



On the valid publication of names of mycobacteria

To the Editor:

In their paper entitled “Same meat, different gravy: ignore the new names of mycobacteria”, TORTOLI *et al.* [1] called to ignore the recently proposed generic names *Mycobacteroides*, *Mycolicibacter*, *Mycolicibacterium* and *Mycolicibacillus* in which some species of *Mycobacterium* were reclassified [2], and to keep using the old names. The authors correctly stated that with the validation of the new names in the *International Journal of Systematic and Evolutionary Microbiology (IJSEM)* [3], the old names remain validly published and anyone is free to use them. By explaining this, they did a great service to the community of microbiologists and clinicians. Arguments similar to those presented by TORTOLI *et al.* [1] against the use of the newly proposed names were brought forward following a proposal to rename the clinically important *Clostridium difficile* as *Clostridioides difficile* [4]. A paper was published to clarify that both names are validly published and can be used [5].

Unfortunately, the editorial by TORTOLI *et al.* [1] contains many errors and misconceptions about the functioning of the International Code of Nomenclature of Prokaryotes (ICNP) [6] and the *IJSEM* that we wish to correct.

The bacterial taxonomy is ruled by the Code of nomenclature of prokaryotes (previously Bacteriological code): The correct name of the code is the International Code of Nomenclature of Prokaryotes – Prokaryotic Code (2008 revision). The ICNP does not rule taxonomy. On the contrary, the Code states: “Nothing in this Code may be construed to restrict the freedom of taxonomic thought or action” (Principle 1(4)).

Actually the Code only provides valid names of bacteria: Based on the ICNP there are no valid names, only validly published names. The Code does not provide such names, but it contains the rules that regulate valid publication of names.

To be valid, a publication describing a new taxon needs to contain a protologue: There are no valid publications that describe new taxa; there only are validly published names of taxa. The word “protologue” is not found in the ICNP. It was proposed in 1999 [7], but was not adopted in the text of the Code. The requirements for the description of new taxa are found in Rule 27 and (for species) in Rule 30.

The publication in IJSEM automatically grants validity to a new name: Publication of a name in *IJSEM* can be considered to be validly published only if it conforms to the rules of the ICNP [8]. Thanks to its rigorous reviewing process, it seldom happens that problematic names of new taxa are published in the journal. When it does happen, a correction can be made in a Notification List. An example is the name *Flavobacterium daemonensis* which contravenes Rule 12c(1) and was corrected to *Flavobacterium daemonesense* [9].

In contrast, in order for an organism name to be recognised as valid if published in other journals, the authors must request the new name to be included in a Validation list published, upon check of conformity, by IJSEM: According to Note 1 to Rule 27, requesting validation of names is not the privilege of the author of the effective publication; others may submit a new name or new combination for validation, provided it conforms to the Rules of this Code.

When a change of a validly published species or genus name is proposed, the new name, once validly published becomes a heterotypic synonym of the previous ones: “Heterotypic synonyms” means that

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The message presented by Tortoli and co-workers in their paper “Same meat, different gravy: ignore the new names of mycobacteria” is correct, but the paper contains many errors and misconceptions about the functioning of the Prokaryotic Code and the IJSEM <http://bit.ly/2YD9u6s>

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different names have been associated with different types that in the opinion of the bacteriologist concerned belong to the same taxon (Rule 24a, Note 3). Of the new combinations discussed by TORTOLI *et al.* [1], the nomenclature types remain the same, so here we have homotypic synonyms, *i.e.* more than one name has been associated with the same type.

A validly published name is not ever withdrawn: This is incorrect: the Judicial Commission of the International Committee on Systematics of Prokaryotes (the ICSP) can place names on the list of rejected names (*nomina rejicienda*) (Rule 56a). One of the reasons to reject a name can be the case of a perilous name (*nomen periculosum*), a name whose application is likely to lead to accidents endangering health or life or both or of serious economic consequences. Therefore, the name *Yersinia pseudotuberculosis* subsp. *pestis* was rejected [10]. Scientists or clinicians who believe that the renaming *Mycobacterium* species may create *nomina periculosa* are free to submit a Request for an Opinion to the Judicial Commission and propose rejection of the names.

Overall, the updated nomenclature and its adoption in IJSEM ... does a disservice to microbiologists, clinicians and patients: Neither the IJSEM nor its Editorial Board are “adopting” the new nomenclature; the journal simply fulfils a service by including the names in a validation list as all requirements have been met, in accordance with the guidelines of ICSP and Rule 27 of the ICNP.

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We are grateful to A. Oren and M.E. Trujillo for their precise clarifications. I admit that my knowledge about the complex rules governing the nomenclature of prokaryotes is very limited and dates back to no more than an year ago when, in reply to a manuscript of mine, a reviewer for the *International Journal of Systematic and Evolutionary Microbiology* invited me to read the papers of B.J. Tindall and co-workers [1, 2].

I am, at the same time, happy to read that A. Oren and M.E. Trujillo confirm the validity of what I consider the backbone of our editorial [3]: “the old names remain validly published and anyone is free to use them.” It is indeed this freedom of choice that allowed us to receive the aversion of a large part of the clinician community against the splitting of mycobacteria among five genera and recommend to continue using the traditional nomenclature based on the genus *Mycobacterium* only. A recommendation, in line

with taxonomic rules, that, in our opinion, allows to avoid confusion for the clinicians and harm for the patients.

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The complex taxonomic rules do not affect the legitimacy of using the conventional nomenclature of mycobacteria based on the single genus *Mycobacterium* <http://bit.ly/2L3mpKi>

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