The Microbial Taxonomist

A Newsletter Published by Bergey's Manual Trust

NEW TAXONOMIC ROAD MAPS UNDER DEVELOPMENT

William Whitman, Director of the Editorial Office

Starting with the Second Edition of *Bergey's Manual of Systematic Bacteriology*, the arrangement of content has followed a phylogenetic framework or "road map" based largely on analyses of the nucleotide sequences of the ribosomal small-subunit RNA. The taxonomic road map proposed in Volume 1 and updated and emended in Volume 2 was derived from phylogenetic and principal-component analyses of comprehensive data sets of small-subunit rRNA sequences. For Volume 3 on the *Firmicutes*, a new procedure was followed based upon the methodology developed by Wolfgang Ludwig (Technische Universität München). This procedure relies upon the integrated small-subunit rRNA database of the SILVA project (Prüsse et al., 2007) and the tools of the ARB software package (Ludwig et al., 2004). Phylogenetic treeing was performed with all of the approximately 14,000 sequences from *Firmicutes* which contain at least 1400 nucleotides and an additional 1000 sequences from representatives of the other phyla and domains. The data sets also varied with respect to the inclusion of highly variable sequence positions, which were eliminated in some analyses (Ludwig and Klenk, 2005). The consensus tree used for evaluating or modifying the taxonomic outline was based on maximum likelihood analyses (RAXML, implemented in the ARB package; Stamatakis et al., 2005) and further evaluated by maximum parsimony and distance matrix analyses. While the resulting phylogenetic tree had many similarities to previous versions, there were some important differences in the road map. This road map will be published in Volume 3 and it is now on our website (www.bergeys.org).

While we feel that this road map is an important step forward, we realize that it is an experimentally derived hypothesis which may change whenever new data and/or improved methods of analysis become available (Ludwig and Klenk, 2005). Moreover, while the rRNA genes have generally proven to be reliable phylogenetic markers, they have yielded misleading results for some taxa. From this perspective, we welcome constructive criticism. Please address your comments to Barny Whitman (whitman@uga.edu).

ROAD MAPS FOR VOLUMES 4 AND 5

We are currently working on the phylogenetic trees for the road map for Volume 4, which will include the *Spirochaetae*, *Planctomycetes*, *Bacteroidetes*, *Chlamydia*, *Fibrobacter*, *Acidobacteria*, *Fusobacteria*, *Dictyoglomi* and other taxa. Our goal is to include all taxa with names validly published before 30 June 2006. The road Map for Volume 5 will include the *Actinobacteria*. For this volume, our goal is to include all taxa with names validly published before 30 June 2007 .

We will post these phylogenetic trees on our website (www.bergeys.org) as soon as possible to help authors and obtain constructive criticism from the systematics community. We particularly welcome comments from experts in specific taxa and suggestions concerning the organization of higher taxa. Please address your comments to Barny Whitman (whitman@uga.edu).

Literature cited

Ludwig, W. and H.P. Klenk. 2005. *In* Garrity et al. (Eds.) Bergey's Manual of Systematic Bacteriology, Vol. 2, The Proteobacteria. Part A, Introductory Essays. Springer, pp. 49–65.

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THE CHAIR'S FORUM

IN ANTICIPATION OF THE 2008 IUMS MEETING IN ISTANBUL

As mentioned in our initial Bergey's newsletter (*The Microbial Taxonomist* Vol. 1, 2007), which is posted on our web site (www.bergeys.org), Bergey's Manual Trust (BMT) is pursuing the idea of forming a new society for microbial taxonomists. The objective of this society would be to better serve the intellectual, scientific and social needs and interests of microbial taxonomists, in particular those interested in the *Bacteria* and *Archaea*. The response to this from our BMT mailing list was overwhelmingly positive. Since the proposal was so well received we wish to obtain more information from microbial taxonomists about what they would like to see in a new society. To this end, we are planning a special issue of *The Microbial Taxonomist* in April 2008 to obtain more specific information from prospective members to assess the needs and goals the proposed society could provide.

In addition, a special session will be held at the IUMS meeting in Istanbul to discuss the newly proposed society. We are hoping to arrange this as part of a reception that is sponsored by our publisher, Springer, which is also the publisher of *The Prokaryotes*.

BMT is also sponsoring one of the sessions at the IUMS meeting. Karl-Heinz Schleifer, who is the current President of IUMS as well as a Bergey's Trustee, and I will be chairing a symposium entitled *Taxonomy of Prokaryotes*. The speakers in the session, which will be held on August 8, are Wolfgang Ludwig, *The Phylogeny of Prokaryotes*, Peter Kämpfer, *Phenotypic Identification in the Era of a Sequence-Based Taxonomy*, Rachel Whitaker, *Using Population Genomics to Delineate Species Boundaries in* Sulfolobus islandicus, Ramon Rosselló-Mora, *Can We Reach an Agreement on a Species Concept?*, and I will speak on *Unifying Biology: The Genomic-Phylogenetic Species Concept*.

So, we are hopeful that microbial taxonomists of all ilks (i.e., those interested in everything from domains to species) will be able to come to Istanbul. In the meantime, we welcome your views and suggestions about the international society for microbial taxonomists. Please contact me at: **jtstaley@u.washington.edu**

SPECIAL TOPICS IN MICROBIAL TAXONOMY

American Academy of Microbiology Colloquium on Microbial Genomics and Species

The American Academy of Microbiology held an international colloquium to discuss the topic of microbial species in the era of genomes and molecular phylogeny.

The steering committee included Richard Roberts as Chair, Rita Colwell, Claire M. Fraser-Liggett, Randall Murch, Howard Ochman, Ronald Walters and Carol Colgan.

SPECIAL DISCOUNT FOR CONTRIBUTORS

Springer, our publisher, offers discounts for authors who have contributed to the current (Second) edition of *Bergey's Manual of Systematic Bacteriology*. These discounts, which are a third off list price, apply to all volumes, not only the volume to which the author has contributed. This makes the current edition a good value for many microbiologists. This is particularly true of international microbiologists because the $US has depreciated considerably against many other currencies.

The 33.3% discount is valid only on online orders made through Springer's website. Please go to springer.com, log in (or register if you are a first-time user), search for the Bergey's volume you are interested in and click on the shopping trolley icon. During the checkout you will need the following SpringerToken to redeem your discount: **TYX3q2A3zBbxQ89**. If you need assistance with the SpringerToken please click on the "Help" link. Springer looks forward to receiving your orders.

Thirty participants attended the meeting, which discussed the microbial species concept, species clusters, community genomics, bottlenecks in microbial forensics, and new techniques. A research recommendation was to sequence the type strains of all species. In addition, a suggestion was made to form a subcommittee of the International Committee on Systematics of Prokaryotes to address the question of a new species concept. Details can be found in their final report, which is entitled *Reconciling Microbial Systematics & Genomics*: http://www.asm.org/Academy/index.asp?bid=54420

AIDAN PARTE, BERGEY'S MANAGING EDITOR

Bergey's Manual Trust is delighted that Aidan Parte has joined the Trust as our Managing Editor. He was born in England and received his BSc in Microbiology with honors at the University of London where he also gained his PhD in 1992. He began working for the Society for General Microbiology's journals in 1994, becoming involved with microbial taxonomy from 1997 to 2003 when he was appointed Managing Editor of the *International Journal of Systematic and Evolutionary Microbiology* (formerly IJSB).

After emigrating to the USA in late 2003, Aidan became a freelance medical writer and scientific copy-editor with clients in the US and UK, followed by a full-time stint with a medical communications agency before joining the Trust last year. Although he lives in the Boston area of Massachusetts, he is able to carry out his editorial responsibilities with ease via the internet. He has written a column for this issue of the newsletter which provides information on the production of Volume 3.

Aidan is married to an English girl, Jane, and has two young American daughters, Isabella and Sophie.

NOEL KRIEG, *TAXONOMIST EXTRAORDINAIRE*

Noel Krieg is an Emeritus member of Bergey's Manual Trust. He has served on the Trust since 1976. Those of you who have been fortunate enough to have Noel edit your manuscripts will appreciate his zeal and dedication to editing.

Most recently Noel agreed to help the Trust by serving as one of the editors of Volume 4. Even though he is not an expert on the phylum *Bacteroidetes*, he accepted the enormous task of editing all of the taxa in that rather large phylum.

Those of us on the Trust regard Noel as the "Editor's editor"– the one the Trustees resort to when they have questions they cannot answer. Noel's generous and long-term service to the Trust and taxonomy has been invaluable to the entire community of microbial taxonomists.

Noel grew up in Connecticut, and received his BS degree in Bacteriology with High Honors and Distinction at the University of Connecticut. He then attended the University of Maryland where he carried out research in the laboratory of Professor Michael Pelczar where he studied syntrophic growth of *Lactobacillus plantarum* and *Steptococcus faecalis*.

In 1964 Noel joined the faculty of the Virginia Polytechnic Institute and State University where he moved up the academic ladder from Assistant Professor to Professor. He received the Alumni Distinguished Professor award in 1983 and became Emeritus Professor in 1999.

Noel has received a number of other significant honors during his career. He was the recipient of the US Federation of Culture Collections - J. Roger Porter Award and the Carski Distinguished Teaching Award from ASM as well as membership in the American Academy of Microbiology. In addition, he has received numerous other honors for his teaching contributions.

Noel remains active at VPI where he still teaches a course in Microbial Diversity.

The Trust is highly indebted to Noel for his high principles as well as his many years of dedicated service.

Jim Staley

PUBLICATION MATTERS

For the past 12 months, we have been reorganizing the production of Volumes 3–5 to get them back on track after the move of the Editorial Offices to the University of Georgia. It's been a steep learning curve for us, but we think we're close to getting things where they should be. We are nearing completion of the material for Volume 3, and well on the way to collecting the manuscripts for Volumes 4 and 5. The first batch of manuscripts from Volume 3 has already gone to Springer for typesetting, the proofs from which will provide us with feedback on the quality of what we are doing and on the typesetting itself. In our new production process, manuscripts must be submitted to Springer in the order in which they appear in the book. The order will follow the taxonomic outline, so in Volume 3 on the *Firmicutes*, the *Bacilli* are first.

Since we have made changes in our production process, we thought some authors might be interested in how we are preparing their manuscripts for publication. We are now supplying Word files of the text and tables to Springer along with electronic artwork. When tables have too many columns for Word to handle, we supply them as Excel files. We have very little of the original artwork and photographs from the First Edition, but if an author needs artwork we can scan the printed volume with a high-resolution scanner. The first step in processing the manuscripts is to run the Word document through a "SuperMacro", kindly supplied by my old friends at the Society for General Microbiology, which sorts out a large number of document formatting and style issues, such as Americanizing spelling. The chapters are then forwarded to our four freelance copyeditors (Susan Andrews, Frances Brenner, Robert Gutman, and Judy Leventhal) in the US and UK for copyediting. At this stage, the copyeditors may have specific queries for which they need to contact the authors.

When the chapter is completed, a freelance Editorial Assistant (Joanne Auger) inserts Endnote bibliographic links into every chapter to facilitate the generation of the bibliographies. As you can imagine, this is not a trivial task! For the first time in *Bergey's*, we are having a bibliography at the end of each family section, rather than a huge list at the end of the volume – this is being to done to expedite production by hopefully reducing the amount of referencing errors and to make the book more reader-friendly. It should have the added benefit of easing production of the next edition of the *Manual*, whereby we will be able to supply Endnote-linked chapters from this edition to Third Edition authors. Authors who use Endnote or Reference Manager are encouraged to send us their bibliographic files since it saves a lot of time in compiling the master library.

After copyediting and compilation of the bibliographies using Endnote, the manuscripts are sent to Springer in the order in which they will appear in the final volume. The order is important to ensure proper pagination and indexing. The Bergey's office will return the proofs to authors as PDF files and will simultaneously arrange for professional proofreaders to check them and ensure that the authors' corrections are added. Since the proofreaders are not microbiologists, they can only look for formatting errors. They will not notice errors in scientific content. It is very expensive and difficult to make changes at this step in the process, so major editorial changes will not be permitted. When everything is corrected, it will be time for Springer to prepare the indexes, again, no trivial task.

In this way, each volume is assembled from front to back. While chapters at the front of the volume are being proofread, some from the back of the volume are still being copyedited and the Endnote bibliographies being prepared. This is the reason it is so important to get responses to queries from the copyeditors and proofreaders. Delays in the middle prevent the assembling of all the material in subsequent chapters. The plan is that when the copyeditors finish Volume 3, they can move directly to Volume 4 manuscripts even while the proofreaders are working on Volume 3. In this fashion, we hope to finish the production of the remaining volumes in the next 18 months.

The Editorial Office truly appreciates the patience and efforts of the authors in what has been quite a challenging transitional period for the Trust.

Aidan Parte, Managing Editor