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Myrmica georgica n. sp., a New Ant from Transcaucasia and North Kazakhstan (U.S.S.R.)

(Hymenoptera, Formicidae, Myrmicinae)

With 10 Figures and 1 Table

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Abstract. A new ant of the genus *Myrmica* is described which is distributed in lowland steppes of Georgia and Kazakhstan. The most similar taxon is *Myrmica specioides* BONDROIT, 1918 subsp. *ahngeri* KARAWAJEW, 1926. Although giving the new ant *Myrmica georgica* n. sp. a species rank, the author can not perfectly exclude that it might be a morphologically extreme Asiatic subspecies of *specioides*.

Collecting ants in a steppe slope in the surrounding of Tiflis/Georgian S.S.R. in July/August 1985, I found a hitherto unknown *Myrmica* which was one of the dominant species at this site. Additionally I got one specimen of this characteristic ant from B. WESENIGK collected in a steppe habitat 20 km northwest from the first locality and, revising the *Myrmica* collection of the Zoological Museum of the Moscow State University, I discovered a series of this new ant from Northern Kazakhstan consisting of three workers and two males which were erroneously identified by K. V ARNOLDI as *Myrmica slovaca* SADIL.

The type material

Workers
Holotype 21.7 1985, leg. SEIFERT, east of Tiflis/Georgia; 44°51'E, 41°43'N; preserved in Staatliches Museum für Naturkunde Görlitz (SMNG).
Paratypes altogether 96 specimens; 57 specimens from the same nest as holotype and 36 specimens from the same site and date as holotype, but from several other nests, all leg. SEIFERT and preserved in SMNG; 3 specimens from Northern Kazakhstan, Kokčetavskaja Oblast', Ščučinsk, 18. 8. 1966, leg. MALOZEMOVA, approximately 69°45'E and 53°5'N, preserved in the Zoological Museum of the Moscow State University (ZMMSU); 1 specimen from Mzcheta/Georgia, 44°43'E, 41°52'N, 29. 7 1984, leg. WESENIGK, preserved in SMNG.

Males
Paratypes two specimens from Northern Kazakhstan, Ščučinsk, 18. 8. 1966, leg. MALOZEMOVA, carrying same collection number (No. 40) as the three paratype workers and thus possibly originating from same nest, preserved in ZMMSU.

Differential diagnosis and discussion of taxonomic position

The new species could be possibly confused with *slovaca* SADIL, 1951, *sabuleti* MEINERT, 1861, or members of the *Myrmica specioides/sancta* group such as *caucasica* ARNOLDI, 1934, *tsuliensis* ARNOLDI, 1976, and *ahngeri* KARAWAJEW, 1926. In the worker caste, *georgica* differs from *caucasica* and *tsuliensis* in having a much larger frontal lobe index (= FL/FR, see description), larger frontal index (= HW/FR, see description), and much larger lobe on scape base. *M. georgica* is a species of lowland steppes, while *caucasica* and *tsuliensis* are mountain dwellers occurring in the Caucasus and Kopet Dagh at elevations from 1100 to 2000 m. *M. georgica* differs from *slovaca* for instance in having

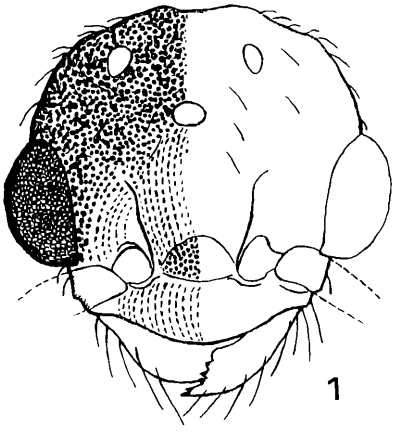
very much smaller frontal lobe and frontal idices, relatively longer head, more pronounced sculpture on clypeus, and less dense and less linear sculpture on front of head. Most obvious differences of the new species in respect to *sabuleti* are the much shorter and thicker scape in the male, and, in the workers, the much weaker sculpture, much shorter spines on propodeum, much narrower petiole, and relatively longer head.

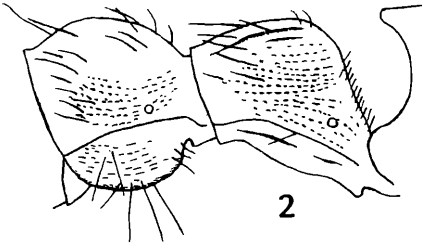
While the different identity of *georgica* is no matter of question in respect to *caucasica, tsuliensis, slovaca,* and *sabuleti,* this is not the case regarding *M. specioides* subsp. *ahngeri* KARAWAJEW The differences to *ahngeri* which is distributed in steppes of the Southern Ukraine and of the Western Black Sea coast (Dobrudsha) are clear at least in the frontal lobe index (*georgica*: 1.533 $\pm$ 0.0417, smallest 1.460, n = 20; *ahngeri*: 1.401 $\pm$ 0.0156, largest 1.420, n = 8) and in the size of scape lobe, but these characters are correlated and otherwise *georgica* and *ahngeri* are morphologically similar. This proves true in the few males compared and because *georgica* apparently occupies a similar ecologic position as *ahngeri* and because sympatry is still unknown, *georgica* could possibly be an extreme Asiatic subspecies of *specioides* BONDROIT which is so far known from Europe only. In fact, we observe within the species *specioides* a geographic trend to enlarge the frontal lobe index from the GDR (1.280) through Czechoslovakia (1.318) to South-East Europe (1.401); all these means are significantly different for error probabilities of less than 0.01. Thus *georgica* (1.533) could be the Asiatic continuation of this trend. However, I have not seen in the ZMSSU collection intermediate examples as we might expect to occur in the steppes on both sides of the lower Wolga and Ural River if the subspecies theory would be true. So I tentatively give the new ant a species rank (a comprehensive revision of the European and Transcaucasian members of this genus containing a large body of statistical data is in preparation).

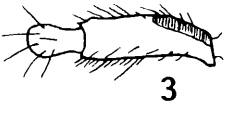
Description

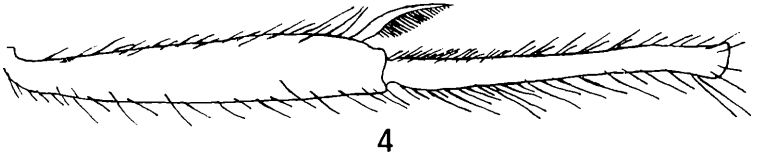
M a l e Figures 1, 2, 3, 4, and 5. Dorsal parts of head and frontal triangle finely punctured; at magnifications of 200x these punctures appear as fine meshes of 12–14 micron diameter. Between the frontal carinae and on clypeus as well the punctures are aligned longitudinally, giving the impression of very fine interrupted striae at lower magnifications. Occipital corners with subdecumbent hairs of 95 micron maximum length. Mesonotum in front of the notauli smooth and shining, behind the notauli with fine longitudinal striae. Lateral areas of scutellum with more pronounced longitudinal rugosity Dorsal parts of petiole node almost smooth and moderately shining, at higher magnifications very fine reticular structures may be seen. Dorsal part of postpetiole shining. Lateral parts of petiole and postpetiole with very weak and fine longitudinal striae which may be more pronounced on dorsolateral petiole node. Flexor parts of all femora with long semierect hairs. Funiculus segments 1 to 7 with standing hairs 1.5 as long as width of each segment. Scape nearly straight, with only very weak curvature at base. Head, alitrunk, petiole, postpetiole, and gaster brown; all appendages pale yellowish brown; mandibles yellow.

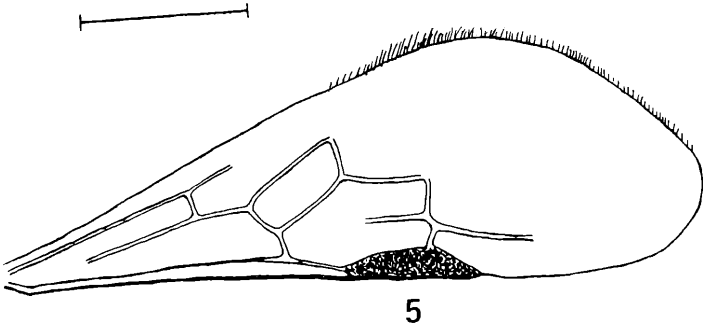
Measurements of the two paratype specimens in micron: head length 801 and 826; head width including eyes 900 and 943; head width before the eyes 614, 619; scape length 343, 351; maximum scape width 115, 110; maximum distance from frontal edge of mesonotum to hind edge of propodeal lobes in lateral view 1838, 1903; length of second funiculus segment 134, 129; ratio of length to width of second funiculus segment 1.91, 1.84; petiole width 296, 288; postpetiole width 488 (deformed), 444; length of longest hair on second funiculus segment 89, 100; length of longest hair on hind metatarsus except the most apical hairs 120, 130; scape length/head length 0.428, 0.424; scape length/maximum scape width 2.99/3.19.





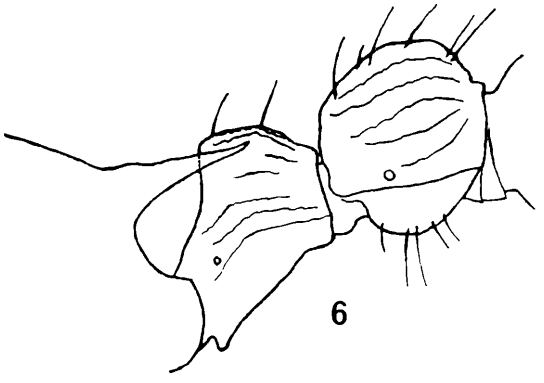


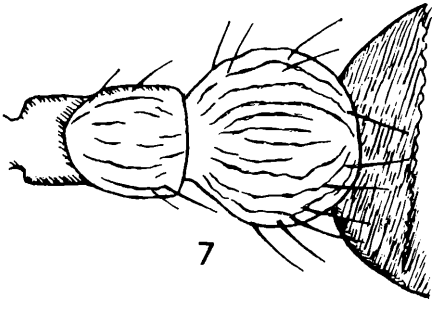


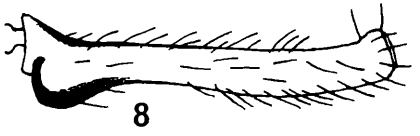


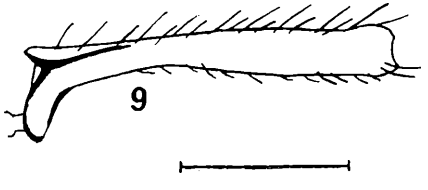
Figs. 1–5. Male of *Myrmica georgica* n. sp. 1 – head in dorsal view; 2 – petiole and postpetiole in lateral view; 3 – scape and pedicellus in posterior view, i. e. the axis of the hinge joint between pedicellus and scape is parallel to plane of paper; 4 – hind tibia and metatarsus; 5 – fore wing. The scale bar equals 416 micron for Figs. 1–4 and 1.05 mm for Fig. 5.

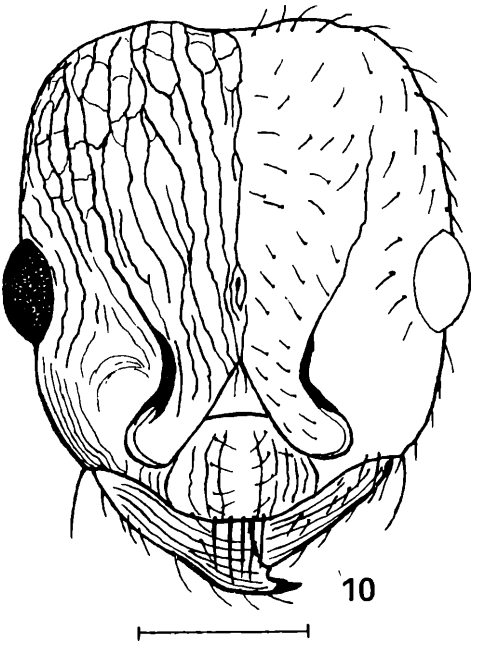
Worker Figures 6, 7, 8, 9, and 10. Sculpture on head, alitrunk, petiole, and postpetiole not very deep; much less pronounced than in *sabuleti* and comparable to sculpture in *caucasica* or *specioides*. Sculpture on head behind the eyes and on occipital corners more reticular, on all other body parts longitudinal rugosity. Scape with broad lobe at base which shape and position is as in *sabuleti* or *slovaca*. Long erect hairs on gaster, petiole, postpetiole, dorsal parts of alitrunk, and ventral and dorsal parts of head. Petiole in dorsal aspect with slightly convex, rarely straight sides. Petiole shape in lateral view as in *caucasica* or Central European *specioides*, with no sharp angles, frontal surface concave, dorsal surface convex sloping posteriorly without a distinct step to its junction with the postpetiole. Propodeal spines as long as distance between their tips. Mesopropodeal furrow distinct. Colour on all body parts uniformly reddish brown.











Figs. 6–10. Worker of *Myrmica georgica* n. sp. 6 – petiole and postpetiole in lateral view; 7 – petiole and postpetiole in dorsal view 8 – scape in dorsal view, axis of hinge joint between pedicellus and scape perpendicular to plane of paper; 9 – scape in posterior view, axis of hinge joint parallel to plane of paper; 10 – head of holotype in dorsal view, sculpture on right side and pilosity on left side of head capsule omitted. The scale bar equals 416 micron.

	holotype	holotype and 19 paratypes		
		mean	stand.dev.	range
HL	1231	1163.2	76.4	[913,1236]
HW	1158	1102.4	77.6	[853,1204]
SL	1003	938.8	66.8	[743,1003]
PE	279	273.7	23.7	[208,316]
PP	467	447.2	35.7	[328,498]
SP	406	375.8	48.5	[235,451]
HW/FR	3.12	3.073	0.113	[2.86,3.25]
FL/FR	1.478	1.533	0.0417	[1.460,1.600]
PE/HW	0.241	0.248	0.0098	[0.230,0.263]
SL/HL	0.815	0.807	0.144	[0.778,0.835]
SP/HL	0.330	0.322	0.025	[0.257,0.369]
HL/HW	1.063	1.056	0.0222	[1.018,1.107]

Table 1. Measurements and idices of 20 workers (holotype and 15 paratypes from several nests from Tiflis, and the specimens from Mzcheta and Kazakhstan). Abbreviations mean: HL – maximum length of head from occipital border to frontal edge of clypeus in median line, HW – head width including eyes, FR – minimum distance between frontal carinae, FL – maximum distance of frontal lobes, SL – scape length, PE – petiole width, PP – postpetiole width, SP – propodeal spine length in dorsal view with maximum length in the measuring plane.

Ecology

The new species seems to be an essentially lowland species. The type localities have elevations of 620 m (Mzcheta), 500 m (Tiflis), and less than 350 m (Kazakhstan). The very dense population at Tiflis was found on a 20° north-exposed steppe slope with a dense field layer of *Salvia* and *Eryngium* species containing phytoassociations. This suggests that *Myrmica georgica* will avoid at lower geographical latitudes the most xerothermous and oligotrophic places. The most abundant ant species at the site near Tiflis was *Lasius alienus* (FÖRSTER) and *M. georgica* was the subdominant ant.

Acknowledgements

I wish to express my grateful thanks to Genady M. DLUSSKY of the Zoological Museum of Moscow State University for giving the opportunity to study the Moscow *Myrmica* collection and for the generous loan of type specimens of many of the *Myrmica* species described from the territory of the U.S.S.R.

References

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