

APPLICATION FOR THE RE-EXAMINATION AND RE-PHRASING OF THE DECISION TAKEN BY THE INTERNATIONAL COMMISSION REGARDING THE NAME OF THE TYPE SPECIES OF "FORMICA" LINNAEUS, 1758 (CLASS INSECTA, ORDER HYMENOPTERA)

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SYNOPSIS

Benson, Ferrière and Richards in 1937 and 1947 submitted a case to the International Commission on Zoological Nomenclature asking for the preservation of the existing usage of the generic names *Formica* Linnaeus, 1758 and *Camponotus* Mayr, 1861, by cancelling the selection by Latreille (1810) of *Formica herculeana* Linnaeus, 1758 as the type species of the genus *Formica* Linnaeus, 1758, and in its place accepting the selection by Curtis (1839) of *Formica rufa* Linnaeus, 1758 as type of the genus *Formica* Linnaeus, 1758. At their Meeting in Paris in July 1948 the Commission considered the above application and agreed that Latreille in 1810 made no type selection of *Formica herculeana* as type species of *Formica* within the meaning of Rule (g) in Article 30 of the *Règles* and ruled that under the *Règles* the type of this genus was *Formica rufa* Linnaeus, 1758, that species having been the first of the originally included species to have been duly selected by Curtis (1839) and that therefore there was no necessity for the Commission to use their Plenary Powers to designate that species as type of the genus *Formica*. Furthermore, the Commission agreed to place *Formica rufa* Linnaeus, 1758 (type species *Formica rufa* Linnaeus 1758) on the *Official List of Generic Names in Zoology*, and *rufo* Linnaeus, 1758, as published in the binominal form *Formica rufa*, on the *Official List of Specific Trivial Names in Zoology*. Recent investigation has shown *Formica rufa* Linnaeus, 1758 and *Formica herculeana* to be conspecific, the former a worker, the latter a wingless female of *Camponotus herculeanus* Linnaeus, 1758.

2. If *Formica rufa* Linnaeus, 1758 is to be accepted as the type species of the genus *Formica*, then *Camponotus* Mayr, 1861 is a direct synonym and the very same confusion, of world-wide compass, which Benson, Ferrière and Richards set out to avoid must obtain.

3. This confusion can be avoided if the Commission will agree to use their Plenary Powers to place *Formica rufa* Linnaeus, 1758 on the list of permanently rejected names, and on the *Official List of Specific Names in Zoology* to replace *Formica rufa* Linnaeus, 1758 with *Formica rufa* Linnaeus, 1761, the occasion on which Linnaeus first described an individual of the species traditionally known as *Formica rufa*.

STATEMENT OF THE CASE

4. Linnaeus in 1758 (: 580, no. 2) proposed the name *Formica rufa*. The description he gives here agrees with the worker caste of *Camponotus herculeanus*

(Linnaeus 1758) but in no way with *Formica rufa* auctt. The description of the nest, on the other hand, cannot apply to *Camponotus*.

5. Linnaeus in 1761 (: 426, no. 1721) redescribed *Formica rufa* giving a description of the worker in the same words as in 1758 together with descriptions of a male and female and a supplementary description of the same worker.

6. Linnaeus in 1767 (: 962, no. 3) quoted the illustration given by Schaeffer in 1766 (pl. 5 fig. 3) under his *Formica rufa*, thus selecting the worker but not the female illustrated in that plate (fig. 4). There can be no doubt that these illustrations apply to *Camponotus ligniperda* (Latreille, 1802), a species not distinguished from *C. herculeanus* (Linnaeus, 1758) at that time. This shows that Linnaeus still confused *Camponotus* workers with those found in thatched nests, a form of nest never made by *Camponotus*.

7. Latreille in 1802 (: 143) was uncertain as to the identity of *Formica rufa* Linnaeus and deliberately excluded Linnaeus's own description and quotation of Schaeffer's illustration in order to retain the name for what we now know as "*F. rufa*"; at the same time he felt obliged to point out that he only supposed his "*rufa*" to be the same as the Linnean species though in his opinion it might well be Linnaeus's *herculeana*.

8. Zetterstedt in 1840 (: 488, no. 3 nec 450, no. 8 which is a *Myrmica* species) interpreted *F. rufa* Linnaeus as a species now placed in *Camponotus* Mayr. 1861, and an examination of his specimens has shown that both his "*F. rufa* and *F. rufa* var. b." are in fact *Camponotus*.

9. Nylander in 1846 (: 894) placed the worker *F. rufa* Linnaeus, 1761 and *F. rufa* Linnaeus Zetterstedt, 1840 as synonyms of *Formica herculeana* Linnaeus. *F. rufa* Linnaeus Nylander, 1846 (: 902) is based on the male and female of Linnaeus 1761. This was followed by Forster 1850 (: 9), Roger 1863 (: 1 no. 7, note :—misprint ♀ for ♂ cf under *F. rufa* : 12, no. 357). Forel 1874 (: 96) synonymizes *F. rufa* Linnaeus with *Camponotus herculeanus* and under *Formica* (: 98) quotes "*F. rufa* i. sp. Linné (Faun. Svec.) Latreille. Mayr. Nylander."

10. Nylander in 1846 (: 894) pointed out that *Formica herculeana* Linnaeus 1761 is a female; in actual fact the description given by Linnaeus in 1758 also must refer to the (dealated) female. In the Linnean Collection at Burlington House, London, there is a specimen which, though unlabelled, could be the type of *herculeana*. Also in the Linnean Collection is a single unlabelled worker of *Camponotus herculeanus* agreeing with the description of *F. rufa*. A third specimen of *Camponotus* is a winged female bearing the label "*herculeanea* [sic] ex desc." *Formica* (modern sense) in the Linnean Collection is represented by a single worker bearing the label "*rufa* ex descr.", two unlabelled winged females and three unlabelled males. These last five could include the male and female specimens described by Linnaeus in the 2nd. edition of the *Fauna Svecica* (1761) and agree with the somewhat cursory description. The labelled worker on the other hand, does not agree at all with the description of *rufa*, which states "Thorace compresso toto ferrugineo, capite abdomenque nigris" (the thorax is not compressed, the head is not black but red—in fact this

specimen is copiously red-marked) and even less with the supplementary description of 1761 which states "... squama intergerina ferruginea, acuminata.", which is typical of the worker of *Camponotus herculeanus* (Linnaeus, 1758), but effectively excludes any known *Formica*. No type of *Formica rufa* has previously been selected.

11. Dalla Torre in 1893 and later authors have disregarded this synonymy of *Formica* and *Camponotus*, indeed Donisthorpe (1927) goes even further and quotes the Linnean description of 1758 under "*Formica rufa*" despite the fact that this description cannot possibly apply to any known *Formica* (nor in fact to any ant known in the British fauna).

12. It should be noted that Linnaeus intended to refer to the woodland thatch-building ants by his *Formica rufa* since he states in 1758 "*habitat in Europae acervis-acerosis sylvaticis; in America septentrionali*. Kalm," but unfortunately selected a superficially similar but in fact abundantly distinct specimen for description. His description of the *rufa* female in 1761 (: 426) removes any doubt on this matter.

13. The International Commission on Zoological Nomenclature at the Paris Meeting, July 1948, having had under consideration an application (file Z.N. (S.) 133) submitted by Mr. R. B. Benson (British Museum (Natural History) London) M. Ch. Ferrière (then of the Commonwealth (at that time Imperial) Institute of Entomology, London) and Dr. O. W. Richards (Imperial College of Science and Technology, London) "that the Commission should use their Plenary Powers to preserve the existing usage of the generic names *Formica* Linnaeus, 1758, and *Camponotus* Mayr, 1861 (Class Insecta, Order Hymenoptera) by cancelling the selection by Latreille (1810) of *Formica herculeana* Linnaeus, 1758, as the type species of the genus *Formica* Linnaeus, 1758 (Benson, Ferrière and Richards, 1947, *Bull. zool. Nomencl.* **1** : 207);" and agreed "to place the undermentioned generic names with the type species severally specified below on the *Official List of Generic Names in Zoology*" :—

Formica Linnaeus, 1758 (type species, by selection by Curtis, 1839 :

Formica rufa Linnaeus, 1758)

Camponotus Mayr, 1861 (type species, by selection by Bingham, 1903 :

Formica ligniperda Latreille, 1802);"

and "to place the undermentioned trivial names on the *Official List of Specific Trivial Names in Zoology*" :—

rufa Linnaeus, 1758, as published in the binominal combination *Formica rufa*;

ligniperda Latreille, 1802, as published in the binominal combination *Formica ligniperda*." (1950, *Bull. zool. Nomencl.* **4** : 409-410).

14. This decision was taken in order to prevent the synonymizing of a *Camponotus* with *Formica* and to retain the use of *Formica* in the traditional sense.

15. From the above statement it will be seen that if *Formica rufa* Linnaeus, 1758 is retained for the type of *Formica* Linnaeus, 1758, then *Camponotus* Mayr, 1861 must be treated as a synonym, the very contingency that the Commission have sought to avoid.

16. As was stated in the original application (Benson, Ferrière and Richards, 1937, *The Generic Names of British Insects*, **5**, Hymenoptera Aculeata, *R. ent. Soc. Lond.*: 86 and 1947, *Bull. zool. Nomencl.* **1**: 207) "*Camponotus* and *Formica* in the generally accepted sense are both very large genera of world-wide distribution and any change in their generic nomenclature would cause great confusion."

RECOMMENDATION

14. It is considered that the best solution of the difficulties discussed above will be for the Commission to direct that the name *Formica rufa* Linnaeus be identified as from the description published in 1761 which undoubtedly refers to the species commonly so known and of which two winged female specimens are preserved in the Linnean Collection at Burlington House, and that this identification should be made by reference to one of those specimens. In order to facilitate the adoption of this proposal, I have selected one of the foregoing specimens to be the lectotype and I hereby publish that selection as follows:— "Of the two unlabelled winged female specimens in the Linnean Collection, one is in better condition than the other, having the full complement of antennae, wings and legs, and this is the specimen which I now select as the lectotype of the foregoing species. I have attached to this specimen the following label for this purpose: "Lectotype of *Formica rufa* Linnaeus, 1761, by selection by I. H. H. Yarrow, 1954." The specimen stands in Box 192 in Drawer 54. An adequate diagnosis of the female of this species will be found under the synonym *F. piniphila* Schenck in Bondroit, 1918 (: 57) "

15. The proposals now submitted are:—

- (a) that the name *rufa* Linnaeus, 1758, as published in the combination *Formica rufa*, be permanently suppressed under the Plenary Powers and that under the same powers *Formica rufa* Linnaeus, 1761 (which under the action proposed would become an available name) should be designated the type species of the genus *Formica* Linnaeus, 1758, the nominal species so designated to be interpreted by reference to the winged female specimen in the Linnean Collection at Burlington House which I have selected to be the lectotype;
- (b) that the name *rufa* Linnaeus, 1761, as published in the combination *Formica rufa*, as validated above and as there interpreted be placed on the *Official List of Specific Names in Zoology* at the same time that the generic name *Formica* Linnaeus, 1758, is placed on the *Official List of Generic Names in Zoology*.

BIBLIOGRAPHY

- Benson, Robert B., Ferrière, Charles and Richards, Owen W. 1937. *The Generic Names of British Insects*, **5**, Hymenoptera Aculeata, R. ent. Soc. Lond.
- 1947, *Bull. zool. Nomencl.* **1** : 207.
- Bondroit, Jean, 1918, Les Fourmis de France et de Belgique. *Ann. Soc. ent. Fr.* **87** : 1-174.
- Dalla Torre, Karl Wilhelm von, 1893, *Catalogus Hymenopterorum* **7** (Formicidae) Leipzig.
- Donisthorpe, Horace St. J. K., 1927, *British Ants, Their Life-History and Classification*, 2nd ed. London.
- Foerster, Arnold, 1850, Hymenopterologische Studien. *Jahresber. höh. Bürgerschule Aachen* **1**, Formicariae Aachen.
- Forel, Auguste, 1874, Les Fourmis de la Suisse. *N. Denschr. allg. Schweiz. Ges. ges. Naturw.* Zürich.
- Latreille, Pierre A., 1802, *Histoire Naturelle des Fourmis, et recueil de Mémoires et d'Observations sur les Abeilles, les Araignées, les Faucheurs et autres insectes*. De l'Imprimerie de Crapelet, Paris [XVI] + 455 pp.; 12 pls.
- Linnaeus, Carolus [Carl von Linné] 1758, *Systema Naturae*. Editio decima, reformata. Stockholm, Laurentii Salvii, vol. 1. (4) 824 pp.
- 1761, *Fauna Svecica*. Editio altera, auctior. Stockholm, Laurentii Salvii. (45) + 578 pp. Fp. + 2 pls.
- 1767, *Systema Naturae*, Tom. 1. Pars. II. Editio duodecima reformata. Stockholm, Lavro Salvii. [1] + 794 + [36].
- Mayr, Gustav L., 1861, *Die europäischen Formiciden*. Vienna.
- Nylander, William, 1846, De Formicis Borealibus. *Acta Soc. Sci. Fenn.* **2** : 875-944 1 pl.
- Roger, Julius, 1863, Verzeichnis der Formiciden-gattungen und-Arten. *Berl. ent. Z.* **6** (Supplement) : 1-65.
- Schaeffer, Jacob Christian, 1766, *Icones Insectorum circa Ratisbonam Indigenorum*. Volume 1, Pars. 1. Regensburg. Frontispiece [10] + 100 pls. + [12] pp.
- Staercke, August, 1947, De boreale vorm van de roode boschmier (*Formica rufa rufa* Nyl.) op de Hooze Veluwe. *Ent. ber. Amst.* no. **275** : 144-6.
- Zetterstedt, Johanne Wilhelmo, 1840, *Insecta Lapponica*. Leipzig.