

TAXONOMIC NOTE

Arguments against the replacement of type species of the genus *Salmonella* from *Salmonella choleraesuis* to '*Salmonella enterica*' and the creation of the term 'neotype species', and for conservation of *Salmonella choleraesuis*

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The proposals of Le Minor and Popoff in 1987 and again of Euzéby in 1999 on the type species of the genus *Salmonella* are in violation of Rule 20a of the Bacteriological Code (1990 Revision) and should be rejected. The introduction of the term 'neotype species' should be rejected. The specific epithet *choleraesuis* in the binary combination *Salmonella choleraesuis* should be conserved. The serovar name Choleraesuis should be changed to Hogcholera.

Keywords: Bacteriological Code, *Salmonella*, nomenclatural type, serovar Hogcholera

In accordance with Rule 20a of the Bacteriological Code, *Salmonella choleraesuis*^{AL} is the type species of the genus *Salmonella* Lignières 1900^{AL} (Lapage *et al.*, 1992). This was declared by the Judicial Commission in Opinion 26. '*Salmonella enterica*' (*ex* Kauffmann and Edwards 1952) was illegitimately proposed by Le Minor & Popoff (1987) in their Request for an Opinion to designate '*S. enterica*' as the type and only species of the genus *Salmonella*. However, the Judicial Commission declined their Request (Wayne, 1994).

Euzéby in 1999, again proposed to designate '*Salmonella enterica*' as a 'neotype species' and requested that *Salmonella choleraesuis* be rejected as the type species of the genus. Rule 20a of the Code reads: The nomenclatural type of a genus or subgenus is the type species, that is, the single species or one of the species included when the name was originally validly published. *S. choleraesuis* was designated as the type species of the genus *Salmonella* in accordance to Rule 20a and it was subsequently listed in the Approved Lists of Bacterial Names (Skerman *et al.*, 1980). *S. choleraesuis* is not a *nomen dubium* as is *Aerobacter liquefaciens* Beijerinck, as stated in Opinion 48 of the Code. Similarity of the names of a specific epithet and a serovar does not relate to any heading under Rule 37b, which is concerned with changes in names of taxa.

A change of the type species of the genus *Salmonella* from *S. choleraesuis* to '*S. enterica*', just because of the similarity of specific epithet *choleraesuis* with the serovar name Choleraesuis, is a definite violation of the Code. After the proposal of '*S. enterica*' by Le Minor and Popoff, the use of this illegitimate name first gradually, then rapidly spread among bacteriologists throughout the world. The *Enterobacteriaceae* taxonomist, R. Sakazaki stated that "Nothing to say on *Salmonella* researchers, all the European and American journals concerned adopted '*S. enterica*', in spite of knowing its invalidity". Furthermore he has recommended the use of '*S. enterica*' in Japan as well. It should be said that this statement recommends the violation of the Code and increases confusion in *Salmonella* nomenclature.

Only the Judicial Commission can place names on the list of rejected names (*nomina rejicienda*) (Rule 56a). To avoid the continual confusion described above, we request the Judicial Commission, as defined in Rule 56a, to issue Opinions to clearly reject '*Salmonella enterica*' and the use of 'neotype species'. We also request the conservation of the specific epithet *choleraesuis* in the binary combination of *Salmonella choleraesuis* as the type species of the genus *Salmonella*.

A neotype strain can be designated according to Rule 18c. However, there is neither the definition nor the description of 'neotype species' in the Code.

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In order to avoid such confusion due to the similarity between the specific epithet of the type species, *choleraesuis*, and the serovar name Choleraesuis, we recommend to change the latter to Hogcholera as described by Smith in 1894. Names of infrasubspecific categories such as serovars do not fall under the Rules of the Code and are free to be changed by the workers concerned.

To realize the intent of Principle 1 of the Code, we expect an urgent decision of the Judicial Commission on the matters stated in this Note.

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