International Committee on Systematic Bacteriology Subcommittee on the Taxonomy of *Haemophilus*

Minutes of the Meeting, 3 and 4 September 1978

Munich, F.R.G.

Minute 1. Record of attendance. Members present were: K. Zinnemann (Chairman), E. Biberstein (Secretary), K. H. Hinz, M. Kilian, and J. Nicolet.

Minute 2. Meetings. The meeting on 3 September was designated as a closed meeting, and the one on 4 September, as an open meeting. Items discussed in the open meeting are presented in Minutes 9 and 10.

Minute 3. Minutes of the previous meeting. The minutes of the previous meeting (11 August 1970, Mexico City) were approved as published (Int. J. Syst. Bacteriol. 21:132-133, 1971) and circulated with the call for the present meeting.

Minute 4. Matters arising from minutes of previous meeting.

Minute 4.1. Temporary need for cofactors as taxonomic criterion. Hematin need of *Yersinia pestis* exists for one passage only. This should be investigated by porphyrin tests.

Minute 4.2. Sodium chloride requirements. *H. paragallinarum* requires 1 to 1.5% sodium chloride for optimal growth.

Minute 4.3. Comparison of *H. gallinarum* and *H. paragallinarum*. According to K. H. Hinz, large numbers of isolates from fowl coryza have been examined in the Federal Republic of Germany, the United Kingdom, and Japan. None has shown a hemin requirement. E. Biberstein reported on a recent coryza isolate still under study at the National Veterinary Institute in Stockholm. This isolate behaved in preliminary tests like a true *H. gallinarum* strain in giving a negative porphyrin test and failing to grow as satellite on a catalase-negative feeder bacterium.

Minute 4.4. Status of *H. pleuropneumoniae* and *H. vaginalis*. *H. pleuropneumoniae* has been described in detail and validly published. The status of *H. vaginalis* remains in dispute. Nothing further supporting its inclusion in the genus *Haemophilus* has been advanced, and it is listed in *Bergey's Manual* under *species incertae sedis*. *H. somnus*, not presently included in *Bergey's Manual*, also still occupies an ambiguous position: gram-negative, fermentative, nitrate reducing, and requiring CO₂ and nutritional supplementation of an undefined nature. With regard to the gas and nutritional needs, considerable strain variations exist.

Minute 4.5. *H. parasuis*, *H. paragallinarum*. Although *H. parasuis* and *H. paragallinarum* continue to be encountered in large numbers, the prevalence, characterization, and significance of their X and V factor-dependent analogs *H. suis* and *H. gallinarum* remain to be further established.

Minute 4.6. Establishment of type strains. The comments received from Margaret Pittman concerning type strains were noted and taken into consideration

when this matter was discussed (see Minute 7).

Minute 4.7. Intrasubspecific designations. This matter, which was postponed at the Mexico City Congress pending the completion of the ICSB code, was included in the current agenda (see Minute 9).

Minute 5. Changes in membership and officers. Mogens Kilian accepted the post of Secretary of the Subcommittee vacated by the resignation of E. Biberstein. The following were suggested as additional members of the Subcommittee: W. L. Albritton, Paula Branefors-Helander, Anders Gunnarsson, and Ragnhild Nielsen. They will be invited to join the Subcommittee by the Chairman.

Minute 6. New proposals of *Haemophilus* spp. subsequent to publication of *Bergey's Manual*, 8th edition. The species *H. segnis*, *H. pleuropneumoniae*, and *H. avium* have been described and validly published. The species *H. equigenitalis*, causative agent of contagious equine metritis, has been described and effectively (not validly) published. In view of the fact that this organism lacks several of the most critical traits of the genus *Haemophilus*, viz., a demonstrable and defined cofactor requirement and nitrate-reducing and fermenting activities, the Subcommittee unanimously recommended against the inclusion of this organism in the genus *Haemophilus*. These matters were again discussed at the public meeting on 4 September with L. R. Hill of the National Collection of Type Cultures, who is co-author of the paper proposing the name *H. equigenitalis*.

Minute 7. Approved Lists of Bacterial Names. There was discussion of proposed type and neotype strains for species of *Haemophilus* and a consideration of names to be placed on the *Approved Lists of Bacterial Names*.

Minute 8. Minimum standards for descriptions of new species of genus *Haemophilus*. A document had been prepared by M. Kilian containing a proposal for minimum standards. The approach taken aimed at the enumeration and definition of the observations to be made rather than the expected, let alone required, results of such observations. The document was discussed and returned, with numerous suggestions, to Kilian for revision into a final form.

Minute 9. Discussion of taxonomic criteria as presently used. Discussion was addressed particularly to the points raised in Pittman's letter with special reference to *H. aegyptius*. Her question was, "Is the classification to be for the taxonomist or for practical application? . . . It seems . . . that the Bergey classification is more practical than the Kilian classification . . ." Kilian's view was that his classification was not in conflict with the Bergey scheme. It was noted that the Kilian biotypes of *H. influenzae*, since their

publication, have been found highly correlated with clinical occurrence, including organ localization and pathogenicity. The habitat and other epidemiological and pathogenic characteristics were acknowledged by the committee to deserve consideration in the classification of microorganisms, but unless they could be identified with a definable structural, chemical, or physiological trait of the organism, their role in taxonomy had to remain an ancillary one. Kilian is to have a meeting with Pittman in the near future, at which any differences in viewpoint can, one hopes, be reconciled. The species *H. aegyptius* is being maintained pending the results of forthcoming investigations.

Minute 10. *Other business.* The following matters were mentioned as worthwhile areas of research or activity.

Minute 10.1. Compilation and circulation of a list of strains of *Haemophilus* and *Haemophilus*-like species presently in possession of, or known to, Subcommittee members. Two collections believed to exist are in the possession of the Burroughs-Wellcome Corporation, Beckenham, Kent, U.K., and Gösta Tunevall, Serafimerlasarettet, Stockholm, Sweden.

Minute 10.2. Characterization of presently unclassified cultures of *Haemophilus* and *Haemophilus*-like organisms.

Minute 10.3. Investigations of pathogenic mechanisms and traits related to parasitism, virulence, and pathogenicity.

Minute 10.4. Studies on nucleic acid homologies

among *Haemophilus* species and between *Haemophilus* species on the one hand and possibly related forms on the other.

Minute 10.5. Exploration of the question of criteria for inclusion of organisms in the genus *Haemophilus*, apart from requirements for V and X factors.

Minute 10.6. Development and comparison of rapid test methods for biochemical activities of *Haemophilus* spp., particularly those suitable for resting cells.

Minute 10.7. The Secretary was authorized to urge upon editors of pertinent publications enforcement of the correct spelling of *Haemophilus* or at least assurance of adequate cross-referencing to facilitate literature searches.

Minute 11. *Current membership.* Current membership of the Subcommittee is as follows: K. Zinnemann (Chairman), Leeds, U.K.; M. Kilian (Secretary), Aarhus, Denmark; W. L. Albritton, Winnepeg, Canada; E. L. Biberstein, Davis, Calif., U.S.A.; P. Branefors-Helander, Göteborg, Sweden; A. Gunnarsson, Stockholm, Sweden; K.-H. Hinz, Hannover, F.R.G.; J. Nicolet, Bern, Switzerland; R. Nielsen, Copenhagen, Denmark; M. Pittman, Washington, D.C., U.S.A.; G. C. Simmons, Brisbane, Queensland, Australia; G. Tunevall, Stockholm, Sweden.

Minute 12. *Adjournment.* The meeting was adjourned.

E. L. BIBERSTEIN, *Secretary*
K. ZINNEMAN, *Chairman*

International Committee on Systematic Bacteriology Subcommittee on the Taxonomy of *Leptospira*

Minutes of the Meeting, 3 to 6 September 1978

Munich, F.R.G.

Minute 1. *Call to order.* The closed session of the meeting was called to order by the Chairman, S. Faine, at 9:00 a.m. on 3 September. It was followed by an open session at 10:30 a.m. Further open sessions were held at 2:00 p.m. on 4 September, 9:00 a.m. on 5 September, and 9:00 a.m. on 6 September.

Minute 2. *Record of attendance.* Members present were: S. Faine (Chairman), M. Torten, R. C. Johnson, H. Dikken and E. Kmety. In addition to members of the Subcommittee, the following attended one or more of the open sessions: Kari Hovind-Hougen, M. Mailoux, W. Terpstra, H. Willinger, R. Tinniswood, A. Schonberg, W. Sojka, D. Kuhn, and J. van Ramshorst.

Minute 3. *Changes in membership and officers.* A letter was received from L. H. Turner indicating his

recent retirement and resignation from the Subcommittee. The Subcommittee records with deepest regret the death of C. Borg-Petersen, who was a past Chairman. As a mark of sympathy and respect the Subcommittee observed one minute of silence. R. Yanagawa, Marina Cinco, and N. D. Stallman were elected members and admitted to the meeting. N. D. Stallman was elected as Secretary. L. H. Turner, having retired from active work, was elected as adviser. B. Caccia-puoti, Joyce Coghlan, C. Everard, and K. Bogel were elected as observers. W. Terpstra, C. Manev, V. Kiktenko, H. Willinger, P. Bakoss, D. Myers, and F. Kemenes were elected as collaborators. D. J. W. Smith, who had served on the Subcommittee for 10 years and as an adviser for 10 years, announced his retirement.