

A provisional list of the Balkan ants (Hym., Formicidae) and a key to the worker caste. I. Synonymic List.

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319 ant species or taxa of incertae sedis of 48 genera of 7 subfamilies of the Balkans i.e. Albania (29 species or taxa of incertae sedis), Bulgaria (116), Greece north of the Gulf of Korinthos (174), the European part of Turkey (90) and Yugoslavia (171) are included in the synonymic list (Part I.). 19 taxa have been given new specific status, 12 taxa have been synonymised and 16 taxa have infrasubspecific or preoccupied names or a nomen nudum and are therefore not available. *Monomorium phoenicum*, *Tetramorium diomedaeum*, *T. hippocratis*, *T. sahlbergi* and *Acantholepis karawajewi*, formerly nomen not available, are redescribed as bonae sp. Data on the distribution of every species are added. The list is based on published records, new records, and taxa expected to be present. A key to the species will be provided in a second part (*Mitt. Schweiz. Ent. Ges.* 60 [3–4]).

#### INTRODUCTION

Material has been collected during the three years (1983–85) towards a fauna of the Balkans. To encourage further collection and facilitate recording, the following synonymic list (Part I.) and keys to the worker caste have been prepared. (Part II, will be published in the next issue). Both list and keys are of a provisional nature as some of the earlier records are doubtful and in many cases correct synonymy has not been established and must await further revisionary studies. All the infrasubspecific names have been suppressed and following BOLTON (pers. com.) and WILSON & BROWN (1953) only specific names are used. Subspecific taxa have been synonymized by the means of additional intergrading samples or given specific status. Only keys to the worker caste are possible at this time, since males and females are still unknown for many of the species groups apart from *Myrmica*, *Lasius* and *Formica*. Both list and keys include species known to occur on the Balkans, i.e. Albania (29 species or taxa of incertae sedis), Bulgaria (113), Greece, north of the Gulf of Korinthos, including the northern Aegean islands (161), the European part of Turkey (89), Bulgaria (113), Yugoslavia (171), or expected to occur there (records from western Anatolia, the southern Aegean islands and the Peloponnesos). Out of a total of 319 taxa listed here, a few have been omitted from the keys where specimens have not been available for examination and original descriptions have been inadequate to distinguish them clearly. It is hoped that collectors will point out defects in the keys and provide additional records so that a fuller and more accurate text can be prepared in due course.

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## MATERIAL

The main data source of recent records on balkanese ants has been our own collection. Few but nevertheless important contributions have been made by the following institutions: Muséum d'Histoire Naturelle, Geneva, Switzerland (*Proceratium melinum*, *P. algircum*, *Amplyopone denticulatum*, *Smithistruma baudueri* and *Oligomyrmex* sp.), British Museum, Nat. Hist. London, UK (*Proceratium numidicum*), Coll. BUSCHINGER, TH Darmstadt, Darmstadt, FRG (*Amplyopone denticulatum*, *Leptothorax lichtensteini*, *L. carinthiacus*, *Epimyrma corsica*, *E. kraussei*, *E. ravouxi*, *Chalepoxenus muellerianus*, *Myrmoxenus gordiagini*, *Plagiolepis* sp.), Muséum Zoologique, Lausanne, Switzerland (*Bothriomyrmex gibbus* and *B. meridionalis*) and Museum of Comparative Zoolgy, Cambridge, USA (*Proceratium numidicum*).

## ABBREVIATIONS

A = Albania;

B = Bulgaria;

E = Expected for the Balcan peninsula;

G = Greece (North of the Gulf of Korinthos inclusive the northern Aegean and the Ionian islands);

T = Turkey (European part);

Y = Yugoslavia;

1 = MUELLER 1923 a, 1923 b;

2 = LEGAKIS 1983;

3 = Compilation of the Greek ants by the means of the up to now published references (A. LEGAKIS, unpubl.)

4 = Recent collections by the authors or by the above mentioned colleagues;

5 = ATANASOV 1952, 1964, FOREL 1892;

6 = BARONI URBANI 1977, BROWN 1958, FINZI 1923;

## LIST OF SPECIES

### Leptanillinae

*Leptanilla* sp. E

### Dorylinae

*Dorylus fulvus* (WESTWOOD) 1840 Y 1  
*Aenictus rhodiensis* MENOZZI 1936 E 3

### Ponerinae

#### Ponerini

	B	G	T	Y	1	2	3	4	5
<i>Ponera coarctata</i> (LATREILLE) 1802									
<i>Hypoponera eduardi</i> (FOREL) 1894	B	G	T	Y	1		3		
<i>H. punctatissima</i> (ROGER) 1859				G			3	4	
<i>Cryptopone ochraceum</i> (MAYR) 1855				G	Y	1		3	

### Amblyoponini

- Amblyopone denticulatum* (ROGER) 1859  
*A. impressifrons* (EMERY) 1869

	A	B	G	T	Y		3	4	5	6
			G			1	3			

### Ectatommini

- Proceratium algiricum* FOREL 1899  
*P. melinum* (ROGER) 1860  
*P. numidicum* SANTSCHI 1912

		G	Y	1	3					
	A	G				3	4	6		
		A	B				4	6		

### Myrmicinae

#### Dacetini

- Smithistruma baudueri* (EMERY) 1875  
*Trichoscapa membranifera* EMERY 1869  
*Epitritus argiolus* EMERY 1869

	G	Y	1	4	
	G			4	
	G	Y	1	3	

#### Myrmicini

- Manica rubida* (LATREILLE) 1802  
*Myrmica deplanata* EMERY 1921  
*M. gallienii* BONDROIT 1919  
*M. lobicornis* NYLANDER 1846  
*M. ravasinii* FINZI 1923  
*M. rubra* (L.) 1758  
*M. ruginodis* NYLANDER 1846  
*M. rugulosa* NYLANDER 1849  
*M. sabuleti* MEINERT 1861  
*M. scabrinodis* NYLANDER 1846  
*M. schencki* EMERY 1895  
*M. slovaca* SADIL 1952  
*M. specioides* BONDROIT 1918  
*M. sulcinodis* NYLANDER 1846  
*M. vandeli* BONDROIT 1919  
*Sifolinia karavajevi* (ARNOLDI) 1930

	B	G	T	Y	1	3	4	5		
			T			4				
	B		T	Y		4				
	B	G	T	Y		4	5			
A		T	Y		1	4		6		
	B	G	T	Y	1	4	5			
A	B	G	T	Y	1	2	3	4	5	6
	B	G	T	Y		3	4	5		
A	B	G	T	Y	1	2	3	4		6
	B	G	T	Y	1	3	4	5		
B		T	Y		1	4	5			
A	B	G	T	Y	1	3	4	5	6	
		T	Y			4				
	G					4				

#### Pheidolini

- Stenamma striatum* EMERY 1895  
*St. westwoodi* WESTWOOD 1840  
*Aphaenogaster balcanica* (EMERY) 1898 n. stat.  
*(A. testaceopilosa var. balcanica)*  
*A. cecconii* EMERY 1894  
*A. epirotes* EMERY 1895  
*A. festae* EMERY 1915 n. stat. (*A. testaceopilosa*  
*ssp. festae*)  
*A. finzii* MUELLER 1913  
*A. gibbosa* (LATREILLE) 1798  
*A. holtzi* EMERY 1898  
*A. ionia* B. URBANI 1968  
*A. lesbica* FOREL 1913 n. stat. (*A. pallida* var.  
*lesbica*)

			Y	1						
	B	G	T	Y		3		5		
		G			1	2	3			
			E		4	3				
		G				3				
			E		3	4				
				Y	1					
	B	G				3	5			
			E							
		G				3	4			
			G				3			
			G	Y		3				

\*n. stat. ? *A. pallida* Finzi MUELLER 1913

<i>A. muelleriana</i> WOLF 1914	A	Y	1		6					
<i>A. obsidiana</i> (MAYR) 1861	G	Y	1	3	4					
<i>A. ovaticeps</i> (EMERY) 1898	G			2	3					
<i>A. sangiorgii</i> (EMERY) 1901	G				3					
<i>A. simonellii</i> (EMERY) 1894	G	T	Y		3					
<i>A. splendida</i> (ROGER) 1859	G	Y	1	3	4					
<i>A. sp. 1</i>		Y			4					
<i>A. subterranea</i> (LATREILLE) 1798	A	B	G	T	Y	2	3	4	5	6
<i>A. subterraneoides</i> (EMERY) 1881	G	Y	1	3	4					
<i>Messor aralocaspicus</i> (ARNOLDI) 1902				E						
<i>M. bouvieri</i> BONDROIT 1918	G				4					
<i>M. caducus</i> (MOT Schulsky) 1839	G	T			3	4				
<i>M. capitatus</i> (LATREILLE) 1798			Y		4					
<i>M. concolor</i> THOME 1981	B	G	T	Y	3	4				
<i>M. dentatus</i> THOME 1981				E						
<i>M. denticulatus</i> K. UGAMSKI 1927	G		E							
<i>M. ebeninus</i> SANTSCHI 1927			T		4					
<i>M. hellenius</i> SANTSCHI 1926 n. stat. <i>M. barbarus</i> var. <i>hellenius</i> )	G			3						
<i>M. meridionalis</i> (ANDRE) 1882	A	G	Y	1	3	4	6			
<i>M. muticus</i> NYLANDER 1849	B	G	T	Y	3	4				
<i>M. oertzeni</i> FOREL 1910 (= <i>M. oertzeni</i> var. <i>amphigaea</i> FOREL 1911) syn. nov.	B	G	T		3	4	5			
<i>M. orientalis</i> (EMERY) 1898			G	T	3	4				
<i>M. structor</i> (LATREILLE) 1798 (= <i>M. rufitarsis</i> F.) 1804 syn. nov.	A	B	G	Y	1	3	4	5	6	
<i>M. sultanus</i> SANTSCHI 1917			G	T		4				
<i>Pheidole megacephala</i> (F.) 1793				E		4				
<i>Ph. pallidula</i> (NYLANDER) 1849	A	B	G	T	1	2	3	4	5	6
<i>Ph. teneriffana</i> FOREL 1893				E		4				
<i>Oxyopomyrmex krueperi</i> FOREL 1911			G			3				
 Myrmecinini										
<i>Myrmecina graminicola</i> (LATREILLE) 1802 (= <i>M. graminicola</i> var. <i>grouvellei</i> BONDROIT 1918) syn. nov.			B	G	T	Y	1	3	4	
 Crematogastrini										
<i>Crematogaster ionia</i> EMERY 1870 n. stat. ( <i>C. scutellaris</i> var. <i>ionia</i> )			G	Y		2	3	4		
<i>C. jehovae</i> FOREL 1907				E						
<i>C. laestrygon</i> EMERY 1869				E						
<i>C. lorteti</i> FOREL 1910				Y		4				
<i>C. schmidti</i> (MAYR) 1852			B	G	T	Y	1	3	4	5
<i>C. scutellaris</i> (OLIVIER) 1791			B	G	Y	1	3	4	5	
<i>C. sordidula</i> (NYLANDER) 1849 (= <i>C. sordidula</i> var. <i>flachi</i> FOREL 1895) syn. nov. (= <i>C. mayri</i> MAYR 1853) syn. nov.	A	B	G	T	Y	1	3	4	5	6

## Solenopsidini

*Monomorium baal* WHEELER & MANN 1916 n.

n. stat. (*M. dentigerum* var. *baal*)

<i>M. bicolor</i> EMERY 1877		E			
<i>M. creticum</i> EMERY 1895	G		3	4	
<i>M. dentigerum</i> (ROGER) 1862	G T		3	4	
<i>M. monomorium</i> BOLTON 1987 (= <i>M. minutum</i> MAYR 1855 nomen preoc.)	G Y	1	3	4	
<i>M. pharaonis</i> (L.) 1758	Y	1	3		
<i>M. phoenicum</i> bona sp. ( <i>M. salomonis</i> ssp. <i>subopacum</i> var. <i>phoenicia</i> EMERY 1908)	G		4		
name not avail.					
<i>M. subopacum</i> (SMITH) 1858	G Y		4		
<i>Solenopsis wolfi</i> EMERY 1915	Y	1			
<i>S. crivellarii</i> MENOZZI 1936	G		3		
<i>S. fugax</i> (LATREILLE) 1798	A B G T Y	1	3	4	5
<i>S. latro</i> FOREL 1894	G T Y		4		
<i>S. sp. 1</i>	G		2	4	

## Pheidologetini

<i>Oligomyrmex oertzeni</i> FOREL 1886 (? = <i>O. sp. 1</i> )	G	3	4	
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## Leptothoracini

<i>Formicoxenus nitidulus</i> (NYLANDER) 1846	G Y	1		
<i>Harpagoxenus sublaevis</i> (NYLANDER) 1849	Y		4	
<i>Leptothorax acervorum</i> (F.) 1793	B G T Y	1	4	5
<i>L. affinis</i> MAYR 1855	B G Y	1	3	4
<i>L. angustulus</i> (NYLANDER) 1856		E	1	
<i>L. bulgaricus</i> FOREL 1892	B T Y	1	4	5
<i>L. carinithiacus</i> BERNARD 1957	Y		4	
<i>L. clypeatus</i> (MAYR) 1853	B			5
<i>L. corticalis</i> (SCHENCK) 1852	B G T		3	4
<i>L. dessyi</i> MENOZZI 1936		E	3	
<i>L. exilis</i> EMERY 1869	G T	1	3	4
<i>L. flavigaster</i> EMERY 1870	Y	1		
<i>L. graecus</i> FOREL 1911 n. stat. ( <i>L. bulgaricus</i> ssp. <i>graecus</i> )	G Y	1	3	
<i>L. gredleri</i> MAYR 1855	G Y		4	
<i>L. interruptus</i> (SCHENCK) 1852	G Y	1	4	
<i>L. kraussei</i> BONDROIT 1918		E		
<i>L. lichtensteini</i> BONDROIT 1918		Y	1	4
<i>L. luteus</i> FOREL 1874		E		
<i>L. melanocephalus</i> EMERY 1870	B G		4	
<i>L. muscorum</i> (NYLANDER) 1846	B G T Y		4	
<i>L. nigriceps</i> MAYR 1855	B G T Y	1	4	
<i>L. nigritus</i> EMERY 1878	G		4	
<i>L. nylanderi</i> (FOERSTER) 1850	B G T Y	1	2	3

<i>L. parvulus</i> (SCHENCK) 1852	B	T	Y	1	3	4	5
<i>L. pelagosanus</i> MUELLER 1923			Y	1			
<i>L. racovitzai</i> BONDROIT 1918				E			
<i>L. recedens</i> (NYLANDER) 1856	B	G	T	Y	1		4
<i>L. rogeri</i> EMERY 1869	B	G		Y	1		5
<i>L. rottenbergii</i> (EMERY) 1870				Y	1		4
<i>L. semiruber</i> ANDRE 1881 (= <i>L. rottenbergi</i> var. <i>balcanicus</i> SANTSCHI 1909) syn. nov.	B	G	T	Y		4	5
<i>L. solerii</i> MENOZZI 1936					E	3	
<i>L. sordidulus</i> MUELLER 1923				T	Y		4
<i>L. tuberum</i> (F.) 1775	B	G	T	Y		3	4
<i>L. unifasciatus</i> (LATREILLE) 1798	B	G	T	Y	1	2	3
<i>Chalepoxenus muellerianus</i> FINZI 1921				Y	1		4
<i>Epimyrma corsica</i> (EMERY) 1895				Y			4
<i>E. kraussei</i> EMERY 1915				G	Y		4
<i>E. ravouxi</i> ANDRE 1896				G			4
<i>Cardiocondyla batesi</i> FOREL 1894				G			4
<i>C. bogdanovi</i> Ruzsky 1905					T		4
<i>C. bulgarica</i> FOREL 1892	B	G				4	5
<i>C. elegans</i> EMERY 1869				T	Y		4
<i>C. nigra</i> FOREL 1905	B	T					4
<i>C. sahlbergi</i> FOREL 1913					E		
<i>C. stambuloffii</i> FOREL 1892	B	T				4	5
<i>C. uljanini</i> EMERY 1889 n. stat. ( <i>C. elegans</i> var. <i>uljanini</i> )					E		

### Tetramoriini

<i>Anergates atratulus</i> (SCHENCK) 1852	G					4	
<i>Tetramorium caespitum</i> (L.) 1758	B	G	T	Y	1	2	3
<i>T. chefteki</i> FOREL 1911 n. stat. ( <i>T. caespitum</i> var. <i>chefteki</i> )	G	T					4
<i>T. davidi</i> FOREL 1913				G	T		4
<i>T. diomedaeum</i> bona sp. ( <i>T. caespitum</i> ssp. <i>ferox</i> var. <i>diomedaeum</i> EMERY 1908) name not avail.				G			4
<i>T. ferox</i> Ruzsky 1903	B	G	T	Y			3
<i>T. forte</i> FOREL 1904	B	T	Y			4	5
<i>T. hippocratis</i> bona sp. ( <i>T. caespitum</i> ssp. <i>semilaeve</i> var. <i>hippocratis</i> EMERY 1922) name not avail.			T				4
<i>T. impurum</i> FOERSTER 1850				T	Y		4
<i>T. lucidulum</i> EMERY 1909				T	Y		4
<i>T. meridionale</i> EMERY 1870	B						5
<i>T. moravicum</i> KRATOCHVIL 1944	B			Y			4
<i>T. punicum</i> (SMITH) 1861			G	T		3	4
<i>T. sahlbergi</i> bona sp. ( <i>T. caespitum</i> r. <i>punicum</i> var. <i>sahlbergi</i> FOREL 1913) name not avail.			G				4
<i>T. semilaeve</i> ANDRE 1883	B	G		Y	1	2	3
					4	5	

<i>T. sp. 1</i>							4
<i>Strongylognathus silvestrii</i> MENOZZI 1936				E		3	
<i>St. testaceus</i> (SCHENCK) 1852	B	G	Y			4	5

### Dolichoderinae

#### Dolichoderini

<i>Dolichoderus quadripunctatus</i> (L.) 1771	B	G	T	Y	1	2	3	4	5
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#### Tapinomini

<i>Liometopum microcephalum</i> (PANZER) 1798	B	G	Y	1	2	3	4	5	
<i>Bothriomyrmex adriacus</i> SANTSCHI 1922		G	Y			3	4		
(= <i>B. adriacus</i> ssp. <i>ionius</i> EMERY 1925) syn.									
nov.									
<i>B. gibbus</i> SOUDEK 1924 n. stat. ( <i>B. meridionalis</i> ssp. <i>gibbus</i> )			Y					4	
<i>B. meridionalis</i> (ROGER) 1863	B		Y	1				5	
<i>B. sp.</i>	B	G	Y			3	4		
<i>Tapinoma ambiguum</i> EMERY 1925			G	Y			4		
<i>T. erraticum</i> (LATREILLE) 1798	A	B	G	T	Y	1	2	3	5
<i>T. simrothi</i> KRAUSSE 1909				G				4	6

### Formicinae

#### Plagiolepidini

<i>Plagiolepis obscuriscapa</i> SANTSCHI 1923				E		4		
<i>P. pallescens</i> FOREL 1888		G	T			4		
<i>P. pygmaea</i> (LATREILLE) 1798	B	G	T	Y	1	2	4	5
<i>P. schmitzi</i> FOREL 1895				E				
<i>P. vindobonensis</i> LOMNICKI 1925	B	G	T	Y			4	5
<i>P. xene</i> STAERCKE 1936		G	Y				4	
<i>Acantholepis caucasica</i> SANTSCHI 1917 n. stat. ( <i>A. frauendorfii</i> var. <i>caucasica</i> )				E				
<i>A. frauendorfii</i> (MAYR) 1855	B	G	Y	1		4	5	
<i>A. karawajewi</i> bona sp. ( <i>A. frauendorfii</i> ssp. <i>melas</i> var. <i>karawajewi</i> SANTSCHI 1917) name not avail.			E			4		
<i>A. melas</i> EMERY 1915 n. stat. ( <i>A. frauendorfii</i> var. <i>melas</i> )	G		Y			4		
<i>A. nigra</i> EMERY 1893 n. stat. ( <i>A. frauendorfii</i> var. <i>nigra</i> )			Y	1				
<i>A. splendens</i> KARAWAIEV 1912	B	G				4		
<i>Acropyga palearctica</i> MENOZZI 1936 (? = <i>Plagiolepis</i> sp. BUSCHINGER et al. 1987)		G			3			
		G				4		

#### Lasiini

<i>Prenolepis nitens</i> (MAYR) 1852	B	G	T	Y	1	2	4	5
<i>Lasius affinis</i> (SCHENCK) 1852		G					4	

<i>L. alienus</i> (FOERSTER) 1850 (= <i>L. alienus</i> ssp. <i>lasiooides</i> EMERY 1869)	A	B	G	T	Y	1	3	4	6
<i>L. bicornis</i> (FOERSTER) 1850		B						5	
<i>L. brunneus</i> (LATREILLE) 1798		B	G	T	Y	1	3	4	5
<i>L. carniolicus</i> MAYR 1861				Y		1			
<i>L. distinguendus</i> (EMERY) 1916		B	G	T	Y	1		4	
<i>L. emarginatus</i> (OLIVIER) 1791	A	B	G	T	Y	1	2	4	5
<i>L. flavus</i> (F.) 1781	A	B	G	T	Y	1	2	3	5
<i>L. fuliginosus</i> (LATREILLE) 1798	A	B	G	T	Y	1		4	6
<i>L. jensi</i> SEIFERT 1982				Y				4	
<i>L. meridionalis</i> (BONDROIT) 1919		B	G	T	Y			4	
<i>L. mixtus</i> (NYLANDER) 1846			G	Y				4	
<i>L. myops</i> (FOREL) 1894		B	G	T	Y	1		4	5
<i>L. niger</i> (L.) 1758		B	G	T	Y	1	3	4	
<i>L. rabaudi</i> (BONDROIT) 1917	B		T	Y				4	
<i>L. reginae</i> FABER 1967				Y				4	
<i>L. umbratus</i> (NYLANDER) 1846 (= <i>L. umbratus</i> var. <i>nudus</i> BONDROIT 1917)	B		Y		1				5
<i>Paratrechina jaegerskjoeldii</i> (MAYR) 1901				E				3	

### Camponotini

<i>Camponotus aethiops</i> (LATREILLE) 1798 (= <i>C. aethiops</i> var. <i>concavus</i> FOREL 1888) syn. nov.	A	B	G	T	Y	1	2	3	4	5	6
(= <i>C. aethiops</i> var. <i>marginatus</i> (LATREILLE) 1798) syn. nov.			G	T						4	
(= <i>C. aethiops</i> var. <i>sylvaticoides</i> FOREL 1892) syn. nov.				E					4		
<i>C. atricolor</i> (NYLANDER) 1849	B		T						4	5	
<i>C. baldacii</i> EMERY 1894		B	G	T					4		
<i>C. cандиotes</i> EMERY 1894 n. stat. ( <i>C. lateralis</i> var. <i>cандиotes</i> )				E					4		
<i>C. ceconii</i> EMERY 1909 n. stat. ( <i>C. sylvaticus</i> ssp. <i>ceconii</i> )				E					4		
<i>C. dalmaticus</i> (NYLANDER) 1849	B	G		Y		1	3	4	5		
<i>C. fallax</i> (NYLANDER) 1856	B	G		Y		1	3	4	5		
<i>C. festai</i> EMERY 1894				E					4		
<i>C. gestroi</i> EMERY 1878 (= <i>C. gestroi</i> ssp. <i>creticus</i> FOREL 1886) syn. nov.	G		Y		1				4		
<i>C. herculeanus</i> (L.) 1758	B	G		Y		1			4	5	
<i>C. ionius</i> EMERY 1925 n. stat. ( <i>C. samius</i> var. <i>ionius</i> )	B	G					3	5			
<i>C. jaliensis</i> FOREL 1888 n. stat. ( <i>C. aethiops</i> var. <i>jaliensis</i> )		G							4		
<i>C. kiesenwetteri</i> (RÖGER) 1859		G							3	4	
<i>C. laconicus</i> EMERY 1925 n. stat. ( <i>C. samius</i> var. <i>laconicus</i> )		G							3		
<i>C. lateralis</i> (OLIVIER) 1791	A	B	G		Y	1	3	4	5	6	
<i>C. libanicus</i> ANDRE 1881				E					4		
<i>C. ligniperdus</i> (LATREILLE) 1802	A	B	G		Y	1	2	3	4	5	6

<i>C. oertzeni</i> FOREL 1888 n. stat. ( <i>C. aethiops</i> var. <i>oertzeni</i> )		Y	3
<i>C. piceus</i> (LEACH) 1825 (= <i>Formica foveolata</i> MAYR 1856)	B G T Y	1 2 3 4 5	
<i>C. samius</i> FOREL 1888 s. lat. (incl. <i>C. samius</i> var. <i>spagnolinii</i> EMERY 1905)	B		4
<i>C. sanctus</i> FOREL 1904	E		4
<i>C. tergestinus</i> MUELLER 1921	T Y	1	4
<i>C. truncatus</i> (SPINOLA) 1808	B G Y	1 3 4 5	
<i>C. turcestanus</i> ANDRE 1882	E		4
<i>C. universitatis</i> FOREL 1890	E		
<i>C. vagus</i> (SCOPOLI) 1763	A B G Y	1 2 3 4 5 6	
<i>C. vogti</i> FOREL 1906	E		4

### Formicini

<i>Cataglyphis aenescens</i> (NYLANDER) 1849 (= <i>Myrmeco cystus cursor</i> FONSCOLOMBE: FOREL 1892)	B		5
<i>C. hellenicus</i> FOREL 1886 n. stat. ( <i>C. cursor</i> var. <i>hellenicus</i> )	G Y	1 3 4	
<i>C. nodus</i> (BRULLE) 1832 (= <i>Myrmecocystus viaticus</i> var. <i>megalocolus</i> FOERSTER 1850) (= <i>C. bicolor</i> (F.) p.p.: WEHNER et. al., 1983)	A B G T Y	1 2 3 4 5 6	
<i>Formica aquilonia</i> YARROW 1955	Y		4
<i>F. bruni</i> KUTTER 1966	Y		4
<i>F. cinerea</i> MAYR 1853 (= <i>F. cinerea</i> var. <i>subrufooides</i> FOREL 1913) syn. nov.	Y	1	4
<i>F. cinereofusca</i> KARAVÀIEV 1929	T		4
<i>F. cunicularia</i> LATREILLE 1798 (= <i>F. glebaria</i> NYLANDER 1846)	B G T Y	2 3 4	
<i>F. exsecta</i> NYLANDER 1846	Y	1	
<i>F. foreli</i> BONDROIT 1918	B G Y	1 3 4 5	
<i>F. fusca</i> L. 1758	Y	1 3 4	
<i>F. gagates</i> LATREILLE 1798	A B G T Y	1 2 3 4 5 6	
<i>F. glauca</i> Ruzsky 1895	B T		3 4
<i>F. imitans</i> Ruzsky 1902	T Y		4
<i>F. lemani</i> BONDROIT 1917	B G T Y	1 3 4 5	
<i>F. lugubris</i> ZETTERSTEDT 1840	B G Y	2 3 4	
<i>F. nigricans</i> EMERY 1909	B Y		4
<i>F. polyctena</i> FOERSTER 1850	Y	1	4
<i>F. pratensis</i> RETZIUS 1783	A B G Y	1 3 4 5 6	
<i>F. pressilabris</i> NYLANDER 1846	B Y	1	5
<i>F. rufa</i> L. 1758	B G T Y	1 3 4 5	
<i>F. rufibarbis</i> FABRICIUS 1793	A B G T Y	1 3 4 5 6	
<i>F. sanguinea</i> LATREILLE 1798	B G T Y	1 3 4 5	
<i>F. selysi</i> BONDROIT 1918	Y		4
<i>F. sp. 1</i>	B G Y		4

<i>F. sp. 2</i>	B	G	3	4	5
(= <i>F. fusca r. cinerea</i> MAYR 1853: FOREL 1892)					
<i>F. transkaukasica</i> NASSONOV 1889	G	Y	3	4	
<i>F. truncorum</i> FABRICIUS 1804		Y	1	3	4
<i>Polyergus rufescens</i> (LATREILLE) 1798	A	B	Y	1	3 4 5 6
<i>P. kaszabi</i> DLUSSKY 1969			E		4
<i>P. kobachidzei</i> ARNOLDI 1968			E		4
<i>P. korbi</i> EMERY 1909			E		
<i>P. nitida</i> K. UGAMSKI 1927			E		4
<i>P. pilosiscapus</i> DLUSSKY 1969			E		4
<i>P. sp. 1</i>	G	T		3	4
<i>P. striaticeps</i> (FOREL) 1911	G	Y		3	4

### Unchecked Taxa

<i>Myrmica rugulosa</i> var. <i>hellenica</i> FINZI 1926	G	3			
<i>Aphaenogaster simonellii</i> var. <i>sporadis</i> SANTSCHI 1933	G	3			
<i>A. splendida</i> st. <i>rugosoferruginea</i> FOREL 1888		?		4	
<i>A. testaceopilosa</i> (LUCAS) 1846	Y	1			5
<i>Messor barbarus</i> ssp. <i>varrialei</i> EMERY 1922	B				
<i>M. barbarus</i> ssp. <i>clivorum</i> Ruzsky 1905		E			
<i>M. barbarus</i> var. <i>wasmanni</i> KRAUSSE 1910	G		3		
<i>M. structor</i> var. <i>aegaea</i> MENOZZI 1928	G		3		
<i>Oxyopomyrmex lagoi</i> MENOZZI 1936	G		3		
<i>Crematogaster auberti</i> EMERY 1869		E	3		
<i>Monomorium bicolor</i> ssp. <i>nitidiventris</i> EMERY 1893		E	3		
<i>Leptothorax bulgaricus</i> ssp. <i>aeolius</i> FOREL 1911		E	3		
<i>L. interruptus</i> var. <i>nitidiceps</i> FOREL 1890		E	3		
<i>L. exilis</i> var. <i>darii</i> FOREL 1911		E	3		
<i>Chalepoxenus</i> sp. I BUSCHINGER (in let.)	Y		4		
<i>Tetramorium caespitum</i> <i>flavidulum</i> EMERY 1903		E	3		
<i>T. caespitum</i> var. <i>rhodium</i> EMERY 1915		E	3		
<i>T. caespitum</i> var. <i>splendens</i> Ruzsky 1902		Y		4	
<i>T. caespitum</i> forma b MUELLER 1923 a		Y	1		
<i>T. caespitum</i> forma c MUELLER 1923 a		Y	1		
<i>T. caespitum</i> forma d MUELLER 1923 a		Y	1		
<i>T. semilaeve</i> var. <i>galacticum</i> SANTSCHI 1927		E	3		
<i>T. semilaeve</i> var. <i>siciliensis</i> SANTSCHI 1927		E	3		
<i>Dolichoderus</i> sp. LEGAKIS 1983	G		2		
<i>Bothriomyrmex atlantis</i> FOREL 1894		E	3		
<i>B. jannonei</i> MENOZZI 1936		E	3		
<i>Tapinoma simrothi</i> ssp. <i>festae</i> EMERY?		E	3		
<i>T. israelis</i> FOREL 1904		E	3		
<i>T. nigerrimum</i> (NYLANDER) 1856	B			5	
<i>T. simrothi</i> var. <i>phoenicea</i> EMERY 1925	G		3		
<i>Acantholepis syriaca</i> ANDRE 1881		E	3		
<i>Camponotus compressus</i> ssp. <i>symiensis</i> FOREL 1910		E	3		

<i>C. boghossiana</i> var. <i>stenotica</i> EMERY 1915 (= <i>C. kiesenwetteri</i> var. <i>angustata</i> FOREL 1888 nomen preoc.)	G	3
<i>C. variegatus</i> (SMITH) 1858	E	3
<i>Cataglyphis bicolor</i> var. <i>rufiventris</i> FOREL 1909	E	3
<i>C. albicans</i> ROGER 1859	E	3
<i>C. bicolor</i> (F.) 1793	E	3
<i>C. viaticus</i> (F.) 1787	B	5
<i>Formica cinereofuscooides</i> FOREL 1892 (?)	B	5
<i>F. cinereorufibarbis</i> FOREL 1874	B	5
<i>F. fuscorufibarbis</i> FOREL 1874	B	5
<i>Proformica nasuta</i> NYLANDER 1856 (= <i>P. aerea</i> (ROGER) 1859)	B	5
<i>P. ocellatissima</i> (FOREL) 1886	E	3

Names not available

<i>Messor barbarus</i> ssp. <i>structor</i> var. <i>romanus</i> SANTSCHI 1917 name not avail.	G	3
<i>M. werneri</i> FINZI 1928 nomen nudum.	G	3
<i>Pheidole pallidula</i> ssp. <i>arenarium</i> var. <i>orientalis</i> EMERY 1916 name not avail.	Y	1
<i>Crematogaster scutellaris</i> ssp. <i>schmidti</i> var. <i>hybrida</i> EMERY 1918 name not avail.	Y	1
<i>Leptothorax rottebergi</i> ssp. <i>semiruber</i> var. <i>galaticus</i> SANTSCHI 1921 name not avail.	G	3
<i>L. tuberum</i> ssp. <i>interruptus</i> var. <i>nitidiceps</i> FOREL 1890 name not avail.	E	3
<i>Tetramorium caespitum</i> ssp. <i>ferox</i> var. <i>laevior</i> FOREL 1911 name not avail.		3
<i>Camponotus aethiops</i> ssp. <i>oertzeni</i> var. <i>andrius</i> FOREL 1888 name not avail.	B G	3
<i>C. aethiops</i> ssp. <i>oertzeni</i> var. <i>kappariensis</i> FOREL 1888 name not avail.	E	4
<i>C. compressus</i> ssp. <i>sancus</i> var. <i>cypriacus</i> FOREL 1904 name not avail.	E	
<i>C. lateralis</i> ssp. <i>dalmaticus</i> var. <i>rhodius</i> EMERY 1925 name not avail.	E	3
<i>C. maculatus</i> ssp. <i>sancus</i> var. <i>cosensis</i> FOREL 1904 name not avail.	E	
<i>C. maculatus</i> ssp. <i>sancus</i> var. <i>pericles</i> FOREL 1911 name not avail.	G	4
<i>Cataglyphis cursor</i> ssp. <i>hellenicus</i> var. <i>creticus</i> EMERY 1906 name not avail.	E	
<i>C. cursor</i> ssp. <i>hellenicus</i> var. <i>doricus</i> SANTSCHI 1929 name not avail.	E	3
<i>C. bicolor</i> ssp. <i>nodus</i> var. <i>helladica</i> SANTSCHI 1934 name not avail.	G	3

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## ZUSAMMENFASSUNG

*Vorläufige Liste der Ameisen (Hym. Formicidae) des Balkans mit einem Schlüssel zur Arbeiterinnen-Kaste. I. Synonymische Liste* – 319 Arten oder Taxa incertae sedis von 48 Gattungen aus 7 Unterfamilien der Familie Formicidae aus dem Balkan (eingeschlossen Albanien, 29 Arten oder taxa incertae sedis), Bulgarien (116), Griechenland nördlich des Golfs von Korinth (174), der Europäische Teil der Türkei (90) und Jugoslawien (169) sind in der synonymischen Liste eingeschlossen. 19 Taxa wird neu der Artstatus zuerkannt, 12 werden synonymisiert und von 16 sind die Namen nicht verwendbar, weil es sich dabei um die Benennung infrasubspezifischer Taxa, um zuvor schon verwendete Namen oder um ein nomen nudum handelt. *Monorium phoenicum*, *Tetramorium diomedaeum*, *T. hippocrais*, *T. sahlbergi* und *Acantholepis karawajewi*, fünf früher nomenklatiorisch bedingt nicht brauchbare Namen werden als gute Arten wiederbeschrieben. Daten über die Verbreitung aller Arten sind eingeschlossen. Die Liste ist auf publizierten Daten, Neufunden und Arten, die durch ihre Präsenz in einem der Anreinerstaaten erwartet werden können, aufgebaut. Ein Schlüssel zu den Arten ist im Druck (Mitt. Schweiz. Ent. Ges. 60 [3–4]).

## REFERENCES

- ATANASOV, N., 1952. Gesetzmäßigkeiten in der Verbreitung und biologische Beobachtungen an den Ameisen des Witoscha Gebirges. *Academia Nauk, Sofia*, 214 pp. (in Bulgarian, with German Summary).
- ATANASOV, N., 1964. Untersuchungen über die Systematik und Ökologie der Ameisen (Formicidae, Hym.) aus dem Gebiet von Petric (Südwestbulgarien). *Bull. Inst. Mus. Zool (Acad. Bulg. Sci.)* 15: 77–104 (in Bulgarian, with German Summary).
- BARONI URBANI, C., 1977. Les espèces européennes du genre *Proceratium* ROGER (Hymnoptera: Formicidae). *Mitt. Schweiz. Ent. Ges.* 50: 91–93.
- BROWN, W. L., Jr., 1958. Contributions toward a reclassification of the Formicidae. II. Tribe Ectatommini (Hymenoptera). *Bull. Mus. Comp. Zool.* 118 (5): 175–362.
- FINZI, B., 1923. Risultati scientifici della spedizione Ravasini-Lona in Albania. *Boll. Soc. Ent. Ital.* 55 (1): 1–4.
- FOREL, A., 1892. Die Ameisenfauna Bulgariens. *Verh. Zool. Bot. Ges. Wien* 42: 305–318.
- LEGAKIS, A., 1983. First Contribution to the Study of the Ants (Hym. Formicidae) of the Zagori Region (Epirus, Greece): an Annotated List of Species. *Ent. Hell.* 1: 3–6.
- MUELLER, G., 1923a. Le Formiche della Venezia Giulia e della Dalmazia. *Boll. Soc. adr. Sci. nat. Trieste* 28: 11–180.
- MUELLER, G., 1923b. Note Mirmecologiche. *Mem. Soc. Ent. It.* 2: 65–72.
- WILSON, E. O. and BROWN, W. L., Jr., 1953. The subspecific concept and its taxonomic application. *Syst. Zool.* 2: 97–111.

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