

Introducing a digital protologue: a timely move towards a database-driven systematics of archaea and bacteria

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It is self-evident that contemporary biological science has become a database-driven endeavour, ranging from databases serving broad communities (such as Genbank) to those that are more specialised. We have argued previously (Rosselló-Móra 2012; Sutcliffe et al. 2012) that it would greatly benefit Archaeal and Bacterial systematics to create an iterative taxonomic database of Archaeal and Bacterial species, which would provide a summative and evolving repository for information on species characteristics, such as those typically found in the protologues of descriptions of novel genera and species. Indeed, such a database would be a welcome complement to MycoBank, a comparable initiative in fungal taxonomy (Robert et al. 2013), and important databases of microbial nomenclature and identification such as

LPSN, LTP and EzTaxon (Yarza et al. 2010; Parte 2014; Yoon et al. 2017).

As Editors of *Antonie van Leeuwenhoek* and *Systematic and Applied Microbiology*, we are responsible for two journals that effectively publish the descriptions of significant numbers of Archaeal and Bacterial species. Given the importance of getting a database established, we have therefore developed a ‘digital protologue’ database (DPD) to accompany descriptions of novel Archaeal and Bacterial taxa published in these two journals. Having been tested by volunteer authors, we believe the DPD has good functionality and fitness for purpose as a repository for taxonomic data, and we expect to refine and improve its design and interactivity in response to feedback from users. Significant features include accession numbers to relevant sequence databases (which will become still more important as whole genome sequences increasingly accompany descriptions of novel microbial taxa) and the generation of unique TaxoNumbers for each entry (which can also be cited and used for microattribution purposes). Moreover, content is exportable in a tabulated format that can be used as Online Supplementary material to accompany published material. At present the database is focussed on descriptions of Archaeal and Bacterial species although options are available to create entries for the description of genera and *Candidatus* taxa. As the current version will no doubt evolve, we encourage all users to feed-back to the editors for improvements.

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From March 2017, the Editors of *Antonie van Leeuwenhoek* and *Systematic and Applied Microbiology* will require all descriptions of novel Archaeal and Bacterial taxa to be accompanied by a mandatory entry in the DPD and to include a TaxonNumber (similar to current policy regarding deposition of information on novel fungal taxa in MycoBank). In time, we also hope the systematics community will also help enter data on previously described taxa (e.g. the current nearest phylogenetic relative) in order to ‘backfill’ the database. The DPD will be curated by relevant Editors of the journals that encourage authors to submit entries and will be editable to ensure updates (for example, as names move from being ‘effectively published’ to ‘validly published’). In time, we hope to encourage the participation of other journals to allow the DPD to grow into a long overdue cumulative and authoritative database of the characterised Archaeal and Bacterial world.

It is highlighted that this Editorial text is being simultaneously published in *Antonie van Leeuwenhoek* and *Systematic and Applied Microbiology*.

Availability The DPD is available at <http://imedea.uib-csic.es/dprotologue/>.

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