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Letter to the Editor
Identification of *Acinetobacter* Species

Actis et al. recently published an article on *Acinetobacter baumannii* (1). While the article focused on growth of this organism in iron-limiting conditions, it nevertheless raised some questions regarding the taxonomy and identification of *Acinetobacter* species, prompting one of us (Robert E. Weaver) to contact the authors. Following a discussion of these questions, we now offer the following comments in an attempt to state and to clarify current problems in the identification of *Acinetobacter* species.

Since 1986 (2) there have been several important findings regarding the taxonomy of the genus *Acinetobacter*. As a result, seven species have been named and described. Three of these species names had been used previously (*A. calcoaceticus*, *A. haemolyticus*, and *A. lwoffii*). The other four species received new species names (*A. baumannii*, *A. junii*, *A. johnsonii*, and *A. radioresistens*) (2, 6). In addition, within the genus there are several DNA-DNA hybridization groups (genomospecies) that have been numbered but not given names (2, 3, 7). The confusion that the new taxonomy has caused in the clinical laboratory is compounded by the fact that identification of the various species and DNA groups by phenotypic characteristics, many of which are assimilations of carbon sources, is very difficult. In some instances, definitive identification will require DNA hybridization. Dijkshoorn and van der Toorn (4) have provided an excellent discussion of the problems resulting from the present taxonomy and the difficulty in determining the exact species of an isolate. Gerner-Smidt et al. address the reliability of the phenotypic tests for identification (5).

Identifications should be reported as presumptive unless the necessary testing has been done to establish the identification. An example of the problem in making a specific identification follows. Reports have indicated that, in clinical laboratories, *A. baumannii* is the most frequently encountered of the *Acinetobacter* species and DNA groups that oxidize glucose and are not hemolytic. Oxidation of glucose and absence of hemolysis, however, are not sufficient characteristics for identification of *A. baumannii*. The ability to grow at 44°C will separate *A. baumannii* from the other species and DNA groups except for DNA group 13, which contains some strains that also grow at 44°C. Additional phenotypic characteristics, most based on carbon source assimilation, must be determined in order to differentiate these two groups.

In citing reports published before Bouvet and Grimont's 1986 report (2), authors should not translate unequivocally the names used in those reports into names of the recent taxonomy. For example, if the older report concerned *A. anitratus* or *A. calcoaceticus* subsp. *anitratus*, one cannot assume that those organisms would now be identified as *A. baumannii*. It may be stated that they might be *A. baumannii*; however, it also should be indicated that they might be one of the other species or DNA groups that contain oxidizers of glucose (*A. calcoaceticus*, *A. haemolyticus*, and genomospecies 3, 6, 8, 10, 12, 13, 14, and 15).

In new reports, authors should indicate how their *Acinetobacter* species were identified. If identifications are not based on an extensive set of substrate assimilation tests or DNA relatedness, it should be indicated that the identifications are presumptive.

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