Comment on the Request to the Judicial Commission to Conserve the Specific Epithet \textit{liquefaciens} over the Specific Epithet \textit{proteamaculans} in the Name of the Organism Currently Known as \textit{Serratia liquefaciens}

PATRICK A. D. GRIMONT, FRANCINE GRIMONT, AND MORTIMER P. STARR

Service des Entérobactéries, INSERM Unité 199, Institut Pasteur, F-75724 Paris Cedex 15, France, and Department of Bacteriology, University of California, Davis, California 95616

In 1978, Grimont et al. (2) demonstrated the identity of \textit{Serratia liquefaciens} biovar Clc with \textit{Erwinia proteamaculans} ICPB XP 176 (=ATCC 19323) and proposed the new combination \textit{Serratia proteamaculans}. The taxonomic scheme in use at that time required that a choice be made between the epithets \textit{liquefaciens} and \textit{proteamaculans}. \textit{S. proteamaculans} (Paine and Stansfield 1919) Grimont, Grimont, and Starr 1978 was then regarded as a senior subjective synonym of \textit{S. liquefaciens} (Grimes and Hennerty 1931) Bascomb et al. 1971. Since the publication of this proposal (2), several new developments have occurred, which necessitate a reconsideration of the problem. The sequence of events was as follows. (i) Holmes (3) requested that the Judicial Commission of the International Committee on Systematic Bacteriology issue an Opinion conserving the specific epithet \textit{liquefaciens} over \textit{proteamaculans} in the scientific name \textit{Serratia liquefaciens} (Grimes and Hennerty 1931) Bascomb et al. 1971. The main argument used by Holmes (3) was the worldwide acceptance enjoyed by the name \textit{S. liquefaciens} as opposed to the little-known (among non-phytopathologists) epithet \textit{proteamaculans}. (ii) The recently published Approved Lists of Bacterial Names (5) contain both the names \textit{S. liquefaciens} and \textit{S. proteamaculans}. The publication of the Approved Lists put an end to any taxonomic uncertainty concerning the type strain of \textit{S. liquefaciens}, which is now definitely ATCC 27592, a member of biovar C1b (1). (iii) A systematic search of the \textit{Serratia} species associated with plants (Grimont, Grimont, and Starr, manuscript in preparation) conducted in California and in France resulted in the isolation of a number of strains identical to \textit{S. proteamaculans} (=\textit{S. liquefaciens} biovar Clc [1]) with respect to biochemical properties and deoxyribonucleic acid (DNA) relatedness. Our present understanding is that the habitat of \textit{S. proteamaculans} is the surfaces of plants, whereas \textit{S. liquefaciens} "stricto sensu" (biovars C1a and C1b) is ubiquitous (unpublished data). (iv) The DNA relatedness among cold-tolerant serratias was re-investigated with 50 strains (P. A. D. Grimont, K. Irino, and F. Grimont, Conference on Taxonomy, Computer Identification of Bacteria and Diagnostic Methods, Liblice Castle, Czechoslovakia, 5–9 May 1980; P. A. D. Grimont, K. Irino, and F. Grimont, manuscript in preparation). With the DNAs from \textit{S. proteamaculans} ATCC 19323 and \textit{S. liquefaciens} ATCC 27592 as references, two DNA hybridization groups were identified among 24 strains; 13 strains of \textit{S. proteamaculans} showed 86 ± 6% relatedness (mean ± standard deviation) to ATCC 19323 (SI nuclease method, 60°C) and 56 ± 7% relatedness to ATCC 27592, and 11 strains of \textit{S. liquefaciens} stricto sensu showed 90 ± 12% relatedness to ATCC 27592 and 45 ± 7% relatedness to ATCC 19323. The thermal stability of hybrid DNA molecules was high within DNA hybridization groups (\(\Delta T_m\) [drop in thermal denaturation midpoint] below 4.4°C) and lower between groups (\(\Delta T_m\), between 7.5 and 11.5°C). This experimental work will be published elsewhere (Grimont et al., manuscript in preparation).

The International Code of Nomenclature of Bacteria (4) stipulates that a Request for an Opinion should be submitted to the Judicial Commission for vote after a period of 6 months after the date of publication of the Request. This 6-month time between publication of a Request for an Opinion and a decision of the Judicial Commission is too short for experimental work to be conducted and then published in the International Journal of Systematic Bacteriology, a quarterly.

Because we now have evidence to prove that \textit{S. liquefaciens} and \textit{S. proteamaculans} are close but discrete genospecies, if one name or the other were to be rejected by the Judicial Commission, a new name would have to be given to replace the rejected name. This would further escalate the confusion that presently exists in the nomenclature of \textit{Serratia} species.

Therefore, we request that the Judicial Commission (i) conserve both names (\textit{S. liquefaciens} and \textit{S. proteamaculans}), (ii) drop any action
concerning conservation or rejection of these names, or (iii) delay any final decision until the International Congress of Microbiology at Boston in 1982.

REPRINT REQUESTS

Address reprint requests to: Patrick A. D. Grimont, Service des Entérobactéries, Unite INSERM 199, Institut Pasteur, F-75724 Paris Cedex 15, France.

LITERATURE CITED