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Minutes

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Hans G. Trüper, *Chairman, Judicial Commission*
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Judicial Commission of the International Committee on Systematics of Prokaryotes

Xth International (IUMS) Congress of Bacteriology and Applied Microbiology

Minutes of the meetings, 28, 29 and 31 July and 1 August 2002, Paris, France

Session 1

Minute 1. Call to order. Chairman H. G. Trüper called the meeting of the Judicial Commission to order at 09:10 on 28 July 2002 in the Palais des Congrès, Paris.

Minute 2. Record of attendance. Present were P. De Vos [Editorial Secretary, International Committee for Systematics of Prokaryotes (ICSP)], J. P. Euzéby, T. Ezaki, M. Goodfellow (Secretary for Subcommittees, ICSP), G. M. Garrity, P. A. D. Grimont, D. P. Labeda (Vice-Chairman, ICSP, deputy for E. Stackebrandt), G. S. Saddler (Executive Secretary-Treasurer, ICSP), E. Stackebrandt [Chairman, ICSP, and Editor of *International Journal of Systematic and Evolutionary Microbiology* (IJSEM)], J. T. Staley (Vice-Chairman, Judicial Commission), B. J. Tindall, H. G. Trüper (Chairman, Judicial Commission) and N. Weiss. Apologies for absence were received from R. R. Colwell, H. Prauser and J. M. Young. No alternates had been proposed for absent members. As guest was present: J. Chun.

Minute 3. Minutes of the 1999 meeting. From three Commissioners who had not been able to attend the 1999 meeting in Sydney (D. Jones, N. Weiss and G. Zavarzin), the Chairman has received affirmative votes on all decisions on emendations of the Bacteriological Code and on all Opinions decided and minuted during the Sydney sessions of the Judicial Commission.

The minutes of the 1999 meeting, held in Sydney, Australia, as published [*Int J Syst Evol Microbiol* **50** (2000), 2239–2244], were corrected as follows:

Minute 7 (p. 2241, item 14, Note 2): 'formerly subjective synonyms' must read 'formerly objective synonyms',

Minute 7 (p. 2241, item 14, Note 3): 'of' must read 'or',

Minute 16 (p. 2243, item 1, last sentence) must read '71' instead of '70',

Minute 16 (p. 2243, item 2, last sentence) must read '72' instead of '71',

Minute 16 (p. 2243, item 3, last sentence) must read '73' instead of '72',

Minute 16 (p. 2243, item 5, last sentence) must read '74' instead of '73'.

Minute 4. Adoption of agenda. The agenda was adopted as circulated. It was dealt with in a sequence compatible with the agenda sequence of the ICSP sessions during the Congress.

Minute 5. Matters arising from the minutes of the 1999 meeting. The Rules Revision Committee (H. G. Trüper, M. Goodfellow and B. J. Tindall) has formulated the proposals of the Judicial Commission accepted in 1999 by the International Committee on Systematic Bacteriology (ICSB, now the ICSP) and included them as formal emendations of the Code.

B. J. Tindall presented the draft of the newly revised Code that will be sent out to all Commissioners in the near future. The Commission expressed the strong desire to have the new edition of the Code available in written form as well as on the Internet as soon as possible. The appropriate change of wording in the Statutes of the ICSP (Bacteriological Code, 1990 edition, pp. 139–158) and its approval are pending. The complete revision of Appendix 9 by H. G. Trüper was delayed due to an unforeseen severe illness. Its draft will be presented in writing or by email to the Judicial Commission before the next IUMS Congress. The current editors of the Code are B. J. Tindall, J. P. Euzéby and H. G. Trüper.

Minute 6. Appointment of a nominating committee. A nominating committee consisting of P. De Vos, D. Labeda, E. Stackebrandt and H. G. Trüper was unanimously appointed by the Judicial Commission (and the ICSP Executive Board) to search for replacements for the members of the 19th Class of Commissioners who will have completed their terms at the end of the Paris meeting as well as for replacements within the ICSP Executive Board. The nominating committee shall present its list of proposals to the ICSP for a vote.

Minute 7. Opinions awarded since the Sydney meeting. The Judicial Commission consisted of 16 voting members (M. Goodfellow, at the same time elected Commissioner and ex-officio member of the Judicial

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Commission, had but one vote because no deputy had been proposed). A vote by letter ballot has been carried out by the Chairman and was completed in Paris on the following six Requests for an Opinion.

(1) Rejection of the species *Methanothrix soehngenii* and the genus *Methanothrix* as *nomina confusa*, and transfer of *Methanothrix thermophila* to the genus *Methanosaeta* as *Methanosaeta thermophila* comb. nov. [Boone & Kamagata, *Int J Syst Bacteriol* **48** (1998), 1079–1080]. The Judicial Commission voted with 14 votes in favour of this request, one against and one abstention. However, this vote failed to take into consideration that the wording of Rule 31a had been changed in such a way that this rule no longer makes references to mixed cultures. In addition, many authors have used data from the type strain of *Methanothrix soehngenii* (which is deposited in the DSMZ) in such a way as to imply that the presence of more than one species in the culture did not adversely affect the data collected. Both facts call into question the interpretation used by Patel [*Int J Syst Bacteriol* **42** (1992), 324–326] and Boone & Kamagata [*Int J Syst Bacteriol* **48** (1998), 1079–1080]. In light of these facts further consideration is required by the Judicial Commission before an Opinion can be issued. The conclusions will be formulated as Opinion 75 and reported on in due course.

(2) Replacement of ATCC 21273, the current type strain of *Streptomyces rameus* Shibata 1959, with IFO 3782 (=NBRC 3782=ATCC 700861=JCM 11574) [Hatano, *Int J Syst Bacteriol* **49** (1999), 931–932). The request was accepted unanimously by the Judicial Commission. The conclusions will be formulated as Opinion 76.

(3) What is the type species of the genus *Paenibacillus*? [Tindall, *Int J Syst Evol Microbiol* **50** (2000), 939–940]. The Judicial Commission unanimously accepted the request and supported the proposal that *Paenibacillus polymyxa* is the type of the genus. The conclusions will be formulated as Opinion 77.

(4) Rejection of the genus name *Pelczaria* with the species *Pelczaria aurantia* [Tindall *et al.*, *Int J Syst Evol Microbiol* **50** (2000), 1695–1696]. The request was unanimously accepted by the Judicial Commission. The conclusions will be formulated as Opinion 78.

(5) Recommended conservation of the names *Streptococcus sanguis*, *S. rattus*, *S. cricetus*, and seven other names included in the Approved Lists [Kilian, *Int J Syst Evol Microbiol* **51** (2001), 723–724]. The Judicial Commission denied this request with two votes for, 13 votes against and one abstention. Consequently no Opinion will be issued upon this request.

(6) Nomenclatural types of orders: corrections necessary according to Rules 15, 21a of the Bacteriological Code (1990 revision), and designation of appropriate nomenclatural types of classes and subclasses [Euzéby & Tindall, *Int J Syst Evol Microbiol* **51** (2001), 725–727]. This request was accepted by the Judicial Commission with 15 votes in favour and one abstention. The conclusions will be formulated as Opinion 79.

Minute 8. Pending Requests for an Opinion. In addition to three Requests for an Opinion related to the genus *Salmonella*, to be dealt with at this meeting, the following Requests for an Opinion had been received:

(1) Nomenclature of the subgenera *Moraxella* and *Branhamella* and of the nine species included in these subgenera and proposal to modify Rule 34a of the Bacteriological Code (1990 revision) [Euzéby, *Int J Syst Evol Microbiol* **51** (2001), 1939–1941].

(2) The status of the species *Lactobacillus casei* (Orla-Jensen 1916) Hansen and Lessel 1971 and *Lactobacillus paracasei* Collins *et al.* 1989 [Dellagio *et al.*, *Int J Syst Evol Microbiol* **52** (2002), 285–287].

These Requests remain pending because the period between their publication in the IJSEM and the meeting of the Judicial Commission in Paris was not long enough according to the statutes of the ICSP. The Chairman of the Judicial Commission will organize a vote by email at the appropriate time (at least 12 months after publication of the respective Request for an Opinion).

Minute 9. Action on proposals to emend the Bacteriological Code. Several letters from J. P. Euzéby, B. J. Tindall, H.-J. Busse via G. S. Saddler and H. G. Trüper that have been received by the Chairman and distributed to the members of the Judicial Commission were discussed thoroughly and led to the following proposals for emending the International Code of Nomenclature of Prokaryotes (ICNP, in the following called 'the Code'):

(1) Principle 6. J. P. Euzéby proposed to reword Principle 6 of the Code (version 1990) as follows: 'The correct name of a taxon is based upon legitimacy, and notably on valid publication and priority of publication. Only correct names should be used'. The Judicial Commission decided to postpone the discussion to the next IUMS congress (to be held in 2005 in San Francisco, USA).

(2) Recommendation 6 of the Code. J. P. Euzéby proposed altering the current wording, 'Avoid names or epithets that are very long or difficult to pronounce', by deleting 'or difficult to pronounce'. As pronunciation difficulties depend strongly on the native language of the speaker, the Judicial Commission decided not to change the present wording, but to add some examples of names that should be avoided. In general, however, the Judicial Commission supports the principle that names must be in correct Neo-Latin to be accepted.

(3) Rule 37a (1) of the Code. J. P. Euzéby proposed to change the wording as follows: 'If an author agrees with the exclusion of the nomenclatural type of a taxon then he

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must change the name of the taxon.' He also proposed to add the following recommendation: 'In the case of a genus or in the case of a species, the status of all species or the status of all subspecies should be established before an author proposes to exclude the type.' These proposals did not find a majority in the Judicial Commission. However, it was concluded that the current wording would be best clarified by adding a note to explain this rule and perhaps by formulating a Taxonomic Note to illustrate the way in which this rule functions. In addition, examples of taxa that have not been transferred to other taxa when the nomenclatural type has been transferred to another taxon could be given.

(4) Rule 65 of the Code. J. P. Euzéby proposed that, when forming new genus names from two word components where the first component is a noun, the genus name should have the gender of that noun. This proposal did not find a majority in the Judicial Commission. The Judicial Commission also stressed the ruling that, when generic and subgeneric names are formed from personal names, they have always to be in the feminine gender, no matter whether the person honoured is male or female.

Minute 10. Adjournment. The first session of the Judicial Commission was adjourned by the Chairman at 11 : 30 on 28 July 2002.

Session 2

Minute 11. Call to order. The Chairman called the meeting to order at 09 : 00 on 29 July 2002.

Minute 12. Record of attendance. Present were: P. De Vos (Editorial Secretary, ICSP), J. P. Euzéby, T. Ezaki, M. Goodfellow (Secretary for Subcommittees, ICSP), G. M. Garrity, P. A. D. Grimont, D. P. Labeda (Vice-Chairman, ICSP, deputy for E. Stackebrandt), G. S. Saddler (Executive Secretary-Treasurer, ICSP), E. Stackebrandt (Chairman, ICSP, and Editor of IJSEM), J. T. Staley (Vice-Chairman, Judicial Commission) (left after Minute 13), B. J. Tindall, H. G. Trüper (Chairman, Judicial Commission) and N. Weiss. For apologies, see Minute 2.

Minute 13. Actions on proposals to amend the Code. (1) J. P. Euzéby proposed that the concept of the Notification Lists in the IJSEM be regulated by the Code. This proposal did not find a majority in the Judicial Commission, because the Notification Lists were primarily developed as a supporting policy of the journal. It was recognized that orthographic mistakes rarely occur in names published in original papers in the IJSEM. In order to identify these few cases and to allow adequate time to consider these corrections, the Judicial Commission proposes that Notification Lists for one issue of the IJSEM be published in the next but one issue (i.e. 4 months later). Such corrections should be marked and explained in accompanying footnotes to the list. This policy has already been adopted. It was also agreed that the Code include formal reference to the concept of the Notification List, since it serves an important function in allowing the correction of names not otherwise possible.

(2) H. G. Trüper proposed to change Rule 52 (2) of the Code (1990 edition) retroactively to the following wording: 'A word which is an ordinal adjective higher than ten used for enumeration. Example: *undecimus*, *duodecimus* etc.'. The proposal was accepted unanimously. This means that epithets formed from ordinal numbers (*primus*, *secundus* etc. up to *decimus*) have standing in nomenclature.

(3) J. P. Euzéby reminded the Judicial Commission that the concept of *Candidatus* should be added to the Code as an Appendix as decided by the ICSB (now ICSP) in 1996 in Jerusalem. As Appendices of the Code have the function to explain specific areas of the Code, the Judicial Commission feels that this should also be mentioned in the main body of the Code, despite the fact that such names have no standing in nomenclature, and proposes that this is to be done in Rule 18a and/or 18f as a note indicating that 'The concept of *Candidatus* is defined in Minute 11 of the 1996 meetings of the ICSB (now ICSP) [*Int J Syst Bacteriol* **47** (1997), 597–600] as recommended by the ad hoc committee for the re-evaluation of the species definition in bacteriology [Stackebrandt *et al.*, *Int J Syst Evol Microbiol* **52** (2002), 1043–1047]'. An Appendix will include the regulations governing the category *Candidatus*.

(4) Higher taxa. The Judicial Commission understands the necessity for discussion on the taxonomy and nomenclature of higher taxa and proposes to establish an ad hoc committee to discuss the naming of higher taxa (above class). Before action can be taken, G. M. Garrity will send an outline to all members of the Judicial Commission of the way that *Bergey's Manual* has treated this subject. The Judicial Commission also confirms that the classification as proposed by Cavalier-Smith [*Int J Syst Evol Microbiol* **52** (2002), 7–76] is not in agreement with the Rules of the Code, e.g. using categories not covered by the Rules, priority and proposed types without standing [as pointed out in the footnotes to the Notification List, *Int J Syst Evol Microbiol* **52** (2002), 293–295].

(5) J. P. Euzéby proposed that the new Rule 27 (2) should not be retroactive. The Judicial Commission agreed and decided to reword Rule 27 (2) in order to avoid unnecessary confusion by the unintentional creation of illegitimate names that do not conform with the current wording. This will be achieved by introducing a date indicating the limitations of the new wording with a statement that this is not retroactive. B. J. Tindall (Rules Revision Committee) will do this.

(6) A proposal by J. P. Euzéby to include in the Code a Rule that covers the problem of homophony was not supported, as the Judicial Commission feels that pronunciation of Neo-Latin names cannot be regulated internationally

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(some languages do not pronounce 'h' at all, others pronounce it as 'g', others miss 'p', 'l' or 'r' or even more consonants, etc.).

(7) Type strains. It was agreed in the Sydney meetings that subcultures of the type strain should be deposited in at least two different internationally recognized service culture collections in two different countries. The Judicial Commission confirmed this decision, although rare exceptions can be accepted in those cases where maintenance conditions for the culture are so exceptional (e.g. obligate barophiles or extremely virulent pathogens) that not more than one culture collection can be found that is able to maintain the strain. Editors of IJSEM will be instructed not to accept articles that do not conform with this ruling. This requirement is also in agreement with the conditions for the acceptance of taxa on the Validation Lists. At a meeting of the editorial board of the IJSEM it was decided to ask for 'confirmation of deposit' that also confirms the availability of strains from the culture collections, although details still need to be confirmed. A process of consultation with culture collections has been initiated.

(8) Orthographic matters. J. P. Euzéby proposed that rulings on the use of chemical names be included in the new text of Appendix 9, which is in preparation by H. G. Trüper. In addition, H. G. Trüper proposed that the recommendations governing the use of the connecting vowel should be overruled by usage in chemistry and physics, where e.g. thioether is used instead of thiether or radioactive instead of radiactive. He proposed the following additions to Appendix 9.

(i) As in inorganic chemistry the vowels -o and -i are used to indicate different oxidation levels of cations (e.g. ferro-, ferri-, cupro-, cupri-), they do not fall under the Greek/Latin ruling for connecting vowels when used in prokaryote names.

Examples: '*Ferrobacillus*' is an Fe^{2+} oxidizer, while *Ferrimonas* is an Fe^{3+} reducer.

(ii) In combined/composite names that include terms used in chemistry or physics, the connecting vowel shall not be dropped when the following component starts with a vowel and when this may cause ambiguity or uncertainty in meaning.

Examples: *Thioalkalivibrio* (not *Thialkalivibrio*), '*Radioergomonas*' (not '*Radiergomonas*') (hypothetical example).

The Judicial Commission unanimously agreed to this proposal and to the proposal of J. P. Euzéby and H. G. Trüper that the revised Appendix 9 should be elevated to the status of a Rule.

(9) Patent and safe deposit strains as type strains. B. J. Tindall reminded the Judicial Commission that this still presents problems. When strains deposited solely for patent purposes ('patent strains') are proposed as type strains for new taxa, access to these strains may be difficult, particularly when deposits are made under the Budapest Treaty. This problem may be overruled by the new requirement of 'confirmation of deposit' needed from two internationally recognized service culture collections [see Minute 13 (7) above]. Situations still exist where a taxon is only represented by a patent strain or a safe deposit. It was agreed that strains solely deposited for patent purposes or a safe deposit should not serve as type strains and that this be formulated in a ruling that would be retroactive. Commissioners G. M. Garrity, D. P. Labeda and B. J. Tindall agreed to prepare a discussion paper on this problem, which will be published in the IJSEM for discussion at the next meeting of the Judicial Commission in 2005.

Minute 14. Pending Request(s) for an Opinion: the nomenclatural situation in *Salmonella*. J. P. Euzéby drew the attention of the Judicial Commission to the fact that the current nomenclature of the genus *Salmonella* still presented a problem on which the Judicial Commission had not appeared to act despite the Request for an Opinion by Le Minor & Popoff [*Int J Syst Bacteriol* **37** (1987), 465–468]. Although a brief report had appeared in the minutes of the Judicial Commission in 1991 and a further report published in 1994 [*Int J Syst Bacteriol* **41** (1991), 185–187; *Int J Syst Bacteriol* **44** (1994), 177–178], this did not fully reflect the deliberations of the Commissioners who dealt with the original request. The current Requests for an Opinion from Euzéby [*Int J Syst Bacteriol* **49** (1999), 927–930], Ezaki *et al.* [*Int J Syst Evol Microbiol* **50** (2000), 941–944; *Int J Syst Evol Microbiol* **50** (2000), 945–947] and Yabuuchi & Ezaki [*Int J Syst Evol Microbiol* **50** (2000), 1693–1694] have, however, allowed the Judicial Commission to reconsider the problem. H. G. Trüper read some of the letters exchanged between the Commissioners who dealt with the original request of Le Minor & Popoff [*Int J Syst Bacteriol* **37** (1987), 465–468], which highlighted the difficulties that they faced in dealing with nomenclatural changes relevant to important human and animal pathogens. These problems were further compounded by the way in which the original request had been worded. In particular, Le Minor & Popoff [*Int J Syst Bacteriol* **37** (1987), 465–468] had requested that the Judicial Commission rule that only a single species of *Salmonella* be used and that the name *Salmonella enterica* be conserved. In the case of a ruling on the acceptance of a single species, the Judicial Commission only rules on matters of nomenclature, not on matters of taxonomy, and the request to conserve one name automatically implies that it must be conserved over another name, although this was not done. Such incorrectly formulated 'Requests for an Opinion' are, therefore, not only problematic for the Judicial Commission, but also destined to be rejected because the consequences of the proposals for both nomenclature and taxonomy have not been properly evaluated. In addition, the radical changes in nomenclature proposed by Le Minor and Popoff would have had a dramatic effect on

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the way that the names of important human and animal pathogens would be reported, and the success of the system proposed by these authors could not be anticipated. G. M. Garrity presented data based on literature searches that clearly indicated that the nomenclature of Le Minor and Popoff had been widely accepted. Despite the fact that the nomenclature of Le Minor and Popoff had been accepted at the level of the WHO and was in use in many EU countries as well as in the USA, other countries were still using the nomenclature based on the currently validly published species names. In view of the Requests for an Opinion, the Judicial Commission agreed that a solution should be sought. There was general agreement that the microbiological community was best served by conforming to the nomenclature laid down by Le Minor & Popoff [*Int J Syst Bacteriol* **37** (1987), 465–468]. This was best achieved by rejecting *Salmonella choleraesuis* as the type species of the genus *Salmonella* and ruling that *Salmonella enterica* be the type species of the genus and that the type strain of this species be strain LT2, as proposed by Le Minor & Popoff [*Int J Syst Bacteriol* **37** (1987), 465–468]. Both proposals were accepted, with 11 votes in favour and one against. During the course of discussions, it was felt that the Requests for an Opinion submitted by Ezaki *et al.* [*Int J Syst Evol Microbiol* **50** (2000), 941–944; *Int J Syst Evol Microbiol* **50** (2000), 945–947] had made requests that were inappropriate. The nomenclatural standing of the names *Salmonella typhi* (Approved Lists 1980), *Salmonella enteritidis* (Approved Lists 1980) and *Salmonella typhimurium* (Approved Lists 1980) has never been called into question, while the request to conserve certain epithets has ignored the fact that one name can only be conserved over an alternative name. In both cases, the Judicial Commission cannot agree with the proposals formulated in the requests.

Minute 15. Adjournment. Session 2 was adjourned by the Chairman at 11 : 55 on 29 July 2002.

Session 3

Minute 16. Call to order. Session 3 of the Judicial Commission was called to order at 09 : 15 on 31 July 2002.

Minute 17. Record of attendance. Present were J. P. Euzéby, P. De Vos (Editorial Secretary, ICSP), T. Ezaki, G. M. Garrity, P. A. D. Grimont, D. P. Labeda (Vice-Chairman, ICSP), G. S. Saddler (Executive Secretary-Treasurer, ICSP), E. Stackebrandt (Editor, IJSEM), B. J. Tindall, H. G. Trüper (Chairman) and N. Weiss. As guests attended: A. Oren (Chairman Elect, ICSP, to take office after the Paris Congress), V. Bondarenko and E. Gavrish. For apologies see Minute 2. Absent were: M. Goodfellow (Secretary for Subcommittees, ICSP) and J. T. Staley.

Minute 18. Pending Request(s) for an Opinion: *Salmonella*. At the request of J. P. Euzéby, the question of the topic of the type species of the genus *Salmonella* was discussed further. Although there was a clear opinion that the nomenclature and taxonomy proposed by Le Minor & Popoff [*Int J Syst Bacteriol* **37** (1987), 465–468] and Reeves *et al.* [*J Clin Microbiol* **27** (1989), 313–320] should be followed, the best way of solving the problem was not obvious. Although the Judicial Commission had formally 'rejected' *S. choleraesuis* as the type species of the genus, it was unclear whether this should also entail the rejection of this name. At the same time, there was some uncertainty about whether the type strain of *S. enterica* should be strain LT2 or the existing type strain of *S. choleraesuis*.

J. P. Euzéby expressed the opinion that the problem is best solved by rejecting the name *S. choleraesuis*, which also then allows the designated type strain of this species (ATCC 13312 = CIP 55.133 = NCTC 5735 = DSM 14846 = JCM 1651) to serve as the type of the species *S. enterica*. This should also have the effect of transferring all subspecies within *S. choleraesuis* to the species *S. enterica*.

P. A. D. Grimont indicated that the type strain of *S. choleraesuis* should not be used as the type of *S. enterica*. The type of *S. enterica* as proposed by Le Minor & Popoff [*Int J Syst Bacteriol* **37** (1987), 465–468] is strain LT2, and the Judicial Commission had already voted to accept this as the type strain of *S. enterica* in an earlier session.

B. J. Tindall raised the point, supported by E. Stackebrandt, that it is not necessary to reject the species name *S. choleraesuis*, but one can designate *S. enterica* as the type species, with strain LT2 as the type strain. Such a proposal would not affect the nomenclatural status of *S. choleraesuis* and its subspecies. However, taxonomic evidence exists [Le Minor & Popoff, *Int J Syst Bacteriol* **37** (1987), 465–468; Le Minor *et al.*, *Ann Microbiol Paris* **133B** (1982), 245–254] to show that the majority of named species should be described as a single species, and that *S. enterica* and *S. choleraesuis* should be considered heterotypic synonyms. If this taxonomic interpretation is used, this also has the effect of automatically creating the same subspecies (with the exception of *S. choleraesuis* subsp. *choleraesuis*) under the species *S. enterica*. This would also mean that *Salmonella enteritidis*, *Salmonella typhi*, *Salmonella typhimurium* and *Salmonella paratyphi* may be regarded as serovars within the subspecies *S. enterica* subsp. *enterica*, which seems to conform to current taxonomic opinion. There was general agreement that the best course of action was to make changes that would allow the old nomenclatural system to be integrated into the interpretation of Le Minor and Popoff, without using drastic solutions such as the rejection of a name. If this system prevails then names such as *S. choleraesuis* will eventually disappear from the literature.

The Judicial Commission felt that additional information would be desirable before a final decision could be reached. In particular, the Judicial Commission wishes to clarify

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whether it is necessary to conserve the name *S. enterica* over *S. choleraesuis*, together with the consequences of designating different type strains, as well as addressing the question of whether the name *S. choleraesuis* should be rejected. It is essential that the actions of the Judicial Commission take into consideration the impact of nomenclatural changes on the international medical microbiological community. The information should be provided by P. A. D. Grimont (a list of the different type strains and their relationship to serovars), by G. M. Garrity (referring to the situation in *Bergey's Manual on Systematic Bacteriology*, 2nd edition, for which L. Le Minor and M. Y. Popoff have written the chapter on *Salmonella*), by B. J. Tindall (possible interpretations and consequences according to the Code and the possibilities for the Judicial Commission) and by J. P. Euzéby (a list of different validly published names and type strains).

The Judicial Commission agreed that the Chairman H. G. Trüper should then coordinate a ballot vote by the present members of the Judicial Commission via email after the information requested has been received by them. The result should be obtained before the end of September 2002.

It was agreed that the Judicial Commission had already voted to make *S. enterica* the type species of the genus *Salmonella*, instead of *S. choleraesuis*. The result of the postal (email) ballot was the acceptance of strain LT2 as type strain of *S. enterica* (12 votes for, one against and one abstention). Furthermore, the epithet *enterica* in the name *Salmonella enterica* should be conserved over all earlier epithets that may be used for this species, in order to avoid any confusion and to provide unambiguous nomenclatural stability for the future. The Commissioners also agreed that the name *S. choleraesuis* should not be rejected (12 votes for, one against and one abstention). In accepting these changes, the Judicial Commission has created a mechanism by which the nomenclature of Le Minor & Popoff [*Int J Syst Bacteriol* **37** (1987), 465–468], which is in wide usage, can be applied using validly published names, while those using the older nomenclature will be provided with a way of linking these two systems. These nomenclatural changes will be published in Opinion 80. This Opinion will deal with the requests and counter-arguments published by Euzéby [*Int J Syst Bacteriol* **49** (1999), 927–930], Ezaki *et al.* [*Int J Syst Evol Microbiol* **50** (2000), 941–944; *Int J Syst Evol Microbiol* **50** (2000), 945–947] and Yabuuchi & Ezaki [*Int J Syst Evol Microbiol* **50** (2000), 1693–1694]. These changes have direct consequences for the nomenclature of the genus *Salmonella*, as well as for its taxonomy. However, the Judicial Commission only deals with matters of nomenclature and cannot deal directly with the taxonomic consequences of these changes. The Judicial Commission therefore supported the idea that a commentary on the taxonomic consequences should be written, to be published in parallel to Opinion 80.

Minute 19. Other matters relating to the Code. (1) Cyanobacteria under the Code. B. J. Tindall reported on the present situation. Cyanobacteria have traditionally been covered by the Botanical Code as 'blue-green algae' or Cyanophyceae. The members of this taxonomic group are generally accepted as prokaryotes, although they currently do not properly fall under the jurisdiction of the Bacteriological Code. In the past there were a number of attempts to make progress towards including their nomenclature under the Bacteriological Code. The Botanical Code explicitly recognizes algal taxa (i.e. including cyanobacteria), which are described under a different Code if that Code formally recognizes them. Other changes to the Botanical Code include the use of viable, but not actively metabolizing material as type material. Both these moves are encouraging, but the major differences between the two Codes remains the fact that the Bacteriological Code's concept of valid publication of a name also incorporates a formal act of registration or indexing of the name in the IJSEM. In the absence of such mechanisms under the Botanical Code, this will potentially lead to a number of problems. These include the fact that none of the genus or species names of cyanobacteria were included on the Approved Lists. Consequently, none of these names are currently validly published under the Bacteriological Code. This causes problems if names recognized under the Botanical Code are subsequently validly published under the Bacteriological Code. This may lead to the same name having different dates of publication as well as different authors. In the case of the genus *Prochloron*, the author under the Botanical Code is Lewin 1977, while under the Bacteriological Code the authors are Florenzano *et al.* 1986, despite the fact that they have the same type. Technically, such names are homonyms, which are illegitimate under the Bacteriological Code [General Considerations, Rule 51b (4)]. Clearly, the Botanical Code has made some significant changes in the way it works that indicate that further progress may be made in harmonizing the nomenclature of cyanobacteria based on a reciprocal agreement between the two Codes. In order to further this goal, the Judicial Commission supports the following actions: (i) representatives from the Botanical Code (Subcommittee for Algae of the International Association for Plant Taxonomy) and representatives from the Bacteriological Code (members of the ICSP Subcommittee on Phototrophic Prokaryotes and B. J. Tindall) should seek mechanisms by which cyanobacterial taxonomy and nomenclature can be harmonized in the future; (ii) in particular, it is desirable that descriptions and nomenclatural proposals made under one Code be accepted under the other Code; (iii) 'Approved Lists – Names in Current Usage' of Cyanobacteria/Cyanophyceae are needed and should be compiled.

(2) Inter-regnal homonyms. The Judicial Commission strongly recommends that lists of homonyms between names under the Bacteriological Code on the one hand and names under the Botanical (ICNB) or Zoological (ICZN)

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Codes on the other should be made and published. B. J. Tindall agreed to follow this up.

Instructions to authors for publication in IJSEM should include Internet addresses to allow the submitting author to make a complete search for existing names under the Botanical/Zoological Codes. The list of links provided by Jean Euzéby at http://www.bacterio.cict.fr/ is a good source.

(3) New version of the Bacteriological Code (ICNP). It was suggested that IUMS be contacted to obtain approval for printing (electronic and hard copy) of the new version of the Bacteriological Code. This has since been done by B. J. Tindall; an official response is still pending.

(4) Specific questions relating to single taxa: items 12–17 of the letter of J. P. Euzéby and letter of H.-J. Busse.

(4a) In the Approved Lists, *Aeromonas punctata*, *Aeromonas punctata* subsp. *caviae* and *Aeromonas caviae* have the same type strain. This topic has been discussed on several occasions by the ICSP Subcommittee on the taxonomy of the family *Vibrionaceae*, but no formal action has been taken. The Judicial Commission will contact the chairman of the Subcommittee in order to formulate a Request for an Opinion to solve this problem.

(4b) The Judicial Commission agreed unanimously that the publication of Manaia *et al.* [*Syst Appl Microbiol* **17** (1994), 526–532] is the effective publication for the revival of the name *Thermus thermophilus* and considers Validation List no. 54 [*Int J Syst Bacteriol* **45** (1995), 619–620] as the valid publication. The publication by Williams *et al.* [*Int J Syst Bacteriol* **45** (1995), 495–499] only raises this point and can only be considered to be an 'incidental mention' [Rule 28b (3)].

(4c) *Staphylococcus cohnii* subsp. *urealyticus* does not have priority over *Staphylococcus capitis* subsp. *urealyticus* and is therefore illegitimate according to Rules 12b and 13c of the Code. The Subcommittee involved will be asked by the Judicial Commission to write a Taxonomic Note to change the name of the taxon currently known as *Staphylococcus capitis* subsp. *urealyticus*, in order that this subspecies has a legitimate name.

(4d) *Micromonas* Murdoch and Shah 2000 and *Micromonas micros* are illegitimate because of precedence of the fungal genus *Micromonas*. The Judicial Commission will contact the authors in order to have the bacterial name changed. This has been done, but no reply has yet been received.

(4e) The Judicial Commission decided that an erratum should be published in IJSEM to effect valid publication of the name *Geodermatophilaceae* with *Geodermatophilus* as type genus of the family.

(4f) The status of the names *Edwardsiella anguillimortifera* and *Edwardsiella tarda*. These two names share the same types and are homotypic synonyms. Both names appear on the Approved Lists, with *Edwardsiella tarda* being the type of the genus *Edwardsiella*. Although the epithet *anguillimortifera* in *Edwardsiella anguillimortifera* is older than the epithet *tarda* in *Edwardsiella tarda*, a Request for an Opinion that sought to conserve the epithet *tarda* over the epithet *anguillimortifera* was, apparently, formally withdrawn [Farmer *et al.*, *Int J Syst Bacteriol* **26** (1976), 293–294; Holt, *Int J Syst Bacteriol* **29** (1979), 267–269]. The two names remain homotypic synonyms.

(4g) The Judicial Commission did not regard the examples given by J. P. Euzéby as *nomina perplexa* (*Hahella* versus *Hallella*; *Moorella* versus *Moellerella*; *Nitrospira* versus *Nitrospina*; *Propionispora* versus *Propionispira*) as problematic and decided that no action was needed.

Minute 20. Adjournment. Session 3 was adjourned by the Chairman at 10 : 55 on 31 July 2002.

Session 4

Minute 21. Call to order. Session 4 of the Judicial Commission was called to order by the Chairman at 09 : 05 on 1 August 2002.

Minute 22. Record of attendance. Present were J. P. Euzéby, P. De Vos (Editorial Secretary, ICSP), T. Ezaki, G. M. Garrity (until 09 : 10), P. A. D. Grimont, D. P. Labeda (Vice-Chairman, ICSP), G. S. Saddler (Executive Secretary-Treasurer, ICSP), E. Stackebrandt (Editor, IJSEM), B. J. Tindall, H. G. Trüper (Chairman) and N. Weiss. As guests attended: A. Oren (Chairman Elect, ICSP) and J. Chun (Secretary for Subcommittees Elect, ICSP). Absent were: M. Goodfellow (Secretary for Subcommittees, ICSP) and J. T. Staley. See Minute 2 for apologies.

Minute 23. Other matters relating to the Code: specific questions relating to single taxa (see also Minute 19). (1) The taxonomic status of *Kitasatospora*. Some confusion has arisen as to whether the genus name *Kitasatospora* is illegitimate because no formal proposal was made for the transfer of *Streptomyces setae* to *Kitasatospora setae* by Zhang *et al.* [*Int J Syst Bacteriol* **47** (1997), 1048–1054]. Commissioners D. P. Labeda and B. J. Tindall were asked to check the details of the publication and to report back to the Judicial Commission on whether action was needed.

It is evident that, on transferring members of the genus *Kitasatosporia* (*sic*) to the genus *Streptomyces*, Wellington *et al.* [*Int J Syst Bacteriol* **42** (1992), 156–160] were required, under the Rules of the Code, to propose new combinations in the genus *Streptomyces*. In re-examining the taxonomic status of these two genera, Zhang *et al.* [*Int J Syst Bacteriol* **47** (1997), 1048–1054] came to the conclusion that there was justification for recognizing two genera. In addition, these authors also came to the conclusion that the genus name *Kitasatosporia* should be corrected to *Kitasatospora*.

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This also has the effect of automatically changing the spelling of all species names validly published under *Kitasatosporia* (*sic*). All species names previously published in the genus *Kitasatospora* (corrig.) were validly published, and the transfer of those species to the genus *Streptomyces* as *Streptomyces* species by Wellington *et al.* [*Int J Syst Bacteriol* **42** (1992), 156–160] only creates homotypic synonyms, but does not affect the fact that the names (in the genus *Kitasatospora*) are validly published. Thus, in considering the correct names of the species to be *Kitasatospora setae* and *Kitasatospora griseola*, Zhang *et al.* [*Int J Syst Bacteriol* **47** (1997), 1048–1054] are not formally required to make any nomenclatural changes, since they are creating neither new species names nor new combinations. The authors also do not change the type species of the genus. In considering that these species are members of the genus *Kitasatospora*, the authors may also formally emend the description of the genus as well as formally propose three new combinations. As long as all names are validly published under the Rules of the Code, there are currently no mechanisms for formally recording changes in taxonomic opinion and the authors are at liberty to consider these species as members of the genus *Kitasatospora*. The only problem presented by the publication is the fact that tables in the publication are the only way of recognizing which species are to be included in this genus. In similar cases, it is recommended that a clear statement be included in the text listing all species considered by the authors to be members of the genus in order to avoid confusion. All names currently listed under the genus *Kitasatospora* are validly published in accordance with the Rules of the Bacteriological Code and their authors and dates of publication remain unchanged. No action is required by the Judicial Commission.

Minute 24. IJSEM matters. (1) The report by the Editor of IJSEM, E. Stackebrandt, was given in the meeting of ICSP [*Int J Syst Evol Microbiol* **55** (2005), 533–537].

(2) Guidelines for authors will be adapted as discussed and decided by the editorial board meeting of IJSEM and according to recommendations given by the Judicial Commission.

(3) Databases and other electronic information provided via the IJSEM fall under the responsibility of the editors involved.

(4) The Judicial Commission recommends that IJSEM should always be published in the printed version.

(5) A list of orthographic and typographic mistakes will be published in IJSEM. B. J. Tindall and N. Weiss have agreed to prepare these lists.

(6) The Judicial Commission recommends that errata be mentioned in the reference lists of new papers.

Minute 25. Taxonomic Subcommittees. The Secretary for Subcommittees of the ICSP, M. Goodfellow, gave a full report during the ICSP session [*Int J Syst Evol Microbiol* **55** (2005), 533–537]. At present, the Judicial Commission has no further suggestions for new Subcommittees to be started other than those accepted by the ICSP. The Judicial Commission welcomes, however, ad hoc meetings of Subcommittees whenever taxonomic or nomenclatural matters demand additional meetings.

Minute 26. New Commissioners. Announcement of new Commissioners appointed by the ICSP. The members of the 22nd Class of Commissioners have been elected by the ICSP. The new Judicial Commission shall take office after this meeting and, in addition to its ex officio members, consists of the 20th Class members, P. A. D. Grimont, H. G. Trüper (Chairman), N. Weiss and J. M. Young, the 21st Class members, J. P. Euzéby, T. Ezaki, G. M. Garrity and B. J. Tindall, and the newly elected 22nd Class members P. Kämpfer, N. A. Logan, F. A. Rainey and R. Rosselló-Mora. The Judicial Commission re-elected H. G. Trüper as Chairman and elected B. J. Tindall as Vice-Chairman.

Minute 27. Discharge of retiring 19th Class of Commissioners. The Commission thanks the 19th Class of Commissioners, R. R. Colwell, M. Goodfellow, H. Prauser and J. T. Staley, for their valuable service.

Minute 28. Other business. (1) The Editor of IJSEM (E. Stackebrandt) has received about 300 letters of protest concerning the rearrangement of the taxonomy of the *Rhizobium–Agrobacterium* group by J. M. Young *et al.* [*Int J Syst Evol Microbiol* **51** (2001), 89–103]. The Judicial Commission is of the opinion that the paper has been published according to the normal procedure of the journal and recommends that the protesting scientists collaborate to write a reply giving their view on an alternative taxonomy and submit it to IJSEM for publication. This has already appeared [*Int J Syst Evol Microbiol* **53** (2003), 1681–1687], together with a further reply by J. M. Young *et al.* [*Int J Syst Evol Microbiol* **53** (2003), 1689–1695].

(2) The Judicial Commission confirms that the proposal to give the genus name *Haemobartonella* the status of *Candidatus* is not possible because the genus name has been validly published.

Minute 29. Final adjournment. Session 4 was adjourned at 09 : 50 on 1 August 2002.

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