International Committee on Systematics of Prokaryotes

Subcommittee on the taxonomy of *Halobacteriaceae*

Minutes of the meetings, 30 July 2002, Paris, France

Session 1. Closed meeting

Minute 1. Call to order. The closed meeting was held on 30 July 2002, at the Palais des Congrès, Paris, France. The Chairman, Dr A. Ventosa, opened the meeting at 14:30.

Minute 2. Record of attendance. The members present were Drs A. Ventosa (Chairman), A. Oren (Secretary), M. Kamekura, C. D. Litchfield, B. J. Tindall, H. G. Trüper and R. H. Vreeland. Apologies were received from R. R. Colwell, W. D. Grant, L. I. Hochstein, Y. Ma, A. Ramos-Cormenzana and F. Rodríguez-Valera.

Minute 3. In memoriam Donn Kushner. The subcommittee honoured the memory of Donn J. Kushner, one of the founding members of the subcommittee, who passed away on 15 September 2001.

Minute 4. Approval of agenda. The agenda of the meeting was approved.

Minute 5. Minutes of previous meeting. The minutes of the meetings held in Seville, Spain, 24 September 2001 [*Int J Syst Evol Microbiol* **52** (2002), 289–290], were approved with a corrigendum as pointed out by J. P. Euzéby: the type strain of *Natronobacterium nitratreducens* is JCM 10879 and not JCM 10717 as stated.

Minute 6. Confirmation of Y. Ma as member of the subcommittee. Professor Y. Ma (Beijing, China), who was nominated as a new member of the subcommittee at its closed meeting in Seville in 2001, was unanimously accepted as a member.

Minute 7. Resignation of Hans G. Trüper as member of the subcommittee. Hans Trüper expressed the wish to resign from the subcommittee in view of his many other duties, including his functions as Editor-in-Chief of IJSEM and president of FEMS. The subcommittee accepted the resignation. The Chairman thanked Professor Trüper for his long and active service as a member.

Minute 8. Nomination of new members. Mike L. Dyll-Smith (Melbourne, Australia) and Helga Stan-Lotter (Salzburg, Austria) were nominated as possible candidate members of the subcommittee. The Secretary will formally invite Drs Dyll-Smith and Stan-Lotter to join the subcommittee at its next meeting.

Minute 9. Current membership. The current membership of the subcommittee is as follows: A. Ventosa (Chairman; Seville, Spain), A. Oren (Secretary; Jerusalem, Israel), R. R. Colwell (Arlington, VA, USA), W. D. Grant (Leicester, UK), L. I. Hochstein (Las Vegas, NV, USA), M. Kamekura (Noda, Japan), C. D. Litchfield (Manassas, VA, USA), Y. Ma (Beijing, China), A. Ramos-Cormenzana (Granada, Spain), F. Rodríguez-Valera (Alicante, Spain), B. J. Tindall (Braunschweig, Germany) and R. H. Vreeland (West Chester, PA, USA).

Minute 10. Next meeting of the subcommittee. The next meeting of the subcommittee will be held in 2004 in association with the meeting on halophilic micro-organisms to be held in Ljubljana, Slovenia.

Minute 11. Adjournment. The meeting was adjourned at 15:00 on 30 July 2002.

Session 2. Open meeting

Minute 12. Call to order. The open meeting was held on 30 July 2002, at the Palais des Congrès, Paris, France. The Chairman, Dr A. Ventosa, opened the meeting at 15:10.

Minute 13. Record of attendance. The subcommittee members present at the closed meeting also attended the open meeting.

Minute 14. New taxa. An updated list of taxa within the family *Halobacteriaceae* was distributed. Reports on the following new taxa and reclassification of existing taxa were presented:

Halorubrum tebenquichense sp. nov. [C. Lizama, M. Monteoliva-Sánchez, A. Suárez-García, R. Roselló-Mora, M. Aguilera, V. Campos & A. Ramos-Cormenzana, *Int J Syst Evol Microbiol* **52** (2002), 149–155], with type strain CECT 5317, DSM 14210 (presented by A. Oren).

Haloferax alexandrinus sp. nov. [D. Asker & Y. Ohta, *Int J Syst Evol Microbiol* **52** (2002), 729–738], with type strain JCM 10717, IFO 16590 (presented by A. Oren).

Halomicrobium mukohataei comb. nov. [A. Oren, R. Elevi, S. Watanabe, T. Tamura, K. Ihara & A. Corcelli, *Int J Syst Evol Microbiol* **52** (2002), 1831–1835; basonym *Haloarcula mukohataei*: K. Ihara, S. Watanabe & T. Tamura, *Int J Syst Bacteriol* **47** (1997), 73–77], with type strain JCM 9738 (DSM 12286, ATCC 700874, NICMB 13541) (presented by A. Oren). Recommended three-letter abbreviation of the genus: *Hmc*.

Halobiforma nitratreducens gen. nov., comb. nov. [F. F. Hezayen, B. J. Tindall, A. Steinbüchel & B. H. A. Rehm, *Int J Syst Evol Microbiol* **52** (2002), 2271–2280; basonym *Natronobacterium nitratreducens*: H. Xin, T. Itoh, P. Zhou, K. Suzuki & T. Nakase, *Int J Syst Evol Microbiol* **51** (2001), 1825–1829], with type strain JCM 10879, AS 1.1980 (presented by B. J. Tindall). Recommended three-letter abbreviation of the genus: *Hbf*.

Halobiforma terrestris sp. nov. [F. F. Hezayen, B. J. Tindall, A. Steinbüchel & B. H. A. Rehm, *Int J Syst Evol Microbiol* **52** (2002), 2271–2280], with type strain JCM 11627, DSM 13078 (presented by B. J. Tindall).

Halococcus dombrowskii sp. nov. [H. Stan-Lotter, M. Pfaffenhuemer, A. Legat, H.-J. Busse, C. Radax & C. Gruber, *Int J Syst Evol Microbiol* **52** (2002), 1807–1814],

with type strain DSM 14522, NCIMB 13803 (presented by A. Oren).

Haloferax lucentensis sp. nov. [M. C. Gutierrez, M. Kamekura, M. L. Holmes, M. L. Dyll-Smith & A. Ventosa, *Extremophiles* (in press)] (the former species *incertae sedis* '*Haloferax alicantei*'), with type strain JCM 9278, NCIMB 13854, CIP 107410, CECT 5871, CCM 7023 (presented by A. Ventosa).

Halosimplex carlsbadense gen. nov., sp. nov. [R. H. Vreeland, S. Straight, W. D. Rosenzweig & M. Kamekura, *Extremophiles* (in press)], with type strain ATCC BAA-75, JCM 11222 (presented by R. H. Vreeland). Recommended three-letter abbreviation of the genus: *Hsx*.

Following the discussion about the nomenclature of *Natrialba aegyptiaca* [F. F. Hezayen, B. H. A. Rehm, B. J. Tindall & A. Steinbüchel, *Int J Syst Evol Microbiol* **51** (2001), 1133–1142] at the previous meeting of the subcommittee [*Int J Syst Evol Microbiol* **52** (2002), 289–290, Minute 3], the issue of the name of the organism was discussed. The species appears in a Notification List [*Int J Syst Evol Microbiol* **51** (2001), 1231–1233] as *Natrialba aegyptia* corrig. According to the decision of the Judicial Commission of the ICSP at its meeting on 1 August 2002 in Paris, *Natrialba aegyptiaca* will be the correct spelling of the name. A corrigendum will be published in IJSEM Online.

According to Opinion no. 74 issued by the Judicial Commission, strain NCIMB 13488 may serve as the type strain of *Halorubrum trapanicum*. In reply to a Request for an Opinion by W. D. Grant, A. Oren & A. Ventosa [*Int J Syst Bacteriol* **48** (1998), 1077–1078], in which strain NCIMB 13488 was proposed as neotype of *Halorubrum trapanicum*, the Judicial Commission decided that *Halorubrum trapanicum* strain NCIMB 13488 will not be the neotype, but since it is derived from Petter's original isolate, it is a 'strain on which the original description was based' (Rule 18c), and may therefore also serve as the type strain of the species.

Two names for the class to which order *Halobacteriales* belongs have recently appeared in the Notification and Validation Lists in IJSEM: *Halomebacteria* class. nov. [Notification List, *Int J Syst Evol Microbiol* **52** (2002), 294; T. Cavalier-Smith (2002) *Int J Syst Evol Microbiol* **52** (2002), 7–76] and *Halobacteria* class. nov. [Validation List no. 85, *Int J Syst Evol Microbiol* **52** (2002), 685; W. D. Grant, M. Kamekura, T. J. McGenity & A. Ventosa (2001), *Bergey's Manual of Systematic Bacteriology*, 2nd edn, vol. 1, p. 294]. The name *Halomebacteria* has priority over *Halobacteria*. The order *Halobacteriales* is the type order of the class.

Minute 15. Species *incertae sedis*. *Haloferax lucentensis* (or '*Haloferax alicantei*'), listed previously as a species *incertae sedis*, has now been effectively published as a new species (see Minute 14). No new information is available on the other species *incertae sedis* mentioned during the previous meeting of the subcommittee [*Int J Syst Evol Microbiol* **52** (2002), 289–290, Minute 4].

Minute 16. Taxonomic rearrangements within the genera *Haloterrigena* and *Natrinema*. R. H. Vreeland reported that he has now obtained all strains relevant for a comparative study intended to sort out the existing taxonomic problems in this group. Dr Vreeland will coordinate this study. B. J. Tindall commented on the need for a reliable preservation method for the strains to be studied, and recommended storage in glass capillaries in liquid nitrogen.

Minute 17. Taxonomic rearrangements within the genus *Natrialba*. M. Kamekura presented his proposal to create the new genus *Natrintrum* to include the alkaliphilic species *Natrialba magadii*, *Natrialba hulunbeirensis*, *Natrialba chachannaoensis* and species *incertae sedis* '*Natrialba wudunaoensis*', '*Natrialba innermongoliae*'. These strains differ from the neutrophilic species *Natrialba asiatica*, *Natrialba aegyptiaca* and *Natrialba taiwanensis* not only on account of their 16S rDNA sequence, but also by their alkaliphilic behaviour and their lack of significant amounts of glycolipids. The proposed new genus is phylogenetically very close to the genus *Natronorubrum* on the basis of 16S rDNA sequence comparisons. The subcommittee discussed the problem at length, and two problems seemed to be critical to the delineation of a new taxon. Firstly it was not possible to unambiguously resolve the branching order of the group in question. B. J. Tindall reported that this problem is occurring more frequently, making it problematic to rely on the 16S rDNA sequence data alone. He also commented that editors and reviewers are not always aware of this problem, and despite adequate scientific evidence illustrating the problem reviewers and/or editors are sometimes requiring 'stable' tree topologies, where they could not be obtained. Secondly, if the 16S rDNA sequence data cannot unambiguously resolve the taxonomy of the group in question, other parameters need to be sought which would help. In the case of the taxa in question, extensive comparative data are still missing, making it difficult to delineate a new taxon within the group at the present stage.

Minute 18. Mislabelled strains in culture collections. The online catalogue of the NCIMB still lists the entries *Halobacterium simoncinii*, *Halobacterium volcanii* subsp. *lipolyticum* and *Halobacterium salinarum* subsp. *lipolyticum*. Following the earlier statement by the curator of NCIMB that 'Curators and not ICSB subcommittee members decide what information is contained in their respective catalogues', W. D. Grant has approached the curator of NCIMB with a renewed request to correct the relevant catalogue entries. The reply obtained from Peter Green states that the matter is still under consideration, and that catalogues will soon be updated. However, he also is of the opinion that the old names should still be listed, while making it clear that they are not valid. B. J. Tindall commented that there is sometimes a need to retain older taxonomic designations, particularly if an organism has been referred to extensively in the past. In other cases strains have been deposited in the collection under a new name, and that name has also appeared in print, although it was never validly published.

Minute 19. Adjournment. The meeting was adjourned at 16:30 on 30 July 2002.

A. Oren, *Secretary*
A. Ventosa, *Chairman*