Rejection of the Name *Nocardia farcinica* Trevisan 1889 (Approved Lists 1980)

Request for an Opinion

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The name *Nocardia farcinica* Trevisan 1889 (Approved Lists 1980) is here considered to be a nomen dubium, and therefore it is requested that the Judicial Commission issue an Opinion rejecting this name.

Before the appearance of the Approved Lists of Bacterial Names (19), the type species of the genus *Nocardia* was *Nocardia farcinica* (12, 25). The change of the type species to *Nocardia asteroides* on the Approved Lists was probably due to the proposal of Gordon and Mihm (6) to recognize *N. asteroides* as the type species. This proposal was based on the facts that these authors could not differentiate ATCC 3318, the type strain of *N. farcinica*, from strains of *N. asteroides* (thus, they considered *N. asteroides* and *N. farcinica* to be different names for the same species), that the original description of *N. farcinica* was meager, and that the name had nearly disappeared from culture collections and the current literature.

In 1969, a group of strains (the Kyoto-I group) which I received as *N. asteroides* was distinguished from other strains of *N. asteroides* (22). Based on this finding, I assigned the name *N. farcinica* to the Kyoto-I group because this group contained ATCC 3318, the type strain of *N. farcinica*, and assigned the name *N. asteroides* sensu stricto to another group. This constituted a revival of the name *N. farcinica*, which was recommended for rejection by Gordon and Mihm (6). The existence of the Kyoto-I group was confirmed subsequently by other investigators (1, 3, 4, 7, 11, 13, 14, 18, 23, 24). During this time, serious questions concerning the nomenclature of *N. farcinica* were raised.

First, the question of the authenticity of the type strain of *N. farcinica* was posed by Chamoiseau and Asselineau (2). These authors found mycolic acids of the mycobacterial type in strain 378 of the Pasteur Institute of Paris, which they received as an authentic strain of *N. farcinica* (that is, as one of the original strains of Nocard). Their finding meant that this supposedly authentic strain of *N. farcinica* was not a *Nocardia* but a *Mycobacterium*. Lechevalier et al. (10) studied the lipid compositions of strains labeled *N. farcinica* and found that strain NCTC 4524, which was considered to be the same as strain ATCC 3318 and was designated as a

cotype strain of *N. farcinica* by Sneath and Skerman (20), contained mycolic acids characteristic of mycobacteria. According to these authors, no strain can be proved to be an authentic member of *N. farcinica* since no indisputable type strain exists for *N. farcinica*. They considered *N. farcinica* to be a nomen dubium and stated that, as proposed by Gordon and Mihm (6), the type species of the genus *Nocardia* should be *N. asteroides*. Doubt concerning the validity of the name *N. farcinica* was also expressed by N. M. McClung (12), H. A. Lechevalier (8), and M. P. Lechevalier (9).

Furthermore, Ridell and Norlin (17) and Ridell (16) stated that there were two kinds of strains labeled *N. farcinica*, one kind serologically related to mycobacteria and the other serologically related to nocardiae. According to the findings of these authors, ATCC 3318 belonged to *Nocardia*, whereas ATCC 13781, which Chamoiseau and Asselineau (2) implied was identical to the original strain of Nocard, belonged to *Mycobacterium*. Orchard and Goodfellow (15) showed that NCTC 4524 and *Mycobacterium farcinogenes* strains formed one cluster in a numerical classification scheme, whereas ATCC 3318 and *Nocardia* strains formed another cluster.

As shown above, strains originally regarded as members of *N. farcinica* were divided into two groups, one belonging to *Mycobacterium* and the other belonging to *Nocardia*. In view of this finding, the name *N. farcinica* should be considered as a nomen dubium and should be formally rejected by the Judicial Commission.

In 1980, the Approved Lists of Bacterial Names (19) were published by the International Committee on Systematic Bacteriology. However, the Approved Lists contain important inconsistencies. The name *N. farcinica* Trevisan 1889 (21) is on the Approved Lists. Nevertheless, the type species of the genus *Nocardia* was changed from *N. farcinica* to *N. asteroides* (Eppinger) Blanchard 1896. It is strange that the type species of *Nocardia* was changed from *N. farcinica*

to *N. asteroides* and that *N. farcinica* was retained on the Approved Lists. Furthermore, a paper by Gordon and Mihm (5) is cited in the Approved Lists for the description of *N. asteroides* despite the fact that *N. asteroides* as described by Gordon and Mihm contains strain ATCC 3318 (i.e., the type strain of *N. farcinica*).

I would like to point out the following inconsistencies on the Approved Lists which are caused by the retention of the name *N. farcinica*. If, as it appears from the Approved Lists, the name *N. farcinica*, which has priority over the name *N. asteroides*, is valid, the type species of the genus *Nocardia* should have been *N. farcinica*. Therefore, a change in the type species from *N. farcinica* to *N. asteroides* should have been made after rejection of the name *N. farcinica*. Furthermore, if the name *N. farcinica* is retained, citation of the paper by Gordon and Mihm (5) is inadequate for the description of the species *N. asteroides* because, as defined by these authors, *N. asteroides* contains *N. farcinica* strains, including the type strain, ATCC 3318. A paper by Tsukamura (22) should have been cited for the description of these two species, as the species *N. asteroides* and the species Kyoto-I containing the type strain of *N. farcinica* (ATCC 3318) were initially differentiated by this author.

To eliminate the above-mentioned inconsistencies from the Approved Lists, I recommend that the name *N. farcinica* be rejected, as it is obviously a nomen dubium.

The finding of Tsukamura (22) that the Kyoto-I group, which contains strain ATCC 3318, is a distinct species has been supported by the findings of many other investigators (1, 3, 4, 8, 11, 13, 14, 18, 23, 24). This taxon should be named as a new species after formal rejection of the name *N. farcinica*.

REPRINT REQUESTS

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