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FIRST DESCRIPTION OF THE FEMALE OF *MYRMICA RITAE* (HYMENOPTERA, FORMICIDAE), WITH SOME NOTES ON THE *RITAE* GROUP

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First Description of the Female of *Myrmica ritae* (Hymenoptera, Formicidae), with Some Notes on the *ritae* Group. Radchenko A. G., Elmes G. W. — The first known female of *Myrmica ritae* Emery is described and compared with the other known females of the *ritae* complex (*M. serica* Wheeler, *M. indica* Weber and *M. gigantea* (Collingwood). It differs from all three species bystraight (not sinuous) longitudinal rugae on the head dorsum, a shorter head and by relatively longer propodeal spines. *M. rigatoi* Radchenko et Elmes is proposed to be excluded from *ritae* group. Some new localities are added to the distribution of *M. gigantea* and *M. urbanii* Radchenko et Elmes.

Key words: Formicidae, ants, taxonomy, *Myrmica ritae*.

Первое описание самки *Myrmica ritae* (Hymenoptera, Formicidae) с замечаниями по группе *ritae*. Радченко А. Г., Элмс Г. В. — Впервые описана самка *Myrmica ritae* Emery и проведено ее сравнение с другими известными самками видов из комплекса *ritae* (*M. serica* Wheeler, *M. indica* Weber и *M. gigantea* (Collingwood). Она отличается от самок выше указанных видов прямыми, не волнистыми продольными морщинками на голове, более короткой головой и сравнительно более длинными шипами проподеума. Предложено исключить *M. rigatoi* Radchenko et Elmes из состава группы *ritae*. Приведены некоторые дополнительные данные по распространению *M. gigantea* и *M. urbanii* Radchenko et Elmes.

Ключевые слова: Formicidae, муравьи, таксономия, *Myrmica ritae*.

Introduction

In the earlier paper we made a taxonomic revision of the *ritae* group of species belonging to the genus *Myrmica* (Radchenko, Elmes, 1998). We proposed separate the *ritae*-group into two complexes: the *ritae* complex and *boltoni* complex. The *boltoni* complex comprises three species that differ separated from the *ritae* complex by much more finely striated or rugulose heads with punctures on the surfaces between the rugae. The *ritae* group comprised the six species described before 1998 and two species, described in 1998 — *Myrmica urbanii* Radchenko et Elmes and *M. rigatoi* Radchenko et Elmes. However, we now believe that *M rigatoi*was erroneously included into *ritae* group because it shares many characters witha group of species close to on *Myrmica inezae* Forel. We now propose exclude *M. rigatoi* from the *ritae* group; this will be discussed in the forcomingrevision of the Himalayan *Myrmica*.

Myrmica ritae Emery was described in 1889. Four workers from Emery's original series deposited in several museums, but no other specimens were known to exist. In our revision (Radchenko, Elmes, 1998) we also examined 3 specimens from the collection of Andreas Schulz. Since then we have discovered a further worker in the collection of the Natural History Museum (London), and A. Schulz has found some other workers and a female from the same series in his collection. Females of *M. ritae* were not known previously, therefore we describe this specimen below. All measurements and indices are as described by Radchenko and Elmes (1998).

Myrmica ritae Emery, 1889 (Fig. 1, *1–5*)

Material. 1 female (dealate): "Nordtailand, Prov. Chiang Mai, Doi Inthanon, N. P. Hipfel Region, 1800–2000 mH, 1.11.1995, leg. Schulz & Vock", depositedin Schulz collection (Germany, Lechlingen).

Female (dealate). Head subrectangular, with somewhat convex sides, straight occipital margin and narrowly rounded occipital corners; its upper latero-ventral corners

distinctly pointed, dentiform (seen in profile). Anterior clypeal margin straight, but shallowly notched medially. Frons wide; frontal carinae very feebly curved, but not curved outwards; antenal socketsnot surrounded by rugae. Eyes oval and convex, situated distinctly anterior tomid point of head sides. Antennal scapes very long, distinctly longer than head, and gradually and weakly curved at their bases; funicular joints distinctly longer than broad; apical club 4-jointed.

Alitrunk relatively long and narrow; metapleural lobes form sharp tooth apically. Propodeal spines long, projecting backwards and curving downwards, and more or less parallel (seen from above). Petiole long, low and narrow, but relatively lessthan in workers; its anterior peduncle long, with slightly concave anterior surface, node long and convex dorsally (seen in profile). Postpetiole high, short and narrowwith more or less straight anterior surface and convex posterior surface, in profile forming flattened arch with its apex distinctly posterior to the mid point.

Generally specimen coarsly rugose with the surfaces between the rugae smooth and shiny. Rugae ofhead dorsum very coarse with only four on central frons; all rugae on head dorsum straight (not sinuous). Clypeus coarsely rugose; mandibles coarsely

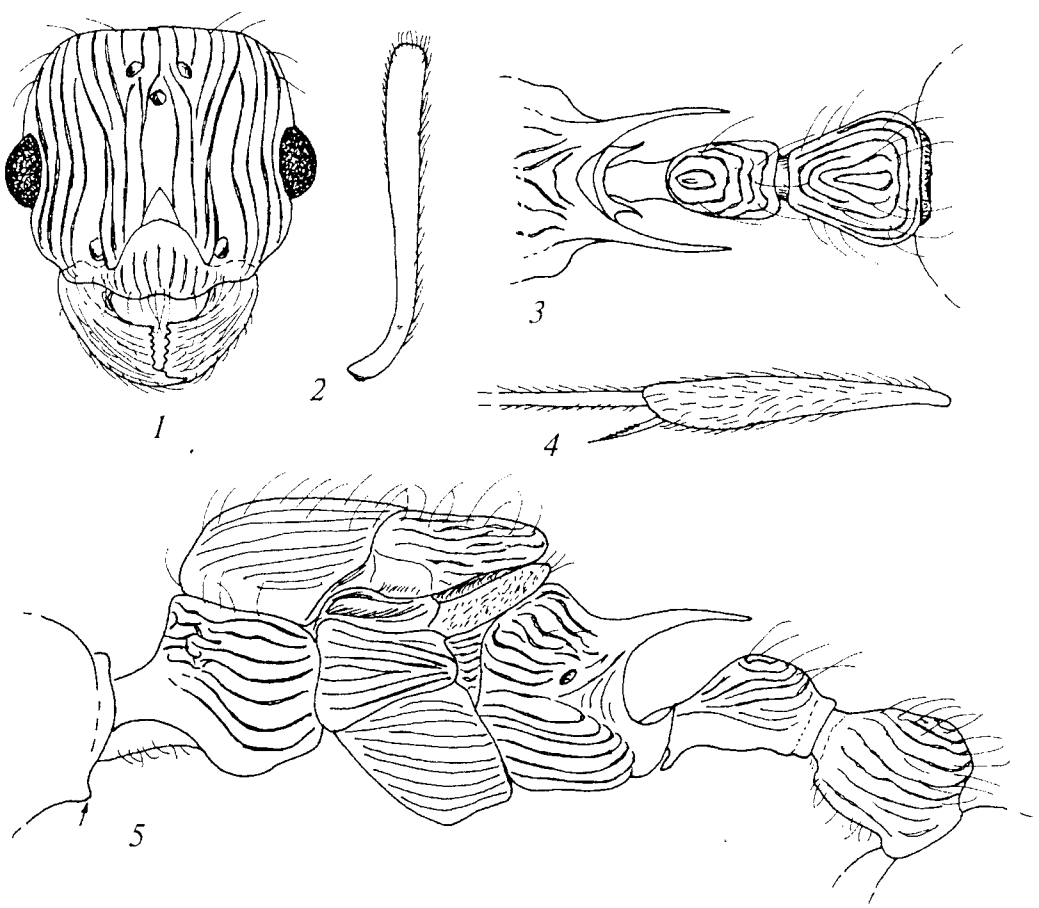

Fig. 1. Details of structure of female *Myrmica ritae: 1* — head, frontal view; *2* — antennal scape; *3* — propodeal spines and waist from above; *4* — hind tibia; *5* — alitrunk and waist in profile.

Рис. 1. Детали строения тела самки *Myrmica ritae: 1* — голова спереди; *2* — скапус антенн; *3* — шипы проподеума и стебелек сверху; *4* — задняя голень; *5* — грудь и стебелек в профиль.

Table 1. Indices (after Elmes, Radchenko, 1998) of the *M. ritae* queen compared with those of the other known queens from the *ritae* complex

Таблица 1. Индексы (по Elmes, Radchenko, 1998) самки *M. ritae* в сравнении с другими известными самками видов из комплекса *ritae*

Species	CI	FI	FLI	SI1	SI2	PI1	PI2	PPI1	PPI2	PPI3	ESLI	ESDI	AI	HTI	SCI
M. gigantea	1.12	0.41	1.13	0.90	1.01	1.82	0.62	1.14	1.00	1.25	0.31	1.37	5.93	1.02	1.61
M. serica	1.17	0.39	1.06	1.01	1.18	1.84	0.70	0.93	1.01	1.62	0.59	0.97	6.09	1.09	1.50
M. indica	1.15	0.44	1.04	1.10	1.27	1.56	0.66	0.86	1.03	1.59	0.45	1.13	6.46	0.99	1.47
M. ritae	1.05	0.36	1.14	1.23	1.29	1.89	0.73	0.97	1.04	1.61	0.64	0.88	6.47	1.20	1.45

striato—rugulose; frontal area smooth and shiny. Scutum with very coarse more or less straight, longitudinal rugae, those of scutellum slightly sinuous, those of pronotum sinuous. Rugae on sides of mesonotum and propodeum straight and those of propodeal dorsum short and sinuous. Petiole and postpetiole with coarse sinuouse rugae. Gaster smooth and shiny. Occipital margin of head, ocipital corners and cheeks with long outstanding hairs. Those of the alitrunk and waist similar but sparser. Tibiae and scapes with numerous subdecumbent hairs. Gaster with very sparse, short, decumbent pilosity. Head and appendages lighter in colour than body, but not so distinctly bicoloured as in workers. Head and antennae yellowish-red; alitrunk and waist dark reddish brown (alitrunk with yellowish spots on mesopleura); gaster reddish brown; legs ochreous.

Measurements (in mm): HW=1.23, HL=1.26, FW=0.43, FLW=0.49, SL=1.55, HTL=1.44, AL=2.46, SCW=1.16, SCL=1.68, AH=1.44, PL=0.87, PPL=0.62, PW=0.38, PPW=0.61, PH=0.46, PPH=0.64, ESL=0.77, ESD=0.68. Indices are in table 1.

Notes. The female of *M. ritae* differs from all known females from the *ritae* complex (*M. serica* Wheeler, *M. indica* Weber and *M. gigantea* (Collingwood) by having straight, not sinuous longitudinal rugae on its head dorsum. When comparingthe above morphometrics with those ofthe other species, provided by Radchenko, Elmes (1998, table 1 *ibid*) the *M. ritae* queen appears about of the same size as *M. indica* (HW=1.19 mm), slightly smaller than *M. serica* (HW=1.32 mm), but distinctly smaller than *M. gigantea* (HW=1.94 mm). Comparison of indices given in table 1, shows that the head of *M. ritae* is distinctly more square than in the other three species (CI=1.05 v =1.15) and this species has the scapemuch longer in relation to the length of its head. Also, its propodeal spines are relatively much longer than those of the other species.

Additional Notes on the *ritae* group

A. Schultz found *M. ritae* living in a piece wood (15 cm diameter) on the ground in dense old oak forest. The forest was at an altitude of 1950 m, it was cool (annual mean temperature <15°C) and quite humid with very few epiphites, but with abundant moss. This fits the idea that *ritae* group are mainly forest ants which probably forage in low shrubs, perhaps even in the foliage of trees. Other genera collected in this area included *Tetramorium* Mayr, *Crematogaster* Lund and *Pachycondyla* F. Smith.

We found a specimen of *M. ritae* in the Natural History Museum (London) collection among the species collected at virtually same place as Schulz material. It is a worker, labelled: "N. Thailand, 16.vi.1981, W. L. Brown & I. Burikar, Doi Indhanont, 1780 m, mountain humid forest, rotten wood".

We have found the third known specimen of *M. gigantea* in the collection of Naturhistoriska Riksmuseet, Stockholm: worker, NE Burma, Kambaiti, 15.04.1934, leg. R. Malaise. We give measurements below (in mm), because this is the second known worker: HW=1.62, HL=1.90, FW=0.62, FLW=0.70, SL=1.68, HTL=1.72, AL=2.60, PL=0.82, PPL=0.56, PW=0.36, PPW=0.52, PH=0.50, PPH=0.56, ESL=0.56, ESD=0.58.

We also have found a worker of *M. urbanii* in the Stockholm collection. Collection details are given because itrepresents a new geographic area: NE Burma, Kambaiti, 7000 ft., 3.04.1934 leg. R. Malaise. This specimen was rather atypical to those described by Radchernko, Elmes (1998), being lighter in colour and having a much larger area of the head covered with reticulate scultpture, only the frons and head sides had longditudial rugae. However, we considered that these differences probably fall within the range of variation of *M. urbanii*.

Acknowledgement

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Radchenko A. G., Elmes G. W. Taxonomic revision of the ritae species-group of the genus Myrmica (Hymenoptera, Formicidae) // Vestn. zoologii. – 1998. – **32**, № 4. – С. 3–27.