



The ants (Hymenoptera, Formicidae) in the collection of William Nylander

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Abstract: The ant collection of W. Nylander (Finnish Museum of Natural History, Helsinki) is investigated. The lectotypes of *Myrmica rugulosa*, *M. sulcinodis*, *M. lobicornis*, *M. lobicornis* var. *lobulicornis*, *M. scabrinodis*, *M. ruginodis*, *M. laevinodis*, and *Formica picea* are designated; the type specimens of the other species are considered as the syntypes (except of the earlier designated lectotypes and paralectotypes). New synonymy is established: *Myrmica hirtula* is junior synonym of *Harpagoxenus sublaevis*; *Formica glebaria* is a junior synonym of *F. fusca* (not of *F. cunicularia*!); *Formica major* is not a synonym of *F. rufa* rather it is a synonym of *F. polycтена*. However, I will apply to the International Commission of Zoological Nomenclature with the proposition to suppress the name *major* and keep priority for the name *F. polycтена*. Some problems on the taxonomy of the different species are discussed, and the non-type material is partly redetermined.

Key words: type material, Finnish Museum of Natural History, Formicidae, new synonymy, redetermination

INTRODUCTION

William Nylander (1822–1899) was a famous Finnish naturalist of the XIX century. Despite Nylander's main scientific interest being in botany (particularly lichenology) he was also an outstanding myrmecologist. His eight myrmecological publications provided the foundations to the modern taxonomy of the European ant fauna. Despite his relatively few papers (see listed below) he described more than 40 species and infraspecific forms, and about half of them remain recognised as good species today.

In 2002, I investigated Nylander's ant collection, which is preserved at the Finnish Museum of Natural History, Helsinki. This collection is kept in the box No. 4 and consists of 265 specimens, including the types of 35 species and infraspecific forms, described from Finland (mainly collected by Nylander personally), from southern Russia (collected by Motchoulsky) and from Italy (collected by Zeller). There are also the non-type material of 19 species (partly redetermined by me), which I include in the list below.

I have designated the lectotype specimens for all the 'good' *Myrmica* species (with one addition – *M. laevinodis*), and for *Formica picea* Nylander. All the other type specimens are considered as syntypes (except for earlier designated lectotypes and paralectotypes). Full label-data for all specimens is provided in order to assist future investigators who may work with Nylander's collection. Here the species are ordered according their order in the collection.

LIST OF THE NAMES OF ANTS IN THE COLLECTION OF WILLIAM NYLANDER (according the original labels)

1. *Ponera coarctata* Latreille

Two workers on 2 pins, without locality labels, first pin with the label “*Ponera coarctata* Latr.”

2. *Myrmica lippula* Nylander, 1849: 41, workers

Type locality: southern Russia (see Note 1 below).

Syntypes (? – see Note 2 below): worker, “Russ. Merid.”, “Motschoulsky”, “Coll. Nyland.”, “spec. type No. 5100”; on 2 another pins there are only gasters of 2 workers (type Nos. 5101 and 5102 correspondly).

Note 1. All material in the Nylander’s collection, labelled as “Russ. Merid.” or “Ross. Merid” (i.e. southern Russia), was collected by Russian entomologist V. Motchoulsky. It is impossible now to define correctly the precise localities or even country: they could have come from the southern part of European Russia or Ukraine.

Note 2. *Myrmica lippula* was transferred to the genus *Stenammina* and synonymised with *S. westwoodi* Westwood by Forel (1889). DuBois (1993) revived the name *S. lippulum* from synonymy and considered it as senior synonym of *S. caucasicum* Arnoldi. He also noted in his paper (*loc. cit.*, p. 322) that the lectotype of *S. lippulum* is in the Finnish Museum of Natural History, but did not give any data of the labels of this “lectotype”. I did not find any of DuBois’ labels in the correspondent material of Nylander’s collection. On the other hand, the type specimen of *Myrmica lippula* with No. 5100 is a worker of *Tetramorium caespitum* Linnaeus.

3. *Myrmica diluta* Nylander, 1849: 41, workers

Type locality: southern Russia.

Syntypes: worker, “Ross. mer.”, “Motchoulsky”, “Coll. Nyland.”, “Russ. merid. Motch.”, “*M. diluta* Nyl.”, “Mus. Zool. H: fors Spec. typ. No. 5104 *Myrmica diluta* Nyl.”; worker, “Ross. mer.”, “Motchoulsky”, “Coll. Nyland.”, “Mus. Zool. H: fors Spec. typ. No. 5103 *Myrmica diluta* Nyl.”.

I confirm Mayr’s (1861) synonymy of this name with *M. ruginodis* Nylander.

4. *Myrmica rugulosa* Nylander, 1849: 32, workers, queens

Type locality: Finland.

Lectotype (designated here): worker, “H: fors”, “W. Nyland.”, “Coll. Nyland.”, “Mus. Zool. H: fors Spec. typ. No. 5077 *Myrmica rugulosa* Nyl.”, “Mus. Hels. N:o 2208”, “Mus. Zool. Helsinki Loan No. 1897”.

Paralectotypes: 2 workers on one pin, “H: fors”, “W. Nyland.”, “Mus. Fenn.”, “Mus. Zool. H: fors Spec. typ. No. 5075 *Myrmica rugulosa* Nyl.”, “Mus. Zool. Helsinki Loan No. 1895”; queen, “H: fors”, “W. Nyland.”, “Coll. Nyland.”, “Mus. Zool. H: fors Spec. typ. No. 5076 *Myrmica rugulosa* Nyl.”, “Mus. Zool. Helsinki Loan No. 1896”; gyne and worker on one pin, “H: fors”, “W. Nyland.”, “Coll. Nyland.”, “Mus. Zool. H: fors Spec. typ. No. 5074 *Myrmica rugulosa* Nyl.”; worker, “H: fors”, “W. Nyland.”, “Coll. Nyland.”; 2 workers on one pin, “H: fors”, “W. Nyland.”, “Coll. Nyland.”.

The type specimens of this species fully correspond with the modern treatment of *M. rugulosa*.

5. *Myrmica sulcinodis* Nylander, 1846a: 934, workers, queens

Type locality: Finland.

Lectotype (designated here): worker (bottom specimen on the pin with 3 workers) , “H: fors”, “W. Nyland.”, “Coll. Nyland.”, “Mus. Zool. H: fors Spec. typ. No. 5054 *Myrmica sulcinodis* Nyl.”.

Paralectotypes: 2 workers on the pin with the lectotype; 3 workers on one pin with the same labels as the lectotype, but type No. 5055.

I exclude a worker with the same labels as the lectotype, but type No. 5056, from the type series of *M. sulcinodis*, which I determined as *M. scabrinodis* Nyl.

Non-type material: 2 workers on one pin, “Kuusamo”, “W. Nyland.”, “Coll. Nyland.”; 3 workers on one pin, “588”; queen and worker on one pin, “590”; queen, “Siberia or.”, “Coll. Nyland.”.

The type specimens of this species fully correspond with the modern treatment of *M. sulcinodis*. They are slightly discoloured, but the head is somewhat darker than the alitrunk. The antennal scape is distinctly but not sharply, angled at the base. The current treatment of *M. sulcinodis* also includes European and Caucasian populations where the antennal scape is only sharply curved, not angled.

6. *Myrmica lobicornis* Nylander, 1846a: 932, workers, queens

Type locality: Finland (“Hab. per totam saltem Fennien sat frequens”).

Lectotype (designated here): worker (with the male on one pin), “Uleåborg”, “W. Nyland.”, “Mus. Zool. H: fors Spec. typ. No. 5053 *Myrmica lobicornis* Nyl.” (see also Seifert, 2005).

Paralectotypes: worker and male on one pin, “Uleåborg”, “W. Nyland.”, “Mus. Fenn.”, “Mus. Zool. H: fors Spec. typ. No. 5050 *Myrmica lobicornis* Nyl.”; worker and male on one pin, “Uleåborg”, “W. Nyland.”, “Mus. Fenn.”, “Mus. Zool. H: fors Spec. typ. No. 5051 *Myrmica lobicornis* Nyl.”; queen, “Uleåborg”, “W. Nyland.”, “Mus. Fenn.”, “Mus. Zool. H: fors Spec. typ. No. 5052 *Myrmica lobicornis* Nyl.”; worker and male on one pin, Uleåborg”, “W. Nyland.”, “Mus. Fenn.”.

Non-type material: worker, “Siberia bor.”.

Note. There are also males on the pins with the lectotype and paralectotypes workers but formally they cannot be included to the type series, because Nylander described males of this species later, in 1849. The type specimens and males fully correspond with the modern treatment of *M. lobicornis*.

7. *Myrmica lobicornis* var. *lobulicornis* Nylander, 1857: LXXIX, workers

Type locality: France.

Lectotype (designated here): worker, “M. Dore”, “*F. (Sic!) lobicornis* var. *lobulicornis* Nyl.” “W. Nyland.”, “Mus. Zool. H: fors Spec. typ. No. 5118 *Myrmica lobulicornis* Nyl.” (see also Seifert 2005).

Paralectotype: worker, “M. Dore”, “W. Nyland.”, “Mus. Zool. H: fors Spec. typ. No. 5119 *Myrmica lobulicornis* Nyl.”.

Note. Bondroit (1920) raised this variety to species level; later it was synonymised with *M. lobicornis* (Bernard 1967, Seifert 1988), but recently (Seifert, 2005) again promoted it to a species.

8. *Myrmica schencki* Viereck (my identification)

Two workers on one pin, No. 587; 1 queen, “Bariges”, “W. Nyland.”, “*M. lobicornis* Nyl.”. Nylander originally determined these specimens as *M. lobicornis*.

9. *Myrmica scabrinodis* Nylander, 1846a: 930, workers, queens, males

Type locality: Finland.

Lectotype (designated here): worker (bottom specimen on the pin with 2 workers), “Kuusamo”, “W. Nyland.”, “Mus. Fenn.”: this specimen was pinned through gaster by a blunt, thin pin; during my investigation of it the specimen fell off its mount, so I stuck it (with water soluble glue) to the cardboard triangle and replaced it on the proper pin.

Paralectotypes: worker (upper) on the pin with the lectotype; 2 workers on a pin with the same labels as the lectotype.

Note. Nylander (1846a) did not give the exact type locality of *M. scabrinodis*, only noted: "A Cell. Dahlbom exemplaria bujus speciei accepti, inter quae errant females and males deprehensi ad Wandsteman Ostrogonthiae d. 17 Aug. 1841 et males alter captus ad Esperöd Scaniae d. 8 ejusdem".

I also found in Nylander's collection other specimens determined as *M. scabrinodis*:

1) a pin with only one ant gaster, "a Dahlbom", "Mus. Zool. H: fors Spec. typ. No. 5049 *Myrmica scabrinodis* Nyl.", "Mus. Hels. N:o 3217"; this specimen most probably belongs to the type series, but as most of the specimen is entirely lost there is no reason to include this gaster to the paralectotypes.

2) male (without head) and queen on one pin, "Bogdå", "W. Nyland.", "Coll. Nyland.", "Emsale", "20/viii.46, ♀♂", "Mus. Hels. N:o 2212", "Mus. Hels. N:o 2216";

3) queen, "H: fors", "W. Nyland.", "2/x 47", "Coll. Nyland.";

4) queen, "H: fors", "W. Nyland.", "Coll. Nyland.".

The specimens mentioned above are *M. scabrinodis*, but formally cannot be included in the type series because they were collected on 20th of August 1846 and 2nd of October 1847 while Nylander's (1846a) paper was accepted 9th of February 1846. The queen on pin "4" has no date label and because I am not sure whether it belong to the type series or not, I have not included it as a paralectotype.

All the workers and queens mentioned above fully correspond with the modern treatment of *M. scabrinodis*; unfortunately the single male in Nylander's collection has no head and so the key character of a short antennal scape cannot be confirmed, but by all other features, including very long and abundant hairs on the legs, it looks to me to be a typical *M. scabrinodis* male.

In addition, there is a damaged worker (pinned though pronotum, gaster with postpetiole pinned below on the same pin) with the labels "H: fors", "W. Nyland.", "Coll. Nyland.". Originally, it was determined as *M. scabrinodis* but actually is a specimen of *M. sabuleti* Meinert (my identification).

10. *Myrmica ruginodis* Nylander, 1846a: 929, workers, queens, males

Type locality: Finland.

Lectotype (designated here): worker (upper specimen on the pin with 2 workers), "Kuusamo", "W. Nyland.", "Mus. Zool. H: fors Spec. typ. No. 5045 *Myrmica ruginodis* Nyl.".

Paralectotypes: worker (bottom) on the pin with the lectotype; male, with the same labels as the lectotype, but type No. 5046; queen, male and worker on one pin, with the same labels as the lectotype, but type No. 5046 and one additional label: "Mus. Hels. N:o 3211"; queen, with the same labels as the lectotype, but type No. 5046 and one additional label: "Mus. Hels. N:o 3212".

The type specimens of this species fully correspond with the modern treatment of *M. ruginodis* (*sensu* Yarrow 1955b *et auct.*).

11. *Myrmica laevinodis* Nylander, 1846a: 927, workers, queens, males

Type locality: Finland.

Lectotype (designated here): worker (upper specimen on the pin with 2 workers), "H: fors", "W. Nyland.", "Mus. Fenn.", "Mus. Zool. H: fors Spec. typ. No. 5044 *Myrmica laevinodis* Nyl.".

Paralectotypes: worker (bottom) on the pin with the lectotype; queen, with the same label as the lectotype, but type No. 5041; male and worker on one pin, "H: fors", "W. Nyland.", "Coll. Nyland.", "9/viii.45", "Mus. Zool. H: fors Spec. typ. No. 5042 *Myrmica laevinodis* Nyl.", "Mus. Hels. N:o 3212"; 2 males on one pin (one male without waist and gaster), "H: fors", "W. Nyland.", "Mus. Zool. H: fors Spec. typ. No. 5043 *Myrmica laevinodis* Nyl.".

The type specimens of this species fully correspond with the modern treatment of *M. rubra* L. (*sensu* Yarrow 1955b *et auct.*).

12. *Myrmica striatula* Nylander, 1849: 40, workers

Type locality: southern Russia.

Syntypes: worker, "Russia merid.", "Motchoulsky", "Coll. Nyland.", "Ross. merid. Motsch.", "*striatula*", "Mus. Zool. H: fors Spec. typ. No. 5097 *Myrmica striatula* Nyl."; worker, "Russia merid.", "Motchoulsky", "Mus. Zool. H: fors Spec. typ. No. 5098 *Myrmica striatula* Nyl."; worker with the same labels as the previous one, but type No. 5099.

Non-type material: male, "Belgia", "Coll. Nyland.".

Note. Mayr (1855) transferred *Myrmica striatula* to the genus *Myrmecina* Curtis and synonymised it with *M. graminicola* (Latreille). I confirm this synonymy.

13. *Myrmica fuscula* Nylander, 1846a: 935, workers, males

Type locality: Finland.

Syntypes: worker, "H: fors", "W. Nyland.", "20/v", "Coll. Nyland.", "*fuscula* Nyl.", "Mus. Zool. H: fors Spec. typ. No. 5057 *Myrmica fuscula* Nyl."; male, with the same labels as the previous specimen, but type No. 5059.

Non-type material: worker (without postpetiole and gaster), "451"; 4 workers on one pin, "587"; 2 workers (one without head) on one pin, "589"; 3 workers on one pin, without label.

Note. In Nylander's collection there are also 3 specimens, labelled as the types of *M. fuscula*: queen, "H: fors", "W. Nyland.", "Mus. Fenn.", "Mus. Zool. H: fors Spec. typ. No. 5058 *Myrmica fuscula* Nyl", and queen and worker on one pin, "H: fors", "W. Nyland.", "2/VII. 46", "Coll. Nyland.", "*fuscula* Nyl.", "Mus. Zool. H: fors Spec. typ. No. 5060 *Myrmica fuscula* Nyl.". I excluded them from the type series for two reasons: 1) Nylander did not describe queens (Bolton 1995 erroneously noted that this species was described also from queens), and 2) collecting date of the second queen with worker is later than when Nylander's paper was accepted (see also Notes for *M. scabrinodis*, above).

F. Smith (1851) synonymised *M. fuscula* with *M. caespitum* (Linnaeus); now: *Tetramorium caespitum*. I confirm this synonymy.

14. *Myrmica mutica* Nylander, 1849: 39, workers, queens, males

Type locality: southern Russia.

Syntypes: worker (major), "Ross. merid.", "Motchoulsky", "Coll. Nyland.", "1", "Ross. merid. Motsch.", "Mus. Zool. H: fors Spec. typ. No. 5096 *Myrmica mutica* Nyl."; queen (damaged, gaster with waist are pinned separately on the same pin), "Ross. merid.", "Coll. Nyland.", "1", "Ross. merid. Motsch.", "Mus. Zool. H: fors Spec. typ. No. 5094 *Myrmica mutica* Nyl."; male, "Ross. merid.", "Motchoulsky", "Coll. Nyland.", "1", "Ross. merid. Motsch.", "Mus. Zool. H: fors Spec. typ. No. 5095 *Myrmica mutica* Nyl.".

Note. Mayr (1855) synonymised *M. mutica* with *Atta structor* (Linnaeus); now: *Messor structor*. I confirm this synonymy.

15. *Myrmica acervorum* (Fabricius)

Three workers on one pin, "Kuusamo", "W. Nyland."; queen, "H: fors", "W. Nyland.", "11/v. 46".

All these specimens are *Leptothorax acervorum*.

16. *Myrmica muscorum* Nylander, 1846b: 1054, workers, queens, males

Type locality: Finland.

Syntypes: worker and queen on one pin, “H: fors”, “W. Nyland.”, “Coll. Nyland.”, “Mus. Zool. H: fors Spec. typ. No. 5068 *Myrmica fuscula* Nyl.”; worker and queen on one pin, with the same labels as the previous one, but type No. 5069; male, with the same labels as the previous one, but type No. 5067; male, with the same labels as the previous one, but type No. 5070; 3 workers on one pin, “H: fors”, “W. Nyland.”, “Coll. Nyland.”; worker and queen, with the same labels as the previous one; worker and queen, with the same labels as the previous one.

The type specimens fully correspond with the modern treatment of *Leptothorax muscorum*.

17. *Myrmica tuberculum* (Fabricius)

Worker, “532”; 2 workers and queen on one pin, “538; 3 workers on one pin, without labels; worker, without labels; 2 workers on one pin, without labels. All these specimens fully correspond with the modern treatment of *Temnothorax tuberculum*. 2 additional workers on one pin, without labels, are *L. muscorum* (my identification).

18. *Myrmica unifasciata* Latreille

Two workers on one pin, “Ros. mer.”, “Motchoulsky”, “Coll. Nyland.”, “*unifasciata* Latr.”; worker, “Ros. mer.”, “Motchoulsky”, “Coll. Nyland.”; queen and 2 workers, each on the separate pins, with the same labels as the previous one; worker and queen on one pin, with the same labels as the previous one.

These specimens are *Temnothorax crassispinus* (Karawajew) (my identification; see also Radchenko 2000).

19. *Myrmica sublaevis* Nylander, 1849: 33, workers

Type locality: Kuusamo, Finland.

Syntypes: worker (upper specimen on the pin; bottom worker on the same pin is its host species, *L. acervorum*), “Kuusamo”, “W. Nyland.”, “Coll. Nyland.”, “Mus. Zool. H: fors Spec. typ. No. 5078 *Myrmica sublaevis* Nyl.”; worker, with the same labels as the previous one, but type No. 5079; worker, “Kuusamo”, “W. Nyland.”, “Mus. Fenn.”, “Mus. Zool. H: fors Spec. typ. No. 5080 *Myrmica sublaevis* Nyl.”.

The type specimens fully correspond with the modern treatment of *Harpagoxenus sublaevis*.

20. *Myrmica hirtula* Nylander, 1849: 45, workers

Type locality: Helsingfors, Finland.

Syntypes: worker, “H: fors”, “W. Nyland.”, “Coll. Nyland.”, “Mus. Zool. H: fors Spec. typ. No. 5114 *Formica* (Sic!) *hirtula* Nyl.”; 4 workers, each on separate pin, with the same labels as the previous one, but type Nos. 5115, 5116 and 5117.

Myrmica hirtula was transferred to the genus *Harpagoxenus* by Emery (1922), and was considered until now as subspecies of *H. sublaevis* (see Bolton 1995). After seeing the type specimens I have no doubt that subsp. *hirtulus* is junior synonym of *H. sublaevis*, **syn. nov.**

21. *Myrmica nitidula* Nylander, 1846: 1058, workers

Type locality: Finland.

Syntypes: worker, “H: fors”, “W. Nyland.”, “Mus. Fenn.”, “Mus. Zool. H: fors Spec. typ. No. 5072 *Myrmica nitidula* Nyl.”; worker, with the same labels as the previous one, but type No. 5073.

Note. In the Nylander’s collection there is a queen (without postpetiole and gaster), labelled as the type: “H: fors”, “W. Nyland.”, “Coll. Nyland.”, “Mus. Zool. H: fors Spec. typ. No. 5071 *Myrmica nitidula* Nyl.”. However, as Nylander described queen of this species three years later, in 1849, this queen must be excluded from the type series.

The type specimens fully correspond with the modern treatment of *Formicoxenus nitidulus*.

22. *Myrmica pallida* Nylander, 1849: 42, workers

Type locality: Messina, Italy.

Syntypes: worker, "Messina", "Zeller", "Coll. Nylandr.", "29", "5", "Mus. Zool. H: fors Spec. typ. No. 5120 *Myrmica pallida* Nyl.", worker, with the same label as the previous one, but type No. 5191.

The type specimens fully correspond with the modern treatment of *Aphaenogaster pallida*.

23. *Myrmica pallidula* Nylander, 1849: 42, workers

Type locality: Messina, Italy.

Syntypes: 3 workers on one pin, "Messina", "Zeller", "Coll. Nylandr.", "6", "Mus. Zool. H: fors Spec. typ. No. 5105 *Myrmica pallidula* Nyl."

Non-type material: worker, "Tiflis", "Coll. Nylandr."

The type specimens fully correspond with the modern treatment of *Pheidole pallidula*.

24. *Myrmica flavidula* Nylander, 1849: 43, workers

Type locality: southern Russia (Don river).

Syntypes: 2 workers on one pin, "Ross. merid.", "Motchoulsky", "Coll. Nylandr.", "Mus. Zool. H: fors Spec. typ. No. 5107 *Myrmica flavidula* Nyl."; 5 workers on three pins with the same labels as the previous ones, but type Nos. 5107, 5108 and 5109.

Mayr (1855) synonymised *M. flavidula* with *Solenopsis fugax* (Latreille). I confirm this synonymy.

25. *Myrmica sordidula* Nylander, 1849: 44, workers

Type locality: Messina, Italy.

Syntypes: 2 workers on one pin, "Messina", "Zeller", "Coll. Nyldr.", "10", "Mus. Zool. H: fors Spec. typ. No. 5110 *Myrmica sordidula* Nyl."; worker with the same labels as the previous one, but type No. 5111.

The type specimens fully correspond with the modern treatment of *Crematogaster sordidula*.

26. *Myrmica rubriceps* Nylander, 1849: 44, workers

Type locality: Messina, Italy.

Syntypes: worker, "Messina", "Zeller", "Coll. Nyldr.", "2", "Mus. Zool. H: fors Spec. typ. No. 5112 *Myrmica rubriceps* Nyl."; worker with the same labels as the previous one, but type No. 5113.

Non-type material: worker, "Georgia", Coll. Nylandr.", "var. *georgica*".

Mayr (1855) transferred *M. rubriceps* to the genus *Crematogaster* Lund and synonymised with *C. scutellaris* (Olivier). I confirm this synonymy.

27. *Formica vividula* Nylander, 1846a: 900, workers, queens, males

Type locality: Finland.

Lectotype (designated by J. Trager): male, "H: fors", "W. Nyl.", "Mus. Fenn.", "Mus. Zool. H: fors Spec. typ. No. 5015 *Formica vividula* Nyl.", "Lectotype *Formica vividula* Nylander det. J. C. Trager, 1984" (red label).

Paralectotypes: 2 workers on one pin, "H: fors", "W. Nylandr.", "Mus. Fenn.", "Mus. Zool. H: fors Spec. typ. No. 5016 *Formica vividula* Nyl.", "Paralectotype top specimen *Formica vividula* Nylander det. J. C. Trager, 1984" (red label), "Allotype allolectotype worker, lower specimen *Formica vividula* Nylander det. J. C. Trager, 1984" (light blue label); 2 workers on

one pin (upper specimen is damaged, with the only head and pronotum), “H: fors”, “W. Nyland.”, “Mus. Fenn.”, “Mus. Zool. H: fors Spec. typ. No. 5017 *Formica vividula* Nyl.”, “Paralectotype workers *Formica vividula* Nylander det. J. C. Trager, 1984” (red label); queen (dealate, without petiole and gaster), “H: fors”, “W. Nyland.”, “Mus. Fenn.”, “2/x 45”, “Mus. Zool. H: fors Spec. typ. No. 5014 *Formica vividula* Nyl.”, “Paralectotype queen *Formica vividula* Nylander det. J. C. Trager, 1984” (red label); queen (without petiole and gaster), “H: fors”, “W. Nyland.”, “Mus. Fenn.” (the last paralectotype specimen is designated here).

The type specimens fully correspond with the modern treatment of *Paratrechina vividula*.

28. *Formica pygmaea* Latreille

Two workers on one pin, “Tiflis”, “Coll. Nyland.”; queen (dealate) and 2 workers on one pin, “43”, “*F. pygmaea* Latr.”.

Note. Workers on the first pin actually are *Plagiolepis tauricus* Santschi (my identification; see also Radchenko 1989, 1996).

Queens and workers on the second pin are not *P. pygmaea*. They have quite long 2nd to 4th funicular joints, but in *P. pygmaea* 3rd funicular joint is transversal and distinctly shorter than the 4th one. Those specimens are very dirty and have no locality labels, and now it is impossible to identify them correctly, however this species belongs to the *pallescens*-group of the genus *Plagiolepis* Mayr.

29. *Lasius citrinus* Emery (my identification of undetermined material)

Three workers and male on the separate pins with the labels “Ross. merid.”, “Motchoulsky”, “Coll. Nyland.”.

30. *Formica umbrata* Nylander, 1846b: 1048, queens, males

Type locality: Finland.

Syntypes: queen, “H: fors”, “W. Nyland.”, “Coll. Nyland.”, “16/viii”, “Mus. Zool. H: fors Spec. typ. No. 5062”, “Mus. Hels. No. 2371”, “Holotype Stärcke, 36” (this specimen cannot be considered as the holotype); gyne, “H: fors”, “W. Nyland.”, “*umbrata* queen H: fors”, Coll. Nyland.”, “16/viii”, “Mus. Zool. H: fors Spec. typ. No. 5061”; gyne, “H: fors”, “W. Nyland.”, “Coll. Nyland.”, “Mus. Zool. H: fors Spec. typ. No. 5064”, “Mus. Hels. No. 2371”; gyne, “Vichtis”, “4/x”, “Coll. Nyland.”, “Mus. Zool. H: fors Spec. typ. No. 5065”; male, “Vichtis”, “4/x”, “Coll. Nyland.”, “Mus. Zool. H: fors Spec. typ. No. 5063”.

Non-type material: 7 workers on 4 pins with the labels “H: fors”, “W. Nyland.”, “Coll. Nyland.”.

The type and non-type specimens fully correspond with the modern treatment of *Lasius umbratus*.

31. *Formica mixta* Nylander, 1846b: 1050, workers, queens, males

Type locality: Finland.

Syntype: queen, “*Formica mixta* Nylander Upsala”, “Mus. Zool. H: fors Spec. typ. No. 5066”, “Mus. Hels. N:o 2372”.

The type specimen fully corresponds with the modern treatment of *Lasius mixtus*.

32. *Formica nigra* Linnaeus

I partly redetermined material, originally determined as “*Formica nigra*” (= *Lasius niger*).

Lasius niger: 2 workers and 2 gynes (one of the latter is damaged by *Anthrenus* beetle, another one is without gaster), “H: fors”, “W. Nyland.”, “Coll. Nyland.”.

Lasius alienus (Förster): worker, “H: fors”, “W. Nyland.”, “Coll. Nyland.”.

Lasius paralienus Seifert: 2 workers on the separate pins, “Triest”, “Triest 29/2 43”, “Coll. Nyland.”.

33. *Formica fuliginosa* Latreille

Worker and 2 males (one is without gaster) on the same pin, without locality labels, there is only label “6”. All are *Lasius fuliginosus*.

34. *Formica fusca* Linnaeus

I partly redetermined material, previously determined as *Formica fusca*.

F. fusca: worker, “Des. Kirgis.”, “Coll. Nyland.”;

F. picea: worker, “Uleåborg”, “W. Nyland.”, “25/viii”, “Coll. Nyland.”, “Mus. Hels. No. 2210”; worker (is damaged, with the only head and pronotum), “Ulåb”.

35. *Formica glebaria* Nylander, 1846a: 917, workers, queens

Type locality: Finland.

Syntypes: worker (is damaged, with the only head and pronotum), “H: fors”, “W. Nyland.”, “Coll. Nyland.”, “*glebaria* Nyl.”, “Mus. Zool. H: fors Spec. typ. No. 5039 *Formica glebaria* Nyl.”, “Mus. Hels. No. 1087”; queen (without gaster) and worker’s gaster on one pin, with the same labels as the previous one, but type No. 5040 and one additional label “Mus. Hels. No. 1086”; queen, with the same labels as the previous one, but type No. 5038; queen, “H: fors”, “W. Nyland.”, “Coll. Nyland.”, “H: fors”, “Mus. Zool. H: fors Spec. typ. No. 5037 *Formica glebaria* Nyl.”, “Mus. Hels. No. 1100”, “Mus. Hels. No. 2677” (Sic!), “*glebaria* Nyl.”, “*fusca* auct ? Lin. Det. Yarrow 195_”.

Non-type material: worker of *F. fusca* L. (for the queen on the same pin see notes below), “499”.

Note. The queen on the pin with worker of *F. fusca* (with the label “499”) is actually *F. lemani* Bondroit. The male with the labels “Ostrob.”, “Hellstöm”, “W. Nyland.”, “Mus. Fenn.”, “Mus. Hels. N:o 1089” is *F. gagatoides* Ruzsky (my identification).

F. glebaria was considered as a junior synonym of *F. fusca* by many authors (Mayr 1855, Yarrow 1954, Dlussky 1967; see also Bolton 1995), but later it was synonymised with *F. cunicularia* Latreille (Bernard 1967, Agosti & Collingwood 1987). Investigation of the types shows that *F. glebaria* is a junior synonym of *F. fusca*, **syn. revived**.

36. *Formica picea* Nylander, 1846a: 917, workers

Type locality: Finland (“ad Helsingfors et Uleåborg”).

Lectotype (designated here): worker (is damaged, without petiole, gaster, left legs, tibia and tarsus of the right middle leg), “H: fors”, “W. Nyland.”, “Coll. Nyland.”, “42/vii”, “*picea* Nyl.”, “Mus. Zool. H: fors Spec. typ. No. 5035 *Formica picea* Nyl” (see also Seifert 2004).

Note. In Nylander’s collection, there are also 2 workers on one pin, which are labelled as the type specimens: “Kuusamo”, “W. Nyland.”, “Coll. Nyland.”, “Mus. Zool. H: fors Spec. typ. No. 5036? *Formica picea* Nyl”. Unfortunately, the locality data of these specimens does not correspond with those in Nylander’s (1846a) paper, where the type localities are given as Helsingfors and Uleåborg. Therefore, I excluded those workers from the type series of *F. picea*.

The name *Formica picea* Nylander is preoccupied name of *Formica picea* Leach, 1825 (now *Camponotus piceus*), and Yarrow (1954) proposed for this species the first available replacement name – *F. transkaukasica* Nasonov, 1889. Later, Bolton (1995) with any comments synonymised *F. transkaukasica* with *F. candida* F. Smith, 1878; Collingwood (1999) rejected Bolton’s opinion and revived name *transkaukasica* from synonymy. Finally, Seifert (2004) proposed to consider Nasonov’s *F. transkaukasica* as *incertae sedis* in the

genus *Formica*, and revived the name *F. picea* Nylander from synonymy, and separated the latter species from *F. candida* F. Smith.

37. *Formica aenescens* Nylander, 1849: 37, workers, queens, males

Type locality: southern Russia.

Syntypes: worker and male (male is without petiole and gaster) on one pin, "Ross. mer.", "Motchoulsky", "Coll. Nylandr.", "Mus. Zool. H: fors Spec. typ. No. 5191".

Non-type material: queen, "Des. Kirgis.", "Coll. Nyland.", "Desert Kirgisisca"; male, "45", "Mt. Bogdo", queen, "45".

All these specimens fully correspond with the modern treatment of *Cataglyphis aenescens*.

38. *Formica brunnea* Latreille

Worker ("Venezia"), originally determined as *F. brunnea* (= *Lasius brunneus*) actually is *Prenolepis* sp. (my identification).

39. *Tapinoma kinburni* Karawajew (my identification of undetermined material)

Worker, "Ross. mer.", "Motchoulsky", "Coll. Nylandr."

Note. *T. kinburni* was known only from Ukraine (Radchenko 1983), and recently recorded from Belgorod Region of Russia (Prisnyi 2003). The locality mentioned as "Russia meridionale" by Motschoulsky is somewhere in European Russia or in Ukraine (see above).

40. *Tapinoma erraticum* (Latreille) (my identification of undetermined material)

Four workers and queen (dealate) on 2 pins, "Paris", "Coll. Nyland."

41. *Formica pressilabris* Nylander, 1846 a: 911, workers, queens, males

Type locality: Finland and Russia (?) ("Fennia et Karelia").

Paralectotypes (?): 2 workers on one pin, "H: fors", "W. Nyland.", "Coll. Nyland."

Non-type material: worker and queen on one pin, "4".

Notes: Seifert (2000) designated the lectotype (worker) and paralectotypes of this species (5 workers and 3 males), but did not provide the labels data. These types are absent from the Nylander's collection.

42. *Formica exsecta* Nylander, 1846a: 909, workers, queens, males

Type locality: Finland.

Syntypes: male, "Ostrob.", "W. Nyland.", "Coll. Nyland.", "Mus. Zool. H: fors Spec. typ. No. 5028 *Formica exsecta* Nyl"; 3 workers on one pin, "H: fors", "W. Nyland.", "Coll. Nyland.", "Mus. Zool. H: fors Spec. typ. No. 5028 *Formica picea* Nyl"; queen, with the same labels as the previous one, but type No. 5029; 2 males on one pin, with the same labels as the previous one, but type No. 5030.

The type specimens fully correspond with the modern treatment of *F. exsecta*.

43. *Formica trunicola* Nylander, 1846a: 907, workers, queens

Type locality: Finland.

Syntypes: queen, "Kuusamo", "W. Nyland.", "Coll. Nyland.", "Mus. Zool. H: fors Spec. typ. No. 5024"; male, with the same label as the previous one, but type No. 5025; worker and gyne on one pin, with the same label as the previous one, but type No. 5026.

I confirm Roger's (1863) synonymy of this species with *F. truncorum* Fabricius.

44. *Formica congerens* Nylander, 1846a: 906, workers

Type locality: Finland.

Syntypes: 2 workers on one pin (one is without petiole and gaster), “H: fors”, “W. Nyland.”, “Coll. Nyland.”, “Mus. Zool. H: fors Spec. typ. No. 5023 *Formica congerens* Nyl”, “Mus. Hels. N:o 2665”; 3 workers on one pin, “Mus. Zool. H: fors Spec. typ. No. 5022 *Formica congerens* Nyl”.

I confirm Yarrow’s (1955a) synonymy of this species with *F. lugubris* Zetterstedt.

45. *Formica dominula* Nylander, 1846a: 905, workers, queens, males

Type locality: Finland.

Syntypes: male and worker on one pin, “H: fors”, “W. Nyland.”, “Coll. Nyland.”, “Mus. Zool. H: fors Spec. typ. No. 5018 *Formica dominula* Nyl”; 2 gynes on the separate pins, with the same labels as the previous one, but type Nos. 5019 and 5020; worker, with the same labels as the previous one, but type No. 5021.

I confirm F. Smith’ (1851) synonymy of this species with *F. sanguinea* Latreille.

46. *Formica major* Nylander, 1849: 29, workers

Type locality: Finland.

Syntypes: 3 workers (one is without petiole and gaster) on one pin, “Mus. Zool. H: fors Spec. typ. No. 5423 *Formica major* Nyl” , “Mus. Hels. N:o 2676”, “*major* Nyl. *pinifila* Schenck *rufa* auct. nec. Bondr.” (Yarrow’s own handwriting label).

Note. Emery and Forel (1879) synonymised *F. major* with *F. rufa* Linnaeus, and this synonymy was confirmed later by Yarrow (1955a) and by the other authors (see also Bolton 1995). However, the syntypes of *F. major* are not *F. rufa* in its modern treatment (e.g. Bernard 1967, Dlussky 1967, Kutter 1977, Collingwood 1979, Seifert 1996, Czechowski et al. 2002), but clearly belong to *F. polyclena* Förster. Their alitrunk dorsum is hairless, while *F. rufa* is more hairy species and their workers have at least several standing hairs on the alitrunk dorsum.

Therefore I consider *F. major* Nylander, 1849 to be the senior synonym of *F. polyclena* Förster, 1850, and the name *major* should have priority. However, the name *F. polyclena* has been used hundreds times during the last 50 or so years, in taxonomic, faunistic, ecological, and other myrmecological literature. If it were changed now it would cause much confusion, therefore I shall formally apply to the International Commission of Zoological Nomenclature and propose that the name *F. major* Nylander, 1849 is suppressed in favour of the name *F. polyclena* Förster, 1850 with the aim of maintaining the stability of nomenclature in the family Formicidae.

47. *Formica atricolor* Nylander, 1849: 36, workers

Type locality: southern Russia

Syntypes: worker, “Ross. mer.”, “Motchoulsky”, “Coll. Nylandr.”, “Motsch. 22”, “Mus. Zool. H: fors Spec. typ. No. 5186”; worker, with the same labels as the previous one, but type No 5088; worker, with the same labels as the previous one, except of “Motsch. 19” and type No. 5087.

Roger (1863) transferred this species to the genus *Camponotus* Mayr; more recently, it was synonymised with *C. piceus* (Atanassov & Dlussky 1992). I confirm this synonymy.

48. *Formica dalmatica* Nylander, 1849: 37, workers

Type locality: Croatia (Dalmatia, Lagosta).

Syntypes: major worker, “Lagosta”, “Zeller”, “Coll. Nyldr.”, “Lagosta” (handle-writing), “5”, “Mus. Zool. H: fors Spec. typ. No. 5189 *Formica dalmatica* Nyl.”; minor worker, with the same labels as the previous one, but “4” and type No. 5090.

The type specimens of this species fully correspond with the modern treatment of *Camponotus dalmaticus*.

49. *Formica pallens* Nylander, 1849: 36, workers

Type locality: Italy.

Syntypes: worker, "Messina", "Zeller", "Coll. Nyldr.", "202", "1", "Mus. Zool. H: fors Spec. typ. No. 5084 *Formica pallens* Nyl."; worker with the same label as the previous one, but "192" and type No. 5191".

Notes. Roger (1863) transferred this species to the genus *Camponotus*. Owing to the name *F. pallens* Nylander, 1849 is the primary junior homonym of *F. pallens* Le Guillou, 1842 (which is also was transferred to the genus *Camponotus*), Emery (1921) proposed the replacement name – *Camponotus nylanderi*.

50. *Formica nigrata* Nylander, 1849: 35, workers, queens, males

Type locality: Italy and southern Russia [Messina (Zeller) e Rossia meridionali, workers, queens, males (Motchoulsky)].

Syntypes: worker, "Messina", "Zeller", "Coll. Nyldr.", "192", "3", "Mus. Zool. H: fors Spec. typ. No. 5081 *Formica nigrata* Nyl."; worker with the same label as the previous one, but type No. 5082; worker, male and gyne on one pin, "Messina", "Zeller", "Coll. Nyldr.", "18", "3 Mai", "Mus. Zool. H: fors Spec. typ. No. 5083 *Formica nigrata* Nyl."

Notes. Probably Nylander (1849: 35) erroneously noted that queens and males of the described species were collected by Motchoulsky in southern Russia; the syntypes queen and male in the collection have locality label "Messina".

Mayr (1855) synonymised this species with *Camponotus aethiops* (Latreille). I confirm this synonymy.

51. *Formica glabrella* Nylander, 1849: 38, workers

Type locality: Russia.

Syntypes: 2 workers on the separate pins, "Tscherkassk", "Motschoulsky", "Coll. Nyland.", "Motsch. 23", "Spec. type No. 5093 *Formica glabrella* Nyl." (No. 5092 on the second pin).

F. Smith (1855) transferred this species to the genus *Tapinoma* Förster and synonymised it with *T. erraticum* (Latreille). I confirm this synonymy.

51. *Formica aethiops* Latreille

Three major workers on one pin, label "9". They are *C. aethiops*.

52. *Formica pubescens* Fabricius

Major worker, without labels.

F. pubescens is considered now as the junior synonym of *Camponotus vagus* (Scopoli) (see Bolton 1995), but the specimen originally determined here as *F. pubescens* actually is *C. saxatilis* Ruzsky (my identification).

53. *Formica herculeana* Linnaeus

Queen, "Uleåborg", "W. Nyland.", "Coll. Nyland.", "*fusca* Nyl.", "Mus. Zool. H: fors Spec. typ. No. 5845 *Camponotus herculeanus* ssp. *freya*", "Mus. Hels. N:o 1090", "Holotype subsp. *Freya* Ske queen nov. subsp." (red handle-writing label).

This specimen is an ordinary queen of *Camponotus herculeanus*. Name "*freya*" has been never used in the literature and should be ignored.

In the Box 4 with Nylander's collection, there are some labels with the names of species, but the material is absent: *Formica flava* F., *Formica cunicularia* Latr., and *F. rufa* L.

OTHER TYPE SPECIMENS IN THE COLLECTION OF FINNISH MUSEUM OF NATURAL HISTORY

Myrmica lobicornis subsp. *alpina* Stärcke, 1927: 80, workers, queens

Type locality: Italy.

Paralectotype (Lectotype worker with the same labels as mentioned below is in the National Museum of Natural History, Leiden, The Netherlands, designated by Radchenko et Elmes, 2002) worker, "Val Aosta 1915 La-Thulle", "holotype *M. lobicornis alpina* Stä.", "holotype subspecies *alpina* Stärcke" (red label), "Mus. Zool. H: fors Spec. typ. No. 5322 *M. lob. alpina* Stärcke".

Notes. This name was previously synonymised with *M. lobicornis* (Bernard 1967, Seifert 1988), but now is considered as a junior synonym of *M. lobulicornis* (Seifert 2005).

Myrmica rugulosa var. *hellenica* Finzi, 1926: 93, workers, queens, males (first available use of *Myrmica scabrinodis* r. *rugulosa* var. *hellenica* Forel, 1913: 431)

Type locality: Greece.

Syntypes: worker, "Corfu", "J. Sahlb.", "584", "*Myrmica scabrinodis* Nyl. r. *rugulosa* Nyl. var. *hellenica* For. Type"; worker, "Patras", "U. Sahlb."

Notes. This form was raised to species by Agosti and Collingwood (1987) (see also Seifert, 1988).

LIST OF PUBLICATIONS ON ANTS BY WILLIAM NYLANDER

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STRESZCZENIE

[Mrówki (Hymenoptera, Formicidae) w kolekcji Williama Nylandera]

Praca dotyczy przeglądu kolekcji mrówek Williama Nylandera w Fińskim Muzeum Przyrodniczym w Helsinkach. Zostały wyznaczone lektotypy *Myrmica rugulosa*, *M. sulcinodis*, *M. lobicornis*, *M. lobicornis* var. *lobulicornis*, *M. scabrinodis*, *M. ruginodis*, *M. laevinodis* oraz *Formica picea*; typowe okazy innych gatunków zostały uznane za syntypy (z wyjątkiem tych, które wcześniej zostały wyznaczone jako lektotypy lub paralektotypy). Ustalono nowe synonimy: *Myrmica hirtula* jako młodszy synonim *Harpagoxenus sublaevis*; *Formica glebaria* jako młodszy synonim *F. fusca* (nie *F. cunicularia*!); *Formica major* jest najprawdopodobniej synonimem *F. rufa* a nie synonimem *F. polycтена*. Niemniej, Międzynarodowej Komisji Nomenklatury Zoologicznej zostanie przedłożona propozycja unieważnienia nazwy *major* i zachowania nazwy *F. polycтена*. W pracy zostały przedyskutowane problemy taksonomiczne materiału nietypowego, który został ponownie oznaczony.

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