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. salcinoides, M. lobicornis, M. lobicornis var. lobicicornis, 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 Harpagogenus sublaevis; Formica glebaria is a junior synonym of F. fusca (not of F. cucullurialis); Formica major is not a synonym of F. rufa rather it is a synonym of F. picea. 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. picea. 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.”

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


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. Motschoulsky. 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 *Stenamma* 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* Linneaus.


Type locality: southern Russia.


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


Type locality: Finland.


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.


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* 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”).


Non-type material: worker, “Sibiria or.”.

Note. There are also males on the pin 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*.


Type locality: France.


Note. Bondrot (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*.


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.

Parallectotypes: 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 note 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 Wandstemann 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.


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 “d” 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.


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 aluc.).

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

Type locality: Finland.


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

Type locality: southern Russia.  
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.  

Type locality: Finland.  
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 *Myrmica 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.”, “fascula 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.  

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

15. *Myrmica acervorum* (Fabricius)  
All these specimens are *Leptothorax acervorum*.  

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 tuberum* (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 tuberum*. 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).


Type locality: Kuusamo, Finland.


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

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

Type locality: Helsin fors, Finland.


*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 subspp. *hirtulus* is junior synonym of *H. sublaevis*, syn. nov.


Type locality: Finland.


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

23. *Myrmica pallidula* Nylander, 1849: 42, workers
Type locality: Messina, Italy.
The type specimens fully correspond with the modern treatment of *Pheidole pallidula*.

Type locality: southern Russia (Don river).
Mayr (1855) synonymised *M. flavidula* with *Solenopsis fugax* (Latreille). I confirm this synonymy.

Type locality: Messina, Italy.
The type specimens fully correspond with the modern treatment of *Cremaugaster sordidula*.

Type locality: Messina, Italy.
Non-type material: worker, “Georgia”, Coll. Nyland.”, “var. georgica”.
Mayr (1855) transferred *M. rubriceps* to the genus *Cremaugaster* Lund and synonymised with *C. scutellaris* (Olivier). I confirm this synonymy.

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

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 tauricu 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.


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.


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.”.


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.

35. Formica glebaria Nylander, 1846a: 917, workers, queens
Type locality: Finland.

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. lenati Bondroit. The male with the labels "Ostrob.", "Hellstöm", "W. Nyland.", "Mus. Penn.", "Mus. Hels. No. 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, Duussky 1967; see also Bolton 1995), but later it was synonymised with F. cucullaria 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").

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: for 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. transkaucasia Nasonov, 1889. Later, Bolton (1995) with any comments synonymised F. transkaucasia with F. candida F. Smith, 1878; Collingwood (1999) rejected Bolton's opinion and revived name transkaucasia from synonymy. Finally, Seifert (2004) proposed to consider Nasonov's F. transkaucasia 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 aeneascens* Nylander, 1849: 37, workers, queens, males

Type locality: southern Russia.


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

38. *Formica brunnea* Latreille

Worker (“Venezia”), originally determined as *F. brunnea* (= *Lasius brunneus*) actually is *Prenocephis* 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 (Prisyl 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”).


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, 1846 a: 909, workers, queens, males

Type locality: Finland.


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

43. *Formica truncicola* Nylander, 1846 a: 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 congeneres* Nylander, 1846 a: 906, workers

Type locality: Finland.

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 gyne 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.


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. polyctena 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. polyctena Förster, 1850, and the name major should have priority. However, the name F. polyctena 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. polyctena 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 (Atanasov & Dlussky 1992). I confirm this synonymy.

48. Formica dalmatica Nylander, 1849: 37, workers

Type locality: Croatia (Dalmatia, Lagosta).

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.
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 nigrita* Nylander, 1849: 35, workers, queens, males
Type locality: Italy and southern Russia [Messina (Zeller) e Rossia meridionali, workers, queens, males (Motschoulsky)].
Notes. Probably Nylander (1849: 35) erroneously noted that queens and males of the described species were collected by Motschoulsky 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.
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
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 SPECIMENS IN THE COLLECTION OF FINNISH MUSEUM OF NATURAL HISTORY**

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

Type locality: Italy.

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).


Type locality: Greece.


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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REFERENCES


Formicidae in collection of W. Nylander


STRESZCZENIE

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


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