MINUTES OF FIRST MEETING OF THE SUBCOMMITTEE
ON TAXONOMY OF THE MYCOPLASMATA

I

On the initiative of a small group interested in taxonomy of the genus Mycoplasma advantage was taken of the New York Academy of Sciences Second Conference on Biology of Mycoplasmas in May 1966 to establish a provisional Subcommittee for Taxonomy of Mycoplasmas.

The provisional Subcommittee constituted itself at a meeting held in New York City on May 13, 1966, with the following members:

Chanock, R.M. (National Institutes of Health, Bethesda, Maryland)
Edward, D.G. ff., Chairman (Wellcome Research Laboratories, Beckenham, England)
Fabricant, J. (Cornell University, Ithaca, New York)
Freundt, E.A., Secretary (University of Aarhus, Denmark)
Hayflick, L. (Wistar Institute of Anatomy and Biology, Philadelphia, Pennsylvania)
Lemcke, Ruth M. (Lister Institute of Preventive Medicine, London, England)
Razin, S. (Hebrew University, Jerusalem, Israel)
Somerson, N.L. (National Institutes of Health, Bethesda, Maryland)
Wittler, Ruth G. (Walter Reed Army Institute of Research, Washington, D. C.)

Dr. W. Ferreira from WHO headquarters attended the meeting as an observer.

Nomination for membership had been guided by the principles that the Subcommittee should be truly international, that both medical and veterinary mycoplasmatology should be covered, and that various approaches to taxonomy and various expertises should be represented.

The Subcommittee elected a Chairman, Dr. D.G. ff. Edward, and a Secretary, Dr. E.A. Freundt.

It was decided that the provisional Subcommittee should, by its Chairman, apply for official recognition* from the International Committee on Nomenclature of Bacteria.

Since the recommendations and proposals made by the Subcommittee are likely to be of interest to large numbers of mycoplasmatologists it was decided to publish them—in due time—in appropriate journals (in addition to expected publication in the International Journal of Systematic Bacteriology if and when the recommendations be ratified by the International Committee on Nomenclature of Bacteria). These recommendations would include general advice to those isolating new strains (species) regarding identification and classification and would draw attention to the care that should be taken in naming new species, which should be adequately characterised. New specific names should only be published in suitable journals.

II

Following decisions on the above-mentioned practical steps, a set of recommendations and proposals concerning the principles for classification of mycoplasmas was made the subject of discussion. As a starting point for this discussion a document which had been worked out presenting the various viewpoints expressed in previous correspondence was circulated among the members of the original organizing committee.

The following statements, recommendations and proposals were made:

1. The Subcommittee recommended that the general principles for classification of the mycoplasmas that were proposed by Edward and Freundt in 1966 receive formal recognition, and that their proposed classification system be further extended.

This implies that the Principles, Rules and Recommendations laid down in the International Code of Nomenclature of Bacteria (Intl. Jour. Syst. Bacteriol. 16(4):469-490, 1966) should hold for the nomenclature of the mycoplasmas.

* At the meeting of the International Committee on Nomenclature of Bacteria (ICNB) held in Moscow, USSR, July 23, 1966, a Subcommittee on Taxonomy of the Mycoplasmata was established.

2. The recognition of a separate new class for the order Mycoplasmatales was proposed.

This implies that mycoplasmas are not regarded by the Subcommittee as fixed L-phase variants descending from bacteria.

3. No final agreement was obtained on an appropriate name for the proposed new Class. The members were invited, however, to devise a Latinized name that would allude to the lack of a (complete) cell wall, thereby abiding by Rule 2 of the International Code of Nomenclature of Bacteria (1966) that reads: "The name of each taxon above the rank of order is taken preferably from a combination of characters covering the nature of the taxon as closely as possible, or from a single character of outstanding importance."

It was mentioned that the principles of priority do not apply to names of taxa above the rank of order.

4. The Subcommittee believed that the broad heterogeneity that has been demonstrated within the mycoplasmas strongly suggests a further subdivision of the Order Mycoplasmatales into more families and/or genera. It was felt, however, that a possible grouping of the Mycoplasma species within different families and/or genera is premature, and should await further investigations.

Particular attention was paid, in this connection, to the status of the 'T' strains. The Subcommittee learned that a group of persons interested in these strains was considering classifying and naming them. The Subcommittee regarded this as premature, and it was suggested that Dr. Chanock, who was in touch with members of the group, should convey this point privately.

5. The general principles as well as the specific criteria on which the classification of mycoplasmas on the species-subspecies level should be based gave rise to considerable discussion.

The viewpoint that in the definition of the species account should be taken of all available information about the microorganisms, with equal emphasis put on antigenic and other biologic properties as well, seemed to meet with general approval.

It proved difficult, however, to define the specific criteria that would be most useful for delimiting the species. Mention was made of the adverse implications of basing the

definition of the species exclusively on highly specific tests, such as the growth-inhibition test, that might—in some instances at least—rather be used to distinguish between subspecies (serotypes). Dr. Chanock pointed out the probable significance of the nucleic-acid homology test as a test by which true genetic relationships were recorded. He also called attention to the remarkable correlation that had been shown, so far, to occur between the currently adopted classification of Mycoplasma species based on serology and biochemical properties etc., and the overall results obtained with the homology technique. The viewpoint was expressed by others that certain reservations concerning the significance of the degree of nucleic-acid cross-reaction among related organisms were necessary until further studies be carried out. It was also stressed that large-scale comparative surveys of the mycoplasmas by this method were not likely to be attainable. Though no definite decisions were formulated on this point, it was agreed that competent investigators in this highly specialized field should be encouraged to explore further the adequacy of the nucleic-acid homology test as a possible basis for classification.

6. Finally, some specific problems that had arisen concerning recently described species and/or species names were briefly discussed.

Doubt had arisen, in particular, whether M. pharyngis (Clyde, 1964) or M. orale (Taylor-Robinson et al., 1964) should be recognized as the legitimate name for what had turned out to be the same species. The name M. pharyngis has clear priority as regards time of publication, but the Subcommittee did not feel competent to decide if publication in abstract form in Federation Proceedings can be accepted as effective publication. It was agreed, therefore, to submit this problem to the decision of the Judicial Commission of the International Committee on Nomenclature of Bacteria.

7. The discussion about species taxonomy gave the Subcommittee occasion to emphasize the absolute necessity of supplying for reference centres and/or permanently established type culture collections representative reference strains as well as sera whenever a new species is proposed.

III

Finally, Dr. Edward brought up the question of Mycoplasma reference centres. He mentioned that the establishment and designation of reference centres could not, of course, be the direct concern of the Subcommittee, but he emphasized the vital importance of the establishment of such centres for the functioning of any committee on classification and nomenclature in this field.

Dr. Ferreira expressed the view that WHO would have great interest in the creation of international centres for mycoplasmas and was prepared to take practical steps toward designating suitable laboratories. He briefly reviewed the general functions and responsibilities of such Centres: they should keep a complete stock of reference strains of recognized Mycoplasma species and subspecies, prepare and store specific sera for identification of mycoplasmas, collaborate with and give advice to other laboratories (regional and national centres), provide training facilities, improve and develop diagnostic methods, etc. He also stressed that WHO would not be in the position to provide more than very limited financial support for the activities of the centres. WHO had already had some informal preliminary discussions with FAO that had an obvious and clear interest in the field of mycoplasmas pathogenic to domestic animals (poultry, cattle, sheep, goats, etc.). FAO had not been able, so far, to offer any financial support, but Dr. Ferreira informed the Subcommittee that WHO intended to keep in contact with FAO on the project.

Dr. Edward said that he had been invited to Geneva to act as consultant to the Virus Unit, WHO, and had advised the establishment of two international reference centres for Mycoplasma as an initial step in the formation of a system of reference laboratories. He had suggested that these should be set up in Dr. Chanock's department at the N.I.H. and in Dr. Freundt's department, University of Aarhus. He understood that these laboratories were interested and willing. The Committee gave its unanimous approval to this recommendation.

E.A. Freundt, Secretary

D.G. Edward, Chairman