THE SPECIES-DEFINITION IN THE
FAMILY ENTEROBACTERIACEAE

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SUMMARY: A definition of the species in the family Enterobacteriaceae is given: "A species is a group of related sero-fermentative phage-types".

In two preceding papers "On the principles of classification and nomenclature of Enterobacteriaceae" and "Definition of genera and species of Enterobacteriaceae" the species were called "serologically defined subdivisions of the genera" and it was stated: "The species of Enterobacteriaceae are the established serotypes". It was added that "these species are in reality large groups which consist of a lot of fermentative types and of phage-types". Therefore it is better to define the species as follows:

"A species is a group of related sero-fermentative phage-types".

When the Salmonella-Subcommittee in the 1. Report (J. of Hyg. 34, 333, 1934) published the known Salmonella-types as species, these species were defined both serologically and biochemically. Only for shortness or simplification we are talking on sero-types or types, but in reality all these sero-types are defined also biochemically. Therefore it is more correct to call these types "sero-fermentative types".

The accepted type-species "Salmonella cholerae-suis" is such a sero-fermentative type. Also the species "Salmonella typhi", "Salmonella paratyphi B" etc. are all sero-fermentative phage types.

When we define a species as a group of sero-fermentative phage-types a change of the Bacteriological Code is not necessary, since the definition of the Salmonella-species is not identical with the definition of the word "sero-type" in the Code. This word means a serological subdivision of a species and can be used in our classification in the same sense:

The species Salmonella paratyphi A has the antigenic formula 1, 2, 12:a:- and a serological variant (= a special "serotype") has the formula 2, 12:a:- = S. paratyphi A var. durazzo.

Since the species is the basic category according to the Bacteriological Code, it should be defined so exactly as possible. According to the old classification the taxa (genus and species) are defined only biochemically, but according to the new classification—started by the Salmonella-Subcommittee—the species is defined both serologically and biochemically. There is no doubt that the new classification used in practice is much more effective than the old one.

REFERENCES

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