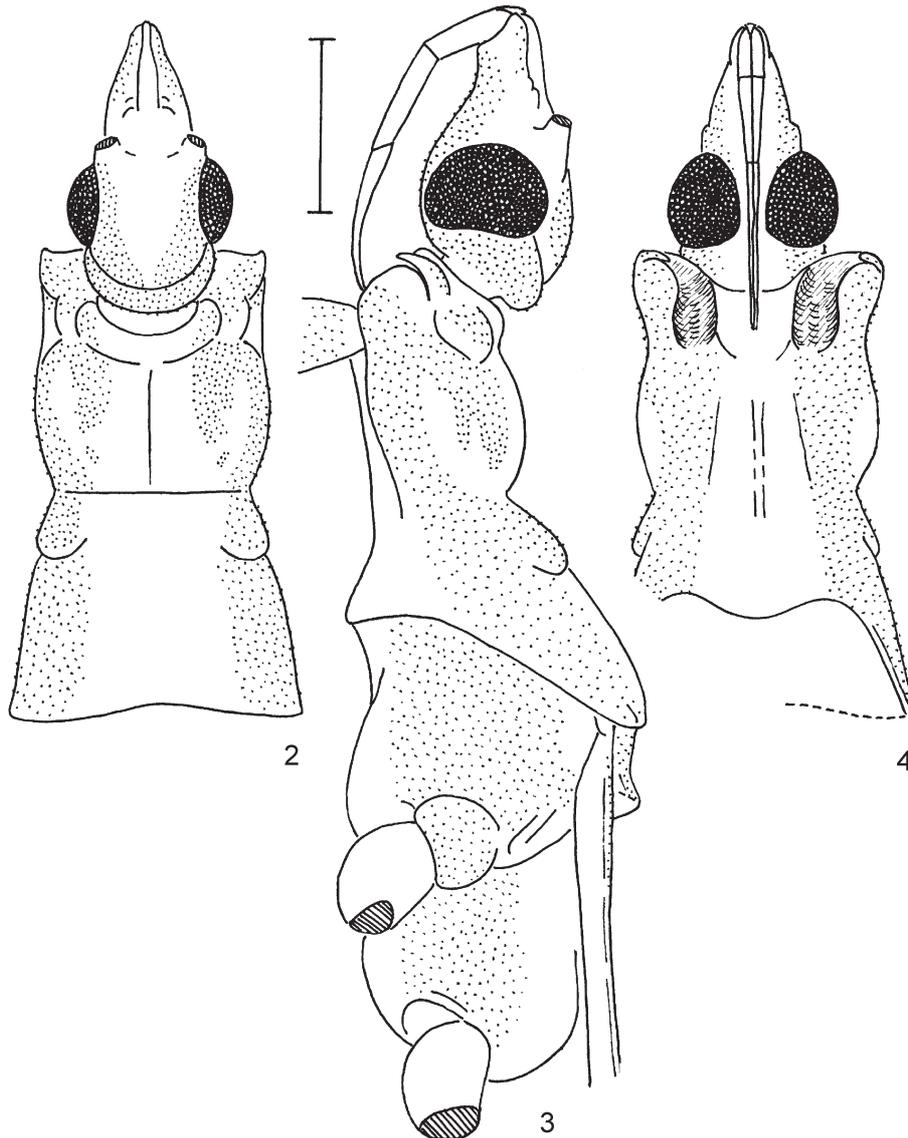
## DESCRIPTION OF A NEW SPECIES

The species of *Guithera*, *Proguithera* and *Lutevula* form a well-recognizable group among the emesine tribe Leistarchini. The first species described from this group was *Guithera feana* (DISTANT, 1903), originally placed into *Luteva* DOHRN, 1806 (now a synonym of *Ploiaria* SCOPOLI, 1786). Later DISTANT (1906) created the genus *Guithera* for the species above (as type species) and two newly described ones, *G. hortensia* (now in *Lutevula* BREDDIN, 1909) and *G. nubifera* (now in *Stenorhamphus* ELKINS, 1962, Collartidini). The genus *Lutevula* was erected by



**Fig 1.** *Proguithera inexpectata* sp. n.

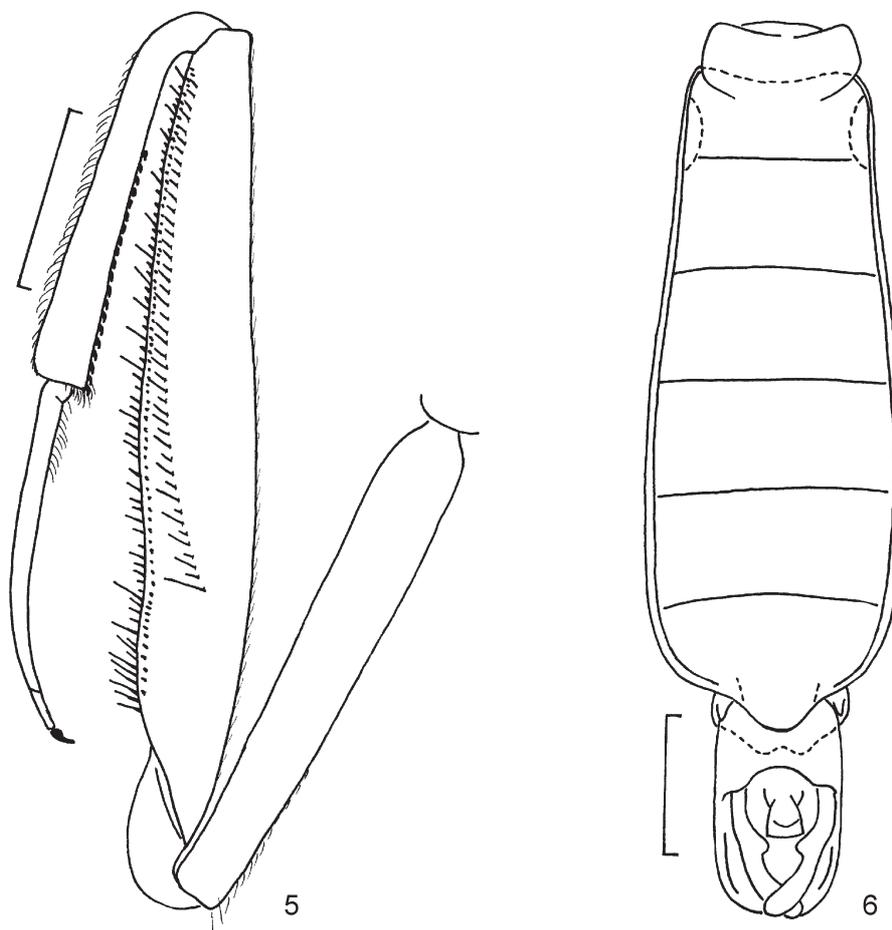
BREDDIN (1909) for his newly described species *lutea*. This species was later synonymized with *Guithera hortensia*, and therefore the genus *Lutevula* was also regarded as junior synonym of *Guithera* by DISTANT (1911). WYGODZINSKY (1966) regarded *Lutevula* as subgenus of *Guithera*, and erected a new subgenus,



**Figs 2–4.** *Proguithera inexpectata* sp. n.: 2 = head and pronotum, dorsal aspect, 3 = head and thorax, lateral aspect, 4 = head and pronotum, ventral aspect. Scale: 1.0 mm

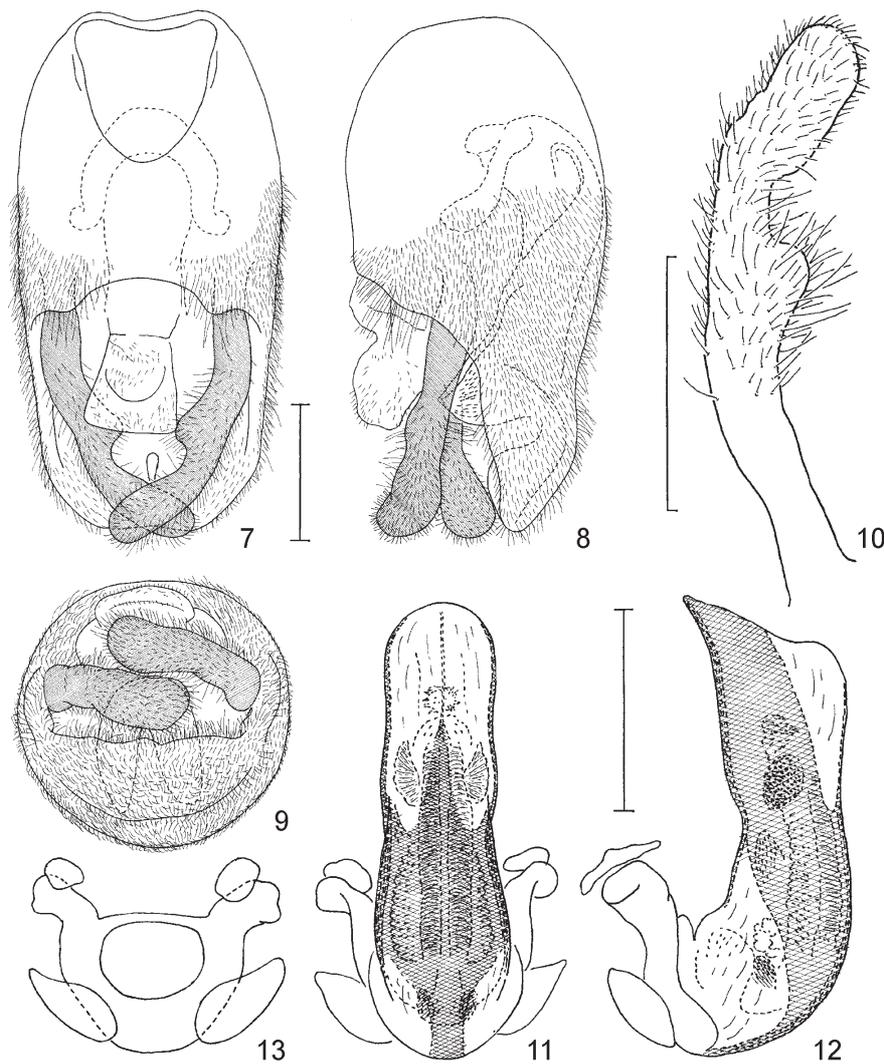
*Proguithera* for his newly described species *drescheri*. *Proguithera* was upgraded by DISPONS (1970) and *Lutevula* by VILLIERS (1970) to generic level.

The relationship between the three previously described species seems quite doubtful. Having many autapomorphic characters, these species are undoubtedly closely related. However, their current supraspecific classification needs further taxonomic study. In the recent World catalogue of MALDONADO-CAPRILES (1990), the species of this group were presented in the following systematic order: genus *Guithera* DISTANT, 1906 – *G. (s. str.) feana* (DISTANT, 1903), *G. (Proguithera) drescheri* WYGODZINSKY, 1966; genus *Lutevula* BREDDIN, 1909 – *L. hortensia*



**Figs 5–6.** *Proguithera inexpectata* sp. n.: 5 = medial surface of right fore leg, 6 = male abdomen, dorsal aspect. Scale: 1.0 mm

(DISTANT, 1909). There seems to be no doubt that the species *drescheri* and *hortensia* are more closely related to each other than either of them is to *feana*, therefore MALDONADO's classification cannot be accepted. In the present paper, without further discussion of the question, the taxa mentioned above are treated to-



**Figs 7–13.** *Proguithera inexpectata* sp. n. 7 = male genital capsule, dorsal aspect; 8 = same, lateral aspect; 9 = same, seen from behind; 10 = right paramere, dorsal aspect; 11 = phallus, ventral aspect, 12 = same, lateral aspect; 13 = articulatory apparatus of phallus. Scale: 0.5 mm

gether as *Guithera*–*Lutevula* group, and *Guithera*, *Proguithera* and *Lutevula* are regarded as distinct genera.

The hitherto described species of the *Guithera*–*Lutevula* group are known to be distributed in the Oriental Region: *G. feana* is known from India, Burma and Thailand, *P. drescheri* from Java, and *L. hortensia* from Sri Lanka. A further species from Afghanistan is described below. The new species is the first and only known species of the *Guithera*–*Lutevula* group in the Palaearctic Region.

### ***Proguithera inexpectata* sp. n.**

(Figs 1–13)

Holotype male: AFGHANISTAN: Nuristan: 25 km north from Barikot, 1200 m, 12–17. VII. 1963, leg. Kasy & Vartian (deposited in the NHMW).

Measurements in mm: total length of body to apex of fore wings 11.5. Length of head (without neck) 1.51, preocular 0.67, postocular 0.35; width across eyes 0.90, interocular distance 0.56. Length of antennal joints (I) 7.40 : (II) 5.25 : (III) 2.45 : (IV) 2.60. Length of labial joints (I) 0.56 : (II) 0.63 : (III) 0.77. Length of pronotum 1.99, fore lobe 0.78, hind lobe 1.21; greatest width of fore lobe 1.22, width across humeral angles 1.62. Length of scutellum 0.49. Length of abdomen from base to apex of tergite VII 5.35, greatest width 2.08. Length of fore wings 8.0, greatest width 2.0. Length of fore coxa 2.58, greatest width 0.38, length of fore trochanter 0.68, length of fore femur 3.93, greatest width 0.58, length of fore tibia 1.95, greatest width 0.30, length of fore tarsus without claw 1.65, tarsal joints (I) 1.47 : (II) 0.21; length of mid femur 8.0, tibia 11.5, tarsus 0.53; length of hind femur 10.3, tibia 17.2, tarsus 0.59.

Macropterous male. General aspect as shown in Fig. 1, moderately elongate.

General colour rather uniformly ochraceous, hind lobe of head, antennae, legs and scutellum slightly darker. Body surface slightly lustrous, with fine granulation on head, thorax and part of legs; with yellowish pubescence very short and adpressed, hardly perceptible.

Head as shown in Figs 2–4, porrect, guttiform in lateral view, about 1.7 times as long as wide; preocular part about 1.9 times longer than postocular, declivent and conspicuously narrowing anteriorly; postocular part very short, semiglobular, distinctly separated from short neck. Eyes relatively great, laterally moderately prominent, posteriorly only slightly excised, approaching ventral surface of head in lateral aspect; diatone approximately 1.6 times as wide as interocular space. On ventral surface of head eyes strongly approaching each other, their distance is smaller than basal width of labial joint II. Vertex with interocular suture curved backward far behind posterior border of eyes. Antennae originated near anterior border of eyes, extremely gracile, joint I the longest, about twice as long as head and pronotum together and 1.4 times as long as joint II; joints III and IV subequal in length, slightly more slender than precedent ones. Rostrum rather long and slender, labial joint I short, rather stout, joint II slightly surpassing anterior border of eyes, gradually narrowing, joint III the longest, slender, projecting between bases of fore coxae.

Pronotum as in Figs 2–4, moderately elongate, about 1.3 times longer than head, divided by a shallow transverse constriction into fore and hind lobe, covering mesonotum except a small region before scutellum. Fore lobe considerably (about 1.6 times) wider than its medial length, rounded laterally, disc with a fine medial longitudinal furrow. Hind lobe about 1.6 times longer than fore lobe,

lateral outline diverging posteriorly, posterior margin concave, disc with a pair of anterolateral transverse nodules. Coxal cavities anteriorly open.

Fore leg as in Fig. 5, rather stout. Fore coxa long, straight, subcylindrical, very slightly narrowing apically, about 6.8 times longer as its greatest width (near base), unarmed. Fore trochanter simple, unarmed. Fore femur stout, laterally flattened, slightly arched, about 6.8 times as long as its greatest width (near middle), about 1.5 times as long as coxa and considerably longer than tibia and tarsus combined. Three rows of spinigerous processes present on fore femur; posteroventral series composed of a single row of about 65–70 processes, long ones basally, short and long ones in the remaining part and also some very small peg-like ones in apical half; anteroventral series beginning beyond basal third of article, consisting of a single row of about 40, more or less long processes, first one the longest; an accessory series also present consisting of a single row of about 70 minute, peg-like spines; in extreme apex of femur anteriorly to accessory series also with some accessory spines. Fore tibia short, stout, about 6.5 times longer than its greatest width (near apex) and half as long as femur, apical two-thirds of its ventral surface with a single row of deflexed spines, dorsal surface with rather long, semi-erect hairs. Fore tarsus about 0.8 times as long as tibia, conspicuously arched, its basal one-fifth with fine hairs ventrally, otherwise smooth, two-segmented, joint I about 7 times longer than joint II, apically with a single stout claw basally conspicuously widened. Mid and hind legs elongate and delicate, apex of mid femora reaching, that of hind femora far surpassing apex of abdomen, tibiae extremely slender, their apical part slightly bent ventrally.

Scutellum subtriangular, wings also leaving a triangular part of metanotum exposed. Fore wings elongate, about 4 times longer than their greatest width, slightly surpassing apex of abdomen. Venation as in *P. drescheri*, with r-m cross vein and a further cross vein connecting M+Cu with costal margin somewhat basal of discal cell. Cu simple, not thickened along base of discal cell. Rs situated extremely apically, portion of M situated between base of discal cell and Rs cross vein about twice as long as distance between base of Rs and apex of fore wing.

Abdomen of male as in Fig. 6, elongate oval, slightly compressed dorsoventrally, posteriorly gradually widening, medial length from base to apex of tergite VII about 2.6 times greater than its greatest width (near apex). Abdominal segment VIII with a pair of short dorsolateral prolongations, ventral part widely projecting posteriorly in the middle, medially excised. Genital capsule as in Figs 7–9, elongated, posterior margin widely excised, without superoposterior prolongation. Parameres as in Fig. 10, symmetrical, moderately elongate, considerably bent, bearing a broad, stout inner protuberance, directed posteriorly in natural position, reaching apex of pygophore, their apices crossing each other. Phallus as in Figs 11–13, directed posteriorly within genital capsule; phallosoma nearly cylindrical, endosoma with two pairs of tuft-like groups of spiniform processes; articulatory apparatus (Fig. 13) wide, stout, with long and narrow ponticulus basilaris located somewhat distally, connectives short, basal foramen transverse.

*Etymology.* Specific name from Latin *inexpectata*, 'unexpected'; the name is given by virtue of the quite surprising occurrence of this Oriental genus in the Palaearctic Region.

The distinguishing of *Proguithera inexpectata* sp. n. from *P. drescheri* is the easiest by its considerably greater size and the fine medial longitudinal furrow on the fore pronotal lobes. In addition, differences are between the two species in wing venation (Cu not thickened along base of discal cell, Rs situated more apically), in the armature of fore femora (posteroventral and anteroventral series composed of far more spines) etc. The identification key presented below allows the recognition of the species of the *Guithera–Lutevula* group.

Key to the species of the *Guithera*–*Lutevula* group  
(modified after WYGODZINSKY 1966: 127)

- 1 (4) Fore tarsi two-segmented, apical segment very short
- 2 (3) Size about 9 mm. Fore pronotal lobe rather deeply and widely sulcate along the middle. On fore femora, posteroventral series composed of approximately 45, anteroventral of not more than 20 spines. Java  
*Proguithera drescheri* (WYGODZINSKY, 1966)
- 3 (2) Size (of holotype) 11.5 mm. Fore pronotal lobe with a fine medial longitudinal furrow. On fore femora, posteroventral series composed of 65–70, anteroventral of approximately 40 spines. Afghanistan  
***Proguithera inexpectata* sp. n.**
- 4 (1) Fore tarsi one-segmented
- 5 (6) Size about 8 mm; colour rather uniformly ochraceous, pattern elements not conspicuous; fore tarsus shorter than tibia; Rs and cross vein connecting M+Cu to costal margin basad of discal cell present. Sri Lanka  
*Lutevula hortensia* (DISTANT, 1906)
- 6 (5) Size 5 mm or less; conspicuously bicolorous; fore tarsus longer than tibia; Rs and cross vein mentioned absent. India, Burma, Thailand  
*Guithera feana* (DISTANT, 1903)

*Gardena insperata* P. V. PUTSHKOV, 1988

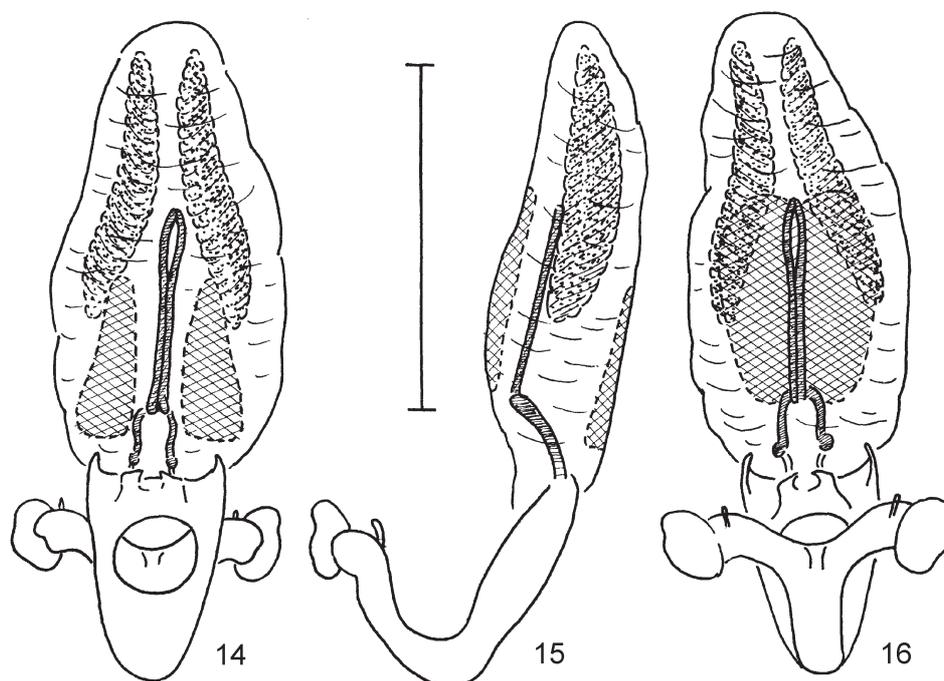
Material examined: AFGHANISTAN: Nuristan: 25 km north from Barikot, 1200 m, 12–17. VII. 1963, leg. Kasy & Vartian, 1 male (deposited in the NHMW).

With nearly 50 species described, *Gardena* DOHRN, 1860 is among the most species-rich genera in the reduviid subfamily Emesinae (MALDONADO-CAPRILES 1990). The genus occurs in all zoogeographical regions, but it is most diverse in the New World and in the Ethiopian Region; only 8 species are known to occur in the Palaearctic Region (PUTSHKOV & PUTSHKOV 1996). *Gardena insperata* has been recently described from Tadzhikistan; only the male holotype has hitherto been known. A further male specimen collected in Afghanistan was found in the collection of the NHMW. The species is new to the fauna of Afghanistan.

Considering its external morphology, the specimen examined is in very high accordance with the original description of *G. insperata*. The ratio between the dis-

tance from the first spiniferous process of fore femur to the base of joint and the length of this spiniferous process was given by PUTSHKOV (1988) as an important differentiating character for the closely related species; this value is 2–3 in *G. muscicapa* (BERGROTH, 1906) and *G. cheesmanae* WYGODZINSKY, 1958, but 4.7 in *insperata*. However, in case of the specimen examined this ratio is only 3.91 (right) and 3.21 (left). It is clear that the different stage of development of the first spiniferous process – independently of its localisation on the joint – can greatly affect the ratio mentioned before (cf. the difference between the two sides of the specimen in this respect). Therefore, the ratio between the distance from the first spiniferous process to the base of joint and the total length of joint (measured on its ventral surface) seems to be more useful character (0.17 in the holotype of *G. insperata*, 0.15 in the specimen in hand).

The prolongation of the abdominal tergite VII of the male holotype is obliquely ascending, their lateral sides relatively widely and sharply folding up (PUTSHKOV 1988). These characters are quite different in the specimen in hand: the prolongation of the last tergite is nearly horizontal, their sides only slightly folding up, therefore this prolongation seems far wider, U-shaped in dorsal aspect.



**Figs 14–16.** *Gardena insperata* P.V. PUTSHKOV, 1988, phallus. 14 = ventral aspect; 15 = lateral aspect; 16 = same, dorsal aspect. Scale: 0.5 mm

It seems quite likely that these differences may be explained by different post-mortem changes of shape. The genital capsule and the parameres of the specimen examined are in full accordance with the original description of *G. insperata*.

Judging by its external characters, the species seems to be very closely related to *G. muscicapa*. However, the phallus of the specimen examined (Figs 14–16) is sharply different from that of the latter species (as figured by WYGODZINSKY 1966: 256, Figs 74M, N, P) and shows relation to the *melinarthrum* group (see WYGODZINSKY 1966): dorsal side of phallosoma with extensive sclerotised area; ventral sclerites basally strongly widening, triangular; basal plate elongated, conspicuously broken at base of fused parts of dorsal connectives, its apical and basal parts enclose a sharp angle, its apical part projecting backward.

\*

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