International Committee on Systematic Bacteriology

Subcommittee on the Taxonomy of Vibrios

Minutes of the Closed Meeting, 3 September 1974

Fuku Room, Imperial Hotel, Tokyo, Japan

1. **Call to order.** The third meeting of the Subcommittee was called to order by the Chairman at 1905 hours.

2. **Record of attendance.** Members present were Rudolph Hugh (Chairman), Riichi Sakazaki, Ralph H. W. Schubert, and Heinz P. R. Seeliger (ex officio).

3. **Alternates.** It was recognized that an alternate could represent an absent Subcommittee member at future meetings.

4. **Observers.** A request to permit Eiko Yabuuchi and K. Tamura to attend the meeting as observers was received and honored without objection.

5. **Approval of agenda.** The agenda distributed to the membership on 26 July 1974 was modified and approved.

6. **Approval of minutes.** Minutes of the 22 July 1971 meeting were approved as published (19).

7. **Resignations.** A letter of resignation dated 16 July 1973 from John C. Feeley, Secretary, and a resignation request dated 1 August 1974 from Charles R. Manclark were received by the Chairman. The resignations were accepted by the Subcommittee and were effective at the termination of the meeting. Thanks were expressed for their contributions to the Subcommittee.

8. **New members.** The vacancies of the two retiring members were filled, and the membership was expanded from five to six voting members. G. I. Barrow (England), A. L. Furniss (England), and S. C. Sanyal (India) have accepted invitations to work on the Subcommittee. Their membership was effective on 1 November 1974.

9. **Election of Secretary.** Riichi Sakazaki was elected to replace the retiring Secretary.

10. **Election of Chairman.** A Chairman will be elected with the participation of the new members.

11. **Report of Subcommittee activities.** On 25 July 1974, a ballot was distributed to the five members of the Subcommittee. They unanimously recommended the following.

A. The definition (parameters) of *Vibrio cholerae* as adopted by the Subcommittee (Minute 7 of the 1971 meeting [19]) should not be expanded to include polar monotrichous, anaerogenic, glucose fermenters that fail to produce indophenol oxidase and fail to be agglutinated by O group I antiserum. *Vibrio proteus* NCTC 8563 is an example of such an organism. It should not be designated *Vibrio cholerae* biotype *proteus*.

B. *Vibrio albensis* ATCC 14547 should not be recognized as a strain of *Vibrio cholerae* and should not be designated *Vibrio cholerae* biotype *albensis*.

C. *Vibrio parahaemolyticus* ATCC 17802 should

not be excluded from the genus *Vibrio* and should not be recognized as *Beneckeia parahaemolytica* as recommended by Bauman, Bauman, and Mandel 1971. The type species of the genus *Beneckeia* is *B. labra*. There are no known strains (including a type or neotype) of this species extant. The relationship of *B. labra* to *V. parahaemolyticus* cannot be objectively evaluated, determined, or established without a type or neotype strain of *B. labra*. The genus *Vibrio* is defined in Minute 6 of the 1971 meeting of the Subcommittee (19) and in footnote a of Table 1 in reference 11. It includes five species: *V. cholerae*, *V. parahaemolyticus*, *V. alginolyticus*, *V. albensis*, and *V. costicola*.

D. ATCC 17802 (Fujino strain EB 101) is the type strain of *Pasteurella parahemolytica* (sic) Fujino 1951, 270. EB 101 was isolated at the Research Institute for Microbial Diseases, Osaka University, on 26 October 1950 from the intestinal contents, collected at autopsy, of a 64-year-old female who died from shirasu food poisoning in Osaka Prefecture. The surname of this acute gastroenteritis victim was Ebisu. Shirasu are the fry of sardines (*Engraulis japonica* Houttuyn) boiled in salt water. They are purchased in markets and eaten in the semidried state. EB 101 was deposited by Tsunesaburo Fujino in the American Type Culture Collection on 5 May 1965 (9). The date of isolation of EB 101 is recorded in the March 1952 List of Cultures, Research Institute for Microbial Diseases, Osaka University. ATCC 17802 is a descendant of EB 101 and one of the original strains from which the description of *P. parahaemolytica* (7) was derived.

E. ATCC 17749 (strain XII-53 isolated by Nakamura) is the type strain of *Oceanomonas alginolytica* Miyamoto, Nakamura, and Takizawa 1961, 481. It was isolated from a spoiled horse mackerel, the cause of food poisoning, on 7 August 1959, and it is a descendant of the original culture from which the original description of the species was derived. The following served as the basis for this conclusion: (i) ATCC 17749 Form 1B, which was completed by Miyamoto in 1965; (ii) reference 18; and (iii) correspondence dated 23 June 1974 from Miyamoto to the Chairman. *O. alginolytica* is the basionym of *Vibrio alginolyticus* (Miyamoto, Nakamura, and Takizawa 1961) Sakazaki 1968, 360.

F. *Vibrio alginolyticus* ATCC 17749 is a species distinct from *Vibrio parahaemolyticus* ATCC 17802. Although two biotypes (subgroups) of *V. parahemolyticus* were recognized by Sakazaki et al. 1963, biotype 2 was excluded from the species and identified as *V. alginolyticus* (17, 21, 22).

G. ATCC 14029 (Bader strain M/51) is the type

strain for *Pseudomonas shigelloides* Bader 1954, 455, as recommended by Ewing, Hugh, and Johnson 1961, 32, and supported by Habs and Schubert 1962, 325. *Pseudomonas shigelloides* is the basionym of *Aeromonas shigelloides*, *Plesiomonas shigelloides*, *Fergusonia shigelloides*, and *Vibrio shigelloides*.

12. **Documentation of the name *Vibrio parahaemolyticus*.** *Pasteurella parahaemolytica* (sic) Fujino 1951, 270, is the basionym of *Vibrio parahaemolyticus* (Fujino 1951) Sakazaki, Iwanami, and Fukumi 1963, 181. The names *Pasteurella parahaemolytica* (sic) and *Vibrio parahaemolytica* (sic) were used earlier in abstracts (8, 16).

13. **Polar monotrichous, glucose-fermenting, gram-negative rods that fail to produce indophenol oxidase.** Polar monotrichous, gram-negative rods that ferment glucose anaerogenically and fail to produce indophenol oxidase have been recognized as species of *Vibrio*, e.g., *Vibrio proteus* NCTC 8563. Since the type or neotype strains for such species have not been designated and very little is known about the relationship of these species to *Vibrio* species which produce indophenol oxidase and to other polar flagellated glucose fermenters, the Subcommittee recommends they not be excluded from the genus *Vibrio* at this time. The taxonomy of strains of these species and the documentation of names applied to them have not been studied rigorously. *Vibrio proteus* Buchner 1885, 10, is an illegitimate name (4).

14. **Definition of the genus *Vibrio*.** In 1971 the Subcommittee recommended the minimal number of characters for the identification of *Vibrio* species (11, 19). This recommendation was reaffirmed. Although *V. parahaemolyticus* is polar monotrichous, the Subcommittee recognized that some strains develop lateral flagella (1, 20). Strains of other species produce similar flagellar variants, e.g., *Vibrio alginolyticus*, *Aeromonas hydrophila*, *Aeromonas shigelloides*, *Comamonas terrigena*, *Pseudomonas putrefaciens*, *Chromobacterium violaceum*, and *Xanthomonas* species (1, 6, 12, 13, 14). These flagellar morphotypes are infrasubspecific forms (subdivisions other than subspecies) of species.

15. **Minimal number of characters for identification of *Vibrio cholerae*.** In 1971 the Subcommittee recommended the minimal number of characters for identification of *V. cholerae* (11, 19). This recommendation was reaffirmed.

16. **Type or neotype strains for *Vibrio* and *Photobacterium* species.** The Subcommittee noted that progress in taxonomy and reduction of redundant names to a common objective synonym are hindered by lack of a type or neotype strain for the following 20 species: *V. albensis*, *V. alginosus*, *V. anguillarum*, *V. haloplanktis*, *V. ichthyodermis*, *V. liquefaciens*, *V. marinus*, *V. marinagilis*, *V. marinofulvus*, *V. marinopraesens*, *V. marinovulgaris*, *V. metschnikovii*, *V. piscium*, *V. ponticus*, *V. proteus*, *V. tyrosinaticus*, *P. mandapamensis*, *P. phosphoreum*, *P. pierantonii*, and *P. sepi*. There is available in the various national culture collections at least one strain of each of these species.

17. **Minimal characters for identification of**

strains of species. The Subcommittee recommended that minimal characters for practical identification of strains of species be derived from taxonomic studies that have compared numerous strains of a species.

18. **Plea for taxonomic research.** The Subcommittee urged that studies be directed to the designation of type strains, the proposal of neotype strains, and determination of minimal characters for identification of strains of species.

19. **Adjournment.** The meeting was adjourned at 2250 hours.

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