

Ant type specimens (Hymenoptera, Formicidae) in the collection of Volodymyr Opanasovych Karawajew. Communication 1. Dorylinae, Poneromorpha and Pseudomyrmecinae

ALEXANDER G. RADCHENKO^{1,3*}, BRIAN L. FISHER^{2,4}, FLAVIA A. ESTEVES^{2,5},
EKATERYNA V. MARTYNOVA^{1,6}, TATYANA N. BAZHENOVA^{1,7} & SVETLANA N. LASARENKO¹

¹Schmalhausen Institute of Zoology of the National Academy of Sciences of Ukraine, Bohdana Khmel'nitskogo str., 15, Kyiv, 01601, Ukraine.

²Entomology, 55 Music Concourse Drive, California Academy of Sciences, San Francisco, CA 94118, USA.

³✉ agradchenko@hotmail.com;  <https://orcid.org/0000-0002-8850-0530>

⁴✉ bfisher@calacademy.org;  <https://orcid.org/0000-0002-4653-3270>

⁵✉ flaviaesteves@gmail.com;  <https://orcid.org/0000-0001-6613-1343>

⁶✉ martynova_kv@ukr.net;  <https://orcid.org/0000-0002-9896-3504>

⁷✉ bazhenowa.tanya63@gmail.com

*Corresponding author. ✉ agradchenko@hotmail.com

Abstract

The collection of Volodymyr Opanasovych Karawajew, stored at the Schmalhausen Institute of Zoology of the National Academy of Sciences of Ukraine (SIZK, Kiev), is one of the richest ant collections of the world. It contains more than 20,000 dry mounted specimens, collected mostly in Southeast Asia and the Palaearctic, as well as in the Afrotropics, Australia, and North and South America. Among them, we found type specimens of 509 taxa, described by Karawajew and other myrmecologists. The compiled Catalogue includes data on types of 80 taxa belonging to the subfamilies Dorylinae, Amblyoponinae, Ectatomminae, Ponerinae, Proceratiinae and Pseudomyrmecinae.

Key words: ants, Karawajew's collection, Kiev, Ukraine, type specimens, catalogue, Dorylinae, Amblyoponinae, Ectatomminae, Ponerinae, Proceratiinae, Pseudomyrmecinae

Introduction

Volodymyr Opanasovych Karawajew (also spelled as Karawaiew, Karavaiev or Karavajev) was an outstanding myrmecologist of the early twentieth century (Fig. 1). He was born on March 9, 1864 in Kiev, Russian Empire, to a family of doctors. His grandfather (1811–1892) was a famous surgeon and professor, and one of the founders of the Faculty of Medicine of the Imperial University of St. Vladimir (now Taras Shevchenko National University of Kiev).

Karawajew graduated from the Nature Department at the Faculty of Physics and Mathematics of Kiev Imperial University of St. Vladimir in 1890, and started his scientific career as an assistant in the Cathedra of Zoology at that University. Although Karawajew is well known now as a myrmecologist, his first publication was devoted to the study of the embryogenesis of the red firebug, *Pyrrhocoris apterus* (Linnaeus, 1758) (Hemiptera: Pyrrhocoridae). In 1892–1895 he worked at the Villafranca marine biological station near Nice (France) and from 1898–1899 was a Director of the marine biological station in Sevastopol (Crimea), where he studied Radiolaria, copepods, and other marine invertebrates.

From the late 1890s to the early 1900s, Karawajew published his first papers on ants, studying their anatomy, embryogenesis, and behavior. His first expedition to Turkestan (1898), and especially a trip to Java and other Indonesian Islands in 1898–1899, sponsored by the Kiev Society of Naturalists, played an important role in his life. After these trips, his scientific interests turned to the study of ant taxonomy.

From 1912–1913 Karawajew made a second expedition to Indonesia, where he collected not only ants, but also rich material on various groups of invertebrate and vertebrate animals. From 1899 to the 1920s he made many additional scientific trips to areas including the Caucasus, West Europe, Egypt, Sudan, Tunisia and Algeria, not to mention all parts of what is now Ukraine.

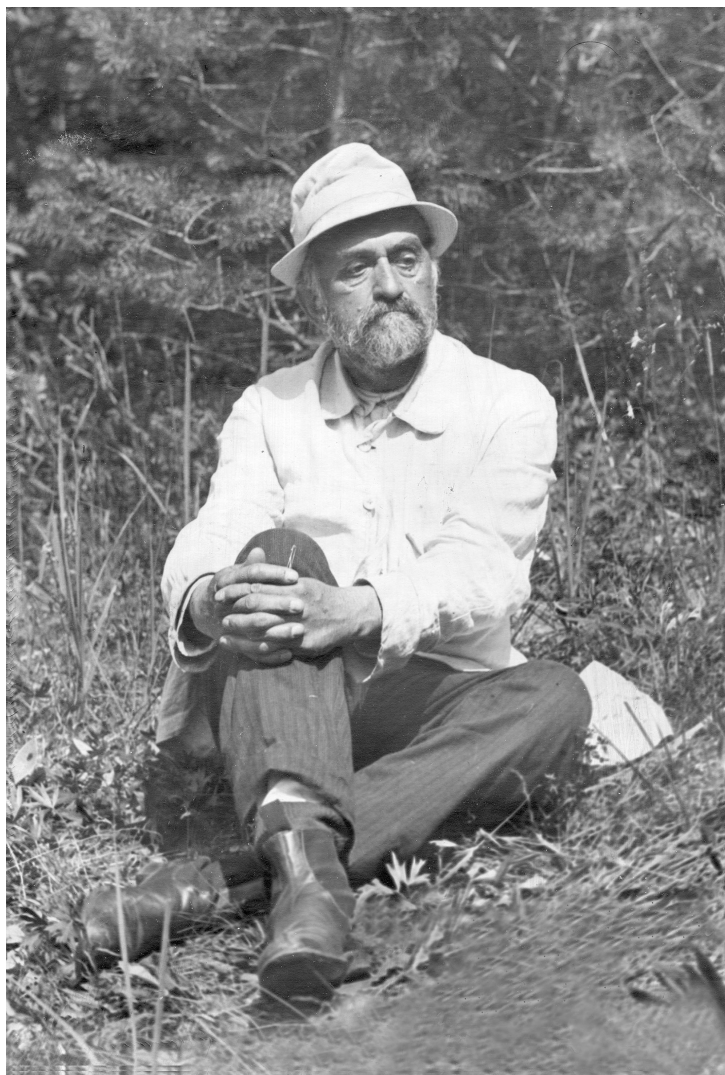


FIGURE 1. Photo of W. A. Karawajew (1930th).

Karawajew was one of the founders of the Zoological Museum of the Ukrainian Academy of Sciences (now the Zoological Department of the National Museum of Natural History of the National Academy of Science of Ukraine, Kiev), which opened on May 1, 1919. On June 3, Karawajew became its first custodian. He donated his huge collections, mainly from Java, to the museum. These consisted of 25 boxes of butterflies and 40 boxes of other insects, plus stuffed birds and mammals, reptiles, mollusk shells, and corals. He served as director of the museum from 1927 until his retirement in 1934, and from 1934 to his death in 1939 was its senior researcher.

Among other things, Karawajew was a good painter and a master of various technical matters. He restored fossil skeletons for the museum, made taxidermied animals, took photographs etc.

Karawajew married Nadezhda Nikolaevna Volkova in 1894. Little is known about his personal life, but they likely did not have children. He died January 7, 1939, aged 74, and was buried at Solomenskoje cemetery in Kiev (Paramonov 1941; Korman 2008).

In total, Karawajew published about 100 scientific papers, 47 of which are devoted to the taxonomy of ants. He established three new genera and four subgenera, and described 258 new species and infraspecific taxa from various parts of the Palearctic, Oriental Region and Afrotropics. Currently, 96 species and 41 subspecies are valid, but 103 names are considered junior synonyms (96 specific and 7 generic and subgeneric rank names), 24 names are unavailable (quadrinomena) (Tables 1–5); one name, *Polyrhachis monacha* Karawajew, 1926f, is a nomen nudum, and *Formica (Formica) rufa* var. *constricta* Karawajew, 1929b is considered now as a hybrid form between *F. aquilonia* Yarrow, 1955 and *F. polycтена* Foerster, 1850 (Seifert 2021). Unfortunately, type specimens of 41 taxa he described are missing from the collection (Table 6).

TABLE 1. Currently valid species, described by W. A. Karawajew*

No	Original generic affiliations and spelling	Current status**
1	<i>Acantholepis aurea</i> Karawajew, 1933a	<i>Lepisiota aurea</i>
2	<i>Acantholepis frauenfeldi</i> var. <i>nigrescens</i> Karawajew, 1912b	<i>Lepisiota nigrescens</i>
3	<i>Acropyga</i> (<i>Rhizomyrma</i>) <i>dubia</i> Karawajew, 1933a	<i>Acropyga dubia</i>
4	<i>Anochetus gracilis</i> Karawajew, 1925c	<i>Anochetus gracilis</i>
5	<i>Aphaenogaster schmidtii</i> Karawajew, 1912a	<i>Aphaenogaster schmidtii</i>
6	<i>Camponotus</i> (<i>Myrmamblys</i>) <i>annulatus</i> Karawajew, 1929c	<i>Camponotus annulatus</i>
7	<i>Camponotus</i> (<i>Colobopsis</i>) <i>aruensis</i> Karawajew, 1933a	<i>Colobopsis aruensis</i>
8	<i>Camponotus</i> (<i>Colobopsis</i>) <i>auratus</i> Karawajew, 1935a	<i>Colobopsis auratus</i>
9	<i>Camponotus herculeanus japonicus</i> var. <i>cruentata</i> Karawajew, 1912a	<i>Camponotus atrox</i> Emery, 1925b
10	<i>Camponotus</i> (<i>Myrmamblys</i>) <i>gibbosus</i> Karawajew, 1929c	<i>Camponotus gibbosus</i>
11	<i>Camponotus</i> (<i>Tanaemyrmex</i>) <i>indefinitus</i> Karawajew, 1929c	<i>Camponotus indefinitus</i>
12	<i>Camponotus</i> (<i>Myrmamblys</i> ?) <i>picto-striatus</i> Karawajew, 1933b	<i>Camponotus pictostriatus</i>
13	<i>Camponotus lateralis sicheli</i> var. <i>rubra</i> Karawajew, 1912b	<i>Camponotus ruber</i>
14	<i>Camponotus</i> (<i>Tanaemyrmex</i>) <i>terricola</i> Karawajew, 1929c	<i>Camponotus terricola</i>
15	<i>Cardiocondyla nigrocerea</i> Karawajew, 1935a	<i>Cardiocondyla nigrocerea</i>
16	<i>Cardiocondyla tjibodana</i> Karawajew, 1935a	<i>Cardiocondyla tjibodana</i>
17	<i>Cerapachys salimani</i> Karawajew, 1925a	<i>Cerapachys salimani</i>
18	<i>Conothorax bilobum</i> Karawajew, 1935a	<i>Pheidole biloba</i>
19	<i>Crematogaster</i> (<i>Acrocoelia</i>) <i>agniae</i> Karawajew, 1935a	<i>Crematogaster agniae</i>
20	<i>Crematogaster</i> (<i>Physocrema</i>) <i>aurita</i> Karawajew, 1935a	<i>Crematogaster aurita</i>
21	<i>Crematogaster</i> (<i>Paracrema</i>) <i>dubia</i> Karawajew, 1935a	<i>Crematogaster dubia</i>
22	<i>Eciton</i> (<i>Aenictus</i>) <i>impressus levior</i> Karawajew, 1926e	<i>Aenictus levior</i>
23	<i>Eciton</i> (<i>Aenictus</i>) <i>ceylonicus orientalis</i> Karawajew, 1926e	<i>Aenictus orientalis</i>
24	<i>Euponera</i> (<i>Brachyponera</i>) <i>luteipes arcuata</i> Karawajew, 1925b	<i>Brachyponera arcuata</i>
25	<i>Euponera</i> (<i>Brachyponera</i>) <i>atrata</i> Karawajew, 1925b	<i>Brachyponera atrata</i>
26	<i>Formica</i> (<i>Serviformica</i>) <i>cinerea</i> var. <i>cinereofusca</i> Karawajew, 1929b	<i>Formica cinereofusca</i>
27	<i>Iridomyrmex latifrons</i> Karawajew, 1933a	<i>Tapinoma latifrons</i>
28	<i>Lasius fuliginosus</i> var. <i>orientalis</i> Karawajew, 1912a	<i>Lasius orientalis</i>
29	<i>Leptogenys</i> (<i>Lobopelta</i>) <i>davydovi</i> Karawajew, 1935a	<i>Leptogenys davydovi</i>
30	<i>Leptogenys</i> (<i>Lobopelta</i>) <i>rugosopunctata</i> Karawajew, 1925c	<i>Leptogenys rugosopunctata</i>
31	<i>Leptothorax nylanderi</i> var. <i>crassispina</i> Karawajew, 1926d	<i>Temothorax crassispinus</i>
32	<i>Leptothorax tuberum knipovitshi</i> Karawajew, 1916	<i>Temothorax knipovitshi</i>
33	<i>Leptothorax shelkovnikovi</i> Karawajew, 1926b	<i>Temothorax shelkovnikovi</i>
34	<i>Liometopum microcephalum</i> var. <i>orientalis</i> Karawajew, 1927d	<i>Liometopum orientalis</i>
35	<i>Messor structor striaticeps</i> var. <i>melancholica</i> Karawajew, 1926a	<i>Messor melancholicus</i>
36	<i>Messor barbarus reticuliventris</i> Karawajew, 1911b	<i>Messor reticuliventris</i>
37	<i>Messor barbarus meridionalis</i> var. <i>rufa</i> Karawajew, 1910	<i>Messor rufus</i>
38	<i>Monomorium</i> (<i>Monomorium</i>) <i>longiceps</i> Karawajew, 1935a	<i>Monomorium annamense</i> Donisthorpe, 1941
39	<i>Myrmecocystus albicans lividus</i> var. <i>auratus</i> Karawajew, 1911a	<i>Cataglyphis auratus</i>
40	<i>Myrmecocystus</i> (<i>Cataglyphis</i>) <i>bicolor bellicosus</i> Karawajew, 1924	<i>Cataglyphis bellicosus</i>
41	<i>Myrmecocystus albicans cinnamomeus</i> Karawajew, 1910	<i>Cataglyphis cinnamomea</i>
42	<i>Myrmecocystus</i> (<i>Cataglyphis</i>) <i>albicans ruber</i> var. <i>cuneinodis</i> Karawajew, 1924	<i>Cataglyphis cuneinodis</i>

.....continued on the next page

TABLE 1. (Continued)

No	Original generic affiliations and spelling	Current status**
43	<i>Myrmecocystus emeryi</i> Karawajew, 1911b	<i>Cataglyphis emeryi</i>
44	<i>Myrmica bergi</i> var. <i>divergens</i> Karawajew, 1931c	<i>Myrmica divergens</i>
45	<i>Myrmica rubra laevinodis</i> var. <i>ferganensis</i> Karawajew, 1916	<i>Myrmica ferganensis</i>
46	<i>Myrmica forcipata</i> Karawajew, 1931c	<i>Myrmica forcipata</i>
47	<i>Myrmica rugulosa</i> var. <i>minuta</i> Karawajew, 1929b	<i>Myrmica constricta</i> Karawajew, 1934
48	<i>Oligomyrmex (Oligomyrmex) satanus</i> Karawajew, 1935a	<i>Carebara satana</i>
49	<i>Opisthopsis halmaherae</i> Karawajew, 1930a	<i>Opisthopsis halmaherae</i>
50	<i>Pachycondyla (Ectomomyrmex) punctata</i> Karawajew, 1935a	<i>Ectomomyrmex punctatus</i>
51	<i>Pachycondyla (Ectomomyrmex) striata</i> Karawajew, 1927a	<i>Ectomomyrmex striatulus</i> Karawajew, 1935a
52	<i>Paratrechina (Nylanderia) dichroa</i> Karawajew, 1933b	<i>Paraparatrechina dichroa</i>
53	<i>Paratrechina (Nylanderia) koningsbergeri</i> Karawajew, 1933b	<i>Paraparatrechina koningsbergeri</i>
54	<i>Paratrechina (Nylanderia) tjibodana</i> Karawajew, 1929c	<i>Nylanderia tjibodana</i>
55	<i>Pheidole (Elasmopheidole) ambonensis</i> Karawajew, 1930a	<i>Pheidole ambonensis</i>
56	<i>Pheidolegeton rugosus</i> Karawajew, 1935a	<i>Carebara rugoflabella</i> Fischer G., Azorsa et Fisher B., 2014
57	<i>Plagiolepis (Plagiolepis) nitida</i> Karawajew, 1935a	<i>Plagiolepis nitida</i>
58	<i>Plagiolepis (Acantholepis) flava</i> Karawajew, 1935a	<i>Plagiolepis adynata</i> Bolton, 1995
59	<i>Plagiolepis (Plagiolepis) regis</i> Karawajew, 1931	<i>Plagiolepis regis</i>
60	<i>Podomyrma tristis</i> Karawajew, 1935a	<i>Podomyrma tristis</i>
61	<i>Polyrhachis (Myrma) conops</i> var. <i>bismarckensis</i> Karawajew, 1927a	<i>Polyrhachis bismarckensis</i>
62	<i>Polyrhachis (Myrmhopla) davydovi</i> Karawajew, 1935a	<i>Polyrhachis davydovi</i>
63	<i>Polyrhachis (Hagiomyrma) denticulata</i> Karawajew, 1927a	<i>Polyrhachis denticulata</i>
64	<i>Polyrhachis (Myrmhopla) acantha dichroa</i> Karawajew, 1927a	<i>Polyrhachis romanovi</i> Santschi, 1928
65	<i>Polyrhachis (Myrmhopla) flavoflagellata</i> Karawajew, 1927a	<i>Polyrhachis flavoflagellata</i>
66	<i>Polyrhachis (Cyrtomyrma) jurii</i> Karawajew, 1935a	<i>Polyrhachis jurii</i>
67	<i>Polyrhachis (Myrmhopla) keratifera</i> Karawajew, 1927a	<i>Polyrhachis keratifera</i>
68	<i>Polyrhachis (Myrmatropa) menozzii</i> Karawajew, 1927a	<i>Polyrhachis menozzii</i>
69	<i>Polyrhachis (Chariomyrma) nigrescens</i> Karawajew, 1927a	<i>Polyrhachis nigrescens</i>
70	<i>Polyrhachis (Myrmhopla) ochracea</i> Karawajew, 1927a	<i>Polyrhachis ochracea</i>
71	<i>Polyrhachis (Myrma) conops simplex</i> Karawajew, 1927a	<i>Polyrhachis simpla</i> Santschi, 1928
72	<i>Polyrhachis (Cephalomyrma) styliifera</i> Karawajew, 1935a	<i>Polyrhachis styliifera</i>
73	<i>Polyrhachis (Myrmhopla) subfossoides</i> Karawajew, 1927a	<i>Polyrhachis subfossoides</i>
74	<i>Polyrhachis (Myrmhopla) tubifex</i> Karawajew, 1926f	<i>Polyrhachis tubifex</i>
75	<i>Ponera typhlos</i> Karawajew, 1935a	<i>Cryptopone typhlos</i>
76	<i>Pristomyrmex africanus</i> Karawajew, 1931d	<i>Pristomyrmex africanus</i>
77	<i>Proceratium longigaster</i> Karawajew, 1935a	<i>Proceratium longigaster</i>
78	<i>Pseudolasius carinatus</i> Karawajew, 1929a	<i>Pseudolasius carinatus</i>
79	<i>Pseudolasius sunda</i> Karawajew, 1929a	<i>Pseudolasius sunda</i>
80	<i>Pseudolasius trimorphus</i> Karawajew, 1929a	<i>Pseudolasius trimorphus</i>
81	<i>Solenomyrma acanthina</i> Karawajew, 1935a	<i>Gauromyrmex acanthinus</i>
82	<i>Solenopsis orbula</i> var. <i>oculata</i> Karawajew, 1926b	<i>Solenopsis ilinei</i> Santschi, 1936
83	<i>Solenopsis (Solenops) weyeri</i> Karawajew, 1930a	<i>Carebara weyeri</i>
84	<i>Stigmatomma amblyops</i> Karawajew, 1935a	<i>Stigmatomma amblyops</i>

.....continued on the next page

TABLE 1. (Continued)

No	Original generic affiliations and spelling	Current status**
85	<i>Stigmatomma quadratum</i> Karawajew, 1935a	<i>Stigmatomma quadratum</i>
86	<i>Strumigenys (Cephaloxys) emeryi</i> Karawajew, 1935a	<i>Strumigenys karawajewi</i> Brown, 1948
87	<i>Tapinoma epinotalis</i> Karawajew, 1935a	<i>Tapinoma epinotale</i>
88	<i>Tapinoma kinburni</i> Karawajew, 1937	<i>Tapinoma kinburni</i>
89	<i>Tapinoma muelleri</i> Karawajew, 1926e	<i>Tapinoma muelleri</i>
90	<i>Technomyrmex albomaculatus</i> Karawajew, 1926e	<i>Technomyrmex albomaculatus</i>
91	<i>Technomyrmex convexifrons</i> Karawajew, 1926e	<i>Technomyrmex convexifrons</i>
92	<i>Technomyrmex albipes rotundiceps</i> Karawajew, 1926e	<i>Technomyrmex rotundiceps</i>
93	<i>Tetramorium dogieli</i> Karawajew, 1931d	<i>Tetramorium dogieli</i>
94	<i>Tetramorium infraspinosum</i> Karawajew, 1935a	<i>Tetramorium infraspinosum</i>
95	<i>Tetramorium caespitum ferox</i> var. <i>levigata</i> Karawajew, 1926b	<i>Tetramorium aegeum</i> Radchenko, 1992
96	<i>Typhloteras hamulatum</i> Karawajew, 1925b	<i>Centromyrmex hamulatum</i>

* in all tables taxa are ordered alphabetically: first by the genus name, and then by the last name of taxon;

** in the column "Current status" only the authors of the replacement names are given

TABLE 2. Currently valid subspecies, described by W. A. Karawajew

No	Original generic affiliations and spelling	Current status*
1	<i>Anoplolepis (Anoplolepis) simulans</i> var. <i>biskrensis</i> Karawajew, 1931b	<i>Tapinolepis simulans biskrensis</i>
2	<i>Aphaenogaster splendida</i> var. <i>transcaucasica</i> Karawajew, 1926a	<i>Aphaenogaster splendida transcaucasica</i>
3	<i>Camponotus (Tanaemyrmex) variegatus</i> var. <i>ambonensis</i> Karawajew, 1930a	<i>Camponotus variegatus ambonensis</i>
4	<i>Camponotus (Colobopsis) leonardi</i> var. <i>grisea</i> Karawajew, 1929c	<i>Colobopsis leonardi grisea</i>
5	<i>Camponotus lateralis sicheli</i> var. <i>nigra</i> Karawajew, 1912b	<i>Camponotus sicheli niger</i>
6	<i>Camponotus (Colobopsis) vitreus</i> var. <i>praelutea</i> Karawajew, 1929c	<i>Colobopsis vitrea praelutea</i>
7	<i>Crematogaster (Acrocoelia) brunnea latipetiolata</i> Karawajew, 1935a	<i>Crematogaster brunnea latipetiolata</i>
8	<i>Diacamma rugosum arcuata</i> Karawajew, 1925b	<i>Diacamma rugosum arcuatum</i>
9	<i>Diacamma rugosum balinensis</i> Karawajew, 1925b	<i>Diacamma rugosum balinense</i>
10	<i>Diacamma rugosum gibbosum</i> Karawajew, 1935a	<i>Diacamma rugosum gibbosum</i>
11	<i>Diacamma rugosum latispina</i> Karawajew, 1925b	<i>Diacamma rugosum latispinum</i>
12	<i>Diacamma rugosum rugosum</i> var. <i>ovalis</i> Karawajew, 1935a	<i>Diacamma rugosum ovale</i>
13	<i>Echinopla striata gibbosa</i> Karawajew, 1927a	<i>Echinopla striata gibbosa</i>
14	<i>Euponera (Brachyponera) luteipes continentalis</i> Karawajew, 1925b	<i>Brachyponera luteipes continentalis</i>
15	<i>Dolichoderus (Hypoclinea) bituberculatus</i> var. <i>levior</i> Karawajew, 1926e	<i>Dolichoderus thoracicus levior</i>
16	<i>Dolichoderus (Hypoclinea) bituberculatus</i> var. <i>nasuta</i> Karawajew, 1935a	<i>Dolichoderus thoracicus nasutus</i>
17	<i>Leptogenys (Lobopelta) diminuta nong-nongi</i> Karawajew, 1925c	<i>Leptogenys diminuta nongnongi</i>
18	<i>Leptogenys (Lobopelta) diminuta tjibodana</i> Karawajew, 1926e	<i>Leptogenys diminuta tjibodana</i>
19	<i>Messor barbarus</i> var. <i>polita</i> Karawajew, 1912b	<i>Messor barbarus politus</i>
20	<i>Myrmecocystus bicolor</i> var. <i>sudanica</i> Karawajew, 1912a	<i>Cataglyphis bicolor sudanica</i>

.....continued on the next page

TABLE 2. (Continued)

No	Original generic affiliations and spelling	Current status*
21	<i>Oecophylla smaragdina</i> var. <i>fuscoides</i> Karawajew, 1933a	<i>Oecophylla smaragdina fuscoides</i>
22	<i>Opistopsis manni</i> var. <i>aruana</i> Karawajew, 1933a	<i>Opistopsis manni aruana</i>
23	<i>Pachycondyla</i> (<i>Ectomomyrmex</i>) <i>astuta obscura</i> Karawajew, 1935a	<i>Ectomomyrmex astutus obscurus</i>
24	<i>Pachycondyla</i> (<i>Ectomomyrmex</i>) <i>sculpturata</i> Karawajew, 1926b	<i>Ectomomyrmex sumatranus</i> Özdikmen, 2010
25	<i>Paratrechina</i> (<i>Nylanderia</i>) <i>obscura celebensis</i> Karawajew, 1933	<i>Nylanderia obscura celebensis</i>
26	<i>Paratrechina</i> (<i>Nylanderia</i>) <i>obscura minor</i> Karawajew, 1933b	<i>Nylanderia obscura minor</i>
27	<i>Plagiolepis</i> (<i>Plagiolepis</i>) <i>pallescentis</i> var. <i>el-guerrhae</i> Karawajew, 1931b	<i>Plagiolepis pallescens elguerrhae</i>
28	<i>Podomyrma basalis reyi</i> Karawajew, 1935a	<i>Podomyrma basalis reyi</i>
29	<i>Polyrhachis</i> (<i>Myrmatropa</i>) <i>frughstorferi</i> var. <i>arcuata</i> Karawajew, 1927a	<i>Polyrhachis frughstorferi torta</i> Santschi, 1928
30	<i>Polyrhachis</i> (<i>Myrmhopla</i>) <i>bicolor</i> var. <i>atrocastanea</i> Karawajew, 1927a	<i>Polyrhachis bicolor atrocastanea</i>
31	<i>Polyrhachis</i> (<i>Myrmhopla</i>) <i>bicolor</i> var. <i>aurata</i> Karawajew, 1935a	<i>Polyrhachis bicolor aurata</i>
32	<i>Polyrhachis</i> (<i>Myrmhopla</i>) <i>bicolor</i> var. <i>brachyacantha</i> Karawajew, 1935a	<i>Polyrhachis bicolor brachyacantha</i>
33	<i>Polyrhachis</i> (<i>Myrmhopla</i>) <i>bicolor</i> var. <i>erecta</i> Karawajew, 1935a	<i>Polyrhachis bicolor erecta</i>
34	<i>Polyrhachis</i> (<i>Myrma</i>) <i>orsyllus</i> var. <i>javana</i> Karawajew, 1927a	<i>Polyrhachis orsyllus javanensis</i> Santschi, 1928
35	<i>Polyrhachis</i> (<i>Myrma</i>) <i>sericata</i> var. <i>nitidissima</i> Karawajew, 1927a	<i>Polyrhachis sericata nitidissima</i>
36	<i>Polyrhachis</i> (<i>Myrmhopla</i>) <i>tibialis</i> var. <i>orientalis</i> Karawajew, 1927a	<i>Polyrhachis tibialis orientalis</i>
37	<i>Polyrhachis</i> (<i>Myrmhopla</i>) <i>dives</i> var. <i>rectispina</i> Karawajew, 1927a	<i>Polyrhachis dives rectispina</i>
38	<i>Polyrhachis</i> (<i>Myrmhopla</i>) <i>tibialis</i> var. <i>robustior</i> Karawajew, 1927a	<i>Polyrhachis tibialis robustior</i>
39	<i>Polyrhachis</i> (<i>Myrmhopla</i>) <i>bicolor</i> var. <i>weyeri</i> Karawajew, 1930a	<i>Polyrhachis bicolor weyeri</i>
40	<i>Sima</i> (<i>Sima</i>) <i>mocquersyi</i> var. <i>biozellata</i> Karawajew, 1931d	<i>Tetraponera mocquersyi biozellata</i>
41	<i>Tapinoma luridum sokolovi</i> Karawajew, 1931d	<i>Tapinoma luridum sokolovi</i>

* in the column "Current status" only the authors of the the replacement names are given

TABLE 3. Current synonyms of the species rank names, described by W. A. Karawajew

No	Original generic affiliations and spelling	Senior synonyms
1	<i>Acantholepis frauenfeldi azerbeidzhanica</i> Karawajew, 1932	<i>Lepisiota frauenfeldi</i> (Mayr, 1855)
2	<i>Acantholepis frauenfeldi</i> var. <i>splendens</i> Karawajew, 1912a	<i>Lepisiota nigra</i> (Dalla Torre, 1893)
3	<i>Acropyga</i> (<i>Acropyga</i>) <i>acutiventris</i> var. <i>carinata</i> Karawajew, 1933a	<i>Acropyga acutiventris</i> Roger, 1862
4	<i>Acropyga</i> (<i>Atopodon</i>) <i>distinguenda</i> Karawajew, 1935a	<i>Acropyga butteli</i> Forel, 1912a
5	<i>Acropyga</i> (<i>Acropyga</i>) <i>acutiventris</i> var. <i>javana</i> Karawajew, 1933a	<i>Acropyga acutiventris</i> Roger, 1862
6	<i>Aneleus punctatus</i> Karawajew, 1931d	<i>Carebara silvestrii</i> (Santschi, 1914)
7	<i>Anochetus amati</i> Karawajew, 1925c	<i>Anochetus graeffei</i> Mayr, 1870
8	<i>Anochetus minutus</i> Karawajew, 1925c	<i>Anochetus graeffei</i> Mayr, 1870
9	<i>Anochetus splendens</i> Karawajew, 1925c	<i>Anochetus isolatus</i> Mann, 1919
10	<i>Camponotus herculeanus</i> var. <i>jacutica</i> Karawajew, 1929b	<i>Camponotus herculeanus sachalinensis</i> Forel, 1904a
11	<i>Camponotus japonicus</i> var. <i>sanguinea</i> Karawajew, 1929b	<i>Camponotus japonicus</i> Mayr, 1866

.....continued on the next page

TABLE 3. (Continued)

No	Original generic affiliations and spelling	Senior synonyms
12	<i>Cardiocondyla longispina</i> Karawajew, 1935a	<i>Cardiocondyla wroughtonii</i> (Forel, 1890)
13	<i>Cardiocondyla emeryi mahdii</i> Karawajew, 1911a	<i>Cardiocondyla emeryi</i> Forel, 1881
14	<i>Cardiocondyla stambuloffi taurica</i> Karawajew, 1927b	<i>Cardiocondyla stambuloffi</i> Forel, 1892
15	<i>Diacamma rugosum buruensis</i> Karawajew, 1925b	<i>Diacamma bispinosum</i> (Le Guillou, 1842)
16	<i>Dolichoderus (Diabolus) bifurcatus</i> Karawajew, 1926e	<i>Dolichoderus cuspidatus</i> (Smith F., 1857)
17	<i>Eciton (Aenictus) fergussoni elongatus</i> Karawajew, 1926e	<i>Aenictus gracilis</i> Emery, 1893
18	<i>Eciton (Aenictus) fergussoni</i> var. <i>sundaica</i> Karawajew, 1927a	<i>Aenictus laeviceps</i> (Smith F., 1857)
19	<i>Formica cinerea</i> var. <i>bipilosa</i> Karawajew, 1926c	<i>Formica subpilosa</i> Ruzsky, 1902
20	<i>Formica cinerea</i> var. <i>brevisetosa</i> Karawajew, 1927b	<i>Formica cinerea</i> Mayr, 1853
21	<i>Formica sanguinea</i> var. <i>clara</i> Karawajew, 1927d	<i>Formica sanguinea</i> Latreille, 1798
22	<i>Formica rufa</i> var. <i>nuda</i> Karawajew, 1930b	<i>Formica polychetena</i> Foerster, 1850
23	<i>Formica cinerea</i> var. <i>ochracea</i> Karawajew, 1937	<i>Formica cinerea</i> Mayr, 1853
24	<i>Formica gagates</i> var. <i>piceo-gagates</i> Karawajew, 1926c	<i>Formica picea</i> Nylander, 1846
25	<i>Formica (Serviformica) cinerea</i> var. <i>sabulosa</i> Karawajew, 1931b	<i>Formica cinerea</i> Mayr, 1853
26	<i>Formica (Raptiformica) sanguinea</i> var. <i>tristis</i> Karawajew, 1929b	<i>Formica sanguinea</i> Latreille, 1798
27	<i>Lasius (Chthonolasius) carniolicus</i> var. <i>kusnezovi</i> Karawajew, 1929b	<i>Lasius carniolicus</i> Mayr, 1861
28	<i>Lasius flavus</i> var. <i>olivacea</i> Karawajew, 1926c	<i>Lasius flavus</i> (Fabricius, 1782)
29	<i>Leptothorax tuberum</i> var. <i>brauneri</i> Karawajew, 1937	<i>Temnothorax unifasciatus</i> (Latreille, 1798)
30	<i>Leptothorax nevodovskii</i> Karawajew, 1926b	<i>Myrmica specioidea</i> Bondroit, 1918
31	<i>Leptothorax tuberum</i> var. <i>nigricephala</i> Karawajew, 1930b	<i>Temnothorax tuberum</i> (Fabricius, 1775)
32	<i>Leptothorax tuberum</i> var. <i>salina</i> Karawajew, 1937	<i>Temnothorax unifasciatus</i> (Latreille, 1798)
33	<i>Leptothorax svartshevskii</i> Karawajew, 1916	<i>Myrmica dshungarica</i> Ruzsky, 1905
34	<i>Lophomyrmex quadrispinosus</i> var. <i>javana</i> Karawajew, 1933c	<i>Lophomyrmex opaciceps</i> Viehmeyer, 1922
35	<i>Messor lobicornis</i> var. <i>rugosa</i> Karawajew, 1912b	<i>Messor lobicornis submuticus</i> Emery, 1908
36	<i>Meranoplus bellii javanus</i> Karawajew, 1935a	<i>Meranoplus castaneus</i> Smith F., 1857
37	<i>Meranoplus nanus similis</i> Karawajew, 1931d	<i>Meranoplus inermis</i> Emery, 1895a
38	<i>Metapone johni</i> Karawajew, 1933b	<i>Metapone greeni</i> Forel, 1911c
39	<i>Messor barbarus hamulifera</i> Karawajew, 1926a	<i>Messor incorruptus</i> Ruzsky, 1923
40	<i>Myrmecina graminicola gotlandica</i> Karawajew, 1930b	<i>Myrmecina graminicola</i> (Latreille, 1802)
41	<i>Myrmecina graminicola oelandica</i> Karawajew, 1930b	<i>Myrmecina graminicola</i> (Latreille, 1802)
42	<i>Myrmecocystus cursor aenescens</i> var. <i>aterrima</i> Karawajew, 1916	<i>Cataglyphis aenescens</i> (Nylander, 1849)
43	<i>Myrmecocystus albicans rotundinodis</i> Karawajew, 1912b	<i>Cataglyphis bicolor</i> (Fabricius, 1793)
44	<i>Myrmica scabrinodis</i> var. <i>ahngerii</i> Karawajew, 1926d	<i>Myrmica salina</i> Ruzsky, 1905
45	<i>Myrmica scabrinodis saposhnikovii</i> var. <i>baikalensis</i> Karawajew, 1931a	<i>Myrmica angulinodis</i> Ruzsky, 1905
46	<i>Myrmica schencki</i> var. <i>brunescens</i> Karawajew, 1929b	<i>Myrmica schencki</i> Viereck, 1903
47	<i>Myrmica schencki</i> var. <i>burtshak-abramovitschi</i> Karawajew, 1929b	<i>Myrmica lobicornis</i> Nylander, 1846
48	<i>Myrmica lobicornis</i> var. <i>kieviensis</i> Karawajew, 1934	<i>Myrmica lobicornis</i> Nylander, 1846
49	<i>Myrmica ruginodis orientalis</i> Karawajew, 1926d	<i>Myrmica kotokui</i> Forel, 1911b
50	<i>Myrmica lobicornis</i> var. <i>plana</i> Karawajew, 1927b	<i>Myrmica deplanata</i> Emery, 1921
51	<i>Myrmica rugulosa</i> var. <i>ruginodiformis</i> Karawajew, 1929b	<i>Myrmica dshungarica</i> Ruzsky, 1905
52	<i>Myrmica rugulosa</i> var. <i>ruguloso-scabrinodis</i> Karawajew, 1929b	<i>Myrmica hellenica</i> Finzi, 1926
53	<i>Myrmica scabrinodis</i> var. <i>sancta</i> Karawajew, 1926d	<i>Myrmica specioidea</i> Bondroit, 1918

.....continued on the next page

TABLE 3. (Continued)

No	Original generic affiliations and spelling	Senior synonyms
54	<i>Myrmica schencki</i> var. <i>starki</i> Karawajew, 1929b	<i>Myrmica lobicornis</i> Nylander, 1846
55	<i>Mystrium camillae javana</i> Karawajew, 1925a	<i>Mystrium camillae</i> Emery, 1889a
56	<i>Odontomachus ruficeps aruanus</i> Karawajew, 1925c	<i>Odontomachus cephalotes</i> Smith F., 1863
57	<i>Oxyopomyrmex santschii</i> var. <i>siciliana</i> Karawajew, 1912b	<i>Oxyopomyrmex saulcyi</i> Emery, 1889b
58	<i>Plagiolepis (Plagiolepis) satunini</i> Karawajew, 1931b	<i>Plagiolepis pallescens</i> (?) Forel, 1889
59	<i>Platythyrea melancholica aruana</i> Karawajew, 1925a	<i>Platythyrea parallela</i> (Smith F., 1859)
60	<i>Polyrhachis alexandri</i> Karawajew, 1906	<i>Polyrhachis solmsi</i> Emery, 1887
61	<i>Polyrhachis (Chariomyrma) arcuata</i> var. <i>aruana</i> Karawajew, 1927a	<i>Polyrhachis obtusa</i> Emery, 1897c
62	<i>Polyrhachis (Hedomyrma) bicolor</i> Karawajew, 1927a	<i>Polyrhachis fervens</i> Smith F., 1860
63	<i>Polyrhachis (Myrmhopla) capra</i> Karawajew, 1927a	<i>Polyrhachis calypso</i> Forel, 1911a
64	<i>Polyrhachis (Chariomyrma) convexa</i> Karawajew, 1927a	<i>Polyrhachis radicola</i> Dahl, 1901
65	<i>Polyrhachis (Myrmhopla) distincta</i> Karawajew, 1927a	<i>Polyrhachis batesi</i> Forel, 1911b
66	<i>Polyrhachis (Campomyrma) creusa distinguenda</i> Karawajew, 1927a	<i>Polyrhachis creusa</i> Emery, 1897c
67	<i>Polyrhachis (Hedomyrma) eucharis</i> Karawajew, 1927a	<i>Polyrhachis atropos</i> Smith F., 1860
68	<i>Polyrhachis (Myrmatropa) schang</i> var. <i>gracilior</i> Karawajew, 1927	<i>Polyrhachis dolomedes</i> Smith F., 1863
69	<i>Polyrhachis (Polyrhachis) bihamata</i> var. <i>minor</i> Karawajew, 1927a	<i>Polyrhachis bihamata</i> Drury, 1773
70	<i>Polyrhachis (Aulacomyrma) mystica</i> Karawajew, 1927a	<i>Polyrhachis cryptoceroides</i> Emery, 1887
71	<i>Polyrhachis (Cyrtomyrma) obsidiana</i> Karawajew, 1927a	<i>Polyrhachis goramensis</i> Emery, 1887
72	<i>Polyrhachis (Myrmhopla) punctata</i> Karawajew, 1927a	<i>Polyrhachis caeciliae</i> Forel, 1912b
73	<i>Polyrhachis (Chariomyrma) rotundiceps</i> Karawajew, 1927a	<i>Polyrhachis marginata</i> Smith F., 1859
74	<i>Polyrhachis (Johnia) schizospina</i> Karawajew, 1927a	<i>Polyrhachis numeria</i> Smith F., 1861
75	<i>Polyrhachis (Myrmhopla) sexspinosa</i> var. <i>sericea</i> Karawajew, 1927a	<i>Polyrhachis sexspinosa</i> (Latreille, 1802)
76	<i>Polyrhachis (Myrmotherinx) ternatae</i> Karawajew, 1933b	<i>Polyrhachis tricuspidis</i> André, 1887
77	<i>Pristomyrmex quadridens</i> var. <i>aruensis</i> Karawajew, 1933c	<i>Pristomyrmex quadridens</i> Emery, 1897b
78	<i>Rhytidoponera subcyanea</i> var. <i>aruana</i> Karawajew, 1925a	<i>Rhytidoponera subcyanea</i> Emery, 1897c
79	<i>Sima (Tetraponera) bidentata</i> var. <i>angusticeps</i> Karawajew, 1933	<i>Tetraponera nitida</i> (Smith F., 1860)
80	<i>Sima (Tetraponera) bidentata</i> Karawajew, 1933c	<i>Tetraponera nitida</i> (Smith F., 1860)
81	<i>Sima (Tetraponera) dentifera</i> Karawajew, 1933c	<i>Tetraponera laeviceps</i> (Smith F., 1859)
82	<i>Sima (Tetraponera) dilatata</i> Karawajew, 1933c	<i>Tetraponera difficilis</i> (Emery, 1900)
83	<i>Sima (Tetraponera) platynota</i> Karawajew, 1933c	<i>Tetraponera laeviceps</i> (Smith F., 1859)
84	<i>Solenopsis latro</i> var. <i>aurata</i> Karawajew, 1912b	<i>Solenopsis lou</i> Forel, 1902a
85	<i>Solenopsis orbula</i> var. <i>oblongior</i> Karawajew, 1926b	<i>Solenopsis deserticola</i> Ruzsky, 1905
86	<i>Stenamma golosejevi</i> Karawajew, 1926d	<i>Stenamma debile</i> (Foerster, 1850)
87	<i>Stictoponera spiralis</i> Karawajew, 1925a	<i>Gnamptogenys crassicornis</i> (Forel, 1912b)
88	<i>Tapinoma simrothi azerbeidzhanica</i> Karawajew, 1932	<i>Tapinoma karavaievi</i> Emery, 1925a
89	<i>Tapinoma simrothi karavaeivi</i> var. <i>transcaucasica</i> Karawajew, 1926c	<i>Tapinoma erraticum</i> (Latreille, 1798)
90	<i>Technomyrmex albipes congolensis</i> Karawajew, 1926e	<i>Technomyrmex moerens</i> Santschi, 1913
91	<i>Tetramorium caespitum annauensis</i> Karawajew, 1931b	<i>Tetramorium armatum</i> Santschi, 1927
92	<i>Tetramorium caespitum</i> var. <i>brevinodis</i> Karawajew, 1927c	<i>Tetramorium armatum</i> Santschi, 1927
93	<i>Tetramorium caespitum</i> var. <i>oxyomma</i> Karawajew, 1912b	<i>Tetramorium biskrense</i> Forel, 1904b
94	<i>Tetramorium caespitum</i> var. <i>picta</i> Karawajew, 1912a	<i>Tetramorium inerme</i> Mayr, 1877
95	<i>Tetramorium caespitum</i> var. <i>plana</i> Karawajew, 1927c	<i>Tetramorium inerme</i> Mayr, 1877
96	<i>Xiphomyrmex aruensis</i> Karawajew, 1935a	<i>Tetramorium carinatum</i> (Smith F., 1859)

TABLE 4. Current synonyms of the genus-group names, described by W. A. Karawajew

No	Original affiliations	Senior synonyms
1	<i>Polyrhachis</i> subgen. <i>Cephalomyrma</i> Karawajew, 1935a	<i>Polyrhachis</i> subgen. <i>Myrmhopla</i> Forel, 1915
2	<i>Conothorax</i> Karawajew, 1935a	<i>Pheidole</i> Westwood, 1839
3	<i>Dolichoderus</i> subgen. <i>Diabolus</i> Karawajew, 1926	<i>Dolichoderus</i> Lund, 1831
4	<i>Polyrhachis</i> subgen. <i>Johnia</i> Karawajew, 1927a	<i>Polyrhachis</i> subgen. <i>Aulacomyrma</i> Emery, 1921
5	<i>Solenomyrma</i> Karawajew, 1935a	<i>Gauromyrmex</i> Menozzi, 1933
6	<i>Solenopsis</i> subgen. <i>Solenops</i> Karawajew, 1930a	<i>Carebara</i> Westwood, 1840
7	<i>Typhloteras</i> Karawajew, 1925b	<i>Centromyrmex</i> Mayr, 1866

TABLE 5. Unavailable names (quadrinomens) of the taxa, described by W. A. Karawajew

No	Original generic affiliations and spelling
1	<i>Camponotus maculatus aethiops</i> var. <i>clara</i> Karawajew, 1926c
2	<i>Camponotus</i> (<i>Myrmambys</i>) <i>reticulatus bedoti</i> var. <i>punctulata</i> Karawajew, 1929c
3	<i>Cataglyphis</i> (<i>Monocombus</i>) <i>cursor aenescens</i> var. <i>maeotica</i> Karawajew, 1935b
4	<i>Crematogaster auberti laestrigon</i> var. <i>cretica</i> Karawajew, 1927c
5	<i>Diacamma rugosum geometricum</i> var. <i>concentrica</i> Karawajew, 1935a
6	<i>Diacamma rugosum hortensis</i> var. <i>debilior</i> Karawajew, 1927a
7	<i>Diacamma rugosum geometricum</i> var. <i>horizontalis</i> Karawajew, 1935a
8	<i>Diacamma rugosum sculpturatum</i> var. <i>papuana</i> Karawajew, 1935a
9	<i>Diacamma rugosum geometricum</i> var. <i>paralleiruga</i> Karawajew, 1935a
10	<i>Iridomyrmex rufoniger pallidus</i> var. <i>flava</i> Karawajew, 1926e
11	<i>Leptogenys</i> (<i>Lobopelta</i>) <i>diminuta fruhstorferi</i> var. <i>amboinensis</i> Karawajew, 1925c
12	<i>Leptogenys</i> (<i>Lobopelta</i>) <i>diminuta fruhstorferi</i> var. <i>huruensis</i> Karawajew, 1925c
13	<i>Leptogenys</i> (<i>Lobopelta</i>) <i>diminuta fruhstorferi</i> var. <i>longinoda</i> Karawajew, 1925c
14	<i>Leptogenys</i> (<i>Lobopelta</i>) <i>diminuta fruhstorferi</i> var. <i>nitida</i> Karawajew, 1927a
15	<i>Messor barbarus striaticeps</i> var. <i>curvispina</i> Karawajew, 1912b
16	<i>Messor barbarus capitatus</i> var. <i>obscuriventris</i> Karawajew, 1912b
17	<i>Messor structor striaticeps</i> var. <i>salina</i> Karawajew, 1937
18	<i>Messor barbarus instabilis</i> var. <i>semirubra</i> Karawajew, 1926a
19	<i>Messor structor striaticeps</i> var. <i>sevani</i> Karawajew, 1926a
20	<i>Messor barbarus capitatus</i> var. <i>splendens</i> Karawajew, 1912b
21	<i>Myrmecocystus</i> (<i>Cataglyphis</i>) <i>cursor aenescens</i> var. <i>flavigastra</i> Karawajew, 1924
22	<i>Polyrhachis</i> (<i>Myrma</i>) <i>sericata pruinosa</i> var. <i>harmsi</i> Karawajew, 1930a
23	<i>Tapinoma erratum ambiguum</i> var. <i>revolutionis</i> Karawajew, 1927e
24	<i>Tetramorium striativnetre schneideri</i> var. <i>longispina</i> Karawajew, 1912a

One of the most important legacies of Karawajew is a large collection of ants, which he left in excellent condition to future generations of entomologists. All specimens in the collection are superbly mounted, labelled, identified and ordered. As a rule, on the first pin with material from the ant nest series (at least for the samples he collected), Karawajew initially placed several labels: a locality label, a label with a collection code number, and an identification label. Subsequent pins from the same nest series usually only have a label with the collection code number (Fig. 5). These code numbers were usually published for type material in Karawajew's published papers. There are also additional (red) labels for many type specimens in the collection which were added later, mainly by Kostyuk (1976), but sometimes by Dlussky and Radchenko. We recently posted small labels with the AntWeb CASENT numbers for the specimens imaged.

Karawajew's ant collection consists of two main parts: the mounted dry material is stored at the Schmalhausen Institute of Zoology of the National Academy of Sciences of Ukraine (Figs. 2–5), and the material in alcohol vials is kept in the National Museum of Natural History of the National Academy of Science of Ukraine (Martynov & Radchenko 2016).

TABLE 6. Type specimens of the taxa described by W. A. Karawajew missing in the collection

No	Original generic affiliations and spelling	Notes
1	<i>Acropyga</i> (<i>Acropyga</i>) <i>acutiventris</i> var. <i>carinata</i>	
2	<i>Acropyga</i> (<i>Atopodon</i>) <i>distinguenda</i>	
3	<i>Acropyga</i> (<i>Rhizomyrma</i>) <i>dubia</i>	
4	<i>Anoplolepis</i> (<i>Anoplolepis</i>) <i>simulans</i> var. <i>biskrensis</i>	
5	<i>Aphaenogaster</i> <i>schmidti</i>	
6	<i>Camponotus</i> (<i>Myrmamblys</i>) <i>gibbosus</i>	
7	<i>Cataglyphis</i> (<i>Monocombus</i>) <i>cursor aenescens</i> var. <i>maeotica</i>	
8	<i>Conothorax</i> <i>bilobum</i>	
9	<i>Crematogaster</i> (<i>Physocrema</i>) <i>aurita</i>	
10	<i>Diacamma</i> <i>rugosum hortensis</i> var. <i>debilior</i>	
11	<i>Diacamma</i> <i>rugosum geometricum</i> var. <i>concentrica</i>	
12	<i>Formica</i> <i>cinerea</i> var. <i>brevisetosa</i>	
13	<i>Formica</i> <i>sanguinea</i> var. <i>clara</i>	
14	<i>Formica</i> (<i>Raptiformica</i>) <i>sanguinea</i> var. <i>tristis</i>	
15	<i>Iridomyrmex</i> <i>latifrons</i>	
16	<i>Lasius</i> <i>flavus</i> var. <i>olivacea</i>	
17	<i>Lasius</i> <i>fuliginosus</i> var. <i>orientalis</i>	Neotype in Karawajew's collection (Radchenko 2005)
18	<i>Messor barbarus striaticeps</i> var. <i>curvispina</i>	
19	<i>Messor barbarus hamulifera</i>	
20	<i>Messor barbarus</i> var. <i>polita</i>	
21	<i>Messor structor striaticeps</i> var. <i>salina</i>	
22	<i>Myrmecocystus albicans rotundinodis</i>	
23	<i>Myrmecocystus bicolor</i> var. <i>sudanica</i>	
24	<i>Oecophylla smaragdina</i> var. <i>fuscoides</i>	
25	<i>Opistopsis manni</i> var. <i>aruana</i>	
26	<i>Opisthopsis halmaherae</i>	
27	<i>Plagiolepis</i> (<i>Plagiolepis</i>) <i>nitida</i>	
28	<i>Plagiolepis</i> (<i>Plagiolepis</i>) <i>satunini</i>	
29	<i>Polyrhachis alexandri</i>	
30	<i>Polyrhachis</i> (<i>Myrma</i>) <i>conops</i> var. <i>bismarckensis</i>	Holotype in MNHUB* (Karawajew 1927a)
31	<i>Polyrhachis</i> (<i>Myrmhopla</i>) <i>bicolor</i> var. <i>brachyacantha</i>	
32	<i>Polyrhachis</i> (<i>Myrmhopla</i>) <i>capra</i>	
33	<i>Polyrhachis</i> (<i>Chariomyrma</i>) <i>convexa</i>	
34	<i>Polyrhachis</i> (<i>Myrmhopla</i>) <i>davydovi</i>	
35	<i>Polyrhachis</i> (<i>Campomyrma</i>) <i>creusa distinguenda</i>	
36	<i>Polyrhachis</i> (<i>Cyrtomyrma</i>) <i>jurii</i>	
37	<i>Polyrhachis</i> (<i>Polyrhachis</i>) <i>bihamata</i> var. <i>minor</i>	
38	<i>Polyrhachis</i> (<i>Chariomyrma</i>) <i>nigrescens</i>	
39	<i>Polyrhachis</i> (<i>Cephalomyrma</i>) <i>stylifera</i>	
40	<i>Solenomyrma acanthina</i>	
41	<i>Tapinoma kinburni</i>	Neotype in SIZK (Radchenko 1983)

MNHUB—Museum für Naturkunde der Humboldt-Universität, Berlin, Germany (collection of H. Stitz)



FIGURES 2–5. Photos of Karawajew’s collection: 2—cupboard with the collection, outside view; 3—cupboard with the collection, inside view; 4—one of the boxes; 5—example of mounted ants with Karawajew’s original labels.

In total, the mounted collection consists of more than 20,000 ant specimens, mainly from Southeast Asia and the Palaearctic, but there is also some material from the Afrotropics, Australia, and North and South America.

The first catalogue of the type specimens of this collection was published by Kostyuk (1976) and included a list of 178 taxa. After careful investigation of the collection we found the type specimens of 218 taxa described by Karawajew and of 286 taxa described by other myrmecologists and donated to Karawajew, namely: A. Forel (107), F. Santschi (96), C. Emery (21), H. Viehmeyer (14), K. V. Arnoldi (14), N. N. Kuznetsov-Ugamsky (10), C. Menozzi (7), M. D. Ruzsky (4), H. Stitz (4), Š. Soudek (2), B. Pisarski (2). G. Mayr (1), B. Finzi (1), W. M. Wheeler (1), E. André (1) and T. Borgmeier (1). Since Karawajew collaborated closely with these entomologists and exchanged materials with them, his type specimens are also stored in many European and American Museums. These include the Museo Civico di Storia Naturale “Giacomo Doria”, Genoa, Italy (collection of Emery), Naturhistorisches Museum, Basle, Switzerland (collections of Santschi and partly of Forel), Museum d’Histoire Naturelle, Geneva, Switzerland (collection of Forel), Museum of Comparative Zoology of Harvard University, USA and even in the Museu de Zoologia da Universidade de São Paulo, Brazil (Esteves *et al.* 2011; MCZ 2023; our unpublished data). Santschi, Emery, Forel, and others described many new species based on samples collected and sent to them by Karawajew.

Material and methods

This paper is the first in a planned series of publications on the type specimens of Karawajew collection and includes taxa of the subfamily Dorylinae Leach, 1815, Poneromorph subfamilies (e.g. Amblyoponinae Forel, 1893, Ectatomminae Emery, 1895b, Ponerinae Lepeletier de Saint-Fargeau, 1835 and Proceratiinae Emery, 1895b) and Pseudomyrmecinae Smith M., 1952 according to current classification (Bolton 2023 and references herein).

This paper is organized as follows: first we give generic names, listed alphabetically (subgeneric names are ignored when sorting) using Karawajew's original generic affiliation and spelling, followed by the author's name, year, page of description, numbers of figures (if any) and caste(-s) described. The species and infraspecific taxa within a genus are also ordered alphabetically (by the names of species / subspecies / variety). We then indicate the current status of the taxon with its affiliation to subfamily according to modern taxonomic designations in brackets; if the taxonomic status has ever changed, we add supplementary information. This is followed by the data of the type locality(-ties) as a direct citation from the original papers using their language, the number of the type specimens with their original Karawajew labels, the number of the AntWeb CASENT images, and number of the box in the collection. We decided to include data on invalid names (quadrinomens), since the validity of the name is formally a requirement of the International Code of Zoological Nomenclature, but described specimens are real and could belong to species other than their bi- or trinomial taxon. If necessary, we add notes to concrete taxa.

Images were taken with Leica Z16 APO stereomicroscope equipped with Leica DFC 450 camera and processed by LAS Core software. The corresponding images can be accessed using AntWeb CASENT code numbers (see below).

The slash character (“ / “) is used to indicate line separation on labels.

The caste abbreviations used are: w—worker, s—soldier, q—queen (gyne), m—male.

Catalogue of the type specimens

Acanthostichus quadratus Emery, 1895b: 750, Taf. 16, Fig. 5, 6; Taf. 17, Fig. 12, w, q.

Current status: *Acanthostichus quadratus* (s/f Dorylinae).

Type locality(-ies): “Aus Bolivian und Amazonas”.

Original Karawajew labels: 1 w, “Bolivia”, “*Acanthostichus* / (*Acanthostichus*) / *quadratus* Em. / Det. Emery”.

Material: PARALECTOTYPE, 1 w (CASENT0916794) (Box 1).

Notes. Mackay (1996) designated lectotype (worker) of *A. quadratus* from “Amazonas” (probably Brazil).

Aenictus bengalensis r. *impressus* Forel, in Karawajew, 1927a: 7, w.

Current status: **junior synonym** of *Aenictus aratus* Forel, 1900a: 74 (s/f Dorylinae).

Synonymy: Shattuck 2008: 4.

Type locality(-ies): exact location not given, but the original labels indicate Australia (see also Shattuck 2008; Bolton 2023).

Original Karawajew labels: 1 w, “Queensland / Mackay, / Turner”, “*Eciton* (*Aenictus*) / *pachycerus* Sm. sb. / *impressus* For. / typus”, “Paratypus w / *Eciton pachycerus* / *impressus* [sic] Forel”.

Material: PARALECTOTYPE, 1 w (CASENT0916861) (Box 5).

Notes. Shattuck (2008) designated lectotype (worker) of *A. pachycerus impressus* from Mackay, Queensland.

Aenictus eugenii Em. subsp. *caroli* Forel, 1910: 248, w.

Current status: *Aenictus eugenii caroli* (s/f Dorylinae).

Type locality(-ies): “Nefassit”.

Original Karawajew labels: 3 w, “Nefassit, / Erythreia / Escherich”, “5190. Coll. / Karavaievi”, “*Eciton* (*Aenictus*) / *eugenii* Em. sb. / *caroli* For. typ.”, “Paratypus ww / *Eciton eugenii* / *caroli* Forel”; 10 w on 5 pins, “5190. Coll. / Karavaievi”, “Paratypus ww / *Eciton eugenii* / *caroli* Forel”.

Material: SYNTYPES, 13 w (CASENT0916857) (Box 5).

Aenictus fergusonii Forel, 1901: 473, w.

Current status: *Aenictus fergusonii* (s/f Dorylinae).

Type locality(-ies): “Travancore (Ferguson, Rothney)”

Original Karawajew labels: 2 w, “Travancore”, “*Eciton (Aenictus) / fergusonii* For. / Dr. Forel”, “Syntypus”.

Material: SYNTYPES, 2 w (CASENT0917746) (Box 5).

Aenictus punensis Forel, 1901: 476, w.

Current status: *Aenictus punensis* (s/f Dorylinae).

Type locality(-ies): “Poona (Wroughton)”.

Original Karawajew labels: 2 w, “Poona XI. 6. / (Wroughton)”, “*Eciton (Aenictus) / punensis* For. / Det. Karawajew, 1924”

Material: SYNTYPES, 2 w (CASENT0916863) (Box 5).

Aenictus wroughtonii Forel, 1890: cii, w, m.

Current status: *Aenictus wroughtonii* (s/f Dorylinae).

Type locality(-ies): “Thana près Poona (Inde anglaise), 31 mars 1890; w et m récoltés ensemble”.

Original Karawajew labels: 1 m, “Poona”, “*Eciton (Aenictus) / wroughtonii* For. / Det. Forel”, “m”.

Material: PARALECTOTYPE, 1 m (CASENT0916864) (Box 5).

Notes. Jaitrong *et al.* (2010) designated lectotype (worker) of *A. wroughtonii* from Thana, near Poona, India.

Alfaria simulans Emery, 1896: 177, w (footnote).

Current status: *Gnamptogenys simulans*. Combination in *Gnamptogenys*: Brown 1958: 229 (s/f Ectatomminae).

Type locality(-ies): “Costa Rica”.

Original Karawajew labels: 1 w, “Costa Rica”, “*Alfaria / simulans* Em. / Det. Emery”.

Material: SYNTYPE, 1 w (CASENT0916804) (Box 2).

Anochetus amati Karawajew, 1925c: 285, Fig. 8, q.

Current status: **junior synonym** of *Anochetus graeffei* Mayr, 1870: 961. Synonymy: Wilson 1959: 507 (s/f Ponerinae).

Type locality(-ies): “Wammar (Aroe), Nr. 2560, 1 entflügeltes q, einzeln gefangen”.

Original Karawajew labels: 1 q, “Wammar, Aroe, / V. Karavaiev, / 2560”, “*Anochetus / amati* Kar. / Typus. 1914 q”, “Holotypus q / *Anochetus / amati* Karaw.”.

Material: HOLOTYPE, q (CASENT0916845) (Box 4).

Anochetus gracilis Karawajew 1925c: 286, Fig. 9, w, q.

Current status: *Anochetus gracilis* (s/f Ponerinae).

Junior synonym of *Anochetus risii* Forel, 1900b: 60: Brown 1978: 558. Restored from synonymy: Chen *et al.*, 2019: 70.

Type locality(-ies): “Buitenzorg, Botan. Garten, Nr. 2416, Nest in der Erde, ww, mehrere geflügelte qq und Kokons (von geblicher Farbe 5,2 mm lang)”.

Original Karawajew labels: 2 w, “Java, / Buitenzorg / Karavaiev, / 2416”, “*Anochetus / gracilis* Kar. / Typus, 1923”, “Syntypus ww *Anochetus / gracilis* Karaw.”; 13 w on 7 pins with the same labels; 3 w, “Java, / Buitenzorg”, “2416. Coll. / Karavaievi”, “*Anochetus / gracilis* Kar. / Typus”, “Syntypus ww / *Anochetus / gracilis* Karaw.”; 2 w, “Java, / Buitenzorg / Karavaiev, / 2416”, “*Anochetus / gracilis* Kar. / Typus, 1923”; 6 w on 2 pins, “Java, / Buitenzorg”, “2416. Coll. / Karavaievi”, “Syntypus ww / *Anochetus / gracilis* Karaw.”; 1 q, 1 m, “Java, / Buitenzorg / Karavaiev, / 2416”, “*Anochetus / gracilis* Kar. / Typus, 1923”; “Syntypus q m / *Anochetus / gracilis* Karaw.”; 7 q on 3 pins, “Java, / Buitenzorg”, “2416. Coll. / Karavaievi”; “Syntypus / *Anochetus / gracilis* Karaw.”; 1 q, “Java, / Buitenzorg / Karavaiev, / 2416”, “*Anochetus / gracilis* Kar. / Typus, 1923”; “Syntypus q / *Anochetus / gracilis* Karaw.”.

Material: SYNTYPES, 26 w (CASENT0916847), 9 q (Box 4).

Notes. There is also one male with the labels “Java, / Buitenzorg, Karavaiev, / 2416”, “*Anochetus / gracilis* Kar. / Typus, 1923”, “Syntypus m / *Anochetus / gracilis* Karaw.”, but it cannot formally belong to the type series, since *A. gracilis* was described only from workers and gynes.

Anochetus minutus Karawajew 1925c: 288, Fig. 10, w, q.

Current status: **junior synonym** of *Anochetus graeffei* Mayr, 1870: 961. Synonymy: Wilson 1959: 507 (s/f Ponerinae).

Type locality(-ies): “Segamat, Johore (Malacca). O. John (Nr. 395 y), meine Nr. 2757. Aus einem Termitennest (387, 9–393, 5). Eine verhältnismässig grosse Anzahl ww, Kokons (gelblich, 3,2 mm lang) und 1 q (Königin)”.

Original Karawajew labels: 4 w on 2 pins, “Segamat, Johore / Malacca. / O. John. 2757”, “*Anochetus / minutus* Kar. / Typus. 1914”, “Syntypus ww / *Anochetus / minutus* Karaw.”.

Material: SYNTYPES, 4 w (CASENT0916846) (Box 4).

Anochetus splendens Karawajew 1925c: 289, Fig. 11, q.

Current status: **junior synonym** of *Anochetus isolatus* Mann, 1919: 302. Synonymy:

Brown 1978: 557 (s/f Ponerinae).

Type locality(-ies): “Wammar, Nr. 2673, 1 q, am Licht gefangen”.

Original Karawajew labels: 1 q, “Wammar, Aroe, / V. Karavaiev, / 2673”, “*Anochetus / splendens / Karavaiev*, 1914 / Typus”, “Holotypus q / *Anochetus / splendens* Karaw.”

Material: HOLOTYPE, q (CASENT0916848) (Box 4).

Cerapachys (subgen. *Cerapachys*) *salimani* Karawajew, 1925a: 72, w.

Current status: ***Parasyscia salimani***. Combination in *Parasyscia*: Borowiec 2016: 205 (s/f Dorylinae).

Type locality(-ies): “Tjibodas (Java), Nr. 2751, mehrere ww”.

Original Karawajew labels: 2 w, “Java, / Tjibodas / Karavaiev”, “2751. Coll. / Karavaievi”, “*Cerapachys / (Cerapachys) / salimani* typ. / W. Karawajew. 1914”, “Syntypus ww *Cerapachys / salimani* Karaw.”; 11 w on 4 pins, 2751. Coll. / Karavaievi”, “Syntypus ww *Cerapachys / salimani* Karaw.”.

Material: SYNTYPES, 13 w (CASENT0916792) (Box 1).

Cylindromyrmex brasiliensis Emery, 1901: 53, w, m.

Current status: ***Cylindromyrmex brasiliensis*** (s/f Dorylinae).

Type locality(-ies): “Santa-Catharina”.

Original Karawajew labels: 1 w, “St. Catharina”, “*Cylindromyrmex / brasiliensis* Em. / Det. Emery”, “Syntypus”.

Material: SYNTYPE, 1 w (CASENT0917744) (Box 1).

Notes to *Diacamma* Mayr, 1862

One day in the early 1960s, some of the old boxes with the Karawajew’s ant collection (including box with *Diacamma* species) were flooded by water that dripped from the roof when snow melted. As a result, some of the labels were blurred and some of the ants peeled away and fell off the cardboard triangles. In the 1970s G. M. Dlussky tried to restore this material based on data from Karawajew’s publications; he stuck ants back to triangles, pinned original labels back on, and added an additional label reading “Dlussky restaur.”. In some cases Dlussky may have attached some specimens or labels incorrectly, making it impossible to be absolutely certain that specimens are types of a particular species (particularly, restored by Dlussky).

Diacamma rugosum Le Guill. subsp. *arcuata* Karawajew, 1925b: 118, w.

Current status: ***Diacamma rugosum arcuatum*** (s/f Ponerinae).

Type locality(-ies): “Manguinang (Sumatra), 25.XI.1913, O. John, Einzelläufer”.

Original Karawajew labels: 1 w (def.), “Sumatra. / Manguinang, / O. John. 1913”, “*Diacamma / rugosum / arcuatum* Kar. / Karawajew det.”, “Dlussky / restaur.”.

Material: HOLOTYPE, w (CASENT0916821) (Box 2).

Diacamma rugosum La Guill. subsp. *balinensis* Karawajew, 1925b: 116, w.

Current status: ***Diacamma rugosum balinense*** (s/f Ponerinae).

Type locality(-ies): “Boeleleng (Singaradja), Bali, Nr. 2681, einige ww”.

Original Karawajew labels: 1 w, “Boeileleng, / Bali. Karav.”, “2681. Coll. / Karavaievi”, “*Diacamma vagans bali- / nense* Kar. typ.”, “Syntypus w / *Diacamma rugosum / balinense* Karaw.”; 1 w, “2681. Coll. / Karavaievi”, “Syntypus / *Diacamma rugosum / balinensis* Karaw.”; 2 w, “2681. Coll. / Karavaievi”, “Syntypus / *Diacamma rugosum / balinense* Karaw.”, “Dlussky / restaur.”.

Material: SYNTYPES, 4 w (CASENT0916818) (Box 2).

Diacamma rugosum La Guill. subsp. ***buruensis*** Karawajew, 1925b: 117, w.

Current status: **junior synonym** of ***Diacamma bispinosum*** (Le Guillou, 1842: 317). Synonymy: Wilson 1958b: 367 (s/f Ponerinae).

Type locality(-ies): “Tifoe (Boeroe), Nr. 2734, einige ww”.

Original Karawajew labels: 2 w, “Boeroe / Tifoe / Karawaiew”, “2734. Coll. / Karavaievi”, “Syntypus w / *Diacamma rugosum / buruensis* Karaw.” “Dlussky / restaur.”.

Material: SYNTYPES, 2 w (CASENT0916819) (Box 2).

Notes. Above labels are not originals written by Karawajew, but rather by G. M. Dlussky.

Diacamma rugosum subsp. ***geometricum*** F. Sm. var. ***anceps*** Emery, 1897a: 155, w (unavailable name; first available use of name: Matsumura & Uchida 1926: 51).

Current status: ***Diacamma rugosum anceps*** (s/f Ponerinae).

Junior synonym of *Diacamma rugosum*: Lin & Wu 2003: 67. Subspecies of *Diacamma rugosum*: Chapman & Capco 1951: 55; Bolton 1995: 169; Terayama 2009: 103; Zhou & Ran 2010: 104; Guénard & Dunn 2012: 58.

Type locality(-ies): “Hong Kong (esemplari racc. da Ris e mandatimi dal Forel), Engano (racc. dal Modigliani), Birmania, Carin (racc. dal Fea)”.

Original Karawajew labels: 1 w, “Engano / Bua-Bua V.VI. / Modigliani 1891”, “*Diacamma / rugosum geometr. / v. anceps* Emery / typus”, “Paratypus”.

Material: SYNTYPE, 1 w (CASENT0916816) (Box 2).

Diacamma rugosum geometricum Sm. var. ***horizontalis*** Karawajew, 1935a: 63, w.

Current status: **unavailable (infrasubspecific) name**. (s/f Ponerinae)

Type locality(-ies): “Lien-Chieu bei Tourane an der Basis von Col de Nuage, Zentralannam, K. Davydov, Nr. 5636, 1 w”.

Original Karawajew labels: 1 w, “Tourana / Lien-Chieu An- / nam Davydov”, “*Diacamma / rugos. geometr. / v. horizontalis / nova* Kar. typ.”, “5636. / Coll. Karavaievi”, “*rugos. geometr. v. / horizontalis*”, “Homotypus [sic] *Diacamma / rugosum geometrica / v. horizontalis* Kar.”.

Material: HOLOTYPE, w (CASENT0916817) (Box 2).

Diacamma rugosum geometricum Sm. var. ***paralleliruga*** Karawajew, 1935a: 64, w.

Current status: **unavailable (infrasubspecific) name** (s/f Ponerinae).

Type locality(-ies): “Dalat, Lang Biang, 1500 m, Südannam, K. Davydov, 2.II.1931, Nr. 5636, 1 w”.

Original Karawajew labels: 1 w, “*rugos. geom. / v. paralleliruga*”, “Lang Biang / Annam, / Davydov”, “5760. Coll. / Karavaievi”, “*Diacamma / rugosum geo- / metr. v. paralleli- / ruga* Karaw. typus”, “Holotypus *Diacamma / rugosum geometrica / v. paralleliruga* Kar.”

Material: HOLOTYPE, w (CASENT0916815) (Box 2).

Notes. The number of the holotype specimen in the original description is 5636, but 5760 in the collection. The number 5760 in the original description was assigned to *D. rugosum gibbosum*, and 5636 to both var. *paralleliruga* and var. *horizontalis* (above). This discrepancy may be the result of mistakes made by Dlussky, Karawajew, or both.

Diacamma rugosum gibbosum Karawajew, 1935a: 68, Fig. 4, w.

Current status: ***Diacamma rugosum gibbosum*** (s/f Ponerinae).

Type locality(-ies): “Dalat, Land Biang, 1500 m, Südannam, K. Davydov, Nr. 5760, 1 w”.

Original Karawajew labels: 1 w, “Lang Biang, / Annam, / K. Davydov”, “5761. Coll. / Karavaievi”, “Holotypus / *Diacamma rugosum / gibbosum* Kar.”, “Dlussky / restaur.”.

Material: HOLOTYPE, w (CASENT0916811) (Box 2).

Notes. The number of the holotype specimen in the original description is 5760, but 5761 in the collection. We do not know whether Karawajew or Dlussky made the mistake.

Diacamma rugosum La Guill. subsp. ***latispina*** Karawajew, 1925b: 119, w.

Current status: ***Diacamma rugosum latispinum*** (s/f Ponerinae).

Type locality(-ies): “Tjiapus auf dem Salak bei Buitenzorg, Einzelläufer”.

Original Karawajew labels: 1 w, “Java, Salak, / Tjiapus, 2900. / V. Karavaievi”, “*Diacamma / rugosum / latispinum* / Karaw. typ.”, “Holotypus w / *Diacamma rugosum / latispinum* Karaw.”.

Material: HOLOTYPE, w (def.) (Box 2).

Diacamma rugosum rugosum Sm. var. ***ovalis*** Karawajew, 1935a: 62, w (unavailable name; first available use of name: Chapman & Capco 1951: 56).

Current status: ***Diacamma rugosum ovale*** (s/f Ponerinae).

Type locality(-ies): “Ba-Me-Thuot, 700 m, Prov. Danlac, Südannam, an der Grenze von Cambodge, K. Davydov, Nr. 5920, 1 w”.

Original Karawajew labels: 1 w, “Ba Me Thuot / Annam. 30.VI. / 30 K. Davydov”, “5720. Coll. Karavaievi”, “*Diacamma / rugosum* var. / *ovalis* Karav. / typus”, “Holotypus / *Diacamma rugosum / v. ovalis* Karaw.”, “Dlussky / restaur.”, “not a type! / 1994 / W. L. Brown”.

Material: HOLOTYPE, w (CASENT0916813) (Box 2).

Notes. In the early 1990s, we sent a sample of *Diacamma* type material to Prof. W. L. Brown (USA) for study, but he was unable to complete a revision of the genus before his death. However, there is an additional Brown label on the pin with this subspecies “not a type! / 1994 / W. L. Brown”. Moreover, the number of the holotype specimen in the original description is 5920, but 5720 in the collection. The situation may be similar to that involving *D. rugosum gibbosum* (above).

Discothyrea oculata Emery, 1901: 52, w, q, m.

Current status: ***Discothyrea oculata*** (s/f Proceratiinae).

Type locality(-ies): “Cameroun (L. Conradt)”.

Original Karawajew labels: 1 w, “Kamerun”, “*Discothyrea oculata* Em. Det. C. Emery”.

Material: PARALECTOTYPE, 1 w (CASENT0916810).

Notes. Hita Garcia *et al.* (2019) designated lectotype (worker) of *D. oculata* from Cameroon.

Dorylus brevipennis Em. st. ***Zimmermanni*** Santschi, 1910c: 738, Figs. 1, 2, s, w, m.

Current status: ***Dorylus brevipennis zimmermanni*** (s/f Dorylinae).

Type locality(-ies): “Madingou. Congo français. Nombreux m et w captures ensemble. (Rev. P. Zimmermann)”.

Original Karawajew labels: 3 w, “Madingou, / Congo”, “5166. Coll. / Karavaievi”, “*Dorylus (Dory- / lus) brevipennis* / Em. ssp. *Zimmerman- / ni* Santschi / Santschi det.”; 1 m, “Madingou, / Congo. / Zimmermann”, “5166. / Coll. Karavaievi”. “m”.

Material: SYNTYPES, 4 w (CASENT0916852), 1 m (CASENT0916853) (Box 5).

Dorylus (Anomma) kohli Wasm. var. ***congolensis*** Santschi, 1910a: 352, Fig. 1, s, w.

Current status: ***Dorylus congolensis***. Raised to species: Boven van & Léveux 1970: 356 (s/f Dorylinae).

Type locality(-ies): “Brazzaville, N’Duona”.

Original Karawajew labels: 1 s, “Congo fr.”, “1958. Coll. / Karavaievi”, “*Dorylus (Anomma) / kohli* v. *congolensis* / Sant. typus”; 28 w on 10 pins, “1958. Coll. / Karavaievi”.

Material: SYNTYPES, 29 w (CASENT0916855) (Box 5).

Dorylus* (s. str.) *spininodis Em. subsp. n. ***longiceps*** Viehmeyer, 1914: 26, Fig. 1, w.

Current status: ***Dorylus spininodis longiceps*** (s/f Dorylinae).

Type locality(-ies): “Manow, Bez. Langenburg, D.-O.-Afrika”.

Original Karawajew labels: 1 w, “Manow / D.-O. Afrika”, “*Dorylus (Dorylus) / spininodis* Em. sb. / *longiceps* Viehm. / Typus”.

Material: SYNTYPE, 1 w (CASENT0916854) (Box 5).

Eciton (Aenictus) ceylonicus Mayr subsp. ***orientalis*** Karawajew, 1926e: 423, Fig. 2, w.

Current status: ***Aenictus orientalis***. Raised to species: Shattuck 2008: 18 (s/f Dorylinae).

Type locality(-ies): “Ins. Wammar (Aru-Archipel), 19.III.1913 (No. 2611)”.

Original Karawajew labels: 5 w on 2 pins, “Wammar, / Aru. W. / Karawajew”, “2611. Coll. / Karavaievi”, “*Eciton (Aenic- / tus) ceylonicus* / ssp. *orientalis* / Karav. typus”, “Syntypus w / *Eciton ceylonicus* / *orientalis* Karaw.”; 38 w on 11 pins, “2611. Coll. / Karavaievi”, “Syntypus w / *Eciton ceylonicus* / *orientalis* Karaw.”.

Material: SYNTYPES, 43 w (CASENT0916856) (Box 5).

Eciton (Aenictus) fergussoni Forel subsp. ***elongatus*** Karawajew, 1926e: 424, Fig. 3, w.

Current status: **junior synonym** of ***Aenictus gracilis*** Emery, 1893: 187. Synonymy: Wilson 1964: 463 (s/f Dorylinae).

Type locality(-ies): “Ramboda (Ceylon). 3500 Fuss, 8.XII.1912, O. John, einige ww”.

Original Karawajew labels: 2 w, “Ramboda, / Ceylon, 8.XII. / 1912. O. John”, “5191. Coll. / Karavaievi”, “*Eciton (Aenictus) / fergussoni* For. / sb. *elongatus* / Karavaiev, Typus”, “Syntypus ww / *Eciton fergussoni* / *elongatus* Karaw.”; 2 w, “5191. Coll. / Karavaievi”, “Syntypus ww / *Eciton fergussoni* / *elongatus* Karaw.”.

Material: SYNTYPES, 4 w (CASENT0916860) (Box 5).

Eciton (Aenictus) fergussoni For. var. ***sundaica*** Karawajew, 1927a: 7, w.

Current status: **junior synonym** of ***Aenictus laeviceps*** (Smith F., 1857: 79), Borneo. Synonymy: Wilson 1964: 467 (s/f Dorylinae).

Type locality(-ies): “Prinsen-Eiland in der Sundastrasse, 5.1.1913 (nr. 2398)”.

Original Karawajew labels: 2 w, “Princen-Eiland, / Karavaiev”, “2398. Coll. / Karavaievi”, “*Eciton (Aenictus) / fergussoni* For. / var. *sundaica* Kar. / Typus”, “Syntypus *Aenictus / fergussoni* v. *sun- / daica* Kar.”; 15 w on 5 pins, “2398. Coll. / Karavaievi”, “Syntypus *Aenictus / fergussoni* v. *sun- / daica* Kar.”.

Material: SYNTYPES, 17 w (CASENT0916859) (Box 5).

Eciton (Aenictus) impressus For. var. ***levior*** Karawajew, 1926e: 424, w.

Current status: ***Aenictus levior***. Raised to species: Shattuck 2008: 17 (s/f Dorylinae).

Type locality(-ies): “Tifu auf der Ins. Buru (No. 2741), einige ww”.

Original Karawajew labels: 2 w, “Tifu (Buru) / Karavaiev, / 2741”, “2741. Coll. / Karavaievi”, “*Eciton (Aenictus) / pachycerus* Sm. sb. / *impressus* For. var. / *levior* Karavaiev, / Typus”, “Syntypus *Eciton (Ae- / nictus) impressus* v. / *levior* Kar.”; 2 w with the same labels.

Material: SYNTYPES, 4 w (CASENT0916862) (Box 5).

Euponera (subgen. ***Brachyponera*** Em.) ***atrata*** Karawajew, 1925b: 126, w

Current status: ***Brachyponera atrata***. Combination in *Brachyponera*: Wilson 1958b: 347; Schmidt & Shattuck 2014: 80 (s/f Ponerinae).

Type locality(-ies): “Amboina, Nr. 2762, einige ww (Länge 6 mm).—Boeton, Nr. 2764, emhrere ww (Länge 4,5 mm).”

Original Karawajew labels: 3 w, “Amboina, / Karavaiew, / 2762.”, “*Euponera / (Brachyponera) / atrata* Karav. / Typus. 1923.”, “Syntypus 2 w / *Euponera / atrata* Karaw.”; 2 w, “Boeton, / Karavaiev, / 2764”, “*Euponera / (Brachyponera) / atrata* Karav. / Typus. 1923.”, “Syntypus 2 w / *Euponera / atrata* Karaw.”; 2 w, “Boeton, / Karavaiev, / 2764”, “*Euponera (Brachy- / ponera) luteipes* / v. *atrata* . Typus. / Karavaiev”.

Material: SYNTYPES, 7 w (Box 3).

Euponera (subgen. ***Brachyponera*** Em.) ***luteipes*** var. ***arcuata*** Karawajew, 1925b: 125, Fig. 3 c, w, q, m.

Current status: ***Brachyponera arcuata***. Raised to species: Wilson 1958b: 347. Combination in *Brachyponera*: Wilson 1958b: 347; Schmidt & Shattuck 2014: 80 (s/f Ponerinae).

Type locality(-ies): “Tjibodas, Nr. 2702 und 2761. Eine grosse Anzahl ww, einige flügellose qq und einige mm”.

Original Karawajew labels: 2 w, “Tjibodas, Java. / Karavaiev, / 2702, 2761”, “*Euponera / (Brachyponera) / luteipes* v. *arcuata* / Karavaiev, 1923. T.”, “Cotypus *Euponera / luteipes* v. *arcuata* / Karaw.”; 6 w on 2 pins, with the same labels; 2 w, “Tjibodas, Java. / Karavaiev / 2702”, “*Euponera / (Brachyponera) / luteipes* v. *rotundata* [sic]

/ Karav. Typus”, “*Cotypus Euponera / luteipes* v. *arcuata* / Karav.”; 2 q, “Tjibodas, Java. / Karavaiev, / 2702, 2761”, “*Euponera / (Brachyponera)* q / *luteipes* v. *arcuata* / Karav. Typus. 1923”, “*Cotypus Euponera / luteipes* v. *arcuata* Karav.”; 1 m, “Tjibodas, Java. / Karavaiev, / 2702, 2761”, “*Euponera / (Brachyponera)* m / *luteipes* v. *arcuata* / Karav. Typus. 1923”, “*Cotypus Euponera / luteipes* v. *arcuata* / Karav.”.

Material: SYNTYPES, 10 w (CASENT0916828), 2 q (CASENT0916829), 1 m (CASENT0916830) (Box 3).

Notes. There are also 51 w with the labels “Tjibodas, Java. / Karavaiev”, “5533. Coll. Karavaievi”, “*Euponera / (Brachyponera) / luteipes* v. *arcuata* / Karav. Typus”, “*Cotypus Euponera / luteipes* v. *arcuata* / Karav.”. These probably belong to the type series of this species, but the collection number differs from the original description.

***Euponera* (subgen. *Brachyponera* Em.) *luteipes* var. *continentalis* Karawajew, 1925b: 125, Fig. 3 d, w.**

Current status: ***Brachyponera luteipes continentalis***. Combination in *Brachyponera*: Schmidt & Shattuck 2014: 80 (s/f Ponerinae).

Type locality(-ies): “Kanara (Vorderinder), 2 w, von Forel erhalten”.

Original Karawajew labels: 2 w, “Kanara. / India. v. / Forel”, “*Euponera / (Brachyponera) / luteipes* v. *continentalis* Karav. / Typus. 1923”, “*Cotypus Euponera / luteipes* v. *continentalis* Karav.”

Material: SYNTYPES, 2 w (1 def.) (Box 3).

***Leptogenys (Lobopelta) breviceps* Viehmeyer, 1914: 30, Fig. 4, w.**

Current status: ***Leptogenys breviceps*** (s/f Ponerinae).

Type locality(-ies): “Wareo D.-Neuguinea”.

Original Karawajew labels: 1 w, “Wareo / D. Neuguinea”, “*Leptogenys / (Lobopelta) / breviceps* Typus / Viehmeier”, “Paratypus w / *Leptogenys breviceps* / Viehmeier”.

Material: SYNTYPE, 1 w (CASENT0916833) (Box 4).

***Leptogenys (Lobopelta) davydovi* Karawajew, 1935a: 74, Fig. 7, w.**

Current status: ***Leptogenys davydovi*** (s/f Ponerinae).

Type locality(-ies): “Bana bei Tourane, 1400 m, Zentralannam, 1.X.1931, K. Davydov, Nr. 5660, 1 w” (s/f Ponerinae).

Original Karawajew labels: 1 w, “Bana, Z. Annam / K. Davydov”, “5660. Coll. / Karavaievi”, “*Leptogenys / (Lobopelta) / davydovi* / Karav. typus”, “Holotypus w / *Leptogenys (Lobopelta) / davydovi* Karawajew”.

Material: HOLOTYPE, w (CASENT0916834) (Box 4).

***Leptogenys (Lobopelta) Mayr) diminuta* Sm. subsp. *fruhstorferi* Em. var. *amboinensis* Karawajew, 1925c: 277, w.**

Current status: **unavailable (infrasubspecific) name**. Material referred to *Leptogenys diminuta* (Smith F., 1857: 69) by Wilson 1958: 118 (s/f Ponerinae).

Type locality(-ies): “Amboina, Nr. 2478, ww”.

Original Karawajew labels: 12 w on 6 pins, “Amboina, / Karavaiev, / 2478”, “*L. (Lobopelta) / diminuta fruhst. / v. amboinensis* / Karav. Typ. 1923”, “*Cotypus Leptogenys / diminuta fruhstorf. / v. amboinensis* Kar.”.

Material: SYNTYPES, 12 w (CASENT0916837) (Box 4).

***Leptogenys (Lobopelta) diminuta* Sm. subsp. *fruhstorferi* Em. var. *huruensis* Karavaiev, 1925c: 278, w.**

Current status: **unavailable (infrasubspecific) name**. Material referred to *Leptogenys diminuta diminuta* (Smith F., 1857: 69) by Wilson, 1958: 118 (s/f Ponerinae).

Type locality(-ies): “Tifoe (Boeroe), Nr. 2437, ww”.

Original Karawajew labels: 2 w, “Tifoe, Boeroe, / Karavaiev, / 2437.”, “*L. (Lobopelta) / diminuta fruhst. / v. buruensis* Ka- / rav. Typus. 1923.”, “*Cotypus Leptogenys / diminuta fruhstorf. / v. buruensis* Kar.”; 4 w on 2 pins with the same labels; 2 w, “Tifu, Buru / Karavaiev.”, “2437. Coll. / Karavaievi”, “*L. (Lobopelta) / diminuta v. / buruensis* Kar. / typus”, “*Cotypus Leptogenys / diminuta fruhstorf. / buruensis* Karav.”; 9 w on 3 pins, “2437. Coll. / Karavaievi”, “*Cotypus Leptogenys / diminuta fruhstorf. / buruensis* Kar.”.

Material: SYNTYPES, 16 w (CASENT0916838) (Box 4).

Notes. This name was originally misspelled as var. *huruensis*, but Chapman & Capco (1951: 34) correctly emended the spelling to *buruensis*. The latter name is correct since this taxon was named after the type locality, Buru Island, which is supported by Karawajew’s original labels (see also Bolton 1995, 2023).

Leptogenys (Lobopelta Mayr) *diminuta* Sm. subsp. *fruhstorferi* Em. var. *longinoda* Karawajew, 1925c: 278, w.

Current status: **unavailable (infrasubspecific) name** (s/f Ponerinae).

Type locality(-ies): “Batu Caves, Selangor (Sumatra), 25.I.1913, O. John, ww”.

Original Karawajew labels: 15 w on 8 pins, “Batu Caves, Se- / langor, Sumatra. / O. John. 1913”, “*L. (Lobopelta) / diminuta fruhst. / v. longinoda* Ka- / rav. Typus. 1914.”, “*Cotypus Leptogenys / diminuta v. longi- / noda* Karav.”.

Material: SYNTYPES, 15 w (CASENT0916836) (Box 4).

Leptogenys (Lobopelta) diminuta Sm. subsp. *fruhstorferi* Em. var. *nitidula* Santschi, 1928: 139 (replacement name for *Leptogenys (Lobopelta) diminuta* Sm. subsp. *fruhstorferi* Em. var. *nitida* Karawajew, 1927a: 6, w, junior primary homonym of *Leptogenys nitida* (Smith F., 1858: 92) (see also Bolton 1995, 2023).

Current status: **unavailable (infrasubspecific) name** (s/f Ponerinae).

Type locality(-ies): “Prinsen-Eiland in der Sundastrasse, 5.I.1913 (nr. 3013), ww”.

Original Karawajew labels: 2 w, “Prinsen-Eiland, / V. Karavaiev, / 3013”.

Material: SYNTYPES, 2 w (Box 4).

Notes. There are also three workers with the labels “Prinsen-Eiland, / V. Karavaiev, / 2400”, “*Leptogenys / (Lobopelta) / diminuta* Sm. / *fruhstorferi* v. / *nitidula* Sant. / n. nom. typus”, “*Cotypus / Leptogenys / diminuta fruhstorf. / nitidula* Sant.”. The collection number of this sample does not correspond with that of the original description, but these workers are without a doubt conspecific with those of the sample number 3013; CASENT number of the latter workers is 0916839.

Leptogenys (subg. *Lobopelta* Mayr) *diminuta* Sm. subsp. *nong-nongi* Karawajew, 1925c: 278, w.

Current status: *Leptogenys diminuta nongnongi* (s/f Ponerinae).

Type locality(-ies): “Tjapus auf dem Salak (Java), an dem Bach. Sehr volkreiches Nest in einem faulen Baumstrunk, teilweise in Erde, ww, Kokons und Larven”.

Original Karawajew labels: 2 w, “Tjiapus, Java. / Karavaiev, / 2363”, “*L. (Lobopelta) / diminuta* sbasp. / *nong-nongi* Kara- / vaiev / typus.”, “Syntypus 2 w / *Leptogenys diminuta / nong-nongi* Karaw.”; 3 w, “Tjiapus, Java. / Karavaiev, / 2363.”, “*L. (Lobopelta) / dimin. nong- / nongi* Karav. / Typus. 1914.”, “Syntypus 2 w / *Leptogenys diminuta / nong-nongi* Karaw.”; 7 w on 4 pins with the same labels; 3 w, “Tjiapus / bei Buiten- / zorg. Java”, “2363. Coll. / Karavaievi”, “*Leptogenys / (Lobopelta) / diminuta nong- / nongi* Karav. typ.”, “Syntypus / *Leptogenys diminuta / nong-nongi* Karaw.”; 3 w, “2363. / Coll. Karavaievi”, “Syntypus ww / *Leptogenys diminuta / nong-nongi* Karaw.”; 33 w on 11 pins with the same labels.

Material: SYNTYPES, 51 w (CASENT0916841) (Box 4).

Leptogenys (Lobopelta) diminuta Sm. v. *tjibodana* Karawajew, 1926e: 421, w.

Current status: *Leptogenys diminuta tjibodana* (s/f Ponerinae).

Type locality(-ies): “Tjibodas (Java), No, 2951, ww”.

Original Karawajew labels: 2 w, “Tjibodas, / Java. 2951. / Karavaiev”, “*Leptogenys / (Lobopelta) / diminuta* Sm. / *tjibodana* Ka / ravaiev, typus”, “Holotypus *Leptogenys / diminuta v. tjiboda / na* Karaw.”.

Material: SYNTYPES, 2 w (CASENT0916840) (Box 4).

Leptogenys (subg. *Lobopelta* Mayr) *rugosopunctata* Karawajew, 1925c: 283, w, ergatoid q.

Current status: *Leptogenys rugosopunctata* (s/f Ponerinae).

Type locality(-ies): “Buitenzorg, Botan. Garten, Nr. 2420, ww, 1 q, Kokons und Larven”.

Original Karawajew labels: 3 w, “Buitenzorg, Java / V. Karavaiev, / 2420”, “*Leptogenys / (Lobopelta) / rugosopunctata* / Karav. Typus. 1923”, “Syntypus ww / *Leptogenys / rugosopunctata* / Karav.”; 1 q with the same labels.

Material: SYNTYPES, 3 w (CASENT0916842), 1 q (def.) (CASENT0916843) (Box 4).

Leptogenys tenuis Stitz, 1911: 376, Fig. 1, w.

Current status: **junior synonym** of *Leptogenys intermedia* Emery, 1902: 32. Synonymy: Forel 1912b: 52 (see also Bolton 2023) (s/f Ponerinae).

Type locality(-ies): “Eine Anzahl ww.—Kiwu-See”

Original Karawajew labels: 1 w, “Kivusee, / Or Stitz’a.”, “*L. (Lobopelta) / tenius* Stitz / Typus”, “Paratypus w *Leptogenys / tenius* Stitz”.

Material: SYNTYPE, 1 w (CASENT0916844) (Box 4).

Lioponera noctambula Santschi, 1910b: 70, m.

Current status: ***Lioponera noctambula*** (s/f Dorylinae).

Type locality(-ies): “Kairouan”.

Original Karawajew labels: 1 m, “Kairouan. / No 2000”, “*Lioponera / noctambula* Sant. / Typus.”, “Paratypus w [sic] / *Lioponera / noctambula* Santschi”.

Material: SYNTYPE, 1 m (CASENT0916793) (Box 1).

Lobopelta fallax Mayr, 1876: 88, m.

Current status: ***Leptogenys fallax***. Combination in *Leptogenys*: Forel, 1900a: 64 (s/f Ponerinae).

Type locality(-ies): “Kap York (Coll. Mayr), Rockhampton, Gayndah, Peak Downs (Mus. Godeffroy)”.

Original Karawajew labels: 2 w, “Neuholland”, “*Cotypus Lobopelta / fallax* Mayr”.

Material: SYNTYPES, 2 w (CASENT0916835) (Box 4).

Mystrium camillae Em. subsp. ***javana*** Karawajew, 1925a: 73, Fig. 1, w.

Current status: **junior synonym** of ***Mystrium camillae*** Emery, 1889a: 491. Synonymy: Brown 1960: 170 (s/f Amblyoponinae).

Type locality(-ies): “Kalkberg bei Tjampea (Java), Nr. 2389. Zwei w auf dem Boden, unter Laub”.

Original Karawajew labels: 2 w, “Java, / Tjampea”, “2389. Coll. / Karavaievi”, “V. Karavaiev / 2389”, “*Mystrium / camillae* Em. / sbp. *javana* typ. / W. Karawajew. 1924”, “Syntypus w / *Mystrium camillae / javana* Karaw.”.

Material: SYNTYPES, 2 w (CASENT0916795) (Box 1).

Odontomachus imperator subsp. ***opaculus*** Viehmeyer, 1912: 6, Fig. 6, w.

Current status: ***Odontomachus opaculus***. Raised to species: Wilson 1959: 496 (s/f Ponerinae).

Type locality(-ies): exact location not given, but based on the title of the paper (Viehmeyer 1912) and label data (see below), is New Guinea.

Original Karawajew labels: 1 w, “Kais Wilhelmsland / Toricelli Gebirge / Dr. Schlaginhaufen”, “5150. Coll. / Karavaievi”, “*Odontomachus / imperator* ssp. / *opaculus* Viehm. / typus”, “Paratypus w / *Odontomachus imperator opacu- / lus* Viehmeyer”, 2 w, “5150. Coll. / Karavaievi”, “Paratypus w / *Odontomachus imperator opacu- / lus* Viehmeyer”.

Material: SYNTYPES, 3 w (CASENT0916849) (Box 4).

Odontomachus ruficeps F. Sm. subsp. ***aruanus*** Karawajew, 1925c: 295, Fig. 14, w, m.

Current status: **junior synonym** of ***Odontomachus cephalotes*** Smith F., 1863: 19. Synonymy: Wilson 1959: 491 (s/f Ponerinae).

Type locality(-ies): “Wammar (Aroe-Archip.), Nr. 2566 und 2575. Nest in der Erde.—Ebenda, Nr. 2675. Nest in der Erde zwischen den Wurzeln eines grossen Baumes. ww und mehrere mm”.

Original Karawajew labels: 1 w, “Wammar, / Aru. Karavaiev”, “2566. / Coll. Karavaievi”, “*Odontomachus / ruficeps* Sm. ssp. / *aruanus* Kar. / typus”, “Syntypus ww / *Odontomachus ruficeps / aruanus* Karaw.”; 2 w, “Wammar, / Aru. Karavaiev”, “2566. / Coll. Karavaievi”, “*Odontomachus / ruficeps* Sm. ssp. / *aruanus* Kar. / typus”; 14 w on 7 pins, “2566. / Coll. Karavaievi”, “Syntypus ww / *Odontomachus ruficeps / aruanus* Karaw.”; 1 m, “2566. / Coll. Karavaievi”, “Syntypus m / *Odontomachus ruficeps / aruanus* Karaw.”.

Material: SYNTYPES, 17 w (CASENT0916850), 1 m (Box 4).

Notes. There are also 10 w with the labels “Wammar, / Karawajew”, “2623. Coll. / Karavaievi”, “*Odontomachus / ruficeps* Sm. ssp. / *aruanus* Kar. / typus”, but the collection number does not correspond with the numbers given in the original description. Nevertheless, these 10 workers undoubtedly are conspecific with the syntype workers.

Pachycondyla (Ectomomyrmex) astuta obscura Karawajew, 1935a: 71, w.

Current status: *Ectomomyrmex astutus obscurus*. Combination in *Ectomomyrmex*: Schmidt & Shattuck 2014: 193 (s/f Ponerinae).

Type locality(-ies): “Tonkin, Phu-ho, K. Davydov, Nr. 5719, 1 w”.

Original Karawajew labels: 1 w, “Tonkin, / Phu-Ho, / K. Davydov”, “5719. Coll. / Karavaievi”, “*Pachycondyla (Ectomomyrmex) / astuta* Sm. *obscura* / Karavaiev typus”, “Holotypus w / *Pachycondyla astuta / obscura* Karaw.”.

Material: HOLOTYPE, w (CASENT0916823) (Box 3).

Pachycondyla (Ectomomyrmex) punctata Karawajew, 1935a: 71, Fig. 5, w, q.

Current status: *Ectomomyrmex punctatus*. Combination in *Ectomomyrmex*: Schmidt & Shattuck 2014: 193 (s/f Ponerinae).

Type locality(-ies): “Bana bei Tourane, 500-800 m, Zentralannam, 27.IX.1931, K. Davydov, Nr. 5718, 3 w und 3 geflüg. q”.

Original Karawajew labels: 2 w, “Bana, / Annam, / K. Davydov”, “5718. Coll. / Karavaievi”, “*Pachycondyla (Ectomomyrmex) / punctata* Kara / vaiev typus”, “Syntypus ww *Pachycondyla / punctata* Karaw.”; 3 q, “5718. Coll. / Karavaievi”, “Syntypus qq / *Pachycondyla / punctata* Karaw.”

Material: SYNTYPES, 2 w (CASENT0916824), 3 q (CASENT0916825) (Box 3).

Pachycondyla (subgen *Ectomomyrmex* Mayr) ***sculpturata*** Karawajew, 1925b: 122, w (junior primary homonym of *Pachycondyla (Bothroponera) sculpturata* Santschi, 1912a: 151; replacement name: *Pachycondyla sumatrana*, Özdikmen, 2010: 997).

Current status: *Ectomomyrmex sumatranus* (s/f Ponerinae).

Type locality(-ies): “Loeboe-Bangkoeng (Sumatra), 18.III.1913, O. John (dessen Nr. 290), bei *Capritermes*. 2 w”.

Original Karawajew labels: 2 w, “Loeboe-Bang / koeng, Sumatra. / O. John. (290).”, “*Pachycondyla (Ectomomyrmex) / sculpturata* Karav. / Typus. 1914”, “Syntypus ww / *Pachycondyla / sculpturata* Karaw.”.

Material: SYNTYPES, 2 w (CASENT0916826) (Box 3).

Pachycondyla (Ectomomyrmex) striata Karawajew, 1927a: 5, w (junior primary homonym of *Pachycondyla striata* Smith F., 1858: 106; replacement name: *Pachycondyla (Ectomomyrmex) striatula* Karavaiev, 1935a: 70).

Current status: *Ectomomyrmex striatulus* (s/f Ponerinae).

Type locality(-ies): “Ambon, 10.II.1913, Nr. 3019 (2445). 1 w”.

Original Karawajew labels: 1 w, “Amboina / Karavaiev”, “3019. Coll. / Karavaievi”, “*Pachycondyla (Ectomomyrmex) / striatula* n. nov. / Karawajew, 1933”, “Holotypus w / *Pachycondyla / striatula* Karaw.”.

Material: HOLOTYPE, w (CASENT0916827) (Box 3).

Parasyscia peringueyi Emery, 1886: 360, w.

Current status: *Parasyscia peringueyi* (s/f Dorylinae).

Type locality(-ies): exact location not given, but based on the original description and labels, is South Africa (“Capo di Bouna Speranza”, = Cape of Good Hope).

Original Karawajew labels: 1 w, “Capland”, “*Cerapachys / (Cerapachys) / peringueyi* Em. / Det. Emery”, “Syntypus”.

Material: SYNTYPE, 1 w (CASENT0917743) (Box 1).

Platythyrea conradti Emery, 1899: 464, w, m.

Current status: *Platythyrea conradti* (s/f Ponerinae).

Type locality(-ies): “Kamerun (Conradt)”.

Original Karawajew labels: 1 w, “KAMERUN / IX-XI 1895 / L. Conradt.”, “*Platythyrea / conradti* Em. / Det. C. Emery.”, “Syntypus”.

Material: SYNTYPE, 1 w (def.) (CASENT0917745) (Box 1).

Platythyrea melancholica F. Sm. var. ***aruana*** Karawajew, 1925a: 75, w.

Current status: **junior synonym of *Platythyrea parallela*** (Smith F., 1859: 143). Synonymy: Wilson 1958: 151 (s/f Ponerinae).

Type locality(-ies): “Wammar (Aroe), Nr. 2646. 20 ww”.

Original Karawajew labels: 6 w on 3 pins, “Aroe, Wammar / V. Karavaiev, / 2646”, “*Platythyrea / melancholica* Sm. / Det. V. Karawajew, 1923”.

Material: SYNTYPES, 6 w (CASENT0916798) (Box 1).

Platythyrea modesta Emery, 1899: 467, w.

Current status: ***Platythyrea modesta*** (s/f Ponerinae).

Type locality(-ies): “Kamerun”.

Original Karawajew labels: 1 w, “Kamerun / 1895 / L. Conradt”, “*Platythyrea / modesta* Em. / Det. C. Emery”.

Material: SYNTYPE, 1 w (CASENT0916799) (Box 1).

Ponera typhlos Karawajew, 1935a: 73, Fig. 6, w.

Current status: ***Cryptopone typhlos***. Combination in *Cryptopone*: Brown 1963: 6 (s/f Ponerinae).

Type locality(-ies): “Cay-Dua, Ins. Phuquoc im Golf von Siam, 26.XI.1931, K. Davydov, Nr. 5664, 1 w.—Caûda, Cochinchine, Derslebe, Nr. 5680, 1 w”.

Original Karawajew labels: 1 w, “Arbre Broyè / S. Annam / K. Давыдов”, “5680. Coll. / Karavaievi”, “*Ponera / typhlos* Kar. / Karavaiev dt.”, “Syntypus w / *Ponera / tiphlos [sic]* Karaw.”; 1 w, “Cay-Dua, остр. / Phuquoc. Golf / di Siam. K. Да- / выдов”, “5664. Coll. / Karavaievi”, “*Ponera / typhlos* Kara- / vaiev typus”, “Syntypus 1 w / *Ponera tiphlos [sic]* Karaw.”.

Material: SYNTYPES, 2 w (CASENT0916832) (Box 3).

Prionopelta opaca Emery, 1897b: 596, Tab. XV, Fig. 44-45, w, q, m.

Current status: ***Prionopelta opaca*** (s/f Amblyoponinae).

Type locality(-ies): exact location not given, but based on the title of the paper (Emery, 1897b) and label data (see below), is New Guinea.

Original Karawajew labels: 1 w, “N. Guinea”, “*Prionopelta / opaca* Em. / Det. C. Emery”.

Material: SYNTYPE, 1 w (CASENT0916800) (Box 1).

Proceratium longigaster Karawajew, 1935a: 59, Fig. 2, w.

Current status: ***Proceratium longigaster*** (s/f Proceratiinae).

Type locality(-ies): “Bana, 1400 m, bei Tourane, Zentralannam, 30.IX.1931, K. Davydov, Nr. 5663, 1 w.”

Original Karawajew labels: 1 w, “Annam. Ba- / nalhoon. / K. Davydov”, “5663. Coll. / Karavaievi”, “*Proceratium longigaster* Ka- / rav. typus”, “Holotypus w / *Proceratium longigaster* / Karaw.”.

Material: HOLOTYPE, w (CASENT0916806) (Box 2).

Proceratium normandi Santschi, 1929: 138, w, q.

Current status: **junior synonym of *Proceratium numidicum*** Santschi, 1912b: 172. Synonymy: Brown 1974: 82 (s/f Proceratiinae).

Type locality(-ies): “La Gaille, 1 q, 6 w (types). Aïn Draham, 1 w (Dr. Normand coll.)”.

Original Karawajew labels: 1 w, “Tunisie. / Ain Draham. / Normand”, “4141. Coll. / Karavaievi”, “*Proceratium / normandi* Sant. / Santschi det. 1929”.

Material: SYNTYPES, 1 w (CASENT0916807) (Box 2).

Proceratium numidicum Santschi, 1912b: 172, Figs. 1, 2, w, q.

Current status: ***Proceratium numidicum*** (s/f Proceratiinae).

Type locality(-ies): “Tunisie, Aïn-Draham: (Dr. Normand) 1 femelle, 20 ouvrières”.

Original Karawajew labels: 1 w, “Tunisie, / Ain Draham, / Normand”, “4140. Coll. / Karavaievi”, “*Proceratium / numidicum* Sant. / Santschi det.”.

Material: SYNTYPE, 1 w (CASENT0916808) (Box 2).

Pseudomyrma kuenckeli var. *dichroa* Forel, 1904b: 41, w.

Current status: **junior synonym** of *Pseudomyrmex kuenckeli* (Emery, 1890: 62). Synonymy: Kempf 1961: 402 (s/f Pseudomyrmecinae).

Type locality(-ies): 2 w, “Dibulla, pied de la Sierra Navada de Santa Marta, Colombie”.

Original Karawajew labels: “Dibulla. / Columbia”, “4330. Coll. / Karavaievi”, “*Pseudomyrma / künckeli* Em. v. / *dichroa* For. / Typus”.

Material: SYNTYPES, 2 w (CASENT0916876) (Box 6).

Pseudomyrma belti var. *obnubila* Menozzi, 1927: 273, w, q.

Current status: **junior synonym** of *Pseudomyrmex flavicornis* (Smith F., 1877: 67). Synonymy: Ward 1989: 438 (s/f Pseudomyrmecinae).

Type locality(-ies): precise locality not given, but based on the original paper, is San Jose, Costa Rica.

Original Karawajew labels: 3 w, “San José (C. R.) / Heinr. Schmidt”, “3420. Coll. / Karavaievi”, “*Pseudomyrma / belti* / v. *obinubila* Menoz. / Menozzi deter. / Cotypus”.

Material: SYNTYPES, 2 w (CASENT0916874) (Box 6).

Pseudomyrma pazosi Santschi, 1909: 309, w, q.

Current status: *Pseudomyrmex pazosi* (s/f Pseudomyrmecinae).

Type locality(-ies): “San Antonio de los Baños, Cuba (Dr. Pazos)”.

Original Karawajew labels: 1w, “Cuba”, “4351. Coll. Karavaievi”, “*Pseudomyrma flavidula* Sm. v. *pazosi* Sant. Santschi det.”.

Material: SYNTYPES, 1 w (CASENT0916875) (Box 6).

Pseudomyrma peltata Menozzi, 1927: 273, Fig. 2, w, m.

Current status: **junior synonym** of *Pseudomyrmex nigrocinctus* (Emery, 1890: 64). Synonymy: Ward 1993: 145.

Type locality(-ies): precise locality not given, but based on the original paper, is San Jose, Costa Rica.

Original Karawajew labels: “San José / (C. R.) / Heinr. Schmidt”, “3421. Coll. / Karavaievi”, “*Pseudomyrma / peltata* / Cotypus Menoz. / Menozzi deter.”, Paratypus ww / *Pseudomyrma / peltata* Menozzi”.

Material: SYNTYPES, 1 w (CASENT0916877) (Box 6).

Pseudomyrma arboris-sanctae r. *sympiotica* Forel, 1904b: 38, w, m.

Current status: **junior synonym** of *Pseudomyrmex mordax* (Warming, 1894: 173). Synonymy: Ward 1999: 497 (s/f Pseudomyrmecinae).

Type locality(-ies): “J’ai découverte cette race en mars 1896 à Dibulla, au pied de la Sierra Navada de S^{ta}-Marts en Colombie, comme suit”.

Original Karawajew labels: 2 w, “Dibulla, / Columbia”, “4325. Coll. / Karavaievi”, “*Pseudomyrma / arbor.-sanctae* / ssp. *sympiotica* / Forel. Typus”, “Paratypus *Pseudomyrma / arboris—sanctae / sympiotica* Forel ww”.

Material: SYNTYPES, 2 w (CASENT0916873) (Box 6).

Rhytidoponera croesus Emery, 1901: 50, w.

Current status: *Rhytidoponera croesus* (s/f Ectatomminae).

Type locality(-ies): “N. S. Wales”.

Original Karawajew labels: 1 w, “N.S. Wales”, “*Rh. (Chalcoponera) / croesus* Em. / Staudinger & Bang-Haas.”.

Material: SYNTYPE, 1 w (CASENT0916803) (Box 2).

Rhytidoponera laciniosa Viehmeyer, 1912: 5, Fig. 3, w.

Current status: *Rhytidoponera laciniosa* (s/f Ectatomminae).

Type locality(-ies): exact location not given, but based on the title of the paper (Viehmeyer 1912) and label data (see below), is New Guinea.

Original Karawajew labels: 1 w, “Kais. Wilhelmsland / Toricelli Gebirge / Dr. Schlaginhaufen”, “*Rhytidoponera / (Rhytidoponera) / laciniosa* Viehmeyer / Typus”, “Paratypus w / *Rhytidoponera / laciniova* Viehmeyer”.

Material: SYNTYPE, 1 w (CASENT0916801) (Box 2).

Rhytidoponera (subg. ***Rhytidoponera*** Mayr) ***subcyanea*** Em. var. ***aruana*** Karawajew, 1925a: 78, w.

Current status: **junior synonym of *Rhytidoponera aspera*** (Roger, 1860: 308). Synonymy: Wilson 1958b: 319 (s/f Ectatomminae).

Type locality(-ies): “Ins. Kobror (Aroe-Archip.), Nr. 2542. Einige ww auf dem Waldboden gesammelt”.

Original Karawajew labels: 2 w, “Aroe, Kobror / V. Karavaiev, / 2542”, “*Rhytidoponera* / (*Rhytidopo-* / *nera*) / *subcyanea* Em. / v. *aruana* Ka- / ravaiev, Typus / 1923”, “Syntypus w *Rhytidoponera subcyanea* var. / *aruana* Kar.”.

Material: SYNTYPES, 2 w (CASENT0916802) (Box 2).

Sima (Tetraponera) bidentata var. ***angusticeps*** Karawajew, 1933c: 266, w.

Current status: **junior synonym of *Tetraponera nitida*** (Smith F., 1860: 106). Synonymy: Ward 2001: 636 (s/f Pseudomyrmecinae).

Type locality(-ies): “Buitenzorg, Java, Botan. Garten (Nr. 5327), 1 w.”

Original Karawajew labels: 1 w, “Java, / Buitenzorg”, “5327 Coll. / Karavaievi”, “*Sima* / (*Tetraponera*) / *bidentata* Kar. / var. *breviscapa* / Karav. Typus”, “Syntypus *Sima (Tet-* / *raponera) bidenta-* / *ta* v. *breviscapa* Kar.”.

Material: HOLOTYPE, w (CASENT0916868) (Box 6).

Notes. The name of this variety on the original labels of Karawaiew is “*breviscapa*”, but the location label and the collection number correspond to var. *angusticeps* in the original description. This specimen is the holotype because this variety was described from a single specimen (worker).

Sima (Tetraponera) bidentata Karawajew, 1933c: 264, Fig. 13, w.

Current status: **junior synonym of *Tetraponera nitida*** (Smith F., 1860: 106). Synonymy: Ward 2001: 636 (s/f Pseudomyrmecinae).

Type locality(-ies): “Buitenzorg, Java, Botan. Garten, 16.XII.1912 (Nr. 2890), ww. Auf Gebüsch gesammelt.—Geser, 10.IV.1913 (Nr. 5318), einige w. An der Küste auf Gebüsch, zusammen mit *Sima allaborans* sunsp. *sumatrensis* gesammelt.—Küste von Bantam, Westspitze von Java an der Sundastrasse gegenüber der Insel Mieuven-Eiland, 7.I.1913 (Nr. 2396), 3 w. Der Fühlerschaft ist bei diesen Exemplaren etwas kürzer als bei denselben aus Buitenzorg und Geser.—Banda-Neira (Nr. 5325), ww. Grösser als die vorhergehenden Exemplare, nämlich 5 mm lang.—Sumbawa-Besaar (Nr. 5326), einige ww von derselben Grösse wie die vorhergehenden”.

Original Karawajew labels: 7 ww on 3 pins, “Java, / Buitenzorg”, “2890. Coll. / Karavaievi Original Karawajew labels:”, “*Sima (Tetrapo-* / *nera) bidentata* / Karaw. Typus”, “Syntypus ww / *Sima (Tetraponera) / bidentata* Karaw.”; 3 w, “Bantam, / Java. Karaw.”, “2396. Coll. / Karavaievi”, “*Sima (Tetrapo-* / *nera) bidentata* Kar. / Karawajew det.”; 2 w, “Geser, / Karawajew”, “5318. Coll. / Karavaievi”, “*Sima (Tetrapo-* / *nera) bidentata* Kar. / Karawajew det.”; 3 w, “5318. Coll. / Karavaievi”; 1 w, “Sumbawa—Besaar. / Karawajew”, “5326. Coll. / Karavaievi”, “*Sima (Tetrapo-* / *nera) bidentata* Kar. / Karawajew det.”; 6 w, “5326. Coll. / Karavaievi”; 2 w, “Banda—Neira / Karawajew”, “5325. Coll. / Karavaievi”, “*Sima (Tetrapo-* / *nera) bidentata* Kar. / Karawajew det.”.

Material: SYNTYPES, 24 w (CASENT0916867) (Box 6).

Sima binghami Forel, 1902b: 243, w, q, m.

Current status: ***Tetraponera binghami*** (s/f Pseudomyrmecinae). Combination in *Tetraponera*: Wheeler 1921: 531.

Type locality(-ies): “Ye Valley, Birmanie (Bingham); Moulmain, Birmanie (Hodgson); Assam (Smythies); Delbrugarh (Oscar Lindgreen)m Nord Konkan (Wroughton)”.

Original Karawajew labels: 1 w, “N. Konkan, Ye / Valley / (Bingham)”, “4323. Coll. / Karavaievi”, “*Sima* / (*Tetraponera*) / *binghami* For. / Forel det.”.

Material: SYNTYPE, 1 w (CASENT0916869) (Box 6).

Sima (Sima) mocquersyi And. var. ***biozellata*** Karawajew, 1931d: 42, Fig. 1, w, q.

Current status: ***Tetraponera mocquersyi biozellata*** (s/f Pseudomyrmecinae). Combination in *Tetraponera*: Ward 1990: 488.

Type locality(-ies): “Naivasha (Nr. 5298), 1 w.—Mabira (Nr. 5319), 1 w und 1 geflügeltes q”.

Original Karawajew labels: 1 w, “Naivasha / Engl. O. Afrika / Dogiel”, “5298. Coll. / Karavaievi”, “*Sima (Sima)*

/ *mocquerysi* And. / v. *biozellata* Kar. / Typus"; 1 w, "Mabira / Brit. E. Afr. / Dogiel", "5319. Coll. / Karavaievi", "*Sima (Sima) / mocquerysi* And. / v. *biozellata* Kar."; 1 q, "5319. Coll. / Karavaievi".

Material: SYNTYPES, 2 w, 1 q (CASENT0916865, 0916866) (Box 6).

Sima (Tetraponera) dentifera Karawajew, 1933c: 266, Fig. 14, q.

Current status: **junior synonym** of *Tetraponera laeviceps* (Smith F., 1859: 145). Synonymy: Ward 2001: 630 (s/f Pseudomyrmecinae).

Type locality(-ies): "Dobo auf Wammar, Aruarchipel, 9.III.1913 (Nr. 2569), auf neidrigem Gewächs, 1 flügelloses q".

Original Karawajew labels: 1 q, "Wammar, / Aru. Karaw.", "2569. Coll. / Karavaievi", "*Sima (Tetraponera) / dentifera* Kar. / Typus", "Holotypus / *Sima (Tetraponera) / dentifera* Karaw."

Material: HOLOTYPE, q (CASENT0916870) (Box 6).

Sima (Tetraponera) dilatata Karawajew, 1933c: 267, Fig. 15, w.

Current status: **junior synonym** of *Tetraponera difficilis* (Emery, 1900: 677). Synonymy: Ward 2001: 628 (s/f Pseudomyrmecinae).

Type locality(-ies): "Prinsen-Eiland in der Sundastrasse, 6.I.1913 (Nr. 2401), 1 w".

Original Karawajew labels: 1 w, "Prinsen—/ Eiland. / Karawajew", "2401. Coll. / Karavaievi", "*Sima (Tetraponera) / dilatata* Kar. / Typus", "Holotypus w / *Sima (Tetraponera) / dilatata* Karaw."

Material: HOLOTYPE, q (CASENT0916871) (Box 6).

Sima (Tetraponera) platynota Karawajew, 1933c: 269, Fig. 16, w.

Current status: **junior synonym** of *Tetraponera laeviceps* (Smith F., 1859: 145). Synonymy: Ward 2001: 630 (s/f Pseudomyrmecinae).

Type locality(-ies): "Wammar, Aruarchipel, 18.III.1913 (Nr. 5365), 3 w auf *Rhizophora mucronata* gesammelt".

Original Karawajew labels: 1 w, "Wammar, / Aru. Karaw.", "5365. Coll. / Karavaievi", "*Sima (Tetrapo- / nera) platynota* / Karaw. Typus", "Syntypus w / *Sima (Tetraponera) / platynota* Karaw."; 1 w, "5365. Coll. / Karavaievi", "Syntypus w / *Sima (Tetraponera) / platynota* Karaw."; 1 w, "Wammar, / Aru. Karaw.", "5365. Coll. / Karavaievi", "*Sima (Tetrapo- / nera) platynota* / Karaw. Typus".

Material: SYNTYPES, 3 w (CASENT0916872) (Box 6).

Stictoponera spiralis Karawajew, 1925a: 79, w.

Current status: **junior synonym** of *Gnamptogenys crassicornis* (Forel, 1912b: 51). Synonymy: Lattke 2004: 106 (s/f Ectatomminae).

Type locality(-ies): "Buitenzorg, Botan. Garten, Einzelläufer".

Original Karawajew labels: 1 w, "Java, / Buitenzorg / 1912 r.", "*Stictoponera / spiralis* Kara / vaiev, 1914, Typus", "Holotypus w / *Stictoponera / spiralis* Karaw.", "*Gnamptogenys / crassinodis* (Forel) / det. Lattke '99".

Material: HOLOTYPE, w (CASENT0916805) (Box 2).

Stigmatomma amblyops Karawajew, 1935a: 57, Fig. 1, w.

Current status: ***Stigmatomma amblyops*** (s/f Amblyoponinae).

Type locality(-ies): "Caûda, Cochinchine, K. Davydov, Nr. 5675, 2 w".

Original Karawajew labels: 2 w, "Caûda pres / Nhatrang / S. Annam / K. Давыдов", "5675. Coll. / Karavaievi", "*Stigmatomma / amblyops* Ka- / rav. typus", "Syntypus ww / *Stigmatomma / amblyops* Karaw."

Material: SYNTYPES, 2 w (CASENT0916796) (Box 1).

Stigmatomma quadratum Karawajew, 1935a: 58, w.

Current status: ***Stigmatomma quadratum*** (s/f Amblyoponinae).

Type locality(-ies): "Poulo Dama, Archipel im Golf von Siam, südslich von der Insel Phuquoe, K. Davydov, Nr. 5673, 1 w".

Original Karawajew labels: 1 w, "Poula Dama / Арх. в Сиам. зал. / К. Давыдов", "5673. Coll. / Karavaievi", "*Stigmatomma / quadratum* / Karav. typus", "Holotypus w / *Stigmatomma / quadratum* Karaw."

Material: HOLOTYPE, w (CASENT0916797) (Box 1).

Sysphincta europaea rossica Arnoldi, 1930: 144, Figs. 1–3, w, q.

Current status: **junior synonym** of *Proceratium melinum* (Roger, 1860: 291). Synonymy: Brown 1958: 248 (s/f Proceratiinae).

Type locality(-ies): “Aksaj (Dongebiet), den 16. Juli 1927, Nr. 2537, coll. Arnoldi”.

Original Karawajew labels: 1 w, “Аксај, / Арнольди”, “5453. Coll. / Karavaievi”, “*Sysphincta / europaea / rossica* Arn. / typus”, “Syntypus *Sysphincta / europaea rossica* / K. Arn.”.

Material: SYNTYPE, 1 w (CASENT0916809) (Box 2).

Genus *Typhloteras* Karawajew, 1925b: 128.

Type species: *Typhloteras hamulatum* Karawajew, 1925b: 129, by monotypy.

Current status: **junior synonym** of *Centromyrmex* Mayr, 1866: 894. Synonymy: Brown 1953: 8.

Typhloteras hamulatum Karawajew, 1925b: 129, Fig. 5, w.

Current status: *Centromyrmex hamulatum*. Combination in *Centromyrmex*: Brown 1953: 8 (s/f Ponerinae).

Type locality(-ies): “Siak, Sungei Pinang (Sumatra), O. John (Nr. 355, 363 und 366), einige ww bei Capritermes, Mirotermes und Eutermes gesammelt”.

Original Karawajew labels: 2 w, “Sumatra, Siak, / Sungei Pinang, / O. John, 356, 363-6”, “*Typhloteras / hamulatum* / Karavaiev, 1923. / Typus”, “Syntypus ww / *Typhloteras / hamulatum* Karaw.”.

Material: SYNTYPES, 2 w (CASENT0916831) (Box 3).

Notes. There is also 1 worker (def.) with the labels “Sumatra, Siak / Sungei Pinang / O. John, № 337-e”, “*Typhloteras hamulatum* Karawajew, 1923. / Typus”, “Syntypus / *Typhloteras / hamulatum* Karaw.”, but its collection number (337-e) does not correspond with the numbers given in the original description. Beside this, there are one queen with the labels “O. John, 411”, “*Typhloteras / hamulatum* Kar. / Det. Karawajew, 25”, and one male with the labels “O. John, 411” and “*Typhloteras / hamulatum* Kar. / Det. Karawajew, 25”. Despite the queen and male not belonging to the type series, Karawajew (1926e: 419) described them for the first time, and this material has important taxonomic value.

Acknowledgements

This work was supported by the grant NRFU (Ukraine) No. 2020/02/0369 (to A. Radchenko and E. Martynova) and by the National Science Foundation DEB 1932467 AoW (to B. Fisher).

References

- Arnoldi, K.V. (1930) Studien über die Systematik der Ameisen. V. Der erste Vertreter der Tribe Proceratiini in USSR. *Zoologischer Anzeiger*, 91 (5/8), 143–146.
- Arnoldi, K.V. (1977) Revision der Ernteameisen aus der gattung *Messor* (Hymenoptera, Formicidae) der Fauna der UdSSR. *Zoologicheskii Zhurnal*, 56, 1637–1648. [in Russian]
- Bolton, B. (1995) *A new general catalogue of the ants of the world*. Harvard University Press, Cambridge-London, 504 pp.
- Bolton, B. (2023) An online catalog of the ants of the world. Available from: <http://www.antcat.org/> (accessed 1 January 2023)
- Bondroit, J. (1918) Les fourmis de France et de Belgique. *Annales de la Société Entomologique de France*, 87, 1–174.
- Borowiec, M.L. (2016) Generic revision of the ant subfamily Dorylinae. *ZooKeys*, 608, 1–280.
<https://doi.org/10.3897/zookeys.608.9427>
- Boven, J.K.A. van. & Léviéux, J. (1970) Les Dorylinae de la savane de Lamto. *Annales de l'Université d'Abidjan. Serie E (Ecologie)*, 1 (2), 351–358. [1968]
- Brown, W.L. (1953) Characters and synonymies among the genera of ants. Part 1. *Breviora*, 11, 1–13.
- Brown, W.L. (1958) Contributions toward a reclassification of the Formicidae. 2. Tribe Ectatommini. *Bulletin of the Museum of Comparative Zoology at Harvard College*, 118 (5), 175–362.
- Brown, W.L. (1960) Contributions toward a reclassification of the Formicidae. 3. Tribe Amblyoponini. *Bulletin of the Museum of Comparative Zoology at Harvard College*, 122 (4), 145–230.

- Brown, W.L. (1963) Characters and synonymies among the genera of ants. Part 3. Some members of the tribe Ponerini. *Breviora*, 190, 1–10.
- Brown, W.L. (1974) A remarkable new island isolate in the ant genus *Proceratium*. *Psyche*, 81, 70–83.
<https://doi.org/10.1155/1974/90949>
- Brown, W.L. (1978) Contributions toward a reclassification of the Formicidae. Part 6. Ponerinae, tribe Ponerini, subtribe Odontomachiti. Section B. Genus *Anochetus* and bibliography. *Studia Entomologica*, New Series, 20 (1–4), 549–652.
- Chen, Z., Yang, Z. & Zhou, S. (2019) Review of the ant genus *Anochetus* Mayr, 1861 (Hymenoptera, Formicidae) from China, with revival of the valid status of *Anochetus gracilis*. *Journal of Hymenoptera Research*, 68, 49–74.
<https://doi.org/10.3897/jhr.68.30784>
- Chapman, J.W. & Capco, S.R. (1951) Check list of the ants (Hymenoptera: Formicidae) of Asia. *Monographs of the Institute of Science and Technology, Manila*, 1, 1–327.
- Dalla Torre, C.G. de (1893) *Catalogus Hymenopterorum, hucusque descriptorum systematicus et synonymicus*. Vol. 7. G. Engelmann, Lipsiae, 289 pp.
<https://doi.org/10.5962/bhl.title.10348>
- Emery, C. (1886) Alcune formiche africane. *Bullettino della Società Entomologica Italiana*, 18, 355–366.
- Emery, C. (1887 [1886]) Catalogo delle formiche esistenti nelle collezioni del Museo Civico di Genova. Parte terza. Formiche della regione Indo-Malese e dell’Australia. [part]. *Annali del Museo Civico di Storia Naturale*, 24 [= (2)4], 209–240.
- Emery, C. (1889a) Viaggio di Leonardo Fea in Birmania e regioni vicine. 20. Formiche di Birmania e del Tenasserim raccolte da Leonardo Fea (1885–87). *Annali del Museo Civico di Storia Naturale di Genova*, Serie 2a, 7 [27], 485–520.
- Emery, C. (1889b) Intorno ad alcune formiche della fauna paleartica. *Annali del Museo Civico di Storia Naturale*, 27 [= (2)7], 439–443.
- Emery, C. (1890) Studii sulle formiche della fauna neotropica. *Bullettino della Società Entomologica Italiana*, 22, 38–80.
- Emery, C. (1893) Voyage de MM. Bedot et Pictet dans l’Archipel Malais. Formicides de l’Archipel Malais. *Revue Suisse de Zoologie*, 1, 187–229.
<https://doi.org/10.5962/bhl.part.3745>
- Emery, C. (1895a) Voyage de M. E. Simon dans l’Afrique australe (janvier-avril 1893). 3e mémoire. Formicides. *Annales de la Société Entomologique de France*, 64, 15–56.
- Emery, C. (1895b) Die Gattung *Dorylus* Fab. und die systematische Eintheilung der Formiciden. *Zoologische Jahrbücher. Abtheilung für Systematik, Geographie und Biologie der Thiere*, 8, 685–778.
- Emery, C. (1896) Clef analytique des genres de la famille des formicides. *Annales de la Société Entomologique de Belgique*, 40, 172–189.
- Emery, C. (1897a) Revisione del genere *Diacamma* Mayr. *Rendiconto delle Sessioni della R. Accademia delle Scienze dell’Istituto di Bologna*, New Series, 1, 147–167.
- Emery, C. (1897b) Formicidarum species novae vel minus cognitae in collectione Musaei Nationalis Hungarici, quas in Nova Guinea, colonia germanica, collegit L. Biró. *Természetrájsi Füzetek*, 20, 571–599.
- Emery, C. (1897c) Viaggio di Lamberto Loria nella Papuasias orientale. XVIII. Formiche raccolte nella Nuova Guinea dal Dott. Lamberto Loria. Dummy reference. *Annali del Museo Civico di Storia Naturale*, 38 [= (2)18], 546–594.
<https://doi.org/10.5962/bhl.part.8735>
- Emery, C. (1899) Fourmis d’Afrique. *Annales de la Société Entomologique de Belgique*, 43, 459–504.
- Emery, C. (1900) Formiche raccolte da Elio Modigliani in Sumatra, Engano e Mentawai. Dummy reference. *Annali del Museo Civico di Storia Naturale*, 40 [= (2)20], 661–722.
<https://doi.org/10.5962/bhl.part.9035>
- Emery, C. (1901) Notes sur les sous-familles des dorylines et ponérines (famille des formicides). *Annales de la Société Entomologique de Belgique*, 45, 32–54.
- Emery, C. (1902) Note mirmecologiche. *Rendiconto delle Sessioni della R. Accademia delle Scienze dell’Istituto di Bologna*, New Series, 6 (1901), 22–34.
- Emery, C. (1925a) Revision des espèces paléarctiques du genre *Tapinoma*. *Revue Suisse de Zoologie*, 32, 45–64.
- Emery, C. (1925b) s.n. In: Wytsman, P., *Genera Insectorum. Hymenoptera, Fam. Formicidae, subfam. Formicinae. Fasc. 183*. L. Desmet-Verteneuil, Bruxelles, pp. 1–302.
- Esteves, F.A., Brandão, C.R.F. & Prado, L.P. (2011) The type specimens of “Dorylomorph” ants (Hymenoptera, Formicidae: Aenictinae, Ecitoninae, Cerapachyinae, Leptanilloidinae) deposited in the Museu de Zoologia da Universidade de São Paulo, Brazil. *Papéis Avulsos de Zoologia Museu de Zoologia da Universidade de São Paulo*, 51 (22), 341–357.
<https://doi.org/10.1590/S0031-10492011002200001>
- Fabricius, J.C. (1775) *Systema Entomologiae, sistens insectorum classes, ordines, genera, species, adiectis synonymis, locis, descriptionibus, observationibus*. Korte, Flensburgi et Lipsiae, 832 pp.
<https://doi.org/10.5962/bhl.title.36510>
- Fabricius, J.C. (1782) *Species Insectorum exhibentes eorum differentias specificas, synonyma, autorum, loca natalia, metamorphosin adiectis observationibus, descriptionibus*. I. impensis C. E. Bohnii, Hamburgi et Kilonii, 552 pp. [1781]
<https://doi.org/10.5962/bhl.title.36509>
- Fabricius, J.C. (1793) *Entomologia Systematica emendata et aucta. Secundum classes, ordines, genera, species adiectis synonymis, locis, observationibus, descriptionibus*. Vol. 2. impensis Christ. Gottl. Proft, Hafniae, 519 pp.

<https://doi.org/10.5962/bhl.title.122153>

- Finzi, B. (1926) Le forme europee del genere *Myrmica* Latr. Primo contributo. *Bollettino della Società Adriatica di Scienze Naturali*, 29, 71–119.
- Foerster, A. (1850) *Hymenopterologische Studien. I. Formicariae*. Ernst Ter Meer, Aachen, 74 pp.
<https://doi.org/10.5962/bhl.title.8795>
- Forel, A. (1881) Die Ameisen der Antille St. Thomas. *Mitteilungen der Münchener Entomologischen Verein*, 5, 1–16.
- Forel, A. (1889 [1888]) Ameisen aus den Sporaden, den Cykladen und Griechenland, gesammelt 1887 von Herrn von Oertzen. *Berliner Entomologische Zeitschrift*, 32, 255–265.
<https://doi.org/10.1002/mmnd.47918880404>
- Forel, A. (1890) *Aenictus-Typhlatta* découverte de M. Wroughton. Nouveaux genres de formicides. *Annales de la Société Entomologique de Belgique. Comptes-rendus*, 34, cii–cxiv.
- Forel, A. (1892) Die Ameisenfauna Bulgariens. (Nebst biologischen Beobachtungen). *Verhandlungen der k.k. Zoologisch-Botanischen Gesellschaft in Wien*, 42, 305–318.
- Forel, A. (1893) Sur la classification de la famille des formicides, avec remarques synonymiques. *Annales de la Société Entomologique de Belgique*, 37, 161–167.
- Forel, A. (1900a) Ponerinae et Dorylinae d’Australie. Récoltés par MM. Turner, Froggatt, Nugent, Chase, Rothney, J.-J. Walker, etc. *Annales de la Société Entomologique de Belgique*, 44, 54–77.
- Forel, A. (1900b) Les formicides de l’Empire des Indes et de Ceylan. Part 6. 3me sous famille Ponerinae. *Journal of the Bombay Natural History Society*, 13, 52–65.
- Forel, A. (1901) Les formicides de l’Empire des Indes et de Ceylan. Part 8. Sous famille Dorylinae. *Journal of the Bombay Natural History Society*, 13, 462–477.
- Forel, A. (1902a) Les fourmis du Sahara algérien récoltées par M. le Professeur A. Lameere et le Dr. A. Diehl. *Annales de la Société Entomologique de Belgique*, 46, 147–158.
- Forel, A. (1902b) Myrmicinae nouveaux de l’Inde et de Ceylan. *Revue Suisse de Zoologie*, 10, 165–249.
<https://doi.org/10.5962/bhl.part.13792>
- Forel, A. (1904a) Note sur les fourmis du Musée Zoologique de l’Académie Impériale des Sciences à St. Pétersbourg. *Ezhagodnik Zoologicheskogo Muzeya*, 8, 368–388. [1903]
- Forel, A. (1904b) Miscellanea myrmécologiques. *Revue Suisse de Zoologie*, 12, 1–52.
- Forel, A. (1910) Ameisen aus der Kolonie Erythräa. Gesammelt von Prof. Dr. K. Escherich (nebst einigen in West-Abessinien von Herrn A. Ilg gesammelten Ameisen). *Zoologische Jahrbücher. Abteilung für Systematik, Geographie und Biologie der Tiere*, 29 (3/4), 243–274.
- Forel, A. (1911a) Fourmis nouvelles ou intéressantes. *Bulletin de la Société Vaudoise des Sciences Naturelles*, 47, 331–400.
- Forel, A. (1911b) Die Ameisen des K. Zoologischen Museums in München. *Sitzungsberichte der Königlich Bayerischen Akademie der Wissenschaften Mathematisch-Physikalische Klasse*, 1911, 249–303.
- Forel, A. (1911c) Sur le genre *Metapone* n. g. nouveau groupe des Formicides et sur quelques autres formes nouvelles. *Revue Suisse de Zoologie*, 19, 445–459.
<https://doi.org/10.5962/bhl.part.29919>
- Forel, A. (1912a) Descriptions provisoires de genres, sous-genres et espèces de formicides des Indes orientales. *Revue Suisse de Zoologie*, 20, 761–774.
<https://doi.org/10.5962/bhl.part.19251>
- Forel, A. (1912b) Einige neue und interessante Ameisenformen aus Sumatra etc. *Zoologische Jahrbücher, Supplement*, 15, 51–78.
- Jaitrong, W., Yamane, S. & Wiwatwitaya, D. (2010) The Army Ant *Aenictus wroughtonii* and related species in the Oriental region, with descriptions of two new species. *Japanese Journal of Systematic Entomology*, 16, 33–36.
- Guénard, B. & Dunn, R.R. (2012) A checklist of the ants of China. *Zootaxa*, 3558 (1), 1–77.
<https://doi.org/10.11646/zootaxa.3558.1.1>
- Hita-Garcia, F., Lieberman, Z., Audisio, T.L., Liu, C. & Economo, E.P. (2019) Revision of the highly specialized ant genus *Discothyrea* (Hymenoptera: Formicidae) in the Afrotropics with x-ray microtomography and 3D cybertaxonomy. *Insect Systematics and Diversity*, 3 (6), 51–84.
- Karawajew, W. (1906) Systematisch-Biologisches über drei Ameisen aus Buitenzorg. *Zeitschrift für Wissenschaftliche Insektenbiologie*, 2, 369–376.
- Karawajew, W. (1910) Nachtrag zu meinen “Ameisen aus Transcaspien und Turkestan”. *Russkoe Entomologicheskoe Obozrenie*, 9, 268–272. [1909]
- Karawajew, W. (1911a) Ameisen aus Aegypten und dem Sudan. *Russkoe Entomologicheskoe Obozrenie*, 11, 1–12.
- Karawajew, W. (1911b) Ameisen aus Transcaspien und Turkestan. *Trudy Russkago Entomologicheskago Obshchestva*, 39, 1–72. [1909]
- Karawajew, W. (1912a) Ameisen aus dem paläarktischen Faunengebiet. *Russkoe Entomologicheskoe Obozrenie*, 12, 581–596.
- Karawajew, W. (1912b) Ameisen aus Tunesien und Algerien, nebst einigen unterwegs in Italien gesammelten Arten. *Russkoe Entomologicheskoe Obozrenie*, 12, 1–22.
- Karawajew, W. (1916) Fourmis provenant du district Gadjatsh du gouvernement de Poltava et de la Province Ferganai. *Russkoe*

- Karawajew, W. (1924) Zur Systematik der paläarktischen *Myrmecocystus*, nebst einigen biologischen Notizen. *Konowia*, 3, 301–308.
- Karawaiew, W. (1925a) Ponerinen aus dem Indo-Australischen Gebiet. *Konowia*, 4, 69–81.
- Karawaiew, W. (1925b) Ponerinen aus dem Indo-Australischen Gebiet (Fortsetzung). *Konowia*, 4, 115–131.
- Karawaiew, W. (1925c) Ponerinen aus dem Indo-Australischen Gebiet (Schluss). *Konowia*, 4, 276–296
- Karawajew, W. (1926a) Beiträge zur Ameisenfauna des Kaukasus, nebst einigen Bemerkungen über andere palaearktische Formen. *Konowia*, 5, 93–109.
- Karawajew, W. (1926b) Beiträge zur Ameisenfauna des Kaukasus, nebst einigen Bemerkungen über andere palaearktische Formen. (Fortsetzung.) *Konowia*, 5, 161–169.
- Karawajew, W. (1926c) Beiträge zur Ameisenfauna des Kaukasus, nebst einigen Bemerkungen über andere palaearktische Formen. (Schluss.) *Konowia*, 5, 187–199.
- Karawajew, W. (1926d) Myrmekologische Fragmente. *Trudy Fizichno-Matematichnoho Viddilu Ukrains'koi Akademiyi Nauk*, 4, 65–69. [Zbirnyk Prats' Zoolohichnoho Muzeju, 1, 47–51.]
- Karawajew, W. (1926e) Ameisen aus dem Indo-Australischen Gebiet. *Treubia*, 8, 413–445.
- Karawajew, W. (1926f) Über den Nestbau von *Polyrhachis* (subg. *Myrmhopla*) *tubifex* sp. n. *Biologischen Zentralblatt*, 46, 143–145.
- Karawajew, W. (1927a) Ameisen aus dem Indo-Australischen Gebiet. III. *Zbirnyk Prats' Zoolohichnoho Muzeju*, 3, 3–52.
- Karawajew, W. (1927b) Übersicht der Ameisenfauna der Krim nebst einigen Neubeschreibungen. *Konowia*, 281–303. [1926]
- Karawajew, W. (1927c) Myrmekologische miszellen. *Ezhegodnik Zoologicheskogo Muzeja Akademiyi Nauk SSSR*, 27, 104–112. [1926]
- Karawajew, W. (1927d) Ameisen aus dem palaarktischen Gebiet. 2. *Trudy Fizichno-Matematichnoho Viddilu Ukrains'koi Akademiyi Nauk*, 4, 333–348. [Zbirnyk Prats' Zoolohichnoho Muzeju, 2, 89–104]
- Karawajew, W. (1927e) Die Ameisenfauna von Ukraine. *Trudy Fizichno-Matematichnoho Viddilu Ukrains'koi Akademiyi Nauk* 4 ((1926): 247–296. [Zbirnyk Prats' Zoolohichnoho Muzeju, 2, 1–52. [in Ukrainian]
- Karawajew, W. (1929a) Ameisen aus dem Indo-Australischen Gebiet. 6 [sic]. *Trudy Fizichno-Matematichnoho Viddilu Ukrains'koi Akademiyi Nauk*, 13, 41–56. [Zbirnyk Prats' Zoolohichnoho Muzeju, 7, 43–58]
- Karawajew, W. (1929b) Myrmekologische Fragmente. 2. *Trudy Fizichno-Matematichnoho Viddilu Ukrains'koi Akademiyi Nauk*, 13, 203–218. [Zbirnyk Prats' Zoolohichnoho Muzeju, 7, 205–220]
- Karawajew, W. (1929c) Ameisen aus dem Indo-Australischen Gebiet. 6. *Trudy Fizichno-Matematichnoho Viddilu Ukrains'koi Akademiyi Nauk*, 13, 233–246. [Zbirnyk Prats' Zoolohichnoho Muzeju, 7, 235–248]
- Karawajew, W. (1930a) Ameisen von den Molukken und Neuguinea. (Ergebnisse der Sunda-Expedition der Notgemeinschaft der deutschen Wissenschaft, (1929/30.) *Zoologischer Anzeiger*, 92, 206–214.
- Karawajew, W. (1930b) Beitrag zur Ameisenfauna der schwedischen Inseln Gotland und Oeland. *Trudy Fizichno-Matematichnoho Viddilu Ukrains'koi Akademiyi Nauk*, 15, 109–150. [Zbirnyk Prats' Zoolohichnoho Muzeju, 8, 5–46]
- Karawajew, W. (1931a) Beitrag zur Ameisenfauna der Umgebung des Baikalsees. *Zoologischer Anzeiger*, 93, 28–32.
- Karawajew, W. (1931b) Myrmekologische Fragmente. 3. *Zoologischer Anzeiger*, 92, 309–317.
- Karawajew, W. (1931c) Beitrag zur Ameisenfauna Jakutiens. *Zoologischer Anzeiger*, 94, 104–117.
- Karawajew, W. (1931d) Ameisen aus Englisch-Ostafrika. *Zoologischer Anzeiger*, 95, 42–51.
- Karawajew, W. (1932) Zwei neue Ameisen aus Aserbeidschan (Transkaukasien). *Zoologischer Anzeiger*, 98, 248–250.
- Karawajew, W. (1933a [1932]) Ameisen aus dem Indo-Australischen Gebiet. 7. *Konowia*, 11, 305–320.
- Karawajew, W. (1933b) Ameisen aus dem Indo-Australischen Gebiet. 7. (Fortsetzung). *Konowia*, 12, 103–120.
- Karawajew, W. (1933c) Ameisen aus dem Indo-Australischen Gebiet. 7. (Schluss). *Konowia*, 12, 260–271.
- Karawajew, W. (1934) Die Fauna der Familie Formicidae (Ameisen) der Ukraine. *Trudy Instytutu Zoolohii ta Biolohii Vseukrains'koi Akademii Nauk*, Seriya 1-a, Pratsi z systematyky ta faunistyky, 1–164. [in Ukrainian with German descriptions of species]
- Karawajew, W. (1935a) Neue Ameisen aus dem Indo-Australischen Gebiet, nebst Revision einiger Formen. *Treubia*, 15, 57–118.
- Karawajew, W. (1935b) Materialy do fauny murashok Mariupol's'koi okruhy. *Zbirnyk Prats' Zoolohichnoho Muzeju Ukrains'koi Akademiyi Nauk*, 16, 107–111. [in Ukrainian]
- Karawajew, W. (1937) Murashky, zibrani v zapovidnykach Kinburns'koho pivostrova i Burkutiv. *Zbirnyk Prats' Zoolohichnoho Muzeju, Instytut Zoolohii ta Biolohii AN URSR*, 19, 171–181. [in Ukrainian]
- Kempf, W.W. (1961) Estudos sobre *Pseudomyrmex*. 3. *Studia Entomologica*, New Series, 4, 369–408.
- Korman, M.M. (2008) *V. O. Karawaiev: life and activity*. Dzhura Press, Ternopil, 224 pp. [in Ukrainian].
- Kostyuk, Yu. A. (1976) Catalogue of the ant types (Hymenoptera, Formicidae) in the collection of W. A. Karawajew that are preserved in the Institute of Zoology of Academy of Sciences of Ukrainian SSR (Part 1). *Sbornik Trudov Zoologicheskogo Muzeja*, 36, 91–106. [in Russian]
- Latreille, P.A. (1798) *Essai sur l'Histoire des Fourmis de la France*. Chez F. Bourdeaux, Brive, 50 pp.
- Latreille, P.A. (1802) *Histoire naturelle des fourmis, et recueil de mémoires et d'observations sur les abeilles, les araignées, les faucheurs, et autres insectes*. Impr. Crapelet (chez T. Barrois), Paris, xvi + 445 pp.
<https://doi.org/10.5962/bhl.title.11138>

- Lattke, J.E. (2004) A taxonomic revision and phylogenetic analysis of the ant genus *Gnamptogenys* Roger in Southeast Asia and Australasia. *University of California Publications in Entomology*, 122, 1–266.
<https://doi.org/10.1525/california/9780520098442.003.0001>
- Leach, W.E. (1815) Entomology. In *Brewster's Edinburgh Encyclopaedia*, 9, 57–172.
- Le Guillou, E.J.F. (1842) Catalogue raisonné des insectes hyménoptères recueillis dans le voyage de circumnavigation des corvettes l'Astrolabe et La Zélée. *Annales de la Société Entomologique de France*, 10 (1841), 311–324.
- Lin, C.-C. & Wu, W.-J. (2003) The ant fauna of Taiwan (Hymenoptera: Formicidae), with keys to subfamilies and genera. *Guoli Taiwan Bowuguan Niankan*, 46, 5–69 [In Chinese].
- Linnaeus, C. (1758) *Systema Naturae per regna tria naturae, secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis. Editio 10.* Holmiae, 823 pp.
<https://doi.org/10.5962/bhl.title.542>
- Mackay, W.P. (1996) A revision of the ant genus *Acanthostichus*. *Sociobiology*, 27, 129–179.
- Mann, W.M. (1919) The ants of the British Solomon Islands. *Bulletin of the Museum of Comparative Zoology at Harvard College*, 63 (7), 273–391.
- Martynov, A.V. & Radchenko, A.G. (2016) Karawajew's ant type specimens (Hymenoptera, Formicidae) in the National Museum of Natural History of the National Academy of Science of Ukraine. *Zootaxa*, 4097 (2), 244–254.
<https://doi.org/10.11646/zootaxa.4097.2.6>
- Matsumura, S. & Uchida, T. (1926) Die Hymenopteren-Fauna von den Riukiu-Inseln. *Insecta Matsumurana*, 1, 32–52.
- Mayr, G. (1853) Beschreibungen einiger neuer Ameisen. *Verhandlungen der Zoologisch-Botanischen Vereins in Wien*, 3, 277–286.
- Mayr, G. (1855) Formicina austriaca. Beschreibung der bisher im Österreichischen Kaiserstaate aufgefundenen Ameisen nebst Hinzufügung jener in Deutschland, in der Schweiz und in Italien vorkommenden Ameisen. *Verhandlungen des Zoologisch-Botanischen Vereins in Wien*, 5, 273–478.
- Mayr, G. (1861) *Die europäischen Formiciden. Nach der analytischen Methode bearbeitet.* C. Gerolds Sohn, Wien, 80 pp.
<https://doi.org/10.5962/bhl.title.14089>
- Mayr, G. (1866) Diagnosen neuer und wenig gekannter Formiciden. *Verhandlungen der k.k. Zoologisch-Botanischen Gesellschaft in Wien*, 16, 885–908.
- Mayr, G. (1870) Neue Formiciden. *Verhandlungen der k.k. Zoologisch-Botanischen Gesellschaft in Wien*, 20, 939–996.
- Mayr, G. (1876) Die australischen Formiciden. *Journal des Museum Goddefroy*, 12, 56–115.
- Mayr, G. (1877) Formicidae. In: Fedchenko, A.P. Travels in Turkestan. Vol. 2. Div. 5, No. 7. *Izvestiya Imperatorskago Obshchestva Lyubitelei Estestvoznaniya Antropologii i Etnografii pri Imperatorskom Moskovskom Universitete*, 26, i–iii +1–20 (+1). [in Russian]
- Menozi, C. (1927) Formiche raccolte dal Sig. H. Schmidt nei dintorni di San José di Costa Rica. *Entomologische Mitteilungen*, 16, 266–277.
- MCZ (2023) Museum of Comparative Zoology MCZBASE: The Database of the Zoological Collections. Available from: <https://mczbase.mcz.harvard.edu/guid/MCZ:Ent:686668> (accessed 1 January 2023)
- Nylander, W. (1846) Adnotationes in monographiam formicarum borealium Europae. *Acta Societatis Scientiarum Fennicae*, 2, 875–944.
<https://doi.org/10.5962/bhl.title.66897>
- Nylander, W. (1849) Additamentum alterum adnotationum in monographiam formicarum borealium. *Acta Societatis Scientiarum Fennicae*, 3, 25–48.
- Özdikmen, H. (2010) New names for some preoccupied specific and subspecific epithets in the family Formicidae. *Munis Entomology & Zoology*, 5 (Supplement), 986–1000.
- Paramonov, S.Y. (1941) V.O. Karawajew. *Zbirnyk parts Zoologichnogo Museyu*, 24, 4–8. [in Ukrainian]
- Radchenko, A.G. (1983) *Tapinoma kinburni* Karaw. (Hymenoptera, Formicidae), endemic species of Ukrainian fauna. *Zoologicheskii Zhurnal*, 62, 1904–1907. [in Russian]
- Radchenko, A.G. (2005) A review of the ants of the genus *Lasius* Fabricius, 1804, subgenus *Dendrolasius* Ruzsky, 1912 (Hymenoptera: Formicidae) from East Palaearctic. *Annales Zoologici*, 55, 83–94.
- Roger, J. (1860) Die *Ponera*-artigen Ameisen. *Berliner Entomologische Zeitschrift*, 4, 278–312.
- Roger, J. (1862) Einige neue exotische Ameisen-Gattungen und Arten. *Berliner Entomologische Zeitschrift*, 6, 233–254.
<https://doi.org/10.1002/mmnd.47918620118>
- Ruzsky, M. (1902) Neue Ameisen aus Russland. *Zoologische Jahrbücher. Abteilung für Systematik, Geographie und Biologie der Tiere*, 17, 469–484.
- Ruzsky, M. (1905) Murav'i Rossii. (Formicariae Imperii Rossici.) *Trudy Obshchestva Estestvoispytatelei pri Imperatorskom Kazanskom Universitete*, 38, 1–799. [in Russian]
- Ruzsky, M. (1923) Die Ameisen der Insel Tscheckenj. *Izvestiya Tomskogo Gosudarstvennogo Universiteta* 72 (2nd Part), 1–6. [in Russian with German summary]
- Santschi, F. (1909) Une nouvelle fourmi de Cuba. *Bulletin de la Société Entomologique de France*, 1909, 309–310.
<https://doi.org/10.3406/bsef.1909.24577>
- Santschi, F. (1910a) Formicides nouveaux ou peu connus du Congo Français. *Annales de la Société Entomologique de France*, 78 (1909), 349–400.

- Santschi, F. (1910b) Nouvelles fourmis de Tunisie (suite). *Bulletin de la Société d'Histoire Naturelle de l'Afrique du Nord*, 2 (5), 70–72.
- Santschi, F. (1910c) Nouveaux dorylines africains. *Revue Suisse de Zoologie*, 18 (4), 737–759.
<https://doi.org/10.5962/bhl.part.16674>
- Santschi, F. (1912a) Fourmis d'Afrique et de Madagascar. *Annales de la Société Entomologique de Belgique*, 56, 150–167.
<https://doi.org/10.5962/bhl.part.5816>
- Santschi, F. (1912b) Nouvelles fourmis de Tunisie, récoltées par le Dr Normand. *Bulletin de la Société d'Histoire Naturelle de l'Afrique du Nord*, 4, 172–175.
- Santschi, F. (1913) Glanures de fourmis africaines. *Annales de la Société Entomologique de Belgique*, 57, 302–314.
<https://doi.org/10.5962/bhl.part.4600>
- Santschi, F. (1914) Formicides de l'Afrique occidentale et australe du voyage de Mr. le Professeur F. Silvestri. *Bollettino del Laboratorio di Zoologia Generale e Agraria della Reale Scuola Superiore d'Agricoltura Portici*, 8, 309–385.
- Santschi, F. (1927) A propos du *Tetramorium caespitum* L. *Folia Myrmecologica et Termitologica*, 1, 52–58.
- Santschi, F. (1928) Fourmis de Sumatra, récoltées par Mr. J.B. Corporaal. *Tijdschrift voor Entomologie*, 71, 119–140.
- Santschi, F. (1929) Fourmis du Maroc, d'Algérie et de Tunisie. *Annales et Bulletin de la Société Entomologique de Belgique*, 69, 138–165.
- Schmidt, C.A. & Shattuck, S.O. (2014) The higher classification of the ant subfamily Ponerinae, with a review of ponerine ecology and behavior. *Zootaxa*, 3817 (1), 1–242.
<https://doi.org/10.11646/zootaxa.3817.1.1>
- Seifert, B. (2021) A taxonomic revision of the Palaearctic members of the *Formica rufa* group (Hymenoptera: Formicidae)—the famous mound-building red wood ants. *Myrmecological News*, 31, 133–179.
- Shattuck, S.O. (2008) Review of the ant genus *Aenictus* in Australia with notes on *A. ceylonicus* (Mayr). *Zootaxa*, 1926 (1), 1–19.
<https://doi.org/10.11646/zootaxa.1926.1.1>
- Smith, F. (1857) Catalogue of the hymenopterous insects collected at Sarawak, Borneo; Mount Ophir, Malacca; and at Singapore, by A.R. Wallace. *Journal of the Proceedings of the Linnean Society of London, Zoology*, 2, 42–88.
<https://doi.org/10.1111/j.1096-3642.1857.tb01759.x>
- Smith, F. (1858) *Catalogue of Hymenopterous Insects in the Collection of the British Museum. Vol. 6. Formicidae*. Printed by order of the Trustees, London, 216 pp.
- Smith, F. (1859) Catalogue of hymenopterous insects collected by Mr. A.R. Wallace at the Islands of Aru and Key. *Journal of the Proceedings of the Linnean Society of London, Zoology*, 3, 132–158.
<https://doi.org/10.1111/j.1096-3642.1859.tb00077.x>
- Smith, F. (1860) Catalogue of hymenopterous insects collected by Mr. A. R. Wallace in the islands of Bachian, Kaisaa, Amboyna, Gilolo, and at Dory in New Guinea. *Journal and Proceedings of the Linnean Society of London, Zoology*, 5 (17b), Supplement to Vol. 4, 93–143.
<https://doi.org/10.1111/j.1096-3642.1860.tb01022.x>
- Smith, F. (1863) Catalogue of hymenopterous insects collected by Mr. A.R. Wallace in the Islands of Mysol, Ceram, Waigiou, Bouru and Timor. *Journal of the Proceedings of the Linnean Society, Zoology*, 7, 6–48.
<https://doi.org/10.1111/j.1096-3642.1863.tb02085.x>
- Smith, F. (1877) Descriptions of new species of the genera *Pseudomyrma* and *Tetraponera*, belonging to the family Myrmicidae. *Transactions of the Entomological Society of London, Series 4*, 10, 57–72.
<https://doi.org/10.1111/j.1365-2311.1877.tb02901.x>
- Smith, M.R. (1952) The correct name for the group of ants formerly known as *Pseudomyrma*. *Proceedings of the Entomological Society of Washington*, 54, 97–98.
- Stitz, H. (1911) *Wissenschaftliche Ergebnisse der Deutschen Zentral-Afrika-Expedition 1907-1908 unter führung Adolf Friedrichs, Herzogs zu Mecklenburg*, 3 (Zoologie), 1 Formicidae, 375–392.
- Terayama, M. (2009) A synopsis of the family Formicidae of Taiwan (Insecta: Hymenoptera). *Research Bulletin of Kanto Gakuen University*, 17, 81–266.
- Ward, P.S. (1989) Systematic studies on pseudomyrmecine ants: revision of the *Pseudomyrmex oculatus* and *P. subtilissimus* species groups, with taxonomic comments on other species. *Quaestiones Entomologicae*, 25, 393–468.
- Ward, P.S. (1990) The ant subfamily Pseudomyrmecinae: generic revision and relationship to other formicids. *Systematic Entomology*, 15, 449–489.
<https://doi.org/10.1111/j.1365-3113.1990.tb00077.x>
- Ward, P.S. (1993) Systematic studies on *Pseudomyrmex* acacia-ants. *Journal of Hymenoptera Research*, 2, 117–168.
- Ward, P.S. (1999) Systematics, biogeography and host plant associations of the *Pseudomyrmex viduus* group, *Triplaris*- and *Tachigali*-inhabiting ants. *Zoological Journal of the Linnean Society*, 126, 451–540.
<https://doi.org/10.1111/j.1096-3642.1999.tb00157.x>
- Ward, P.S. (2001) Taxonomy, phylogeny and biogeography of the ant genus *Tetraponera* in the Oriental and Australian regions. *Invertebrate Taxonomy*, 15, 589–665.
<https://doi.org/10.1071/IT01001>
- Warming, E. (1894) Om et par af myrer beboede Traeer. *Videnskabelige Meddelelser fra den Naturhistoriske Forening i*

- Kjobenhavn, 5, 173–187. [1893]
- Wheeler, W.M. (1921) Chinese ants. *Bulletin of the Museum of Comparative Zoology at Harvard College*, 64, 529–547.
- Viehmeyer, H. (1912) Ameisen aus Deutsch Neuguinea gesammelt von Dr. O. Schlaginhaufen. Nebst einem Verzeichnisse der papuanischen Ameisen. *Abhandlungen und Berichte des Königl. Zoologischen und Anthropologisch-Ethnographischen Museums zu Dresden*, 14 (1), 1–26.
- Viehmeyer, H. (1914) Neue und unvollständig bekannte Ameisen der alten Welt. *Archiv für Naturgeschichte*, Series A, 79 (12), 24–60. [1913]
- Viehmeyer, H. (1922) Neue Ameisen. *Archiv für Naturgeschichte*, 88 (A.7), 203–220.
- Viereck, H.L. (1903) Hymenoptera of Beulah, New Mexico [part]. *Transactions of the American Entomological Society*, 29, 56–87.
- Wilson, E.O. (1958a) Studies on the ant fauna of Melanesia. 1. The tribe Leptogenyini. 2. The tribes Amblyoponini and Platythyreini. *Bulletin of the Museum of Comparative Zoology at Harvard College*, 118 (3), 101–153.
- Wilson, E.O. (1958b) Studies on the ant fauna of Melanesia. 3. *Rhytidoponera* in western Melanesia and the Moluccas. 4. The tribe Ponerini. *Bulletin of the Museum of Comparative Zoology at Harvard College*, 119 (4), 303–371.
- Wilson, E.O. (1959) Studies on the ant fauna of Melanesia. 5. The tribe Odontomachini. *Bulletin of the Museum of Comparative Zoology at Harvard College*, 120 (5), 483–510.
- Wilson, E.O. (1964) The true army ants of the Indo-Australian area. *Pacific Insects*, 6 (3), 427–483.
- Yarrow, I.H.H. (1955) The British ants allied to *Formica rufa* L. *Transactions of the Society for British Entomology*, 12, 1–48.
- Zhou, S. & Ran, H. (2010) Checklist of poneromorph subfamilies (Hymenoptera: Formicidae) in China. *Journal of Guangxi Normal University (Natural Science Edition)*, 28, 101–113.