International Committee on Nomenclature of Bacteria

Subcommittee on the Taxonomy of *Haemophilus*

Minutes of Meeting, 11 August, 1970

Mexico City, Mexico

Minute 1. Record of attendance. Members present were K. S. Zinnemann (Chairman) and G. Tunevall. Also present were G. C. Simmons and S. P. Lapage.

Minute 2. Open meeting. A closed meeting was not held, as only the chairman was present. The officers of the Subcommittee are to continue for another term. Lapage's offer to act as Secretary for the duration of the meeting was gratefully accepted.

Minute 3. Approval of minutes of previous meeting. The minutes of the previous meeting were approved as distributed.

Minute 4. Taxonomic position of organisms showing temporary cofactor need. *Yersinia pestis* shows a need for haematin. This organism is intermediate between *Pasteurella* and *Haemophilus*. Experimental work on the intermediate organisms is to be carried out at the Bacteriological Central Laboratory, Stockholm (see Minute 9). The Chairman is to ask the Chairman of the *Pasteurella* Subcommittee concerning *Y. pestis*.

Minute 5. Taxonomic importance of CO₂ need by *H. paraphrophilus*, *H. paraphrohaemolyticus*, and *H. aphrophilus*. There is need for a closer investigation into the physiology and the methods of testing for CO₂ need (in particular, reduction of O₂ content).

Minute 6. Relation of X-factor need to NaCl concentration. Zinnemann will carry out further experimental work on the problem of the relationship of X-factor need to NaCl concentration.

Minute 7. *Haemophilus gallinarum*. The comparison of *Haemophilus gallinarum* and *H. paragallinarum* requires further work.

Chick embryo egg-yolk-infected material is suitable for preservation by freezing at -70 C.

Minute 8. Status of *Haemophilus pleuropneumoniae* and *H. vaginalis*. *H. pleuropneumoniae* is considered to be a synonym of *H. parahaemolyticus*. *H. vaginalis* was not considered to belong to the genus *Haemophilus*.

The chairman is to consult the editors of *Bergey's Manual* regarding the position in which this organism was placed in the *Manual*. Similar cases are *H. agni* and *H. somnus*.

Minute 9. Proposals of *Haemophilus para-*

suis, *H. paragallinarum*, and *H. paraphrophilus*. The proposals of *Haemophilus parasuis* and *H. paragallinarum* as new species by Biberstein and White (J. Med. Microbiol. 2:75-78) and of *H. paraphrophilus* by Zinnemann, Rogers, Frazer, and Boyce (J. Pathol. Bacteriol.) 96:413-449 were noted.

Minute 10. Organisms at present not assignable to the genus *Haemophilus*. Margaret Pittmann's collection of organisms from rodents is now available at the Bacteriological Central Laboratory in Stockholm, Sweden. A collection of similar organisms exists in the Wellcome Collection in England. Further study of these organisms will be carried out in Sweden.

Minute 11. Establishment of type strains to be deposited in major culture collections and so made available for study. The Subcommittee had agreed to examine a set of strains collectively, but the study has not been completed.

(a) *H. aphrophilus*: Boyce, Frazer, and Zinnemann [J. Med. Microbiol. 2:55-62, (1969)] proposed NCTC 5906 as the type strain, chosen from among the strains studied by the original author, who did not nominate a type strain.

(b) *H. parahaemolyticus*: Pittman's strain 536 (= ATCC 10014 = NCTC 8479) had been proposed as the type strain. This strain had been supplied to the collections referred to above and listed and issued as *H. haemolyticus*. To avoid confusion, the Subcommittee recommended nomination of another strain for proposal as a neotype. Pittman should be asked to supply another of her strains for consideration as neotype.

(c) *H. haemolyticus*: Pittman's strain 734 is to be considered by members of the Subcommittee for proposal as a neotype.

(d) *H. putorii* and *H. influenzae-murium*: Strains of these species have not been found to be available after search. Workers are recommended to attempt reisolation of these organisms.

Minute 12. Request to conserve the specific epithets *ducreyi* and *suis*. The Subcommittee was asked by Professor Buchanan to prepare a request for an Opinion to conserve:

(1) The specific epithet *ducreyi* in *Hae-*

mophilus ducreyi (Neveu-Lemaire) Bergey et al. 1923 over the specific epithet *ulceris cancrosi* in *Bacillus ulceris cancrosi* Kruse 1896.

(2) The specific epithet *suis* in the name *Haemophilus suis* Hauduroy 1937 over the specific epithet *influenzae suis* in the name *H. influenzae suis* Shope 1931.

The Subcommittee recognized the wide use of the names *H. ducreyi* and *H. suis* and indicated its preference of the epithets in these names over *ulceris cancrosi* and *influenzae suis*, respectively.

Minute 13. Intrasubspecific designations. The Subcommittee deferred any action on the matter of intrasubspecific designations until the new statutes of the ICNB had been ratified. The Subcommittee felt that there was international agreement on the naming of the serotypes of *H. influenzae* as a; b; c; d; e1; e2; and f.

Minute 14. Additional Criteria for Classification. The Subcommittee noted the paucity of

information available in the genus *Haemophilus* on enzyme constitution, DNA homology, and similar techniques.

Minute 15. New members. G. C. Simmons, nominated by Zinnemann and seconded by Tunevall, was elected to the Subcommittee.

Minute 16. Present membership. The present membership of the subcommittee is as follows: K. Zinnemann (Chairman), Leeds, Great Britain; E. L. Biberstein (Secretary), Davis, California, USA; Margaret Pittman, Bethesda, Maryland, USA; G. C. Simmons, Brisbane, Queensland, Australia; G. Tunevall, Stockholm, Sweden; D. C. Turk, Oxford, Great Britain; D. C. White, Lexington, Kentucky, USA.

Minute 17. Adjournment of meeting. The meeting was adjourned.

S. P. Lapage, Acting Secretary
K. Zinnemann, Chairman

Report (1966–1970) of the Subcommittee on the Taxonomy of *Haemophilus* to the International Committee on Nomenclature of Bacteria

The Subcommittee did not meet during the IXth International Congress for Microbiology held at Moscow, USSR in 1966. Correspondence on some topics has been conducted at intervals, but, as pointed out previously, this is not satisfactory, and financing of a meeting of the whole Subcommittee is an urgent necessity.

A. Designation of type and reference strains.

1. A search was made by enquiry with culture collections and with authors for strains of some named and described species. From the correspondence, it appears that the strains of *Haemophilus putorii* and *H. influenzae-muris* which had been kept at the Robert Koch Institute at Berlin had to be destroyed, together with many others, at the end of World War II. Professor G. Ivanovics of the Institute of General Pathology and Bacteriology of the University of Szeged, Hungary, offered to reisolate the species *H. influenzae-murium*. No strains have been received from him so far.

2. For some years a certain amount of confusion has existed in the literature by the mention in publications of *H. parasuis* and by hints at the existence of a species *H. paragal-linarum* without clearly stated proposals having been made. The situation has been remedied by the formal proposals made by Biberstein and White (J. Med. Microbiol. 2:75–78).

3. *Haemophilus* strains with a very rough,

wrinkled colony surface have been described from time to time (see Fleming and MacLean, Brit. J. Exp. Pathol. 2:127–134, Chandler, Fothergill, and Dingle, J. Bacteriol. 37:415; May, J. Pathol. Bacteriol. 90:379). Such strains have been described fully and have been identified as a new species, *Haemophilus paraphrophilus* (Zinnemann, Rogers, Frazer, and Boyce, J. Pathol. Bacteriol. 96:413–419).

4. A strain labeled *H. haemolyticus* NCTC 8479 was obtained from the ATCC in 1951. It is listed in the ATCC catalogue under the number 10014. On renewed investigation it was found to require V but not X factor and is therefore *H. parahaemolyticus*. Miss Margaret Pittman wrote concerning this strain: "Incorrectly designated as *H. haemolyticus*. It was this strain that I selected as typical when I proposed *H. parahaemolyticus* nov. spec." Miss Pittman's proposal to recognize this strain as the holotype for *H. parahaemolyticus* will be put before the Subcommittee. No X- and V-dependent haemolytic *Haemophilus* strain could be found in the catalogue of any culture collection. A search for such strains was made, but the majority of haemolytic strains was V-dependent only. Finally D. C. Turk supplied a haemolytic, V- and X-dependent *Haemophilus* strain which has been deposited with the NCTC and bears the number 10659. Since then, a strain of *H.*