International Committee on Systematic Bacteriology XVIth International Congress of Microbiology

Minutes of the Meetings, 2, 3, and 5 July 1994, Prague, Czech Republic

Minute 1. Call to order. Chairman H. G. Trüper called the meeting to order at 18:00 on 2 July 1994.

Minute 2. Members present. Present were W. Frederiksen (Denmark), M. Goodfellow (United Kingdom), P. A. D. Grimont (France), T. Hofstad (Norway), D. Jones (United Kingdom), M. Kocur (Czech Republic), K. Komagata (Japan), D. P. Labeda (United States), R. G. E. Murray (Canada; Life Member), H. Prauser (Germany), J. Schindler (Czech Republic), L. Sly (Australia), E. Stackebrandt (Germany), P. H. A. Sneath (United Kingdom; Life Member), J. T. Staley (United States), H. G. Trüper (Germany), J. B. Ursing (Sweden), and L. G. Wayne (United States). Apologies for absence were received from T. Hasegawa (Japan), P. de Vos (Belgium), S. Niemäle (Finland), Y.-H. Park (Republic of Korea), D. K. Song (People's Republic of China), S. Shinoda (Japan), and K. I. Suzuki (Japan).

Minute 3. With sadness. The death of the eminent Australian taxonomist V. B. D. Skerman was recorded. A moving tribute to the work that Vic Skerman had undertaken on behalf of the International Committee on Systematic Bacteriology (ICSB) was presented by P. H. A. Sneath.

Minute 4. Agenda. The circulated agenda was adopted.

Minute 5. Osaka meetings. The minutes of the meetings held in Osaka, Japan, were approved as published in the International Journal of Systematic Bacteriology (Int. J. Syst. Bacteriol. 41:188–189, 1991).

Minute 6. Matters arising. None.

Minute 7. Chairman's report. H. G. Trüper reported on the following meetings that were relevant to the activities of the ICSB that he had attended: (i) WBS/IUBS Workshop on Biodiversity amongst Microorganisms, held in Amsterdam, The Netherlands, on 7 and 8 September 1992 (the proceedings of this workshop have been published [Biodiversity Conserv. 1:219–360, 1992]); (ii) Discussion Workshop on Microbial Diversity: Priorities for Research and Infrastructure, held in East Lansing, Mich., on 15 to 18 June 1992; and (iii) FEMS Meeting on Identification of Bacteria: Present Trends—Future Prospects, held in Granada, Spain, on 19 to 22 September 1993 (a book derived from this meeting [F. G. Priest, A. Ramos-Cormenzana, and B. Tindall, ed., *Bacterial Systematics and Diversity*, Plenum Press, London, 1994] has been published). It was agreed that L. Sly should write a Taxonomic Note on microbial diversity (including a bibliography) for the IJSB.

Minute 8. Nominating committee. The following individuals were appointed members of a nominating committee for Executive Board and Judicial Commission vacancies: P. H. A. Sneath, H. G. Trüper, and L. G. Wayne.

Minute 9. Secretary-Treasurer's report. M. Goodfellow spoke about the following matters, some of which arose later in the meetings.

(i) *Van Niel International Prize for Studies in Bacterial Systematics.* Congratulations were offered to J. de Ley, who was to be the second recipient of the Van Niel International Prize for Studies in Bacterial Systematics. The importance of the prize in helping raise the standing of bacterial systematics in the microbial community was acknowledged.

(ii) *Workshops.* The time was not ripe to follow up the earlier

intention to convene workshops on reconciliation of approaches to the generation of phylogenetic trees and on the taxonomy of the family *Bacillaceae* and related taxa. (Int. J. Syst. Bacteriol. 41:188–189, 1991).

(iii) *Finances.* The current financial position of the ICSB was given.

(iv) *Acknowledgments.* The Secretary-Treasurer thanked members of the Executive Board of the ICSB for their support throughout his final term of office.

Minute 10. IJSB editor's report. R. G. E. Murray raised several important issues but also pointed out that the IJSB is doing very well.

(i) *Submission rates.* The increasing interest that is being shown in systematics is reflected in the number of submissions to the IJSB. The number of papers published in 1993 was up about 55% over the numbers published in 1990 and before. It is likely that the number of submissions will continue to rise.

(ii) *Circulation figures.* The circulation figures are reasonable, although the total has not risen in recent years. The journal attracts a wide readership, and this is attested to by its reasonably high standing in the Science Citation Index as sixth among microbiological journals. The journal also places in the top 15% of science journals.

(iii) *Polyphasic studies.* Many of the papers published describe truly polyphasic studies. This highlights a problem for taxonomic research in that it is becoming expensive and often requires the specialized facilities of several laboratories. As a result, the average number of authors per paper has increased so that many papers now have three or more authors.

(iv) *Uncultivated bacteria.* The *International Code of Nomenclature of Bacteria (Bacteriological Code)* was designed before molecular-genetic techniques were fully developed; hence, the approach that it takes to the naming of uncultivated bacteria is too simple and nondiscriminating. A mechanism for reporting significant partial descriptions is given in a recent proposal in the IJSB (Int. J. Syst. Bacteriol. 44:174–176, 1994).

(v) *Validation lists.* The validation of new names is an important function that has been carried out in an exemplary fashion by R. L. Gherna. The contents of the validation lists depend on the submission of reprints by authors who propose new names that appear in journals other than the IJSB, and the IJSB also produces its own notification lists of new names that appear in its pages. The main responsibility is to see that the requirements of the *Bacteriological Code* are followed and that there is an appropriate description. The two types of lists, validation and notification, include all formally described taxa of bacteria. There are about 150 new names per year.

(vi) *Taxonomic issues.* The IJSB has become more active in the airing of taxonomic problems and contentious proposals or views and in promoting discussion. It is now possible to discuss material published in the IJSB by submitting a letter to the Editor. This may be accepted for publication together with a comment or response from the author of the article that gave rise to the letter. The introduction of a Taxonomic Notes section for comments and proposals to taxonomists and to the ICSB arising from publications or discussions outside the pages of the IJSB was initiated in January 1994. This device is

proving to be particularly valuable for disseminating arguments, proposals, or points of view that are to be discussed formally at forthcoming ICSB meetings.

(vii) *Acknowledgments.* The ICSB unanimously complimented the retiring Editor-in-Chief, R. G. E. Murray, for the excellent work that he had done on behalf of the journal over the past 3 years. The ICSB also acknowledged that the journal had greatly benefitted from the experience of the five Associate Editors (R. L. Gherna, H. J. Phaff, E. Stackebrandt, J. T. Staley, and H. G. Trüper), all of whom gave unstintingly of their time and energies. H. J. Phaff and J. T. Staley were due to rotate off the Editorial Board.

Minute 11. *Report of the Secretary for Subcommittees.* E. Stackebrandt outlined the recent activities of the subcommittees.

(i) *Existing subcommittees.* There are currently 31 subcommittees.

(ii) *Review of subcommittee structure.* The Subcommittee on the Actinomycetes has been dissolved and replaced by subcommittees for the following taxa: *Arthrobacter* and related taxa; *Dermatophilaceae* and *Frankiaceae*; *Microbacterium* and related taxa; and *Micromonosporaceae*, *Streptosporangiaceae*, *Thermomonosporaceae*, *Pseudonocardiaceae*, and *Streptomyetaceae*. The prospects for corresponding changes in the subcommittees dealing with the low-G+C-content gram-positive bacteria look good in light of a report from K. H. Schleifer. These organisms can be arranged into the following three major clusters: facultatively anaerobic and microaerophilic organisms, in which lactic acid is the major fermentation product; aerobic and facultatively anaerobic organisms, which often form spores; and anaerobic organisms, which often form spores. Each of these major clusters can be further subdivided. It was agreed that proposals for restructuring the subcommittees responsible for the low G+C-content gram-positive bacteria should be made to the Executive Board of the ICSB by K. H. Schleifer and E. Stackebrandt. H. G. Trüper pointed out that the ad hoc working group reviewing the subcommittee structure of the *Proteobacteria* was not yet ready to recommend changes because of the unsettled taxonomy of these organisms.

(iii) *New subcommittees.* A subcommittee on the taxonomy of *Clostridium* and related taxa is to be established following informal discussions that took place at recent meetings of the American Society for Microbiology under the chairmanship of J. Wiegand. Further consideration is to be given to setting up a subcommittee on phylogeny.

Minute 12. *Judicial Commission report.* L. G. Wayne presented the Judicial Commission report.

(i) *New edition of the Bacteriological Code.* The new and extensively revised edition of the *Bacteriological Code* was published in January 1992. This edition includes all of the amendments adopted up to the present time. The ICSB expressed its thanks to P. H. A. Sneath for his dedication in preparing the revised *Bacteriological Code*.

(ii) *Establishment of notification lists.* The *Bacteriological Code* provides that new names or name changes that are proposed in accordance with the Rules in the text of original papers published in the IJSB are automatically valid, without having to appear in the special validation lists. Since such proposals are not necessarily mentioned in the titles of papers, the proposals might not be noted by those who do not read the full papers. To simplify dissemination of nomenclatural information, the Editor of the IJSB has implemented a suggestion offered by the Judicial Commission (see Minute 11 of the 1990 meetings [Int. J. Syst. Bacteriol. 41:185–187, 1991]) that all names that were validly published in original articles published in IJSB should appear in a notification list. A notification list

follows the validation list in an issue of the IJSB following the issue in which the proposal appears. This ensures that all new valid names can be found in one of two types of lists in the IJSB.

(iii) *Opinions awarded.* Opinions 64, 65, 66, and 67 have been published since the 1990 meetings. Two requests for opinions were denied (Int. J. Syst. Bacteriol. 44:177–179, 1994).

(iv) *Published proposals to amend the Bacteriological Code.* Proposals to amend the *Bacteriological Code* for the names for higher taxa (Int. J. Syst. Bacteriol. 44:368–369, 1994), as proposed by L. G. Wayne and seconded by P. H. A. Sneath, were approved unanimously (Minute 8, Judicial Commission [Int. J. Syst. Bacteriol. 45:195–196, 1995]).

(v) *Mandatory deposition and availability of type cultures.* It was agreed that all type cultures, including patent strains, should be available through recognized culture collections to the scientific community (Minute 12, Judicial Commission).

(vi) *Candidatus concept.* It was agreed that a *Candidatus* list should be established in the IJSB (Minute 9, Judicial Commission [Int. J. Syst. Bacteriol. 45:195–196, 1995]).

(vii) *Retiring commissioners.* The work of the retiring 16th Class of Commissioners, K. Komagata, H. Prauser, P. H. A. Sneath, and J. T. Staley, was acknowledged.

Minute 13. *Adjournment.* The meeting was adjourned at 20:35.

Minute 14. *Call to order.* The Chairman called the meeting to order at 09:00 on 3 July 1994; the members present were W. Frederiksen (Denmark), M. Goodfellow (United Kingdom), D. Jones (United Kingdom), K. Komagata (Japan), D. P. Labeda (United States), R. G. E. Murray (Canada; Life Member), H. Prauser (Germany), J. Schindler (Czech Republic), P. H. A. Sneath (United Kingdom; Life Member), E. Stackebrandt (Germany), H. G. Trüper (Germany), J. B. Ursing (Sweden), and L. G. Wayne (United States). Apologies for absence were received from M. Kocur (Czech Republic), L. Sly (Australia), and P. de Vos (Belgium).

Minute 15. *Nomenclature of genomic groups within a nomen-species.* Investigation of a nomen-species by means of DNA-DNA pairing sometimes shows that it contains two or more genomic groups that may be referred to as “genomic species.” If a sufficient number of phenotypic characteristics are available, the normal practice is to split the species into two or more nomenclatural taxa. The rank of the resulting taxa (species or subspecies) depends on the genomic distance between the groups. However, a term is needed to help prevent the creation of nomenclatural taxa that can be recognized genomically but not phenotypically. It was agreed that this issue should be aired in a Taxonomic Note to be prepared by J. B. Ursing.

Minute 16. *Principles for description of new taxa.* W. Frederiksen submitted a proposal that the ICSB should adopt or authorize principles for the description of new taxa. The intention was to provide guidelines, based on agreed principles, to facilitate the establishment of minimal standards for the description of taxa. It was agreed that W. Frederiksen should draft a Taxonomic Note for consideration before it is sent to the Editor of the IJSB.

Minute 17. *Infrasubspecific taxa.* It was agreed that L. G. Wayne should write a Taxonomic Note outlining the utility of infrasubspecific taxa.

Minute 18. *Establishment of reference service laboratories.* It was agreed that centers of excellence in particular methods (e.g., nucleic acid sequencing, numerical taxonomy, or chemotaxonomy) are needed, although it is not practical to recommend reference service laboratories.

Minute 19. Adjournment. The meeting was adjourned at 10:50.

Minute 20. Call to order. The Chairman called the meeting to order at 16:00 on 5 July 1994; the members present were P. de Vos (Belgium), W. Frederiksen (Denmark), M. Goodfellow (United Kingdom), P. A. D. Grimont (France), Y.-C. Hah (alternate from Republic of Korea), D. Jones (United Kingdom), K. Komagata (Japan), D. P. Labeda (United States), R. G. E. Murray (Canada; Life Member), H. Prauser (Germany), L. Sly (Australia), P. H. A. Sneath (United Kingdom; Life Member), E. Stackebrandt (Germany), K. I. Suzuki (Japan), J. B. Ursing (Sweden), A. Ventosa (Spain), and L. G. Wayne (United States). Also in attendance were L. Anker (Denmark), B. E. Jones (The Netherlands), J. T. Magee (United Kingdom), and C. Sjøholm (Denmark).

Minute 21. Interactions with industry. L. Anker outlined, on behalf of the Forum for Industrial Microbiologists, some of the requirements that industry seeks from microbial taxonomists. After a lively discussion and consideration by the Executive Board of the ICSB, it was agreed that the Secretary-Treasurer should approach both the Forum for Industrial Microbiologists and the Society for Industrial Microbiology to clarify their taxonomic needs with a view to holding an industry-sponsored workshop to be attended by representatives of the ICSB, Forum for Industrial Microbiologists, and Society for Industrial Microbiology.

Minute 22. Systematics and medical microbiology. J. T. Magee stated that there was a growing disparity between advances in bacterial systematics and the needs of medical microbiologists, particularly with respect to nomenclatural issues. He was of the view that there was an urgent need to reestablish communication between taxonomists and individuals in the medical community who use the products of taxonomic research. The Executive Committee of the ICSB agreed to set up an ad hoc committee charged with finding ways to disseminate new bacterial names important in medical microbiology. The committee is chaired by J. B. Ursing, and W. Frederiksen is the secretary.

Minute 23. Workshop on approaches to taxonomy. It was agreed that a workshop to build on the recommendations that were derived from the earlier workshop on reconciliation of approaches to bacterial systematics (Int. J. Syst. Bacteriol. 37: 463–466, 1987) is needed. E. Stackebrandt and H. G. Trüper agreed to arrange a workshop in Braunschweig, Germany, in 1996.

Minute 24. Higher taxa. H. G. Trüper reiterated the need to have names for higher taxa and pointed out that usage of such names had implications for the *Bacteriological Code* (Int. J. Syst. Bacteriol. 44:368–369, 1994).

Minute 25. Taxonomic databases. The need for high-quality taxonomic databases was discussed by H. G. Trüper. It was pointed out that this topic has been the subject of a comprehensive review (Antonie van Leeuwenhoek 64:205–229, 1993).

Minute 26. New edition of the Bacteriological Code. A report by P. H. A. Sneath on the new edition of the *Bacteriological Code* was received.

Minute 27. Liaisons with other codes. P. H. A. Sneath presented a paper outlining a number of recommendations that

were to be made to the International Union of Biological Societies and the International Union of Microbiological Societies in light of a meeting that he and E. Stackebrandt had attended, Harmonization between Codes of Nomenclature, which was convened by D. L. Hawksworth and was held on 16 to 18 March 1994 at the International Mycological Institute, Egham, Surrey, United Kingdom.

Minute 28. New "Cyano Code." An update of the progress in the development of a "Cyano Code" was presented by P. H. A. Sneath, who stressed the need for liaison between bacteriologists and botanists.

Minute 29. ICSB statutes. J. B. Ursing presented a proposal to amend Article 9 (2) of the ICSB statutes. The matter was referred to the Executive Board of the ICSB for further consideration.

Minute 30. Elections. H. G. Trüper, for the Nominating Committee, presented a full slate of candidates for election, as follows: for Chairman, H. G. Trüper (term expiring but eligible for reelection; elected unanimously); for Vice Chairman (K. Komagata retiring and not eligible for reelection), L. Sly (elected unanimously); for Secretary-Treasurer (M. Goodfellow retiring and not eligible for reelection), D. P. Labeda (elected unanimously); for two Members at Large (J. Schindler and J. B. Ursing retiring), V. P. Canhos and A. Ventosa (elected unanimously); and for four Judicial Commissioners (16th Class to replace the 15th Class), R. R. Colwell, M. Goodfellow, H. Prauser, and J. T. Staley. The Full Executive Board of the ICSB for the next 2 years comprises H. G. Trüper, L. Sly, D. P. Labeda, E. Stackebrandt, W. Frederiksen, V. P. Canhos, A. Ventosa, and L. G. Wayne (Chairman of the Judicial Commission).

Minute 31. Editor- of the IJSB. H. G. Trüper, on behalf of The Executive Board of the ICSB, reported that E. Stackebrandt would assume the duties of Editor of the IJSB in January 1995.

Minute 32. ICSB membership. Nominations from International Union of Microbiological Societies member societies are being sought for the next 2 years by the Secretary-Treasurer.

Minute 33. Life membership. On behalf of The Executive Board of the ICSB, H. G. Trüper proposed that life membership in the ICSB be conferred on K. Komagata in recognition of his outstanding service to bacterial systematics and for his many contributions to the work of the ICSB. The proposal was received with acclaim.

Minute 34. Co-opted members. The following individuals were co-opted as members of the ICSB for the next 2 years: V. P. Canhos (Brazil), T. Ezaki (Japan), Y.-C. Hah (Republic of Korea), and A. Ventosa (Spain).

Minute 35. Other business. There being no further business, the Chairman concluded that the present ICSB meeting had been successful and had provided a useful base for future developments.

Minute 36. Final adjournment. The Chairman adjourned the meeting at 18:18.

Michael Goodfellow, Honorary Secretary-Treasurer