AGENDA FOR ROUND TABLE
EVALUATION OF CRITERIA FOR TAXONOMY*

D. Gottlieb

Department of Plant Pathology,
Urbana, Illinois, U.S.A.

A. Difficulty with many of the current procedures

1. A large number of criteria have been used but were carried on in a different manner by investigators over the past years.
2. Difficulty of reproducing some media.
3. Limits for criteria are not sharp enough. Therefore, interpretation of the test varies.
4. Absence of many type cultures or neotypes.
5. Changes in type cultures.
6. Variability of cultures.

   a. History of handling
   b. Genetic variability
   c. Cultural variability

7. No uniformity among investigators for types and numbers of differences in creating new species (Lumpers vs. Splitters)

B. Evaluation of criteria

1. Standards for criteria

   Are they sufficiently clear so that the results can be interpreted uniformly by investigators in laboratories all over the world?
   Are the constituents of the media widely available?
   Can the tests be standardized?
   Are the reactions stable enough so that they do not change with slight variations in environmental and cultural conditions or variations of the micro-organism?
2. Discussions of criteria

Morphological characteristics
  Colony
  Mycelia
  Sporophore structure
  Method of spore formation
  Spore morphology

Color characteristics
  Soluble pigments
  Color of mycelium
  Spore and aerial mycelium

Growth response to temperature

Metabolic characteristics
  Hydrogen sulfide production
  Reduction of nitrates
  Gelatin liquefaction
  Milk peptonization
  Carbohydrate utilization
  Nitrogen utilization
  Production of antibiotics
  Sensitivity to antibiotics

Serology

Phage specificity

C. Speciation

D. Nomenclature

*Presented at Round Table Conference on *Streptomyces*, August 4-5, 1958, Stockholm, Sweden, 7th. International Congress of Microbiology.