

International Committee on Systematic Bacteriology

Subcommittee on the taxonomy of *Bifidobacterium*, *Lactobacillus* and related organisms

Minutes of the meetings, 4 and 6 July 1994, Prague, Czech Republic

Session 1. Open meeting

Minute 1. Call to order. The open meeting was called to order at 14:00 on 4 July 1994 by Chairperson E. Lauer.

Minute 2. Record of attendance. The members present were B. Biavati, F. Dellaglio, L. M. T. Dicks, F. Gasser, W. Hammes, W. Holzapfel, A. Kagermeier-Callaway (Secretary), K. W. Knox, E. Lauer (Chairperson), T. Mitsuoka, M.-C. Montel, G. Reuter, B. Sgorbati and N. Weiss. Apologies were received from M. D. Collins, J. London and W. E. C. Moore. The guests present were C. Bonaparte, G. Klein, D. Palenzona and several other attendees of the IUMS conference.

Minute 3. Call for research reports. The following research reports were presented: L. M. T. Dicks, 'Phenotypic and genetic relatedness of *Lactobacillus casei* and *Lactobacillus acidophilus*. Evaluation of RAPDs as a taxonomic method'; W. Hammes, 'Some new aspects of taxonomy and metabolism of lactobacilli in sourdough'; G. Klein, 'Taxonomic difficulties with the classification of strains from the '*Lactobacillus acidophilus*-group'; K. Knox, 'Enzymic activities of lactobacilli that could contribute to their pathogenicity'; M.-C. Montel, 'rRNA gene restriction patterns of *Lactobacillus sake* and *Lactobacillus curvatus* strains'; D. Palenzona, 'Evolution's control in lactic acid bacteria'; G. Reuter, 'Proposals for subdivisions within the species *Lactobacillus sake* and *Lactobacillus curvatus*'; B. Sgorbati, 'Environment and genetics of adhesion in bifidobacteria'. A brief discussion followed each presentation.

Minute 4. Adjournment. E. Lauer thanked all speakers for their contributions. The open meeting was adjourned at 16:10 on 4 July 1994.

Session 2. Closed meeting

Minute 5. Call to order. The closed meeting was called to order at 16:00 on 6 July 1994 by Chairperson E. Lauer.

Minute 6. Record of attendance. The members present were B. Biavati, M. D. Collins, F. Dellaglio, L. M. T. Dicks, F. Gasser, W. Hammes, W. Holzapfel, A. Kagermeier-Callaway (Secretary), K. W. Knox, E. Lauer (Chairperson), T. Mitsuoka, M.-C. Montel, G. Reuter, B. Sgorbati and N. Weiss. Apologies were received from J. London and W. E. C. Moore. The guests present were G. Klein and A. Lenzner.

Minute 7. Changes in membership. A letter of resignation was received from W. E. C. Moore. He was thanked for his valuable contributions in a formal letter. Both E. Lauer and A. Kagermeier-Callaway were asked to remain in office until 1996.

Minute 8. Call for old business. F. Gasser presented a short report: 'Safety of lactic acid bacteria: where is the problem?'

A brief discussion followed in which the importance of defining pathogenicity was stressed. It is necessary to establish standards, to investigate the significance of capsule formation (for example in *Lactobacillus rhamnosus*), and to determine whether pathogenicity is strain-specific or species-specific. The taxonomic problem concerning the species *Lactobacillus casei/Lactobacillus paracasei* was discussed. A new statement from the subcommittee is to be drafted and circulated among the members for approval before submission to the Judicial Commission. It was mentioned that a new Request for an Opinion has been published, concerning the designation of a neotype strain for *Pediococcus acidilactici* [Tanasupawat, S., Okada, S., Kozaki, M. & Komagata, K. (1993). *Int J Syst Bacteriol* **43**, 860–863]. The Judicial Commission has subsequently considered and approved the request to conserve *Pediococcus acidilactici* with neotype strain B213c (= DSM 20284), which replaces NCDO 1859 [Opinion 68. *Int J Syst Bacteriol* **46** (1996), 835]. E. Lauer mentioned again the need to address the serious problems that still persist with respect to the taxonomy of both of the following groups of species: the *Bifidobacterium indicum/Bifidobacterium coryneforme/Bifidobacterium asteroides*-group and the *Bifidobacterium infantis/Bifidobacterium suis/Bifidobacterium longum*-group. E. Lauer agreed to prepare a draft of Minimal Standards requirements for the description of new species of the genus *Bifidobacterium* to be presented at the next subcommittee meeting. Suggestions in writing should be sent to him within three months. A. Kagermeier-Callaway and E. Lauer reported that their note with the title '*Lactobacillus sake* Katagiri, Kitahara and Fukami 1934 is the senior synonym for *Lactobacillus bavaricus* Stetter and Stetter 1980' has been submitted for publication in the *International Journal of Systematic Bacteriology*. It subsequently has been published [*Int J Syst Bacteriol* **45** (1995), 398–399].

Minute 9. New species. The following new species were acknowledged as good species by the subcommittee: *Bifidobacterium saeculare* [Biavati, B., Matarelli, P. & Crociani, F. (1991). *Syst Appl Microbiol*, **14**, 389–392], *Carnobacterium alterfunditum* [Franzmann, P. D., Hoepfl, P., Weiss, N. & Tindall, B. J. (1991). *Arch Microbiol* **156**, 255–262], *Carnobacterium funditum* [Franzmann, P. D., Hoepfl, P., Weiss, N. & Tindall, B. J. (1991). *Arch Microbiol* **156**, 255–262] and *Lactobacillus pontis* [Vogel, R. F., Boecker, G., Stolz, P., Ehrmann, M., Fanta, D., Ludwig, W., Pot, B., Kersters, K., Schleifer, K. H. & Hammes, W. (1994). *Int J Syst Bacteriol* **44**, 223–229].

Minute 10. New business. M. D. Collins pointed out that several new genera have been proposed, including *Atopobium*, *Globicatella*, *Helcococcus*, *Tetragenococcus* and *Weissella*. Some of them, especially the latter two, contain species of lactic acid bacteria, which already belong to the purview of the subcommittee, but have been transferred and

renamed. '*Pediococcus halophilus*' has been renamed *Tetragenococcus halophilus*. The following species have been transferred to the genus *Weissella*: *Weissella confusa* (basonym *Lactobacillus confusus*), *Weissella halotolerans* (basonym *Lactobacillus halotolerans*); *Weissella kandleri* (basonym *Lactobacillus kandleri*), *Weissella minor* (basonym *Lactobacillus minor*), *Weissella paramesenteroides* (basonym *Leuconostoc paramesenteroides*) and *Weissella viridescens* (basonym *Lactobacillus viridescens*). It was therefore proposed to include the new genera *Tetragenococcus* and *Weissella* under the scope of the subcommittee. The Secretary was charged with contacting the Secretary for Subcommittees to request permission. In order to obtain more information about strains belonging to the *Lactobacillus sake/curvatus* group, several members agreed to exchange strains or nucleic acid probes. The results will be reported at a future subcommittee meeting. Furthermore, it seems necessary to verify the separate species status of *Lactobacillus animalis* and *Lactobacillus murinus*; N. Weiss agreed to perform the DNA-DNA homology studies.

Minute 11. Present membership. The following individuals are members of the subcommittee on the taxonomy of *Bifidobacterium*, *Lactobacillus* and related organisms: Bruno Biavati, Bologna, Italy; Matthew D. Collins, Reading, UK; Franco Dellaglio, Verona, Italy; Leon Dicks, Stellenbosch, South Africa; Francis Gasser, Paris, France; Walter Hammes, Stuttgart, Germany; Wilhelm Holzapfel, Karlsruhe, Germany; Angelika Kagermeier-Callaway (Secretary), Mainz, Germany; Kenneth W. Knox, Sydney, Australia; Eckhard Lauer (Chairperson), Berlin, Germany; Jack London, Bethesda, MD, USA; Tomotari Mitsuoka, Tokyo, Japan; Marie-Christine Montel, St-Genes-Champanelle, France; Gerhard Reuter, Berlin, Germany; Vittorio Scardovi, Bologna, Italy; Barbara Sgorbati, Bologna, Italy; Norbert Weiss, Braunschweig, Germany.

Minute 12. Adjournment and date of next meeting. The closed meeting was adjourned at 18:55 on 6 July 1994. The next meeting will be held at the Food Micro '96 Congress in Budapest, Hungary, in August 1996.

Angelika S. Kagermeier-Callaway, *Secretary*