

Approved Lists of Bacterial Names

edited by

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on behalf of

The Ad Hoc Committee of the Judicial Commission of the ICSB

INTRODUCTION

At the meeting of the Judicial Commission of the ICSB held in Jerusalem on the 29th March, 1973 an Ad Hoc Committee was appointed (Minute 22) to organize a review of the currently valid names of bacteria with the object of retaining only names for those taxa which were adequately described and, if cultivable, for which there was a Type, Neotype or Reference strain available; to compile these names under the title of **Approved Lists of Bacterial Names** and to publish the lists in the *International Journal of Systematic Bacteriology*, to become effective on January 1, 1980. This date would then replace May 1, 1973 (International Code of Nomenclature of Bacteria and Viruses. Rule 10) as the new date for determining priorities for names of new taxa.

The members of the Ad Hoc Committee originally appointed to oversee the task were S.P. Lapage, H.P.R. Seeliger and V.B.D. Skerman (Chairman). Following his election as President-Elect of IAMS, H.P.R. Seeliger resigned from the Committee and was replaced by J.G. Holt. P.H.A. Sneath, as Chairman of the Judicial Commission, was coopted to the Committee. This Committee was responsible for the editing of the first draft of the **Approved Lists of Bacterial Names** published in the *IJSB* (26, 1976, 563-599).

The Ad Hoc Committee was reconstituted by the Judicial Commission during its meetings at the International Congress of the IAMS in Munich in September, 1978, with V.B.D. Skerman (Chairman), P.H.A. Sneath (newly elected Chairman of the ICSB) and L.G. Wayne (newly elected Chairman of the Judicial Commission) as Committee members. This Committee was assigned wide powers to complete the work on the Lists and arrange publication.

The initial Committee agreed that, as a basis for inquiry, all names which had been included in the eighth edition of Bergey's *Manual of Determinative Bacteriology*, whether listed as recognised species, synonyms, *species incertae sedis*, or under other headings should be circulated; that all Subcommittees on Taxonomy of the ICSB should be asked for advice on the retention of taxa for which the Subcommittees were responsible and that specialists be approached for advice on other taxa - only a small list of taxa remained to be considered by the Ad Hoc Committee itself. Advice was also sought on additional names of taxa which had been validly published since the publication of the *Manual*. Special provision had been made in the Code of Nomenclature for the inclusion of names validly published after the 1st January, 1978 (Rule 24a).

A list of specialists was drawn up and approved by the Ad Hoc Committee. Each specialist was asked to associate two others in reaching a decision on name retention. The Chairman accepted the responsibility for coordination of work associated with the selection of generic names and specific and subspecific epithets and P.H.A. Sneath for the names of higher taxa.

Names of Genera, Species and Subspecies:

The Lists of names of species and subspecies were circulated by airmail in April, 1976 and a draft list of names recommended for retention published in the *IJSB* (26, 1976, 563-599) together with the list of those people associated with that stage of the project. Reference may be made to the draft list for details of the procedures adopted in processing the information.

The object of publishing the draft list was to enable microbiologists, in general, to submit

opinions to the Ad Hoc Committee. Several were received. Some of these resulted in modification to lists submitted by Subcommittees on Taxonomy and others.

Rule 24a of the Code of Nomenclature provided, *inter alia*, for the publication with each bacterial name the name(s) of the author(s) who originally proposed it, a reference to an effectively published description of each species and its nomenclatural type whenever possible, and a Type, Neotype or Reference strain by its designation.

To conserve space in publication, it was agreed that for all references to the 8th edition of *Bergey's Manual* (Buchanan, R.E. and N.E. Gibbons (eds). 1974. *Bergey's Manual of Determinative Bacteriology*, 8th ed. The Williams and Wilkins Co., Baltimore) be contracted to 'Bergey 8'.

Although these requirements were formally published in the Code on 1st January, 1976 little action was taken by those responsible for various taxa and in order to assist resolution of the problem, the Chairman and his staff produced a document which listed Collections of Cultures of Microorganisms which held Type, Neotype and Reference strains for those species whose names appeared in the draft list and subsequent amendments. This list, which will be published elsewhere as a publication of the World Data Center for Microorganisms, has been used as a guide to the deletion of numerous names for which no cultures could be located.

The requirements of Rule 24a together with the list of strains, were discussed at a meeting of the ICSB with Subcommittees on Taxonomy at the International Congress for Microbiology in Munich in September, 1978 where the decision was made to list only one designation for each strain and preferably that of the American Type Culture Collection, where available. Because of difficulties associated with locating references to publications in which Type strains, Neotype strains or Reference strains had been designated, it was agreed that references would be given only to those publications concerned with the naming of the taxa and to descriptions of the taxa.

The Judicial Commission also determined that publication should be in the January (1980) issue of the IJSB, thus negating the requirement of Rule 24a that publication take place prior to 1st January, 1980. This action

enabled the inclusion in the Approved Lists of names of all new taxa which had been validated by publication in the October, 1979 issue of the IJSB and so has obviated the need to make any further additions to the Approved Lists of Bacterial Names.

Formal notice of these requirements was circulated, by airmail, to all Subcommittees and specialists on 5th February, 1979 requesting return of the information by 31st August, 1979. Meanwhile, the Chairman and his staff proceeded as far as possible with the compilation of the whole of the required information, subsequently making use of such submissions as were ultimately received from others, to verify compilations already made.

Computer printouts, in the final format of assembled information, were distributed by airmail to all participants in July, 1979 for the purpose of verification and for the provision of information which was still missing.

A final decision to retain or delete some names was based on our ability to obtain the relevant information.

Names of Taxa Above the Rank of Genus:

Compilation of names of higher taxa was undertaken by Sneath and his associates. No draft list was published but a proposal was discussed at some length in an open meeting at the Munich Congress. The format of the list as submitted was modified to conform with the format adopted for the names of the genera and species. References given in this section of the lists are restricted to those relating to the higher taxa. Those to genera will be found in the list of genera and species.

Designation of Strains:

Strains have been designated by accession numbers of Culture Collections in which they have been deposited. Every effort has been made to ensure that the strains are actually available but no guarantee of this can be given. Names, which have been omitted, may be revived if the location of suitable strains can be ascertained.

The following is a list of addresses of institutions, together with acronyms used to assign accession numbers.

AMRC	FAO-WHO International Reference Centre for Animal Myco-
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	plasmas, Institute for Medical Microbiology, University of Aarhus, Aarhus, Denmark.	NCDO	Wageningen, The Netherlands.
ATCC	American Type Culture Collection, Rockville, Maryland 20852, U.S.A.		National Collection of Dairy Organisms, National Institute for Research in Dairying, University of Reading, England, UK.
BKM	All-Union Collection of Microorganisms, Institute of Microbiology, USSR Academy of Sciences, Moscow, USSR.	NCIB	National Collection of Industrial Bacteria, Torry Research Station, Aberdeen, Scotland, UK.
BKMW	Culture Collection, Institute of Microbiology, USSR Academy of Sciences, Moscow, USSR.	NCMB	National Collection of Marine Bacteria, Torry Research Station, Aberdeen, Scotland, UK.
CBS	Centraalbureau voor Schimmelcultures, Baarn, The Netherlands.	NCPPB	National Collection of Plant Pathogenic Bacteria, Plant Pathology Laboratory, Harpenden, England, UK.
CCM	Czechoslovak Collection of Microorganisms, J.E. Purkyne University, Brno, Czechoslovakia.	NCTC	National Collection of Type Cultures, Central Public Health Laboratory, Colindale, London, England, UK.
CDC	Center for Disease Control, Atlanta, Georgia, U.S.A.	NIAID	National Institute of Allergy and Infectious Diseases, Hamilton, Montana, U.S.A.
CIP	Collection of the Institute Pasteur, Paris, France.	NIHJ	National Institute of Health, Tokyo, Japan.
DSM	Deutsche Sammlung von Mikroorganismen, Gottingen, Federal Republic of Germany.	NRC	National Research Council, Ottawa, Canada.
IAM	Institute of Applied Microbiology, University of Tokyo, Tokyo, Japan.	NRL	Neisseria Reference Laboratory, US Public Health Service Hospital, Seattle, Washington, U.S.A.
IFO	Institute for Fermentation, Osaka, Japan.	NRRL	Northern Utilization Research and Development Division, US Department of Agriculture, Peoria, Illinois, U.S.A.
IMRU	Institute of Microbiology, Rutgers - The State University, New Brunswick, New Jersey, U.S.A.	PDDCC	Culture Collection of Plant Diseases Division, New Zealand Department of Scientific and Industrial Research, Auckland, New Zealand.
IMV	Institute of Microbiology and Virology, Academy of Sciences of the Ukrainian SSR.	TC	Thaxter Collection, Farlow Herbarium, Harvard University, Boston, Massachusetts, U.S.A.
INA	Institute for New Antibiotics, Moscow, USSR.	UMH	University of Missouri Herbarium, Missouri, U.S.A.
INMI	Institute for Microbiology, USSR Academy of Sciences, Moscow, USSR.	UQM	Culture Collection, Department of Microbiology, University of Queensland, Brisbane, Australia.
IPV	Istituto di Patologia Vegetale, Milan, Italy.	VKM	Institute of Microbiology, Academy of Sciences of the USSR, Moscow, USSR.
KCC	Kaken Chemical Company Ltd., Tokyo, Japan.	VPI	Virginia Polytechnic Institute and State University, Blacksburg, Virginia, U.S.A.
LIA	Museum of Cultures, Leningrad Research Institute of Antibiotics, 23 Ogorodnikov Prospect, Leningrad L-20, USSR.	WINDSOR	Culture Collection, University of Windsor, Windsor, Ontario, Canada.
LSU	Louisiana State University, Baton Rouge, Louisiana, U.S.A.		
LMD	Laboratorium voor Microbiologie der Landbouwhogeschool,		

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Whilst the task of compilation and preparation of manuscripts for publication has been of necessity concentrated in two areas, the successful completion of the task would not have been possible without the associated efforts of a large number of people whose names are recorded here.

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SPECIFIC INFORMATION RELATING TO THE APPROVED LISTS OF BACTERIAL NAMES

The names included in these Lists are those selected by Subcommittees on Taxonomy of the ICSB, specialist advisers and, where the former have not been available or have declined to advise, by the members of the Ad Hoc Committee.

With few exceptions (*vide infra*) names which have been included in the Lists are those which

... were validly published before the 1st January, 1978 and which have been listed by advisers.

... have been validly published since the 1st January, 1978 by publication in the IJSB or by inclusion in the lists of new names cited in the IJSB (to and including Volume 29, Part 4, 1979) as having been effectively published in other Journals.

Specific attention is drawn to the following

1. Names included in the Approved List of Bacterial Names are the only names which are nomenclaturally valid as at the 1st January, 1980. All other names which have appeared in the literature prior to 1st January, 1980 are nomenclaturally invalid. Names which have been effectively published in Journals other than the IJSB but which have not been cited in the

lists of new names published in the IJSB, have not been validly published under Rule 27 of the Code of Nomenclature. Such names may be validated by publication in forthcoming issues of the IJSB and will simply constitute names of new taxa.

2. No name appearing in the Approved Lists of Bacterial Names is conserved in the sense defined under Rule 56b of the Code of Nomenclature (1976 Revision).

3. Any name previously rejected by the Judicial Commission remains a *nomen rejiciendum* and can no longer be used to name a bacterium.

4. By majority decision of the Ad Hoc Committee, supported by an overwhelming majority of the members of the ICSB, all strains of bacteria which were submitted as nomenclatural Type strains, Neotype strains, Proposed Neotype strains or Reference strains have been elevated to the status of Type strains. The few objections which were received to the elevation of reference strains to Type status were based on concern that such reference strains may not prove to be the best choice for Type strains. This objection however, applies equally to quite a number of Type strains, particularly monotypes of which there are, and will continue to be, several. It seemed more appropriate that names appearing in the Approved Lists of Bacterial Names, which constitutes a new base for future nomenclature, should have Type status or be omitted.

5. For some names included in the Lists no strains were available. These names were retained to preserve the status of

A. some microorganisms for which habitats are well known, which have distinct morphological characters but which have never been isolated. In most cases only the Type Species has been retained to preserve the status of the genus.

B. a genus which contained well described species for which representative strains were available for all but the Type Species of the genus itself.

Exclusion of the Type Species would have necessitated the exclusion of the genus as a whole under Rule 20c of the Code of Nomenclature. There were several of these. It is

hoped that early action will be taken to request the Judicial Commission to conserve these genera with new Type Species in order that each species within these genera will be represented by a Type strain in a recognised culture collection.

6. The Ad Hoc Committee has repeatedly stressed that its task was nomenclatural and not taxonomic; further that Subcommittees and others were not required to solve taxonomic problems before advising on retention of names. They were requested to omit names of doubtful species as such species could be revived (see 8 below).

Because there are some differences of opinion regarding the generic position of some species it has been necessary to include the same microorganism under two names, each with the same specific epithet and the same nomenclatural type strain. In such instances cross-reference has been made to the alternate name. This applied specifically to the species in the genus *Beneckeia* and the genus *Vibrio* and to a few instances in the *Enterobacteriaceae*. For this reason it is necessary here to reaffirm the statement made previously that no name in the Approved Lists of Bacterial Names has been conserved. Names in the Lists may later be conserved, rejected, merged with other names or subjected to any other valid nomenclatural act.

7. The names of some genera, for which there are no available strains for the Type Species, have been omitted from the Lists in order to permit the resolution of a very difficult nomenclatural situation arising from the recent publication of provisional names which have no standing in nomenclature but which have been cited by subsequent authors as though they were valid. Addition of new species, with nomenclatural types, to an invalidly published generic name renders the new names equally invalid. This refers specifically to the methane oxidising bacteria, where the otherwise valid name *Methanomonas* has been omitted in the hope that by so doing the impasse caused by the illegitimate substitution of the name *Methylomonas* may be resolved. Specialists in this field are now urged to publish a fully validated list of appropriate species.

8. Reuse and revival of names which do not

appear in the Approved Lists of Bacterial Names is authorized by Rule 28a. In addition, the Code of Nomenclature (1976 Revision) contains a number of Provisional Rules. At the time of publication of this List these Rules still have only provisional status. It will require a specific act on the part of the Judicial Commission at a formally constituted meeting to raise these Provisional Rules to Rule status. Meanwhile they continue to be inapplicable.

Revival of Names: A name which has not appeared in the Approved Lists of Bacterial Names and which has not been listed as a *nomen rejiciendum* by the Judicial Commission may be revived (*nomen revictum*) if it is to be used for the same taxon to which (in the author's opinion) it was originally applied. For citation of such names see Rule 28a and Provisional Rules B2 and B3.

As most names which have not been included in the Approved Lists of Bacterial Names have been omitted because of uncertainty of the validity of the taxa to which they apply, the revival of names should be practised very conservatively.

Reuse of names - Specific and Subspecific epithets: There never has been any rule which forbids the use of the same specific epithet for taxa *within different genera*.

Many contributors to the Approved Lists of Bacterial Names have voiced considerable concern at the possibility that a specific epithet may be used *within the same genus* as that in which it was originally used but for the naming of a taxon to which it was not originally applied.

Unless the Judicial Commission takes action to prevent such usage, the Ad Hoc Committee can only urge taxonomists to avoid such reusage as may lead to considerable confusion in future nomenclature.

For the same reason taxonomists are urged not to use as a specific epithet within a genus a name which has been used for an infrasubspecific subdivision of a species within that genus. This applies particularly to several genera of predominantly plant pathogens, where previously cited species have been relegated to the status of pathovars within species listed in the

Approved Lists of Bacterial Names. As such infrasubspecific pathovars may later be elevated to the status of subspecies or species, preemption of the pathovar name as a specific or subspecific epithet of a different taxon would obviously cause confusion.

The International Society for Plant Pathology is publishing, in the Review of Plant Pathology, a list of pathovars of species which appear in the Approved Lists of Bacterial Names. Taxonomists are urged to consult this list before proposing new specific epithets or reusing or reviving old epithets for new species within the relevant genera.

Reuse of generic names: The reuse of a generic name which has not appeared in the Approved Lists of Bacterial Names and which has not been listed as a *nomen rejiciendum* by the Judicial Commission does not appear to be fraught with the same difficulties as those associated with specific and subspecific epithets. Taxonomists are nevertheless asked to seriously consider the possibility of confusion arising from the use of such names before taking such action.

The correct form of citation for reused names is given in Provisional Rules B1 and B4.

9. Omissions from Approved Lists of Bacterial Names. No names will be added to or removed from the Approved Lists of Bacterial Names. Attention may be drawn to errors in nomenclature or to errors in spelling or citations of references and such communications should be directed to the Executive Secretary, ICSB for transmission to the appropriate body. Please note that the omission of diacritical signs was intentional and dictated by the limitations of the computers used in setting up the type. These omissions do not constitute 'errors' in the above sense.

Every effort has been made to obviate errors by reference of the computer printouts of the final information to the original advisers for correction and also for insertion of some missing information. The final printout prior to production of the bromide copy for printing has been checked by the Chairman but the magnitude of the task allowed only of a search for the more glaring errors of which there were fortunately few.

NAMES OF TAXA ABOVE THE RANK OF GENUS

Note: No Nomenclatural Type is required for the categories of Division, Class or Subclass.

DIVISION

Firmacutes Gibbons and Murray 1978
Gibbons, N.E. and R.G.E. Murray. 1978. International Journal of Systematic Bacteriology 28:1-6.

Gracilicutes Gibbons and Murray 1978
Gibbons, N.E. and R.G.E. Murray. 1978. International Journal of Systematic Bacteriology 28:1-6.

CLASS

Actinomycetes Krassilnikov 1949
Krassilnikov, N.A. 1949. Opredelitel'v Bakterii i Actinomicetov. Akademii Nauk SSSR Moscow. pp. 328.

Bacteria Haeckel 1894
Haeckel, E.H. 1894. Systematische Phylogenie der Protisten und Pflanzen. I.G. Reimer, Berlin. p. 40.

Microtobiotes Philip 1956
Philip, C.B. 1956. Canadian Journal of Microbiology 2:261-270.

Mollicutes Edward and Freundt 1967
Edward, D.G. ff. and E.A. Freundt. 1967. International Journal of Systematic Bacteriology 17:267-268.

Photobacteria Gibbons and Murray 1978
Gibbons, N.E. and R.G.E. Murray. 1978. International Journal of Systematic Bacteriology 28:1-6.

Schizomycetes Naegeli 1857
Naegeli, C. von. 1857 in Caspari, R. Botanische Zeitung 15:749-776.

Scotobacteria Gibbons and Murray 1978
Gibbons, N.E. and R.G.E. Murray. 1978. International Journal of Systematic Bacteriology 28:1-6.

SUBCLASS

Anoxyphotobacteriae Gibbons and Murray 1978
Gibbons, N.E. and R.G.E. Murray. 1978. International Journal of Systematic Bacteriology 28:1-6.

ORDER

Actinomycetales Buchanan 1917
Buchanan, R.E. 1917. Journal of Bacteriology 2:155-164. Type genus: *Actinomyces* Harz 1877

Bacillales Prevot 1953
Prevot, A.R. 1953 in Hauduroy, P., G. Ehringer, G. Guillot, J. Magrou, A.R. Prevot, Rosset and A. Urbain. Dictionnaire des bacteries pathogenes. 2nd ed. Masson, Paris. pp. 692. Type genus: *Bacillus* Cohn 1872

Beggiatoales Buchanan 1957
Buchanan, R.E. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). Bergey's Manual of Determinative Bacteriology, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 837-853. Type genus: *Beggiatoa* Trevisan 1842

Caryophanales Peshkoff 1939
Peshkoff, M.A. 1939. Doklady Akademii Nauk SSSR 25:239-242. Type genus: *Caryophanon* Peshkoff 1939

Caulobacteriales Henrici and Johnson 1935
Henrici, A.T. and D. Johnson. 1935. Journal of Bacteriology 29:3-4. Type genus: *Caulobacter* Henrici and Johnson 1935

Chlamydiales Storz and Page 1971
Storz, J. and L.A. Page. 1971. International Journal of Systematic Bacteriology 21:332-334. Type genus: *Chlamydia* Jones, Rake and Stearns 1945

Chlorobiales Gibbons and Murray 1978
Gibbons, N.E. and R.G.E. Murray. 1978. International Journal of Systematic Bacteriology 28:1-6. Type genus: *Chlorobium* Nadson 1906

Clostridiales Prevot 1953
Prevot, A.R. 1953 in Hauduroy, P., G. Ehringer, G. Guillot, J. Magrou, A.R. Prevot, Rosset and A. Urbain. Dictionnaire des bacteries pathogenes. 2nd

ed. Masson, Paris. pp. 692. **Type genus:** *Clostridium* Prazmowski 1880

Cytophagales Leadbetter 1974

Leadbetter, E.R. 1974. in Bergey 8. pp. 99-127. **Type genus:** *Cytophaga* Winogradsky 1929

Eubacteriales Buchanan 1917

Buchanan, R.E. 1917. Journal of Bacteriology 2:347-350. **Type genus:** *Eubacterium* Prevot 1938

Hyphomicrobiales Douglas 1957

Douglas, H.C. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). Bergey's Manual of Determinative Bacteriology, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 276-280. **Type genus:** *Hyphomicrobium* Stutzer and Hartleb 1899

Lysobacterales Christensen and Cook 1978

Christensen, P. and F.D. Cook. 1978. International Journal of Systematic Bacteriology 28:367-393. **Type genus:** *Lysobacter* Christensen and Cook 1978

Micrococcales Prevot 1940

Prevot, A.R. 1940. Manuel de classification et de determination des bacteries anaerobies. 1st ed. Masson, Paris. pp. 223. **Type genus:** *Micrococcus* Cohn 1872

Mycobacteriales Janke 1924

Janke, A. 1924. Allgemeine technische Mikrobiologie. I. Teil. Die Mikroorganismen. T. Steinkopf, Dresden und Leipzig. pp. 1-342. **Type genus:** *Mycobacterium* Lehmann and Neumann 1896

Mycoplasmatales Freundt 1955

Freundt, E.A. 1955. International Bulletin of Bacteriological Nomenclature and Taxonomy 5:67-78. **Type genus:** *Mycoplasma* Nowak 1929

Myxococcales Tchan, Pochon and Prevot 1948

Tchan, Y.T., J. Pochon and A.R. Prevot. 1948. Annales de l'Institut Pasteur (Paris) 74:394-400. **Type genus:** *Myxococcus* Thaxter 1892

Pseudomonadales Orla-Jensen 1921

Orla-Jensen, S. 1921. Journal of Bacteriology 6:263-273. **Type genus:** *Pseudomonas* Migula 1894

Rhodospirillales Pfennig and Truper 1971

Pfennig, N. and H.G. Truper. 1971. International Journal of Systematic Bacteriology 21:17-18. **Type genus:** *Rhodospirillum* Molisch 1904

Rickettsiales Gieszczykiewicz 1939

Gieszczykiewicz, M. 1939. Bulletin de l'Academie Polonaise des Sciences. Serie des Sciences Biologiques 1:9-27. **Type genus:** *Rickettsia* da Rocha-Lima 1916

Spirillales Prevot 1940

Prevot, A.R. 1940. Manuel de classification et de determination des bacteries anaerobies. 1st ed. Masson, Paris. pp. 223. **Type genus:** *Spirillum* Ehrenberg 1832

Spirochaetales Buchanan 1917

Buchanan, R.E. 1917. Journal of Bacteriology 2:155-164. **Type genus:** *Spirochaeta* Ehrenberg 1835

SUBORDER

Caulobacterineae Breed, Murray and Hitchens 1944

Breed, R.S., E.G.D. Murray and A.P. Hitchens. 1944. Bacteriological Reviews 8: 255-260. **Type genus:** *Caulobacter* Henrici and Johnson 1935

Eubacteriineae Breed, Murray and Hitchens 1944

Breed, R.S., E.G.D. Murray and A.P. Hitchens. 1944. Bacteriological Reviews 8: 255-260. **Type genus:** *Eubacterium* Prevot 1938

Pseudomonadineae Breed, Murray and Smith 1957

Breed, R.S., E.G.D. Murray and N.R. Smith (eds). Bergey's Manual of Determinative Bacteriology, 7th ed. The Williams and Wilkins Co., Baltimore. p. 67. **Type genus:** *Pseudomonas* Migula 1894

TRIBE

- Acetobacteraceae** Pribram 1929
 Pribram, E. 1929. *Journal of Bacteriology* 18:361-394. **Type genus:** *Acetobacter* Beijerinck 1898
- Bacteroidaceae** Castellani and Chalmers 1919
 Castellani, A. and A.J. Chalmers. 1919. *Manual of tropical medicine*, 3rd ed. Williams, Wood and Co., New York. **Type genus:** *Bacteroides* Castellani and Chalmers 1919
- Brevibacteriaceae** Prevot 1961
 Prevot, A.R. 1961. *Traite de systematique bacterienne*. Dunod, Paris. Volume 2. pp. 771. **Type genus:** *Brevibacterium* Breed 1953
- Brucellaceae** Murray 1948
 Murray, E.G.D. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacteriology*, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 545-595. **Type genus:** *Brucella* Meyer and Shaw 1920
- Chromobacteriaceae** Winslow, Broadhurst, Buchanan, Krumwiede, Rogers and Smith 1920
 Winslow, C.E.A., J. Broadhurst, R.E. Buchanan, C. Krumwiede Jr., L.A. Rogers and G.H. Smith. *Journal of Bacteriology* 5:191-229. **Type genus:** *Chromobacterium* Bergonzini 1881
- Ehrlichiae** Philip 1957
 Philip, C.B. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. p. 933. **Type genus:** *Ehrlichia* Moshkovski 1945
- Erwinieae** Winslow, Broadhurst, Buchanan, Krumwiede, Rogers and Smith 1920
 Winslow, C.E.A., J. Broadhurst, R.E. Buchanan, C. Krumwiede Jr., L.A. Rogers and G.H. Smith. *Journal of Bacteriology* 5:191-229. **Type genus:** *Erwinia* Winslow, Broadhurst, Buchanan, Krumwiede, Rogers and Smith 1920
- Escherichiae** Bergey, Breed, Murray and Hitchens 1939
 Bergey, D.H., R.S. Breed, E.G.D. Murray and A.P. Hitchens (eds). 1939. *Bergey's Manual of Determinative Bacteriology*, 5th ed. The Williams and Wilkins Co., Baltimore. p. 388. **Type genus:** *Escherichia* Castellani and Chalmers 1919
- Eubacterieae** Prevot 1961
 Prevot, A.R. 1961. *Traite de systematique bacterienne*. Dunod, Paris. Volume 2. pp. 771. **Type genus:** *Eubacterium* Prevot 1938
- Haemophileae** Castellani and Chalmers 1919
 Castellani, A. and A.J. Chalmers. 1919. *Manual of tropical medicine*, 3rd ed. Williams, Wood and Co., New York. p. 933. **Type genus:** *Haemophilus* Winslow, Broadhurst, Buchanan, Krumwiede, Rogers and Smith 1917
- Lactobacilleae** Winslow, Broadhurst, Buchanan, Krumwiede, Rogers and Smith 1920
 Winslow, C.E.A., J. Broadhurst, R.E. Buchanan, C. Krumwiede Jr., L.A. Rogers and G.H. Smith. *Journal of Bacteriology* 5:191-229. **Type genus:** *Lactobacillus* Beijerinck 1901
- Micrococceae** Prevot 1961
 Prevot, A.R. 1961. *Traite de systematique bacterienne*. Dunod, Paris. Volume 2. p. 31. **Type genus:** *Micrococcus* Cohn 1872
- Pasteurelleae** Castellani and Chalmers 1919
 Castellani, A. and A.J. Chalmers. 1919. *Manual of tropical medicine*, 3rd ed. Williams, Wood and Co., New York. p. 943. **Type genus:** *Pasteurella* Trevisan 1887
- Proteeae** Castellani and Chalmers 1919
 Castellani, A. and A.J. Chalmers. 1919. *Manual of tropical medicine*, 3rd ed. Williams, Wood and Co., New York. p. 932. **Type genus:** *Proteus* Hauser 1885
- Pseudomonadeae** Kluver and van Niel 1936
 Kluver, A.J. and C.B. van Niel. 1936. *Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und*

Hygiene. Abteilung II. 94:369-403. **Type genus:** *Pseudomonas* Migula 1894

Rhizobieae Prevot 1948

Prevot, A.R. 1948. Manuel de classification et de determination des bacteries anaerobies. 2nd ed. Masson, Paris. pp. 290. **Type genus:** *Rhizobium* Frank 1889

Rickettsieae Philip 1957

Philip, C.B. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). Bergey's Manual of Determinative Bacteriology, 7th ed. The Williams and Wilkins Co., Baltimore. **Type genus:** *Rickettsia* da Rocha-Lima 1916

Salmonelleae Kalz 1957

Kalz, G. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). Bergey's Manual of Determinative Bacteriology, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 368-384. **Type genus:** *Salmonella* Lignieres 1900

Serratiae Bergey, Breed, Murray and Hitchens 1939

Bergey, D.H., R.S. Breed, E.G.D. Murray and A.P. Hitchens (eds). 1939. Bergey's Manual of Determinative Bacteriology, 5th ed. The Williams and Wilkins Co., Baltimore. p. 359. **Type genus:** *Serratia* Bizio 1823

Spirilleae Kluyver and van Niel 1936

Kluyver, A.J. and C.B. van Niel. 1936. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. 94:369-403. **Type genus:** *Spirillum* Ehrenberg 1832

Staphylococcae Prevot 1940

Prevot, A.R. 1940. Manuel de classification et de determination des bacteries anaerobies. 1st ed. Masson, Paris. pp. 223. **Type genus:** *Staphylococcus* Rosenbach 1884

Streptococcae Trevisan 1889

Trevisan, V. 1889. I generi e le specie delle Batteriacee. Zanaboni and Gabuzzi, Milano. p. 29. **Type genus:** *Streptococcus* Rosenbach 1884

Thiobacilleae Pribram 1929

Pribram, E. 1929. Journal of Bacteriology 18:361-394. **Type genus:** *Thiobacillus* Beijerinck 1904

Wolbachieae Philip 1955

Philip, C.B. 1955. Bacteriological Reviews 19:271. **Type genus:** *Wolbachia* Hertig 1936

FAMILY

Acholeplasmataceae Edward and Freundt 1970

Edward, D.G. ff. and E.A. Freundt. 1970. Journal of General Microbiology 62:1-2. **Type genus:** *Acholeplasma* Edward and Freundt 1970

Achromatiaceae Massart 1901

Massart, J. 1901. Recueil de l'Institut Botanique 'Leo Errara', (Bruxelles) 5:251-282. **Type genus:** *Achromatium* Schewiakoff 1893

Actinomycetaceae Buchanan 1918

Buchanan, R.E. 1918. Journal of Bacteriology 3:403-406. **Type genus:** *Actinomyces* Harz 1877

Actinoplanaceae Couch 1955

Couch, J.N. 1955. Journal of Elisha Mitchell Scientific Society 71:269. **Type genus:** *Actinoplanes* Couch 1950

Anaplasmataceae Philip 1957

Philip, C.B. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). Bergey's Manual of Determinative Bacteriology, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 980-984. **Type genus:** *Anaplasma* Theiler 1910

Archangiaceae Jahn 1924

Jahn, E. 1924. Beiträge zur botanischen Protistologie. I. Die Polyangiden. Verlag von Gebrüder Borntraeger, Leipzig. p. 66. **Type genus:** *Archangium* Jahn 1924

Azotobacteraceae Pribram 1933

Pribram, E. 1933. Klassifikation der Schizomyceten. F. Deuticke, Leipzig. pp. 1-143. **Type genus:** *Azotobacter* Beijerinck 1901

Bacillaceae Fischer 1895

Fischer, A. 1895. Jahrbuch für Wissenschaftliche Botanik 27:1-163. **Type genus:** *Bacillus* Cohn 1872

Bacteroidaceae Pribram 1933

Pribram, E. 1933. Klassifikation der Schizomyceten. F. Deuticke, Leipzig. pp. 1-143. **Type genus:** *Bacteroides* Castellani and Chalmers 1919

Bartonellaceae Gieszczykiewicz 1939

Gieszczykiewicz, M. 1939. Bulletin de l'Académie Polonaise des Sciences. Série des Sciences Biologiques 1:9-27. **Type genus:** *Bartonella* Strong, Tyzzer and Sellards 1915

Beggiatoaceae Migula 1894

Migula, W. 1894. Arbeiten aus dem Bakteriologischen Institut der Technischen Hochschule zu Karlsruhe 1:235-238. **Type genus:** *Beggiatoa* Trevisan 1842

Brevibacteriaceae Breed 1953

Breed, R.S. 1953. Riassunti delle Comunicazioni, VI Congresso Internazionale Microbiologia Roma, 1:10-15. **Type genus:** *Brevibacterium* Breed 1953

Brucellaceae Breed, Murray and Smith 1957

Breed, R.S., E.G.D. Murray and N.R. Smith (eds). 1957. Bergey's Manual of Determinative Bacteriology, 7th ed. The Williams and Wilkins Co., Baltimore. p. 394. **Type genus:** *Brucella* Meyer and Shaw 1920

Caryophanaceae Peshkoff 1939

Peshkoff, M.A. 1939. Doklady Akademii Nauk SSSR 25:239-242. **Type genus:** *Caryophanon* Peshkoff 1939

Caulobacteraceae Henrici and Johnson 1935

Henrici, A.T. and D. Johnson. 1935. Journal of Bacteriology 29:3-4. **Type genus:** *Caulobacter* Henrici and Johnson 1935

Chlamydiaceae Rake 1957

Rake, G. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). Bergey's Manual of Determinative Bacteriology,

7th ed. The Williams and Wilkins Co., Baltimore. pp. 957-968. **Type genus:** *Chlamydia* Jones, Rake and Stearns 1945

Chlorobiaceae Copeland 1956

Copeland, H.F. 1956. The classification of lower organisms. Pacific Books, Palo Alto, California. p. 31. **Type genus:** *Chlorobium* Nadson 1906

Chromatiaceae Bavendamm 1924

Bavendamm, W. 1924 in Kalkwitz (ed). Die farblosen und roten Schwefelbakterien des Süss- und Salzwassers. Pflanzenforschung, Berlin-Dahlem. pp. 1-156. **Type genus:** *Chromatium* Perty 1852

Clostridiaceae Pribram 1933

Pribram, E. 1933. Klassifikation der Schizomyceten. F. Deuticke, Leipzig. pp. 1-143. **Type genus:** *Clostridium* Prazmowski 1880

Corynebacteriaceae Lehmann and Neumann 1907

Lehmann, K.B. and R. Neumann. 1907. Lehmann's Medizin, Handatlas X. Atlas und Grundriss der Bakteriologie und Lehrbuch der speziellen bakteriologischen Diagnostik. 4. Auflage. J.F. Lehmann, München. p. 500. **Type genus:** *Corynebacterium* Lehmann and Neumann 1896

Crenotrichaceae Hansgirg 1888

Hansgirg, A. 1888. Oesterreichische Botanische Zeitschrift 38:227-230. **Type genus:** *Crenothrix* Cohn 1870

Cystobacteraceae McCurdy 1970

McCurdy, H.D. 1970. International Journal of Systematic Bacteriology 20: 283-296. **Type genus:** *Cystobacter* Schroeter 1886

Cytophagaceae Stanier 1940

Stanier, R.Y. 1940. Journal of Bacteriology 40:619-636. **Type genus:** *Cytophaga* Winogradsky 1929

Dermatophilaceae Austwick 1958

Austwick, P.K.C. 1958. Veterinary Reviews and Annotations 4:33-48. **Type**

genus: *Dermatophilus* (Van Saceghem 1915) Gordon 1964

Ehrlichiaeae Moshkovski 1945

Moshkovski, S.D. 1945. *Advances in Modern Biology (Moscow)* 19:1-44. **Type genus:** *Ehrlichia* Moshkovski 1945 see below

Frankiaceae Becking 1970

Becking, J.H. 1970. *International Journal of Systematic Bacteriology* 20:201-220. **Type genus:** *Frankia* Brunchorst 1886

Gallionellaceae Henrici and Johnson 1935

Henrici, A.T. and D. Johnson. 1935. *Journal of Bacteriology* 29:3-4. **Type genus:** *Gallionella* Ehrenberg 1838

Halobacteriaceae Gibbons 1974

Gibbons, N.E. 1974. in *Bergey* 8. pp. 269-272. **Type genus:** *Halobacterium* Elazari-Volcani 1957

Hyphomicrobiaceae Babudieri 1950

Babudieri, B. 1950. R.C. 1st Supplement, *Sanita, Roma* 13:580-591. **Type genus:** *Hyphomicrobium* Stutzer and Hartleb 1899

Lactobacillaceae Winslow, Broadhurst, Buchanan, Krumwiede, Rogers and Smith 1917

Winslow, C.E.A., J. Broadhurst, R.E. Buchanan, C. Krumwiede Jr., L.A. Rogers and G.H. Smith 1917. *Journal of Bacteriology* 2:505-566. **Type genus:** *Lactobacillus* Beijerinck 1901

Legionellaceae Brenner, Steigerwalt and McDade 1979

Brenner, D.J., A.G. Steigerwalt and J.E. McDade. 1979. *International Journal of Systematic Bacteriology* 29:436; Effective publication Brenner, D.J., A.G. Steigerwalt and J.E. McDade. 1979. *Annals of Internal Medicine* 90:656-658. **Type genus:** *Legionella* Brenner, Steigerwalt and McDade 1979

Leptospiraceae Hovind-Houger 1978

Hovind-Houger, K. 1978. *International Journal of Systematic Bacteriology* 29:245-251. **Type genus:** *Leptospira* Noguchi 1917

Leucotrichaceae Buchanan 1957

Buchanan, R.E. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 850-851. **Type genus:** *Leucotrix* Oersted 1884

Lysobacteraceae Christensen and Cook 1978

Christensen, P. and F.D. Cook. 1978. *International Journal of Systematic Bacteriology* 28:367-393. **Type genus:** *Lysobacter* Christensen and Cook 1978

Methanobacteriaceae Barker 1956

Barker, H.A. 1956. *Bacterial fermentations*. John Wiley, New York. p. 15. **Type genus:** *Methanobacterium* Kluyver and van Niel 1936

Micrococcaceae Pribram 1929

Pribram, E. 1929. *Journal of Bacteriology* 18:361-394. **Type genus:** *Micrococcus* Cohn 1872

Micromonosporaceae Krassilnikov 1938

Krassilnikov, N.A. 1938. *Ray fungi and related organisms, Actinomycetales. Akademii Nauk SSSR, Moscow*. p. 272. **Type genus:** *Micromonospora* Orskov 1923

Mycobacteriaceae Chester 1897

Chester, F.D. 1897. *Delaware Agricultural Experiment Station Bulletin* 9:38-145. **Type genus:** *Mycobacterium* Lehmann and Neumann 1896

Mycoplasmataceae Freundt 1955

Freundt, E.A. 1955. *International Bulletin of Bacteriological Nomenclature and Taxonomy* 5:67-78. **Type genus:** *Mycoplasma* Nowak 1929

Myxococcaceae Jahn 1924

Jahn, E. 1924. *Beitrage zur botanischen Protistologie. I. Die Polyangiden*. Verlag von Gebruder Borntraeger, Leipzig. p.

† Editor's note: The family name *Enterobacteriaceae* Rahn 1937 (type genus *Escherichia* Castellani and Chalmers 1919) has been challenged and is presently *sub judice* (see S.P. Lapage, *Int. J. Syst. Bacteriol.* 29:265-266, 1979; Judicial Commission Minute 29, *Int. J. Syst. Bacteriol.* 29:267-269, 1979).

403. **Type genus:** *Myxococcus* Thaxter 1892
- Neisseriaceae** Prevot 1933
Prevot, A.R. 1933. *Annales des Sciences Naturelles Zoologie et Biologie Animale* 15:23-260. **Type genus:** *Neisseria* Trevisan 1885
- Nevskiaceae** Henrici and Johnson 1935
Henrici, A.T. and D. Johnson. 1935. *Journal of Bacteriology* 29:3-4. **Type genus:** *Nevskia* Famintzin 1892
- Nitrobacteraceae** Buchanan 1917
Buchanan, R.E. 1917. *Journal of Bacteriology* 2:347-350. **Type genus:** *Nitrobacter* Winogradsky 1892
- Nocardiaceae** Castellani and Chalmers 1919
Castellani, A. and A.J. Chalmers. 1919. *Manual of tropical medicine*, 3rd ed. Williams, Wood and Co., New York. p. 1040. **Type genus:** *Nocardia* Trevisan 1889
- Oscillospiraceae** Peshkoff 1940
Peshkoff, M.A. 1940. *Zhurnal Obshchei Biologii* 1:597-617. **Type genus:** *Oscillospira* Chatton and Perard 1913
- Pasteuriaceae** Laurent 1890
Laurent, E. 1890. *Comptes Rendus de l'Academie des Sciences Paris* 111:754-756. **Type genus:** *Pasteuria* Metchnikoff 1888
- Peptococcaceae** Rogosa 1971
Rogosa, M. 1971. *International Journal of Systematic Bacteriology* 21:234-237. **Type genus:** *Peptococcus* Kluver and van Niel 1936
- Planococcaceae** Krassilnikov 1949
Krassilnikov, N.A. 1949. *Opredelitelv Bakterii i Actinomisetov. Akademii Nauk SSSR, Moscow*. pp. 328. **Type genus:** *Planococcus* Migula 1894
- Polyangiaceae** Jahn 1924
Jahn, E. 1924. *Beitrage zur botanischen Protistologie. I. Die Polyangiden*. Verlag von Gebruder Borntraeger, Leipzig. p. 75. **Type genus:** *Polyangium* Link 1809
- Propionibacteriaceae** Delwiche 1957
Delwiche, E.A. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. p. 569. **Type genus:** *Propionibacterium* Orla-Jensen 1909
- Pseudomonadaceae** Winslow, Broadhurst, Buchanan, Krumwiede, Rogers and Smith 1917
Winslow, C.E.A., J. Broadhurst, R.E. Buchanan, C. Krumwiede Jr., L.A. Rogers and G.H. Smith. 1917. *Journal of Bacteriology* 2:505-566. **Type genus:** *Pseudomonas* Migula 1894
- Rhizobiaceae** Conn 1938
Conn, H.J. 1938. *Journal of Bacteriology* 36:320-321. **Type genus:** *Rhizobium* Frank 1889
- Rhodospirillaceae** Pfennig and Truper 1971
Pfennig, N. and H.G. Truper. 1971. *International Journal of Systematic Bacteriology* 21:17-18. **Type genus:** *Rhodospirillum* Molisch 1907
- Rickettsiaceae** Pinkerton 1936
Pinkerton, H. 1936. *Parasitology* 28:172-189. **Type genus:** *Rickettsia* da Rocha-Lima 1916
- Simonsiellaceae** Steed 1962
Steed, P.D.M. 1962. *Journal of General Microbiology* 29:615-624. **Type genus:** *Simonsiella* Schmid 1922
- Spirillaceae** Migula 1894
Migula, N. 1894. *Arbeiten aus dem Bakteriologischen Institut der Technischen Hochschule zu Karlsruhe* 1:235:238. **Type genus:** *Spirillum* Ehrenberg 1832
- Spirochaetaceae** Swellengrebel 1907
Swellengrebel, N.H. 1907. *Annales de l'Institut Pasteur (Paris)* 21:562-586. **Type genus:** *Spirochaeta* Ehrenberg 1835
- Spirosomaceae** Larkin and Borrall 1978
Larkin, J.M. and R. Borrall. 1978. *International Journal of Systematic Bacteriology* 28:595-596. **Type genus:** *Spirosoma* Migula 1894

Streptomycetaceae Waksman and Henrici 1943
Waksman, S.A. and A.T. Henrici. 1943.
Journal of Bacteriology **46**:337-341. **Type genus:** *Streptomyces* Waksman and Henrici 1943

Streptococcaceae Deibel and Seeley 1974
Deibel, R.H. and H.W. Seeley Jr. 1974.
in *Bergey* 8. pp. 490-517. **Type genus:** *Streptococcus* Rosenbach 1884

Thiocapsaceae Bavendamm 1924
Bavendamm, W. 1924. Die farblosen und roten Schwefelbakterien des Suss- und Salzwassers. *Pflanzenforschung*, Berlin-Dahlem. pp. 1-156. **Type genus:** *Thiocapsa* Winogradsky 1888

Treponemataceae Robinson 1948
Robinson, G.H. 1948 in Breed, R.S.,

E.G.D. Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacteriology*, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 1051-1058. **Type genus:** *Treponema* Schaudinn 1905

Veillonellaceae Rogosa 1971
Rogosa, M. 1971. *International Journal of Systematic Bacteriology* **21**:231-233. **Type genus:** *Veillonella* Prevot 1933

Vibrionaceae Veron 1965
Veron, M. 1965. *Comptes Rendus de l'Academie des Sciences Paris* **261**:5243-5246. **Type genus:** *Vibrio* Pacini 1854

Vitreoscillaceae Pringsheim 1949
Pringsheim, E.G. 1949. *Bacteriological Reviews* **13**:47-98. **Type genus:** *Vitreoscilla* Pringsheim 1949

NAMES OF GENERA, SPECIES AND SUBSPECIES

Note: Abbreviations used for genera in the following lists are used for brevity only and are not intended or recommended as contractions in the nomenclatural sense.

Acetobacter Beijerinck 1898

Beijerinck, M. 1898. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. 4:209-216. **Type species:** *A. aceti* (Pasteur 1864) Beijerinck 1898

Description: Bergey 8.

A. aceti (Pasteur 1864) Beijerinck 1898

Pasteur, L. 1864. Annales scientifiques de l'École normale supérieure. Paris 1:113-158; Beijerinck, M. 1898. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. 4:209-216. **Type strain:** NCIB 8621

Description: Bergey 8.

A. aceti subsp. *aceti* (Pasteur 1864) De Ley and Frateur 1974

Pasteur, L. 1864. Annales scientifiques de l'École normale supérieure. Paris 1:113-158; De Ley, J. and J. Frateur. 1974 in Bergey 8. **Type strain:** NCIB 8621

Description: Bergey 8.

A. aceti subsp. *liquefaciens* (Asai 1935) De Ley and Frateur 1974

Asai, T. 1935. Journal of the Agricultural Chemical Society of Japan 11:674-708; De Ley, J. and J. Frateur. 1974 in Bergey 8. **Type strain:** IAM 1834

Description: Bergey 8.

A. aceti subsp. *orleanensis* (Henneberg 1906) De Ley and Frateur 1974

Henneberg, W. 1906. Deutsche Essigindustrie 10:106-108; De Ley, J. and J. Frateur. 1974 in Bergey 8. **Type strain:** ATCC 12876

Description: Bergey 8.

A. aceti subsp. *xylinum* (Brown 1886) De Ley and Frateur 1974

Brown, A.J. 1886. Journal of the Chemical Society (London) 49:432-439; De Ley, J. and J. Frateur. 1974 in Bergey 8. **Type strain:** ATCC 23767

Description: Bergey 8.

A. pasteurianus (Hansen 1879) Beijerinck 1916

Hansen, E.C. 1879. Compte Rendu des travaux du Laboratoire Carlsberg 1:96-100; Beijerinck, M. 1916. Verslagen van de gewone vergadering der wis- en natuurkundige afdeling. Koninklijke Akademie van wetenschappen te Amsterdam 18:1198-2000. **Type strain:** LMD

22.1

Description: Bergey 8.

A. pasteurianus subsp. *ascendens* (Henneberg 1898) De Ley and Frateur 1974

Henneberg, W. 1898. Deutsche Essigindustrie 2:145-148; De Ley, J. and J. Frateur. 1974 in Bergey 8. **Type strain:** LMD 51.1

Description: Bergey 8.

A. pasteurianus subsp. *estunensis* (Carr 1958) De Ley and Frateur 1974

Carr, J.G. 1958. Antonie van Leeuwenhoek Journal of Microbiology and Serology 24:157-160; De Ley, J. and J. Frateur. 1974 in Bergey 8. **Type strain:** ATCC 23753

Description: Bergey 8.

A. pasteurianus subsp. *lovaniensis* (Frateur 1950) De Ley and Frateur 1974

Frateur, J. 1950. Cellule 53:287-392; De Ley, J. and J. Frateur. 1974 in Bergey 8. **Type strain:** ATCC 12875

Description: Bergey 8.

A. pasteurianus subsp. *paradoxus* (Frateur 1950) De Ley and Frateur 1974

Frateur, J. 1950. Cellule 53: 287-392; De Ley, J. and J. Frateur. 1974 in Bergey 8. **Type strain:** LMD 53.6

Description: Bergey 8.

A. pasteurianus subsp. *pasteurianus* (Hansen 1879) De Ley and Frateur 1974

Hansen, E.C. 1879. Compte Rendu des Travaux du Laboratoire Carlsberg 1:96-100; De Ley, J. and J. Frateur. 1974 in Bergey 8. **Type strain:** LMD 22.1

Description: Bergey 8.

A. peroxydans Visser't Hooft 1925

Visser't Hooft, F. 1925. Dissertation. Technical University, Delft, Meinema. pp. 1-129. **Type strain:** ATCC 12874

Description: Bergey 8.

Acetobacterium Balch, Schoberth, Tanner and Wolfe 1977

Balch, W.E., S. Schoberth, R.S. Tanner and R.S. Wolfe. 1977. International Journal of Systematic Bacteriology 27: 355-361. **Type species:** *A. woodii* Balch, Schoberth, Tanner and Wolfe 1977

Description: Balch, W.E., S. Schoberth, R.S. Tanner and R.S. Wolfe. 1977. Ibid.

- A. woodii** Balch, Schoberth, Tanner and Wolfe 1977
Balch, W.E., S. Schoberth, R.S. Tanner and R.S. Wolfe. 1977. *International Journal of Systematic Bacteriology* **27**: 355-361. **Type strain:** ATCC 29683
Description: Balch, W.E., S. Schoberth, R.S. Tanner and R.S. Wolfe. 1977. *Ibid.*
- Acholeplasma** Edward and Freundt 1970
Edward, D.G. ff. and E.A. Freundt. 1970. *Journal of General Microbiology* **62**:1-2. **Type species:** *A. laidlawii* (Freundt 1955) Edward and Freundt 1970
Description: Bergey 8.
- A. axanthum** Tully and Razin 1970
Tully, J.G. and S. Razin. 1970. *Journal of Bacteriology* **103**:751-754. **Type strain:** ATCC 25176
Description: Tully, J.G. 1979 in Barile, M.F., S. Razin, J.G. Tully and R.F. Whitcomb (eds). *The Mycoplasmas*. Academic Press, New York, Volume I. pp. 431-449.
- A. equifetale** Kirchoff 1974
Kirchoff, H. 1974. *Zentralblatt für Veterinärmedizin Reihe B* **21**:207-210. **Type strain:** ATCC 29724
Description: Kirchoff, H. 1978. *International Journal of Systematic Bacteriology* **28**:76-81.
- A. granularum** (Switzer 1964) Edward and Freundt 1970
Switzer, W.P. 1964 in Dunne (ed). *Diseases of Swine*, 2nd ed. Iowa State University Press, Ames. pp. 498-507; Edward, D.G. ff. and E.A. Freundt. 1970. *Journal of General Microbiology* **62**:1-2. **Type strain:** ATCC 19168
Description: Tully, J.G. 1979 in Barile, M.F., S. Razin, J.G. Tully and R.F. Whitcomb (eds). *The Mycoplasmas*. Academic Press, New York, Volume I. pp. 431-449.
- A. hippikon** Kirchoff 1974
Kirchoff, H. 1974. *Zentralblatt für Veterinärmedizin Reihe B* **21**:207-210. **Type strain:** ATCC 29725
Description: Kirchoff, H. 1978. *International Journal of Systematic Bacteriology* **28**:76-81.
- A. laidlawii** (Freundt 1955) Edward and Freundt 1970
Freundt, E.A. 1955. *International Bulletin of Bacteriological Nomenclature and Taxonomy* **5**:67-78; Edward, D.G. ff. and E.A. Freundt. 1970. *Journal of General Microbiology* **62**:1-2. **Type strain:** ATCC 23206
Description: Tully, J.G. 1979 in Barile, M.F., S. Razin, J.G. Tully and R.F. Whitcomb (eds). *The Mycoplasmas*. Academic Press, New York, Volume I. pp. 431-449.
- A. modicum** Leach 1973
Leach, R.H. 1973. *Journal of General Microbiology* **75**:135-153. **Type strain:** ATCC 29102
Description: Tully, J.G. 1979 in Barile, M.F., S. Razin, J.G. Tully and R.F. Whitcomb (eds). *The Mycoplasmas*. Academic Press, New York, Volume I. pp. 431-449.
- A. oculi** Al-Aubaidi, Dardiri, Muscoplatt and McCauley 1973
Al-Aubaidi, J.M., A.H. Dardiri, C.C. Muscoplatt and E.H. McCauley. 1973. *Cornell Veterinarian* **63**:117-129. **Type strain:** ATCC 27350
Description: Tully, J.G. 1979 in Barile, M.F., S. Razin, J.G. Tully R.F. Whitcomb (eds). *The Mycoplasmas*. Academic Press, New York, Volume I. pp. 431-449.
- Achromatium** Schewiakoff 1893
Schewiakoff, W. 1893. *Über einen neuen bacterienähnlichen Organismus des Susswassers*. *Habilitations schrift, Universität Heidelberg C. Winter*. pp. 1-36. **Type species:** *A. oxaliferum* Schewiakoff 1893
Description: Bergey 8.
- A. oxaliferum** Schewiakoff 1893
Schewiakoff, W. 1893. *Über einen neuen bacterienähnlichen Organismus des Susswassers*. *Habilitations schrift, Universität Heidelberg C. Winter*. pp. 1-36. **Type strain:** no culture isolated.
Description: West, G.S. and B.M. Griffiths. 1909. *Proceedings of the Royal Society London B, Biological Sciences* **81**: 398-405.
- Acidaminococcus** Rogosa 1969
Rogosa, M. 1969. *Journal of Bacteriology*

- 98:756-766. Type species:** *A. fermentans* Rogosa 1969
Description: Bergey 8.
- A. fermentans** Rogosa 1969
 Rogosa, M. 1969. Journal of Bacteriology **98:756-766. Type strain:** ATCC 25085
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- Actinobacter** Brisou and Prevot 1954
 Brisou, J. and A.R. Prevot. 1954. Annales de l'Institut Pasteur (Paris) **86:722-728. Type species:** *A. calcoaceticus* (Beijerinck 1911) Baumann, Doudoroff and Stanier 1968
Description: Bergey 8.
- A. calcoaceticus** (Beijerinck 1911) Baumann, Doudoroff and Stanier 1968
 Beijerinck, M.W. 1911. Proceedings of the Royal Academy of Sciences (Amsterdam) **13:1066-1077; Baumann, P., M. Doudoroff and R.Y. Stanier. 1968. Journal of Bacteriology 95:1520-1541. Type strain:** ATCC 23055
Description: Henriksen, S.D. 1973. Bacteriological Reviews **37:522-561.**
- A. lwoffii** (Audureau 1940) Brisou and Prevot 1954
 Audureau, A. 1940. Annales de l'Institut Pasteur (Paris) **64:126-166; Brisou, J. and A.R. Prevot. 1954. Annales de l'Institut Pasteur (Paris) 86:722-728. Type strain:** ATCC 15309
Description: Henriksen, S.D. 1973. Bacteriological Reviews **37:522-561.**
- Actinobacillus** Brumpt 1910
 Brumpt, E. 1910. Precis de Parasitologie. 1st ed., Masson et Cie, Paris. **Type species:** *A. lignieresii* Brumpt 1910
Description: Bergey 8.
- A. actinomycetemcomitans** (Klinger 1912) Topley and Wilson 1929
 Klinger, R. 1912. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I. **62:191-200; Topley, W.W.C. and G.S. Wilson. 1929. The principles of bacteriology and immunity. 1st ed. Edward Arnold and Co., London. pp. 1-587. Type strain:** NCTC 9710
Description: King, E.O. and H.W. Tatum. 1962. Journal of Infectious Diseases **111:85-94.**
- A. capsulatus** Arseculeratne 1962
 Arseculeratne, S.N. 1962. Journal of Comparative Pathology and Therapeutics **72:33-39. Type strain:** Frederiksen P243
Description: Arseculeratne, S.N. 1962. Ibid.
- A. equuli** (van Straaten 1918) Haupt 1934
 van Straaten, H. 1918. Bacteriologische Bevindingen bij eenige gevallen van Pyosepticaemie (Lahme) der veulens. Verslag van den Werksaamheden der Rijksseruminrichting voor 1916-1917, Rotterdam. pp. 71-76; Haupt, H. 1934. Archiv für wissenschaftliche und praktische Tierheilkunde **67:513-524. Type strain:** ATCC 19392
Description: Bergey 8.
- A. lignieresii** Brumpt 1910
 Brumpt, E. 1910. Precis de Parasitologie. 1st ed., Masson et Cie, Paris. p. 849.
Type strain: NCTC 4189
Description: Bergey 8.
- A. suis** van Dorssen and Jaartsveld 1962
 van Dorssen, C.A. and F.H.J. Jaartsveld. 1962. Tijdschrift voor Diergeneeskunde **87:448-450. Type strain:** CCM 5586
Description: Mair, N.S., C.J. Randall, G.W. Thomas, J.F. Harbourne, C.T. McCrea and K.P. Cowl. 1974. Journal of Comparative Pathology **84:113-119.**
- Actinomadura** Lechevalier and Lechevalier 1970
 Lechevalier, H.A. and M.P. Lechevalier. 1970 in Prauser, H. (ed). The Actinomycetales. VEB Gustav Fischer Verlag, Jena. pp. 393-405. **Type species:** *A. madurae* (Vincent 1894) Lechevalier and Lechevalier 1970
Description: Lechevalier, H.A. and M.P. Lechevalier. 1970. Ibid.
- A. africana** Preobrazhenskaya and Sveshnikova 1974
 Preobrazhenskaya, T.P. and M.A. Sveshnikova. 1974. Mikrobiologiya **43:735-738. Type strain:** INA 1839
Description: Preobrazhenskaya, T.P. and M.A. Sveshnikova. 1974. Ibid.
- A. aurantiaca** Lavrova and Preobrazhenskaya 1975

- Lavrova, N.V. and T.P. Preobrazhenskaya. 1975. *Antibiotiki* **20**:483-488. **Type strain:** INA 1933
Description: Lavrova, N.V. and T.P. Preobrazhenskaya. 1975. *Ibid.*
- A. carminata** Gauze, Sveshnikova, Ukholina, Gavrilina, Filicheva and Gladkikh 1973
 Gauze, G.F., M.A. Sveshnikova, R.S. Ukholina, G.V. Gavrilina, V.A. Filicheva and E.G. Gladkikh. 1973. *Antibiotiki* **18**: 675-678. **Type strain:** INA 4281
Description: Gauze, G.F., M.A. Sveshnikova, R.S. Ukholina, G.V. Gavrilina, V.A. Filicheva and E.G. Gladkikh. 1973. *Ibid.*
- A. citrea** Lavrova, Preobrazhenskaya and Sveshnikova 1972
 Lavrova, N.V., T.P. Preobrazhenskaya and M.A. Sveshnikova. 1972. *Antibiotiki* **17**:965-970. **Type strain:** ATCC 27887
Description: Lavrova, N.V., T.P. Preobrazhenskaya and M.A. Sveshnikova. 1972. *Ibid.*
- A. coerulea** Preobrazhenskaya, Lavrova, Ukholina and Nechaeva 1975
 Preobrazhenskaya, T.P., N.V. Lavrova, R.S. Ukholina and N.P. Nechaeva. 1975. *Antibiotiki* **20**:404-409. **Type strain:** INA 765
Description: Preobrazhenskaya, T.P., N.V. Lavrova, R.S. Ukholina and N.P. Nechaeva. 1975. *Ibid.*
- A. coeruleofusca** Preobrazhenskaya and Sveshnikova 1974
 Preobrazhenskaya, T.P. and M.A. Sveshnikova. 1974. *Mikrobiologiya* **43**:735-738. **Type strain:** INA 1335
Description: Preobrazhenskaya, T.P. and M.A. Sveshnikova. 1974. *Ibid.*
- A. cremea** Preobrazhenskaya, Lavrova, Ukholina and Nechaeva 1975
 Preobrazhenskaya, T.P., N.V. Lavrova, R.S. Ukholina and N.P. Nechaeva. 1975. *Antibiotiki* **20**:404-409. **Type strain:** INA 292
Description: Preobrazhenskaya, T.P., N.V. Lavrova, R.S. Ukholina and N.P. Nechaeva. 1975. *Ibid.*
- A. fastidiosa** Soina, Sokolov and Agre 1975
 Soina, V.S., A.A. Sokolov and N.S. Agre. 1975. *Mikrobiologiya* **44**:883-887. **Type strain:** INMI 104
Description: Soina, V.S., A.A. Sokolov and N.S. Agre. 1975. *Ibid.*
- A. flava** Gauze, Maksimova, Ollkhovatova, Sveshnikova, Kochetkova and Ilchenko 1974
 Gauze, G.F., T.S. Maksimova, O.L. Ollkhovatova, M.A. Sveshnikova, G.V. Kochetkova and G.B. Ilchenko. 1974. *Antibiotiki* **9**:771-775. **Type strain:** ATCC 29533
Description: Gauze, G.F., T.S. Maksimova, O.L. Ollkhovatova, M.A. Sveshnikova, G.V. Kochetkova and G.B. Ilchenko. 1974. *Ibid.*
- A. helvata** Nonomura and Ohara 1971
 Nonomura, H. and Y. Ohara. 1971. *Journal of Fermentation Technology* **49**: 904-912. **Type strain:** ATCC 27295
Description: Nonomura, H. and Y. Ohara. 1971. *Ibid.*
- A. livida** Lavrova and Preobrazhenskaya 1975
 Lavrova, N.V. and T.P. Preobrazhenskaya. 1975. *Antibiotiki* **20**:483-488. **Type strain:** INA 1678
Description: Lavrova, N.V. and T.P. Preobrazhenskaya. 1975. *Ibid.*
- A. longispora** Preobrazhenskaya and Sveshnikova 1974
 Preobrazhenskaya, T.P. and M.A. Sveshnikova. 1974. *Mikrobiologiya* **43**:864-868. **Type strain:** INA 10222
Description: Preobrazhenskaya, T.P. and M.A. Sveshnikova. 1974. *Ibid.*
- A. luteofluorescens** (Shinobu 1962)
 Preobrazhenskaya, Lavrova and Blinov 1975
 Shinobu, R. 1962. *Memoirs of the Osaka University of the Liberal Arts and Education B Natural Science* **11**:115-122; Preobrazhenskaya, T.P., N.V. Lavrova and N.O. Blinov. 1975. *Mikrobiologiya* **44**:524-527. **Type strain:** IFO 13057
Description: Preobrazhenskaya, T.P., N.V. Lavrova and N.O. Blinov. 1975. *Ibid.*
- A. madurae** (Vincent 1894) Lechevalier and Lechevalier 1970
 Vincent, H. 1894. *Annales de l'Institut Pasteur (Paris)* **8**:129-151; Lechevalier, H.A. and M.P. Lechevalier. 1970 in Prauser, H. (ed). *The Actinomycetales*. VEB Gustav Fischer Verlag, Jena. pp. 393-405. **Type strain:** NCTC 5654
Description: Lechevalier, H.A. and M.P. Lechevalier. 1970. *Ibid.*
- A. malachitica** Lavrova, Preobrazhenskaya and

- Sveshnikova 1972
Lavrova, N.V., T.P. Preobrazhenskaya and M.A. Sveshnikova. 1972. *Antibiotiki* **17**:965-970. **Type strain:** ATCC 27888
Description: Lavrova, N.V., T.P. Preobrazhenskaya and M.A. Sveshnikova. 1972. *Ibid.*
- A. pelletieri** (Laveran 1906) Lechevalier and Lechevalier 1970
Laveran, A. 1906. *Comptes Rendus des Seances de la Societe de Biologie (Paris)* **61**:340-341; Lechevalier, H.A. and M.P. Lechevalier. 1970 in Prauser, H. (ed). *The Actinomycetales*. VEB Gustav Fischer Verlag, Jena. pp. 393-405. **Type strain:** NCTC 4162
Description: Lechevalier, H.A. and M.P. Lechevalier. 1970. *Ibid.*
- A. pusilla** Nonomura and Ohara 1971
Nonomura, H. and Y. Ohara. 1971. *Journal of Fermentation Technology* **49**: 904-912. **Type strain:** ATCC 27296
Description: Nonomura, H. and Y. Ohara. 1971. *Ibid.*
- A. roseola** Lavrova and Preobrazhenskaya 1975
Lavrova, N.V. and T.P. Preobrazhenskaya. 1975. *Antibiotiki* **20**:483-488. **Type strain:** INA 1671
Description: Lavrova, N.V. and T.P. Preobrazhenskaya. 1975. *Ibid.*
- A. roseoviolacea** Nonomura and Ohara 1971
Nonomura, H. and Y. Ohara. 1971. *Journal of Fermentation Technology* **49**: 904-912. **Type strain:** ATCC 27297
Description: Nonomura, H. and Y. Ohara. 1971. *Ibid.*
- A. rubra** (Sveshnikova, Maksimova and Kudrina 1969) Meyer and Sveshnikova 1974
Sveshnikova, M.A., T.S. Maksimova and E.S. Kudrina. 1969. *Mikrobiologiya* **38**: 883-893; Meyer, J. and M.A. Sveshnikova. 1974. *Zeitschrift fur Allgemeine Mikrobiologie* **14**:167-170. **Type strain:** ATCC 27031
Description: Meyer, J. and M.A. Sveshnikova. 1974. *Ibid.*
- A. salmona** Preobrazhenskaya, Lavrova, Ukholina and Nechaeva 1975
Preobrazhenskaya, T.P., N.V. Lavrova, R.S. Ukholina and N.P. Nechaeva. 1975. *Antibiotiki* **20**:404-409. **Type strain:** INA 2488
Description: Preobrazhenskaya, T.P., N.V. Lavrova, R.S. Ukholina and N.P. Nechaeva. 1975. *Ibid.*
- A. spadix** Nonomura and Ohara 1971
Nonomura, H. and Y. Ohara. 1971. *Journal of Fermentation Technology* **49**: 904-912. **Type strain:** ATCC 27298
Description: Nonomura, H. and Y. Ohara. 1971. *Ibid.*
- A. verrucosospora** Nonomura and Ohara 1971
Nonomura, H. and Y. Ohara. 1971. *Journal of Fermentation Technology* **49**: 904-912. **Type strain:** ATCC 27299
Description: Nonomura, H. and Y. Ohara. 1971. *Ibid.*
- A. vinacea** Lavrova and Preobrazhenskaya 1975
Lavrova, N.V. and T.P. Preobrazhenskaya. 1975. *Antibiotiki* **20**:483-488. **Type strain:** INA 1682
Description: Lavrova, N.V. and T.P. Preobrazhenskaya. 1975. *Ibid.*
- Actinomyces** Harz 1877
Harz, C.O. 1877-1878. *Deutsche Zeitschrift fur Tiermedizin* **5**:125-140. **Type species:** *A. bovis* Harz 1877
Description: Bergey 8.
- A. bovis** Harz 1877
Harz, C.O. 1877-1878. *Deutsche Zeitschrift fur Tiermedizin* **5**:125-140. **Type strain:** ATCC 13683
Description: Bergey 8.
- A. humiferus** Gledhill and Casida 1969
Gledhill, W.E. and L.E. Casida. 1969. *Applied Microbiology* **18**:114-121. **Type strain:** ATCC 25174
Description: Gledhill, W.E. and L.E. Casida. 1969. *Ibid.*
- A. israelii** (Kruse 1896) Lachner-Sandoval 1898
Kruse, W. 1896 in Flugge, C. *Die Mikroorganismen* 3rd ed. Vol. 2, Vogel, Leipzig. pp. 48-96; Lachner-Sandoval, V. 1898. *Uber Strahlenpilze*. Inaugural Dissertation Strassburg. Universitats Buchdruckerei Von Carl Georgi, Bonn. **Type strain:** ATCC 12102
Description: Bergey 8.
- A. naeslundii** Thompson and Lovstedt 1951
Thompson, L. and S.A. Lovstedt. 1951. *Proceedings of the Staff Meetings of the Mayo Clinic* **26**:169-175. **Type strain:** ATCC 12104
Description: Bergey 8.
- A. odontolyticus** Batty 1958

- Batty, I. 1958. *Journal of Pathology and Bacteriology* **75**:455-459. **Type strain:** ATCC 17929
Description: Bergey 8.
- A. viscosus** (Howell, Jordan, Georg and Pine 1965) Georg, Pine and Gerencser 1969
Howell, A., H.V. Jordan, L.K. Georg and L. Pine. 1965. *Sabouraudia* **4**:65-67; Georg, L.K., L. Pine and M.A. Gerencser. 1969. *International Journal of Systematic Bacteriology* **19**:291-293. **Type strain:** ATCC 15987
Description: Bergey 8.
- Actinoplanes** Couch 1950
Couch, J.N. 1950. *Journal of the Elisha Mitchell Scientific Society* **66**:87-92. **Type species:** *A. philippinensis* Couch 1950
Description: Bergey 8.
- A. armeniacus** Kalakoutskii and Kusnetsov 1964
Kalakoutskii, L.V. and V.D. Kusnetsov. 1964. *Mikrobiologiya* **33**:613. **Type strain:** ATCC 15676
Description: Bergey 8.
- A. brasiliensis** Thiemann, Beretta, Coronelli and Pagani 1969
Thiemann, J.E., G. Beretta, C. Coronelli and H. Pagani. 1969. *Journal of Antibiotics* **22**:119-125. **Type strain:** ATCC 25844
Description: Thiemann, J.E., G. Beretta, C. Coronelli and H. Pagani. 1969. *Ibid.*
- A. deccanensis** Parenti, Pagani and Beretta 1975
Parenti, F., H. Pagani and G. Beretta. 1975. *Journal of Antibiotics* **28**:247-252. **Type strain:** ATCC 21983
Description: Parenti, F., H. Pagani and G. Beretta. 1975. *Ibid.*
- A. ferrugineus** Palleroni 1978
Palleroni, N.J. 1978. *International Journal of Systematic Bacteriology* **29**:51-55. **Type strain:** ATCC 29868
Description: Palleroni, N.J. 1978. *Ibid.*
- A. italicus** Beretta 1973
Beretta, G. 1973. *International Journal of Systematic Bacteriology* **23**:37-41. **Type strain:** ATCC 27366
Description: Beretta, G. 1973. *Ibid.*
- A. missouriensis** Couch 1963
Couch, J.N. 1963. *Journal of the Elisha Mitchell Scientific Society* **79**:53-70. **Type strain:** ATCC 14538
Description: Bergey 8.
- A. philippinensis** Couch 1950
Couch, J.N. 1950. *Journal of the Elisha Mitchell Scientific Society* **66**:87-92. **Type strain:** ATCC 12427
Description: Bergey 8.
- A. rectilineatus** Lechevalier and Lechevalier 1975
Lechevalier, M.P. and H.A. Lechevalier. 1975. *International Journal of Systematic Bacteriology* **25**:371-376. **Type strain:** ATCC 29234
Description: Lechevalier, M.P. and H.A. Lechevalier. 1975. *Ibid.*
- A. utahensis** Couch 1963
Couch, J.N. 1963. *Journal of the Elisha Mitchell Scientific Society* **79**:53-70. **Type strain:** ATCC 14539
Description: Bergey 8.
- Actinopolyspora** Gochnauer, Leppard, Komararat, Kates, Novitsky and Kushner 1975
Gochnauer, M.B., G.G. Leppard, P. Komararat, M. Kates, T. Novitsky and D.J. Kushner. 1975. *Canadian Journal of Microbiology* **21**:1500-1511. **Type species:** *A. halophila* Gochnauer, Leppard, Komararat, Kates, Novitsky and Kushner 1975
Description: Gochnauer, M.B., G.G. Leppard, P. Komararat, M. Kates, T. Novitsky and D.J. Kushner. 1975. *Ibid.*
- A. halophila** Gochnauer, Leppard, Komararat, Kates, Novitsky and Kushner 1975
Gochnauer, M.B., G.G. Leppard, P. Komararat, M. Kates, T. Novitsky and D.J. Kushner. 1975. *Canadian Journal of Microbiology* **21**:1500-1511. **Type strain:** ATCC 27976
Description: Gochnauer, M.B., G.G. Leppard, P. Komararat, M. Kates, T. Novitsky and D.J. Kushner. 1975. *Ibid.*
- Actinopycnidium** Krassilnikov 1962
Krassilnikov, N.A. 1962. *Mikrobiologiya* **31**:250-253 (English Translation 204-207). **Type species:** *A. caeruleum* Krassilnikov 1962
Description: Krassilnikov, N.A. 1962. *Ibid.*
- A. caeruleum** Krassilnikov 1962
Krassilnikov, N.A. 1962. *Mikrobiologiya* **31**:204-207. **Type strain:** ATCC 15719

- Description:** Krassilnikov, N.A. 1962. Ibid.
- Actinosporangium** Krassilnikov and Yuan 1961
Krassilnikov, N.A. and C.S. Yuan. 1961. *Izvestiya Akademii Nauk SSSR Seriya Biologicheskaya* 8:113-116. **Type species:** *A. violaceum* Krassilnikov and Yuan 1961
Description: Krassilnikov, N.A. and C.S. Yuan. 1961. Ibid.
- A. violaceum** Krassilnikov and Yuan 1961
Krassilnikov, N.A. and C.S. Yuan. 1961. *Izvestiya Akademii Nauk SSSR Seriya Biologicheskaya* 8:113-116. **Type strain:** ATCC 15813
Description: Krassilnikov, N.A. and C.S. Yuan. 1961. Ibid.
- Actinosynnema** Hasegawa, Lechevalier and Lechevalier 1978
Hasegawa, T., M.P. Lechevalier and H.A. Lechevalier. 1978. *International Journal of Systematic Bacteriology* 28:304-310. **Type species:** *A. mirum* Hasegawa, Lechevalier and Lechevalier 1978
Description: Hasegawa, T., M.P. Lechevalier and H.A. Lechevalier. 1978. Ibid.
- A. mirum** Hasegawa, Lechevalier and Lechevalier 1978
Hasegawa, T., M.P. Lechevalier and H.A. Lechevalier. 1978. *International Journal of Systematic Bacteriology* 28:304-310. **Type strain:** IMRU 3971
Description: Hasegawa, T., M.P. Lechevalier and H.A. Lechevalier. 1978. Ibid.
- Aegyptianella** Carpano 1929
Carpano, M. 1929. *Bulletin of the Ministry of Agriculture Egypt* 86:1-12. **Type species:** *A. pullorum* Carpano 1929
Description: Bergey 8.
- A. pullorum** Carpano 1929
Carpano, M. 1929. *Bulletin of the Ministry of Agriculture Egypt* 86:1-12. **Type strain:** no culture isolated.
Description: Bergey 8.
- Aerococcus** Williams, Hirsch and Cowan 1953
Williams, R.E.O., A. Hirsch and S.T. Cowan. 1953. *Journal of General Microbiology* 8:475-480. **Type species:** *A. viridans* Williams, Hirsch and Cowan 1953
Description: Bergey 8.
- A. viridans** Williams, Hirsch and Cowan 1953
Williams, R.E.O., A. Hirsch and S.T. Cowan. 1953. *Journal of General Microbiology* 8:475-480. **Type strain:** NCTC 8251
Description: Williams, R.E.O., A. Hirsch and S.T. Cowan. 1953. Ibid.
- Aeromonas** Kluyver and van Niel 1936
Kluyver, A.J. and C.B. van Niel. 1936. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* 94:369-403. **Type species:** *A. hydrophila* (Chester 1901) Stanier 1943
Description: Bergey 8.
- A. hydrophila** (Chester 1901) Stanier 1943
Chester, F.D. 1901. *A Manual of Determinative Bacteriology.* The MacMillan Co., New York. pp. 1-401; Stanier, R.Y. 1943. *Journal of Bacteriology* 46:213-214. **Type strain:** ATCC 7966
Description: Bergey 8.
- A. hydrophila** subsp. *anaerogenes* Schubert 1964
Schubert, R.H.W. 1964. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I.* 193:343-352. **Type strain:** ATCC 15467
Description: Bergey 8.
- A. hydrophila** subsp. *hydrophila* (Chester 1901) Stanier 1943
Chester, F.D. 1901. *A Manual of Determinative Bacteriology.* The MacMillan Co., New York. pp. 1-401; Stanier, R.Y. 1943. *Journal of Bacteriology* 46:213-214. **Type strain:** ATCC 7966
Description: Bergey 8.
- A. hydrophila** subsp. *proteolytica* (Merkel, Traganza, Mukherjee, Griffin and Prescott 1964) Schubert 1969
Merkel, J.R., E.D. Traganza, B.B. Mukherjee, T.B. Griffin and J.M. Prescott. 1964. *Journal of Bacteriology* 87:1227-1233; Schubert, R.H.W. 1969. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I.* 211:409-412. **Type strain:** ATCC 15338
Description: Bergey 8.
- A. punctata** (Zimmermann 1890) Snieszko 1957
Zimmermann, O.E.R. 1890. 1. Reihe, *Elfter Bericht der Naturwissenschaftlichen Gesellschaft Chemnitz*, pp. 54-154; Snieszko 1957.

- eszko, S.F. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 189-193. **Type strain:** ATCC 15468
Description: Bergey 8.
- A. punctata** subsp. *caviae* (Scherago 1936) Schubert 1964
Scherago, M. 1936. *Journal of Bacteriology* 31:83; Schubert, R.H.W. 1964. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I.* 193:343-352. **Type strain:** ATCC 15468
Description: Bergey 8.
- A. punctata** subsp. *punctata* (Zimmermann 1890) Snieszko 1957
Zimmermann, O.E.R. 1890. 1 Reihe Elfter Bericht der Naturwissenschaftlichen Gesellschaft Chemnitz, pp. 54-154; Snieszko, S.F. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 189-193. **Type strain:** ATCC 15468
Description: Bergey 8.
- A. salmonicida** (Lehmann and Neumann 1896) Griffin, Snieszko and Friddle 1953
Lehmann, K.B. and R. Neumann. 1896. *Atlas und Grundriss der Bakteriologie und Lehrbuch der speziellen bakteriologischen Diagnostik*. 1st ed. J.F. Lehmann, Munchen; Griffin, P.J., S.F. Snieszko and S.B. Friddle. 1953. *Transactions of the American Fisheries Society* 82:129-138. **Type strain:** NCMB 1102
Description: Bergey 8.
- A. salmonicida** subsp. *achromogenes* (Smith 1963) Schubert 1967
Smith, I.W. 1963. *Journal of General Microbiology* 33:263-274; Schubert, R.H.W. 1967. *International Journal of Systematic Bacteriology* 17:273-279. **Type strain:** NCMB 1110
Description: Bergey 8.
- A. salmonicida** subsp. *masoucida* Kimura 1969
Kimura, T. 1969. *Fish Pathology* (Tokyo) 3:45-52. **Type strain:** ATCC 27013
Description: Bergey 8.
- A. salmonicida** subsp. *salmonicida* (Lehmann and Neumann 1896) Griffin, Snieszko and Friddle 1953
Lehmann, K.B. and R. Neumann. 1896. *Atlas und Grundriss der Bakteriologie und Lehrbuch der speziellen bakteriologischen Diagnostik*. 1st ed. J.F. Lehmann, Munchen; Griffin, P.J., S.F. Snieszko and S.B. Friddle. 1953. *Transactions of the American Fisheries Society* 82:129-138. **Type strain:** NCMB 1102
Description: Bergey 8.
- Agrobacterium** Conn 1942
Conn, H.J. 1942. *Journal of Bacteriology* 44:353-360. **Type species:** *A. tumefaciens* (Smith and Townsend 1907) Conn 1942
Description: Bergey 8.
- A. radiobacter** (Beijerinck and van Delden 1902) Conn 1942
Beijerinck, M.W. and A. van Delden. 1902. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* 9:3-43; Conn, H.J. 1942. *Journal of Bacteriology* 44:353-360. **Type strain:** ATCC 19358
Description: Bergey 8.
- A. rhizogenes** (Riker, Banfield, Wright, Keitt and Sagen 1930) Conn 1942
Riker, A.J., W.M. Banfield, W.H. Wright, G.W. Keitt and H.E. Sagen. 1930. *Journal of Agricultural Research* 41:507-540; Conn, H.J. 1942. *Journal of Bacteriology* 44:353-360. **Type strain:** ATCC 11325
Description: Burkholder, W.J. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 288-292.
- A. rubi** (Hildebrand 1940) Starr and Weiss 1943
Hildebrand, E.M. 1940. *Journal of Agricultural Research* 61:685-696; Starr, M.P. and J.E. Weiss. 1943. *Phytopathology* 33:314-318. **Type strain:** ATCC 13335
Description: Burkholder, W.J. 1957.
- A. tumefaciens** (Smith and Townsend 1907) Conn 1942
Smith, E.F. and C.O. Townsend. 1907. *Science* (Washington) 25:671-673; Conn, H.J. 1942. *Journal of Bacteriology* 44:353-360. **Type strain:** ATCC 23308
Description: Bergey 8.

Agromyces Gledhill and Casida 1969

Gledhill, W.E. and L.E. Casida. 1969. Applied Microbiology **18**:340-349. **Type species:** *A. ramosus* Gledhill and Casida 1969

Description: Gledhill, W.E. and L.E. Casida. 1969. Ibid.

A. ramosus Gledhill and Casida 1969

Gledhill, W.E. and L.E. Casida. 1969. Applied Microbiology **18**:114-121. **Type strain:** ATCC 25173

Description: Gledhill, W.E. and L.E. Casida. 1969. Ibid.

Alcaligenes Castellani and Chalmers 1919

Castellani, A. and A.J. Chalmers. 1919. Manual of Tropical Medicine, 3rd ed. Williams, Wood and Co., New York. **Type species:** *A. faecalis* Castellani and Chalmers 1919

Description: Bergey 8.

A. aestus Baumann, Baumann, Mandel and Allen 1972

Baumann, L., P. Baumann, M. Mandel and R.D. Allen. 1972. Journal of Bacteriology **110**:402-429. **Type strain:** ATCC 27128

Description: Baumann, L., P. Baumann, M. Mandel and R.D. Allen. 1972. Ibid.

A. aquamarinus (ZoBell and Upham 1944)

Hendrie, Holding and Shewan 1974
ZoBell, C.E. and H.C. Upham. 1944. Bulletin Scripps Institution of Oceanography University of California (Technical Series) **5**:239-292; Hendrie, M.S., A.J. Holding and J.M. Shewan. 1974. International Journal of Systematic Bacteriology **24**:534-550. **Type strain:** ATCC 14400

Description: Zobell, C.E. and H.C. Upham. 1944. Ibid.

A. cupidus Baumann, Baumann, Mandel and Allen 1972

Baumann, L., P. Baumann, M. Mandel and R.D. Allen. 1972. Journal of Bacteriology **110**:402-429. **Type strain:** ATCC 27124

Description: Baumann, L., P. Baumann, M. Mandel and R.D. Allen. 1972. Ibid.

A. eutrophus Davis 1969

Davis, D.H. 1969 in Davis, D.H., M. Doudoroff, R.Y. Stanier and M. Mandel. International Journal of Systematic

Bacteriology **19**:375-390. **Type strain:** ATCC 17697

Description: Davis, D.H. 1969. Ibid.

A. faecalis Castellani and Chalmers 1919

Castellani, A. and A.J. Chalmers. 1919. Manual of Tropical Medicine, 3rd ed. Williams, Wood and Co., New York. **Type strain:** ATCC 8750

Description: Castellani, A. and A.J. Chalmers. 1919. Ibid.

A. latus Palleroni and Palleroni 1978

Palleroni, N.J. and A.V. Palleroni. 1978. International Journal of Systematic Bacteriology **28**:416-424. **Type strain:** ATCC 29712

Description: Palleroni, N.J. and A.V. Palleroni. 1978. Ibid.

A. pacifus Baumann, Baumann, Mandel and Allen 1972

Baumann, L., P. Baumann, M. Mandel and R.D. Allen. 1972. Journal of Bacteriology **110**:402-429. **Type strain:** ATCC 27122

Description: Baumann, L., P. Baumann, M. Mandel and R.D. Allen. 1972. Ibid.

A. paradoxus Davis 1969

Davis, D.H. 1969 in Davis, D.H., M. Doudoroff, R.Y. Stanier and M. Mandel. International Journal of Systematic Bacteriology **19**:375-390. **Type strain:** ATCC 17713

Description: Davis, D.H. 1969. Ibid.

A. ruhlandii (Packer and Vishniac 1955)

Aragno and Schlegel 1977
Packer, L. and W. Vishniac. 1955. Journal of Bacteriology **70**:216-233; Aragno, M. and H. Schlegel. 1977. International Journal of Systematic Bacteriology **27**:279-281. **Type strain:** ATCC 15749

Description: Aragno, M. and H. Schlegel. 1977. Ibid.

A. venustus Baumann, Baumann, Mandel and Allen 1972

Baumann, L., P. Baumann, M. Mandel and R.D. Allen. 1972. Journal of Bacteriology **110**:402-429. **Type strain:** ATCC 27125

Description: Baumann, L., P. Baumann, M. Mandel and R.D. Allen. 1972. Ibid.

Alteromonas Baumann, Baumann, Mandel and Allen 1972

- Baumann, L., P. Baumann, M. Mandel and R.D. Allen. 1972. *Journal of Bacteriology* **110**:402-429. **Type species:** *A. macleodii* Baumann, Baumann, Mandel and Allen 1972.
Description: Baumann, L., P. Baumann, M. Mandel and R.D. Allen. 1972. *Ibid.*
- A. aurantia** Gauthier and Breittmayer 1979
Gauthier, M.J. and V.A. Breittmayer. 1979. *International Journal of Systematic Bacteriology* **29**:366-372. **Type strain:** ATCC 33046
Description: Gauthier, M.J. and V.A. Breittmayer. 1979. *Ibid.*
- A. citrea** Gauthier 1977
Gauthier, M.J. 1977. *International Journal of Systematic Bacteriology* **27**:349-354. **Type strain:** ATCC 29719
Description: Gauthier, M.J. 1977. *Ibid.*
- A. communis** Baumann, Baumann, Mandel and Allen 1972
Baumann, L., P. Baumann, M. Mandel and R.D. Allen. 1972. *Journal of Bacteriology* **110**:402-429. **Type strain:** ATCC 27118
Description: Baumann, L., P. Baumann, M. Mandel and R.D. Allen. 1972. *Ibid.*
- A. espejiana** Chan, Baumann, Garza and Baumann 1978
Chan, K.Y., L. Baumann, M.M. Garza and P. Baumann. 1978. *International Journal of Systematic Bacteriology* **28**:217-222. **Type strain:** ATCC 29659
Description: Chan, K.Y., L. Baumann, M.M. Garza and P. Baumann. 1978. *Ibid.*
- A. haloplanktis** (ZoBell and Upham 1944)
Reichelt and Baumann 1973
ZoBell, C.E. and H.C. Upham. 1944. *Bulletin of the Scripps Institution of Oceanography, University of California* **5**:239-292; Reichelt, J.L. and P. Baumann. 1973. *International Journal of Systematic Bacteriology* **23**:438-441. **Type strain:** ATCC 14393
Description: Reichelt, J.L. and P. Baumann. 1973. *Ibid.*
- A. macleodii** Baumann, Baumann, Mandel and Allen 1972
Baumann, L., P. Baumann, M. Mandel and R.D. Allen. 1972. *Journal of Bacteriology* **110**:402-429. **Type strain:** ATCC 27126
Description: Baumann, L., P. Baumann, M. Mandel and R.D. Allen. 1972. *Ibid.*
- A. rubra** Gauthier 1976
Gauthier, M.J. 1976. *International Journal of Systematic Bacteriology* **26**:459-466. **Type strain:** ATCC 29570
Description: Gauthier, M.J. 1976. *Ibid.*
- A. undina** Chan, Baumann, Garza and Baumann 1978
Chan, K.Y., L. Baumann, M.M. Garza and P. Baumann. 1978. *International Journal of Systematic Bacteriology* **28**:217-222. **Type strain:** ATCC 29660
Description: Chan, K.Y., L. Baumann, M.M. Garza and L. Baumann. 1978. *Ibid.*
- A. vaga** Baumann, Baumann, Mandel and Allen 1972
Baumann, L., P. Baumann, M. Mandel and R.D. Allen. 1972. *Journal of Bacteriology* **110**:402-429. **Type strain:** ATCC 27119
Description: Baumann, L., P. Baumann, M. Mandel and R.D. Allen. 1972. *Ibid.*
- Alysiella** Langeron 1923
Langeron, M. 1923. *Annales de Parasitologie Humaine et Comparee* **1**:113-123. **Type species:** *A. filiformis* (Schmid 1922) Langeron 1923
Description: Bergey 8.
- A. filiformis** (Schmid 1922) Langeron 1923
Schmid, G. 1922 in Simons, H. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I.* **88**:501-510; Langeron, M. 1923. *Annales de Parasitologie Humaine et Comparee* **1**:113-123. **Type strain:** ATCC 15532
Description: Steed, P.D.M. 1962. *Journal of General Microbiology* **29**:615-624.
- Amoebobacter** Winogradsky 1888
Winogradsky, S. 1888. *Beiträge zur Morphologie und Physiologie der Bakterien. Heft I. Zur Morphologie und Physiologie der Schwefelbakterien.* Arthur Felix, Leipzig. pp. 1-120. **Type species:** *A. roseus* Winogradsky 1888
Description: Bergey 8.
- A. pendens** (Molisch 1906) Pfennig and Truper 1971
Molisch, H. 1906. *Botanische Zeitung. Abteilung I.* **64**:223-232; Pfennig, N. and

- H.G. Truper. 1971. *International Journal of Systematic Bacteriology* **21**:11-14. **Type strain:** DSM 236
Description: Bergey 8.
- A. roseus** Winogradsky 1888
Winogradsky, S. 1888. *Beitrage zur Morphologie und Physiologie der Bakterien*. Heft I. Zur Morphologie und Physiologie der Schwefelbakterien. Arthur Felix, Leipzig. pp. 1-120. **Type strain:** DSM 235
Description: Bergey 8.
- Amorphosporangium** Couch 1963
Couch, J.N. 1963. *Journal of the Elisha Mitchell Scientific Society* **79**:53-70. **Type species:** *A. auranticolor* Couch 1963
Description: Bergey 8.
- A. auranticolor** Couch 1963
Couch, J.N. 1963. *Journal of the Elisha Mitchell Scientific Society* **79**:53-70. **Type strain:** ATCC 15330
Description: Bergey 8.
- A. globisporum** Thiemann 1967
Thiemann, J.E. 1967. *Mycopathologia et Mycologia Applicata* **33**:233-240. **Type strain:** ATCC 23056
Description: Thiemann, J.E. 1967. *Ibid.*
- Ampullariella** Couch 1964
Couch, J.N. 1964. *Journal of the Elisha Mitchell Scientific Society* **80**:29. **Type species:** *A. regularis* (Couch 1963) Couch 1964
Description: Bergey 8.
- A. campanulata** (Couch 1963) Couch 1964
Couch, J.N. 1963. *Journal of the Elisha Mitchell Scientific Society* **79**:53-70; Couch, J.N. 1964. *Journal of the Elisha Mitchell Scientific Society* **80**:29. **Type strain:** DSM 43148
Description: Bergey 8.
- A. digitata** (Couch 1963) Couch 1964
Couch, J.N. 1963. *Journal of the Elisha Mitchell Scientific Society* **79**:53-70; Couch, J.N. 1964. *Journal of the Elisha Mitchell Scientific Society* **80**:29. **Type strain:** ATCC 15349
Description: Bergey 8.
- A. lobata** (Couch 1963) Couch 1964
Couch, J.N. 1963. *Journal of the Elisha Mitchell Scientific Society* **79**:53-70; Couch, J.N. 1964. *Journal of the Elisha Mitchell Scientific Society* **80**:29. **Type strain:** ATCC 15350
Description: Bergey 8.
- A. regularis** (Couch 1963) Couch 1964
Couch, J.N. 1963. *Journal of the Elisha Mitchell Scientific Society* **79**:53-70; Couch, J.N. 1964. *Journal of the Elisha Mitchell Scientific Society* **80**:29. **Type strain:** DSM 43151
Description: Bergey 8.
- Anaerobiospirillum** Davis, Cleven, Brown and Balish 1976
Davis, C.P., D. Cleven, J. Brown and E. Balish. 1976. *International Journal of Systematic Bacteriology* **26**:498-504. **Type species:** *A. succiniciproducens* Davis, Cleven, Brown and Balish 1976
Description: Davis, C.P., D. Cleven, J. Brown and E. Balish. 1976. *Ibid.*
- A. succiniciproducens** Davis, Cleven, Brown and Balish 1976
Davis, C.P., D. Cleven, J. Brown and E. Balish. 1976. *International Journal of Systematic Bacteriology* **26**:498-504. **Type strain:** ATCC 29305
Description: Davis, C.P., D. Cleven, J. Brown and E. Balish. 1976. *Ibid.*
- Anaeroplasma** Robinson, Allison and Hartman 1975
Robinson, I.M., M.J. Allison and P.A. Hartman. 1975. *International Journal of Systematic Bacteriology* **25**:173-181. **Type species:** *A. abactoclasticum* Robinson, Allison and Hartman 1975
Description: Robinson, I.M., M.J. Allison and P.A. Hartman. 1975. *Ibid.*
- A. abactoclasticum** Robinson, Allison and Hartman 1975
Robinson, I.M., M.J. Allison and P.A. Hartman. 1975. *International Journal of Systematic Bacteriology* **25**:173-181. **Type strain:** ATCC 27879
Description: Robinson, I.M., M.J. Allison and P.A. Hartman. 1975. *Ibid.*
- A. bactoclasticum** (Robinson and Hungate 1973) Robinson and Allison 1975
Robinson, J.P. and R.E. Hungate. 1973. *International Journal of Systematic Bacteriology* **23**:171-181; Robinson, I.M. and M.J. Allison. 1975. *International Journal of Systematic Bacteriology* **25**:182-186.

Type strain: ATCC 27112

Description: Robinson, I.M. and M.J. Allison. 1975. *Ibid.*

Anaerovibrio Hungate 1966

Hungate, R.E. 1966. The rumen and its microbes. Academic Press, New York.

Type species: *A. lipolytica* Hungate 1966

Description: Hungate, R.E. 1966. *Ibid.*

A. lipolytica Hungate 1966

Hungate, R.E. 1966. The rumen and its microbes. Academic Press, New York.

Type strain: VPI 7553

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

Anaplasma Theiler 1910

Theiler, A. 1910. Report to the Government, Transvaal, South Africa. Veterinary Bacteriology, Department of Agriculture 1908-9:7-64. **Type species:** *A. marginale* Theiler 1910

Description: Bergey 8.

A. marginale Theiler 1910

Theiler, A. 1910. Transvaal S. Afr. Rep. Vet. Bacteriol. Dep. Agr. 1908-9:7-64.

Type strain: no culture isolated.

Description: Bergey 8.

A. ovis Lestoquard 1924

Lestoquard, F. 1924. Bulletin de la Societe de Pathologie Exotique 17:784-787. **Type strain:** no culture isolated.

Description: Bergey 8.

Ancalochloris Gorlenko and Lebedeva 1971

Gorlenko, V.M. and E.V. Lebedeva. 1971. Mikrobiologiya 40:1035-1039. **Type species:** *A. perfilievii* Gorlenko and Lebedeva 1971

Description: Gorlenko, V.M. and E.V. Lebedeva. 1971. *Ibid.*

A. perfilievii Gorlenko and Lebedeva 1971

Gorlenko, V.M. and E.V. Lebedeva. 1971. Mikrobiologiya 40:1035-1039. **Type strain:** no pure culture.

Description: Gorlenko, V.M. and E.V. Lebedeva. 1971. *Ibid.*

Ancalomicrobium Staley 1968

Staley, J.T. 1968. Journal of Bacteriology

95:1921-1942. **Type species:** *A. adetum* Staley 1968

Description: Bergey 8.

A. adetum Staley 1968

Staley, J.T. 1968. Journal of Bacteriology

95:1921-1942. **Type strain:** ATCC 23632

Description: Staley, J.T. 1968. *Ibid.*

Aquaspirillum Hylemon, Wells, Krieg and Jannasch 1973

Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. International Journal of Systematic Bacteriology 23: 340-380. **Type species:** *A. serpens* Hylemon, Wells, Krieg and Jannasch 1973

Description: Bergey 8.

A. anulus (Williams and Rittenberg 1957)

Hylemon, Wells, Krieg and Jannasch 1973

Williams, M.A. and S.C. Rittenberg.

1957. International Bulletin of Bacteriological Nomenclature and Taxonomy 7:

49-110; Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973.

International Journal of Systematic Bacteriology 23:340-380. **Type strain:** NCIB 9012

Description: Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch.

1973. *Ibid.*

A. aquaticum Hylemon, Wells, Krieg and Jannasch 1973

Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. International

Journal of Systematic Bacteriology 23:

340-380. **Type strain:** ATCC 11330

Description: Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *Ibid.*

A. autotrophicum Aragno and Schlegel 1978

Aragno, M. and H.G. Schlegel. 1978. International Journal of Systematic Bacteriology 28:112-116. **Type strain:** DSM

732

Description: Aragno, M. and H.G. Schlegel. 1978. *Ibid.*

A. bengal Kumar, Banerjee, Bowdre, McElroy and Krieg 1974

Kumar, R., A.K. Banerjee, J.H. Bowdre, L.J. McElroy and N.R. Krieg. 1974.

International Journal of Systematic Bacteriology 24:453-458. **Type strain:**

ATCC 27641

Description: Kumar, R., A.K. Banerjee, J.H. Bowdre, L.J. McElroy and N.R. Krieg. 1974. *Ibid.*

A. delicatum (Leifson 1962) Hylemon, Wells, Krieg and Jannasch 1973

Leifson, E. 1962. *International Bulletin of Bacteriological Nomenclature and Taxonomy* 12:161-170; Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *International Journal of Systematic Bacteriology* 23:340-380. **Type strain:** ATCC 14667

Description: Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *Ibid.*

A. dispar Hylemon, Wells, Krieg and Jannasch 1973

Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *International Journal of Systematic Bacteriology* 23:340-380. **Type strain:** ATCC 27510

Description: Krieg, N.R. and P.B. Hylemon. 1976. *Annual Review of Microbiology* 30:303-325.

A. fasciculus Strength, Isani, Linn, Williams, Vandermolten, Laughon and Krieg 1976

Strength, W.J., B. Isani, D.M. Linn, F.D. Williams, G.E. Vandermolten, B.E. Laughon and N.R. Krieg. 1976. *International Journal of Systematic Bacteriology* 26:253-267. **Type strain:** ATCC 27740

Description: Strength, W.J., B. Isani, D.M. Linn, F.D. Williams, G.E. Vandermolten, B.E. Laughon and N.R. Krieg. 1976. *Ibid.*

A. giesbergeri (Williams and Rittenberg 1957) Hylemon, Wells, Krieg and Jannasch 1973

Williams, M.A. and S.C. Rittenberg. 1957. *International Bulletin of Bacteriological Nomenclature and Taxonomy* 7:49-110; Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *International Journal of Systematic Bacteriology* 23:340-380. **Type strain:** ATCC 11334

Description: Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *Ibid.*

A. gracile (Canale-Parola, Rosenthal and Kupfer 1966) Hylemon, Wells, Krieg and Jannasch 1973

Canale-Parola, E., S.L. Rosenthal and D.G. Kupfer. 1966. *Antonie van Leeuwenhoek Journal of Microbiology and Serology* 32:113-124; Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *International Journal of Systematic Bacteriology* 23:340-380. **Type strain:** ATCC 19624

Description: Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *Ibid.*

A. itersonii (Giesberger 1936) Hylemon, Wells, Krieg and Jannasch 1973

Giesberger, G. 1936. *Inaugural Dissertation Utrecht*. pp. 1-136; Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *International Journal of Systematic Bacteriology* 23:340-380. **Type strain:** ATCC 12639

Description: Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *Ibid.*

A. itersonii subsp. *itersonii* (Giesberger 1936) Hylemon, Wells, Krieg and Jannasch 1973

Giesberger, G. 1936. *Inaugural Dissertation Utrecht*. pp. 1-136; Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *International Journal of Systematic Bacteriology* 23:340-380. **Type strain:** ATCC 12639

Description: Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *Ibid.*

A. itersonii subsp. *nipponicum* (Terasaki 1973) Terasaki 1979

Terasaki, Y. 1973. *Bulletin of the Suzugamine Women's College, Natural Science* 17:1-71; Terasaki, Y. 1979. *International Journal of Systematic Bacteriology* 29:130-144. **Type strain:** IFO 13615

Description: Terasaki, Y. 1979. *Ibid.*

A. metamorphum (Terasaki 1961) Hylemon, Wells, Krieg and Jannasch 1973

Terasaki, Y. 1961. *Botanical Magazine (Tokyo)* 74:220-227; Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *International Journal of Systematic Bacteriology* 23:340-380. **Type strain:** ATCC 15280

Description: Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch.

1973. *Ibid.*

- A. peregrinum** (Pretorius 1963) Hylemon, Wells, Krieg and Jannasch 1973
 Pretorius, W.A. 1963. *Journal of General Microbiology* **32**:403-408; Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *International Journal of Systematic Bacteriology* **23**:340-380. **Type strain:** ATCC 15387
Description: Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *Ibid.*
- A. peregrinum** subsp. *integrum* (Terasaki 1973) Terasaki 1979
 Terasaki, Y. 1973. *Bulletin of the Suzugamine Women's College, Natural Science* **17**:1-71; Terasaki, Y. 1979. *International Journal of Systematic Bacteriology* **29**:130-144. **Type strain:** IFO 13617
Description: Terasaki, Y. 1979. *Ibid.*
- A. peregrinum** subsp. *peregrinum* (Pretorius 1963) Hylemon, Wells, Krieg and Jannasch 1973
 Pretorius, W.A. 1963. *Journal of General Microbiology* **32**:403-408; Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *International Journal of Systematic Bacteriology* **23**:340-380. **Type strain:** ATCC 15387
Description: Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *Ibid.*
- A. polymorphum** (Williams and Rittenberg 1957) Hylemon, Wells, Krieg and Jannasch 1973
 Williams, M.A. and S.C. Rittenberg. 1957. *International Bulletin of Bacteriological Nomenclature and Taxonomy* **7**:49-110; Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *International Journal of Systematic Bacteriology* **23**:340-380. **Type strain:** ATCC 11332
Description: Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *Ibid.*
- A. psychrophilum** (Terasaki 1973) Terasaki 1979
 Terasaki, Y. 1973. *Bulletin of the Suzugamine Women's College, Natural Science* **17**:1-71; Terasaki, Y. 1979. *International Journal of Systematic Bacteriology* **29**:130-144. **Type strain:** IFO 13611
Description: Terasaki, Y. 1979. *Ibid.*
- A. putridiconchylium** (Terasaki 1961) Hylemon, Wells, Krieg and Jannasch 1973
 Terasaki, Y. 1961. *Botanical Magazine (Tokyo)* **74**:79-85; Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *International Journal of Systematic Bacteriology* **23**:340-380. **Type strain:** ATCC 15279
Description: Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *Ibid.*
- A. serpens** (Muller 1786) Hylemon, Wells, Krieg and Jannasch 1973
 Muller, O.F. 1786. *Animalcula Infusoria Fluviatilia et Marina, Quae Detexit. Systematice Descripsit et Ad Vivum Delineari Curavit*, pp. 1-367; Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *International Journal of Systematic Bacteriology* **23**:340-380. **Type strain:** ATCC 12638
Description: Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *Ibid.*
- A. sinuosum** (Williams and Rittenberg 1957) Hylemon, Wells, Krieg and Jannasch 1973
 Williams, M.A. and S.C. Rittenberg. 1957. *International Bulletin of Bacteriological Nomenclature and Taxonomy* **7**:49-110; Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *International Journal of Systematic Bacteriology* **23**:340-380. **Type strain:** ATCC 9786
Description: Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *Ibid.*
- Arachnia** Pine and Georg 1969
 Pine, L. and L.K. Georg. 1969. *International Journal of Systematic Bacteriology* **19**:267-272. **Type species:** *A. propionica* (Buchanan and Pine 1962) Pine and Georg 1969
Description: Bergey 8.
- A. propionica** (Buchanan and Pine 1962) Pine and Georg 1969
 Buchanan, B.B. and L. Pine. 1962. *Journal of General Microbiology* **28**:305-

323; Pine, L. and L. Georg. 1969. International Journal of Systematic Bacteriology **19**:267-272. **Type strain**: ATCC 14157

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

Archangium Jahn 1924

Jahn, E. 1924. Beitrage zur botanischen Protistologie. I. Die Polyangiden. Verlag von Gebruder Borntraeger, Leipzig. **Type species**: *A. gephyra* Jahn 1924

Description: Bergey 8.

A. gephyra Jahn 1924

Jahn, E. 1924. Beitrage zur botanischen Protistologie. I. Die Polyangiden. Verlag von Gebruder Borntraeger, Leipzig. **Type strain**: ATCC 25201

Description: Bergey 8.

Arthrobacter Conn and Dimmick 1947

Conn, H.J. and I. Dimmick. 1947. Journal of Bacteriology **54**:291-303. **Type species**: *A. globiformis* (Conn 1928) Conn and Dimmick 1947

Description: Bergey 8.

A. atrocyaneus Kuhn and Starr 1960

Kuhn, D.A. and M.P. Starr. 1960. Archiv fur Mikrobiologie **36**:175-181. **Type strain**: ATCC 13752

Description: Kuhn, D.A. and M.P. Starr. 1960. Ibid.

A. aurescens Phillips 1953

Phillips, H.C. 1953. Iowa State Journal of Science **27**:240-241. **Type strain**: ATCC 13344

Description: Phillips, H.C. 1953. Ibid.

A. citreus Sacks 1954

Sacks, L.E. 1954. Journal of Bacteriology **67**:342-345. **Type strain**: ATCC 11624

Description: Bergey 8.

A. crystallopoietes Ensign and Rittenberg 1963

Ensign, J.C. and S.C. Rittenberg. 1963. Archiv fur Mikrobiologie **47**:137-153. **Type strain**: ATCC 15481

Description: Ensign, J.C. and S.C. Rittenberg. 1963. Ibid.

A. duodecadis Lochhead 1958

Lochhead, A.G. 1958. Archiv fur Mikrobiologie **31**:163-170. **Type strain**: ATCC

13347

Description: Lochhead, A.G. 1958. Ibid.

A. flavescens Lochhead 1958

Lochhead, A.G. 1958. Archiv fur Mikrobiologie **31**:163-170. **Type strain**: ATCC 13348

Description: Lochhead, A.G. 1958. Ibid.

A. globiformis (Conn 1928) Conn and Dimmick 1947

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Description: Bergey 8.

A. histidinolovorans Adams 1954

Adams, E. 1954. Journal of Biological Chemistry **209**:829-846. **Type strain**: ATCC 11442

Description: Keddie, R.M. and G.L. Cure. 1977. Journal of Applied Bacteriology **42**:229-252.

A. mysorens Nand and Rao 1972

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Description: Nand, K. and D.V. Rao. 1972. Ibid.

A. nicotianae Giovannozzi-Sermanni 1959

Giovannozzi-Sermanni, G. 1959. Il Tabacco (Rome) **63**:83-86. **Type strain**: ATCC 15236

Description: Giovannozzi-Sermanni, G. 1959. Ibid.

A. oxydans Sguros 1954

Sguros, P.L. 1954. Bacteriological Proceedings **1954**:21-22. **Type strain**: ATCC 14358

Description: Sguros, P.L. 1955. Journal of Bacteriology **69**:28-37.

A. pascens Lochhead and Burton 1953

Lochhead, A.G. and M.O. Burton. 1953. Canadian Journal of Botany **31**:7-22. **Type strain**: ATCC 13346

Description: Lochhead, A.G. and M.O. Burton. 1953. Ibid.

A. picolinophilus Tate and Ensign 1974

Tate, R.L. and J.C. Ensign. 1974. Canadian Journal of Microbiology **20**:691-694. **Type strain**: ATCC 27854

- Description:** Tate, R.L. and J.C. Ensign. 1974. *Ibid.*
- A. polychromogenes** Schippers-Lammertse, Muijsers and Klatser-Oedeckerk 1963
Schippers-Lammertse, A.F., A.O. Muijsers and K.B. Klatser-Oedeckerk. 1963. *Antonie van Leeuwenhoek Journal of Microbiology and Serology* **29**:1-15. **Type strain:** ATCC 15216
Description: Schippers-Lammertse, A.F., A.O. Muijsers and K.B. Klatser-Oedeckerk. 1963. *Ibid.*
- A. radiotolerans** Yoshinaka, Yano and Yamaguchi 1973
Yoshinaka, T., K. Yano and H. Yamaguchi. 1973. *Agricultural and Biological Chemistry* **37**:2269-2275. **Type strain:** IAM 12072
Description: Yoshinaka, T., K. Yano and H. Yamaguchi. 1973. *Ibid.*
- A. ramosus** Jensen 1960
Jensen, V. 1960. *Kongelige Veterinaer-og Landbohojskole Arsskrift* pp. 123-132. **Type strain:** ATCC 13727
Description: Jensen, V. 1960. *Ibid.*
- A. siderocapsulatus** Dubinin and Zhdanov 1975
Dubinin, G. and A.V. Zhdanov. 1975. *International Journal of Systematic Bacteriology* **25**:340-350. **Type strain:** BKM-B N 1122
Description: Dubinin, G. and A.V. Zhdanov. 1975. *Ibid.*
- A. simplex** (Jensen 1934) Lochhead 1957
Jensen, H.L. 1934. *Proceedings of the Linnean Society of New South Wales* **59**:19-61; Lochhead, A.G. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 605-612. **Type strain:** ATCC 6946
Description: Bergey 8.
- A. terregens** Lochhead and Burton 1953
Lochhead, A.G. and M.O. Burton. 1953. *Canadian Journal of Botany* **31**:7-22. **Type strain:** ATCC 13345
Description: Bergey 8.
- A. tumescens** (Jensen 1934) Conn and Dimmick 1947
Jensen, H.L. 1934. *Proceedings of the Linnean Society of New South Wales* **59**:19-61; Conn, H.J. and I. Dimmick. 1947. *Journal of Bacteriology* **54**:291-303. **Type strain:** ATCC 6947
Description: Bergey 8.
- A. ureafaciens** (Krebs and Eggleston 1939) Clark 1955
Krebs, H.A. and L.V. Eggleston. 1939. *Enzymologia* **7**:310-320; Clark, F.E. 1955. *International Bulletin of Bacteriological Nomenclature and Taxonomy* **5**:111-113. **Type strain:** ATCC 7562
Description: Bergey 8.
- A. variabilis** Muller 1961
Muller, G. 1961. *Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **114**:520-537. **Type strain:** ATCC 15753
Description: Muller, G. 1961. *Ibid.*
- A. viscosus** Gasdorf, Benedict, Cadmus, Anderson and Jackson 1965
Gasdorf, H.J., R.G. Benedict, M.C. Cadmus, R.F. Anderson and R.W. Jackson. 1965. *Journal of Bacteriology* **90**:147-150. **Type strain:** ATCC 19584
Description: Gasdorf, H.J., R.G. Benedict, M.C. Cadmus, R.F. Anderson and R.W. Jackson. 1965. *Ibid.*
- Asticcacaulis** Poindexter 1964
Poindexter, J.S. 1964. *Bacteriological Reviews* **28**:231-295. **Type species:** *A. excentricus* Poindexter 1964
Description: Bergey 8.
- A. biprosthecium** Pate, Porter and Jordan 1973
Pate, J.L., J.S. Porter and T.L. Jordan. 1973. *Antonie van Leeuwenhoek Journal of Microbiology and Serology* **39**:569-583. **Type strain:** ATCC 27554
Description: Pate, J.L., J.S. Porter and T.L. Jordan. 1973. *Ibid.*
- A. excentricus** Poindexter 1964
Poindexter, J.S. 1964. *Bacteriological Reviews* **28**:231-295. **Type strain:** ATCC 15261
Description: Poindexter, J.S. 1964. *Ibid.*
- Azomonas** Winogradsky 1938
Winogradsky, S. 1938. *Annales de l'Institut Pasteur (Paris)* **60**:351-400. **Type species:** *A. agilis* (Beijerinck 1901) Winogradsky 1938
Description: Bergey 8.
- A. agilis** (Beijerinck 1901) Winogradsky 1938
Beijerinck, M.W. 1901. *Zentralblatt fur Bakteriologie, Parasitenkunde, Infektion-*

skrankheiten und Hygiene. Abteilung II. 7:561-582; Winogradsky, S. 1938. Annales de l'Institut Pasteur (Paris) 60:351-400. **Type strain:** ATCC 7494

Description: Thompson, J.P. and V.B.D. Skerman. 1979. Azotobacteraceae - the taxonomy and ecology of the aerobic nitrogen-fixing bacteria. Academic Press, London. pp. 290-294.

A. insignis (Derx 1951) Jensen 1955

Derx, H.G. 1951. Proceedings Koninklijke Nederlandse Akademie van Wetenschappen Series C 54:342-350; Jensen, V. 1955. Botanisk Tidsskrift 52:143-157. **Type strain:** UQM 1966

Description: Thompson, J.P. and V.B.D. Skerman. 1979. Azotobacteraceae - the taxonomy and ecology of the aerobic nitrogen-fixing bacteria. Academic Press, London. pp. 294-297.

Azospirillum Tarrand, Krieg and Dobereiner 1979

Tarrand, J.J., N.R. Krieg and J. Dobereiner. 1979. International Journal of Systematic Bacteriology 29:79-80; Effective publication Tarrand, J.J., N.R. Krieg and J. Dobereiner. 1978. Canadian Journal of Microbiology 24:967-980. **Type species:** *A. lipoferum* (Beijerinck 1925) Tarrand, Krieg and Dobereiner 1979

Description: Tarrand, J.J., N.R. Krieg and J. Dobereiner. 1978. Ibid.

A. brasiliense Tarrand, Krieg and Dobereiner 1979

Tarrand, J.J., N.R. Krieg and J. Dobereiner. 1979. International Journal of Systematic Bacteriology 29:79-80; Effective publication Tarrand, J.J., N.R. Krieg and J. Dobereiner. 1978. Canadian Journal of Microbiology 24:967-980. **Type strain:** ATCC 29145

Description: Tarrand, J.J., N.R. Krieg and J. Dobereiner. 1978. Ibid.

A. lipoferum (Beijerinck 1925) Tarrand, Krieg and Dobereiner 1979

Beijerinck, M.W. 1925. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. 63:353-359; Tarrand, J.J., N.R. Krieg and J. Dobereiner. 1979. International Journal of Systematic Bacteriology 29:79-80; Effective publication Tarrand, J.J., N.R.

Krieg and J. Dobereiner. 1978. Canadian Journal of Microbiology 24:967-980. **Type strain:** ATCC 29707

Description: Tarrand, J.J., N.R. Krieg and J. Dobereiner. 1978. Ibid.

Azotobacter Beijerinck 1901

Beijerinck, M.W. 1901. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. 7:561-582. **Type species:** *A. chroococcum* Beijerinck 1901

Description: Bergey 8.

A. beijerinckii Lipman 1904

Lipman, J.G. 1904. Report of the New Jersey Agricultural Experiment Station 25:237-289. **Type strain:** ATCC 19360

Description: Thompson, J.P. and V.B.D. Skerman. 1979. Azotobacteraceae - the taxonomy and ecology of the aerobic nitrogen-fixing bacteria. Academic Press, London. pp. 277-281.

A. chroococcum Beijerinck 1901

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Description: Thompson, J.P. and V.B.D. Skerman 1979. Azotobacteraceae - the taxonomy and the ecology of the aerobic nitrogen-fixing bacteria. Academic Press, London. pp. 263-266.

A. macrocytogenes Jensen 1955

Jensen, H. 1955. Acta Agriculturae Scandinavica 5:280-294. **Type strain:** ATCC 12335

Description: Thompson, J.P. and V.B.D. Skerman. 1979. Azotobacteraceae - the taxonomy and ecology of the aerobic nitrogen-fixing bacteria. Academic Press, London. pp. 306-309. (as *Azomonotrichon macrocytogenes*)

A. nigricans Krassilnikov 1949

Krassilnikov, N.A. 1949. Guide to the bacteria and actinomycetes. Akademiya Nauk SSSR, Moscow. pp. 1-830. **Type strain:** UQM 1967

Description: Thompson, J.P. and V.B.D. Skerman. 1979. Azotobacteraceae - taxonomy and ecology of the aerobic nitrogen-fixing bacteria. Academic Press, London. pp. 267-271.

A. paspali Dobereiner 1966

- Dobereiner, J. 1966. *Pesquisas Agropecuar Brasil* 1:357-365. **Type strain:** ATCC 23833
Description: Thompson, J.P. and V.B.D. Skerman. 1979. *Azotobacteraceae - taxonomy and ecology of the aerobic nitrogen-fixing bacteria*. Academic Press, London. pp. 306-309. (as *Azorhizophilus paspali*)
- A. vinelandii** Lipman 1903
 Lipman, J.G. 1903. Report of the New Jersey Agricultural Experiment Station 24:217-285. **Type strain:** ATCC 478
Description: Thompson, J.P. and V.B.D. Skerman. 1979. *Azotobacteraceae - taxonomy and ecology of the aerobic nitrogen-fixing bacteria*. Academic Press, London. pp. 283-287.
- Bacillus** Cohn 1872
 Cohn, F. 1872. *Beitrage zur Biologie der Pflanzen* 1:127-224. **Type species:** *B. subtilis* (Ehrenberg 1835) Cohn 1872
Description: Bergey 8.
- B. acidocaldarius** Darland and Brock 1971
 Darland, G. and T.D. Brock. 1971. *Journal of General Microbiology* 67:9-15. **Type strain:** ATCC 27009
Description: Bergey 8.
- B. alcalophilus** Vedder 1934
 Vedder, A. 1934. *Antonie van Leeuwenhoek Journal of Microbiology and Serology* 1:141-147. **Type strain:** ATCC 27647
Description: Boyer, E.W., M.B. Ingle and G.D. Mercer. 1973. *International Journal of Systematic Bacteriology* 23:238-242.
- B. alvei** Cheshire and Cheyne 1885
 Cheshire, F.R. and W.W. Cheyne. 1885. *Journal of the Royal Microscopic Society, Series II* 5:581-601. **Type strain:** ATCC 6344
Description: Bergey 8.
- B. anthracis** Cohn 1872
 Cohn, F. 1872. *Beitrage zur Biologie der Pflanzen* 1:127-224. **Type strain:** ATCC 14578
Description: Bergey 8.
- B. badius** Batchelor 1919
 Batchelor, M.D. 1919. *Journal of Bacteriology* 4:23-34. **Type strain:** ATCC 14574
Description: Bergey 8.
- B. brevis** Migula 1900
 Migula, W. 1900. *System der Bakterien*, Vol. 2. Gustav Fischer, Jena. **Type strain:** ATCC 8246
Description: Bergey 8.
- B. cereus** Frankland and Frankland 1887
 Frankland, G.C. and P.F. Frankland. 1887. *Royal Society London, Philosophical Transactions, Series B, Biological Sciences* 178:257-287. **Type strain:** ATCC 14579
Description: Bergey 8.
- B. circulans** Jordan 1890
 Jordan, E.O. 1890 in *Sedgewick, W.T. in The Report of the Massachusetts Board of Health*. pp. 821-844. **Type strain:** ATCC 4513
Description: Bergey 8.
- B. coagulans** Hammer 1915
 Hammer, B.W. 1915. *Iowa Agricultural Experimental Station Research Bulletin* 19:119-131. **Type strain:** ATCC 7050
Description: Bergey 8.
- B. fastidiosus** den Dooren de Jong 1929
 den Dooren de Jong, L.E. 1929. *Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* 79:344-353. **Type strain:** Delft LMD 29-14
Description: Bongaerts, G.P.A. and G.D. Vogels. 1976. *Journal of Bacteriology* 125: 689-697.
- B. firmus** Bredemann and Werner 1933
 Bredemann, G. and W. Werner. 1933 in *Werner, W. Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* 87:446-475. **Type strain:** ATCC 14575
Description: Gordon, R.E., J.L. Hyde and J.A. Moore. 1977. *International Journal of Systematic Bacteriology* 27:256-262.
- B. globisporus** Larkin and Stokes 1967
 Larkin, J.M. and J.L. Stokes. 1967. *Journal of Bacteriology* 94:889-895. **Type strain:** ATCC 23301
Description: Bergey 8.
- B. globisporus** subsp. *globisporus* Larkin and Stokes 1967
 Larkin, J.M. and J.L. Stokes. 1967. *Journal of Bacteriology* 94:889-895. **Type strain:** ATCC 23301
Description: Bergey 8.
- B. globisporus** subsp. *marinus* Ruger and Richter 1979
 Ruger, H.-J. and G. Richter. 1979.

- International Journal of Systematic Bacteriology **29**:196-203. **Type strain**: ATCC 29841
Description: Ruger, H.-J. and G. Richter. 1979. *Ibid.*
- B. insolitus** Larkin and Stokes 1967
 Larkin, J.M. and J.L. Stokes. 1967. *Journal of Bacteriology* **94**:889-895. **Type strain**: ATCC 23299
Description: Larkin, J.M. and J.L. Stokes. 1967. *Ibid.*
- B. larvae** White 1906
 White, G.F. 1906. United States Department of Agriculture, Bureau of Entomology, Technical Series No. 14. **Type strain**: ATCC 9545
Description: Bergey 8.
- B. laterosporus** Laubach 1916
 Laubach, C.A. 1916. *Journal of Bacteriology* **1**:505-512. **Type strain**: ATCC 64
Description: Bergey 8.
- B. lentimorbus** Dutky 1940
 Dutky, S.R. 1940. *Journal of Agricultural Research* **61**:57-68. **Type strain**: ATCC 14707
Description: Bergey 8.
- B. lentus** Gibson 1935
 Gibson, T. 1935. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **92**: 364-380. **Type strain**: ATCC 10840
Description: Gordon, R.E., J.L. Hyde and J.A. Moore. 1977. *International Journal of Systematic Bacteriology* **27**:256-262.
- B. licheniformis** (Weigmann 1898) Chester 1901
 Weigmann, H. 1898. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **4**:820-834; Chester, F.D. 1901. *A Manual of Determinative Bacteriology.* The Macmillan Co., New York, pp. 1-401. **Type strain**: ATCC 14580
Description: Bergey 8.
- B. macerans** Schardinger 1905
 Schardinger, F. 1905. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **14**:772-781. **Type strain**: ATCC 8244
Description: Bergey 8.
- B. macquariensis** Marshall and Ohye 1966
 Marshall, B.J. and D.F. Ohye. 1966. *Journal of General Microbiology* **44**:41-46. **Type strain**: ATCC 23464
Description: Marshall, B.J. and D.F. Ohye. 1966. *Ibid.*
- B. megaterium** de Bary 1884
 de Bary, A. 1884. *Vergleichende Morphologie und Biologie der Pilze, Mycetozoen und Bakterien.* Wilhelm Engelmann, Leipzig. **Type strain**: ATCC 14581
Description: Bergey 8.
- B. mycoides** Flugge 1886
 Flugge, C. 1886. *Die Mikroorganismen.* F.C.W. Vogel, Leipzig. **Type strain**: ATCC 6462
Description: Bergey 8.
- B. pantothenicus** Proom and Knight 1950
 Proom, H. and B.C.J.G. Knight. 1950. *Journal of General Microbiology* **4**:539-541. **Type strain**: ATCC 14576
Description: Bergey 8.
- B. pasteurii** (Miquel 1889) Chester 1898
 Miquel, P. 1889. *Annales Micrographie* **1**: 506-519; Chester, F.D. 1898. *Delaware Agricultural Experimental Station Annual Report* **10**:47-137. **Type strain**: ATCC 11859
Description: Bergey 8.
- B. polymyxa** (Prazmowski 1880) Mace 1889
 Prazmowski, A. 1880. *Inaugural Dissertation.* Hugo Voigt, Leipzig, pp. 1-58; Mace, E. 1889. *Traite Pratique de Bacteriologie*, 1st ed. J.-B. Balliere. Paris, pp. 1-711. **Type strain**: ATCC 842
Description: Bergey 8.
- B. popilliae** Dutky 1940
 Dutky, S.R. 1940. *Journal of Agricultural Research* **61**:57-68. **Type strain**: ATCC 14706
Description: Bergey 8.
- B. pumilus** Meyer and Gottheil 1901
 Meyer, A. and O. Gottheil. 1901 in Gottheil, O. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **7**:680-691. **Type strain**: ATCC 7061
Description: Bergey 8.
- B. sphaericus** Meyer and Neide 1904
 Meyer, A. and E. Neide. 1904 in Neide, E. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **12**:337-352. **Type strain**: ATCC 14577
Description: Bergey 8.
- B. stearotherophilus** Donk 1920

- Donk, P.J. 1920. *Journal of Bacteriology* **5**:373-374. **Type strain**: ATCC 12980
Description: Bergey 8.
- B. subtilis** (Ehrenberg 1835) Cohn 1872
 Ehrenberg, C.G. 1835. *Physikalische Abhandlungen der Koeniglichen Akademie der Wissenschaften zu Berlin aus den Jahren 1833-1835*, pp. 145-336; Cohn, F. 1872. *Beitrage zur Biologie der Pflanzen* 1875 **1**:127-224. **Type strain**: ATCC 6051
Description: Bergey 8.
- B. thuringiensis** Berliner 1915
 Berliner, E. 1915. *Zeitschrift fur angewandte Entomologie Berlin* **2**:29-56. **Type strain**: ATCC 10792
Description: Bergey 8.
- Bacterionema** Gilmour, Howell and Bibby 1961
 Gilmour, M.N., A. Howell Jr. and B.G. Bibby. 1961. *Bacteriological Reviews* **25**:131-141. **Type species**: *B. matruchotii* (Mendel 1919) Gilmour, Howell and Bibby 1961
Description: Bergey 8.
- B. matruchotii** (Mendel 1919) Gilmour, Howell and Bibby 1961
 Mendel, J. 1919. *Comptes Rendus des Seances de la Societe de Biologie (Filiales)* **82**:583-586; Gilmour, M.N., A. Howell Jr. and B.G. Bibby. 1961. *Bacteriological Reviews* **25**:131-141. **Type strain**: ATCC 14266
Description: Bergey 8.
- Bacteroides** Castellani and Chalmers 1919
 Castellani, A. and A.J. Chalmers. 1919. *Manual of tropical medicine*. 3rd ed. Williams, Wood and Co., New York. pp. 959-960. **Type species**: *B. fragilis* (Veillon and Zuber 1898) Castellani and Chalmers 1919
Description: Bergey 8.
- B. amylophilus** Hamlin and Hungate 1956
 Hamlin, L.J. and R.E. Hungate. 1956. *Journal of Bacteriology* **72**:548-554. **Type strain**: ATCC 29744
Description: Cato, E.P., W.E.C. Moore and M.P. Bryant. 1978. *International Journal of Systematic Bacteriology* **28**:491-495.
- B. asaccharolyticus** (Holdeman and Moore 1970) Finegold and Barnes 1977
 Holdeman, L.V. and W.E.C. Moore. 1970. *in* Cato, E.P., C.S. Cummins, L.V. Holdeman, J.L. Johnson, W.E.C. Moore, R.M. Smibert and L.D.S. Smith (eds). *Outline of clinical methods in anaerobic bacteriology*, 2nd revision. Virginia Polytechnic Institute, Anaerobe Laboratory, Blacksburg, Virginia. pp. 33-44; Finegold, S.M. and E.M. Barnes. 1977. *International Journal of Systematic Bacteriology* **27**:388-391. **Type strain**: ATCC 25260
Description: Finegold, S.M. and E.M. Barnes. 1977. *Ibid.*
- B. bivius** Holdeman and Johnson 1977
 Holdeman, L.V. and J.L. Johnson. 1977. *International Journal of Systematic Bacteriology* **27**:337-345. **Type strain**: ATCC 29303
Description: Holdeman, L.V. and J.L. Johnson. 1977. *Ibid.*
- B. capillosus** (Tissier 1908) Kelly 1957
 Tissier, H. 1908. *Annales de l'Institut Pasteur (Paris)* **22**:189-208; Kelly, C.D. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 424-436. **Type strain**: ATCC 29799
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- B. coagulans** Eggerth and Gagnon 1933
 Eggerth, A.H. and B.H. Gagnon. 1933. *Journal of Bacteriology* **25**:389-413. **Type strain**: ATCC 29798
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- B. disiens** Holdeman and Johnson 1977
 Holdeman, L.V. and J.L. Johnson. 1977. *International Journal of Systematic Bacteriology* **27**:337-345. **Type strain**: ATCC 29426
Description: Holdeman, L.V. and J.L. Johnson. 1977. *Ibid.*
- B. distasonis** Eggerth and Gagnon 1933
 Eggerth, A.H. and B.H. Gagnon. 1933. *Journal of Bacteriology* **25**:389-413. **Type strain**: ATCC 8503

- Description:** Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- B. eggerthii** Holdeman and Moore 1974
Holdeman, L.V. and W.E.C. Moore. 1974. International Journal of Systematic Bacteriology **24**:260-277. **Type strain:** ATCC 27754
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- B. fragilis** (Veillon and Zuber 1898) Castellani and Chalmers 1919
Veillon, A. and A. Zuber. 1898. Archives de Medecine Experimentale et d'Anatomie Pathologique **10**:517-545; Castellani, A. and A.J. Chalmers. 1919. Manual of tropical medicine. 3rd ed. Williams, Wood and Co., New York. **Type strain:** ATCC 25285
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- B. furcosus** (Veillon and Zuber 1898) Hauduroy, Ehringer, Urbain, Guillot and Magrou 1937
Veillon, A. and A. Zuber. 1898. Archives de Medecine Experimentale et d'Anatomie Pathologique **10**:517-545; Hauduroy, P., G. Ehringer, A. Urbain, G. Guillot and J. Magrou. 1937. Dictionnaire des bacteries pathogenes. Masson et Cie, Paris. **Type strain:** ATCC 25662
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- B. hypermegas** Harrison and Hansen 1963
Harrison, Jr., A.P. and P.A. Hansen. 1963. Antonie van Leeuwenhoek Journal of Microbiology and Serology **29**:22-28. **Type strain:** ATCC 25560
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- Blacksburg, Virginia. pp. 1-156.
- B. melaninogenicus** (Oliver and Wherry 1921) Roy and Kelly 1939
Oliver, W.W. and W.B. Wherry. 1921. Journal of Infectious Diseases **28**:341-344; Roy, T.E. and C.D. Kelly. 1939 in Bergey, D.H., R.S. Breed, E.G.D. Murray and A.P. Hitchens (eds). Bergey's Manual of Determinative Bacteriology, 5th ed. The Williams and Wilkins Co., Baltimore. pp. 556-558. **Type strain:** ATCC 25845
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- B. melaninogenicus** subsp. *intermedius* Holdeman and Moore 1970
Holdeman, L.V. and W.E.C. Moore. 1970 in Cato, E.P., C.S. Cummins, L.V. Holdeman, J.L. Johnson, W.E.C. Moore, R.M. Smibert and L.D.S. Smith (eds). Outline of clinical methods in anaerobic bacteriology, 2nd revision. Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia. pp. 33-44. **Type strain:** ATCC 25611
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- B. melaninogenicus** subsp. *melaninogenicus* (Oliver and Wherry 1921) Holdeman and Moore 1970
Oliver, W.W. and W.B. Wherry. 1921. Journal of Infectious Diseases **28**:341-344; Holdeman, L.V. and W.E.C. Moore. 1970 in Cato, E.P., C.S. Cummins, L.V. Holdeman, J.L. Johnson, W.E.C. Moore, R.M. Smibert and L.D.S. Smith (eds). Outline of clinical methods in anaerobic bacteriology, 2nd revision. Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia. pp. 33-44. **Type strain:** ATCC 25845
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- B. microfusis** Kaneuchi and Mitsuoka 1978
Kaneuchi, C. and T. Mitsuoka. 1978.

International Journal of Systematic Bacteriology **28**:478-481. **Type strain**: ATCC 29728

Description: Kaneuchi, C. and T. Mitsuoka. 1978. *Ibid.*

B. multiacidus Mitsuoka, Terada, Watanabe and Uchida 1974

Mitsuoka, T., A. Terada, K. Watanabe and K. Uchida. 1974. International Journal of Systematic Bacteriology **24**:35-41. **Type strain**: ATCC 27723

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

B. nodosus (Beveridge 1941) Mraz 1963

Beveridge, W.I.B. 1941. Council of Scientific Industrial Research Australian Bulletin **140**:1-56; Mraz, O. 1963 in Mraz, O., J. Tesarcik and R. Varejka (eds). Nomina und Synonyma der pathogenen und saprophytaren Mikroben, isoliert aus den wirtschaftlich oder epidemiologisch bedeutenden Wirbeltieren und Lebensmittelten tierischer Herkunft. VEB Gustav Fischer Verlag, Jena. pp. 53-334. **Type strain**: ATCC 25549

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

B. ochraceus Prevot, Joubert, Tardieux and de Cadore 1956

Prevot, A.R., P. Tardieux, L. Joubert and F. de Cadore. 1956. Annales de l'Institut Pasteur (Paris) **91**:787-798. **Type strain**: ATCC 27872

Description: Bergey 8.

B. oralis Loesche, Socransky and Gibbons 1964

Loesche, W.J., S.S. Socransky and R.J. Gibbons. 1964. Journal of Bacteriology **88**:1329-1337. **Type strain**: VPI D27B-24

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

B. ovatus Eggerth and Gagnon 1933

Eggerth, A.H. and B.H. Gagnon. 1933. Journal of Bacteriology **25**:389-413. **Type strain**: ATCC 8483

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

B. pneumosintes (Olitsky and Gates 1921) Holdeman and Moore 1970

Olitsky, P.K. and F.L. Gates. 1921. Journal of Experimental Medicine **33**:713-729; Holdeman, L.V. and W.E.C. Moore. 1970 in Cato, E.P., C.S. Cummins, L.V. Holdeman, J.L. Johnson, W.E.C. Moore, R.M. Smibert and L.D.S. Smith (eds). Outline of clinical methods in anaerobic bacteriology. 2nd revision. Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia. **Type strain**: ATCC 33048

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

B. praeacutus (Tissier 1908) Holdeman and Moore 1970

Tissier, H. 1908. Annales de l'Institut Pasteur (Paris) **22**:189-208; Holdeman, L.V. and W.E.C. Moore. 1970 in Cato, E.P., C.S. Cummins, L.V. Holdeman, J.L. Johnson, W.E.C. Moore, R.M. Smibert and L.D.S. Smith (eds). Outline of clinical methods in anaerobic bacteriology, 2nd revision. Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia. **Type strain**: ATCC 25539

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

B. putredinis (Weinberg, Nativelle and Prevot 1937) Kelly 1957

Weinberg, M., R. Nativelle and A.R. Prevot. 1937. Les Microbes Anaerobies. Masson et Cie, Paris. pp. 1-1186; Kelly, C.D. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). Bergey's Manual of Determinative Bacteriology, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 424-436. **Type strain**: ATCC 29800

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia

- Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- B. ruminicola** Bryant, Small, Bouma and Chu 1958
Bryant, M.P., N. Small, C. Bouma and H. Chu. 1958. *Journal of Bacteriology* **76**: 15-23. **Type strain:** ATCC 19189
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- B. ruminicola** subsp. *brevis* Bryant, Small, Bouma and Chu 1958
Bryant, M.P., N. Small, C. Bouma and H. Chu. 1958. *Journal of Bacteriology* **76**: 15-23. **Type strain:** ATCC 19188
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- B. ruminicola** subsp. *ruminicola* Bryant, Small, Bouma and Chu 1958
Bryant, M.P., N. Small, C. Bouma and H. Chu. 1958. *Journal of Bacteriology* **76**: 15-23. **Type strain:** ATCC 19189
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- B. splanchnicus** Werner, Rintelen and Kunstek-Santos 1975
Werner, H., G. Rintelen and H. Kunstek-Santos. 1975. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I.* **231**:133-144. **Type strain:** ATCC 29572
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- B. succinogenes** Hungate 1950
Hungate, R.E. 1950. *Bacteriological Reviews* **14**:1-49. **Type strain:** ATCC 19169
Description: Cato, E.P., W.E.C. Moore and M.P. Bryant. 1978. *International Journal of Systematic Bacteriology* **28**: 491-495.
- B. termitidis** (Sebald 1962) Holdeman and Moore 1970
Sebald, M. 1962. *Etude sur les bacteries anaerobies gram-negatives asporulees.* Theses de L'universite Paris, Imprimerie Barneoud S. A. Laval, France. pp. 1-171; Holdeman, L.V. and W.E.C. Moore. 1970 in Cato, E.P., C.S. Cummins, L.V. Holdeman, J.L. Johnson, W.E.C. Moore, R.M. Smibert and L.D.S. Smith (eds). *Outline of clinical methods in anaerobic bacteriology*, 2nd revision. Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia. **Type strain:** NCTC 11300
Description: Sebald, M. 1962. *Ibid.*
- B. thetaiotaomicron** (Distaso 1912) Castellani and Chalmers 1919
Distaso, A. 1912. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I.* **62**:433-468; Castellani, A. and A.J. Chalmers. 1919. *Manual of Tropical Medicine*, 3rd ed. Williams, Wood and Co., New York. **Type strain:** ATCC 29148
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- B. uniformis** Eggerth and Gagnon 1933
Eggerth, A.H. and B.H. Gagnon. 1933. *Journal of Bacteriology* **25**:389-413. **Type strain:** ATCC 8492
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- B. ureolyticus** Jackson and Goodman 1978
Jackson, F.L. and Y.E. Goodman. 1978. *International Journal of Systematic Bacteriology* **28**:197-200. **Type strain:** NCTC 10941
Description: Jackson, F.L. and Y.E. Goodman. 1978. *Ibid.*
- B. vulgatus** Eggerth and Gagnon 1933
Eggerth, A.H. and B.H. Gagnon. 1933. *Journal of Bacteriology* **25**:389-413. **Type strain:** ATCC 8482
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University,

Blacksburg, Virginia. pp. 1-156.

Bactoderma Tepper and Korshunova 1973

Tepper, S.Z. and G.F. Korshunova. 1973. Mikrobiologiya **42**:430-434. **Type species:** *B. alba* Tepper and Korshunova 1973

Description: Tepper, S.Z. and G.F. Korshunova. 1973. *Ibid.*

B. alba Tepper and Korshunova 1973

Tepper, S.Z. and G.F. Korshunova. 1973. Mikrobiologiya **42**:430-434. **Type strain:** no culture available.

Description: Tepper, S.Z. and G.F. Korshunova. 1973. *Ibid.*

B. rosea (Winogradsky and Winogradsky 1933)

Tepper and Korshunova 1973
Winogradsky, S.N. and H. Winogradsky. 1933. Annales de l'Institut Pasteur (Paris) **50**:350-434; Tepper, S.Z. and G.F. Korshunova. 1973. Mikrobiologiya **42**:430-434. **Type strain:** BKMW 1344

Description: Tepper, S.Z. and G.F. Korshunova. 1973. *Ibid.*

Bartonella Strong, Tyzzer and Sellards 1915

Strong, R.P., E.E. Tyzzer and A.W. Sellards. 1915. Journal of the American Medical Association **64**:806-808. **Type species:** *B. bacilliformis* (Strong, Tyzzer, Brues, Sellards and Gastiaboru 1913) Strong, Tyzzer and Sellards 1915

Description: Bergey 8.

B. bacilliformis (Strong, Tyzzer, Brues, Sellards and Gastiaboru 1913) Strong, Tyzzer and Sellards 1915

Strong, R.P., E.E. Tyzzer, C.T. Brues, A.W. Sellards and J.C. Gastiaboru. 1913. Journal of the American Medical Association **61**:1713-1716; Strong, R.P., E.E. Tyzzer and A.W. Sellards. 1915. Journal of the American Medical Association **64**:806-808. **Type strain:** no culture available.

Description: Bergey 8.

Bdellovibrio Stolp and Starr 1963

Stolp, H.J. and M.P. Starr. 1963. Antonie van Leeuwenhoek Journal of Microbiology and Serology **29**:217-248. **Type species:** *B. bacteriovorus* Stolp and Starr 1963

Description: Bergey 8.

B. bacteriovorus Stolp and Starr 1963

Stolp, H.J. and M.P. Starr. 1963. Antonie van Leeuwenhoek Journal of Microbiology

and Serology **29**:217-248. **Type strain:** NCIB 9529

Description: Stolp, H.J. and M.P. Starr. 1963. *Ibid.*

B. starrii Seidler, Mandel and Baptist 1972

Seidler, R.J., M. Mandel and J.N. Baptist. 1972. Journal of Bacteriology **109**:209-217. **Type strain:** ATCC 15145

Description: Seidler, R.J., M. Mandel and J.N. Baptist. 1972. *Ibid.*

B. stolpii Seidler, Mandel and Baptist 1972

Seidler, R.J., M. Mandel and J.N. Baptist. 1972. Journal of Bacteriology **109**:209-217. **Type strain:** DSM 50722

Description: Seidler, R.J., M. Mandel and J.N. Baptist. 1972. *Ibid.*

Beggiatoa Trevisan 1842

Trevisan, V. 1842. Prospetto della Flora Euganea. Coi Tipi Del Seminario, Padova. pp. 1-68. **Type species:** *B. alba* (Vaucher 1803) Trevisan 1845

Description: Bergey 8.

B. alba (Vaucher 1803) Trevisan 1845

Vaucher, J.P. 1803. Histoire des conferves d'eau douce, contenant leurs different modes de reproduction, et la description de leurs principales especes. J.J. Paschoud, Geneva. pp. 1-285; Trevisan, V. 1845. Nomenclator Algarum. Impr du seminaire, Padone. pp. 58-59. **Type strain:** LSU B18LD

Description: Bergey 8.

Beijerinckia Derx 1950

Derx, H.G. 1950. Proceedings Koninklijke Nederlandse Akademie van Wetenschappen Series C **53**:140-147. **Type species:** *B. indica* (Starkey and De 1939) Derx 1950

Description: Bergey 8.

B. dèrxii Tchan 1957

Tchan, Y.T. 1957. Proceedings of the Linnean Society New South Wales **82**:314-316. **Type strain:** UQM 1968

Description: Thompson, J.P. and V.B.D. Skerman. 1979. Azotobacteraceae - taxonomy and ecology of the aerobic nitrogen-fixing bacteria. Academic Press, London. pp. 347-352.

B. fluminensis Dobreiner and Ruschel 1958

Dobreiner, J. and A.P. Ruschel. 1958. Revista de Biologia **1**:261-272. **Type strain:** UQM 1685

- Description:** Thompson, J.P. and V.B.D. Skerman. 1979. Azotobacteraceae - taxonomy and ecology of the aerobic nitrogen-fixing bacteria. Academic Press, London. pp. 337-341.
- B. indica** (Starkey and De 1939) Derx 1950
Starkey, R.L. and P.K. De. 1939. Soil Science **47**:329-343; Derx, H.G. 1950. Proceedings Koninklijke Nederlandse Akademie van Wetenschappen Series C **53**: 140-147. **Type strain:** ATCC 9039
Description: Thompson, J.P. and V.B.D. Skerman. 1979. Azotobacteraceae - taxonomy and ecology of the aerobic nitrogen-fixing bacteria. Academic Press, London. pp. 328-332.
- B. mobilis** Derx 1950
Derx, H.G. 1950. Bogoriensis **1**:1-11. **Type strain:** UQM 1969
Description: Thompson, J.P. and V.B.D. Skerman. 1979. Azotobacteraceae - taxonomy and ecology of the aerobic nitrogen-fixing bacteria. Academic Press, London. pp. 333-336.
- Benecke** Campbell 1957
Campbell, L.L. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). Bergey's Manual of Determinative Bacteriology, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 328-332. **Type species:** *B. campbellii* Baumann, Baumann and Mandel 1971
Description: Campbell, L.L. 1957. Ibid.
- B. alginolytica** (Miyamoto, Nakamura and Takizawa 1961) Baumann, Baumann and Mandel 1971 (See also *Vibrio alginolyticus*)
Miyamoto, Y., K. Nakamura and K. Takizawa. 1961. Japanese Journal of Microbiology **5**:477-486; Baumann, P., L. Baumann and M. Mandel. 1971. Journal of Bacteriology **107**:268-294. **Type strain:** ATCC 17749
Description: Baumann, P., L. Baumann and M. Mandel. 1971. Ibid.
- B. campbellii** Baumann, Baumann and Mandel 1971
Baumann, P., L. Baumann and M. Mandel. 1971. Journal of Bacteriology **107**:268-294. **Type strain:** ATCC 25920
Description: Baumann, P., L. Baumann and M. Mandel. 1971. Ibid.
- B. harveyi** (Johnson and Shunk 1936) Reichelt and Baumann 1973 (See also *Lucibacterium harveyi*)
Johnson, F.H. and I.V. Shunk. 1936. Journal of Bacteriology **31**:585-593; Reichelt, J.L. and P. Baumann. 1973. Archiv fur Mikrobiologie **94**:283-330. **Type strain:** ATCC 14126
Description: Reichelt, J.L. and P. Baumann. 1973. Ibid.
- B. natriegens** (Payne, Eagon and Williams 1961) Baumann, Baumann and Mandel 1971
Payne, W.J., R.G. Eagon and A.K. Williams. 1961. Antonie van Leeuwenhoek Journal of Microbiology and Serology **27**:121-128; Baumann, P., L. Baumann and M. Mandel. 1971. Journal of Bacteriology **107**:268-294. **Type strain:** ATCC 14048
Description: Baumann, P., L. Baumann and M. Mandel. 1971. Ibid.
- B. nigrapulchrituda** Baumann, Baumann, Mandel and Allen 1971
Baumann, P., L. Baumann, M. Mandel and R.D. Allen. 1971. Journal of Bacteriology **108**:1380-1383. **Type strain:** ATCC 27043
Description: Baumann, P., L. Baumann, M. Mandel and R.D. Allen. 1971. Ibid.
- B. parahaemolytica** (Fujino, Miwatani, Yasuda, Kondo, Takeda, Akita, Kotera, Okada, Nishimura, Shimizu, Tamura and Tamura 1965) Baumann, Baumann and Mandel 1971 (See also *Vibrio parahaemolyticus*)
Fujino, T., T. Miwatani, J. Yasuda, M. Kondo, Y. Takeda, Y. Akita, K. Kotera, M. Okada, H. Nishimura, Y. Shimizu, T. Tamura and Y. Tamura. 1965. Biken Journal **8**:63-71; Baumann, P., L. Baumann and M. Mandel. 1971. Journal of Bacteriology **107**:268-294. **Type strain:** ATCC 17802
Description: Baumann, P., L. Baumann and J.L. Reichelt. 1973. Journal of Bacteriology **113**:1144-1155.
- B. pelagia** Baumann, Baumann and Mandel 1971
Baumann, P., L. Baumann and M. Mandel. 1971. Journal of Bacteriology **107**:268-294. **Type strain:** ATCC 25916
Description: Baumann, P., L. Baumann and M. Mandel. 1971. Ibid.

- B. splendida** (Beijerinck 1900) Reichelt, Baumann and Baumann 1979
 Beijerinck, M.W. 1900. Proceedings of the Academy of Sciences (Amsterdam) 3: 352-365; Reichelt, J.L., P. Baumann and L. Baumann. 1979 in International Journal of Systematic Bacteriology 29:79-80; Effective publication Reichelt, J.L., P. Baumann and L. Baumann. 1976. Archives of Microbiology 110:101-120. **Type strain:** NCMB 1
Description: Reichelt, J.L., P. Baumann and L. Baumann. 1976. Ibid.
- B. vulnifica** Reichelt, Baumann and Baumann 1979
 Reichelt, J.L., P. Baumann and L. Baumann. 1979 in International Journal of Systematic Bacteriology 29:79-80; Effective publication Reichelt, J.L., P. Baumann and L. Baumann. 1976. Archives of Microbiology 110:101-120. **Type strain:** ATCC 27562
Description: Reichelt, J.P., P. Baumann and L. Baumann. 1976. Ibid.
- Bifidobacterium** Orla-Jensen 1924
 Orla-Jensen, S. 1924. Lait 4:468-474. **Type species:** *B. bifidum* (Tissier 1900) Orla-Jensen 1924
Description: Bergey 8.
- B. adolescentis** Reuter 1963
 Reuter, G. 1963. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I. 191: 486-507. **Type strain:** ATCC 15703 biotype a
Description: Reuter, G. 1971. International Journal of Systematic Bacteriology 21: 273-275.
- B. angulatum** Scardovi and Crociani 1974
 Scardovi, V. and F. Crociani. 1974. International Journal of Systematic Bacteriology 24:6-20. **Type strain:** ATCC 27535
Description: Scardovi, V. and F. Crociani. 1974. Ibid.
- B. animalis** (Mitsuoka 1969) Scardovi and Trovatelli 1974
 Mitsuoka, T. 1969. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I. 210:52-64; Scardovi, V. and L.D. Trovatelli. 1974. International Journal of Systematic Bacteriology 24:21-18. **Type strain:** ATCC 25527
Description: Scardovi, V. and L.D. Trovatelli. 1974. Ibid.
- B. asteroides** Scardovi and Trovatelli 1969
 Scardovi, V. and L.D. Trovatelli. 1969. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. 123:64-88. **Type strain:** ATCC 25910
Description: Scardovi, V. and L.D. Trovatelli. 1969. Ibid.
- B. bifidum** (Tissier 1900) Orla-Jensen 1924
 Tissier, H. 1900. Theses, Paris pp. 1-253; Orla-Jensen, S. 1924. Lait 4:468-474. **Type strain:** Ti(Tissier) Anaerobe Collection, Institut Pasteur Lille
Description: Werner, H. and H.P.R. Seeliger. 1964. Pathologia et Microbiologia 27:212-215.
- B. boum** Scardovi, Trovatelli, Biavati and Zani 1979
 Scardovi, V., L.D. Trovatelli, B. Biavati and G. Zani. 1979. International Journal of Systematic Bacteriology 29:291-311. **Type strain:** ATCC 27917
Description: Scardovi, V., L.D. Trovatelli, B. Biavati and G. Zani. 1979. Ibid.
- B. breve** Reuter 1963
 Reuter, G. 1963. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I. 191:486-507. **Type strain:** ATCC 15700
Description: Reuter, G. 1971. International Journal of Systematic Bacteriology 21: 273-275.
- B. catenulatum** Scardovi and Crociani 1974
 Scardovi, V. and F. Crociani. 1974. International Journal of Systematic Bacteriology 24:6-20. **Type strain:** ATCC 27539
Description: Scardovi, V. and F. Crociani. 1974. Ibid.
- B. choerinum** Scardovi, Trovatelli, Biavati and Zani 1979
 Scardovi, V., L.D. Trovatelli, B. Biavati and G. Zani. 1979. International Journal of Systematic Bacteriology 29:291-311. **Type strain:** ATCC 27686
Description: Scardovi, V., L.D. Trovatelli, B. Biavati and G. Zani. 1979. Ibid.
- B. cuniculi** Scardovi, Trovatelli, Biavati and

- Zani 1979
Scardovi, V., L.D. Trovatelli, B. Biavati and G. Zani. 1979. *International Journal of Systematic Bacteriology* **29**:291-311. **Type strain:** ATCC 27916
Description: Scardovi, V., L.D. Trovatelli, B. Biavati and G. Zani. 1979. *Ibid.*
- B. dentium** Scardovi and Crociani 1974
Scardovi, V. and F. Crociani. 1974. *International Journal of Systematic Bacteriology* **24**:6-20. **Type strain:** ATCC 27534
Description: Scardovi, V. and F. Crociani. 1974. *Ibid.*
- B. indicum** Scardovi and Trovatelli 1969
Scardovi, V. and L.D. Trovatelli. 1969. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **123**:64-88. **Type strain:** ATCC 25912
Description: Scardovi, V. and L.D. Trovatelli. 1969. *Ibid.*
- B. infantis** Reuter 1963
Reuter, G. 1963. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I.* **191**:486-507. **Type strain:** ATCC 15697
Description: Reuter, G. 1971. *International Journal of Systematic Bacteriology* **21**:273-275.
- B. longum** Reuter 1963
Reuter, G. 1963. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I.* **191**:486-507. **Type strain:** ATCC 15707
Description: Reuter, G. 1971. *International Journal of Systematic Bacteriology* **21**:273-275.
- B. magnum** Scardovi and Zani 1974
Scardovi, V. and G. Zani. 1974. *International Journal of Systematic Bacteriology* **24**:29-34. **Type strain:** ATCC 27540
Description: Scardovi, V. and G. Zani. 1974. *Ibid.*
- B. pseudocatenulatum** Scardovi, Trovatelli, Biavati and Zani 1979
Scardovi, V., L.D. Trovatelli, B. Biavati and G. Zani. 1979. *International Journal of Systematic Bacteriology* **29**:291-311. **Type strain:** ATCC 27919
Description: Scardovi, V., L.D. Trovatelli, B. Biavati and G. Zani. 1979. *Ibid.*
- B. pseudolongum** Mitsuoka 1969
Mitsuoka, T. 1969. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I.* **210**:52-64. **Type strain:** ATCC 25526
Description: Mitsuoka, T. 1969. *Ibid.*
- B. pullorum** Trovatelli, Crociani, Pedinotti and Scardovi 1974
Trovatelli, L.D., F. Crociani, M. Pedinotti and V. Scardovi. 1974. *Archives of Microbiology* **98**:187-198. **Type strain:** ATCC 27685
Description: Trovatelli, L.D., F. Crociani, M. Pedinotti and V. Scardovi. 1974. *Ibid.*
- B. suis** Matteuzzi, Crociani, Zani and Trovatelli 1971
Matteuzzi, D., F. Crociani, G. Zani and L.D. Trovatelli. 1971. *Zeitschrift für Allgemeine Mikrobiologie* **11**:387-395. **Type strain:** ATCC 27533
Description: Matteuzzi, D., F. Crociani, G. Zani and L.D. Trovatelli. 1971. *Ibid.*
- B. thermophilium** Mitsuoka 1969
Mitsuoka, T. 1969. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I.* **210**:52-64. **Type strain:** ATCC 25525
Description: Mitsuoka, T. 1969. *Ibid.*
- Blastobacter** Zavarzin 1961
Zavarzin, G.A. 1961. *Mikrobiologiya* **30**:952-975 (English translation 774-791). **Type species:** *B. henricii* Zavarzin 1961
Description: Bergey 8.
- B. henricii** Zavarzin 1961
Zavarzin, G.A. 1961. *Mikrobiologiya* **30**:952-975 (English translation 774-791). **Type strain:** no culture isolated.
Description: Bergey 8.
- Blastococcus** Ahrens and Moll 1970
Ahrens, R. and G. Moll. 1970. *Archiv für Mikrobiologie* **70**:243-265. **Type species:** *B. aggregatus* Ahrens and Moll 1970
Description: Ahrens, R. and G. Moll. 1970. *Ibid.*
- B. aggregatus** Ahrens and Moll 1970
Ahrens, R. and G. Moll. 1970. *Archiv für Mikrobiologie* **70**:243-265. **Type strain:** ATCC 25902
Description: Ahrens, R. and G. Moll.

1970. *Ibid.*

Blattabacterium Hollande and Favre 1931

Hollande, A.C. and R. Favre. 1931. *Comptes Rendus des Seances de la Societe de Biologie (Paris)* **107**:752-754. **Type species:** *B. cuenoti* (Mercier 1906) Hollande and Favre 1931

Description: Bergey 8.

B. cuenoti (Mercier 1906) Hollande and Favre 1931

Mercier, L. 1906. *Comptes Rendus des Seances de la Societe de Biologie (Paris)* **61**:682-684; Hollande, A.C. and R. Favre. 1931. *Comptes Rendus des Seances de la Societe de Biologie (Paris)* **107**:752-754. **Type strain:** no culture isolated.

Description: Brooks, M.A. 1970. *Journal of Invertebrate Pathology* **16**:249-258.

Bordetella Moreno-Lopez 1952

Moreno-Lopez, M. 1952. *Microbiologia Espanola* **5**:117-181. **Type species:** *B. pertussis* (Bergey, Harrison, Breed, Hammer and Huntoon 1923) Moreno-Lopez 1952

Description: Bergey 8.

B. bronchiseptica (Ferry 1912) Moreno-Lopez 1952

Ferry, N.S. 1912. *Veterinary Journal* **68**:376-391; Moreno-Lopez, M. 1952. *Microbiologia Espanola* **5**:117-181. **Type strain:** ATCC 19395

Description: Bergey 8.

B. parapertussis (Eldering and Kendrick 1938) Moreno-Lopez 1952

Eldering, G. and P. Kendrick. 1938. *Journal of Bacteriology* **35**:561-572; Moreno-Lopez, M. 1952. *Microbiologia Espanola* **5**:117-181. **Type strain:** NCTC 5952

Description: Bergey 8.

B. pertussis (Bergey, Harrison, Breed, Hammer and Huntoon 1923) Moreno-Lopez 1952

Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. *Bergey's Manual of Determinative Bacteriology*, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442; Moreno-Lopez, M. 1952. *Microbiologia Espanola* **5**:117-181. **Type strain:** ATCC 9797

Description: Bergey 8.

Borrelia Swellengrebel 1907

Swellengrebel, N.H. 1907. *Annales de l'Institut Pasteur (Paris)* **21**:562-586. **Type species:** *B. anserina* (Sakharoff 1891) Bergey, Harrison, Breed, Hammer and Huntoon 1925

Description: Bergey 8.

B. anserina (Sakharoff 1891) Bergey, Harrison, Breed, Hammer and Huntoon 1925

Sakharoff, M.N. 1891. *Annales de l'Institut Pasteur (Paris)* **5**:564-566; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon (eds). 1925. *Bergey's Manual of Determinative Bacteriology*, 2nd ed. The Williams and Wilkins Co., Baltimore. pp. 1-462. **Type strain:** no culture available.

Description: Bergey 8.

B. brasiliensis Davis 1952

Davis, G.E. 1952. *Journal of Parasitology* **38**:473-476. **Type strain:** no culture available.

Description: Bergey 8.

B. caucasica (Kandelaki 1945) Davis 1957

Kandelaki according to Maruashvili, G.M. 1945. *Meditsinskaya Parazitologiya i Parazitarnye Bolezni* **14**:24-27; Davis, G.E. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 892-907. **Type strain:** no culture available.

Description: Bergey 8.

B. crociduræ (Leger 1917) Davis 1957

Leger, A. 1917. *Bulletin de la Societe de Pathologie Exotique* **10**:280-281; Davis, G.E. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 892-907. **Type strain:** no culture available.

Description: Bergey 8.

B. dugesii (Mazzotti 1949) Davis 1957

Mazzotti, L. 1949. *Revista del Instituto de Salubridad y Enfermedades Tropicales Mexico* **10**:277-281; Davis, G.E. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 892-907. **Type strain:** no culture available.

- Description:** Bergey 8.
- B. duttonii** (Novy and Knapp 1906) Bergey, Harrison, Breed, Hammer and Huntoon 1925
Novy, F.G. and R.E. Knapp. 1906. *Journal of Infectious Diseases* 3:291-393; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon (eds). 1925. *Bergey's Manual of Determinative Bacteriology*, 2nd ed. The Williams and Wilkins Co., Baltimore. pp. 1-462. **Type strain:** no culture available.
Description: Bergey 8.
- B. graingeri** (Heisch 1953) Davis 1957
Heisch, R.B. 1953. *Parasitology* 43:133-135; Davis, G.E. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 892-907. **Type strain:** no culture available.
Description: Bergey 8.
- B. harveyi** (Garnham 1947) Davis 1948
Garnham, P.C.C. 1947. *East African Medical Journal* 24:47-51; Davis, G.E. 1948. *Annual Review of Microbiology* 2: 305-334. **Type strain:** no culture available.
Description: Bergey 8.
- B. hermsii** (Davis 1942) Steinhaus 1946
Davis, G.E. 1942. *Publications of the American Association for the Advancement of Science* No. 18, pp. 41-47; Steinhaus, E.A. 1946. *Insect Microbiology*. Comstock Publishing Co., Ithaca, New York. **Type strain:** no culture available.
Description: Bergey 8.
- B. hispanica** (de Buen 1926) Steinhaus 1946
de Buen, S. 1926. *Annales de Parasitologie Humaine et Comparee* 4:185-192; Steinhaus, E.A. 1946. *Insect Microbiology*. Comstock Publishing Co., Ithaca, New York. **Type strain:** no culture available.
Description: Bergey 8.
- B. latyschewii** (Sofiev 1941) Davis 1948
Sofiev, M.S. 1941. *Medical Parasitology (Moscow)* 10:337-373; Davis, G.E. 1948. *Annual Review of Microbiology* 2:305-334. **Type strain:** no culture available.
Description: Bergey 8.
- B. mazzottii** Davis 1956
Davis, G.E. 1956. *American Journal of Hygiene* 63:13-17. **Type strain:** no culture available.
Description: Bergey 8.
- B. parkeri** (Davis 1942) Steinhaus 1946
Davis, G.E. 1942. *Publications of the American Association for the Advancement of Science* No. 18, pp. 41-47; Steinhaus, E.A. 1946. *Insect Microbiology*. Comstock Publishing Co., Ithaca, New York. **Type strain:** no culture available.
Description: Bergey 8.
- B. persica** (Dschunkowsky 1913) Steinhaus 1946
Dschunkowsky, E. 1913. *Deutsche Medizinische Wochenschrift* 39:419-420; Steinhaus, E.A. 1946. *Insect Microbiology*. Comstock Publishing Co., Ithaca, New York. **Type strain:** no culture available.
Description: Bergey 8.
- B. recurrentis** (Lebert 1874) Bergey, Harrison, Breed, Hammer and Huntoon 1925
Lebert, H. 1874 in *Ziemssen's Handbuch der Speciellen Pathologie und Therapie*, Ed. 2. F.C.W. Vogel, Leipzig. pp. 267-304; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon (eds). 1925. *Bergey's Manual of Determinative Bacteriology*, 2nd ed. The Williams and Wilkins Co., Baltimore. pp. 1-462. **Type strain:** no culture available.
Description: Bergey 8.
- B. theileri** (Laveran 1903) Bergey, Harrison, Breed, Hammer and Huntoon 1925
Laveran, A. 1903. *Compte Rendu de l'Academie des Sciences (Paris)* 136:939-941; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon (eds). 1925. *Bergey's Manual of Determinative Bacteriology*, 2nd ed. The Williams and Wilkins Co., Baltimore. pp. 1-462. **Type strain:** no culture available.
Description: Bergey 8.
- B. tillae** Zumpt and Organ 1961
Zumpt, F. and D. Organ. 1961. *South African Journal of Laboratory and Clinical Medicine* 7:31-35. **Type strain:** no culture available.
Description: Bergey 8.
- B. turicatae** (Brumpt 1933) Steinhaus 1946
Brumpt, E. 1933. *Comptes Rendus des Seances de la Societe de Biologie (Paris)*

113:1369-1372; Steinhaus, E.A. 1946. Insect Microbiology. Comstock Publishing Co., Ithaca, New York. **Type strain:** no culture available.

Description: Bergey 8.

- B. venezuelensis** (Brumpt 1921) Brumpt 1922
Brumpt, E. 1921 in Lavier, These, Paris. p. 207; Brumpt, E. 1922 in Roger, G.H., F. Widal and P.J. Teissier (eds). Nouveau Traite de Medecine. Masson, Paris 4:491-531. **Type strain:** no culture available.
Description: Bergey 8.

Branhamella Catlin 1970

Catlin, B.W. 1970 International Journal of Systematic Bacteriology 20:155-159. **Type species:** *B. catarrhalis* (Frosch and Kolle 1896) Catlin 1970

Description: Bergey 8.

- B. catarrhalis** (Frosch and Kolle 1896) Catlin 1970
Frosch, P. and W. Kolle. 1896 in Flugge, C. (ed). Die Mikroorganismen. F.C.W. Vogel, Leipzig. pp. 154-155; Catlin, B.W. 1970. International Journal of Systematic Bacteriology 20:155-159. **Type strain:** ATCC 25238
Description: Bergey 8.

Brevibacterium Breed 1953

Breed, R.S. 1953. Riassunti delle Comunicazione VI Congresso Internazionale di Microbiologia, Roma 1:13-14. **Type species:** *B. linens* (Wolff 1910) Breed 1953

Description: Breed, R.S. 1953. Ibid.

- B. acetylicum** (Levine and Soppeland 1926) Breed 1957
Levine, M. and L. Soppeland. 1926. Bulletin of the Iowa State Agricultural College 77:1-72; Breed, R.S. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). Bergey's Manual of Determinative Bacteriology, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 490-503. **Type strain:** ATCC 953
Description: Keddie, R.M. and G.L. Cure. 1978 in Bousfield, I.J. and A.G. Calley (eds). Special Publications of the Society for General Microbiology I. Coryneform Bacteria. Academic Press, London. pp. 47-84.
- B. albidum** Komagata and Iizuka 1964

Komagata, K. and H. Iizuka. 1964. Journal of the Agricultural Chemical Society of Japan 38:496-502. **Type strain:** ATCC 15831

Description: Komagata, K. and H. Iizuka. 1964. Ibid.

- B. ammoniagenes** (Cooke and Keith 1927) Breed 1953
Cooke, J.V. and H.R. Keith. 1927. Journal of Bacteriology 13:315-319; Breed, R.S. 1953. Riassunti delle Comunicazione VI Congresso Internazionale di Microbiologia, Roma 1:13-14. **Type strain:** ATCC 6871
Description: Keddie, R.M. and G.L. Cure. 1978 in Bousfield, I.J. and A.G. Calley (eds). Special Publications of the Society for General Microbiology I. Coryneform Bacteria. Academic Press, London. pp. 47-84.
- B. citreum** Komagata and Iizuka 1964
Komagata, K. and H. Iizuka. 1964. Journal of the Agricultural Chemical Society of Japan 38:496-502. **Type strain:** ATCC 15828
Description: Komagata, K. and H. Iizuka. 1964. Ibid.
- B. divaricatum** Su and Yamada 1960
Su, Y. and K. Yamada. 1960. Bulletin of the Agricultural Chemical Society of Japan 24:69-74. **Type strain:** ATCC 14020
Description: Abe, S., K. Takayama and S. Kinoshita. 1967. Journal of General and Applied Microbiology 13:279-301.
- B. fermentans** Chatelain and Second 1966
Chatelain, R. and L. Second. 1966. Annales de l'Institut Pasteur (Paris) 111: 630-644. **Type strain:** CIP 6611
Description: Chatelain, R. and L. Second. 1966. Ibid.
- B. frigoritolerans** Delaporte and Sasson 1967
Delaporte, B. and A. Sasson. 1967. Compte Rendu de l'Academie des Sciences. Paris, Series D, 264:2257-2260. **Type strain:** ATCC 25097
Description: Delaporte, B. and A. Sasson. 1967. Ibid.
- B. halotolerans** Delaporte and Sasson 1967
Delaporte, B. and A. Sasson. 1967. Compte Rendu de l'Academie des Sciences. Paris, Series D, 264:2257-2260. **Type strain:** ATCC 25096

- Description:** Delaporte, B. and A. Sasson. 1967. *Ibid.*
- B. imperiale** (Steinhaus 1941) Breed 1953
Steinhaus, E.A. 1941. *Journal of Bacteriology* **42**:757-790; Breed, R.S. 1953. *Riassunti delle Comunicazione VI Congresso Internazionale di Microbiologia, Roma* **1**:13-14. **Type strain:** ATCC 8365
Description: Steinhaus, E.A. 1941. *Ibid.*
- B. incertum** (Steinhaus 1941) Breed 1953
Steinhaus, E.A. 1941. *Journal of Bacteriology* **42**:757-790; Breed, R.S. 1953. *Riassunti delle Comunicazione VI Congresso Internazionale di Microbiologia, Roma* **1**:13-14. **Type strain:** ATCC 8363
Description: Steinhaus, E.A. 1941. *Ibid.*
- B. linens** (Wolff 1910) Breed 1953
Wolff, M. 1910. *Mitteilungen des Kaiser-Wilhelm-Instituts für Landwirtschaft in Bromberg* **3**:69-92; Breed, R.S. 1953. *Riassunti delle Comunicazione VI Congresso Internazionale di Microbiologia, Roma* **1**:13-14. **Type strain:** ATCC 9172
Description: Crombach, W.H.J. 1974. *Antonie van Leeuwenhoek Journal of Microbiology and Serology* **40**:361-376.
- B. liquefaciens** Okabayashi and Masuo 1960
Okabayashi, T. and E. Masuo. 1960. *Chemical and Pharmaceutical Bulletin (Tokyo)* **8**:1084-1088. **Type strain:** ATCC 14929
Description: Okabayashi, T., M. Ide, T. Hattori and A. Yoshimoto. 1962. *Annual Report of Shionogi Research Laboratory* **12**:191-197.
- B. luteum** Komagata and Iizuka 1964
Komagata, K. and H. Iizuka. 1964. *Journal of the Agricultural Chemical Society of Japan* **38**:496-502. **Type strain:** ATCC 15830
Description: Komagata, K. and H. Iizuka. 1964. *Ibid.*
- B. lyticum** Takayama, Udagawa and Abe 1960
Takayama, K., K. Udagawa and S. Abe. 1960. *Journal of the Agricultural Chemical Society of Japan* **34**:652-656. **Type strain:** ATCC 15921
Description: Takayama, K., K. Udagawa and S. Abe. 1960. *Ibid.*
- B. oxydans** Chatelain and Second 1966
Chatelain, R. and L. Second. 1966. *Annales de l'Institut Pasteur (Paris)* **111**:630-644. **Type strain:** CIP 6612
Description: Chatelain, R. and L. Second. 1966. *Ibid.*
- B. protophormiae** Lysenko 1959
Lysenko, O. 1959. *Journal of Insect Pathology* **1**:34-42. **Type strain:** ATCC 19271
Description: Lysenko, O. 1959. *Ibid.*
- B. pusillum** Iizuka and Komagata 1965
Iizuka, H. and K. Komagata. 1965. *Journal of General and Applied Microbiology* **11**:1-14. **Type strain:** ATCC 19096
Description: Iizuka, H. and K. Komagata. 1965. *Ibid.*
- B. saperdae** Lysenko 1959
Lysenko, O. 1959. *Journal of Insect Pathology* **1**:34-42. **Type strain:** ATCC 19272
Description: Lysenko, O. 1959. *Ibid.*
- B. stationis** (ZoBell and Upham 1944) Breed 1953
ZoBell, C.E. and H.C. Upham. 1944. *Bulletin Scripps Institution of Oceanography University of California (Technical Series)* **5**:239-292; Breed, R.S. 1953. *Riassunti delle Comunicazione VI Congresso Internazionale di Microbiologia, Roma* **1**:13-14. **Type strain:** ATCC 14403
Description: ZoBell, C.E. and H.C. Upham. 1944. *Ibid.*
- B. testaceum** Komagata and Iizuka 1964
Komagata, K. and H. Iizuka. 1964. *Journal of the Agricultural Chemical Society of Japan* **38**:496-502. **Type strain:** ATCC 15829
Description: Komagata, K. and H. Iizuka. 1964. *Ibid.*
- B. vitarumen** (Bechdel, Honeywell, Dutscher and Knutsen 1928) Breed 1957
Bechdel, S.I., H.E. Honeywell, R.A. Dutscher and M.H. Knutsen. 1928. *Journal of Biological Chemistry* **80**:231-238; Breed, R.S. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 490-503. **Type strain:** ATCC 10234
Description: Breed, R.S. 1957. *Ibid.*
- Brochothrix** Sneath and Jones 1976

- Sneath, P.H.A. and D. Jones. 1976. *International Journal of Systematic Bacteriology* **26**:102-104. **Type species:** *B. thermosphacta* (McLean and Sulzbacher 1953) Sneath and Jones 1976
Description: Sneath, P.H.A. and D. Jones. 1976. *Ibid.*
- B. thermosphacta** (McLean and Sulzbacher 1953) Sneath and Jones 1976
McLean, R.A. and W.L. Sulzbacher. 1953. *Journal of Bacteriology* **65**:428-433; Sneath, P.H.A. and D. Jones. 1976. *International Journal of Systematic Bacteriology* **26**:102-104. **Type strain:** ATCC 11509
Description: Sneath, P.H.A. and D. Jones. 1976. *Ibid.*
- Brucella** Meyer and Shaw 1920
Meyer, K.F. and E.B. Shaw. 1920. *Journal of Infectious Diseases* **27**:173-184. **Type species:** *B. melitensis* (Hughes 1893) Meyer and Shaw 1920
Description: Bergey 8.
- B. abortus** (Schmidt 1901) Meyer and Shaw 1920
Schmidt, J. 1901 in Schmidt, J. and F. Weis. *Bakterielle. Naturhistorisk Grundlag for det Bakteriologiske Studium, Morten Porsild, Kobenhavn 1899-1901.* pp. 248-296; Meyer, K.F. and E.B. Shaw. 1920. *Journal of Infectious Diseases* **27**:173-184. **Type strain:** ATCC 23448
Description: Bergey 8.
- B. canis** Carmichael and Bruner 1968
Carmichael, L.E. and D.W. Bruner. 1968. *Cornell Veterinarian* **58**:579-592. **Type strain:** ATCC 23365
Description: Bergey 8.
- B. melitensis** (Hughes 1893) Meyer and Shaw 1920
Hughes, M.L. 1893. *Mediterranean Nature* **2**:325-327; Meyer, K.F. and E.B. Shaw. 1920. *Journal of Infectious Diseases* **27**:173-184. **Type strain:** ATCC 23456
Description: Bergey 8.
- B. neotomae** Stoenner and Lackman 1957
Stoenner, H.G. and D.B. Lackman. 1957. *American Journal of Veterinary Research* **18**:947-951. **Type strain:** ATCC 23459
Description: Bergey 8.
- B. ovis** Buddle 1956
Buddle, M.B. 1956. *Journal of Hygiene* **54**:351-364. **Type strain:** ATCC 25840
Description: Bergey 8.
- B. suis** Huddleson 1929
Huddleson, I.F. 1929. Michigan State College Agricultural Experimental Station Technical Bulletin **100**:1-16. **Type strain:** ATCC-23444
Description: Bergey 8.
- Butyrivibrio** Bryant and Small 1956
Bryant, M.P. and N. Small. 1956. *Journal of Bacteriology* **72**:16-21. **Type species:** *B. fibrisolvens* Bryant and Small 1956
Description: Bergey 8.
- B. crossotus** Moore, Johnson and Holdeman 1976
Moore, W.E.C., J.L. Johnson and L.V. Holdeman. 1976. *International Journal of Systematic Bacteriology* **26**:238-252. **Type strain:** VPI T9-40A
Description: Moore, W.E.C., J.L. Johnson and L.V. Holdeman. 1976. *Ibid.*
- B. fibrisolvens** Bryant and Small 1956
Bryant, M.P. and N. Small. 1956. *Journal of Bacteriology* **72**:16-21. **Type strain:** ATCC 19171
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- Calymmatobacterium** Aragao and Vianna 1913
Aragao, H. and G. Vianna. 1913. *Memorias do Instituto Oswaldo Cruz Rio de Janeiro* **5**:211-238. **Type species:** *C. granulomatis* Aragao and Vianna 1913
Description: Bergey 8.
- C. granulomatis** Aragao and Vianna 1913
Aragao, H. and G. Vianna. 1913. *Memorias do Instituto Oswaldo Cruz Rio de Janeiro* **5**:211-238. **Type strain:** no strain extant.
Description: Bergey 8.
- Campylobacter** Sebald and Veron 1963
Sebald, M. and M. Veron. 1963. *Annales de l'Institut Pasteur (Paris)* **105**:897-910. **Type species:** *C. fetus* (Smith and Taylor 1919) Sebald and Veron 1963
Description: Bergey 8.

- C. coli** (Doyle 1948) Veron and Chatelain 1973
Doyle, L.P. 1948. American Journal of Veterinary Research **9**:50-51; Veron, M. and R. Chatelain. 1973. International Journal of Systematic Bacteriology **23**:122-134. **Type strain**: CIP 7080
Description: Veron, M. and R. Chatelain. 1973. *Ibid.*
- C. fetus** (Smith and Taylor 1919) Sebald and Veron 1963
Smith, T. and M.S. Taylor. 1919. Journal of Experimental Medicine **30**:299-311; Sebald, M. and M. Veron. 1963. Annales de l'Institut Pasteur (Paris) **105**:897-910. **Type strain**: CIP 5396
Description: Veron, M. and R. Chatelain. 1973. International Journal of Systematic Bacteriology **23**:133-134.
- C. fetus** subsp. *fetus* (Smith and Taylor 1919) Veron and Chatelain 1973
Smith, T. and M.S. Taylor. 1919. Journal of Experimental Medicine **30**:299-311; Veron, M. and R. Chatelain. 1973. International Journal of Systematic Bacteriology **23**:122-134. **Type strain**: CIP 5396
Description: Veron, M. and R. Chatelain. 1973. *Ibid.*
- C. fetus** subsp. *venerealis* (Florent 1959) Veron and Chatelain 1973
Florent, A. 1959. Proceedings 10th International Veterinary Congress Madrid **2**:953-957; Veron, M. and R. Chatelain. 1973. International Journal of Systematic Bacteriology **23**:122-134. **Type strain**: ATCC 19483
Description: Veron, M. and R. Chatelain. 1973. *Ibid.*
- C. jejuni** (Jones, Orcutt and Little 1931) Veron and Chatelain 1973
Jones, F.S., M. Orcutt and R.B. Little. 1931. Journal of Experimental Medicine **53**:853-864; Veron, M. and R. Chatelain. 1973. International Journal of Systematic Bacteriology **23**:122-134. **Type strain**: CIP 702
Description: Veron, M. and R. Chatelain. 1973. *Ibid.*
- C. sputorum** (Prevot 1940) Veron and Chatelain 1973
Prevot, A.R. 1940. Annales de l'Institut Pasteur (Paris) **64**:117-125; Veron, M. and R. Chatelain. 1973. International Journal of Systematic Bacteriology **23**:122-134. **Type strain**: strain Forsyth ER33 (Location not yet determined)
Description: Loesche, W.J., R.J. Gibbons and S.S. Socransky. 1965. Journal of Bacteriology **89**:1109-1116.
- C. sputorum** subsp. *bubulus* (Florent 1953) Veron and Chatelain 1973
Florent, A. 1953. Comptes Rendus des Seances de la Societe de Biologie **147**:2066-2069; Veron, M. and R. Chatelain. 1973. International Journal of Systematic Bacteriology **23**:122-134. **Type strain**: CIP 53103
Description: Veron, M. and R. Chatelain. 1973. *Ibid.*
- C. sputorum** subsp. *sputorum* (Prevot 1940) Veron and Chatelain 1973
Prevot, A.R. 1940. Annales de l'Institut Pasteur (Paris) **64**:117-125; Veron, M. and R. Chatelain. 1973. International Journal of Systematic Bacteriology **23**:122-134. **Type strain**: strain Forsyth ER33
Description: Loesche, W.J., R.J. Gibbons and S.S. Socransky. 1965. Journal of Bacteriology **89**:1109-1116.
- Capsularis** Prevot 1938
Prevot, A.R. 1938. Annales de l'Institut Pasteur (Paris) **60**:285-307. **Type species**: *C. zooglyphiformans* (Weinberg, Nativelle and Prevot 1937) Prevot 1938
Description: Prevot, A.R., A. Turpin and P. Kaiser. 1967. Les bacteries anaerobies. Dunod, Paris. p. 272.
- C. zooglyphiformans** (Weinberg, Nativelle and Prevot 1937) Prevot 1938
Weinberg, M., R. Nativelle and A.R. Prevot. 1937. Les microbes anaerobies. Masson et Cie; Prevot, A.R. 1938. Annales de l'Institut Pasteur (Paris) **60**:285-307. **Type strain**: VPI D28K-1
Description: Prevot, A.R., A. Turpin and P. Kaiser. 1967. Les bacteries anaerobies. Dunod, Paris. p. 272.
- Cardiobacterium** Slotnick and Dougherty 1964
Slotnick, I.J. and M. Dougherty. 1964. Antonie van Leeuwenhoek Journal of Microbiology and Serology **30**:261-272. **Type species**: *C. hominis* Slotnick and Dougherty 1964
Description: Bergey 8.

- C. hominis** Slotnick and Dougherty 1964
Slotnick, I.J. and M. Dougherty. 1964. *Antonie van Leeuwenhoek Journal of Microbiology and Serology* **30**:261-272. **Type strain:** ATCC 15826
Description: Bergey 8.
- Caryophanon** Peshkoff 1939
Peshkoff, M.A. 1939. *Doklady Akademii Nauk SSSR* **25**:239-242. **Type species:** *C. latum* Peshkoff 1939
Description: Bergey 8.
- C. latum** Peshkoff 1939
Peshkoff, M.A. 1939. *Doklady Akademii Nauk SSSR* **25**:239-242. **Type strain:** NCIB 9533
Description: Bergey 8.
- Caseobacter** Crombach 1978
Crombach, W.H.J. 1978. *International Journal of Systematic Bacteriology* **28**: 354-366. **Type species:** *C. polymorphus* Crombach 1978
Description: Crombach, W.H.J. 1978. *Ibid.*
- C. polymorphus** Crombach 1978
Crombach, W.H.J. 1978. *International Journal of Systematic Bacteriology* **28**: 354-366. **Type strain:** LMD AC 256
Description: Crombach, W.H.J. 1978. *Ibid.*
- Caulobacter** Henrici and Johnson 1935
Henrici, A.T. and D. Johnson. 1935. *Journal of Bacteriology* **30**:61-92. **Type species:** *C. vibrioides* Henrici and Johnson 1935
Description: Bergey 8.
- C. bacteroides** Poindexter 1964
Poindexter, J.S. 1964. *Bacteriological Reviews* **28**:231-295. **Type strain:** ATCC 15254
Description: Poindexter, J.S. 1964. *Ibid.*
- C. crescentus** Poindexter 1964
Poindexter, J.S. 1964. *Bacteriological Reviews* **28**:231-295. **Type strain:** ATCC 15252
Description: Poindexter, J.S. 1964. *Ibid.*
- C. fusiformis** Poindexter 1964
Poindexter, J.S. 1964. *Bacteriological Reviews* **28**:231-295. **Type strain:** ATCC 15257
Description: Poindexter, J.S. 1964. *Ibid.*
- C. halobacteroides** Poindexter 1964
Poindexter, J.S. 1964. *Bacteriological Reviews* **28**:231-295. **Type strain:** ATCC 15269
Description: Poindexter, J.S. 1964. *Ibid.*
- C. henricii** Poindexter 1964
Poindexter, J.S. 1964. *Bacteriological Reviews* **28**:231-295. **Type strain:** ATCC 15253
Description: Poindexter, J.S. 1964. *Ibid.*
- C. intermedius** Poindexter 1964
Poindexter, J.S. 1964. *Bacteriological Reviews* **28**:231-295. **Type strain:** ATCC 15262
Description: Poindexter, J.S. 1964. *Ibid.*
- C. leidyia** Poindexter 1964
Poindexter, J.S. 1964. *Bacteriological Reviews* **28**:231-295. **Type strain:** ATCC 15260
Description: Poindexter, J.S. 1964. *Ibid.*
- C. maris** Poindexter 1964
Poindexter, J.S. 1964. *Bacteriological Reviews* **28**:231-295. **Type strain:** ATCC 15268
Description: Poindexter, J.S. 1964. *Ibid.*
- C. subvibrioides** Poindexter 1964
Poindexter, J.S. 1964. *Bacteriological Reviews* **28**:231-295. **Type strain:** ATCC 15264
Description: Poindexter, J.S. 1964. *Ibid.*
- C. vibrioides** Henrici and Johnson 1935
Henrici, A.T. and D. Johnson. 1935. *Journal of Bacteriology* **30**:61-92. **Type strain:** Stove CB51 (not extant)
Description: Poindexter, J.S. 1964. *Bacteriological Reviews* **28**:231-295.
- Cellulomonas** Bergey, Harrison, Breed, Hammer and Huntoon 1923
Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon 1923. *Bergey's Manual of Determinative Bacteriology*, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type species:** *C. flavigena* (Kellerman and McBeth 1912) Bergey, Harrison, Breed, Hammer and Huntoon 1923
Description: Bergey 8.
- C. biazotea** (Kellerman, McBeth, Scales and Smith 1913) Bergey, Harrison, Breed, Hammer and Huntoon 1923
Kellerman, K.F., I.G. McBeth, F.M. Scales and N.R. Smith. 1913.

Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. 39:502-522; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. Bergey's Manual of Determinative Bacteriology, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type strain:** ATCC 486

Description: Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. *Ibid.*

C. cellasea (Kellerman, McBeth, Scales and Smith 1913) Bergey, Harrison, Breed, Hammer and Huntoon 1923

Kellerman, K.F., I.G. McBeth, F.M. Scales and N.R. Smith. 1913. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. 39:502-522; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. Bergey's Manual of Determinative Bacteriology, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type strain:** ATCC 487

Description: Kellerman, K.F., I.G. McBeth, F.M. Scales and N.R. Smith. 1913. *Ibid.*

C. fimi (McBeth and Scales 1913) Bergey, Harrison, Breed, Hammer and Huntoon 1923

McBeth, I.G. and F.M. Scales. 1913. United States Department of Agriculture Bureau of Plant Industry Bulletin 266:1-52; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. Bergey's Manual of Determinative Bacteriology, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type strain:** ATCC 484

Description: McBeth, I.G. and F.M. Scales. 1913. *Ibid.*

C. flavigena (Kellerman and McBeth 1912) Bergey, Harrison, Breed, Hammer and Huntoon 1923

Kellerman, K.F. and I.G. McBeth. 1912. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. 34:485-494; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. Bergey's Manual of Determinative Bacteriology, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type strain:** ATCC 482

Description: Bergey 8.

C. gelida (Kellerman, McBeth, Scales and Smith 1913) Bergey, Harrison, Breed, Hammer and Huntoon 1923

Kellerman, K.F., I.G. McBeth, F.M. Scales and N.R. Smith. 1913. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. 39:502-522; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. Bergey's Manual of Determinative Bacteriology, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type strain:** ATCC 488

Description: Kellerman, K.F., I.G. McBeth, F.M. Scales and N.R. Smith. 1913. *Ibid.*

C. uda (Kellerman, McBeth, Scales and Smith 1913) Bergey, Harrison, Breed, Hammer and Huntoon 1923

Kellerman, K.F., I.G. McBeth, F.M. Scales and N.R. Smith. 1913. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. 39:502-522; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. Bergey's Manual of Determinative Bacteriology, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type strain:** ATCC 491

Description: Kellerman, K.F., I.G. McBeth, F.M. Scales and N.R. Smith. 1913. *Ibid.*

Chainia Thirumalachar 1955

Thirumalachar, M.J. 1955. Nature (London) 176:934-935. **Type species:** *C. antibiotica* Thirumalachar 1955

Description: Thirumalachar, M.J. 1955. *Ibid.*

C. antibiotica Thirumalachar 1955

Thirumalachar, M.J. 1955. Nature (London) 176:934-935. **Type strain:** ATCC 15721

Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology 22:265-394.

C. flava Thirumalachar and Sukapure 1964

Thirumalachar, M.J. and R.S. Sukapure.

1964. Hindustan Antibiotics Bulletin **6**: 157-166. **Type strain:** ATCC 19347
Description: Thirumalachar, M.J. and R.S. Sukapure. 1964. *Ibid.*
- C. fumigata** Thirumalachar, Sukapure, Rahalkar and Gopalkrishnan 1966
 Thirumalachar, M.J., R.S. Sukapure, P.W. Rahalkar and K.S. Gopalkrishnan. 1966. Hindustan Antibiotics Bulletin **9**:10-14. **Type strain:** ATCC 19345
Description: Thirumalachar, M.J., R.S. Sukapure, P.W. Rahalkar and K.S. Gopalkrishnan. 1966. *Ibid.*
- C. minutisclerotica** Thirumalachar, Rahalkar, Deshmukh and Sukapure 1965
 Thirumalachar, M.J., P.W. Rahalkar, P.V. Deshmukh and R.S. Sukapure. 1965. Hindustan Antibiotics Bulletin **8**:6-9. **Type strain:** ATCC 17757
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- C. nigra** Thirumalachar 1955
 Thirumalachar, M.J. 1955. Nature (London) **176**:934-935. **Type strain:** ATCC 17756
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- C. ochracea** Kuznetsov 1962
 Kuznetsov, V.D. 1962. Mikrobiologiya **31**: 534-539. **Type strain:** ATCC 15814
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- C. olivacea** Thirumalachar and Sukapure 1964
 Thirumalachar, M.J. and R.S. Sukapure. 1964. Hindustan Antibiotics Bulletin **6**: 157-166. **Type strain:** ATCC 15722
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- C. poonensis** Thirumalachar 1960
 Thirumalachar, M.J. 1960 in Kalakoutskii, L.V. and N.A. Krassilnikov in Rautenshtein, Ya. I. Transactions of the Institute of Microbiology, Academy of Sciences USSR **8**:1-344. **Type strain:** ATCC 15723
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- C. purpurogena** Thirumalachar and Sukapure 1964
 Thirumalachar, M.J. and R.S. Sukapure. 1964. Hindustan Antibiotics Bulletin **6**: 157-166. **Type strain:** ATCC 19348
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- C. rosea** Thirumalachar 1966
 Thirumalachar, M.J. 1966 in Thirumalachar, M.J., R.S. Sukapure, P.W. Rahalkar and K.S. Gopalkrishnan. Hindustan Antibiotics Bulletin **9**:10-14. **Type strain:** ATCC 17755
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- C. rubra** Thirumalachar 1955
 Thirumalachar, M.J. 1955. Nature (London) **176**:934-935. **Type strain:** ATCC 17754
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- C. violens** Kalakoutskii and Krassilnikov 1960
 Kalakoutskii, L.V. and N.A. Krassilnikov. 1960. Transactions of the Institute of Microbiology, Academy of Science USSR **8**:45-55. **Type strain:** ATCC 15898
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- Chlamydia** Jones, Rake and Stearns 1945
 Jones, H., G. Rake and B. Stearns. 1945. Journal of Infectious Diseases **76**:55-69.
Type species: *C. trachomatis* (Busacca 1935) Rake 1957
Description: Bergey 8.
- C. psittaci** (Lillie 1930) Page 1968
 Lillie, R.D. 1930. Public Health Report **45**:773-778; Page, L.A. 1968. International Journal of Systematic Bacteriology **18**: 51-66. **Type strain:** ATCC VR 125
Description: Bergey 8.
- C. trachomatis** (Busacca 1935) Rake 1957
 Busacca, A. 1935. Archives d'Ophthalmologie **52**:567-572; Rake, G. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). Bergey's Manual of Determinative Bacteriology, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 957-968. **Type strain:** ATCC VR 571

Description: Bergey 8.

Chlorobium Nadson 1906

Nadson, G.A. 1906. Bulletin du Jardin Botanique, St. Petersbourg 6:190. **Type species:** *C. limicola* Nadson 1906

Description: Bergey 8.

C. chlorovibrioides Gorlenko, Chebotarev and Kachalkin 1974

Gorlenko, V.M., E.N. Chebotarev and V.I. Kachalkin. 1974. Mikrobiologiya 43: 908-914. **Type strain:** DSM 1377

Description: Gorlenko, V.M., E.N. Chebotarev and V.I. Kachalkin. 1974. Ibid.

C. limicola Nadson 1906

Nadson, G.A. 1906. Bulletin du Jardin Botanique, St. Petersbourg 6:190. **Type strain:** DSM 245

Description: Bergey 8.

C. phaeobacteroides Pfennig 1968

Pfennig, N. 1968. Archiv fur Mikrobiologie 63:224-226. **Type strain:** DSM 266

Description: Bergey 8.

C. phaeovibrioides Pfennig 1968

Pfennig, N. 1968. Archiv fur Mikrobiologie 63:224-226. **Type strain:** DSM 269

Description: Bergey 8.

C. vibrioforme Pelsh 1936

Pelsh, A.D. 1936. Trudy Solyanoi Laboratorii, Vsesoyuznogo Instituta Metallurgii NISNKT. Izdatelstvo Akademya Nauk SSSR, Moscow eningrad 5:49-126. **Type strain:** DSM 260

Description: Bergey 8.

Chloroflexus Pierson and Castenholz 1974

Pierson, B.K. and R.W. Castenholz. 1974. Archives of Microbiology 100:5-24. **Type species:** *C. aurantiacus* Pierson and Castenholz 1974

Description: Pierson, B.K. and R.W. Castenholz. 1974. Ibid.

C. aurantiacus Pierson and Castenholz 1974

Pierson, B.K. and R.W. Castenholz. 1974. Archives of Microbiology 100:5-24. **Type strain:** ATCC 29366

Description: Pierson, B.K. and R.W. Castenholz. 1974. Ibid.

Chloronema Dubinina and Gorlenko 1975

Dubinina, G.A. and V.M. Gorlenko. 1975. Mikrobiologiya 44:511-517. **Type species:**

C. giganteum Dubinina and Gorlenko

1975

Description: Dubinina, G.A. and V.M. Gorlenko. 1975. Ibid.

C. giganteum Dubinina and Gorlenko 1975

Dubinina, G.A. and V.M. Gorlenko. 1975. Mikrobiologiya 44:511-517. **Type strain:** no pure culture.

Description: Dubinina, G.A. and V.M. Gorlenko. 1975. Ibid.

Chondromyces Berkeley and Curtis 1874

Berkeley, M.J. and M.A. Curtis. 1874 in Berkeley, M.J. Grevillea 3:49-64. **Type species:** *C. crocatus* Berkeley and Curtis 1874

Description: Bergey 8.

C. apiculatus Thaxter 1897

Thaxter, R. 1897. Botanical Gazette 23: 395-411. **Type strain:** TC 4481

Description: Bergey 8.

C. catenulatus Thaxter 1904

Thaxter, R. 1904. Botanical Gazette 37: 405-416. **Type strain:** TC 4517

Description: Bergey 8.

C. crocatus Berkeley and Curtis 1874

Berkeley, M.J. and M.A. Curtis. 1874 in Berkeley, M.J. Grevillea 3:49-64. **Type strain:** TC 601

Description: Bergey 8.

C. lanuginosus Kofler 1913

Kofler, L. 1913. Sitzungsberichte der Akademie der Wissenschaften in Wien. Mathematisch-naturwissenschaftliche Klasse Abteilung I. 122:845-876. **Type strain:** TC 4494

Description: Kofler, L. 1913. Ibid.

C. pediculatus Thaxter 1904

Thaxter, R. 1904. Botanical Gazette 37: 405-416. **Type strain:** TC 4524

Description: Bergey 8.

Chromatium Perty 1852

Perty, M. 1852. Zur Kenntnis kleinster Lebensformen. Jent and Reinert, Bern I-VIII, pp. 1-228. **Type species:** *C. okenii* (Ehrenberg 1838) Perty 1852

Description: Bergey 8.

C. buderi Truper and Jannasch 1968

Truper, H.G. and H.W. Jannasch. 1968. Archiv fur Mikrobiologie 61:363-372. **Type strain:** ATCC 25588

Description: Bergey 8.

- C. gracile** Strzeszewski 1913
Strzeszewski, B. 1913. Bulletin de l'Academie des Sciences de Cracovie, Serie B. pp. 309-334. **Type strain:** DSM 203
Description: Bergey 8.
- C. minus** Winogradsky 1888
Winogradsky, S. 1888. Beitrage zur Morphologie und Physiologie der Bacterien. Heft I. Zur Morphologie und Physiologie der Schwefelbacterien. Arthur Felix, Leipzig. pp. 1-120. **Type strain:** DSM 178
Description: Bergey 8.
- C. minutissimum** Winogradsky 1888
Winogradsky, S. 1888. Beitrage zur Morphologie und Physiologie der Bacterien. Heft I. Zur Morphologie und Physiologie der Schwefelbacterien. Arthur Felix, Leipzig. pp. 1-120. **Type strain:** DSM 1376
Description: Bergey 8.
- C. okenii** (Ehrenberg 1838) Perty 1852
Ehrenberg, C.G. 1838. Die Infusionsthierchen als vollkommene Organismen. L. Voss, Leipzig; Perty, M. 1852. Zur Kenntnis kleinster Lebensformen. Jent and Reinert, Bern I-VIII, pp. 1-228. **Type strain:** DSM 169
Description: Bergey 8.
- C. vinosum** (Ehrenberg 1838) Winogradsky 1888
Ehrenberg, C.G. 1838. Die Infusionsthierchen als vollkommene Organismen. L. Voss, Leipzig; Winogradsky, S. 1888. Beitrage zur Morphologie und Physiologie der Bacterien. Heft I. Zur Morphologie und Physiologie der Schwefelbacterien. Arthur Felix, Leipzig. pp. 1-120. **Type strain:** ATCC 17899
Description: Bergey 8.
- C. violascens** Perty 1852
Perty, M. 1852. Zur Kenntnis kleinster Lebensformen. Jent and Reinert, Bern I-VIII. pp. 1-228. **Type strain:** ATCC 17096
Description: Bergey 8.
- C. warmingii** (Cohn 1875) Migula 1900
Cohn, F. 1875. Beitrage zur Biologie der Pflanzen 1:141-207; Migula, W. 1900. System der Bakterien, Vol. 2. Gustav Fischer, Jena. **Type strain:** ATCC 14959
Description: Bergey 8.
- C. weissei** Perty 1852
Perty, M. 1852. Zur Kenntnis kleinster Lebensformen. Jent and Reinert, Bern I-VIII. pp. 1-228. **Type strain:** DSM 171
Description: Bergey 8.
- Chromobacterium** Bergonzini 1881
Bergonzini, C. 1881. Annuar Soc. Nat. Modena, Series 2, 14:149-158. **Type species:** *C. violaceum* Bergonzini 1881
Description: De Ley, J., P. Segers and M. Gillis. 1978. International Journal of Systematic Bacteriology 28:154-168.
- C. violaceum** Bergonzini 1881
Bergonzini, C. 1881. Annuar. Soc. Nat. Modena, Series 2, 14:149-158. **Type strain:** ATCC 12472
Description: De Ley, J., P. Segers and M. Gillis. 1978. International Journal of Systematic Bacteriology 28:154-168.
- Citrobacter** Werkman and Gillen 1932
Werkman, C.H. and G.F. Gillen. 1932. Journal of Bacteriology 23:167-182. **Type species:** *C. freundii* (Braak 1928) Werkman and Gillen 1932
Description: Bergey 8.
- C. diversus** (Burkey 1928) Werkman and Gillen 1932
Burkey, L.A. 1928. Iowa State College Journal of Science 3:57-100; Werkman, C.H. and G.F. Gillen. 1932. Journal of Bacteriology 23:167-182. **Type strain:** ATCC 27156
Description: Ewing, W.H. and B.R. Davis. 1972. International Journal of Systematic Bacteriology 22:12-18.
- C. freundii** (Braak 1928) Werkman and Gillen 1932
Braak, H.R. 1928. Onderzoekingen over vergisting van glycerine. Thesis. Meinema W.D. Uitgever- Delft. pp. 1-233; Werkman, C.H. and G.F. Gillen. 1932. Journal of Bacteriology 23:167-182. **Type strain:** ATCC 8090
Description: Bergey 8.
- C. koseri** Frederiksen 1970
Frederiksen, W. 1970. Publication of the Faculty of Sciences University J.E. Purkyne, Brno. 47:89-94. **Type strain:** ATCC 27028
Description: Frederiksen, W. 1970. Ibid.

Clostridium Prazmowski 1880

Prazmowski, A. 1880. Inaugural Dissertation Hugo Voigt, Leipzig. pp. 1-58. **Type species:** *C. butyricum* Prazmowski 1880
Description: Bergey 8.

C. absonum Nakamura, Shimamura, Hayase and Nishida 1973

Nakamura, S., T. Shimamura, M. Hayase and S. Nishida. 1973. International Journal of Systematic Bacteriology **23**: 419-429. **Type strain:** ATCC 27555

Description: Nakamura, S., T. Shimamura, M. Hayase and S. Nishida. 1973. Ibid.

C. acetobutylicum McCoy, Fred, Peterson and Hastings 1926

McCoy, E., E.B. Fred, W.H. Peterson and E.G. Hastings. 1926. Journal of Infectious Diseases **39**:457-483. **Type strain:** ATCC 824

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. acidiurici (Liebert 1909) Barker 1938

Liebert, F. 1909. Verslagen van de gewone vergadering der wis- en natuurkundige afdeling. K. Akademie van wetenschappen te Amsterdam. **17**:990-1001; Barker, H.A. 1938. Journal of Bacteriology **36**:322-323. **Type strain:** ATCC 7906

Description: Bergey 8.

C. aminovalericum Hardman and Stadtman 1960

Hardman, J.K. and T.C. Stadtman. 1960. Journal of Bacteriology **79**:549-552. **Type strain:** ATCC 13725

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. aurantibutyricum Hellinger 1944

Hellinger, E. 1944. Commemorative Volume to Dr. Weizmann's 70th Birthday Private print November 1944. pp. 37-46. **Type strain:** ATCC 17777

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University,

Blacksburg, Virginia. pp. 1-156.

C. barati (Prevot 1938) Holdeman and Moore 1970

Prevot, A.R. 1938. Annales de l'Institut Pasteur (Paris) **61**:72-91; Holdeman, L.V. and W.E.C. Moore. 1970 in Cato, E.P., C.S. Cummins, L.V. Holdeman, J.L. Johnson, W.E.C. Moore, R.M. Smibert and L.D.S. Smith (eds). Outline of clinical methods in anaerobic bacteriology, 2nd revision. Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia. pp. 57-66. **Type strain:** ATCC 27638

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. barkeri Stadtman, Stadtman, Pastan and Smith 1972

Stadtman, E.R., T.C. Stadtman, I. Pastan and L.D.S. Smith. 1972. Journal of Bacteriology **110**:758-760. **Type strain:** ATCC 25849

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. beijerinckii Donker 1926

Donker, H.J.L. 1926. Dissertations Delft. W.D. Meinema, Delft. **Type strain:** ATCC 25752

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. bifermentans (Weinberg and Seguin 1918) Bergey, Harrison, Breed, Hammer and Huntoon 1923

Weinberg, M. and P. Seguin. 1918. La gangrene gazeuse-Bacteriologie, Reproduction experimentale, Sereotherapie. Masson et Cie, Paris, pp. 1-444; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. Bergey's Manual of Determinative Bacteriology, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type strain:** ATCC 638

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe

Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. botulinum (van Ermengem 1896) Bergey, Harrison, Breed, Hammer and Huntoon 1923

van Ermengem, E. 1896. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I. **19**:442-444; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. Bergey's Manual of Determinative Bacteriology, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type strain:** ATCC 25763

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. butyricum Prazmowski 1880

Prazmowski, A. 1880. Inaugural Dissertation Hugo Voigt, Leipzig, pp. 1-58. **Type strain:** ATCC 19398

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. cadaveris (Klein 1899) McClung and McCoy 1957

Klein, E. 1899. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I. **25**:278-284; McClung, L.S. and E. McCoy. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). Bergey's Manual of Determinative Bacteriology, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 634-693. **Type strain:** ATCC 25783

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. carnis (Klein 1904) Spray 1939

Klein, E. 1904. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I. **35**:459-461; Spray, R.S. 1939 in Bergey, D.H., R.S. Breed, E.G.D. Murray and A.P. Hitchens (eds). Bergey's Manual of Determinative Bacteriology, 5th ed. The

Williams and Wilkins Co., Baltimore. pp. 743-790. **Type strain:** ATCC 25777

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. celatum Hauschild and Holdeman 1974

Hauschild, A.H.W. and L.V. Holdeman. 1974. International Journal of Systematic Bacteriology **24**:478-481. **Type strain:** ATCC 27791

Description: Hauschild, A.H.W. and L.V. Holdeman 1974. *Ibid.*

C. cellobioparum Hungate 1944

Hungate, R.E. 1944. Journal of Bacteriology **48**:499-513. **Type strain:** ATCC 15832

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. chauvoei (Arloing, Cornevin and Thomas 1887) Scott 1928

Arloing, S., Cornevin and Thomas. 1887. Le charbon symptomatique du boeuf. 2nd ed. Asselin and Houzeau, Paris. pp. 1-281; Scott, J.P. 1928. Cornell Veterinarian **18**:259-271. **Type strain:** ATCC 10092

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. clostridiiforme (Burri and Ankersmit 1906)

Kaneuchi, Watanabe, Terada, Benno and Mitsuoka 1976

Burri, R. and P. Ankersmit. 1906 in Ankersmit, P. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I. **40**:100-118; Kaneuchi, C., K. Watanabe, A. Terada, Y. Benno and T. Mitsuoka. 1976. International Journal of Systematic Bacteriology **26**:195-204, 341. **Type strain:** ATCC 25537

Description: Cato, E.P. and C.W. Salmon. 1976. International Journal of Systematic Bacteriology **26**:205-211.

C. coccoides Kaneuchi, Benno and Mitsuoka 1976

Kaneuchi, C., Y. Benno and T. Mitsuoka.

1976. *International Journal of Systematic Bacteriology* **26**:482-486. **Type strain:** ATCC 29236
Description: Kaneuchi, C., Y. Benno and T. Mitsuoka. 1976. *Ibid.*
- C. cochlearium** (Douglas, Fleming and Colebrook 1919) Bergey, Harrison, Breed, Hammer and Huntoon 1923
 Douglas, S.R., A. Fleming and L. Colebrook. 1919. *Medical Research Council (Great Britain) Special Report Series* **57**:1-159; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. *Bergey's Manual of Determinative Bacteriology*, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type strain:** ATCC 17787
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- C. cocleatum** Kaneuchi, Miyazato, Shinjo and Mitsuoka 1979
 Kaneuchi, C., T. Miyazato, T. Shinjo and T. Mitsuoka. 1979. *International Journal of Systematic Bacteriology* **29**:1-12. **Type strain:** ATCC 29902
Description: Kaneuchi, C., T. Miyazato, T. Shinjo and T. Mitsuoka. 1979. *Ibid.*
- C. difficile** (Hall and O'Toole 1935) Prevot 1938
 Hall, I.C. and E. O'Toole. 1935. *American Journal of Diseases of Children* **49**:390-402; Prevot, A.R. 1938. *Annales de l'Institut Pasteur (Paris)* **61**:72-91. **Type strain:** ATCC 9689
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- C. durum** Smith and Cato 1974
 Smith, L.D.S. and E.P. Cato. 1974. *Canadian Journal of Microbiology* **20**:1393-1397. **Type strain:** ATCC 27763
Description: Smith, L.D.S. and E.P. Cato. 1974. *Ibid.*
- C. fallax** (Weinberg and Seguin 1915) Bergey, Harrison, Breed, Hammer and Huntoon 1923
 Weinberg, M. and P. Seguin. 1915. *Comptes Rendus des Seances de la Societe de Biologie, Paris* **78**:686-689; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. *Bergey's Manual of Determinative Bacteriology*, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type strain:** ATCC 19400
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- C. felsineum** (Carbone and Tombolato 1917) Bergey, Breed, Murray and Hitchens 1939
 Carbone, D. and A. Tombolato. 1917. *Stazioni Sperimentali Agrarie Italiane* **50**:563-575; Bergey, D.H., R.S. Breed, E.G.D. Murray and A.P. Hitchens (eds). 1939. *Bergey's Manual of Determinative Bacteriology*, 5th ed. The Williams and Wilkins Co., Baltimore. pp. 1-1032. **Type strain:** ATCC 17788
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- C. formicoaceticum** Andreesen, Gottschalk and Schlegel 1970
 Andreesen, J.R., G. Gottschalk and H.G. Schlegel. 1970. *Archiv fur Mikrobiologie* **72**:154-174. **Type strain:** ATCC 27076
Description: Andreesen, J.R., G. Gottschalk and H.G. Schlegel. 1970. *Ibid.*
- C. ghoni** Prevot 1938
 Prevot, A.R. 1938. *Annales de l'Institut Pasteur (Paris)* **61**:72-91. **Type strain:** ATCC 25757
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- C. glycolicum** Gaston and Stadtman 1963
 Gaston, L.W. and E.R. Stadtman. 1963. *Journal of Bacteriology* **85**:356-362. **Type strain:** ATCC 14880
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

- C. haemolyticum** (Hall 1929) Scott, Turner and Vawter 1935
Hall, I.C. 1929. *Journal of Infectious Diseases* **45**:156-162; Scott, J., A.W. Turner and L.R. Vawter. 1935. Twelfth International Veterinary Congress **2**:168-182. **Type strain:** ATCC 9650
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- C. hastiforme** MacLennan 1939
MacLennan, J.D. 1939. *Journal of Pathology and Bacteriology* **49**:535-548. **Type strain:** VPI 12193
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- C. histolyticum** (Weinberg and Seguin 1916) Bergey, Harrison, Breed, Hammer and Huntoon 1923
Weinberg, M. and P. Seguin. 1916. *Comptes Rendus de l'Academie des Seances Paris* **163**:449-451; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. *Bergey's Manual of Determinative Bacteriology*, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type strain:** ATCC 19401
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- C. indolis** McClung and McCoy 1957
McClung, L.S. and E. McCoy. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 634-693. **Type strain:** ATCC 25771
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- C. innocuum** Smith and King 1962
Smith, L.D.S. and E. King. 1962. *Journal of Bacteriology* **83**:938-939. **Type strain:** ATCC 14501
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- C. irregularis** (Choukevitch 1911) Prevot 1938
Choukevitch, J. 1911. *Annales de l'Institut Pasteur (Paris)* **25**:345-368; Prevot, A.R. 1938. *Annales de l'Institut Pasteur (Paris)* **61**:72-91. **Type strain:** ATCC 25756
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- C. kluveri** Barker and Taha 1942
Barker, H.A. and S.M. Taha. 1942. *Journal of Bacteriology* **43**:347-363. **Type strain:** NCIB 10680
Description: Bergey 8.
- C. lentoputrescens** Hartsell and Rettger 1934
Hartsell, S.E. and L.F. Rettger. 1934. *Journal of Bacteriology* **27**:497-514. **Type strain:** ATCC 17794
Description: Bergey 8.
- C. leptum** Moore, Johnson and Holdeman 1976
Moore, W.E.C., J.L. Johnson and L.V. Holdeman. 1976. *International Journal of Systematic Bacteriology* **26**:238-252. **Type strain:** ATCC 29065
Description: Moore, W.E.C., J.L. Johnson and L.V. Holdeman. 1976. *Ibid.*
- C. limosum** Andre 1948
Andre, 1948 in Prevot, A.R. *Annales de l'Institut Pasteur (Paris)* **74**:157-170. **Type strain:** ATCC 25620
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- C. lituseburensis** (Laplanche and Saissac 1948) McClung and McCoy 1957
Laplanche, J. and R. Saissac. 1948 in Prevot, A.R. *Annales de l'Institut Pasteur (Paris)* **74**:157-170; McClung, L.S. and E. McCoy. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 634-693. **Type strain:**

ATCC 25759

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. malenominatum (Weinberg, Nativelle and Prevot 1937) Spray 1948

Weinberg, M., R. Nativelle and A.R. Prevot. 1937. Les Microbes Anaerobies. Masson et Cie, Paris. pp. 1-1186; Spray, R.S. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). Bergey's Manual of Determinative Bacteriology, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 763-827. **Type strain:** ATCC 25776

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. manganotii (Prevot and Zimmes-Chaverou 1947) McClung and McCoy 1957

Prevot, A.R. and Zimmes-Chaverou. 1947. Annales de l'Institut Pasteur (Paris) 73:602-604; McClung, L.S. and E. McCoy. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). Bergey's Manual of Determinative Bacteriology. 7th ed. The Williams and Wilkins Co., Baltimore. pp. 634-693. **Type strain:** ATCC 25761

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. nexile Holdeman and Moore 1974

Holdeman, L.V. and W.E.C. Moore. 1974. International Journal of Systematic Bacteriology 24:260-277. **Type strain:** ATCC 27757

Description: Holdeman, L.V. and W.E.C. Moore. 1974. Ibid.

C. novyi (Migula 1894) Bergey, Harrison, Breed, Hammer and Huntoon 1923

Migula, W. 1894. Zeitschrift fur Hygiene 17:209; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. Bergey's Manual of Determinative Bacteriology, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type strain:** ATCC 17861

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. oceanicum Smith 1970

Smith, L.D.S. 1970. Journal of Bacteriology 103:811-813. **Type strain:** ATCC 25647

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. oroticum (Wachsman and Barker 1954)

Cato, Moore and Holdeman 1968
Wachsman, J.T. and H.A. Barker. 1954. Journal of Bacteriology 68:400-404; Cato, E., W.E.C. Moore and L.V. Holdeman. 1968. International Journal of Systematic Bacteriology 18:9-13. **Type strain:** ATCC 13619

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. paraperfringens Nakamura, Tamai and Nishida 1970

Nakamura, S., K. Tamai and S. Nishida. 1970. Medical Biology 80:137-140. **Type strain:** ATCC 27639

Description: Nakamura, S., T. Shimamura, M. Hayase and S. Nishida. 1973. Ibid.

C. parapatrificum (Bienstock 1906) Snyder 1936

Bienstock, B. 1906. Annales de l'Institut Pasteur (Paris) 20:407-415; Snyder, M.L. 1936. Journal of Bacteriology 32:401-410. **Type strain:** ATCC 25780

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. pasteurianum Winogradsky 1895

Winogradsky, S. 1894-95. Archives of Science and Biology, St. Petersburg 3: 297-352. **Type strain:** ATCC 6013

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia

Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. perenne (Prevot 1940) McClung and McCoy 1957

Prevot, A.R. 1940. Comptes Rendus des Seances de la Societe de Biologie (Paris) **133**:574-577; McClung, L.S. and E. McCoy. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 634-693. **Type strain:** ATCC 25782

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. perfringens (Veillon and Zuber 1898)

Hauduroy, Ehringer, Urbain, Guillot and Magrou 1937

Veillon, A. and A. Zuber. 1898. *Archives de Medicine Experimentale et d'Anatomic Pathologique* **10**:517-545; Hauduroy, P., G. Ehringer, A. Urbain, G. Guillot and J. Magrou. 1937. *Dictionnaire des bacteries pathogenes*. Masson et Cie, Paris. pp. 1-597. **Type strain:** ATCC 13124

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. propionicum Cardon and Barker 1946

Cardon, B.P. and H.A. Barker. 1946. *Journal of Bacteriology* **52**:629-634. **Type strain:** ATCC 25522

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. putrefaciens (McBryde 1911) Sturges and Drake 1927

McBryde, C.N. 1911. *United States Bureau of Animal Industry* **132**:1-55; Sturges, W.S. and E.T. Drake. 1927. *Journal of Bacteriology* **14**:175-179. **Type strain:** ATCC 25786

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University,

Blacksburg, Virginia. pp. 1-156.

C. putrificum (Trevisan 1889) Reddish and Rettger 1922

Trevisan, V. 1889. *I Generi e le Specie delle Battieriacee*. Zanaboni and Gabuzzi, Milano; Reddish, G. and L. Rettger. 1922. *Abstracts of Bacteriology* **6**:9. **Type strain:** ATCC 25784

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. quercicolum Stankewich, Cosenza and Shigo 1971

Stankewich, J.P., B.J. Cosenza and A.L. Shigo. 1971. *Antonie van Leeuwenhoek Journal of Microbiology and Serology* **37**: 299-302. **Type strain:** ATCC 25974

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. ramosum (Veillon and Zuber 1898)

Holdeman, Cato and Moore 1971

Veillon, A. and A. Zuber. 1898. *Archives de Medecine Experimentale et d'Anatomic Pathologique* **10**:51-545; Holdeman, L.V., E.P. Cato and W.E.C. Moore. 1971. *International Journal of Systematic Bacteriology* **21**:35-39. **Type strain:** ATCC 25582

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. rectum (Heller 1922) Holdeman and Moore 1972

Heller, H.H. 1922. *Journal of Bacteriology* **7**:1-38; Holdeman, L.V. and W.E.C. Moore. 1972. *Anaerobe Laboratory Manual Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia*. **Type strain:** ATCC 25751

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. sardiniensis Prevot 1938

Prevot, A.R. 1938. *Annales de l'Institut*

- Pasteur (Paris) 61:72-91. **Type strain:** VPI 2971
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- C. sartagoformum** Partansky and Henry 1935
 Partansky, A.M. and B.S. Henry. 1935. Journal of Bacteriology 30:559-571. **Type strain:** ATCC 25778
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- C. scatogenes** (Weinberg and Ginsbourg 1927) Prevot 1948
 Weinberg, M. and B. Ginsbourg. 1927. Donnees recentes sur les microbes anaerobies et leur role en pathologie. Masson et Cie, Paris. pp. 1-291; Prevot, A.R. 1948. Manuel de classification et de determination des bacteries anaerobies, 2nd ed. Masson et Cie, Paris. pp. 1-290. **Type strain:** ATCC 25775
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- C. septicum** (Mace 1889) Ford 1927
 Mace, E. 1889. Traite Pratique de Bacteriologie, 1st ed. J.-B. Balliere and Sons, Paris I-III. pp. 1-711; Ford, W.W. 1927. Text-book of Bacteriology. Saunders, Philadelphia. pp. 1-1069. **Type strain:** ATCC 12464
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- C. sordellii** (Hall and Scott 1927) Prevot 1938
 Hall, I.C. and J.P. Scott. 1927. Journal of Infectious Diseases 41:329-335; Prevot, A.R. 1938. Annales de l'Institut Pasteur (Paris) 61:72-91. **Type strain:** NCIB 10717
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- C. sphenoides** (Douglas, Fleming and Colebrook 1919) Bergey, Harrison, Breed, Hammer and Huntoon 1923
 Douglas, S.R., A. Fleming and L. Colebrook. 1919. Medical Research Council (Great Britain) Special Report Series 57:1-159; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. Bergey's Manual of Determinative Bacteriology, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type strain:** ATCC 19403
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- C. spiroforme** Kaneuchi, Miyazato, Shinjo and Mitsuoka 1979
 Kaneuchi, C., T. Miyazato, T. Shinjo and T. Mitsuoka. 1979. International Journal of Systematic Bacteriology 29:1-12. **Type strain:** ATCC 29900
Description: Kaneuchi, C., T. Miyazato, T. Shinjo and T. Mitsuoka. 1979. Ibid.
- C. sporogenes** (Metchnikoff 1908) Bergey, Harrison, Breed, Hammer and Huntoon 1923
 Metchnikoff, E. 1908. Annales de l'Institut Pasteur (Paris) 22:929-955; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. Bergey's Manual of Determinative Bacteriology 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type strain:** ATCC 3584
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- C. sporosphaeroides** Soriano and Soriano 1948
 Soriano, S. and A. Soriano. 1948. Revista de la Asociacion Argentina de Dietologia 6: 36-41. **Type strain:** ATCC 25781
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- C. sticklandii** Stadtman and McClung 1957
 Stadtman, T.C. and L.S. McClung. 1957. Journal of Bacteriology 73:218-219. **Type**

strain: ATCC 12662

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. subterminale (Hall and Whitehead 1927) Spray 1948

Hall, I.C. and R.W. Whitehead. 1927. *Journal of Infectious Diseases* **41**:51-69; Spray, R.S. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacteriology*, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 763-827. **Type strain:** ATCC 25774

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. symbiosum (Stevens 1956) Kaneuchi, Watanabe, Terada, Benno and Mitsuoka 1976

Stevens, W.C. 1956. Taxonomic studies on the genus *Bacteroides* and similar forms. Thesis, Vanderbilt University; Kaneuchi, C., K. Watanabe, A. Terada, Y. Benno and T. Mitsuoka. 1976. *International Journal of Systematic Bacteriology* **26**:195-204. **Type strain:** ATCC 14940

Description: Kaneuchi, C., K. Watanabe, A. Terada, Y. Benno and T. Mitsuoka. 1976. *Ibid.*

C. tertium (Henry 1917) Bergey, Harrison, Breed, Hammer and Huntoon 1923

Henry, H. 1917. *Journal of Pathology and Bacteriology* **21**:344-385; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. *Bergey's Manual of Determinative Bacteriology*, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type strain:** ATCC 14573

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. tetani (Flügge 1886) Bergey, Harrison, Breed, Hammer and Huntoon 1923

Flügge, C. 1886. *Die Mikroorganismen*. F.C.W. Vogel, Leipzig. pp. 1-692; Bergey,

D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. *Bergey's Manual of Determinative Bacteriology*, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type strain:** ATCC 19406

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. thermoaceticum Fontaine, Peterson, McCoy and Johnson 1942

Fontaine, F.E., W.H. Peterson, E. McCoy and M.J. Johnson. 1942. *Journal of Bacteriology* **43**:701-715. **Type strain:** DSM 521

Description: Fontaine, F.E., W.H. Peterson, E. McCoy and M.J. Johnson. 1942. *Ibid.*

C. thermocellum Viljoen, Fred and Peterson 1926

Viljoen, J.A., E.B. Fred and W.H. Peterson. 1926. *Journal of Agricultural Science Cambridge* **16**:1-17. **Type strain:** ATCC 27405

Description: Bergey 8.

C. thermohydrosulfuricum Klaushofer and Parkkinen 1965

Klaushofer, H. and E. Parkkinen. 1965. *Zeitschrift für Zuckerindustrien Boehmen* **15**:445-449. **Type strain:** DSM 567

Description: Matteuzzi, D., F. Hollaus and B. Bravati. 1978. *International Journal of Systematic Bacteriology* **28**: 528-531.

C. thermosaccharolyticum McClung 1935

McClung, L.S. 1935. *Journal of Bacteriology* **29**:189-203. **Type strain:** ATCC 7956

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. tyrobutyricum van Beynum and Pette 1935

van Beynum, J. and J.W. Pette. 1935. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **93**:198-212. **Type strain:** ATCC 25755

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe

Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

C. villosum Love, Jones and Bailey 1979

Love, D.N., R.F. Jones and M. Bailey. 1979. International Journal of Systematic Bacteriology **29**:241-244. **Type strain:** NCTC 11220

Description: Love, D.N., R.F. Jones and M. Bailey. 1979. *Ibid.*

Coprococcus Holdeman and Moore 1974

Holdeman, L.V. and W.E.C. Moore. 1974. International Journal of Systematic Bacteriology **24**:260-277. **Type species:** *C. eutactus* Holdeman and Moore 1974

Description: Holdeman, L.V. and W.E.C. Moore. 1974. *Ibid.*

C. catus Holdeman and Moore 1974

Holdeman, L.V. and W.E.C. Moore. 1974. International Journal of Systematic Bacteriology **24**:260-277. **Type strain:** VPI C6-61

Description: Holdeman, L.V. and W.E.C. Moore. 1974. *Ibid.*

C. comes Holdeman and Moore 1974

Holdeman, L.V. and W.E.C. Moore. 1974. International Journal of Systematic Bacteriology **24**:260-277. **Type strain:** VPI C1-38

Description: Holdeman, L.V. and W.E.C. Moore. 1974. *Ibid.*

C. eutactus Holdeman and Moore 1974

Holdeman, L.V. and W.E.C. Moore. 1974. International Journal of Systematic Bacteriology **24**:260-277. **Type strain:** ATCC 27759

Description: Holdeman, L.V. and W.E.C. Moore. 1974. *Ibid.*

Corynebacterium Lehmann and Neumann 1896

Lehmann, K.B. and R. Neumann. 1896. Atlas und Grundriss der Bakteriologie und Lehrbuch der speziellen bakteriologischen Diagnostik. 1st ed. J.F. Lehmann, Munchen. **Type species:** *C. diphtheriae* (Kruse 1886) Lehmann and Neumann 1896

Description: Bergey 8.

C. betae Keyworth, Howell and Dowson 1956

Keyworth, W.G., J.T.S. Howell and W.J. Dowson. 1956. Plant Pathology **5**:88-90. **Type strain:** NCPPB 374

Description: Dye, D.W. and W.J. Kemp. 1977. New Zealand Journal of Agricultural Research **20**:563-582.

C. beticola Abdou 1969

Abdou, M. A-F. 1969. Phytopathologische Zeitschrift **66**:147-167. **Type strain:** NCPPB 2256

Description: Bergey 8.

C. bovis Bergey, Harrison, Breed, Hammer and Huntoon 1923

Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. Bergey's Manual of Determinative Bacteriology, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type strain:** ATCC 7715

Description: Bergey 8.

C. callunae (Lee and Good 1963) Yamada and Komagata 1972

Lee, W.H. and R.C. Good. 1963. Official Gazette of the United States Patent Office **789**:1349; Yamada, K. and K. Komagata. 1972. Journal of General and Applied Microbiology **18**:417-431. **Type strain:** ATCC 15991

Description: Yamada, K. and K. Komagata. 1972. Journal of General and Applied Microbiology **18**:399-416.

C. cystitidis Yanagawa and Honda 1978

Yanagawa, R. and E. Honda. 1978. International Journal of Systematic Bacteriology **28**:209-216. **Type strain:** ATCC 29593

Description: Yanagawa, R. and E. Honda. 1978. *Ibid.*

C. diphtheriae (Kruse 1886) Lehmann and Neumann 1896

Kruse, W. 1886 in Flugge, C. Die Mikroorganismen. F.C.W. Vogel, Leipzig; Lehmann, K.B. and R. Neumann. 1896. Atlas und Grundriss der Bakteriologie und Lehrbuch der speziellen bakteriologischen Diagnostik. 1st ed. J.F. Lehmann, Munchen. **Type strain:** ATCC 27010

Description: Barksdale, L. 1970. Bacteriological Reviews **34**:414.

C. equi Magnusson 1923

Magnusson, M. 1923. Archiv fur wissenschaftliche u. praktische Tierheilkunde **50**: 22-38. **Type strain:** ATCC 6939

Description: Bergey 8.

C. fascians (Tilford 1936) Dowson 1942

- Tilford, P.E. 1936. *Journal of Agricultural Research* **53**:383-394; Dowson, W.J. 1942. *Transactions of the British Mycological Society* **25**:311-314. **Type strain:** ATCC 12974
Description: Bergey 8.
- C. flaccumfaciens** (Hedges 1922) Dowson 1942
Hedges, F. 1922. *Science (Washington)* **55**:433-434; Dowson, W.J. 1942. *Transactions of the British Mycological Society* **25**:311-314. **Type strain:** NCPPB 1446
Description: Bergey 8.
- C. flavescens** Barksdale, Laneelle, Pollice, Asselineau, Welby and Norgard 1979
Barksdale, L., M.-A. Laneelle, M.C. Pollice, J. Asselineau, M. Welby and M.V. Norgard. 1979. *International Journal of Systematic Bacteriology* **29**:222-233. **Type strain:** ATCC 10340
Description: Barksdale, L., M.-A. Laneelle, M.C. Pollice, J. Asselineau, M. Welby and M.V. Norgard. 1979. *Ibid.*
- C. glutamicum** (Kinoshita, Nakayama and Akita 1958) Abe, Takayama and Kinoshita 1967
Kinoshita, S., S. Nakayama and S. Akita. 1958. *Bulletin of the Agricultural Chemical Society of Japan* **22**:176-185; Abe, S., K. Takayama and S. Kinoshita. 1967. *Journal of General and Applied Microbiology* **13**:279-301. **Type strain:** ATCC 13032
Description: Yamada, K. and K. Komagata. 1972. *Journal of General and Applied Microbiology* **18**:399-416.
- C. hoagii** (Morse 1912) Ebersson 1918
Morse, M.E. 1912. *Journal of Infectious Diseases* **11**:253-285; Ebersson, F. 1918. *Journal of Infectious Diseases* **23**:1-42. **Type strain:** ATCC 7005
Description: Yamada, K. and K. Komagata. 1972. *Journal of General and Applied Microbiology* **18**:399-416.
- C. ilicis** Mandel, Guba and Litsky 1961
Mandel, M., E.F. Guba and W. Litsky. 1961. *Bacteriological Proceedings* **1961**:61. **Type strain:** ATCC 14264
Description: Dye, D.W. and W.J. Kemp. 1977. *New Zealand Journal of Agricultural Research* **20**:563-582.
- C. insidiosum** (McCulloch 1925) Jensen 1934
McCulloch, L. 1925. *Phytopathology* **15**:496-497; Jensen, H.J. 1934. *Proceedings of the Linnean Society of New South Wales* **59**:19-61. **Type strain:** NCPPB 1109
Description: Bergey 8.
- C. kutscheri** (Migula 1900) Bergey, Harrison, Breed, Hammer and Huntoon 1925
Migula, W. 1900. *System der Bakterien*, Vol. 2. Gustav Fischer, Jena; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon (eds). 1925. *Bergey's Manual of Determinative Bacteriology*, 2nd ed. The Williams and Wilkins Co., Baltimore. pp. 1-462. **Type strain:** ATCC 15677
Description: Bergey 8.
- C. lilium** Lee and Good 1963
Lee, W.H. and R.C. Good. 1963. *Official Gazette of the United States Patent Office* **789**:1349. **Type strain:** ATCC 15990
Description: Yamada, K. and K. Komagata. 1972. *Journal of General and Applied Microbiology* **18**:399-416.
- C. michiganense** (Smith 1910) Jensen 1934
Smith, E.F. 1910. *Science (Washington)* **31**:794-796; Jensen, H.L. 1934. *Proceedings of the Linnean Society of New South Wales* **59**:19-61. **Type strain:** NCPPB 2979
Description: Bergey 8.
- C. nebraskense** (Schuster, Hoff, Mandel and Lazar 1973) emend. Vidaver and Mandel 1974
Schuster, M.L., B. Hoff, M. Mandel and I. Lazar. 1973. 27th Annual Corn and Sorghum Research Conference Proceedings, 1972, **27**:176-191; Vidaver, A.K. and M. Mandel. 1974. *International Journal of Systematic Bacteriology* **24**:482-485. **Type strain:** NCPPB 2581
Description: Vidaver, A.K. and M. Mandel. 1974. *Ibid.*
- C. oortii** Saaltink and Maas Geesteranus 1969
Saaltink, G.J. and H.P. Maas Geesteranus. 1969. *Netherlands Journal of Plant Pathology* **75**:123-128. **Type strain:** ATCC 25283
Description: Saaltink, G.J. and H.P. Maas Geesteranus. 1969. *Ibid.*
- C. paurometabolum** Steinhaus 1941
Steinhaus, E.A. 1941. *Journal of Bacteriology* **42**:757-790. **Type strain:** ATCC 8368

- Description:** Bergey 8.
- C. pilosum** Yanagawa and Honda 1978
Yanagawa, R. and E. Honda. 1978. International Journal of Systematic Bacteriology **28**:209-216. **Type strain:** ATCC 29592
Description: Yanagawa, R. and E. Honda. 1978. *Ibid.*
- C. poinsettiae** (Starr and Pirone 1942) Burkholder 1948
Starr, M.P. and P.P. Pirone. 1942. Phytopathology **32**:1076-1081; Burkholder, W.H. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). Bergey's Manual of Determinative Bacteriology, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 381-408. **Type strain:** ATCC 9682
Description: Bergey 8.
- C. pseudodiphtheriticum** Lehmann and Neumann 1896
Lehmann, K.B. and R. Neumann. 1896. Atlas und Grundriss der Bakteriologie und Lehrbuch der speziellen bakteriologischen Diagnostik. 1st ed. J.F. Lehmann, Munchen. **Type strain:** ATCC 10700
Description: Bergey 8.
- C. pseudotuberculosis** (Buchanan 1911) Ebersson 1918
Buchanan, R.E. 1911. Veterinary Bacteriology. W.B. Saunders Co., Philadelphia; Ebersson, F. 1918. Journal of Infectious Diseases **23**:1-42. **Type strain:** ATCC 19410
Description: Bergey 8.
- C. pyogenes** (Glage 1903) Ebersson 1918
Glage, F. 1903. Zeitschrift fur Fleisch und Milchhygiene **13**:166-175; Ebersson, F. 1918. Journal of Infectious Diseases **23**:1-42. **Type strain:** ATCC 19411
Description: Bergey 8.
- C. rathayi** (Smith 1913) Dowson 1942
Smith, E.F. 1913. Science (Washington) **38**:926; Dowson, W.J. 1942. Transactions of the British Mycological Society **25**:311-314. **Type strain:** NCPPB 2980
Description: Dye, D.W. and W.J. Kemp. 1977. New Zealand Journal of Agricultural Research **20**:563-582.
- C. renale** (Migula 1900) Ernst 1906
Migula, W. 1900. System der Bakterien, Vol. 2. Gustav Fischer, Jena; Ernst, W. 1906. Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I. **40**:79-91. **Type strain:** ATCC 19412
Description: Bergey 8.
- C. sepedonicum** (Spieckermann and Kotthoff 1914) Skaptason and Burkholder 1942
Spieckermann, A. and P. Kotthoff. 1914. Landwirtschaftliche Jahrbucher Berlin **46**:659-732; Skaptason, J.B. and W.H. Burkholder. 1942. Phytopathology **32**:439-441. **Type strain:** ATCC 33113
Description: Bergey 8.
- C. striatum** (Chester 1901) Ebersson 1918
Chester, F.D. 1901. A manual of determinative bacteriology. The Macmillan Co., New York. pp. 1-401; Ebersson, F. 1918. Journal of Infectious Diseases **23**:1-42. **Type strain:** ATCC 6940
Description: Bergey 8.
- C. xerosis** Lehmann and Neumann 1899
Lehmann, K.B. and R. Neumann. 1899. Lehmann's Medizin, Handatanten X. Atlas und Grundriss der Bakteriologie und Lehrbuch der speziellen bakteriologischen Diagnostik. 2. Auflage. **2**:1-497. **Type strain:** ATCC 373
Description: Bergey 8.
- Cowdria** Moshkovski 1947
Moshkovski, S.D. 1947. Science (Washington) **106**:62. **Type species:** *C. ruminantium* (Cowdry 1925) Moshkovski 1947
Description: Bergey 8.
- C. ruminantium** (Cowdry 1925) Moshkovski 1947
Cowdry, E.V. 1925. Journal of Experimental Medicine **42**:231-252; Moshkovski, S.D. 1947. Science (Washington) **106**:62. **Type strain:** no culture isolated.
Description: Bergey 8.
- Coxiella** (Philip 1943) Philip 1948
Philip, C.B. 1943. American Journal of Hygiene **37**:301-309; Philip, C.B. 1948. Public Health Report **63**:58. **Type species:** *C. burnetii* (Derrick 1939) Philip 1948
Description: Bergey 8.
- C. burnetii** (Derrick 1939) Philip 1948
Derrick, E.H. 1939. Medical Journal of Australia **1**:14; Philip, C.B. 1948. Public Health Report **63**:58. **Type strain:** ATCC

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Description: Bergey 8.**Crenothrix** Cohn 1870Cohn, F. 1870. Beitrage zur Biologie der Pflanzen 1:108-131. **Type species:** *C. polyspora* Cohn 1870**Description:** Bergey 8.**C. polyspora** Cohn 1870Cohn, F. 1870. Beitrage zur Biologie der Pflanzen 1:108-131. **Type strain:** no culture isolated.**Description:** Bergey 8.**Cristispira** Gross 1910Gross, J. 1910. Mitteilungen aus der Zoologischen Station zu Neapel 20:41-93. **Type species:** *C. pectinis* Gross 1910**Description:** Bergey 8.**C. pectinis** Gross 1910Gross, J. 1910. Mitteilungen aus der Zoologischen Station zu Neapel 20:41-93. **Type strain:** no culture isolated.**Description:** Bergey 8.**Curtobacterium** Yamada and Komagata 1972Yamada, K. and K. Komagata. 1972. Journal of General and Applied Microbiology 18:417-431. **Type species:** *C. citreum* (Komagata and Iizuka 1964) Yamada and Komagata 1972**Description:** Yamada, K. and K. Komagata. 1972. Ibid.**C. albidum** (Komagata and Iizuka 1964)Yamada and Komagata 1972
Komagata, K. and H. Iizuka. 1964. Journal of the Agricultural Chemical Society of Japan 38:496-502; Yamada, K. and K. Komagata. 1972. Journal of General and Applied Microbiology 18:417-431. **Type strain:** ATCC 15831**Description:** Yamada, K. and K. Komagata. 1962. Ibid.**C. citreum** (Komagata and Iizuka 1964)Yamada and Komagata 1972
Komagata, K. and H. Iizuka. 1964. Journal of the Agricultural Chemical Society of Japan 38:496-502; Yamada, K. and K. Komagata. 1972. Journal of General and Applied Microbiology 18:417-431. **Type strain:** ATCC 15828**Description:** Yamada, K. and K. Komagata. 1972. Ibid.**C. luteum** (Komagata and Iizuka 1964) Yamada and Komagata 1972Komagata, K. and H. Iizuka. 1964. Journal of the Agricultural Chemical Society of Japan 38:496-502; Yamada, K. and K. Komagata. 1972. Journal of General and Applied Microbiology 18:417-431. **Type strain:** IAM 1623**Description:** Yamada, K. and K. Komagata. 1972. Ibid.**C. pusillum** (Iizuka and Komagata 1965)Yamada and Komagata 1972
Iizuka, H. and K. Komagata. 1965. Journal of General and Applied Microbiology 11:1-14; Yamada, K. and K. Komagata. 1972. Journal of General and Applied Microbiology 18:417-431. **Type strain:** ATCC 19096**Description:** Yamada, K. and K. Komagata. 1972. Ibid.**C. saperdae** (Lysenko 1959) Yamada and Komagata 1972Lysenko, O. 1959. Journal of Insect Pathology 1:34-42; Yamada, K. and K. Komagata. 1972. Journal of General and Applied Microbiology 18:417-431. **Type strain:** ATCC 19272**Description:** Yamada, K. and K. Komagata. 1972. Ibid.**C. testaceum** (Komagata and Iizuka 1964)Yamada and Komagata 1972
Komagata, K. and H. Iizuka. 1964. Journal of the Agricultural Chemical Society of Japan 38:496-502; Yamada, K. and K. Komagata. 1972. Journal of General and Applied Microbiology 18:417-431. **Type strain:** ATCC 15829**Description:** Yamada, K. and K. Komagata. 1972. Ibid.**Cystobacter** Schroeter 1886Schroeter, J. 1885-1889 in Cohn, F. Kryptogamenflora von Schlesien. Band 3, Heft 3, Pilze J.U. Kern's Verlag, Breslau. pp. 1-814. **Type species:** *C. fuscus* Schroeter 1886**Description:** Bergey 8.**C. ferrugineus** (Krzemieniewska and Krzemieniewski 1927) McCurdy 1970

Krzemieniewska, H. and S. Krzemieniewski. 1927. Acta Societatis Botanicorum Poloniae 5:79-98; McCurdy, H.D. 1970. International Journal of Systematic Bac-

- teriology **20**:283-296. **Type strain**: Windsor M-203
Description: Bergey 8.
- C. fuscus** Schroeter 1886
 Schroeter, J. 1885-1889 in Cohn, F. Kryptogamenflora von Schlesien. Band 3, Heft 3, Pilze J.U. Kern's Verlag, Breslau. pp. 1-814. **Type strain**: ATCC 25194
Description: Bergey 8.
- C. minus** (Krzemieniewska and Krzemieniewski 1926) McCurdy 1970
 Krzemieniewska, H. and S. Krzemieniewski. 1926. Acta Societatis Botanicorum Poloniae **4**:1-54; McCurdy, H.D. 1970. International Journal of Systematic Bacteriology **20**:283-296. **Type strain**: Windsor M-307
Description: Bergey 8.
- Cytophaga** Winogradsky 1929
 Winogradsky, S. 1929. Annales de l'Institut Pasteur (Paris) **43**:549-633. **Type species**: *C. hutchinsonii* Winogradsky 1929
Description: Bergey 8.
- C. aquatilis** Strohl and Tait 1978
 Strohl, W.R. and L.R. Tait. 1978. International Journal of Systematic Bacteriology **28**:293-303. **Type strain**: ATCC 29551
Description: Strohl, W.R. and L.R. Tait. 1978. Ibid.
- C. fermentans** Bachmann 1955
 Bachmann, B.J. 1955. Journal of General Microbiology **13**:541-551. **Type strain**: ATCC 19072
Description: Bergey 8.
- C. flevensis** van der Meulen, Harder and Veldkamp 1974
 van der Meulen, H.J., W. Harder and H. Veldkamp. 1974. Antonie van Leeuwenhoek Journal of Microbiology and Serology **40**:329-346. **Type strain**: ATCC 27944
Description: van der Meulen, H.J., W. Harder and H. Veldkamp. 1974. Ibid.
- C. hutchinsonii** Winogradsky 1929
 Winogradsky, S. 1929. Annales de l'Institut Pasteur (Paris) **43**:549-633. **Type strain**: NCIB 9469
Description: Bergey 8.
- C. johnsonae** Stanier 1947
 Stanier, R.Y. 1947. Journal of Bacteriology **53**:297-315. **Type strain**: ATCC 17061
Description: Bergey 8.
- C. latercula** Lewin 1969
 Lewin, R.A. 1969. Journal of General Microbiology **58**:189-206. **Type strain**: ATCC 23177
Description: Lewin, R.A. 1969. Ibid.
- C. lytica** Lewin 1969
 Lewin, R.A. 1969. Journal of General Microbiology **58**:189-206. **Type strain**: ATCC 23178
Description: Lewin, R.A. 1969. Ibid.
- C. salmonicolor** Veldkamp 1961
 Veldkamp, H. 1961. Journal of General Microbiology **26**:331-342. **Type strain**: ATCC 19041
Description: Veldkamp, H. 1961. Ibid.
- Dactylosporangium** Thiemann, Pagani and Beretta 1967
 Thiemann, J.E., H. Pagani and G. Beretta. 1967. Archiv fur Mikrobiologie **58**:42-52. **Type species**: *D. aurantiacum* Thiemann, Pagani and Beretta 1967
Description: Bergey 8.
- D. aurantiacum** Thiemann, Pagani and Beretta 1967
 Thiemann, J.E., H. Pagani and G. Beretta. 1967. Archiv fur Mikrobiologie **58**:42-52. **Type strain**: ATCC 23491
Description: Bergey 8.
- D. thailandense** Thiemann, Pagani and Beretta 1967
 Thiemann, J.E., H. Pagani and G. Beretta. 1967. Archiv fur Mikrobiologie **58**:42-52. **Type strain**: ATCC 23490
Description: Bergey 8.
- Dermatophilus** (Van Saceghem 1915) Gordon 1964
 Van Saceghem, R. 1915. Bulletin de la Societe de Pathologie Exotique **8**:354-359; Gordon, M.A. 1964. Journal of Bacteriology **88**:509-522. **Type species**: *D. congolensis* (Van Saceghem 1915) Gordon 1964
Description: Bergey 8.
- D. congolensis** (Van Saceghem 1915) Gordon 1964
 Van Saceghem, R. 1915. Bulletin de la Societe de Pathologie Exotique **8**:354-359; Gordon, M.A. 1964. Journal of Bacteriology **88**:509-522. **Type strain**: ATCC 14637

Description: Bergey 8.

Derxia Jensen, Petersen, De and Bhattacharya 1960

Jensen, H.L., E.J. Petersen, P.K. De and R. Bhattacharya. 1960. *Archiv fur Mikrobiologie* **36**:182-195. **Type species:** *D. gummosa* Jensen, Petersen, De and Bhattacharya 1960

Description: Bergey 8.

D. gummosa Jensen, Petersen, De and Bhattacharya 1960

Jensen, H.L., E.J. Petersen, P.K. De and R. Bhattacharya. 1960. *Archiv fur Mikrobiologie* **36**:182-195. **Type strain:** ATCC 15994

Description: Thompson, J.P. and V.B.D. Skerman. 1979. *Azotobacteraceae - the taxonomy and ecology of the aerobic nitrogen-fixing bacteria*. Academic Press, London. pp. 310-313.

Desulfomonas Moore, Johnson and Holdeman 1976

Moore, W.E.C., J.L. Johnson and L.V. Holdeman. 1976. *International Journal of Systematic Bacteriology* **26**:238-252. **Type species:** *D. pigra* Moore, Johnson and Holdeman 1976

Description: Moore, W.E.C., J.L. Johnson and L.V. Holdeman. 1976. *Ibid.*

D. pigra Moore, Johnson and Holdeman 1976

Moore, W.E.C., J.L. Johnson and L.V. Holdeman. 1976. *International Journal of Systematic Bacteriology* **26**:238-252. **Type strain:** ATCC 29098

Description: Moore, W.E.C., J.L. Johnson and L.V. Holdeman. 1976. *Ibid.*

Desulfotomaculum Campbell and Postgate 1965

Campbell, L.L. and J.R. Postgate. 1965. *Bacteriological Reviews* **29**:359-363. **Type species:** *D. nigrificans* (Werkman and Weaver 1927) Campbell and Postgate 1965

Description: Bergey 8.

D. acetoxidans Widdel and Pfennig 1977

Widdel, F. and N. Pfennig. 1977 in *International Journal of Systematic Bacteriology* **27**:306; Effective publication Widdel, F. and N. Pfennig. 1977. *Archives of Microbiology* **112**:119-122. **Type strain:** DSM 771

Description: Widdel, F. and N. Pfennig. 1977. *Ibid.*

D. nigrificans (Werkman and Weaver 1927) Campbell and Postgate 1965

Werkman, C.H. and H.J. Weaver. 1927. *Iowa State Journal of Science* **2**:57-67; Campbell, L.L. and J.R. Postgate. 1965. *Bacteriological Reviews* **29**:359-363. **Type strain:** ATCC 19998

Description: Bergey 8.

D. orientis Campbell and Postgate 1965

Campbell, L.L. and J.R. Postgate. 1965. *Bacteriological Reviews* **29**:359-363. **Type strain:** ATCC 19365

Description: Bergey 8.

D. ruminis Campbell and Postgate 1965

Campbell, L.L. and J.R. Postgate. 1965. *Bacteriological Reviews* **29**:359-363. **Type strain:** ATCC 23193

Description: Bergey 8.

Desulfovibrio Kluver and van Niel 1936

Kluver, A.J. and B.C. van Niel. 1936. *Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **94**:369-403. **Type species:** *D. desulfuricans* (Beijerinck 1895) Kluver and van Niel 1936

Description: Bergey 8.

D. africanus Campbell, Kasprzycki and Postgate 1966

Campbell, L.L., M.A. Kasprzycki and J.R. Postgate. 1966. *Journal of Bacteriology* **92**:1122-1127. **Type strain:** NCIB 8401

Description: Campbell, L.L., M.A. Kasprzycki and J.R. Postgate. 1966. *Ibid.*

D. desulfuricans (Beijerinck 1895) Kluver and van Niel 1936

Beijerinck, M.W. 1895. *Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I.* **1**: 104-114; Kluver, A.J. and C.B. van Niel. 1936. *Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **94**:369-403. **Type strain:** NCIB 8307

Description: Bergey 8.

D. desulfuricans subsp. *aestuarii* Postgate and Campbell 1966

Postgate, J.R. and L.L. Campbell. 1966. *Bacteriological Reviews* **30**:732-738. **Type strain:** NCIB 9335

- Description:** Bergey 8.
- D. desulfuricans** subsp. *desulfuricans* (Beijerinck 1895) Kluyver and van Niel 1936
Beijerinck, M.W. 1895. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I. 1:104-114; Kluyver, A.J. and C.B. van Niel. 1936. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. 94:369-403. **Type strain:** NCIB 8307
Description: Bergey 8.
- D. gigas** Le Gall 1963
Le Gall, J. 1963. Journal of Bacteriology 86:1120. **Type strain:** NCIB 9332
Description: Le Gall, J. 1963. Ibid.
- D. salexigens** Postgate and Campbell 1966
Postgate, J.R. and L.L. Campbell. 1966. Bacteriological Reviews 30:732-738. **Type strain:** ATCC 14822
Description: Bergey 8.
- D. thermophilus** Rozanova and Khudyakova 1974
Rozanova, E.P. and A.I. Khudyakova. 1974. Microbiology 43:908-912. **Type strain:** VKM V-1128
Description: Rozanova, E.P. and A.I. Khudyakova. 1974. Ibid.
- D. vulgaris** Postgate and Campbell 1966
Postgate, J.R. and L.L. Campbell. 1966. Bacteriological Reviews 30:732-738. **Type strain:** DSM 644
Description: Bergey 8.
- D. vulgaris** subsp. *oxamicus* Postgate and Campbell 1966
Postgate, J.R. and L.L. Campbell. 1966. Bacteriological Reviews 30:732-738. **Type strain:** NCIB 9442
Description: Bergey 8.
- D. vulgaris** subsp. *vulgaris* Postgate and Campbell 1966
Postgate, J.R. and L.L. Campbell. 1966. Bacteriological Reviews 30:732-738. **Type strain:** DSM 644
Description: Bergey 8.
- Desulfuromonas** Pfennig and Biebl 1977
Pfennig, N. and H. Biebl. 1977 in International Journal of Systematic Bacteriology 27:306; Effective publication
- Pfennig, N. and H. Biebl. 1976. Archives of Microbiology 110:1-10. **Type species:** *D. acetoxidans* Pfennig and Biebl 1977
Description: Pfennig, N. and H. Biebl. 1976. Ibid.
- D. acetoxidans** Pfennig and Biebl 1977
Pfennig, N. and H. Biebl. 1977 in International Journal of Systematic Bacteriology 27:306; Effective publication Pfennig, N. and H. Biebl. 1976. Archives of Microbiology 110:1-10. **Type strain:** DSM 684
Description: Pfennig, N. and H. Biebl. 1976. Ibid.
- Ectothiorhodospira** Pelsh 1936
Pelsh, A.O. 1936. Trudy Solyanoi Laboratorii Vsesoyuznogo Instituta Metallurgii NISNKT. Izdatelstvo Akademya Nauk SSSR, Moscow
eningrad 5: 49-126. **Type species:** *E. mobilis* Pelsh 1936
Description: Bergey 8.
- E. halochloris** Imhoff and Truper 1979
Imhoff, J.F. and H.G. Truper. 1979 in International Journal of Systematic Bacteriology 29:79-80; Effective publication Imhoff, J.F. and H.G. Truper. 1977. Archives of Microbiology 114:114-121. **Type strain:** DSM 1059
Description: Imhoff, J.F. and H.G. Truper. 1977. Ibid.
- E. halophila** Raymond and Siström 1969
Raymond, J.C. and W.R. Siström. 1969. Archiv für Mikrobiologie 69:121-126. **Type strain:** DSM 244
Description: Bergey 8.
- E. mobilis** Pelsh 1936
Pelsh, A.D. 1936. Trudy Solyanoi Laboratorii Vsesoyuznogo Instituta Metallurgii NISNKT. Izdatelstvo Akademya Nauk SSSR, Moscow
eningrad 5:49-126. **Type strain:** DSM 237
Description: Bergey 8.
- E. shaposhnikovii** Cherni, Soloveva, Fedorova and Kondrateva 1969
Cherni, N.E., J.V. Soloveva, V.D. Fedorova and E.N. Kondrateva. 1969. Mikrobiologiya 38:479-484. **Type strain:** DSM 243

Description: Bergey 8.

Edwardsiella Ewing and McWhorter 1965

Ewing, W.H. and A.C. McWhorter. 1965 in Ewing, W.H., A.C. McWhorter, M.R. Escobar and A.H. Lubin. International Bulletin of Bacteriological Nomenclature and Taxonomy **15**:33-38. **Type species:** *E. tarda* Ewing and McWhorter 1965

Description: Bergey 8.

E. anguillimortifera (Hoshina 1962) Sakazaki and Tamura 1975

Hoshina, T. 1962. Bulletin of the Society of Scientific Fisheries (Japan) **28**:162; Sakazaki, R. and K. Tamura. 1975. International Journal of Systematic Bacteriology **25**:219-220. **Type strain:** ATCC 15947

Description: Sakazaki, R. and K. Tamura. 1975. Ibid.

E. tarda Ewing and McWhorter 1965

Ewing, W.H. and A.C. McWhorter. 1965 in Ewing, W.H., A.C. McWhorter, M.R. Escobar and A.H. Lubin. International Bulletin of Bacteriological Nomenclature and Taxonomy **15**:33-38. **Type strain:** ATCC 15947

Description: Ewing, W.H., A.C. McWhorter, M.R. Escobar and A.H. Lubin. 1965. Ibid.

Ehrlichia Moshkovski 1945

Moshkovski, S.D. 1945. Advances in Modern Biology (Moscow) **19**:1-44. **Type species:** *E. canis* (Donatien and Lestoquard 1935) Moshkovski 1945

Description: Bergey 8.

E. canis (Donatien and Lestoquard 1935) Moshkovski 1945

Donatien, A. and F. Lestoquard. 1935. Bulletin de la Societe de Pathologie Exotique **28**:418-419; Moshkovski, S.D. 1945. Advances in Modern Biology (Moscow) **19**:1-44. **Type strain:** no culture isolated.

Description: Bergey 8.

E. phagocytophila (Foggie 1949) Philip 1962

Foggie, A. 1949. Journal of General Microbiology **3**:5-6; Philip, C.B. 1962. Report 2nd Meeting FAOIE Expert Panel

on Tick-borne Diseases of livestock, Cairo. United Nations, Rome 1962. pp. 41-43. **Type strain:** no culture isolated.

Description: Bergey 8.

Eikenella Jackson and Goodman 1972

Jackson, F.L. and Y.E. Goodman. 1972. International Journal of Systematic Bacteriology **22**:73-77. **Type species:** *E. corrodens* (Eiken 1958) Jackson and Goodman 1972

Description: Jackson, F.L. and Y.E. Goodman. 1972. Ibid.

E. corrodens (Eiken 1958) Jackson and Goodman 1972

Eiken, M. 1958. Acta Pathologica et Microbiologica Scandinavica **43**:404-416; Jackson, F.L. and Y.E. Goodman. 1972. International Journal of Systematic Bacteriology **22**:73-77. **Type strain:** ATCC 23834

Description: Bergey 8.

Elytrosporangium Falcao de Morais, Batista and Massa 1966

Falcao de Morais, J.O., A.C. Batista and D.M.G. Massa. 1966. Mycopathologia et Mycologia Applicata **30**:161-171. **Type species:** *E. brasiliensis* Falcao de Morais, Batista and Massa 1966

Description: Falcao de Morais, J.O., C. Batista and D.M.G. Massa. 1966. Ibid.

E. brasiliensis Falcao de Morais, Batista and Massa 1966

Falcao de Morais, J.O., C. Batista and D.M.G. Massa. 1966. Mycopathologia et Mycologia Applicata **30**:161-171. **Type strain:** ATCC 23727

Description: Falcao de Morais, J.O., C. Batista and D.M.G. Massa. 1966. Ibid.

E. carpinense Falcao de Morais, Oliveira da Silva and Machado 1971

Falcao de Morais, J.O., J. Oliveira da Silva and C. Machado. 1971. Revista Microbiologia Brazil **2**:203-206. **Type strain:** 70-6-2 (Lab. Microbiol. Inst. Biociencias Univer. Federal Pernambuco, Recife, Brazil)

Description: Falcao de Morais, J.O., J. Oliveira da Silva and C. Machado. 1971. Ibid.

E. spirale Falcao de Morais 1970

Falcao de Morais, J.O. 1970. *Revista Microbiologia Brazil* 1:79-84. **Type strain:** ATCC 25664

Description: Falcao de Morais, J.O. 1970. *Ibid.*

Enterobacter Hormaeche and Edwards 1960

Hormaeche, E. and P.R. Edwards. 1960. *International Bulletin of Bacteriological Nomenclature and Taxonomy* 10:71-74.

Type species: *E. cloacae* (Jordan 1890) Hormaeche and Edwards 1960

Description: Bergey 8.

E. aerogenes Hormaeche and Edwards 1960

Hormaeche, E. and P.R. Edwards. 1960. *International Bulletin of Bacteriological Nomenclature and Taxonomy* 10:71-74.

Type strain: ATCC 13048

Description: Hormaeche, E. and P.R. Edwards. 1960. *Ibid.*

E. agglomerans Ewing and Fife 1972

Ewing, W.H. and M.A. Fife. 1972. *International Journal of Systematic Bacteriology* 22:4-11. **Type strain:** ATCC 27155

Description: Ewing, W.H. and M.A. Fife. 1972. *Ibid.*

E. cloacae (Jordan 1890) Hormaeche and Edwards 1960

Jordan, E.O. 1890 in Sedgewick, W.T. *Report of the Massachusetts Board of Public Health*, pp. 821-844; Hormaeche, E. and P.R. Edwards. 1960. *International Bulletin of Bacteriological Nomenclature and Taxonomy* 10:71-74. **Type strain:** ATCC 13047

Description: Hormaeche, E. and P.R. Edwards. 1960. *Ibid.*

Eperythrozoon Schilling 1928

Schilling, V. 1928. *Klinische Wochenschrift* 7:1854-1855. **Type species:** *E. coccoides* Schilling 1928

Description: Bergey 8.

E. coccoides Schilling 1928

Schilling, V. 1928. *Klinische Wochenschrift* 7:1854-1855. **Type strain:** no culture isolated.

Description: Bergey 8.

E. ovis Neitz, Alexander and du Toit 1934

Neitz, W.O., R.A. Alexander and P.J. du Toit. 1934. *Onderstepoort Journal of Veterinary Science* 3:263-274. **Type strain:** no culture isolated.

Description: Bergey 8.

E. parvum Splitter 1950

Splitter, E.J. 1950. *Science (Washington)* 111:513-514. **Type strain:** no culture isolated.

Description: Bergey 8.

E. suis Splitter 1950

Splitter, E.J. 1950. *Science (Washington)* 111:513-514. **Type strain:** no culture isolated.

Description: Bergey 8.

E. wenyonii Adler and Ellenbogen 1934

Adler, S. and V. Ellenbogen. 1934. *Journal of Comparative Pathology* 47:220-221. **Type strain:** no culture isolated.

Description: Bergey 8.

Erwinia Winslow, Broadhurst, Buchanan, Krumwiede, Rogers and Smith 1920

Winslow, C.E.A., J. Broadhurst, R.E. Buchanan, C. Krumwiede Jr., L.A. Rogers and G.H. Smith. 1920. *Journal of Bacteriology* 5:191-229. **Type species:** *E. amylovora* (Burrill 1882) Winslow, Broadhurst, Buchanan, Krumwiede, Rogers and Smith 1920

Description: Bergey 8.

E. amylovora (Burrill 1882) Winslow, Broadhurst, Buchanan, Krumwiede, Rogers and Smith 1920

Burrill, T.J. 1882. *Illinois Industrial University 11th Report* pp. 93-157; Winslow, C.E.A., J. Broadhurst, R.E. Buchanan, C. Krumwiede Jr., L.A. Rogers and G.H. Smith. 1920. *Journal of Bacteriology* 5:191-229. **Type strain:** ATCC 15580

Description: Bergey 8.

E. ananas Serrano 1928

Serrano, F.B. 1928. *Philippine Journal of Science* 36:271-305. **Type strain:** NCPPB 1846

Description: Bergey 8.

- E. cancerogena** Urosevic 1966
Urosevic, B. 1966. *Lesnický casopsis* **12**: 493-505. **Type strain**: NCPPB 2176
Description: Urosevic, B. 1966. *Ibid.*
- E. carnegieana** Standring 1942 (See also *Pectobacterium carnegieana*)
Standring, E.T. 1942 in Lightle, P.C., E.T. Standring and J.G. Brown. *Phytopathology* **32**:303-313. **Type strain**: NCPPB 439
Description: Bergey 8.
- E. carotovora** (Jones 1901) Bergey, Harrison, Breed, Hammer and Huntoon 1923 (See also *Pectobacterium carotovorum*)
Jones, L.R. 1901. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **7**:12-21; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. *Bergey's Manual of Determinative Bacteriology*, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type strain**: ATCC 15713
Description: Bergey 8.
- E. carotovora** subsp. *atroseptica* (van Hall 1902) Dye 1969
van Hall, C.J.J. 1902. *Inaugural Dissertation Amsterdam*; Dye, D.W. 1969. *New Zealand Journal of Science* **12**:81-97. **Type strain**: NCPPB 549
Description: Bergey 8.
- E. carotovora** subsp. *carotovora* (Jones 1901) Bergey, Harrison, Breed, Hammer and Huntoon 1923
Jones, L.R. 1901. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **7**:12-21; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. *Bergey's Manual of Determinative Bacteriology*, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type strain**: ATCC 15713
Description: Bergey 8.
- E. chrysanthemi** Burkholder, McFadden and Dimock 1953 (See also *Pectobacterium chrysanthemi*)
Burkholder, W.H., L.A. McFadden and A.V. Dimock. 1953. *Phytopathology* **43**: 522-526. **Type strain**: ATCC 11663
Description: Bergey 8.
- E. cyripedii** (Hori 1911) Bergey, Harrison, Breed, Hammer and Huntoon 1923 (See also *Pectobacterium cyripedii*)
Hori, S. 1911. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **31**:85-92; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. *Bergey's Manual of Determinative Bacteriology*, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type strain**: PDDCC 1591
Description: Bergey 8.
- E. dissolvens** (Rosen 1922) Burkholder 1948
Rosen, H.R. 1922. *Phytopathology* **12**: 497-499; Burkholder, W.H. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacteriology*, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 463-478. **Type strain**: ATCC 23373
Description: Dye, D.W. 1969. *New Zealand Journal of Science* **12**:833-839.
- E. herbicola** (Lohnis 1911) Dye 1964
Lohnis, F. 1911. *Landwirtschaftlich-bakteriologisches Praktikum. Gebrüder Borntraeger, Berlin.* pp. 1-156; Dye, D.W. 1964. *New Zealand Journal of Science* **7**: 261-269. **Type strain**: NCPPB 2971
Description: Bergey 8.
- E. mallotivora** Goto 1976
Goto, M. 1976. *International Journal of Systematic Bacteriology* **26**:467-473. **Type strain**: ATCC 29573
Description: Goto, M. 1976. *Ibid.*
- E. milletiae** (Kawakami and Yoshida 1920) Magrou 1937
Kawakami, K. and S. Yoshida. 1920. *Botanical Magazine Tokyo* **34**:110-115; Magrou, J. 1937 in Hauduroy, P., G. Ehringer, A. Urbain, G. Guillot and J. Magrou (eds). *Dictionnaire des bacteries pathogenes.* Masson et Cie, Paris. p. 60. **Type strain**: NCPPB 2519
Description: Dye, D.W. 1969. *New Zealand Journal of Science* **12**:223-236.
- E. nigrifluens** Wilson, Starr and Berger 1957
Wilson, E.E., M.P. Starr and J.A. Berger. 1957. *Phytopathology* **47**:669-673. **Type strain**: ATCC 13028
Description: Wilson, E.E., M.P. Starr and J.A. Berger. 1957. *Ibid.*
- E. nimipressuralis** (Carter 1945) Dye 1969
Carter, J.C. 1945. *Illinois Natural History Survey Bulletin* **23**:407-448; Dye, D.W.

1969. *New Zealand Journal of Science* 12:833-839. **Type strain:** ATCC 9912
Description: Dye, D.W. 1969. *Ibid.*
- E. paradisiaca** Fernandez-Borrero and Lopez-Duque 1970
 Fernandez-Borrero, O. and S. Lopez-Duque. 1970. *Cenicafe* 21:3-44. **Type strain:** NCPPB 2511
Description: Fernandez-Borrero, O. and S. Lopez-Duque. 1970. *Ibid.*
- E. quercina** Hildebrand and Schroth 1967
 Hildebrand, D.C. and M.N. Schroth. 1967. *Phytopathology* 57:250-253. **Type strain:** ATCC 29281
Description: Hildebrand, D.C. and M.N. Schroth. 1967. *Ibid.*
- E. rhapontici** (Millard 1924) Burkholder 1948 (See also *Pectobacterium rhapontici*)
 Millard, W.A. 1924. *Bulletin of the University of Leeds and the Yorkshire Council for Agricultural Education* 134:1-28; Burkholder, W.H. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacteriology*, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 463-478. **Type strain:** ATCC 29283
Description: Bergey 8.
- E. rubrificans** Wilson, Zeitoun and Fredrickson 1967
 Wilson, E.E., F.M. Zeitoun and D.L. Fredrickson. 1967. *Phytopathology* 57:618-621. **Type strain:** ATCC 29291
Description: Wilson, E.E., F.M. Zeitoun and D.L. Fredrickson. 1967. *Ibid.*
- E. salicis** (Day 1924) Chester 1939
 Day, W.R. 1924. *Oxford Forestry Memoirs* 3:1-30; Chester, F.D. 1939 in Bergey, R.S., E.G.D. Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacteriology*, 5th ed. The Williams and Wilkins Co., Baltimore. pp. 404-420. **Type strain:** ATCC 15712
Description: Bergey 8.
- E. stewartii** (Smith 1898) Dye 1963
 Smith, E.F. 1898. *Proceedings of the American Association for the Advancement of Science* 47:422-426; Dye, D.W. 1963. *New Zealand Journal of Science* 6:495-506. **Type strain:** ATCC 8199
Description: Bergey 8.
- E. tracheiphila** (Smith 1895) Bergey, Harrison, Breed, Hammer and Huntoon 1923
 Smith, E.F. 1895. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* 1:364-373; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. *Bergey's Manual of Determinative Bacteriology*, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type strain:** NCPPB 2452
Description: Bergey 8.
- E. uredovora** (Pon, Townsend, Wessman, Schmitt and Kingsolver 1954) Dye 1963
 Pon, D.S., C.E. Townsend, G.E. Wessman, C.G. Schmitt and C.H. Kingsolver. 1954. *Phytopathology* 44:707-710; Dye, D.W. 1963. *New Zealand Journal of Science* 6:146-149. **Type strain:** ATCC 19321
Description: Bergey 8.
- Erysipelothrix** Rosenbach 1909
 Rosenbach, F.J. 1909. *Zeitschrift für Hygiene und Infektionskrankheiten Medizinische Mikrobiologie, Immunologie und Virologie* 63:343-371. **Type species:** *E. rhusiopathiae* (Migula 1900) Buchanan 1918
Description: Bergey 8.
- E. rhusiopathiae** (Migula 1900) Buchanan 1918
 Migula, W. 1900. *System der Bakterien*, Vol. 2. Gustav Fischer, Jena; Buchanan, R.E. 1918. *Journal of Bacteriology* 3:27-61. **Type strain:** ATCC 19414
Description: Bergey 8.
- Escherichia** Castellani and Chalmers 1919
 Castellani, A. and A.J. Chalmers. 1919. *Manual of tropical medicine*, 3rd ed. Williams, Wood and Co., New York. **Type species:** *E. coli* (Migula 1895) Castellani and Chalmers 1919
Description: Bergey 8.
- E. adecarboxylata** Leclerc 1962
 Leclerc, H. 1962. *Annales de l'Institut Pasteur (Paris)* 102:726-741. **Type strain:** ATCC 23216
Description: Leclerc, H. 1962. *Ibid.*
- E. blattae** Burgess, McDermott and Whiting 1973
 Burgess, N.R.H., S.N. McDermott and J. Whiting. 1973. *Journal of Hygiene (Cambridge)* 71:1. **Type strain:** CDC

9005-74

Description: Burgess, N.R.H., S.N. McDermott and J. Whiting. 1973. *Ibid.*

E. coli (Migula 1895) Castellani and Chalmers 1919

Migula, W. 1895 in Engler, A. and K. Prantl (eds). *Die Natürlichen Pflanzenfamilien*, W. Engelmann, Leipzig, Teil I, Abteilung Ia. pp. 20-30; Castellani, A. and A.J. Chalmers. 1919. *Manual of tropical medicine*. 3rd ed. Williams, Wood and Co., New York. **Type strain:** ATCC 11775

Description: Bergey 8.

Eubacterium Prevot 1938

Prevot, A.R. 1938. *Annales de l'Institut Pasteur (Paris)* **60**:285-307. **Type species:** *E. foedans* (Klein 1908) Prevot 1938

Description: Bergey 8.

E. aerofaciens (Eggerth 1935) Prevot 1938

Eggerth, A.H. 1935. *Journal of Bacteriology* **30**:277-299; Prevot, A.R. 1938. *Annales de l'Institut Pasteur (Paris)* **60**:285-307. **Type strain:** ATCC 25986

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

E. alactolyticum (Prevot and Taffanel 1942)

Holdeman and Moore 1970

Prevot, A.R. and J. Taffanel. 1942. *Annales de l'Institut Pasteur (Paris)* **68**:259-262; Holdeman, L.V. and W.E.C. Moore. 1970. in Cato, E.P., C.S. Cummins, L.V. Holdeman, J.L. Johnson, W.E.C. Moore, R.M. Smibert and L.D.S. Smith (eds). *Outline of clinical methods in anaerobic bacteriology*, 2nd revision. Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia. pp. 23-30. **Type strain:** ATCC 23263

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

E. biforme (Eggerth 1935) Prevot 1938

Eggerth, A.H. 1935. *Journal of Bacteriology* **30**:277-299; Prevot, A.R. 1938. *Annales de l'Institut Pasteur (Paris)* **60**:285-307. **Type strain:** ATCC 27806

Description: Holdeman, L.V. and W.E.C. Moore. 1974. *International Journal of Systematic Bacteriology* **24**:260-277.

E. budayi (Le Blaye and Guggenheim 1914) Holdeman and Moore 1970

Le Blaye, R. and H. Guggenheim. 1914. *Manuel pratique de diagnostic bacteriologique et de technique appliquee a la determination des bacteries*. Vigot Freres (eds). Paris. pp. 1-444; Holdeman, L.V. and W.E.C. Moore. 1970 in Cato, E.P., C.S. Cummins, L.V. Holdeman, J.L. Johnson, W.E.C. Moore, R.M. Smibert and L.D.S. Smith (eds). *Outline of clinical methods in anaerobic bacteriology*, 2nd revision. Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia. pp. 23-30. **Type strain:** ATCC 25541

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

E. cellulosolvans (Bryant, Small, Bouma and Robinson 1958) Holdeman and Moore 1972

Bryant, M.P., N. Small, C. Bouma and I.M. Robinson. 1958. *Journal of Bacteriology* **76**:529-537; Holdeman, L.V. and W.E.C. Moore. 1972 in Holdeman, L.V. and W.E.C. Moore (eds). *Anaerobe Laboratory Manual*. Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia. pp. 39-47. **Type strain:** Bryant B348

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

E. combesii (Prevot and Laplanche 1947) Holdeman and Moore 1970

Prevot, A.R. and J. Laplanche. 1947. *Annales de l'Institut Pasteur (Paris)* **73**:687-688; Holdeman, L.V. and W.E.C. Moore. 1970 in Cato, E.P., C.S. Cummins, L.V. Holdeman, J.L. Johnson, W.E.C. Moore, R.M. Smibert and L.D.S. Smith (eds). *Outline of clinical methods in anaerobic bacteriology*, 2nd revision. Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia. pp. 23-30. **Type strain:** ATCC 25545

- Description:** Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- E. contortum** (Prevot 1947) Holdeman, Cato and Moore 1971
Prevot, A.R. 1947. Annales de l'Institut Pasteur (Paris) 73:409-418; Holdeman, L.V., E.P. Cato and W.E.C. Moore. 1971. International Journal of Systematic Bacteriology 21:304-306. **Type strain:** ATCC 25540
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- E. cylindroides** (Rocchi 1908) Holdeman and Moore 1970
Rocchi, G. 1908. Bulletin delle Scienze Mediche (Societa di Bologna) 8:457-528; Holdeman, L.V. and W.E.C. Moore. 1970 in Cato, E.P., C.S. Cummins, L.V. Holdeman, J.L. Johnson, W.E.C. Moore, R.M. Smibert and L.D.S. Smith (eds). Outline of clinical methods in anaerobic bacteriology, 2nd revision. Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia. pp. 23-30. **Type strain:** ATCC 27803
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- E. dolichum** Moore, Johnson and Holdeman 1976
Moore, W.E.C., J.L. Johnson and L.V. Holdeman. 1976. International Journal of Systematic Bacteriology 26:238-252. **Type strain:** ATCC 29143
Description: Moore, W.E.C., J.L. Johnson and L.V. Holdeman. 1976. Ibid.
- E. eligens** Holdeman and Moore 1974
Holdeman, L.V. and W.E.C. Moore. 1974. International Journal of Systematic Bacteriology 24:260-277. **Type strain:** VPI C15-48
Description: Holdeman, L.V. and W.E.C. Moore. 1974. Ibid.
- E. fissicatena** Taylor 1972
Taylor, M.M. 1972. Journal of General Microbiology 71:457-463. **Type strain:** NCIB 10446
Description: Taylor, M.M. 1972. Ibid.
- E. formicigenerans** Holdeman and Moore 1974
Holdeman, L.V. and W.E.C. Moore. 1974. International Journal of Systematic Bacteriology 24:260-277. **Type strain:** ATCC 27755
Description: Holdeman, L.V. and W.E.C. Moore. 1974. Ibid.
- E. hadrum** Moore, Johnson and Holdeman 1976
Moore, W.E.C., J.L. Johnson and L.V. Holdeman. 1976. International Journal of Systematic Bacteriology 26:238-252. **Type strain:** VPI B2-52
Description: Moore, W.E.C., J.L. Johnson and L.V. Holdeman. 1976. Ibid.
- E. hallii** Holdeman and Moore 1974
Holdeman, L.V. and W.E.C. Moore. 1974. International Journal of Systematic Bacteriology 24:260-277. **Type strain:** VPI B4-27
Description: Holdeman, L.V. and W.E.C. Moore. 1974. Ibid.
- E. lentum** (Eggerth 1935) Prevot 1938
Eggerth, A.H. 1935. Journal of Bacteriology 30:277-299; Prevot, A.R. 1938. Annales de l'Institut Pasteur (Paris) 60:285-307. **Type strain:** ATCC 25559
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- E. limosum** (Eggerth 1935) Prevot 1938
Eggerth, A.H. 1935. Journal of Bacteriology 30:277-299; Prevot, A.R. 1938. Annales de l'Institut Pasteur (Paris) 60:285-307. **Type strain:** ATCC 8486
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- E. moniliforme** (Repaci 1910) Holdeman and Moore 1970
Repaci, G. 1910. Comptes Rendus des Seances de la Societe de Biologie (Paris) 68:410-412; Holdeman, L.V. and W.E.C. Moore. 1970 in Cato, E.P., C.S. Cummins, L.V. Holdeman, J.L. Johnson, W.E.C. Moore, R.M. Smibert and L.D.S. Smith (eds). Outline of clinical methods

- in anaerobic bacteriology, 2nd revision. Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia. pp. 23-30. **Type strain:** ATCC 25546
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- E. multiforme** (Distaso 1911) Holdeman and Moore 1970
 Distaso, A. 1911. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I. 59:97-103; Holdeman, L.V. and W.E.C. Moore. 1970. in Cato, E.P., C.S. Cummins, L.V. Holdeman, J.L. Johnson, W.E.C. Moore, R.M. Smibert and L.D.S. Smith (eds). Outline of clinical methods in anaerobic bacteriology, 2nd revision. Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia. pp. 23-30. **Type strain:** ATCC 25552
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- E. nitritogenes** Prevot 1940
 Prevot, A.R. 1940. Comptes Rendus des Seances de la Societe de Biologie (Paris) 134:353-355. **Type strain:** ATCC 25547
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- E. plexicaudatum** Wilkins, Fulghum and Wilkins 1974
 Wilkins, T.D., R.S. Fulghum and J.H. Wilkins. 1974. International Journal of Systematic Bacteriology 24:408-411. **Type strain:** VPI 7582
Description: Wilkins, T.D., R.S. Fulghum and J.H. Wilkins. 1974. Ibid.
- E. ramulus** Moore, Johnson and Holdeman 1976
 Moore, W.E.C., J.L. Johnson and L.V. Holdeman. 1976. International Journal of Systematic Bacteriology 26:238-252. **Type strain:** ATCC 29099
Description: Moore, W.E.C., J.L. Johnson and L.V. Holdeman. 1976. Ibid.
- E. rectale** (Hauduroy, Ehringer, Urbain, Guillot and Magrou 1937) Prevot 1938
 Hauduroy, P., G. Ehringer, A. Urbain, G. Guillot and J. Magrou. 1937. Dictionnaire des bacteries pathogenes. Masson et Cie, Paris; Prevot, A.R. 1938. Annales de l'Institut Pasteur (Paris) 60:285-307. **Type strain:** VPI 0989
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- E. ruminantium** Bryant 1959
 Bryant, M.P. 1959. Bacteriological Reviews 23:125-153. **Type strain:** ATCC 17233
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- E. saburreum** (Prevot 1966) Holdeman and Moore 1970
 Prevot, A.R. 1966. Manual for the classification and determination of the anaerobic bacteria. 1st American ed. transl. by V. Fredette, Lea and Febiger, Philadelphia. pp. 1-402; Holdeman, L.V. and W.E.C. Moore. 1970. In Cato, E.P., C.S. Cummins, L.V. Holdeman, J.L. Johnson, W.E.C. Moore, R.M. Smibert and L.D.S. Smith (eds). Outline of clinical methods in anaerobic bacteriology, 2nd revision. Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia. pp. 23-30. **Type strain:** VPI 11763
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- E. siraeum** Moore, Johnson and Holdeman 1976
 Moore, W.E.C., J.L. Johnson and L.V. Holdeman. 1976. International Journal of Systematic Bacteriology 26:238-252. **Type strain:** ATCC 29066
Description: Moore, W.E.C., J.L. Johnson and L.V. Holdeman. 1976. Ibid.
- E. tarantellus** Udey, Young and Sallman 1977
 Udey, L.R., E. Young and B. Sallman. 1977 in International Journal of Systematic Bacteriology 27:306; Effective

publication Udey, L.R., E. Young and B. Sallman. 1977. Journal of the Fisheries Research Board of Canada **34**:402-409.
Type strain: ATCC 29255

Description: Udey, L.R., E. Young and B. Sallman. 1977. *Ibid.*

E. tenue (Bergey, Harrison, Breed, Hammer and Huntoon 1923) Holdeman and Moore 1970

Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. Bergey's Manual of Determinative Bacteriology, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442; Holdeman, L.V. and W.E.C. Moore. 1970 in Cato, E.P., C.S. Cummins, L.V. Holdeman, J.L. Johnson, W.E.C. Moore, R.M. Smibert and L.D.S. Smith (eds). Outline of clinical methods in anaerobic bacteriology, 2nd revision. Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia. pp. 23-30. **Type strain:** ATCC 25553

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

E. tortuosum (Debono 1912) Prevot 1938

Debono, M. 1912. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I. **62**:229-234; Prevot, A.R. 1938. Annales de l'Institut Pasteur (Paris) **60**:285-307.
Type strain: ATCC 25548

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

E. ventriosum (Tissier 1908) Prevot 1938

Tissier, H. 1908. Annales de l'Institut Pasteur (Paris) **22**:189-208; Prevot, A.R. 1938. Annales de l'Institut Pasteur (Paris) **60**:285-307. **Type strain:** ATCC 27560

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

Excillospora Agre and Guzeva 1975

Agre, N.S. and L.N. Guzeva. 1975. Mikrobiologiya **44**:459-463. **Type species:**

E. viridilutea Agre and Guzeva 1975

Description: Agre, N.S. and L.N. Guzeva. 1975. *Ibid.*

E. viridilutea Agre and Guzeva 1975

Agre, N.S. and L.N. Guzeva. 1975. Mikrobiologiya **44**:459-463. **Type strain:** INMI 187

Description: Agre, N.S. and L.N. Guzeva. 1975. *Ibid.*

Flavobacterium Bergey, Harrison, Breed, Hammer and Huntoon 1923

Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. Bergey's Manual of Determinative Bacteriology, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type species:** *F. aquatile* (Frankland and Frankland 1889) Bergey, Harrison, Breed, Hammer and Huntoon 1923

Description: Bergey 8.

F. acidificum Steinhaus 1941

Steinhaus, E.A. 1941. Journal of Bacteriology **42**:757-790. **Type strain:** NCIB 9891

Description: Steinhaus, E.A. 1941. *Ibid.*

F. acidurans Millar 1973

Millar, W.N. 1973. International Journal of Systematic Bacteriology **23**:142-150.
Type strain: ATCC 27383

Description: Millar, W.N. 1973. *Ibid.*

F. aquatile (Frankland and Frankland 1889) Bergey, Harrison, Breed, Hammer and Huntoon 1923

Frankland, G.C. and P.F. Frankland. 1889. Zeitschrift für Hygiene und Infektionskrankheiten Medizinische Mikrobiologie, Immunologie und Virologie **6**:373-400; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. Bergey's Manual of Determinative Bacteriology, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type strain:** ATCC 11947

Description: Weeks, O.B. 1955. Journal of Bacteriology **69**:649-658.

F. balustinum Harrison 1929

Harrison, F.C. 1929. Canadian Journal of Research **1**:214-239. **Type strain:** NCTC 11212

Description: Harrison, F.C. 1929. *Ibid.*

F. capsulatum Leifson 1962

Leifson, E. 1962. International Bulletin of

- Bacteriological Nomenclature and Taxonomy 12:161-170. **Type strain:** ATCC 14666
Description: Leifson, E. 1962. *Ibid.*
- F. devorans** (Zimmermann 1890) Bergey, Harrison, Breed, Hammer and Huntoon 1923
 Zimmermann, O.E.R. 1890. 1. Reihe, Elfter Bericht der Naturwissenschaftlichen Gesellschaft Chemnitz, pp. 54-154; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. Bergey's Manual of Determinative Bacteriology, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type strain:** ATCC 10829
Description: Bergey 8.
- F. esteraromaticum** (Omelianski 1923) Bergey, Harrison, Breed, Hammer and Huntoon 1930
 Omelianski, V.L. 1923. Journal of Bacteriology 8:393-419; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon (eds). 1930. Bergey's Manual of Determinative Bacteriology, 3rd ed. The Williams and Wilkins Co., Baltimore. pp. 1-589. **Type strain:** ATCC 8091
Description: Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1930. *Ibid.*
- F. ferrugineum** Sickles and Shaw 1934
 Sickles, G.M. and M. Shaw. 1934. Journal of Bacteriology 28:415-431. **Type strain:** ATCC 13524
Description: Sickles, G.M. and M. Shaw. 1934. *Ibid.*
- F. halmephilium** Elazari-Volcani 1940
 Elazari-Volcani, B. 1940. Studies on the microflora of the Dead Sea. In Hebrew, English summary. Thesis, Hebrew University Jerusalem. **Type strain:** ATCC 19717
Description: Elazari-Volcani, B. 1940. *Ibid.*
- F. heparinum** Payza and Korn 1956
 Payza, A.N. and E.D. Korn. 1956. Journal of Biological Chemistry 223:853-858. **Type strain:** ATCC 13125
Description: Payza, A.N. and E.D. Korn. 1956. *Ibid.*
- F. indoltheticum** Campbell and Williams 1951
 Campbell, L.L. and O.B. Williams. 1951. Journal of General Microbiology 5:894-905. **Type strain:** ATCC 27950
Description: Campbell, L.L. and O.B. Williams. 1951. *Ibid.*
- F. marinotypicum** ZoBell and Upham 1944
 ZoBell, C.E. and H.C. Upham. 1944. Bulletin Scripps Institution of Oceanography University of California (Technical Series) 5:239-292. **Type strain:** ATCC 19260
Description: Zobell, C.E. and H.C. Upham. 1944. *Ibid.*
- F. meningosepticum** King 1959
 King, E.O. 1959. American Journal of Clinical Pathology 31:241-247. **Type strain:** ATCC 13253
Description: King, E.O. 1959. *Ibid.*
- F. oceanosedimentum** Carty and Litchfield 1978
 Carty, C.E. and C.D. Litchfield. 1978. International Journal of Systematic Bacteriology 28:561-566. **Type strain:** ATCC 31317
Description: Carty, C.E. and C.D. Litchfield. 1978. *Ibid.*
- F. odoratum** Stutzer 1929
 Stutzer, M. 1929. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I. 102:113. **Type strain:** ATCC 4651
Description: Stutzer, M. 1929. *Ibid.*
- F. okeanokoites** ZoBell and Upham 1944
 ZoBell, C.E. and H.C. Upham. 1944. Bulletin Scripps Institution of Oceanography University of California (Technical Series) 5:239-292. **Type strain:** CCM 320
Description: Zobell, C.E. and H.C. Upham. 1944. *Ibid.*
- F. resinovorum** Delaporte and Daste 1956
 Delaporte, B. and P. Daste. 1956. Comptes Rendus de l'Académie des Sciences (Paris) 242:831-834. **Type strain:** NCIB 8767
Description: Delaporte, B. and P. Daste. 1956. *Ibid.*
- F. uliginosum** ZoBell and Upham 1944
 ZoBell, C.E. and H.C. Upham. 1944. Bulletin Scripps Institution of Oceanography University of California (Technical Series) 5:239-292. **Type strain:** ATCC 14397
Description: Zobell, C.E. and H.C. Upham. 1944. *Ibid.*
- Flectobacillus** Larkin, Williams and Taylor 1977
 Larkin, J.M., P.M. Williams and R.

- Taylor. 1977. *International Journal of Systematic Bacteriology* **27**:147-156. **Type species:** *F. major* Larkin, Williams and Taylor 1977
Description: Larkin, J.M., P.M. Williams and R. Taylor. 1977. *Ibid.*
- F. major** (Gromov 1963) Larkin, Williams and Taylor 1977
 Gromov, B.V. 1963. *Doklady Akademii Nauk SSSR* **152**:733-734; Larkin, J.M., P.M. Williams and R. Taylor. 1977. *International Journal of Systematic Bacteriology* **27**:147-156. **Type strain:** DSM 103
Description: Larkin, J.M., P.M. Williams and R. Taylor. 1977. *Ibid.*
- F. marinus** (Raj 1976) Borrall and Larkin 1978
 Raj, H.D. 1976. *International Journal of Systematic Bacteriology* **26**:528-544; Borrall, R. and J.M. Larkin. 1978. *International Journal of Systematic Bacteriology* **28**:341-343. **Type strain:** ATCC 25205
Description: Raj, H.D. 1976. *Ibid.*
- Flexibacter** Soriano 1945
 Soriano, S. 1945. *Ciencia e Investigacion (Buenos Aires)* **1**:92-93. **Type species:** *F. flexilis* Soriano 1945
Description: Bergey 8.
- F. aggregans** (Lewin 1969) Leadbetter 1974
 Lewin, R.A. 1969. *Journal of General Microbiology* **58**:189-206; Leadbetter, E.R. 1974 *Bergey 8*. **Type strain:** ATCC 23162
Description: Lewin, R.A. 1969. *Ibid.*
- F. aurantiacus** Lewin 1969
 Lewin, R.A. 1969. *Journal of General Microbiology* **58**:189-206. **Type strain:** ATCC 23107
Description: Lewin, R.A. 1969. *Ibid.*
- F. flexilis** Soriano 1945
 Soriano, S. 1945. *Ciencia e Investigacion (Buenos Aires)* **1**:92-93. **Type strain:** ATCC 23079
Description: Soriano, S. 1945. *Ibid.*
- F. litoralis** Lewin 1969
 Lewin, R.A. 1969. *Journal of General Microbiology* **58**:189-206. **Type strain:** ATCC 23117
Description: Lewin, R.A. 1969. *Ibid.*
- F. polymorphus** Lewin 1974
 Lewin, R.A. 1974. *Journal of General Microbiology* **82**:393-403. **Type strain:** ATCC 27820
Description: Lewin, R.A. 1974. *Ibid.*
- F. roseolus** Lewin 1969
 Lewin, R.A. 1969. *Journal of General Microbiology* **58**:189-206. **Type strain:** ATCC 23088
Description: Lewin, R.A. 1969. *Ibid.*
- F. ruber** Lewin 1969
 Lewin, R.A. 1969. *Journal of General Microbiology* **58**:189-206. **Type strain:** ATCC 23103
Description: Lewin, R.A. 1969. *Ibid.*
- F. sancti** Lewin 1969
 Lewin, R.A. 1969. *Journal of General Microbiology* **58**:189-206. **Type strain:** ATCC 23092
Description: Lewin, R.A. 1969. *Ibid.*
- F. tractuosus** (Lewin 1969) Leadbetter 1974
 Lewin, R.A. 1969. *Journal of General Microbiology* **58**:189-206; Leadbetter, E.R. 1974 *Bergey 8*. **Type strain:** ATCC 23168
Description: Lewin, R.A. 1969. *Ibid.*
- Flexithrix** Lewin 1970
 Lewin, R.A. 1970. *Canadian Journal of Microbiology* **16**:511-515. **Type species:** *F. dorotheae* Lewin 1970
Description: Bergey 8.
- F. dorotheae** Lewin 1970
 Lewin, R.A. 1970. *Canadian Journal of Microbiology* **16**:511-515. **Type strain:** ATCC 23163
Description: Lewin, R.A. 1970. *Ibid.*
- Francisella** Dorofeev 1947
 Dorofeev, K.A. 1947. *Symposium Research Works Institute Epidemiology and Microbiology Chita* **1**:170-180. **Type species:** *F. tularensis* (McCoy and Chapin 1912) Dorofeev 1947
Description: Bergey 8.
- F. novicida** (Larson, Wicht and Jellison 1955) Olsufiev, Emelyanova and Dunaeva 1959
 Larson, C.L., W. Wicht and W.L. Jellison. 1955. *Public Health Report* **70**:253-258; Olsufiev, N.G., O.S. Emelyanova and T.N. Dunaeva. 1959. *Journal of Hygiene, Epidemiology, Microbiology and Immunology (Prague)* **3**:138-149. **Type strain:** ATCC 15482
Description: Bergey 8.
- F. tularensis** (McCoy and Chapin 1912) Doro-

feev 1947

McCoy, G.W. and C.W. Chapin. 1912. *Journal of Infectious Diseases* **10**:61-72; Dorofeev, K.A. 1947. *Symposium Research Works Institute Epidemiology and Microbiology Chita* **1**:170-180. **Type strain**: ATCC 6223

Description: Bergey 8.

Frankia Brunchorst 1886

Brunchorst, J. 1886. *Botanische Institut Tubingen* **2**:151-177. **Type species**: *F. alni* (Woronin 1866) Von Tubeuf 1895

Description: Bergey 8.

F. alni (Woronin 1866) Von Tubeuf 1895

Woronin, M. 1866. *Memoires de l'Academie des Sciences St Petersburg* **10**: 1-10; Von Tubeuf, K. 1895. *Pflanzenkrankheiten durch kryptogame Parasiten verursacht*. Verlag J Springer, Berlin. pp. 1-599. **Type strain**: no culture isolated.

Description: Bergey 8.

Fusobacterium Knorr 1922

Knorr, M. 1922. *Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I.* **89**:4-22. **Type species**: *F. nucleatum* Knorr 1922

Description: Bergey 8.

F. gonidiaformans (Tunncliff and Jackson 1925) Moore and Holdeman 1970

Tunncliff, R. and L. Jackson. 1925. *Journal of Infectious Diseases* **36**:430-438; Moore, W.E.C. and L.V. Holdeman. 1970 in Cato, E.P., C.S. Cummins, L.V. Holdeman, J.L. Johnson, W.E.C. Moore, R.M. Smibert and L.D.S. Smith (eds). *Outline of clinical methods in anaerobic bacteriology 2nd revision*. Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia. **Type strain**: ATCC 25563

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

F. mortiferum (Harris 1901) Moore and Holdeman 1970

Harris, N.M. 1901. *Journal of Experimental Medicine* **6**:519-547; Moore, W.E.C. and L.V. Holdeman 1970 in

Cato, E.P., C.S. Cummins, L.V. Holdeman, J.L. Johnson, W.E.C. Moore, R.M. Smibert and L.D.S. Smith (eds). *Outline of clinical methods in anaerobic bacteriology 2nd revision*. Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia. **Type strain**: ATCC 25557

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual 4th ed*. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

F. naviforme (Jungano 1909) Moore and Holdeman 1970

Jungano, M. 1909. *Comptes Rendus des Seances de la Societe de Biologie (Paris)* **66**:122-124; Moore, W.E.C. and L.V. Holdeman. 1970 in Cato, E.P., C.S. Cummins, L.V. Holdeman, J.L. Johnson, W.E.C. Moore, R.M. Smibert and L.D.S. Smith (eds). *Outline of clinical in anaerobic bacteriology, 2nd revision*. Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia. **Type strain**: ATCC 25832

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual 4th ed*. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

F. necrogenes (Weinberg, Nativelle and Prevot 1937) Moore and Holdeman 1970

Weinberg, M., R. Nativelle and A.R. Prevot. 1937. *Masson et Cie, Paris*. pp. 1-1186; Moore, W.E.C. and L.V. Holdeman. 1970 in Cato, E.P., C.S. Cummins, L.V. Holdeman, J.L. Johnson, W.E.C. Moore, R.M. Smibert and L.D.S. Smith (eds). *Outline of clinical methods in anaerobic bacteriology, 2nd revision*. Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia. **Type strain**: ATCC 25556

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual 4th ed*. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

F. necrophorum (Flugge 1886) Moore and Holdeman 1969

Flugge, C. 1886. *Die Mikroorganismen* F.C.W. Vogel, Leipzig. pp. 1-692; Moore,

W.E.C. and L.V. Holdeman. 1969 in Cato, E.P., C.S. Cummins, L.V. Holdeman, J.L. Johnson, W.E.C. Moore, R.M. Smibert and L.D.S. Smith (eds). Outline of clinical methods in anaerobic bacteriology, 1st revision. Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia. pp. 1-107. **Type strain:** ATCC 25286

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

F. nucleatum Knorr 1922

Knorr, M. 1922. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I. 89:4-22. **Type strain:** ATCC 25586

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

F. perfoetens (Tissier 1905) Moore and Holdeman 1973

Tissier, H. 1905. Annales de l'Institut Pasteur (Paris) 19:109-123; Moore, W.E.C. and L.V. Holdeman. 1973. International Journal of Systematic Bacteriology 23:69-74. **Type strain:** ATCC 29250

Description: Van Assche, P.F. and A.T. Wilssens. 1977. International Journal of Systematic Bacteriology 27:1-5.

F. plauti Seguin 1928

Seguin, P. 1928. Comptes Rendus des Seances de la Societe de Biologie (Paris) 99:439-442. **Type strain:** ATCC 29863

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

F. prausnitzii (Hauduroy, Ehringer, Urbain, Guillot and Magrou 1937) Moore and Holdeman 1970

Hauduroy, P., G. Ehringer, A. Urbain, G. Guillot, and J. Magrou. 1937. Dictionnaire des bacteries pathogenes. Masson et Cie, Paris. pp. 1-597; Moore, W.E.C. and L.V. Holdeman. 1970 in Cato, E.P., C.S. Cummins, L.V. Holdeman, J.L. Johnson,

W.E.C. Moore, R.M. Smibert and L.D.S. Smith (eds). Outline of clinical methods in anaerobic bacteriology, 2nd revision. Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia. **Type strain:** ATCC 27768

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

F. russii (Hauduroy, Ehringer, Urbain, Guillot and Magrou 1937) Moore and Holdeman 1970

Hauduroy, P., G. Ehringer, A. Urbain, G. Guillot, and J. Magrou. 1937. Dictionnaire des bacteries pathogenes. Masson et Cie, Paris. pp. 1-597; Moore, W.E.C. and L.V. Holdeman. 1970 in Cato, E.P., C.S. Cummins, L.V. Holdeman, J.L. Johnson, W.E.C. Moore, R.M. Smibert and L.D.S. Smith (eds). Outline of clinical methods in anaerobic bacteriology, 2nd revision. Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia. **Type strain:** ATCC 25533

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

F. varium (Eggerth and Gagnon 1933) Moore and Holdeman 1969

Eggerth, A.H. and B.H. Gagnon. 1933. Journal of Bacteriology 25:389-413; Moore, W.E.C. and L.V. Holdeman. 1969 in Cato, E.P., C.S. Cummins, L.V. Holdeman, J.L. Johnson, W.E.C. Moore, R.M. Smibert and L.D.S. Smith (eds). Outline of clinical methods in anaerobic bacteriology, 1st revision. Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia. pp. 1-107. **Type strain:** ATCC 8501

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

Gallionella Ehrenberg 1838

Ehrenberg, C.G. 1838. Die Infusionsthier-

- chen als vollkommene Organismen. L. Voss, Leipzig. **Type species:** *G. ferruginea* Ehrenberg 1838
Description: Bergey 8.
- G. ferruginea** Ehrenberg 1838
 Ehrenberg, C.G. 1838. **Type strain:** no culture isolated.
Description: Bergey 8.
- Gemella** Berger 1960
 Berger, U. 1960. Zeitschrift für Hygiene und Infektionskrankheiten Medizinische Mikrobiologie, Immunologie und Virologie **146:**253-259. **Type species:** *G. haemolysans* (Thjotta and Boe 1938) Berger 1960
Description: Bergey 8.
- G. haemolysans** (Thjotta and Boe 1938) Berger 1960
 Thjotta, T. and J. Boe. 1938. Acta Pathologica et Bacteriologica Scandinavica Supplement **37:**527-531; Berger, U. 1960. Zeitschrift für Hygiene und Infektionskrankheiten Medizinische Mikrobiologie, Immunologie und Virologie **146:**253-259. **Type strain:** ATCC 10379
Description: Bergey 8.
- Gemmiger** Gossling and Moore 1975
 Gossling, J. and W.E.C. Moore. 1975. International Journal of Systematic Bacteriology **25:**202-207. **Type species:** *G. formicilis* Gossling and Moore 1975
Description: Gossling, J. and W.E.C. Moore. 1975. Ibid.
- G. formicilis** Gossling and Moore 1975
 Gossling, J. and W.E.C. Moore. 1975. International Journal of Systematic Bacteriology **25:**202-207. **Type strain:** ATCC 27749
Description: Gossling, J. and W.E.C. Moore. 1975. Ibid.
- Geodermatophilus** Luedemann 1968
 Luedemann, G.M. 1968. Journal of Bacteriology **96:**1848-1858. **Type species:** *G. obscurus* Luedemann 1968
Description: Bergey 8.
- G. obscurus** Luedemann 1968
 Luedemann, G.M. 1968. Journal of Bacteriology **96:**1848-1858. **Type strain:** ATCC 25078
Description: Luedemann, G.M. 1968. Ibid.
- Gluconobacter** (Asai 1935) Asai, Iizuka and Komagata 1964
 Asai, T. 1935. Journal of the Agricultural Chemical Society of Japan **11:**674-708; Asai, T., H. Iizuka and K. Komagata. 1964. Journal of General and Applied Microbiology **10:**95-126. **Type species:** *G. oxydans* (Henneberg 1897) De Ley 1961
Description: Bergey 8.
- G. oxydans** (Henneberg 1897) De Ley 1961
 Henneberg, W. 1897. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. **3:**223-231; De Ley, J. 1961. Journal of General Microbiology **24:**31-50. **Type strain:** ATCC 19357
Description: Bergey 8.
- G. oxydans** subsp. *industrius* (Henneberg 1898) De Ley and Frateur 1974
 Henneberg, W. 1898. Deutsche Essigindustrie **2:**145-148; De Ley, J. and J. Frateur. 1974 in Bergey 8. **Type strain:** LMD 24.1
Description: Bergey 8.
- G. oxydans** subsp. *melanogenes* (Beijerinck 1911) De Ley and Frateur 1974
 Beijerinck, M. 1911. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. **29:**169-176; De Ley, J. and J. Frateur. 1974 in Bergey 8. **Type strain:** LMD 29.2
Description: Bergey 8.
- G. oxydans** subsp. *oxydans* (Henneberg 1897) De Ley 1961
 Henneberg, W. 1897. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. **3:**223-231; De Ley, J. 1961. Journal of General Microbiology **24:**31-50. **Type strain:** ATCC 19357
Description: Bergey 8.
- G. oxydans** subsp. *sphaericus* Ameyama 1975
 Ameyama, M. 1975. International Journal of Systematic Bacteriology **25:**365-370. **Type strain:** IFO 12467
Description: Ameyama, M. 1975. Ibid.
- G. oxydans** subsp. *suboxydans* (Kluyver and de Leeuw 1924) De Ley and Frateur 1974
 Kluyver, A.J. and F.J.G. de Leeuw. 1924. Tijdschrift voor vergeelijkende geneeskunde, gezondheidsleer en parasitaire en infectieziekten **10:**170-281; De Ley, J. and J. Frateur. 1974 in Bergey 8. **Type strain:**

LMD 23.2

Description: Bergey 8.**Haemobartonella** Tyzzer and Weinman 1939Tyzzer, E.E. and D. Weinman. 1939. American Journal of Hygiene **30**:141-157.**Type species:** *H. muris* (Mayer 1921)

Tyzzer and Weinman 1939

Description: Bergey 8.**H. muris** (Mayer 1921) Tyzzer and Weinman 1939Mayer, M. 1921. Archiv fur Schiffs und Tropenhygiene **25**:150-152; Tyzzer, E.E. and D. Weinman. 1939. American Journal of Hygiene **30**:141-157. **Type strain:** no culture isolated.**Description:** Bergey 8.**Haemophilus** Winslow, Broadhurst, Buchanan, Krumwiede, Rogers and Smith 1917

Winslow, C.E.A., J. Broadhurst, R.E.

Buchanan, C. Krumwiede Jr., L.A.

Rogers and G.H. Smith. 1917. Journal of

Bacteriology **2**:505-566. **Type species:** *H.**influenzae* (Lehmann and Neumann

1896) Winslow, Broadhurst, Buchanan,

Krumwiede, Rogers and Smith 1917

Description: Bergey 8.**H. aegyptius** (Trevisan 1889) Pittman and Davis 1950

Trevisan, V. 1889. I. Generi e le Specie delle Battieriacee. Zanaboni and Gabuzzi,

Milano; Pittman, M. and D.J. Davis.

1950. Journal of Bacteriology **59**:413-426.**Type strain:** ATCC 11116**Description:** Pittman, M. and D.J. Davis. 1950. Ibid.**H. aphrophilus** Khairat 1940Khairat, O. 1940. Journal of Pathology and Bacteriology **50**:497-505. **Type strain:** NCTC 5906**Description:** Kilian, M. 1976. Journal of General Microbiology **93**:9-62.**H. avium** Hinz and Kunjara 1977Hinz, K.H. and C. Kunjara. 1977. International Journal of Systematic Bacteriology **27**:324-329. **Type strain:** ATCC 29546**Description:** Hinz, K.H. and C. Kunjara. 1977. Ibid.**H. ducreyi** (Neveu-Lemaire 1921) Bergey, Harrison, Breed, Hammer and Huntoon 1923

Neveu-Lemaire, M. 1921. Precis de la

parasitologie humaine, 5th ed. J. Lemaire Paris; Bergey, D.H., F.C. Harrison, R.S.

Breed, B.W. Hammer and F.M. Huntoon.

1923. Bergey's Manual of Determinative

Bacteriology, 1st ed. The Williams and

Wilkins Co., Baltimore. p. 271. **Type****strain:** CIP 542**Description:** Kilian, M. 1976. Journal of General Microbiology **93**:9-62.**H. haemoglobinophilus** (Lehmann and Neumann 1907) Murray 1939

Lehmann, K.B. and R. Neumann. 1907. Lehmann's Medizin, Handatanten. X

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und Lehrbuch der speziellen bakteriologis-

chen Diagnostik. Vol. 2, 4th ed. p. 270;

Murray, R.G.E. 1938 in Bergey, D.H.,

R.S. Breed, E.G.D. Murray and A.P.

Hitchens (eds). Bergey's Manual of

Determinative Bacteriology, 5th ed. The

Williams and Wilkins Co., Baltimore. p.

309. **Type strain:** NCTC 1659**Description:** Kilian, M. 1976. Journal of General Microbiology **93**:9-62.**H. haemolyticus** Bergey, Harrison, Breed, Hammer and Huntoon 1923

Bergey, D.H., F.C. Harrison, R.S. Breed,

B.W. Hammer and F.M. Huntoon. 1923.

Bergey's Manual of Determinative Bacteri-

ology, 1st ed. The Williams and Wilkins

Co., Baltimore. p. 271. **Type strain:**

NCTC 10659

Description: Kilian, M. 1976. Journal of General Microbiology **93**:9-62.**H. influenzae** (Lehmann and Neumann 1896) Winslow, Broadhurst, Buchanan, Krumwiede, Rogers and Smith 1917

Lehmann, K.B. and R. Neumann. 1896.

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und Lehrbuch der speziellen bakteriologis-

chen Diagnostik. 1st ed. J.F. Lehmann,

Munchen; Winslow, C.E.A., J. Broad-

hurst, R.E. Buchanan, C. Krumwiede Jr.,

L.A. Rogers and G.H. Smith. 1917.

Journal of Bacteriology **2**:505-566. **Type****strain:** NCTC 8143**Description:** Kilian, M. 1976. Journal of General Microbiology **93**:9-63.**H. paragallinarum** Biberstein and White 1969

Biberstein, E.L. and D.C. White. 1969.

Journal of Medical Microbiology **2**:75-78.**Type strain:** ATCC 29545**Description:** Hinz, K.H. and C. Kunjara.

1977. *International Journal of Systematic Bacteriology* **27**:324-329.
- H. parahaemolyticus** Pittman 1953
Pittman, M. 1953. *Journal of Bacteriology* **65**:750-751. **Type strain:** ATCC 10014
Description: Kilian, M. 1976. *Journal of General Microbiology* **93**:9-62.
- H. parainfluenzae** Rivers 1922
Rivers, T.M. 1922. *Johns Hopkins Hospital Bulletin* **33**:429-431. **Type strain:** NCTC 7857
Description: Kilian, M. 1976. *Journal of General Microbiology* **93**:9-62.
- H. paraphrohaemolyticus** Zinnemann, Rogers, Frazer and Devaraj 1971
Zinnemann, K., K.B. Rogers, J. Frazer and S.K. Devaraj. 1971. *Journal of Medical Microbiology* **4**:139-143. **Type strain:** NCTC 10670
Description: Zinnemann, K., K.B. Rogers, J. Frazer and S.K. Devaraj. 1971. *Ibid.*
- H. paraphrophilus** Zinnemann, Rogers, Frazer and Boyce 1968
Zinnemann, K., K.B. Rogers, J. Frazer and J.M.H. Boyce. 1968. *Journal of Pathology and Bacteriology* **96**:413-419. **Type strain:** NCTC 10557
Description: Kilian, M. 1976. *Journal of General Microbiology* **93**:9-62.
- H. parasuis** Biberstein and White 1969
Biberstein E.L. and D.C. White. 1969. *Journal of Medical Microbiology* **2**:75-78. **Type strain:** ATCC 19417
Description: Kilian, M. 1976. *Journal of General Microbiology* **93**:9-62.
- H. piscium** Snieszko, Griffin and Friddle 1950
Snieszko, S.F., P.J. Griffin and S.B. Friddle. 1950. *Journal of Bacteriology* **59**:699-710. **Type strain:** ATCC 10801
Description: Kilian, M. 1976. *Journal of General Microbiology* **93**:9-62.
- H. pleuropneumoniae** (Matthews and Pattison 1961) Shope 1964
Matthews, P.R.J. and I.H. Pattison. 1961. *Journal of Comparative Pathology* **71**:44-52; Shope, R.E. 1964. *Journal of Experimental Medicine* **119**:357-368. **Type strain:** ATCC 27088
Description: Kilian, M., J. Nicolet and E.L. Biberstein. 1978. *International Journal of Systematic Bacteriology* **28**:20-26.
- H. segnis** Kilian 1977
Kilian, M. 1977 in *International Journal of Systematic Bacteriology* **27**:306; Effective publication Kilian, M. 1976. *Journal of General Microbiology* **93**:9-62. **Type strain:** NCTC 10977
Description: Kilian, M. and J. Theilade. 1978. *International Journal of Systematic Bacteriology* **28**:411-415.
- H. vaginalis** Gardner and Dukes 1955
Gardner, H.L. and C.D. Dukes. 1955. *American Journal of Obstetrics and Gynecology* **69**:962-976. **Type strain:** ATCC 14018
Description: Bergey 8.
- Hafnia** Moller 1954
Moller, V. 1954. *Acta Pathologica et Microbiologica Scandinavica* **35**:259-277. **Type species:** *H. alvei* Moller 1954
Description: Bergey 8.
- H. alvei** Moller 1954
Moller, V. 1954. *Acta Pathologica et Microbiologica Scandinavica* **35**:259-277. **Type strain:** ATCC 13337
Description: Ewing, W.H. and M.A. Fife. 1968. *International Journal of Systematic Bacteriology* **18**:263-271.
- Halicomonobacter** van Veen, van der Kooij, Geuze and van der Vlies 1973
van Veen, W.L., D. van der Kooij, E.C.W.A. Geuze and A.W. van der Vlies. 1973. *Antonie van Leeuwenhoek Journal of Microbiology and Serology* **39**:207-216. **Type species:** *H. hydrossis* van Veen, van der Kooij, Geuze and van der Vlies 1973
Description: van Veen, W.L., D. van der Kooij, E.C.W.A. Geuze and A.W. van der Vlies. 1973. *Ibid.*
- H. hydrossis** van Veen, van der Kooij, Geuze and van der Vlies 1973
van Veen, W.L., D. van der Kooij, E.C.W.A. Geuze and A.W. van der Vlies. 1973. *Antonie van Leeuwenhoek Journal of Microbiology and Serology* **39**:207-216. **Type strain:** ATCC 27775
Description: van Veen, W.L., D. van der Kooij, E.C.W.A. Geuze and A.W. van der Vlies. 1970. *Ibid.*
- Halobacterium** Elazari-Volcani 1957
Elazari-Volcani, B. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds).

- Bergey's Manual of Determinative Bacteriology, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 207-212. **Type species:** *H. salinarium* (Harrison and Kennedy 1922) Elazari-Volcani 1957
Description: Bergey 8.
- H. cutirubrum** (Lochhead 1934) Elazari-Volcani 1957
Lochhead, A.G. 1934. Canadian Journal of Research 10:275-286; Elazari-Volcani, B. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). Bergey's Manual of Determinative Bacteriology, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 207-212. **Type strain:** NRC 34001
Description: Colwell, R.R., C.D. Litchfield, R.H. Vreeland, N.E. Gibbons and L.A. Kiefer. 1979. International Journal of Systematic Bacteriology 29:379-399.
- H. halobium** (Petter 1931) Elazari-Volcani 1957
Petter, H.F.M. 1931. Proceedings Academy of Science, Amsterdam 34:1417-1423; Elazari-Volcani, B. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). Bergey's Manual of Determinative Bacteriology, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 207-212. **Type strain:** NCIB 8720
Description: Petter, H.F.M. 1931. Ibid.
- H. saccharovororum** Tomlinson and Hochstein 1977
Tomlinson, G.A. and L.I. Hochstein. 1977 in International Journal of Systematic Bacteriology 27:306; Effective publication Tomlinson, G.A. and L.I. Hochstein. 1976. Canadian Journal of Microbiology 22:587-591. **Type strain:** ATCC 29252
Description: Tomlinson, G.A. and L.I. Hochstein. 1976. Ibid.
- H. salinarium** (Harrison and Kennedy 1922) Elazari-Volcani 1957
Harrison, F.C. and M.E. Kennedy. 1922. Proceedings of the Royal Society of Canada, Section 5, 16:101-152; Elazari-Volcani, B. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). Bergey's Manual of Determinative Bacteriology, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 207-212. **Type strain:** NRC 34002
Description: Colwell, R.R., C.D. Litchfield, R.H. Vreeland, N.E. Gibbons and L. A. Kiefer. 1979. International Journal of Systematic Bacteriology 29:379-399.
- H. trapanicum** (Petter 1931) Elazari-Volcani 1957
Petter, H.F.M. 1931. Proceedings Academy of Science, Amsterdam 34:1417-1423; Elazari-Volcani, B. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). Bergey's Manual of Determinative Bacteriology, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 207-212. **Type strain:** NRC 34021
Description: Petter, H.F.M. 1931. Ibid.
- H. vallismortis** Gonzalez, Gutierrez and Ramirez 1979
Gonzalez, C., C. Gutierrez and C. Ramirez. 1979 in International Journal of Systematic Bacteriology 29:436; Effective publication Gonzalez, C., C. Gutierrez and C. Ramirez. 1978. Canadian Journal of Microbiology 24:710-715. **Type strain:** ATCC 29715
Description: Gonzalez, C., C. Gutierrez and C. Ramirez. 1978. Ibid.
- H. volcanii** Mullakhanbhai and Larson 1975
Mullakhanbhai, M.F. and H. Larson. 1975. Archives of Microbiology 104:207-214. **Type strain:** NCMB 2012
Description: Mullakhanbhai, M.F. and H. Larson. 1975. Ibid.
- Halococcus** Schoop 1935
Schoop, G. 1935. Deutsche Tierärztliche Wochenschrift 43:817-820. **Type species:** *H. morrhuae* (Farlow 1880) Kocur and Hodgkiss 1973
Description: Bergey 8.
- H. morrhuae** (Farlow 1880) Kocur and Hodgkiss 1973
Farlow, W.G. 1880. United States Fisheries Commission Report for 1878 pp. 969-974; Kocur, M. and W. Hodgkiss. 1973. International Journal of Systematic Bacteriology 23:151-156. **Type strain:** ATCC 17082
Description: Kocur, M. and W. Hodgkiss. 1973. Ibid.
- Herpetosiphon** Holt and Lewin 1968
Holt, J.G. and R.A. Lewin. 1968. Journal of Bacteriology 95:2407-2408. **Type species:** *H. aurantiacus* Holt and Lewin 1968
Description: Bergey 8.
- H. aurantiacus** Holt and Lewin 1968

- Holt, J.G. and R.A. Lewin. 1968. *Journal of Bacteriology* **95**:2407-2408. **Type strain:** ATCC 23779
Description: Holt, J.G. and R.A. Lewin. 1968. *Ibid.*
- H. cohaerens** Lewin 1970
 Lewin, R.A. 1970. *Canadian Journal of Microbiology* **16**:517-520. **Type strain:** ATCC 23123
Description: Lewin, R.A. 1970. *Ibid.*
- H. geysericola** (Copeland 1936) Lewin 1970
 Copeland, J.J. 1936. *Annals of the New York Academy of Sciences* **36**:1-232; Lewin, R.A. 1970. *Canadian Journal of Microbiology* **16**:517-520. **Type strain:** ATCC 23076
Description: Lewin, R.A. 1970. *Ibid.*
- H. nigricans** Lewin 1970
 Lewin, R.A. 1970. *Canadian Journal of Microbiology* **16**:517-520. **Type strain:** ATCC 23147
Description: Lewin, R.A. 1970. *Ibid.*
- H. persicus** Lewin 1970
 Lewin, R.A. 1970. *Canadian Journal of Microbiology* **16**:517-520. **Type strain:** ATCC 23167
Description: Lewin, R.A. 1970. *Ibid.*
- Hyphomicrobium** Stutzer and Hartleb 1899
 Stutzer, A. and R. Hartleb. 1899. *Mitteilungen des Landwirtschaftlichen Institutes der Kaiserlichen Universitat Breslau* **1**:75-100. **Type species:** *H. vulgare* Stutzer and Hartleb 1899
Description: Bergey 8.
- H. indicum** Johnson and Weisrock 1969
 Johnson, R.M. and W.P. Weisrock. 1969. *International Journal of Systematic Bacteriology* **19**:295-307. **Type strain:** ATCC 19614
Description: Bergey 8.
- H. neptunium** Leifson 1964
 Leifson, E. 1964. *Antonie van Leeuwenhoek Journal of Microbiology and Serology* **30**:249-256. **Type strain:** ATCC 15444
Description: Bergey 8.
- H. vulgare** Stutzer and Hartleb 1899
 Stutzer, A. and R. Hartleb. 1899. *Mitteilungen des Landwirtschaftlichen Institutes der Kaiserlichen Universitat Breslau* **1**:75-100. **Type strain:** NCIB 8698
Description: Bergey 8.
- Intrasporangium** Kalakoutsii, Kirillova and Krassilnikov 1967
 Kalakoutsii, L.V., I.P. Kirillova and N.A. Krassilnikov. 1967. *Journal of General Microbiology* **48**:79-85. **Type species:** *I. calvum* Kalakoutsii, Kirillova and Krassilnikov 1967
Description: Kalakoutsii, L.V., I.P. Kirillova and N.A. Krassilnikov. 1976. *Ibid.*
- I. calvum** Kalakoutsii, Kirillova and Krassilnikov 1967
 Kalakoutsii, L.V., I.P. Kirillova and N.A. Krassilnikov. 1967. *Journal of General Microbiology* **48**:79-85. **Type strain:** ATCC 23552
Description: Kalakoutsii, L.V., I.P. Kirillova and N.A. Krassilnikov. 1967. *Ibid.*
- Janthinobacterium** De Ley, Segers and Gillis 1978
 De Ley, J., P. Segers and M. Gillis. 1978. *International Journal of Systematic Bacteriology* **28**:154-168. **Type species:** *J. lividum* (Eisenberg 1891) De Ley, Segers and Gillis 1978
Description: De Ley, J., P. Segers and M. Gillis. 1978. *Ibid.*
- J. lividum** De Ley, Segers and Willis 1978
 De Ley, J., P. Segers and M. Gillis. 1978. *International Journal of Systematic Bacteriology* **28**:154-168. **Type strain:** NCTC 9796
Description: De Ley, J., P. Segers and M. Gillis. 1978. *Ibid.*
- Kineosporia** Pagani and Parenti 1978
 Pagani, H. and F. Parenti. 1978. *International Journal of Systematic Bacteriology* **28**:401-406. **Type species:** *K. aurantiaca* Pagani and Parenti 1978
Description: Pagani, H. and F. Parenti. 1978. *Ibid.*
- K. aurantiaca** Pagani and Parenti 1978
 Pagani, H. and F. Parenti. 1978. *International Journal of Systematic Bacteriology* **28**:401-406. **Type strain:** ATCC 29727
Description: Pagani, H. and F. Parenti. 1978. *Ibid.*
- Kingella** Henriksen and Bovre 1976
 Henriksen, S.D. and K. Bovre. 1976.

- International Journal of Systematic Bacteriology **26**:447-450. **Type species:** *K. kingae* (Henriksen and Bovre 1968) Henriksen and Bovre 1976
Description: Henriksen, S.D. and K. Bovre. 1976. *Ibid.*
- K. denitrificans** Snell and Lapage 1976
 Snell, J.J.S. and S.P. Lapage. 1976. International Journal of Systematic Bacteriology **26**:451-458. **Type strain:** NCTC 10995
Description: Snell, J.J.S. and S.P. Lapage. 1976. *Ibid.*
- K. indologenes** Snell and Lapage 1976
 Snell, J.J.S. and S.P. Lapage. 1976. International Journal of Systematic Bacteriology **26**:451-458. **Type strain:** ATCC 25869
Description: Snell, J.J.S. and S.P. Lapage 1976. *Ibid.*
- K. kingae** (Henriksen and Bovre 1968) Henriksen and Bovre 1976
 Henriksen, S.D. and K. Bovre. 1968. Journal of General Microbiology **51**:377-385; Henriksen, S.D. and K. Bovre. 1976. International Journal of Systematic Bacteriology **26**:447-450. **Type strain:** ATCC 23330
Description: Henriksen, S.D. and K. Bovre. 1976. *Ibid.*
- Kitasatoa** Matsumae and Hata 1968
 Matsumae, A.M. and T. Hata. 1968 in Matsumae, A.M., M. Ohtani, H. Takeshima and T. Hata. Journal of Antibiotics (Tokyo) **21**:616-625. **Type species:** *K. purpurea* Matsumae and Hata 1968
Description: Bergey 8.
- K. diplospora** Matsumae, Ohtani and Hata 1968
 Matsumae, A.M., M. Ohtani and T. Hata. 1968 in Matsumae, A.M., M. Ohtani, H. Takeshima and T. Hata. Journal of Antibiotics (Tokyo) **21**:616-625. **Type strain:** ATCC 27788
Description: Bergey 8.
- K. kauaiensis** Matsumae, Ohtani and Hata 1968
 Matsumae, A.M., M. Ohtani and T. Hata. 1968 in Matsumae, A.M., M. Ohtani, H. Takeshima and T. Hata. Journal of Antibiotics (Tokyo) **21**:616-625. **Type strain:** ATCC 21405
Description: Bergey 8.
- K. nagasakiensis** Matsumae and Hata 1968
 Matsumae, A.M. and T. Hata. 1968 in Matsumae, A.M., M. Ohtani, H. Takeshima and T. Hata. Journal of Antibiotics (Tokyo) **21**:616-625. **Type strain:** ATCC 27789
Description: Bergey 8.
- K. purpurea** Matsumae and Hata 1968
 Matsumae, A.M. and T. Hata. 1968 in Matsumae, A.M., M. Ohtani, H. Takeshima and T. Hata. Journal of Antibiotics (Tokyo) **21**:616-625. **Type strain:** ATCC 27787
Description: Bergey 8.
- Klebsiella** Trevisan 1885
 Trevisan, V. 1885. Atti della Accademia Fisica-Medica-Statistica in Milano (ser 4) **3**:92-107. **Type species:** *K. pneumoniae* (Schroeter 1886) Trevisan 1887
Description: Bergey 8.
- K. mobilis** Bascomb, Lapage, Willcox and Curtis 1971
 Bascomb, S., S.P. Lapage, W.R. Willcox and M.A. Curtis. 1971. Journal of General Microbiology **66**:279-295. **Type strain:** ATCC 13048
Description: Bascomb, S., S.P. Lapage, W.R. Willcox and M.A. Curtis. 1971. *Ibid.*
- K. ozaenae** (Abel 1893) Bergey, Harrison, Breed, Hammer and Huntoon 1925
 Abel, R. 1893. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I. **13**:161-173; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon (eds). 1925. Bergey's Manual of Determinative Bacteriology, 2nd ed. The Williams and Wilkins Co., Baltimore. pp. 1-462. **Type strain:** ATCC 11296
Description: Bergey 8.
- K. oxytoca** (Flügge 1886) Lautrop 1956
 Flügge, C. 1886. Die Mikroorganismen. F.C.W. Vogel, Leipzig; Lautrop, H. 1956. Acta Pathologica et Microbiologica Scandinavica **39**:375-384. **Type strain:** ATCC 13182
Description: Lautrop, H. 1956. *Ibid.*
- K. pneumoniae** (Schroeter 1886) Trevisan 1887
 Schroeter, J. 1885-1889 in Cohn, F. Kryptogamenflora von Schlesien. Band 3,

Heft 3, Pilze J.U. Kern's Verlag, Breslau. pp. 1-814; Trevisan, V. 1887. Rendiconti dell'Instituto Lombardo di Scienze e Lettere (Ser 2) **20**:88-105. **Type strain**: ATCC 13883

Description: Bergey 8.

K. rhinoscleromatis Trevisan 1887

Trevisan, V. 1887. Rendiconti dell'Instituto Lombardo di Scienze e Lettere (Ser 2) **20**:88-105. **Type strain**: ATCC 13884

Description: Bergey 8.

Kurthia Trevisan 1885

Trevisan, V. 1885. Atti della Accademia Fisio-Medica-Statistica in Milano (Series 4) **3**:92-107. **Type species**: *K. zopfii* (Kurth 1883) Trevisan 1885

Description: Bergey 8.

K. zopfii (Kurth 1883) Trevisan 1885

Kurth, H. 1883. Berichte der Deutschen botanischen Gesellschaft **1**:97-100; Trevisan, V. 1885. Atti della Accademia Fisio-Medica-Statistica in Milano (Series 4) **3**: 92-107. **Type strain**: NCIB 9878

Description: Bergey 8.

Lachnospira Bryant and Small 1956

Bryant, M.P. and N. Small. 1956. Journal of Bacteriology **72**:22-26. **Type species**: *L. multiparis* Bryant and Small 1956

Description: Bergey 8.

L. multiparis Bryant and Small 1956

Bryant, M.P. and N. Small. 1956. Journal of Bacteriology **72**:22-26. **Type strain**: ATCC 19207

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

Lactobacillus Beijerinck 1901

Beijerinck, M.W. 1901. Archives Neerlandaises des Sciences Exactes et Naturelles (Section 2) **6**:212-243. **Type species**: *L. delbrueckii* (Leichmann 1896) Beijerinck 1901

Description: Bergey 8.

L. acidophilus (Moro 1900) Hansen and Mocoquot 1970

Moro, E. 1900. Jahrbuch fur Kinderheil-

kunde und physische Erziehung **52**:38-55; Hansen, P.A. and G. Mocoquot. 1970. International Journal of Systematic Bacteriology **20**:325-327. **Type strain**: ATCC 4356

Description: Hansen, P.A. and G. Mocoquot. 1970. Ibid.

L. brevis (Orla-Jensen 1919) Bergey, Breed, Hammer, Huntoon, Murray and Harrison 1934

Orla-Jensen, S. 1919. The lactic acid bacteria. Host, Copenhagen. pp. 1-196; Bergey, D.H., R.S. Breed, B.W. Hammer, F.M. Huntoon, E.G.D. Murray and F.C. Harrison. 1934. Bergey's Manual of Determinative Bacteriology, 4th ed. The Williams and Wilkins Co., Baltimore. pp. 1-664. **Type strain**: ATCC 14869

Description: Rogosa, M. and P.A. Hansen. 1971. International Journal of Systematic Bacteriology **21**:177-186.

L. buchneri (Henneberg 1903) Bergey, Harrison, Breed, Hammer, and Huntoon 1923

Henneberg, W. 1903. Zeitschrift fur Spiritusindustrie **26**:329-332; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer, and F.M. Huntoon. 1923. Bergey's Manual of Determinative Bacteriology, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type strain**: ATCC 4005

Description: Rogosa, M. and P.A. Hansen. 1971. Ibid.

L. bulgaricus (Orla-Jensen 1919) Rogosa and Hansen 1971

Orla-Jensen, S. 1919. The lactic acid bacteria. Host, Copenhagen. pp. 1-196; Rogosa, M. and P.A. Hansen. 1971. International Journal of Systematic Bacteriology **21**:177-186. **Type strain**: ATCC 11842

Description: Rogosa, M. and P.A. Hansen. 1971. Ibid.

L. casei (Orla-Jensen 1916) Hansen and Lessel 1971

Orla-Jensen, S. 1916. Maelkeri-Bakteriologi. Schonberske Forlag, Copenhagen; Hansen, P.A. and E.F. Lessel. 1971. International Journal of Systematic Bacteriology **21**:69-71. **Type strain**: ATCC 393

Description: Bergey 8.

L. casei subsp. *alactosus* Mills and Lessel 1973

- Mills, C.K. and E.F. Lessel. 1973. *International Journal of Systematic Bacteriology* 23:67-68. **Type strain:** ATCC 27216
Description: Mills, C.K. and E.F. Lessel. 1973. *Ibid.*
- L. casei** subsp. *casei* (Orla-Jensen 1916) Hansen and Lessel 1971
 Orla-Jensen, S. 1916. *Maelkeri-Bakteriologi*. Schonberske Forlag, Copenhagen; Hansen, P.A. and E.F. Lessel. 1971. *International Journal of Systematic Bacteriology* 21:69-71. **Type strain:** ATCC 393
Description: Bergey 8.
- L. casei** subsp. *pseudopltantarum* Abo-Elnaga and Kandler 1965
 Abo-Elnaga, I.G. and O. Kandler. 1965. *Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* 119:1-36. **Type strain:** ATCC 25598
Description: Bergey 8.
- L. casei** subsp. *rhamnosus* Hansen 1968
 Hansen, P.A. 1968. A report by the Taxonomic Subcommittee on Lactobacilli and Closely Related Organisms. American Type Culture Collection, Rockville, Maryland. p. 76. **Type strain:** ATCC 7469
Description: Bergey 8.
- L. casei** subsp. *tolerans* Abo-Elnaga and Kandler 1965
 Abo-Elnaga, I.G. and O. Kandler. 1965. *Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* 119:1-39. **Type strain:** ATCC 25599
Description: Bergey 8.
- L. cateniforme** (Eggerth 1935) Moore and Holdeman 1970
 Eggerth, A.H. 1935. *Journal of Bacteriology* 30:277-299; Moore, W.E.C. and L.V. Holdeman. 1970. IN Cato, E.P., C.S. Cummins, L.V. Holdeman, J.L. Johnson, W.E.C. Moore, R.M. Smibert and L.D.S. Smith (eds). *Outline of clinical methods in anaerobic bacteriology*, 2nd revision. Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia pp. 15-22. **Type strain:** ATCC 25536
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- L. cellobiosus** Rogosa, Wiseman, Mitchell and Disraely 1953
 Rogosa, M., R.F. Wiseman, J.A. Mitchell and M.N. Disraely. 1953. *Journal of Bacteriology* 65:681-699. **Type strain:** ATCC 11739
Description: Bergey 8.
- L. collinoides** Carr and Davies 1972
 Carr, J.G. and P.A. Davies. 1972. *Journal of Applied Bacteriology* 35:463. **Type strain:** ATCC 27612
Description: Carr, J.G. and P.A. Davies. 1972. *Ibid.*
- L. confusus** (Holzapfel and Kandler 1969) Sharpe, Garvie and Tilbury 1972
 Holzapfel, W. and O. Kandler. 1969. *Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* 123:657-666; Sharpe, M.E., E.I. Garvie and R. Tilbury. 1972. *Applied Microbiology* 23:389-397. **Type strain:** ATCC 10881
Description: Sharpe, M.E., E.I. Garvie and R. Tilbury. 1972. *Ibid.*
- L. coryniformis** Abo-Elnaga and Kandler 1965
 Abo-Elnaga, I.G. and O. Kandler. 1965. *Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* 119:1-36. **Type strain:** DSM 20001
Description: Bergey 8.
- L. coryniformis** subsp. *coryniformis* Abo-Elnaga and Kandler 1965
 Abo-Elnaga, I.G. and O. Kandler. 1965. *Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* 119:1-36. **Type strain:** DSM 20001
Description: Bergey 8.
- L. coryniformis** subsp. *torquens* Abo-Elnaga and Kandler 1965
 Abo-Elnaga, I.G. and O. Kandler. 1965. *Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* 119:1-36. **Type strain:** ATCC 25600
Description: Bergey 8.
- L. crispatus** (Brygoo and Aladame 1953) Moore and Holdeman 1970
 Brygoo, E.R. and N. Aladame. 1953.

- Annales de l'Institut Pasteur (Paris) **84**: 640-641; Moore, W.E.C. and L.V. Holdeman. 1970 in Cato, E.P., C.S. Cummins, L.V. Holdeman, J.L. Johnson, W.E.C. Moore, R.M. Smibert and L.D.S. Smith (eds). Outline of clinical methods in anaerobic bacteriology, 2nd revision. Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia. pp. 15-21. **Type strain**: VPI 3199
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- L. curvatus** (Troili-Petersson 1903) Abo-Elnaga and Kandler 1965
 Troili-Petersson, G. 1903. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. **11**:120-143; Abo-Elnaga, I.G. and O. Kandler. 1965. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. **119**:1-36. **Type strain**: ATCC 25601
Description: Bergey 8.
- L. delbrueckii** (Leichmann 1896) Beijerinck 1901
 Leichmann, G. 1896. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. **2**:281-285; Beijerinck, M.W. 1901. Archives Néerlandaises des Sciences Exactes et Naturelles (Section 2) **6**:212-243. **Type strain**: ATCC 9649
Description: Rogosa, M. and P.A. Hansen. 1971. International Journal of Systematic Bacteriology **21**:177-186.
- L. fermentum** Beijerinck 1901
 Beijerinck, M.W. 1901. Archives Néerlandaises des Sciences Exactes et Naturelles (Section 2) **6**:212-243. **Type strain**: ATCC 14931
Description: Rogosa, M. and P.A. Hansen. 1971. International Journal of Systematic Bacteriology **21**:177-186.
- L. fructivorans** Charlton, Nelson and Werkman 1934
 Charlton, D.B., M.E. Nelson and C.H. Werkman. 1934. Iowa State Journal of Science **9**:1-11. **Type strain**: ATCC 8288
Description: Bergey 8.
- L. fructosus** Kodama 1956
 Kodama, R. 1956. Journal of the Agricultural Chemical Society of Japan **30**:705-708. **Type strain**: ATCC 13162
Description: Kodama, R. 1956. Ibid.
- L. helveticus** (Orla-Jensen 1919) Bergey, Harrison, Breed, Hammer and Huntoon 1925
 Orla-Jensen, S. 1919. The lactic acid bacteria. Host, Copenhagen. pp. 1-196; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon (eds). 1925. Bergey's Manual of Determinative Bacteriology, 2nd ed. The Williams and Wilkins Co., Baltimore. pp. 1-462. **Type strain**: ATCC 15009
Description: Rogosa, M. and P.A. Hansen. 1971. International Journal of Systematic Bacteriology **21**:177-186.
- L. heterohiochii** Kitahara, Kaneko and Goto 1957
 Kitahara, K., T. Kaneko and O. Goto. 1957. Journal of General and Applied Microbiology **3**:111-120. **Type strain**: ATCC 15435
Description: Bergey 8.
- L. hilgardii** Douglas and Cruess 1936
 Douglas, H.C. and W.V. Cruess. 1936. Food Research **1**:113-119. **Type strain**: ATCC 8290
Description: Bergey 8.
- L. homohiochii** Kitahara, Kaneko and Goto 1957
 Kitahara, K., T. Kaneko and O. Goto. 1957. Journal of General and Applied Microbiology **3**:111-120. **Type strain**: ATCC 15434
Description: Bergey 8.
- L. jensenii** Gasser, Mandel and Rogosa 1970
 Gasser, F., M. Mandel and M. Rogosa. 1970. Journal of General Microbiology **62**:219-222. **Type strain**: ATCC 25258
Description: Bergey 8.
- L. lactis** (Orla-Jensen 1919) Bergey, Breed, Hammer, Huntoon, Murray and Harrison 1934
 Orla-Jensen, S. 1919. The lactic acid bacteria. Host, Copenhagen. pp. 1-196; Bergey, D.H., R.S. Breed, B.W. Hammer, F.M. Huntoon, E.G.D. Murray and F.C. Harrison (eds). 1934. Bergey's Manual of Determinative Bacteriology, 4th ed. The Williams and Wilkins Co., Baltimore. pp. 1-664. **Type strain**: ATCC 12315
Description: Rogosa, M. and P.A. Han-

- sen. 1971. *International Journal of Systematic Bacteriology* **21**:177-186.
- L. leichmannii** (Henneberg 1903) Bergey, Harrison, Breed, Hammer and Huntoon 1923
Henneberg, W. 1903. *Zeitschrift für Spiritusindustrie* **26**:329-332; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. *Bergey's Manual of Determinative Bacteriology*, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type strain:** ATCC 4797
Description: Rogosa, M. and P.A. Hansen. 1971. *International Journal of Systematic Bacteriology* **21**:177-186.
- L. mali** Carr and Davies 1970
Carr, J.G. and P.A. Davies. 1970. *Journal of Applied Bacteriology* **33**:768-774. **Type strain:** ATCC 27053
Description: Carr, J.G. and P.A. Davis. 1970. *Ibid.*
- L. maltaromicus** Miller, Morgan and Libbey 1974
Miller III, A., M.E. Morgan and L.M. Libbey. 1974. *International Journal of Systematic Bacteriology* **24**:346-354. **Type strain:** ATCC 27865
Description: Miller III, A., M.E. Morgan and L.M. Libbey. 1974. *Ibid.*
- L. minutus** (Hauduroy, Ehringer, Urbain, Guillot and Magrou 1937) Moore and Holdeman 1972
Hauduroy, P., G. Ehringer, A. Urbain, G. Guillot and J. Magrou. 1937. *Dictionnaire des bacteries pathogenes*. Masson et Cie, Paris. pp. 1-597; Moore, W.E.C. and L.V. Holdeman. 1972 in Holdeman, L.V. and W.E.C. Moore (eds). *Anaerobe Laboratory Manual*. Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia. **Type strain:** VPI 9428
Description: Holdeman, L.V., E.P. Cato, and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- L. plantarum** (Orla-Jensen 1919) Bergey, Harrison, Breed, Hammer and Huntoon 1923
Orla-Jensen, S. 1919. *The lactic acid bacteria*. Host, Copenhagen. pp. 1-196; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. *Bergey's Manual of Determinative Bacteriology*, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type strain:** ATCC 14917
Description: Bergey 8.
- L. rogosae** Holdeman and Moore 1974
Holdeman, L.V. and W.E.C. Moore. 1974. *International Journal of Systematic Bacteriology* **24**:260-277. **Type strain:** VPI C37-38
Description: Holdeman, L.V. and W.E.C. Moore. 1974. *Ibid.*
- L. ruminis** Sharpe, Latham, Garvie, Zirngibl and Kandler 1973
Sharpe, M.E., M.J. Latham, E.I. Garvie, J. Zirngibl and O. Kandler. 1973. *Journal of General Microbiology* **77**:37-49. **Type strain:** ATCC 27780
Description: Sharpe, M.E., M.J. Latham, E.I. Garvie, J. Zirngibl and O. Kandler. 1973. *Ibid.*
- L. sake** Katagiri, Kitahara and Fukami 1934
Katagiri, H., K. Kitahara and K. Fukami. 1934. *Bulletin of the Agricultural Chemical Society of Japan* **10**:156-157. **Type strain:** ATCC 15521
Description: Katagiri, H., K. Kitahara and K. Fukami. 1934. *Ibid.*
- L. salivarius** Rogosa, Wiseman, Mitchell and Disraely 1953
Rogosa, M., R.F. Wiseman, J.A. Mitchell and M.N. Disraely. 1953. *Journal of Bacteriology* **65**:681-699. **Type strain:** ATCC 11741
Description: Bergey 8.
- L. salivarius** subsp. *salicinii* Rogosa, Wiseman, Mitchell and Disraely 1953
Rogosa, M., R.F. Wiseman, J.A. Mitchell and M.N. Disraely. 1953. *Journal of Bacteriology* **65**:681-699. **Type strain:** ATCC 11742
Description: Bergey 8.
- L. salivarius** subsp. *salivarius* Rogosa, Wiseman, Mitchell and Disraely 1953
Rogosa, M., R.F. Wiseman, J.A. Mitchell and M.N. Disraely. 1953. *Journal of Bacteriology* **65**:681-699. **Type strain:** ATCC 11741
Description: Bergey 8.
- L. trichodes** Fornachon, Douglas and Vaughn 1949
Fornachon, J.C.M., H.C. Douglas and R.H. Vaughn. 1949. *Hilgardia* **19**:129-

132. **Type strain:** ATCC 27394
Description: Bergey 8.
- L. viridescens** Kandler and Abo-Elnaga 1966
 Kandler, O. and I.G. Abo-Elnaga. 1966. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. **120:**753-754. **Type strain:** ATCC 12706
Description: Bergey 8.
- L. vitulinus** Sharpe, Latham, Garvie, Zirngibl and Kandler 1973
 Sharpe, M.E., M.J. Latham, E.I. Garvie, J. Zirngibl and O. Kandler. 1973. Journal of General Microbiology **77:**37-49. **Type strain:** ATCC 27783
Description: Sharpe, M.E., M.J. Latham, E.I. Garvie, J. Zirngibl and O. Kandler. 1973. Ibid.
- L. xylosus** Kitahara 1938
 Kitahara, K. 1938. Journal of the Agricultural Chemical Society of Japan **14:**1449-1465. **Type strain:** ATCC 15577
Description: Bergey 8.
- Lamprocystis** Schroeter 1886
 Schroeter, J. 1885-1889 in Cohn, F. Kryptogamenflora von Schlesien. Band 3, Heft 3, Pilze J.U. Kern's Verlag, Breslau. pp. 1-814. **Type species:** *L. roseopersicina* (Kutzing 1849) Schroeter 1886
Description: Bergey 8.
- L. roseopersicina** (Kutzing 1849) Schroeter 1886
 Kutzing, F.T. 1849. Species Algarum. Lipsiae, pp. 1-922; Schroeter, J. 1885-1889 in Cohn, F. Kryptogamenflora von Schlesien. Band 3, Heft 3, Pilze J.U. Kern's Verlag. Breslau, pp. 1-814. **Type strain:** DSM 229
Description: Bergey 8.
- Lampropedia** Schroeter 1886
 Schroeter, J. 1885-1889 in Cohn, F. Kryptogamenflora von Schlesien. Band 3, Heft 3, Pilze J.U. Kern's Verlag, Breslau. pp. 1-814. **Type species:** *L. hyalina* (Ehrenberg 1832) Schroeter 1886
Description: Bergey 8.
- L. hyalina** (Ehrenberg 1832) Schroeter 1886
 Ehrenberg, C.G. 1832. Abhandlungen der Deutschen Akademie der Wissenschaften zu Berlin **1830:**1-88; Schroeter, J. 1885-1889 in Cohn, F. Kryptogamenflora von Schlesien. Band 3, Heft 3, Pilze J.U. Kern's Verlag, Breslau. pp. 1-814. **Type strain:** ATCC 11041
Description: Bergey 8.
- Legionella** Brenner, Steigerwalt and McDade 1979
 Brenner, D.J., A.G. Steigerwalt and J.E. McDade. 1979. International Journal of Systematic Bacteriology **29:**436; Effective publication Brenner, D.J., A.G. Steigerwalt and J.E. McDade. 1979. Annals of Internal Medicine **90:**656-658. **Type species:** *L. pneumophila* Brenner, Steigerwalt and McDade 1979
Description: Brenner, D.J., A.G. Steigerwalt and J.E. McDade. 1979. Ibid.
- L. pneumophila** Brenner, Steigerwalt and McDade 1979
 Brenner, D.J., A.G. Steigerwalt and J.E. McDade. 1979. International Journal of Systematic Bacteriology **29:**436; Effective publication Brenner, D.J., A.G. Steigerwalt and J.E. McDade. 1979. Annals of Internal Medicine **90:**656-658. **Type strain:** ATCC 33152
Description: Brenner, D.J., A.G. Steigerwalt and J.E. McDade. 1979. Ibid.
- Leptospira** Noguchi 1917
 Noguchi, H. 1917. Journal of Experimental Medicine **25:**755-763. **Type species:** *L. interrogans* (Stimson 1907) Wenyon 1926
Description: Bergey 8.
- L. biflexa** (Wolbach and Binger 1914) Noguchi 1918
 Wolbach, S.B. and C.A.L. Binger. 1914. Journal of Medical Research **30:**23-26; Noguchi, H. 1918. Journal of Experimental Medicine **27:**575-592. **Type strain:** ATCC 23582
Description: Bergey 8.
- L. interrogans** (Stimson 1907) Wenyon 1926
 Stimson, A.M. 1907. Public Health Report **22:**541; Wenyon, C.M. 1926 in Wenyon, C.M. Protozoology, Vol. 2. Williams, Wood and Co., New York. pp. 1233-1288. **Type strain:** ATCC 23581
Description: Bergey 8.
- Leptothrix** Kutzing 1843
 Kutzing, F.T. 1843. Phycologia Generalis. Leipzig. **Type species:** *L. ochracea* (Roth

- 1797) Kutzing 1843
Description: Bergey 8.
- L. cholodnii** Mulder and van Veen 1963
 Mulder, E.G. and W.L. van Veen. 1963. Antonie van Leeuwenhoek Journal of Microbiology and Serology **29**:121-153.
Type strain: LVMW 99
Description: Mulder, E.G. and W.L. van Veen. 1963. *Ibid.*
- L. lopholea** Dorff 1934
 Dorff, P. 1934. Pflanzenforschung, Jena. **16**:1-62. **Type strain:** LVMW 124
Description: Mulder, E.G. and W.L. van Veen. 1963. Antonie van Leeuwenhoek Journal of Microbiology and Serology **29**:121-153.
- L. ochracea** (Roth 1797) Kutzing 1843
 Roth, A.W. 1797. Catalecta botanica quibus plantae novae et minus cognitae describuntur atque illustrantur. Lipsiae in Bibliopolio I.G. Mulleriano, Fasc. 1; Kutzing, F.T. 1843. Phycologia Generalis. Leipzig. **Type strain:** no culture available.
Description: Bergey 8.
- Leptotrichia** Trevisan 1879
 Trevisan, V. 1879. R C Institut Lombardo (Seriale 2) **12**:133-151. **Type species:** *L. buccalis* (Robin 1853) Trevisan 1879
Description: Bergey 8.
- L. buccalis** (Robin 1853) Trevisan 1879
 Robin, C. 1853. J.-B. Bailliere, Paris. pp. 1-702; Trevisan, V. 1879. R C Institut Lombardo (Seriale 2) **12**:133-151. **Type strain:** ATCC 14201
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- Leuconostoc** van Tieghem 1878
 van Tieghem, P. 1878. Annales des Sciences Naturelles Botanique **7**:180-203. **Type species:** *L. mesenteroides* (Tsenkovskii 1878) van Tieghem 1878
Description: Bergey 8.
- L. cremoris** (Kundsen and Sorenson 1929) Garvie 1960
 Kundsen, S. and A. Sorenson. 1929. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. **79**:75-85; Garvie, E.I. 1960. Journal of Dairy Research **27**:283-292. **Type strain:** NCDO 543
Description: Garvie, E.I. 1979. International Journal of Systematic Bacteriology **29**:149-151.
- L. dextranicum** (Beijerinck 1912) Hucker and Pederson 1930
 Beijerinck, M.W. 1912. Folia Mikrobiologia (Delft) **1**:4-100; Hucker, G.J. and C.S. Pederson. 1930. Technical Bulletin New York State Agricultural Experiment Station **167**:3-80. **Type strain:** NCDO 529
Description: Garvie, E.I. 1979. International Journal of Systematic Bacteriology **29**:149-151.
- L. lactis** Garvie 1960
 Garvie, E.I. 1960. Journal of Dairy Research **27**:283-292. **Type strain:** NCDO 533
Description: Garvie, E.I. 1960. *Ibid.*
- L. mesenteroides** (Tsenkovskii 1878) van Tieghem 1878
 Tsenkovskii, L. 1878. Proceedings of the Society of Natural Sciences of the Imperial University of Kharkov **12**:137-167; van Tieghem, P. 1878. Annales des Sciences Naturelles Botanique **7**:180-203. **Type strain:** ATCC 8293
Description: Garvie, E.I. 1979. International Journal of Systematic Bacteriology **29**:149-151.
- L. oenos** Garvie 1967
 Garvie, E.I. 1967. Journal of General Microbiology **48**:431-438. **Type strain:** NCDO 1674
Description: Garvie, E.I. 1967. *Ibid.*
- L. paramesenteroides** Garvie 1967
 Garvie, E.I. 1967. Journal of General Microbiology **48**:439-447. **Type strain:** NCDO 803
Description: Garvie, E.I. 1967. *Ibid.*
- Leucothrix** Oersted 1844
 Oersted, A.S. 1844. De Regionibus marinis. Elementa Topographiae Historiconaturalis Freti Oeresund. Inaugural Dissertation. J.C. Scharling, Copenhagen. **Type species:** *L. mucor* Oersted 1844
Description: Bergey 8.
- L. mucor** Oersted 1844
 Oersted, A.S. 1844. De Regionibus Marinis. Elementa Topographiae Histori-

conaturalis Freti Oeresund. Inaugural Dissertation. J.C. Scharling, Copenhagen.

Type strain: ATCC 25107

Description: Bergey 8.

Levinea Young, Kenton, Hobbs and Moody 1971

Young, V.M., D.M. Kenton, B.J. Hobbs and M.R. Moody. 1971. International Journal of Systematic Bacteriology **21**:58-63. **Type species:** *L. amalonatica* Young, Kenton, Hobbs and Moody 1971

Description: Young, V.M., D.M. Kenton, B.J. Hobbs and M.R. Moody. 1971. Ibid.

L. amalonatica Young, Kenton, Hobbs and Moody 1971

Young, V.M., D.M. Kenton, B.J. Hobbs and M.R. Moody. 1971. International Journal of Systematic Bacteriology **21**:58-63. **Type strain:** ATCC 25405

Description: Young, V.M., D.M. Kenton, B.J. Hobbs and M.R. Moody. 1971. Ibid.

L. malonatica Young, Kenton, Hobbs and Moody 1971

Young, V.M., D.M. Kenton, B.J. Hobbs and M.R. Moody. 1971. International Journal of Systematic Bacteriology **21**:58-63. **Type strain:** ATCC 25408

Description: Young, V.M., D.M. Kenton, B.J. Hobbs and M.R. Moody. 1971. Ibid.

Listeria Pirie 1940

Pirie, J.H.H. 1940. Science (Washington) **91**:383. **Type species:** *L. monocytogenes* (Murray, Webb and Swann 1926) Pirie 1940

Description: Bergey 8.

L. denitrificans Prevot 1961

Prevot, A.R. 1961. Traite de Systematique Bacterienne, Vol. 2, Dunod, Paris. pp. 1-771. **Type strain:** ATCC 14870

Description: Bergey 8.

L. grayi Errebo Larsen and Seeliger 1966

Errebo Larsen, H. and H.P.R. Seeliger. 1966. Proceedings of the Third International Symposium on Listeriosis July 13-16, Bilthoven. p. 35. **Type strain:** ATCC 19120

Description: Bergey 8.

L. monocytogenes (Murray, Webb and Swann 1926) Pirie 1940

Murray, E.G.D., A.A. Webb and M.B.R.

Swann. 1926. Journal of Pathology and Bacteriology **29**:407-439; Pirie, J.H.H. 1940. Science (Washington) **91**:383. **Type strain:** ATCC 15313

Description: Bergey 8.

L. murrayi Welshimer and Meredith 1971

Welshimer, H.J. and A. Meredith. 1971. International Journal of Systematic Bacteriology **21**:3-7. **Type strain:** ATCC 25401

Description: Bergey 8.

Lucibacterium Hendrie, Hodgkiss and Shewan 1970

Hendrie, M.S., W. Hodgkiss and J.M. Shewan. 1970. Journal of General Microbiology **64**:151-169. **Type species:** *L. harveyi* (Johnson and Shunk 1936) Hendrie, Hodgkiss and Shewan 1970

Description: Bergey 8.

L. harveyi (Johnson and Shunk 1936) Hendrie, Hodgkiss and Shewan 1970 (See also *Benecke harveyi*)

Johnson, F.H. and I.V. Shunk. 1936. Journal of Bacteriology **31**:585-592; Hendrie, M.S., W. Hodgkiss and J.M. Shewan. 1970. Journal of General Microbiology **64**:151-169. **Type strain:** ATCC 14126

Description: Johnson, F.H. and I.V. Shunk. 1936. Ibid.

Lysobacter Christensen and Cook 1978

Christensen, P. and F.D. Cook. 1978. International Journal of Systematic Bacteriology **28**:367-393. **Type species:** *L. enzymogenes* Christensen and Cook 1978

Description: Christensen, P. and F.D. Cook. 1978. Ibid.

L. antibioticus Christensen and Cook 1978

Christensen, P. and F.D. Cook. 1978. International Journal of Systematic Bacteriology **28**:367-393. **Type strain:** ATCC 29479

Description: Christensen, P. and F.D. Cook. 1978. Ibid.

L. brunescens Christensen and Cook 1978

Christensen, P. and F.D. Cook. 1978. International Journal of Systematic Bacteriology **28**:367-393. **Type strain:** ATCC 29482

Description: Christensen, P. and F.D. Cook. 1978. Ibid.

- L. enzymogenes** Christensen and Cook 1978
Christensen, P. and F.D. Cook. 1978. International Journal of Systematic Bacteriology **28**:367-393. **Type strain**: ATCC 29487
Description: Christensen, P. and F.D. Cook. 1978. Ibid.
- L. gummosus** Christensen and Cook 1978
Christensen, P. and F.D. Cook. 1978. International Journal of Systematic Bacteriology **28**:367-393. **Type strain**: ATCC 29489
Description: Christensen, P. and F.D. Cook. 1978. Ibid.
- Macromonas** Utermohl and Koppe 1924
Utermohl, H. and F. Koppe. 1924 in Koppe, F. Archiv fur Hydrobiologie **14**: 619-672. **Type species**: *M. mobilis* (Lauterborn 1915) Utermohl and Koppe 1924
Description: Bergey 8.
- M. mobilis** (Lauterborn 1915) Utermohl and Koppe 1924
Lauterborn, R. 1915. Verhandlungen des Naturhistorisch- Medizinischen Vereins zu Heidelberg **13**:395-481. **Type strain**: no culture available.
Description: Bergey 8.
- Megasphaera** Rogosa 1971
Rogosa, M. 1971. International Journal of Systematic Bacteriology **21**:187-189. **Type species**: *M. elsdenii* (Gutierrez, Davis, Lindahl and Warwick 1959) Rogosa 1971
Description: Bergey 8.
- M. elsdenii** (Gutierrez, Davis, Lindahl and Warwick 1959) Rogosa 1971
Gutierrez, J., R.E. Davis, I.L. Lindahl and E.J. Warwick. 1959. Applied Microbiology **7**:16-22; Rogosa, M. 1971. International Journal of Systematic Bacteriology **21**:187-189. **Type strain**: ATCC 25940
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- Melittangium** Jahn 1924
Jahn, E. 1924. Beitrage zur botanischen Protistologie. I. Die Polyangiden. Verlag von Gebruder Borntraeger, Leipzig. **Type species**: *M. boletus* Jahn 1924
Description: Bergey 8.
- M. alboraceum** (Peterson 1959) McCurdy 1971
Peterson, J.E. 1959. Mycologia **51**:163-172; McCurdy, H.D. 1971. International Journal of Systematic Bacteriology **21**:50-54. **Type strain**: UMH Slides Peterson 72
Description: Peterson, J.E. 1959. Ibid.
- M. boletus** Jahn 1924
Jahn, E. 1924. Beitrage zur botanischen Protistologie. I. Die Polyangiden. Verlag von Gebruder Borntraeger, Leipzig. **Type strain**: not
Description: Jahn, E. 1924. Ibid.
- M. lichenicola** (Thaxter 1892) McCurdy 1971
Thaxter, R. 1892. Botanical Gazette **17**: 389-406; McCurdy, H.D. 1971. International Journal of Systematic Bacteriology **21**:50-54. **Type strain**: ATCC 25944
Description: McCurdy, H.D. 1971. Ibid.
- Meniscus** Irgens 1977
Irgens, R.L. 1977. International Journal of Systematic Bacteriology **27**:38-43. **Type species**: *M. glaucopsis* Irgens 1977
Description: Irgens, R.L. 1977. Ibid.
- M. glaucopsis** Irgens 1977
Irgens, R.L. 1977. International Journal of Systematic Bacteriology **27**:38-43. **Type strain**: ATCC 29398
Description: Irgens, R.L. 1977. Ibid.
- Methanobacterium** Kluyver and van Niel 1936
Kluyver, A.J. and C.B. van Niel. 1936. Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. **94**:369-403. **Type species**: *M. formicicum* Schnellen 1947
Description: Bergey 8.
- M. arbophilicum** Zeikus and Henning 1975
Zeikus, J.G. and D.L. Henning. 1975. Antonie van Leeuwenhoek Journal of Microbiology and Serology **41**:543-552. **Type strain**: DSM 1125
Description: Zeikus, J.G. and D.L. Henning. 1975. Ibid.
- M. formicicum** Schnellen 1947
Schnellen, C.G.T.P. 1947. Onderzoekingen over de methaangisting. Thesis, Delft. pp. 1-137. **Type strain**: DSM 863
Description: Mylorie, R.L. and R.E. Hungate. 1954. Canadian Journal of Microbiology **1**:55-64.

- M. mobile** Paynter and Hungate 1968
Paynter, M.J.B. and R.E. Hungate. 1968. Journal of Bacteriology **95**:1943-1951. **Type strain:** DSM 1539
Description: Paynter, M.J.B. and R.E. Hungate. 1968. *Ibid.*
- M. ruminantium** Smith and Hungate 1958
Smith, P.H. and R.E. Hungate. 1958. Journal of Bacteriology **75**:713-718. **Type strain:** DSM 1093
Description: Bergey 8.
- M. thermoautotrophicum** Zeikus and Wolfe 1972
Zeikus, J.G. and R.S. Wolfe. 1972. Journal of Bacteriology **109**:707-713. **Type strain:** ATCC 29096
Description: Zeikus, J.G. and R.S. Wolfe. 1972. *Ibid.*
- Methanococcus** Kluver and van Niel 1936 emend. Barker 1936
Kluver, A.J. and C.B. van Niel. 1936. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. **94**:369-403; Barker, H.A. 1936. Archiv für Mikrobiologie **7**:420-438. **Type species:** *M. mazei* Barker 1936
Description: Bergey 8.
- M. mazei** Barker 1936
Barker, H.A. 1936. Archiv für Mikrobiologie **7**:420-438. **Type strain:** not
Description: Bergey 8.
- M. vanniellii** Stadtman and Barker 1951
Stadtman, T.C. and H.A. Barker. 1951. Journal of Bacteriology **62**:269-280. **Type strain:** DSM 1224
Description: Stadtman, T.C. and H.A. Barker. 1951. *Ibid.*
- Methanosarcina** Kluver and van Niel 1936 emend. Barker 1956
Kluver, A.J. and C.B. van Niel. 1936. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. **94**:369-403; Barker, H.A. 1956. Bacterial fermentations. John Wiley and Sons, New York. pp. 1-95. **Type species:** *M. methanica* (Smit 1930) Kluver and van Niel 1936
Description: Bergey 8.
- M. barkeri** Schnellen 1947
Schnellen, C.G.T.P. 1947. Onderzoekingen over de methaangisting. Thesis, Delft. pp. 1-137. **Type strain:** DSM 800
Description: Mah, R.A., M.R. Smith and L. Baresi. 1978. Applied and Environmental Microbiology **35**:1174-1184.
- M. methanica** (Smit 1930) Kluver and van Niel 1936
Smit, J. 1930. Die Garungssarcinen. Eine Monographie. Pflanzenforschung Heft 14, pp. 1-59; Kluver, A.J. and C.B. van Niel. 1936. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. **94**:369-403. **Type strain:** not
Description: Bergey 8.
- Methanospirillum** Ferry, Smith and Wolfe 1974
Ferry, J.G., P.H. Smith and R.S. Wolfe. 1974. International Journal of Systematic Bacteriology **24**:465-469. **Type species:** *M. hungatii* Ferry, Smith and Wolfe 1974
Description: Ferry, J.G., P.H. Smith and R.S. Wolfe. 1974. *Ibid.*
- M. hungatii** Ferry, Smith and Wolfe 1974
Ferry, T.G., P.H. Smith and R.S. Wolfe. 1974. International Journal of Systematic Bacteriology **24**:465-469. **Type strain:** ATCC 27890
Description: Ferry, J.G., P.H. Smith and R.S. Wolfe. 1974. *Ibid.*
- Methylobacillus** Yordy and Weaver 1977
Yordy, J.R. and T.L. Weaver. 1977. International Journal of Systematic Bacteriology **27**:247-255. **Type species:** *M. glycogenes* Yordy and Weaver 1977
Description: Yordy, J.R. and T.L. Weaver. 1977. *Ibid.*
- M. glycogenes** Yordy and Weaver 1977
Yordy, J.R. and T.L. Weaver. 1977. International Journal of Systematic Bacteriology **27**:247-255. **Type strain:** ATCC 29475
Description: Yordy, J.R. and T.L. Weaver. 1977. *Ibid.*
- Methylobacterium** Patt, Cole and Hanson 1976
Patt, T.E., G.C. Cole and R.S. Hanson. 1976. International Journal of Systematic Bacteriology **26**:226-229. **Type species:** *M. organophilum* Patt, Cole and Hanson 1976
Description: Patt, T.E., G.C. Cole and

- R.S. Hanson. 1976. *Ibid.*
- M. organophilum** Patt, Cole and Hanson 1976
Patt, T.E., G.C. Cole and R.S. Hanson. 1976. *International Journal of Systematic Bacteriology* **26**:226-229. **Type strain:** ATCC 27886
Description: Patt, T.E., G.C. Cole and R.S. Hanson. 1976. *Ibid.*
- Methylococcus** Foster and Davis 1966
Foster, J.W. and R.H. Davis. 1966. *Journal of Bacteriology* **91**:1924-1931. **Type species:** *M. capsulatus* Foster and Davis 1966
Description: Foster, J.W. and R.H. Davis. 1966. *Ibid.*
- M. capsulatus** Foster and Davis 1966
Foster, J.W. and R.H. Davis. 1966. *Journal of Bacteriology* **91**:1924-1931. **Type strain:** ATCC 19069
Description: Foster, J.W. and R.H. Davis. 1966. *Ibid.*
- M. thermophilus** Malashenko, Romanovskaya, Bogachenko and Stved 1975
Malashenko, Y.R., V.A. Romanovskaya, V.N. Bogachenko and A.D. Stved. 1975. *Mikrobiologiya* **44**:855-862 (English translation 773-779). **Type strain:** IMV-2Yu
Description: Malashenko, Y.R., V.A. Romanovskaya, V.N. Bogachenko and A.D. Stved. 1975. *Ibid.*
- Microbacterium** Orla-Jensen 1919
Orla-Jensen, S. 1919. The lactic acid bacteria. Host, Copenhagen. pp. 1-196. **Type species:** *M. lacticum* Orla-Jensen 1919
Description: Robinson, K. 1966. *Journal of Applied Bacteriology* **29**:607-615.
- M. lacticum** Orla-Jensen 1919
Orla-Jensen, S. 1919. The lactic acid bacteria. Host, Copenhagen. pp. 1-196. **Type strain:** ATCC 8180
Description: Robinson, K. 1966. *Journal of Applied Bacteriology* **29**:607-615.
- Microbispora** Nonomura and Ohara 1957
Nonomura, H. and Y. Ohara. 1957. *Journal of Fermentation Technology* **35**: 307-311. **Type species:** *M. rosea* Nonomura and Ohara 1957
Description: Bergey 8.
- M. aerata** (Gerber and Lechevalier 1964) Cross 1974
Gerber, N.N. and M.P. Lechevalier. 1964. *Biochemistry* **3**:598-602; Cross, T. 1964. *Bergey* 8. **Type strain:** ATCC 15448
Description: Bergey 8.
- M. amethystogenes** Nonomura and Ohara 1960
Nonomura, H. and Y. Ohara. 1960. *Journal of Fermentation Technology* **38**: 401-409. **Type strain:** DSM 43164
Description: Bergey 8.
- M. bispora** (Henssen 1957) Lechevalier 1965
Henssen, A. 1957. *Archiv fur Mikrobiologie* **26**:373-414; Lechevalier, H.A. 1965. *International Bulletin of Bacteriological Nomenclature and Taxonomy* **15**:139-142. **Type strain:** ATCC 19993
Description: Bergey 8.
- M. chromogenes** Nonomura and Ohara 1960
Nonomura, H. and Y. Ohara. 1960. *Journal of Fermentation Technology* **38**: 401-409. **Type strain:** DSM 43165
Description: Bergey 8.
- M. diastatica** Nonomura and Ohara 1960
Nonomura, H. and Y. Ohara. 1960. *Journal of Fermentation Technology* **38**: 401-409. **Type strain:** KCC A-0023
Description: Bergey 8.
- M. echinospora** Nonomura and Ohara 1971
Nonomura, H. and Y. Ohara. 1971. *Journal of Fermentation Technology* **49**: 887-894. **Type strain:** ATCC 27300
Description: Nonomura, H. and Y. Ohara. 1971. *Ibid.*
- M. parva** Nonomura and Ohara 1960
Nonomura, H. and Y. Ohara. 1960. *Journal of Fermentation Technology* **38**: 401-409. **Type strain:** KCC A-0024
Description: Bergey 8.
- M. rosea** Nonomura and Ohara 1957
Nonomura, H. and Y. Ohara. 1957. *Journal of Fermentation Technology* **35**: 307-311. **Type strain:** ATCC 12950
Description: Bergey 8.
- M. thermodiastatica** Nonomura and Ohara 1969
Nonomura, H. and Y. Ohara. 1969. *Journal of Fermentation Technology* **47**: 701-709. **Type strain:** ATCC 27098
Description: Nonomura, H. and Y. Ohara. 1969. *Ibid.*
- M. thermorosea** Nonomura and Ohara 1969

Nonomura, H. and Y. Ohara. 1969. *Journal of Fermentation Technology* **47**: 701-709. **Type strain**: ATCC 27099
Description: Nonomura, H. and Y. Ohara. 1969. *Ibid.*

Micrococcus Cohn 1872

Cohn, F. 1872. *Beitrage zur Biologie der Pflanzen* **1**:127-224. **Type species**: *M. luteus* (Schroeter 1872) Cohn 1872
Description: Bergey 8.

M. agilis Ali-Cohen 1889

Ali-Cohen, C.H. 1889. *Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I.* **6**: 33-36. **Type strain**: ATCC 966
Description: Kocur, M. and K.H. Schleifer. 1975. *International Journal of Systematic Bacteriology* **25**:294-297.

M. halobius Onishi and Kamekura 1972

Onishi, H. and M. Kamekura. 1972. *International Journal of Systematic Bacteriology* **22**:233-236. **Type strain**: ATCC 21727

Description: Onishi, H. and M. Kamekura. 1972. *Ibid.*

M. kristinae Kloos, Tornabene and Schleifer 1974

Kloos, W.E., T.G. Tornabene and K.H. Schleifer. 1974. *International Journal of Systematic Bacteriology* **24**:79-101. **Type strain**: ATCC 27570

Description: Kloos, W.E., T.G. Tornabene and K.H. Schleifer. 1974. *Ibid.*

M. luteus (Schroeter 1872) Cohn 1872

Schroeter, J. 1872 in Cohn, F. 1875. *Beitrage zur Biologie der Pflanzen*, J.U. Kern's Verlag, Breslau. pp. 109-126; Cohn, F. 1872. *Beitrage zur Biologie der Pflanzen* **1**:127-224. **Type strain**: ATCC 4698

Description: Kocur, M., Z. Pacova and T. Martinec. 1972. *International Journal of Systematic Bacteriology* **22**:218-223.

M. lylae Kloos, Tornabene and Schleifer 1974

Kloos, W.E., T.G. Tornabene and K. Schleifer. 1974. *International Journal of Systematic Bacteriology* **24**:79-101. **Type strain**: ATCC 17566

Description: Kloos, W.E., T.G. Tornabene and K. Schleifer. 1974. *Ibid.*

M. nishinomiyaensis Oda 1935

Oda, M. 1935. *Journal of Fermentation*

and *Technology* **13**:1202-1228. **Type strain**: ATCC 29093

Description: Kocur, M., K.H. Schleifer and W.E. Kloos. 1975. *International Journal of Systematic Bacteriology* **25**: 290-293.

M. roseus Flugge 1886

Flugge, C. 1886. *Die Mikroorganismen*. F.C.W. Vogel, Leipzig. **Type strain**: ATCC 186

Description: Kocur, M. and Z. Pacova. 1970. *International Journal of Systematic Bacteriology* **20**:233-240.

M. sedentarius ZoBell and Upham 1944

ZoBell, C.E. and H.C. Upham. 1944. *Bulletin Scripps Institution of Oceanography University of California (Technical Series)* **5**:239-292. **Type strain**: ATCC 14392

Description: Kloos, W.E., T.G. Tornabene and K.H. Schleifer. 1974. *International Journal of Systematic Bacteriology* **24**:79-101.

M. varians Migula 1900

Migula, W. 1900. *System der Bakterien*. Vol. 2. Gustav Fischer, Jena. **Type strain**: ATCC 15306

Description: Kocur, M. and T. Martinec. 1972. *International Journal of Systematic Bacteriology* **22**:228-232.

Microcyclus Orskov 1928

Orskov, J. 1928. *Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I.* **107**: 180-184. **Type species**: *M. aquaticus* Orskov 1928

Description: Larkin, J.M., P.M. Williams and R. Taylor. 1977. *International Journal of Systematic Bacteriology* **27**:147-156.

M. aquaticus Orskov 1928

Orskov, J. 1928. *Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I.* **107**:180-184. **Type strain**: ATCC 25396

Description: Larkin, J.M., P.M. Williams and R. Taylor. 1977. *International Journal of Systematic Bacteriology* **27**: 147-156.

Microellobosporia Cross, Lechevalier and Lechevalier 1963

- Cross, T., M.P. Lechevalier and H.A. Lechevalier. 1963. *Journal of General Microbiology* 31:421-429. **Type species:** *M. cinerea* Cross, Lechevalier and Lechevalier 1963
Description: Bergey 8.
- M. cinerea** Cross, Lechevalier and Lechevalier 1963
Cross, T., M.P. Lechevalier and H.A. Lechevalier. 1963. *Journal of General Microbiology* 31:421-429. **Type strain:** ATCC 15840
Description: Cross, T., M.P. Lechevalier and H.A. Lechevalier. 1963. *Ibid.*
- M. flava** Cross, Lechevalier and Lechevalier 1963
Cross, T., M.P. Lechevalier and H.A. Lechevalier. 1963. *Journal of General Microbiology* 31:421-429. **Type strain:** ATCC 15332
Description: Cross, T., M.P. Lechevalier and H.A. Lechevalier. 1963. *Ibid.*
- M. grisea** (Konev, Tsyganov, Minbayev and Morozov 1967) Pridham 1970
Konev, I.E., V.A. Tsyganov, P. Minbayev and V.M. Morozov. 1967. *Mikrobiologiya* 36:308-317; Pridham, T.G. 1970. *Bulletin of the United States Department of Agriculture* 1424:1-55. **Type strain:** ATCC 19618
Description: Bergey 8.
- M. violacea** (Tsyganov, Zhukova and Timofeeva 1964) Pridham 1974
Tsyganov, V.A., R.A. Zhukova and K.A. Timofeeva. 1964. *Mikrobiologiya* 33:863-869; Pridham, T.G. 1974. *Bergey 8*. **Type strain:** DSM 43167
Description: Bergey 8.
- Micromonospora** Orskov 1923
Orskov, J. 1923. Investigations into the morphology of the ray fungi. Levin and Munksgaard, Copenhagen, Denmark. **Type species:** *M. chalcea* (Foulerton 1905) Orskov 1923
Description: Bergey 8.
- M. aurantiaca** Sveshnikova, Maksimova and Kudrina 1969
Sveshnikova, M.A., T.S. Maksimova and E.S. Kudrina. 1969. *Mikrobiologiya* 38: 754-763. **Type strain:** ATCC 27029
Description: Sveshnikova, M.A., T.S. Maksimova and E.S. Kudrina. 1969. *Ibid.*
- M. brunnea** Sveshnikova, Maksimova and Kudrina 1969
Sveshnikova, M.A., T.S. Maksimova and E.S. Kudrina. 1969. *Mikrobiologiya* 38: 754-763. **Type strain:** ATCC 27334
Description: Sveshnikova, M.A., T.S. Maksimova and E.S. Kudrina. 1969. *Ibid.*
- M. carbonacea** Luedemann and Brodsky 1965
Luedemann, G.M. and B.C. Brodsky. 1965. *Antimicrobial Agents and Chemotherapy* 1964:47-52. **Type strain:** ATCC 27114
Description: Bergey 8.
- M. carbonacea** subsp. *aurantiaca* Luedemann and Brodsky 1965
Luedemann, G.M. and B.C. Brodsky. 1965. *Antimicrobial Agents and Chemotherapy* 1964:47-52. **Type strain:** ATCC 27115
Description: Bergey 8.
- M. carbonacea** subsp. *carbonacea* Luedemann and Brodsky 1965
Luedemann, G.M. and B.C. Brodsky. 1965. *Antimicrobial Agents and Chemotherapy* 1964:47-52. **Type strain:** ATCC 27114
Description: Bergey 8.
- M. chalcea** (Foulerton 1905) Orskov 1923
Foulerton, A.G.R. 1905. *Lancet* 1:1199-1200; Orskov, J. 1923. Investigations into the morphology of the ray fungi. Levin and Munksgaard, Copenhagen, Denmark. **Type strain:** ATCC 12452
Description: Bergey 8.
- M. coerulea** Jensen 1932
Jensen, H.L. 1932. *Proceedings of the Linnean Society of New South Wales* 57: 173-180. **Type strain:** ATCC 27008
Description: Bergey 8.
- M. echinospora** Luedemann and Brodsky 1964
Luedemann, G.M. and B.C. Brodsky. 1964. *Antimicrobial Agents and Chemotherapy* 1963:116-124. **Type strain:** ATCC 15837
Description: Bergey 8.
- M. echinospora** subsp. *echinospora* Luedemann and Brodsky 1964
Luedemann, G.M. and B.C. Brodsky. 1964. *Antimicrobial Agents and Chemotherapy* 1963:116-124. **Type strain:** ATCC 15837
Description: Bergey 8.
- M. echinospora** subsp. *ferruginea* Luedemann

- and Brodsky 1964
Luedemann, G.M. and B.C. Brodsky. 1964. Antimicrobial Agents and Chemotherapy **1963**:116-124. **Type strain:** ATCC 15836
Description: Bergey 8.
- M. echinospora** subsp. *pallida* Luedemann and Brodsky 1964
Luedemann, G.M. and B.C. Brodsky. 1964. Antimicrobial Agents and Chemotherapy **1963**:116-124. **Type strain:** ATCC 15838
Description: Bergey 8.
- M. gallica** (Erikson 1935) Waksman 1961
Erikson, D. 1935. Medical Research Council (Great Britain) Special Report series **203**:5-61; Waksman, S.A. 1961. The Actinomycetes. Vol. 2. Classification, identification and descriptions of genera and species. The Williams and Wilkins Co., Baltimore. pp. 1-363. **Type strain:** NCTC 4582
Description: Bergey 8.
- M. halophytica** Weinstein, Luedemann, Oden and Wagman 1968
Weinstein, M.J., G.M. Luedemann, E.M. Oden and G.H. Wagman. 1968. Antimicrobial Agents and Chemotherapy **1967**: 435-441. **Type strain:** ATCC 27596
Description: Bergey 8.
- M. halophytica** subsp. *halophytica* Weinstein, Luedemann, Oden and Wagman 1968
Weinstein, M.J., G.M. Luedemann, E.M. Oden and G.H. Wagman. 1968. Antimicrobial Agents and Chemotherapy **1967**: 435-441. **Type strain:** ATCC 27596
Description: Bergey 8.
- M. halophytica** subsp. *nigra* Weinstein, Luedemann, Oden and Wagman 1968
Weinstein, M.J., G.M. Luedemann, E.M. Oden and G.H. Wagman. 1968. Antimicrobial Agents and Chemotherapy **1967**:435-441. **Type strain:** ATCC 33088
Description: Bergey 8.
- M. inositola** Kawamoto, Okachi, Kato, Yamamoto, Takahashi, Takasawa and Nara 1974
Kawamoto, I., R. Okachi, H. Kato, S. Yamamoto, I. Takahashi, S. Takasawa and T. Nara. 1974. Journal of Antibiotics **27**:493-501. **Type strain:** ATCC 21773
Description: Bergey 8.
- M. purpurea** Luedemann and Brodsky 1964
Luedemann, G.M. and B.C. Brodsky. 1964. Antimicrobial Agents and Chemotherapy **1963**:116-124. **Type strain:** ATCC 15835
Description: Bergey 8.
- M. purpureochromogenes** (Waksman and Curtis 1916) Luedemann 1971
Waksman, S.A. and R.E. Curtis. 1916. Soil Science **1**:99-134; Luedemann, G.M. 1971. International Journal of Systematic Bacteriology **21**:240-247. **Type strain:** ATCC 27007
Description: Bergey 8.
- M. rhodorangea** Wagman, Testa, Marquez and Weinstein 1974
Wagman, G.H., R.T. Testa, J.A. Marquez and M.J. Weinstein. 1974. Antimicrobial Agents and Chemotherapy **6**:144-149. **Type strain:** ATCC 27932
Description: Wagman, G.H., R.T. Testa, J.A. Marquez and M.J. Weinstein. 1974. Ibid.
- Micropolyspora** Lechevalier, Solotorovsky and McDurmont 1961
Lechevalier, H.A., M. Solotorovsky and C.I. McDurmont. 1961. Journal of General Microbiology **26**:11-18. **Type species:** *M. brevicatena* Lechevalier, Solotorovsky and McDurmont 1961
Description: Bergey 8.
- M. angiospora** Zhukova, Tsyganov and Morozov 1968
Zhukova, R.A., V.A. Tsyganov and V.M. Morozov. 1968. Mikrobiologiya **37**:724-728. **Type strain:** LIA 3479-30
Description: Zhukova, R.A., V.A. Tsyganov and V.M. Morozov. 1968. Ibid.
- M. brevicatena** Lechevalier, Solotorovsky and McDurmont 1961
Lechevalier, H.A., M. Solotorovsky and C.I. McDurmont. 1961. Journal of General Microbiology **26**:11-18. **Type strain:** ATCC 15333
Description: Bergey 8.
- M. faeni** Cross, Maciver and Lacey 1968
Cross, T., A.M. Maciver and J. Lacey. 1968. Journal of General Microbiology **50**:351-359. **Type strain:** ATCC 15347
Description: Bergey 8.
- M. internatus** Agre, Guzeva and Dorokhova 1974
Agre, N.S., L.N. Guzeva and L.A.

- Dorokhova. 1974. *Mikrobiologiya* 43:577-583. **Type strain:** INMI 632
Description: Agre, N.S., L.N. Guzeva and L.A. Dorokhova. 1974. *Ibid.*
- M. rectivirgula** (Krassilnikov and Agre 1964) Prauser and Momirova 1970
 Krassilnikov, N.A. and N.S. Agre. 1964. *Hindustan Antibiotics Bulletin* 6:97-107; Prauser, H. and S. Momirova. 1970. *Zeitschrift für Allgemeine Mikrobiologie* 10:219-222. **Type strain:** INMI 683
Description: Bergey 8.
- Microscilla** Pringsheim 1951
 Pringsheim, E.G. 1951. *Journal of General Microbiology* 5:124-149. **Type species:** *M. marina* Pringsheim 1951
Description: Pringsheim, E.G. 1951. *Ibid.*
- M. marina** (Pringsheim 1951) Lewin 1969
 Pringsheim, E.G. 1951. *Journal of General Microbiology* 5:124-149; Lewin, R.A. 1969. *Journal of General Microbiology* 58:189-206. **Type strain:** ATCC 23134
Description: Lewin, R.A. 1969. *Ibid.*
- Microtetraspora** Thiemann, Pagani and Beretta 1968
 Thiemann, J.E., H. Pagani and G. Beretta. 1968. *Journal of General Microbiology* 50:295-303. **Type species:** *M. glauca* Thiemann, Pagani and Beretta 1968
Description: Thiemann, J.E., H. Pagani and G. Beretta. 1968. *Ibid.*
- M. fusca** Thiemann, Pagani and Beretta 1968
 Thiemann, J.E., H. Pagani and G. Beretta. 1968. *Journal of General Microbiology* 50:295-303. **Type strain:** ATCC 23058
Description: Thiemann, J.E., H. Pagani and G. Beretta. 1968. *Ibid.*
- M. glauca** Thiemann, Pagani and Beretta 1968
 Thiemann, J.E., H. Pagani and G. Beretta. 1968. *Journal of General Microbiology* 50:295-303. **Type strain:** ATCC 23057
Description: Thiemann, J.E., H. Pagani and G. Beretta. 1968. *Ibid.*
- M. niveoalba** Nonomura and Ohara 1971
 Nonomura, H. and Y. Ohara. 1971. *Journal of Fermentation Technology* 49:887-894. **Type strain:** ATCC 27301
Description: Thiemann, J.E., H. Pagani and G. Beretta. 1968. *Journal of General Microbiology* 50:295-303.
- M. viridis** Nonomura and Ohara 1971
 Nonomura, H. and Y. Ohara. 1971. *Journal of Fermentation Technology* 49:887-894. **Type strain:** ATCC 27103
Description: Thiemann, J.E., H. Pagani and G. Beretta. 1968. *Journal of General Microbiology* 50:295-303.
- Moraxella** Lwoff 1939
 Lwoff, A. 1939. *Annales de l'Institut Pasteur (Paris)* 62:168-176. **Type species:** *M. lacunata* (Eyre 1900) Lwoff 1939
Description: Bergey 8.
- M. anatipestifer** (Hendrickson and Hilbert 1932) Bruner and Fabricant 1954
 Hendrickson, J.M. and K.F. Hilbert. 1932. *Cornell Veterinarian* 22:239-252; Bruner, D.W. and J. Fabricant. 1954. *Cornell Veterinarian* 44:461-464. **Type strain:** ATCC 11845
Description: Henriksen, S.D. 1973. *Bacteriological Reviews* 37:522-561.
- M. atlantae** Bovre, Fuglesang, Hagen, Jantzen and Froholm 1976
 Bovre, K., J.E. Fuglesang, N. Hagen, E. Jantzen and L.O. Froholm. 1976. *International Journal of Systematic Bacteriology* 26:511-521. **Type strain:** ATCC 29525
Description: Bovre, K., J.E. Fuglesang, N. Hagen, E. Jantzen and L.O. Froholm. 1976. *Ibid.*
- M. bovis** (Hauduroy, Ehringer, Urbain, Guillot and Magrou 1937) Murray 1948
 Hauduroy, P., G. Ehringer, A. Urbain, G. Guillot and J. Magrou. 1937. *Dictionnaire des Bacteries Pathogenes*. Masson et Cie, Paris. p. 247; Murray, E.G.D. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacteriology*, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 590-592. **Type strain:** ATCC 10900
Description: Henriksen, S.D. 1973. *Bacteriological Reviews* 37:522-561.
- M. catarrhalis** (Frosch and Kolle 1896) Henriksen and Bovre 1968
 Frosch, P. and W. Kolle. 1896 in Flugge, C. *Die Mikroorganismen*. 3rd ed. Verlag von Vogel, Leipzig. Part 2. p. 154; Henriksen, S.D. and K. Bovre. 1968.

- Journal of General Microbiology **51**:387-392. **Type strain**: ATCC 25238
Description: Catlin, B.W. 1970. International Journal of Systematic Bacteriology **20**:155-159.
- M. caviae** (Pelczar 1953) Henriksen and Bovre 1968
 Pelczar, M.J. 1953. Journal of Bacteriology **65**:744; Henriksen, S.D. and K. Bovre. 1968. Journal of General Microbiology **51**:387-392. **Type strain**: ATCC 14659
Description: Berger, U. 1963. Ergebnisse der Mikrobiologie, Immunitätsforschung und experimentellen Therapie **36**:97-167.
- M. equi** Hughes and Pugh 1970
 Hughes, D.E. and G.W. Pugh. 1970. American Journal of Veterinary Research **31**:457-462. **Type strain**: ATCC 25576
Description: Hughes, D.E. and G.W. Pugh. 1970. Ibid.
- M. lacunata** (Eyre 1900) Lwoff 1939
 Eyre, J.W. 1900. Journal of Pathology and Bacteriology **6**:1-13; Lwoff, A. 1939. Annales de l'Institut Pasteur (Paris) **62**:168-176. **Type strain**: ATCC 17967
Description: Henriksen, S.D. 1973. Bacteriological Reviews **37**:522-561.
- M. nonliquefaciens** (Scarlett 1916) Lwoff 1939
 Scarlett, M. 1916. Annales d'Oculistique (Paris) **153**:100-111; Lwoff, A. 1939. Annales de l'Institut Pasteur (Paris) **62**:168-176. **Type strain**: ATCC 19975
Description: Henriksen, S.D. 1973. Bacteriological Reviews **37**:522-561.
- M. osloensis** Bovre and Henriksen 1967
 Bovre, K. and S.D. Henriksen. 1967. International Journal of Systematic Bacteriology **17**:127-135. **Type strain**: ATCC 19976
Description: Henriksen, S.D. 1973. Bacteriological Reviews **37**:522-561.
- M. ovis** (Lindqvist 1960) Henriksen and Bovre 1968
 Lindqvist, K. 1960. Journal of Infectious Diseases **106**:162-165; Henriksen, S.D. and K. Bovre. 1968. Journal of General Microbiology **51**:387-392. **Type strain**: ATCC 33078
Description: Berger, U. 1963. Ergebnisse der Mikrobiologie, Immunitätsforschung und experimentellen Therapie **36**:97-167.
- M. phenylpyruvica** Bovre and Henriksen 1967
 Bovre, K. and S.D. Henriksen. 1967. International Journal of Systematic Bacteriology **17**:343-360. **Type strain**: ATCC 23333
Description: Henriksen, S.D. 1973. Bacteriological Reviews **37**:522-561.
- M. saccharolytica** Flamm 1956
 Flamm, H. 1956. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I. **166**:498-502. **Type strain**: ATCC 19245
Description: Flamm, H. 1956. Ibid.
- M. urethralis** Lautrop, Bovre and Frederiksen 1970
 Lautrop, H., K. Bovre and W. Frederiksen. 1970. Acta Pathologica et Microbiologica Scandinavica, Section B, **78**:255-256. **Type strain**: ATCC 17960
Description: Lautrop, H., K. Bovre and W. Frederiksen. 1970. Ibid.
- Morganella** Fulton 1943
 Fulton, MacD. 1943. Journal of Bacteriology **46**:79-81. **Type species**: *M. morganii* (Winslow, Kligler and Rothberg 1919) Brenner, Farmer, Fanning, Steigerwalt, Klykken, Wathen, Hickman and Ewing 1978
Description: Fulton, MacD. 1943. Ibid.
- M. morganii** (Winslow, Kligler and Rothberg 1919) Brenner, Farmer, Fanning, Steigerwalt, Klykken, Wathen, Hickman and Ewing 1978
 Winslow, C.E.A., I.J. Kligler and W. Rothberg. 1919. Journal of Bacteriology **4**:429-503; Brenner, D.J., J.J. Farmer III, G.R. Fanning, A.G. Steigerwalt, P. Klykken, H.G. Wathen, F.W. Hickman and W.H. Ewing. 1978. International Journal of Systematic Bacteriology **28**:269-282. **Type strain**: ATCC 25830
Description: Brenner, D.J., J.J. Farmer III, G.R. Fanning, A.G. Steigerwalt, P. Klykken, H.G. Wathen, F.W. Hickman and W.H. Ewing. 1978. Ibid.
- Mycobacterium** Lehmann and Neumann 1896
 Lehmann, K.B. and R. Neumann. 1896. Atlas und Grundriss der Bakteriologie und Lehrbuch der speziellen bakteriologischen Diagnostik. 1st ed. J.F. Lehmann, München. **Type species**: *M. tuberculosis* (Zopf 1883) Lehmann and Neumann 1896
Description: Bergey 8.

- M. africanum** Castets, Rist and Boisvert 1969
Castets, M., N. Rist and H. Boisvert. 1969. *Medecin D'Afrique Noire* **16**:321-322. **Type strain:** ATCC 25420
Description: Bergey 8.
- M. asiaticum** Weiszfeiler, Karasseva and Karczag 1971
Weiszfeiler, J., G.V. Karasseva and E. Karczag. 1971. *Acta Microbiologica Academiae Scientiarum Hungaricae* **18**:247-252. **Type strain:** ATCC 25276
Description: Weiszfeiler, J., G.V. Karasseva and E. Karczag. 1971. *Ibid.*
- M. aurum** Tsukamura 1966
Tsukamura, M. 1966. *Journal of General Microbiology* **45**:253-273. **Type strain:** ATCC 23366
Description: Tsukamura, M. 1966. *Ibid.*
- M. avium** Chester 1901
Chester, F.D. 1901. *A manual of determinative bacteriology*. The Macmillan Co., New York. **Type strain:** ATCC 25291
Description: Meissner, G., K.H. Schroder, G.E. Amadio, W. Anz, S. Chaparas, H.W.B. Engel, P.A. Jenkins, W. Kappler, H.H. Kleeberg, E. Kubala, M. Kubin, D. Lauterbach, A. Lind, M. Magnusson, Zd. Mikova, S.R. Pattyn, W.B. Schaefer, J.L. Stanford, M. Tsukamura, L.G. Wayne, I. Willers and E. Wolinsky. 1974. *Journal of General Microbiology* **83**:207-235.
- M. bovis** Karlson and Lessel 1970
Karlson, A.G. and E.F. Lessel. 1970. *International Journal of Systematic Bacteriology* **20**:273-282. **Type strain:** ATCC 19210
Description: Karlson, A.G. and E.F. Lessel. 1970. *Ibid.*
- M. chelonae** Bergey, Harrison, Breed, Hammer and Huntoon 1923
Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. *Bergey's Manual of Determinative Bacteriology*, 1st ed. The Williams and Wilkins Co., Baltimore. **Type strain:** NCTC 946
Description: Kubica, G.P., I. Baess, R.E. Gordon, P.A. Jenkins, J.B.G. Kwapinski, C. McDermont, S.R. Pattyn, H. Saito, V. Silcox, J.L. Stanford, K. Takeya and M. Tsukamura. 1972. *Journal of General Microbiology* **73**:55-70.
- M. chelonae** subsp. *abscessus* (Moore and Frerichs 1953) Kubica, Baess, Gordon, Jenkins, Kwapinski, McDermont, Pattyn, Saito, Silcox, Stanford, Takeya and Tsukamura 1972
Moore, M. and J.B. Frerichs. 1953. *Journal of Investigative Dermatology* **20**:133-169; Kubica, G.P., I. Baess, R.E. Gordon, P.A. Jenkins, J.B.G. Kwapinski, C. McDermont, S.R. Pattyn, H. Saito, V. Silcox, J.L. Stanford, K. Takeya and M. Tsukamura. 1972. *Journal of General Microbiology* **73**:55-70. **Type strain:** ATCC 19977
Description: Kubica, G.P., I. Baess, R.E. Gordon, P.A. Jenkins, J.B.G. Kwapinski, G. McDermont, S.R. Pattyn, H. Saito, V. Silcox, J.L. Stanford, K. Takeya and M. Tsukamura. 1972. *Ibid.*
- M. chelonae** subsp. *chelonae* (Bergey, Harrison, Breed, Hammer and Huntoon 1923) Kubica, Baess, Gordon, Jenkins, Kwapinski, McDermont, Pattyn, Saito, Silcox, Stanford, Takeya and Tsukamura 1972
Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. *Bergey's Manual of Determinative Bacteriology*, 1st ed. The Williams and Wilkins Co., Baltimore; Kubica, G.P., I. Baess, R.E. Gordon, P.A. Jenkins, J.B.G. Kwapinski, C. McDermont, S.R. Pattyn, H. Saito, V. Silcox, J.H. Stanford, K. Takeya and M. Tsukamura. 1972. *Journal of General Microbiology* **73**:55-70. **Type strain:** NCTC 946
Description: Kubica, G.P., I. Baess, R.E. Gordon, P.A. Jenkins, J.B.G. Kwapinski, C. McDermont, S.R. Pattyn, H. Saito, V. Silcox, J.L. Stanford, K. Takeya and M. Tsukamura. 1972. *Ibid.*
- M. chitae** Tsukamura 1967
Tsukamura, M. 1967. *Japanese Journal of Microbiology* **11**:43-47. **Type strain:** ATCC 19627
Description: Tsukamura, M. 1967. *Ibid.*
- M. duvalii** Stanford and Gunthorpe 1971
Stanford, J.L. and W.J. Gunthorpe. 1971. *British Journal of Experimental Pathology* **52**:627-637. **Type strain:** NCTC 358
Description: Stanford, J.L. and W.J. Gunthorpe. 1971. *Ibid.*
- M. farcinogenes** Chamoiseau 1973
Chamoiseau, G. 1973. *Annales de Microbiologie de l'Institut Pasteur (Paris)* **124**:

- 215-222. **Type strain:** NCTC 10955
Description: Chamoiseau, G. 1973. *Ibid.*
- M. flavescens** Bojalil, Cerbon and Trujillo 1962
 Bojalil, L.F., J. Cerbon and A. Trujillo. 1962. *Journal of General Microbiology* **28**:333-346. **Type strain:** ATCC 14474
Description: Kubica, G.P., I. Baess, R.E. Gordon, P.A. Jenkins, J.B.G. Kwapinski, C. McDurmont, S.R. Pattyn, H. Saito, V. Silcox, J.L. Stanford, K. Takeya and M. Tsukamura. 1972. *Journal of General Microbiology* **73**:55-70.
- M. fortuitum** da Costa Cruz 1938
 da Costa Cruz, J.C. 1938. *Acta Medica (Rio de Janeiro)* **1**:297-301. **Type strain:** ATCC 6841
Description: Kubica, G.P., I. Baess, R.E. Gordon, P.A. Jenkins, J.B.G. Kwapinski, C. McDurmont, S.P. Pattyn, H. Saito, V. Silcox, J.L. Stanford, K. Takeya and M. Tsukamura. 1972. *Journal of General Microbiology* **73**:55-70.
- M. gadium** Casal and Calero 1974
 Casal, M. and J.R. Calero. 1974. *Tubercle* **55**:299-308. **Type strain:** ATCC 27726
Description: Casel, M. and J.R. Calero. 1974. *Ibid.*
- M. gastris** Wayne 1966
 Wayne, L.G. 1966. *American Review of Respiratory Diseases* **93**:919-928. **Type strain:** ATCC 15754
Description: Wayne, L.G. 1966. *Ibid.*
- M. gilvum** Stanford and Gunthorpe 1971
 Stanford, J.L. and W.J. Gunthorpe. 1971. *British Journal of Experimental Pathology* **52**:627-637. **Type strain:** NCTC 10742
Description: Stanford, J.L. and W.J. Gunthorpe. 1971. *Ibid.*
- M. gordonae** Bojalil, Cerbon and Trujillo 1962
 Bojalil, L.F., J. Cerbon and A. Trujillo. 1962. *Journal of General Microbiology* **28**:333-346. **Type strain:** ATCC 14470
Description: Wayne, L.G., T.M. Dietz, C. Gernez-Rieux, P.A. Jenkins, W. Kappler, G.P. Kubica, J.B.G. Kwapinski, G. Meissner, S.R. Pattyn, E.H. Runyon, K.H. Schroder, V.A. Silcox, A. Tacquet, M. Tsukamura and E. Wolinsky. 1971. *Journal of General Microbiology* **66**:255-271.
- M. haemophilum** Sompolinsky, Lagziel, Naveh and Yankilevitz 1978
 Sompolinsky, D., A. Lagziel, D. Naveh and L. Yankilevitz. 1978. *International Journal of Systematic Bacteriology* **28**:67-75. **Type strain:** ATCC 29548
Description: Sompolinsky, D., A. Lagziel, D. Naveh and T. Yankilevitz. 1978. *Ibid.*
- M. intracellulare** (Cuttino and McCabe 1949)
 Runyon 1965
 Cuttino, J.T. and A.M. McCabe. 1949. *American Journal of Clinical Pathology* **25**:1-34; Runyon, E.H. 1965. *Advances in Tuberculosis Research* **14**:235-287. **Type strain:** ATCC 13950
Description: Meissner, G., K.H. Schroder, G.E. Amadio, W. Anz, S. Chaparas, H.W.B. Engel, P.A. Jenkins, W. Kappler, H.H. Kleeberg, E. Kubala, M. Kubin, D. Lauterbach, A. Lind, M. Magnusson, Z. Mikova, S.R. Pattyn, W.B. Schaefer, J.L. Stanford, M. Tsukamura, L.G. Wayne, I. Willers and E. Wolinsky. 1974. *Journal of General Microbiology* **83**:207-235.
- M. kansasii** Hauduroy 1955
 Hauduroy, P. 1955. *Derniers aspects du monde des mycobacteries*. Masson et Cie, Paris. **Type strain:** ATCC 12478
Description: Bergey 8.
- M. komossense** Kazda and Muller 1979
 Kazda, J. and K. Muller. 1979. *International Journal of Systematic Bacteriology* **29**:361-365. **Type strain:** ATCC 33013
Description: Kazda, J. and K. Muller. 1979. *Ibid.*
- M. leprae** (Hansen 1880) Lehmann and Neumann 1896
 Hansen, G.A. 1880. *Virchows Archiv fur pathologische Anatomie und Physiologie und fur klinische Medizin* **79**:32-42; Lehmann, K.B. and R. Neumann. 1896. *Atlas und Grundriss der Bakteriologie und Lehrbuch der speziellen bakteriologischen Diagnostik*. 1st ed. J.F. Lehmann, Munchen. **Type strain:** Has not been cultivated.
Description: Bergey 8.
- M. lepraemurium** Marchoux and Sorel 1912
 Marchoux, E. and F. Sorel. 1912. *Annales de l'Institut Pasteur (Paris)* **26**:675-700. **Type strain:** Difficult to cultivate.
Description: Saito, H., K. Yamaoka and K. Kiyotani. 1976. *International Journal of Systematic Bacteriology* **26**:111-115.

- M. malmoense** Schroder and Juhlin 1977
Schroder, K.H. and I. Juhlin. 1977. International Journal of Systematic Bacteriology 27:241-246. **Type strain:** ATCC 29571
Description: Schroder, K.H. and I. Juhlin. 1977. Ibid.
- M. marinum** Aronson 1926
Aronson, J.D. 1926. Journal of Infectious Diseases 39:314-320. **Type strain:** ATCC 927
Description: Bergey 8.
- M. microti** Reed 1957
Reed, G.B. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). Bergey's Manual of Determinative Bacteriology, 7th ed. The Williams and Wilkins Co., Baltimore. p. 703. **Type strain:** NCTC 8710
Description: Bergey 8.
- M. nonchromogenicum** Tsukamura 1965
Tsukamura, M. 1965. Medical Biology 71:110-113. **Type strain:** ATCC 19530
Description: Meissner, G., K.H. Schroder, G.E. Amadio, W. Anz, S. Chaparas, H.W.B. Engel, P.A. Jenkins, W. Kappler, H.H. Kleeborg, E. Kubala, M. Kubin, D. Lauterbach, A. Lind, M. Magnusson, Zd. Mikova, S.R. Pattyn, W.B. Schaefer, J.L. Stanford, M. Tsukamura, L.G. Wayne, I. Willers and E. Wolinsky. 1974. Journal of General Microbiology 83:207-235.
- M. neoaurum** Tsukamura 1972
Tsukamura, M. 1972. Medical Biology 85:229-233. **Type strain:** ATCC 25795
Description: Tsukamura, M. 1972. Ibid.
- M. parafortuitum** Tsukamura 1966
Tsukamura, M. 1966. Journal of General Microbiology 42:7-12. **Type strain:** ATCC 19686
Description: Saito, H., R.E. Gordon, I. Juhlin, W. Kappler, J.B.G. Kwapinski, C. McDurmont, S.R. Pattyn, E.H. Runyon, J.L. Stanford, I. Tarnok, H. Tasaka, M. Tsukamura and J. Weiszfeiler. 1977. International Journal of Systematic Bacteriology 27:75-85.
- M. paratuberculosis** Bergey, Harrison, Breed, Hammer and Huntoon 1923
Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. Bergey's Manual of Determinative Bacteriology, 1st ed. The Williams and Wilkins Co., Baltimore. p. 374. **Type strain:** ATCC 19698
Description: Thorel, M.F. and L. Valette. 1976. Annales Recherches Veterinaire 7: 207-213.
- M. phlei** Lehmann and Neumann 1899
Lehmann, K.B. and R. Neumann. 1899. Lehmann's Medizin, Handatlaten X. Atlas und Grundriss der Bakteriologie und Lehrbuch der speziellen bakteriologischen Diagnostik. 2 Auflage. **Type strain:** ATCC 11758
Description: Kubica, G.P., I. Baess, R.E. Gordon, P.A. Jenkins, J.B.G. Kwapinski, C. McDurmont, S.R. Pattyn, H. Saito, V. Silcox, J.L. Stanford, K. Takeya and M. Tsukamura. 1972. Journal of General Microbiology 73:55-70.
- M. scrofulaceum** Prissick and Masson 1956
Prissick, F.H. and A.M. Masson. 1956. Canadian Medical Association Journal 75: 798-803. **Type strain:** ATCC 19981
Description: Wayne, L.G., T.M. Dietz, C. Gernez-Rieux, P.A. Jenkins, W. Kappler, G.P. Kubica, J.B.G. Kwapinski, G. Meissner, S.R. Pattyn, E.H. Runyon, K.H. Schroder, V.A. Silcox, A. Tacquet, M. Tsukamura and E. Wolinsky. 1971. Journal of General Microbiology 66:255-271.
- M. senegalense** (Chamoiseau 1973) Chamoiseau 1979
Chamoiseau, G. 1973. Annales de Microbiologie de l'Institut Pasteur (Paris) 124: 215-222; Chamoiseau, G. 1979. International Journal of Systematic Bacteriology 29:407-410. **Type strain:** NCTC 10956
Description: Chamoiseau, G. 1973. Ibid.
- M. simiae** Karassova, Weiszfeiler and Krasznay 1965
Karassova, V., J. Weiszfeiler and E. Krasznay. 1965. Acta Microbiologica Academiae Scientiarum Hungaricae 12: 275-282. **Type strain:** ATCC 25275
Description: Bergey 8.
- M. smegmatis** (Trevisan 1889) Lehmann and Neumann 1899
Trevisan, V. 1889. I Generi e le Specie delle Bacteriacee. Zanaboni and Gabuzzi, Milano; Lehmann, K.B. and R. Neumann. 1899. Lehmann's Medizin Handatlaten X. Atlas und Grundriss der Bakteriologie und Lehrbuch der speziellen

- bakteriologischen Diagnostik. 2 Auflage.
Type strain: ATCC 19420
Description: Kubica, G.P., I. Baess, R.E. Gordon, P.A. Jenkins, J.B.G. Kwapinski, C. McDurmont, S.R. Pattyn, H. Saito, V. Silcox, J.L. Stanford, K. Takeya and M. Tsukamura. 1972. *Journal of General Microbiology* **73**:55-70.
- M. szulgai** Marks, Jenkins and Tsukamura 1972
 Marks, J., P.A. Jenkins and M. Tsukamura. 1972. *Tubercle* **53**:210-214. **Type strain:** NCTC 10831
Description: Marks, J., P.A. Jenkins and M. Tsukamura. 1972. *Ibid.*
- M. terrae** Wayne 1966
 Wayne, L.G. 1966. *American Review of Respiratory Diseases* **93**:919-928. **Type strain:** ATCC 15755
Description: Meissner, G., K.H. Schroder, G.E. Amadio, W. Anz, S. Chaparas, H.W.B. Engel, P.A. Jenkins, W. Kappler, H.H. Kleeberg, E. Kubala, M. Kubin, D. Lauterbach, A. Lind, M. Magnusson, Z. Mikova, S.R. Pattyn, W.B. Schaefer, J.L. Stanford, M. Tsukamura, L.G. Wayne, I. Willers and E. Wolinsky. 1974. *Journal of General Microbiology* **83**:207-235.
- M. thermoresistibile** Tsukamura 1966
 Tsukamura, M. 1966. *Journal of General Microbiology* **45**:253-273. **Type strain:** ATCC 19527
Description: Tsukamura, M. 1966. *Ibid.*
- M. triviale** Kubica 1970
 Kubica, G.P. 1970 in Kubica, G.P., V.A. Silcox, J.O. Kilburn, R.W. Smithwick, R.E. Beam, W.D. Jones, Jr. and K.D. Stottmeier. *International Journal of Systematic Bacteriology* **20**:161-174. **Type strain:** ATCC 23292
Description: Kubica, G.P. 1970. *Ibid.*
- M. tuberculosis** (Zopf 1883) Lehmann and Neumann 1896
 Zopf, W. 1883. *Die Spaltpilze*, Edward Trewendt, Breslau. pp. 1-100; Lehmann, K.B. and R. Neumann. 1896. *Atlas und Grundriss der Bakteriologie und Lehrbuch der speziellen bakteriologischen Diagnostik*. 1st ed. J.F. Lehmann, Munchen. **Type strain:** ATCC 27294
Description: Bergey 8.
- M. ulcerans** MacCallum, Tolhurst and Buckle 1950
 MacCallum, P., J.C. Tolhurst and G. Buckle. 1950 in Fenner, F. *Medical Journal of Australia* **2**:813-818. **Type strain:** ATCC 19423
Description: Boisvert, H. 1977. *Bulletin de la Societe de Pathologie Exotique* **70**:125-131.
- M. vaccae** Bonicke and Juhasz 1964
 Bonicke, R. and S.E. Juhasz. 1964. *Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I.* **192**:133-135. **Type strain:** ATCC 15483
Description: Saito, H., R.E. Gordon, I. Juhlin, W. Kappler, J.B.G. Kwapinski, C. McDurmont, S.R. Pattyn, E.H. Runyon, J.L. Stanford, I. Tarnok, H. Tasaka, M. Tsukamura and J. Weiszfeiler. 1977. *International Journal of Systematic Bacteriology* **27**:75-85.
- M. xenopi** Schwabacher 1959
 Schwabacher, H. 1959. *Journal of Hygiene* **57**:57-67. **Type strain:** NCTC 10042
Description: Meissner, G., K.H. Schroder, G.E. Amadio, W. Anz, S. Chaparas, H.W.B. Engel, P.A. Jenkins, W. Kappler, H.H. Kleeberg, E. Kubala, M. Kubin, D. Lauterbach, A. Lind, M. Magnusson, Z. Mikova, S.R. Pattyn, W.B. Schaefer, J.L. Stanford, M. Tsukamura, L.G. Wayne, I. Willers and E. Wolinsky. 1974. *Journal of General Microbiology* **83**:207-235.
- Mycoplana** Gray and Thornton 1928
 Gray, P.H.H. and H.G. Thornton. 1928. *Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **73**:74-96. **Type species:** *M. dimorpha* Gray and Thornton 1928
Description: Gray, P.H.H. and H.G. Thornton. 1928. *Ibid.*
- M. bullata** Gray and Thornton 1928
 Gray, P.H.H. and H.G. Thornton. 1928. *Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **73**:74-96. **Type strain:** ATCC 4278
Description: Gray, P.H.H. and H.G. Thornton. 1928. *Ibid.*
- M. dimorpha** Gray and Thornton 1928
 Gray, P.H.H. and H.G. Thornton. 1928. *Zentralblatt fur Bakteriologie, Parasiten-*

- kunde, Infektionskrankheiten und Hygiene. Abteilung II. 73:74-96. **Type strain:** ATCC 4279
Description: Gray, P.H.H. and H.G. Thornton. 1928. *Ibid.*
- Mycoplasma** Nowak 1929
Nowak, J. 1929. *Annales de l'Institut Pasteur (Paris)* 43:1330-1352. **Type species:** *M. mycoides* (Borrel, Dujardin-Beaumetz, Jeantet and Jouan 1910) Freundt 1955
Description: Bergey 8.
- M. agalactiae** (Wroblewski 1931) Freundt 1955
Wroblewski, W. 1931. *Annales de l'Institut Pasteur (Paris)* 47:94-115; Freundt, E.A. 1955. *International Bulletin of Bacteriological Nomenclature and Taxonomy* 5:67-78. **Type strain:** NCTC 10123
Description: Cottew, G.S. 1979 in Barile, M.F., S. Razin, J.G. Tully and R.F. Whitcomb (eds). *The Mycoplasmas*. Academic Press, New York, Volume II. pp. 103-132.
- M. alkalescens** Leach 1973
Leach, R.H. 1973. *Journal of General Microbiology* 75:135-153. **Type strain:** ATCC 29103
Description: Leach, R.H. 1973. *Ibid.*
- M. alvi** Gourlay, Wyld and Leach 1977
Gourlay, R.N., S.G. Wyld and R.H. Leach. 1977. *International Journal of Systematic Bacteriology* 27:86-96. **Type strain:** ATCC 29626
Description: Gourlay, R.N., S.G. Wyld and R.H. Leach. 1977. *Ibid.*
- M. anatis** Roberts 1964
Roberts, D.H. 1964. *Veterinary Record* 76:470-473. **Type strain:** ATCC 25524
Description: Bergey 8.
- M. arginini** Barile, Del Giudice, Carski, Gibbs and Morris 1968
Barile, M.F., R.A. Del Giudice, T.R. Carski, C.J. Gibbs and J.A. Morris. 1968. *Proceedings of the Society for Experimental Biology and Medicine* 129:489-494. **Type strain:** ATCC 23838
Description: Gourlay, R.N. and C.J. Howard. 1979 in Barile, M.F., S. Razin, J.G. Tully and R.F. Whitcomb (eds). *The Mycoplasmas*. Academic Press, New York, Volume II. pp. 49-102.
- M. arthritis** (Sabin 1941) Freundt 1955
Sabin, A.B. 1941. *Bacteriological Reviews* 5:1-66; Freundt, E.A. 1955. *International Bulletin of Bacteriological Nomenclature and Taxonomy* 5:67-78. **Type strain:** ATCC 19611
Description: Cassell, G.H. and A. Hill. 1979 in Barile, M.F., S. Razin, J.G. Tully and R.F. Whitcomb (eds). *The Mycoplasmas*. Academic Press, New York, Volume II. pp. 235-273.
- M. bovirhinium** Freundt 1955
Freundt, E.A. 1955. *International Bulletin of Bacteriological Nomenclature and Taxonomy* 5:67-78. **Type strain:** ATCC 19852
Description: Gourlay, R.N. and C.J. Howard. 1979 in Barile, M.F., S. Razin, J.G. Tully and R.F. Whitcomb (eds). *The Mycoplasmas*. Academic Press, New York, Volume II. pp. 49-102.
- M. bovirhinis** Leach 1967
Leach, R.H. 1967. *Annals of the New York Academy of Sciences* 143:305-316. **Type strain:** ATCC 27748
Description: Gourlay, R.N. and C.J. Howard. 1979 in Barile, M.F., S. Razin, J.G. Tully and R.F. Whitcomb (eds). *The Mycoplasmas*. Academic Press, New York, Volume II. pp. 49-102.
- M. bovis** (Hale, Helmboldt, Plastringe and Stula 1962) Askaa and Erno 1976
Hale, H.H., C.F. Helmboldt, W.N. Plastringe and E.F. Stula. 1962. *Cornell Veterinarian* 52:582-591; Askåa, G. and H. Erno. 1976. *International Journal of Systematic Bacteriology* 26:323-325. **Type strain:** ATCC 25523
Description: Askaa, G. and H. Erno. 1976. *Ibid.*
- M. bovoculi** Langford and Leach 1973
Langford, E.V. and R.H. Leach. 1973. *Canadian Journal of Microbiology* 19:1435-1444. **Type strain:** ATCC 29104
Description: Langford, E.V. and R.H. Leach. 1973. *Ibid.*
- M. buccale** Freundt, Taylor-Robinson, Purcell, Chanock and Black 1974
Freundt, E.A., D. Taylor-Robinson, R.H. Purcell, R.M. Chanock and F.T. Black. 1974. *International Journal of Systematic Bacteriology* 24:252-255. **Type strain:** ATCC 23636

- Description:** Freundt, E.A., D. Taylor-Robinson, R.H. Purcell, R.M. Chanock and F.T. Black. 1974. *Ibid.*
- M. canadense** Langford, Ruhnke and Onoviran 1976
Langford, E.V., H.L. Ruhnke and O. Onoviran. 1976. *International Journal of Systematic Bacteriology* **26**:212-219. **Type strain:** ATCC 29418
Description: Langford, E.V., H.L. Ruhnke and O. Onoviran. 1976. *Ibid.*
- M. canis** Edward 1955
Edward, D.G. ff. 1955. *International Bulletin of Bacteriological Nomenclature and Taxonomy* **5**:85-93. **Type strain:** ATCC 19525
Description: Rosendal, S. 1979 in Barile, M.F., S. Razin, J.G. Tully and R.F. Whitcomb (eds). *The Mycoplasmas*. Academic Press, New York, Volume II. pp. 217-234.
- M. capricolum** Tully, Barile, Edward, Theodore and Erno 1974
Tully, J.G., M.F. Barile, D.G. ff. Edward, T.S. Theodore and H. Erno. 1974. *Journal of General Microbiology* **85**:102-120. **Type strain:** ATCC 27343
Description: Tully, J.G., M.F. Barile, D.G. ff. Edward, T.S. Theodore and H. Erno. 1974. *Ibid.*
- M. caviae** Hill 1971
Hill, A. 1971. *Journal of General Microbiology* **65**:109-113. **Type strain:** ATCC 27108
Description: Cassel, G.H. and A. Hill. 1979 in Barile, M.F., S. Razin, J.G. Tully and R.F. Whitcomb (eds). *The Mycoplasmas*. Academic Press, New York, Volume II. pp. 235-273.
- M. citelli** Rose, Tully and Langford 1978
Rose, D.L., J.G. Tully and E.V. Langford. 1978. *International Journal of Systematic Bacteriology* **28**:567-572. **Type strain:** ATCC 29760
Description: Rose, D.L., J.G. Tully and E.V. Langford. 1978. *Ibid.*
- M. columbinum** Shimizu, Erno and Nagatomo 1978
Shimizu, T., H. Erno and H. Nagatomo. 1978. *International Journal of Systematic Bacteriology* **28**:538-546. **Type strain:** ATCC 29257
Description: Shimizu, T., H. Erno and H. Nagatomo. 1978. *Ibid.*
- M. columborale** Shimizu, Erno and Nagatomo 1978
Shimizu, T., H. Erno and H. Nagatomo. 1978. *International Journal of Systematic Bacteriology* **28**:538-546. **Type strain:** ATCC 29258
Description: Shimizu, T., H. Erno and H. Nagatomo. 1978. *Ibid.*
- M. conjunctivae** Barile, Del Giudice and Tully 1972
Barile, M.F., R.A. Del Giudice and J.G. Tully. 1972. *Infection and Immunity* **5**:70-76. **Type strain:** ATCC 25834
Description: Barile, M.F., R.A. Del Giudice and J.G. Tully. 1972. *Ibid.*
- M. cynos** Rosendal 1973
Rosendal, S. 1973. *International Journal of Systematic Bacteriology* **23**:49-54. **Type strain:** ATCC 27544
Description: Rosendal, S. 1973. *Ibid.*
- M. dispar** Gourlay and Leach 1970
Gourlay, R.N. and R.H. Leach. 1970. *Journal of Medical Microbiology* **3**:111-123. **Type strain:** ATCC 27140
Description: Gourlay, R.N. and C.J. Howard. 1979 in Barile, M.F., S. Razin, J.G. Tully and R.F. Whitcomb (eds). *The Mycoplasmas*. Academic Press, New York, Volume II. pp. 49-102.
- M. edwardii** Tully, Barile, Del Giudice, Carski, Armstrong and Razin 1970
Tully, J.G., M.F. Barile, R.A. Del Giudice, T.R. Carski, D. Armstrong and S. Razin. 1970. *Journal of Bacteriology* **101**:346-349. **Type strain:** ATCC 23462
Description: Rosendal, S. 1979 in Barile, M.F., S. Razin, J.G. Tully and R.F. Whitcomb (eds). *The Mycoplasmas*. Academic Press, New York, Volume II. pp. 217-234.
- M. equigenitalium** Kirchoff 1978
Kirchoff, H. 1978. *International Journal of Systematic Bacteriology* **28**:496-502. **Type strain:** ATCC 29869
Description: Kirchoff, H. 1978. *Ibid.*
- M. equirhinis** Allam and Lemcke 1975
Allam, N.M. and R.M. Lemcke. 1975. *Journal of Hygiene Cambridge* **74**:385-408. **Type strain:** ATCC 29420
Description: Allam, N.M. and R.M. Lemcke. 1975. *Ibid.*
- M. faucium** Freundt, Taylor-Robinson, Purcell,

Chanock and Black 1974

Freundt, E.A., D. Taylor-Robinson, R.H. Purcell, R.M. Chanock and F.T. Black 1974. *International Journal of Systematic Bacteriology* **24**:252-255. **Type strain:** ATCC 25293

Description: Freundt, E.A., D. Taylor-Robinson, R.H. Purcell, R.M. Chanock and F.T. Black. 1974. *Ibid.*

M. feliminutum Heyward, Sabry and Dowdle 1969

Heyward, J.T., M.Z. Sabry and W.R. Dowdle. 1969. *American Journal of Veterinary Research* **30**:615-622. **Type strain:** ATCC 25749

Description: Rosendal, S. 1979 in Barile, M.F., S. Razin, J.G. Tully and R.F. Whitcomb (eds). *The Mycoplasmas*. Academic Press, New York, Volume II. pp. 217-234.

M. felis Cole, Golightly and Ward 1967

Cole, B.C., L. Golightly and J.R. Ward. 1967. *Journal of Bacteriology* **94**:1451-1458. **Type strain:** ATCC 23391

Description: Bergey 8.

M. fermentans Edward 1955

Edward, D.G. ff. 1955. *International Bulletin of Bacteriological Nomenclature and Taxonomy* **5**:85-93. **Type strain:** ATCC 19989

Description: Bergey 8.

M. flocculare Meyling and Friis 1972

Meyling, A. and N.F. Friis. 1972. *Acta Veterinaria Scandinavica* **13**:287-289. **Type strain:** ATCC 27399

Description: Rose, D.L. J.G. Tully and R.G. Wittler. 1979. *International Journal of Systematic Bacteriology* **29**:83-91.

M. gallinarum Freundt 1955

Freundt, E.A. 1955. *International Bulletin of Bacteriological Nomenclature and Taxonomy* **5**:67-78. **Type strain:** ATCC 19708

Description: Bergey 8.

M. gallisepticum Edward and Kanarek 1960

Edward, D.G. ff. and A.D. Kanarek. 1960. *Annals of the New York Academy of Sciences* **79**:696-702. **Type strain:** ATCC 19610

Description: Bergey 8.

M. gateae Cole, Golightly and Ward 1967

Cole, B.C., L. Golightly and J.R. Ward. 1967. *Journal of Bacteriology* **94**:1451-

1458. **Type strain:** ATCC 23392

Description: Bergey 8.

M. hominis (Freundt 1953) Edward 1955

Freundt, E.A. 1953. *Acta Pathologica et Microbiologica Scandinavica* **32**:468-480; Edward, D.G. ff. 1955. *International Bulletin of Bacteriological Nomenclature and Taxonomy* **5**:85-93. **Type strain:** ATCC 23114

Description: Bergey 8.

M. hypopneumoniae Mare and Switzer 1965

Mare, C.J. and W.P. Switzer. 1965. *Veterinary Medicine* **60**:841-846. **Type strain:** ATCC 25934

Description: Rose, D.L., J.G. Tully and R.G. Wittler. 1979. *International Journal of Systematic Bacteriology* **29**:83-91.

M. hyorhinitis Switzer 1955

Switzer, W.P. 1955. *American Journal of Veterinary Research* **16**:540-544. **Type strain:** ATCC 17981

Description: Whittlestone, P. 1979 in Barile, M.F., S. Razin, J.G. Tully and R.F. Whitcomb (eds). *The Mycoplasmas*. Academic Press, New York, Volume II. pp. 133-176.

M. hyosynoviae Ross and Karmon 1970

Ross, R.F. and J.A. Karmon. 1970. *Journal of Bacteriology* **103**:707-713. **Type strain:** ATCC 25591

Description: Whittlestone, P. 1979 in Barile, M.F., S. Razin, J.G. Tully and R.F. Whitcomb (eds). *The Mycoplasmas*. Academic Press, New York, Volume II. pp. 133-176.

M. iners Edward and Kanarek 1960

Edward, D.G. ff. and A.D. Kanarek. 1960. *Annals of the New York Academy of Sciences* **79**:696-702. **Type strain:** ATCC 19705

Description: Bergey 8.

M. lipophilum Del Giudice, Purcell, Carski and Chanock 1974

Del Giudice, R.A., R.H. Purcell, T.R. Carski and R.M. Chanock 1974. *International Journal of Systematic Bacteriology* **24**:147-153. **Type strain:** ATCC 27104

Description: Del Giudice, R.A., R.H. Purcell, T.R. Carski and R.M. Chanock. 1974. *Ibid.*

M. maculosum Edward 1955

Edward, D.G. ff. 1955. *International Bulletin of Bacteriological Nomenclature*

- and Taxonomy 5:85-93. **Type strain:** ATCC 19327
Description: Rosendal, S. 1979 in Barile, M.F., S. Razin, J.G. Tully and R.F. Whitcomb (eds). The Mycoplasmas. Academic Press, New York, Volume II. pp. 217-234.
- M. meleagridis** Yamamoto, Bigland and Ort-mayer 1965
 Yamamoto, R., C.H. Bigland and H.B. Ort-mayer. 1965. Journal of Bacteriology 90:47-49. **Type strain:** ATCC 25294
Description: Bergey 8.
- M. moatsii** Madden, Moats, London, Matthew and Sever 1974
 Madden, D.L., K.E. Moats, W.T. London, E.B. Matthew and J.L. Sever. 1974. International Journal of Systematic Bacteriology 24:459-464. **Type strain:** ATCC 27625
Description: Madden, D.L., K.E. Moats, W.T. London, E.B. Matthew and J.L. Sever. 1974. Ibid.
- M. molare** Rosendal 1974
 Rosendal, S. 1974. International Journal of Systematic Bacteriology 24:125-130. **Type strain:** ATCC 27746
Description: Rosendal, S. 1974. Ibid.
- M. mycoides** (Borrel, Dujardin-Beaumetz, Jeantet and Jouan 1910) Freundt 1955
 Borrel, A., E. Dujardin-Beaumetz, Jeantet and Jouan. 1910. Annales de l'Institut Pasteur (Paris) 24:168-179; Freundt, E.A. 1955. International Bulletin of Bacteriological Nomenclature and Taxonomy 5: 67-78. **Type strain:** NCTC 10114
Description: Gourlay, R.N. and C.J. Howard. 1979 in Barile, M.F., S. Razin, J.G. Tully and R.F. Whitcomb (eds). The Mycoplasmas. Academic Press, New York, Volume II. pp. 103-132.
- M. mycoides** subsp. *capri* (Edward 1953) Freundt 1955
 Edward, D.G. ff. 1953. Veterinary Record 65:873-874; Freundt, E.A. 1955. International Bulletin of Bacteriological Nomenclature and Taxonomy 5:67-78. **Type strain:** NCTC 10137
Description: Cottew, G.S. 1979 in Barile, M.F., S. Razin, J.G. Tully and R.F. Whitcomb (eds). The Mycoplasmas. Academic Press, New York, Volume II. pp. 103-132.
- M. mycoides** subsp. *mycoides* (Borrel, Dujardin-Beaumetz, Jeantet and Jouan 1910) Freundt 1955
 Borrel, A., E. Dujardin-Beaumetz, Jeantet and Jouan. 1910. Annales de l'Institut Pasteur (Paris) 24:168-179; Freundt, E.A. 1955. International Bulletin of Bacteriological Nomenclature and Taxonomy 5: 67-78. **Type strain:** NCTC 10114
Description: Gourlay, R.N. and C.J. Howard. 1979 in Barile, M.F., S. Razin, J.G. Tully and R.F. Whitcomb (eds). The Mycoplasmas. Academic Press, New York, Volume II. pp. 103-132.
- M. neurolyticum** (Sabin 1941) Freundt 1955
 Sabin, A.B. 1941. Bacteriological Reviews 5:1-66; Freundt, E.A. 1955. International Bulletin of Bacteriological Nomenclature and Taxonomy 5:67-78. **Type strain:** ATCC 19988
Description: Cassell, G.H. and A. Hill. 1979 in Barile, M.F., S. Razin, J.G. Tully and R.F. Whitcomb (eds). The Mycoplasmas. Academic Press, New York, Volume II. pp. 235-273.
- M. opalescens** Rosendal 1975
 Rosendal, S. 1975. Acta Pathologica et Microbiologica Scandinavica Section B 83:463-470. **Type strain:** ATCC 27921
Description: Rosendal, S. 1975. Ibid.
- M. orale** Taylor-Robinson, Canchola, Fox and Chanock 1964
 Taylor-Robinson, D., J. Canchola, H. Fox and R.M. Chanock. 1964. American Journal of Hygiene 80:135-148. **Type strain:** ATCC 23714
Description: Bergey 8.
- M. ovipneumoniae** Carmichael, St. George, Sullivan and Horsfall 1972
 Carmichael, L.E., T.D. St. George, N.D. Sullivan and N. Horsfall. 1972. Cornell Veterinarian 62:654-679. **Type strain:** ATCC 29419
Description: Cottew, G.S. 1979 in Barile, M.F., S. Razin, J.G. Tully and R.F. Whitcomb (eds). The Mycoplasmas. Academic Press, New York, Volume II. pp. 103-132.
- M. pneumoniae** Somerson, Taylor-Robinson and Chanock 1963
 Somerson, N.L., D. Taylor-Robinson and R.M. Chanock. 1963. American Journal of Hygiene 77:122-128. **Type strain:**

- ATCC 15531
Description: Bergey 8.
- M. primatum** Del Giudice, Carski, Barile, Lemcke and Tully 1971
 Del Giudice, R.A., T.R. Carski, M.F. Barile, R.M. Lemcke and J. Tully. 1971. *Journal of Bacteriology* **108**:439-445. **Type strain:** ATCC 25948
Description: Del Giudice, R.A., T.R. Carski, M.F. Barile, R.M. Lemcke and J.G. Tully. 1971. *Ibid.*
- M. pulmonis** (Sabin 1941) Freundt 1955
 Sabin, A.B. 1941. *Bacteriological Reviews* **5**:1-66; Freundt, E.A. 1955. *International Bulletin of Bacteriological Nomenclature and Taxonomy* **5**:67-78. **Type strain:** ATCC 19612
Description: Cassell, G.H. and A. Hill. 1979 in Barile, M.F., S. Razin, J.G. Tully and R.F. Whitcomb (eds). *The Mycoplasmas*. Academic Press, New York, Volume II. pp. 235-273.
- M. putrefaciens** Tully, Barile, Edward, Theodore and Erno 1974
 Tully, J.G., M.F. Barile, D.G. ff. Edward, T.S. Theodore and H. Erno. 1974. *Journal of General Microbiology* **85**:102-120. **Type strain:** ATCC 15718
Description: Tully, J.G., M.F. Barile, D.G. ff. Edward, T.S. Theodore and H. Erno. 1974. *Ibid.*
- M. salivarium** Edward 1955
 Edward, D.G. ff. 1955. *International Bulletin of Bacteriological Nomenclature and Taxonomy* **5**:85-93. **Type strain:** ATCC 23064
Description: Bergey 8.
- M. spumans** Edward 1955
 Edward, D.G. ff. 1955. *International Bulletin of Bacteriological Nomenclature and Taxonomy* **5**:85-93. **Type strain:** ATCC 19526
Description: Rosendal, S. 1979 in Barile, M.F., S. Razin, J.G. Tully and R.F. Whitcomb (eds). *The Mycoplasmas*. Academic Press, New York, Volume II. pp. 217-234.
- M. svalvi** Gourlay, Wyld and Leach 1978
 Gourlay, R.N., S.G. Wyld and R.H. Leach. 1978. *International Journal of Systematic Bacteriology* **28**:289-292. **Type strain:** NCTC 10170
Description: Gourlay, R.N., S.G. Wyld and R.H. Leach. 1978. *Ibid.*
- M. subdolum** Lemcke and Kirchoff 1979
 Lemcke, R.M. and H. Kirchoff. 1979. *International Journal of Systematic Bacteriology* **29**:42-50. **Type strain:** ATCC 29870
Description: Lemcke, R.M. and H. Kirchoff. 1979. *Ibid.*
- M. synoviae** Olson, Kerr and Campbell 1964
 Olson, N.O., K.M. Kerr and A. Campbell. 1964. *Avian Diseases* **8**:209-214. **Type strain:** ATCC 25204
Description: Bergey 8.
- M. verecundum** Gourlay, Leach and Howard 1974
 Gourlay, R.N., R.H. Leach and C.J. Howard. 1974. *Journal of General Microbiology* **81**:475-484. **Type strain:** ATCC 27862
Description: Gourlay, R.N., R.H. Leach and C.J. Howard. 1974. *Ibid.*
- Myxococcus** Thaxter 1892
 Thaxter, R. 1892. *Botanical Gazette* **17**:389-406. **Type species:** *M. fulvus* (Cohn 1875) Jahn 1911
Description: Bergey 8.
- M. coralloides** Thaxter 1892
 Thaxter, R. 1892. *Botanical Gazette* **17**:389-406. **Type strain:** ATCC 25202
Description: Bergey 8.
- M. disciformis** Thaxter 1904
 Thaxter, R. 1904. *Botanical Gazette* **37**:405-416. **Type strain:** ATCC 33172
Description: Thaxter, R. 1904. *Ibid.*
- M. fulvus** (Cohn 1875) Jahn 1911
 Cohn, F. 1875. *Beitrage zur Biologie der Pflanzen* **1**:141-207; Jahn, E. 1911. *Kryptogamenflora der Mark Brandenburg* **5**:187-206. **Type strain:** ATCC 25199
Description: Bergey 8.
- M. macrosporus** (Krzemieniewska and Krzemieniewski 1926) Zahler and McCurdy 1974
 Krzemieniewska, H. and S. Krzemieniewski. 1926. *Acta Societatis Botanicorum Poloniae* **4**:1-54; Zahler, S.A. and H.D. McCurdy. 1974. *Bergey 8*. **Type strain:** Windsor M271
Description: Bergey 8.
- M. stipitatus** Thaxter 1897
 Thaxter, R. 1897. *Botanical Gazette* **23**:395-411. **Type strain:** Windsor M78

- Description:** Bergey 8.
- M. virescens** Thaxter 1892
Thaxter, R. 1892. Botanical Gazette 17: 389-406. **Type strain:** ATCC 25203
Description: Bergey 8.
- M. xanthus** Beebe 1941
Beebe, J.M. 1941. Journal of Bacteriology 42:193-223. **Type strain:** ATCC 25232
Description: Bergey 8.
- Nannocystis** Reichenbach 1970
Reichenbach, H. 1970. Archiv fur Mikrobiologie 70:119-138. **Type species:** *N. exedens* Reichenbach 1970
Description: Bergey 8.
- N. exedens** Reichenbach 1970
Reichenbach, H. 1970. Archiv fur Mikrobiologie 70:119-138. **Type strain:** DSM 71
Description: Reichenbach, H. 1970. Ibid.
- Neisseria** Trevisan 1885
Trevisan, V. 1885. Atti della Accademia Fisica-Medica-Statistica in Milano (Ser 4) 3:92-107. **Type species:** *N. gonorrhoeae* (Zopf 1885) Trevisan 1885
Description: Bergey 8.
- N. animalis** Berger 1960
Berger, U. 1960. Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. 147: 158-161. **Type strain:** NCTC 10212
Description: Berger, U. 1960. Ibid.
- N. canis** Berger 1962
Berger, U. 1962. Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. 148:445-457. **Type strain:** ATCC 14678
Description: Berger, U. 1962. Ibid.
- N. caviae** Pelczar 1953
Pelczar, M.J. 1953. Journal of Bacteriology 65:744. **Type strain:** ATCC 14659
Description: Branham, S.E. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). Bergey's Manual of Determinative Bacteriology, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 480-485.
- N. cinerea** (von Lingelsheim 1906) Murray 1939
von Lingelsheim, W. 1906. Klinisches Jahrbuch 15:373-489; Murray, E.G.D. 1939 in Bergey, D.H., R.S. Breed, E.G.D. Murray and A.P. Hitchens (eds). Bergey's Manual of Determinative Bacteriology, 5th ed. The Williams and Wilkins Co., Baltimore. pp. 278-288. **Type strain:** ATCC 14685
Description: Murray, E.G.D. 1939. Ibid.
- N. cuniculi** Berger 1962
Berger, U. 1962. Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. 148:445-457. **Type strain:** ATCC 14688
Description: Berger, U. 1962. Ibid.
- N. denitrificans** Berger 1962
Berger, U. 1962. Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. 148: 445-457. **Type strain:** ATCC 14686
Description: Berger, U. 1962. Ibid.
- N. elongata** Bovre and Holten 1970
Bovre, K. and E. Holten. 1970. Journal of General Microbiology 60:67-75. **Type strain:** ATCC 25295
Description: Bovre, K. and E. Holten. 1970. Ibid.
- N. elongata** subsp. *elongata* Bovre and Holten 1970
Bovre, K. and E. Holten. 1970. Journal of General Microbiology 60:67-75. **Type strain:** ATCC 25295
Description: Bovre, K. and E. Holten. 1970. Ibid.
- N. elongata** subsp. *glycolytica* Henriksen and Holten 1976
Henriksen, S.D. and E. Holten. 1976. International Journal of Systematic Bacteriology 26:478-481. **Type strain:** ATCC 29315
Description: Henriksen, S.D. and E. Holten. 1976. Ibid.
- N. flava** Bergey, Harrison, Breed, Hammer and Huntoon 1923
Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. Bergey's Manual of Determinative Bacteriology, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type strain:** NRL 30,008
Description: Branham, S.E. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). Bergey's Manual of Determinative Bacteriology, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 480-485.
- N. flavescens** Branham 1930
Branham, S.E. 1930. United States Public Health Services Public Health Report 45:

- 845-849. **Type strain:** ATCC 13120
Description: Bergey 8.
- N. gonorrhoeae** (Zopf 1885) Trevisan 1885
 Zopf, W. 1885. Die Spaltpilze, 3rd ed. Edward Trewendt, Breslau. pp. 1-127; Trevisan, V. 1885. Atti della Accademia Fisica-Medica-Statistica in Milano (Ser 4) 3:92-107. **Type strain:** ATCC 19424
Description: Bergey 8.
- N. lactamica** Hollis, Wiggins and Weaver 1969
 Hollis, D.G., G.L. Wiggins and R.E. Weaver. 1969. Applied Microbiology 17: 71-77. **Type strain:** ATCC 23970
Description: Hollis, D.G., G.L. Wiggins and R.E. Weaver. 1969. Ibid.
- N. meningitidis** (Albrecht and Ghon 1901) Murray 1929
 Albrecht, H. and A. Ghon. 1901. Wiener klinische Wochenschrift 14:984-996; Murray, E.G.D. 1929. Medical Research Council (Great Britain) Special Report Series 124:7-142. **Type strain:** ATCC 13077
Description: Bergey 8.
- N. mucosa** Veron, Tult and Second 1959
 Veron, M., P. Thibault and L. Second. 1959. Annales de l'Institut Pasteur (Paris) 97:497-510. **Type strain:** ATCC 19696
Description: Bergey 8.
- N. ovis** Lindqvist 1960
 Lindqvist, K. 1960. Journal of Infectious Diseases 106:162-165. **Type strain:** ATCC 33078
Description: Lindqvist, K. 1960. Ibid.
- N. perflava** Bergey, Harrison, Breed, Hammer and Huntoon 1923
 Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. Bergey's Manual of Determinative Bacteriology, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type strain:** ATCC 10555
Description: Branham, S.E. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). Bergey's Manual of Determinative Bacteriology, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 480-485.
- N. sicca** (von Lingelsheim 1908) Bergey, Harrison, Breed, Hammer and Huntoon 1923
 von Lingelsheim, W. 1908. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I. 59:457-476; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. Bergey's Manual of Determinative Bacteriology, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type strain:** NRL 30,016
Description: Bergey 8.
- N. subflava** (Flugge 1886) Trevisan 1889
 Flugge, 1886. Die Mikroorganismen. F.C.W. Vogel, Leipzig; Trevisan, V. 1889. I. Generi e le Specie delle Bacteriacee. Zanaboni and Gabuzzi, Milano. **Type strain:** NRL 30,017
Description: Bergey 8.
- Neorickettsia** Philip, Hadlow and Hughes 1953
 Philip, C.B., W.J. Hadlow and L.E. Hughes. 1953. Riassunti della Comunicazione VI Congresso Internazionale di Microbiologia, Roma 2:256-257. **Type species:** *N. helminthoeca* Philip, Hadlow and Hughes 1953
Description: Bergey 8.
- N. helminthoeca** Philip, Hadlow and Hughes 1953
 Philip, C.B., W.J. Hadlow and L.E. Hughes. 1953. Riassunti della Comunicazione VI Congresso Internazionale di Microbiologia, Roma 2:256-257. **Type strain:** no culture isolated.
Description: Bergey 8.
- Nevskia** Famintzin 1892
 Famintzin, A. 1892. Bulletin of the Academy of Science St. Petersburg New Series 2 34:481-486. **Type species:** *N. ramosa* Famintzin 1892
Description: Bergey 8.
- N. ramosa** Famintzin 1892
 Famintzin, A. 1892. Bulletin of the Academy of Science St. Petersburg New Series 2 34:481-486. **Type strain:** no culture isolated.
Description: Bergey 8.
- Nitrobacter** Winogradsky 1892
 Winogradsky, S. 1892. Arkhiv Biologicheskikh Nauk (St. Petersburg) 1:87-137. **Type species:** *N. winogradskyi* Winslow, Broadhurst, Buchanan, Krumwiede, Rogers and Smith 1917
Description: Bergey 8.
- N. winogradskyi** Winslow, Broadhurst, Buchan-

an, Krumwiede, Rogers and Smith 1917
Winslow, C.E.A., J. Broadhurst, R.E.
Buchanan, C. Krumwiede Jr., L.A.
Rogers and G.H. Smith. 1917. *Journal of*
Bacteriology 2:505-566. **Type strain:**
ATCC 25391

Description: Watson, S.W. 1971. *International Journal of Systematic Bacteriology* 21:254-270.

Nitrococcus Watson and Waterbury 1971

Watson, S.W. and J.B. Waterbury. 1971.
Archiv fur Mikrobiologie 77:203-230.
Type species: *N. mobilis* Watson and
Waterbury 1971

Description: Bergey 8.

N. mobilis Watson and Waterbury 1971

Watson, S.W. and J.B. Waterbury. 1971.
Archiv fur Mikrobiologie 77:203-230.
Type strain: ATCC 25380

Description: Watson, S.W. and J.B.
Waterbury. 1971. *Ibid.*

Nitrosococcus Winogradsky 1892

Winogradsky, S. 1892. *Archiv Biologi-*
cheskikh Nauk (St. Petersburg) 1:87-
137. **Type species:** *N. nitrosus* (Migula
1900) Buchanan 1925

Description: Bergey 8.

N. nitrosus (Migula 1900) Buchanan 1925

Migula, W. 1900. *System der Bakterien*,
Vol. 2. Gustav Fischer, Jena; Buchanan,
R.E. 1925. *General Systemic Bacteriolo-*
gy. The Williams and Wilkins Co.,
Baltimore. **Type strain:** no culture
isolated.

Description: Bergey 8.

N. oceanus (Watson 1965) Watson 1971

Watson, S.W. 1965. *Limnology and*
Oceanography 10:274-289; Watson, S.W.
1971. *International Journal of Systematic*
Bacteriology 21:254-270. **Type strain:**
ATCC 19707

Description: Watson, S.W. 1971. *Ibid.*

Nitrosolobus Watson, Graham, Remsen and
Valois 1971

Watson, S.W., L.B. Graham, C.C.
Remsen and F.W. Valois. 1971. *Archiv*
fur Mikrobiologie 76:83-203. **Type species:**
N. multiformis Watson, Graham, Remsen
and Valois 1971

Description: Bergey 8.

N. multiformis Watson, Graham, Remsen and
Valois 1971

Watson, S.W., L.B. Graham, C.C.
Remsen and F.W. Valois. 1971. *Archiv*
fur Mikrobiologie 76:83-203. **Type strain:**
ATCC 25196

Description: Watson, S.W. 1971. *International Journal of Systematic Bacteriology* 21:254-270.

Nitrosomonas Winogradsky 1892

Winogradsky, S. 1892. *Archiv Biologi-*
cheskikh Nauk (St. Petersburg) 1:87-
137. **Type species:** *N. europaea* Wino-
gradsky 1892

Description: Bergey 8.

N. europaea Winogradsky 1892

Winogradsky, S. 1892. *Archiv*
Biologicheskikh Nauk (St. Petersburg) 1:
87-137. **Type strain:** ATCC 25978

Description: Watson, S.W. 1971. *International Journal of Systematic Bacteriology* 21:254-270.

Nitrospira Winogradsky and Winogradsky
1933

Winogradsky, S. and H. Winogradsky.
1933. *Annales de l'Institut Pasteur (Paris)*
50:350-434. **Type species:** *N. briensis*
Winogradsky and Winogradsky 1933

Description: Bergey 8.

N. briensis Winogradsky and Winogradsky 1933

Winogradsky, S. and H. Winogradsky.
1933. *Annales de l'Institut Pasteur (Paris)*
50:350-434. **Type strain:** no culture
available.

Description: Watson, S.W. 1971. *International Journal of Systematic Bacteriology* 21:254-270.

Nitrospina Watson and Waterbury 1971

Watson, S.W. and J.B. Waterbury. 1971.
Archiv fur Mikrobiologie 77:203-230.
Type species: *N. gracilis* Watson and
Waterbury 1971

Description: Bergey 8.

N. gracilis Watson and Waterbury 1971

Watson, S.W. and J.B. Waterbury. 1971.
Archiv fur Mikrobiologie 77:203-230.
Type strain: no culture available.

Description: Watson, S.W. and J.B.
Waterbury. 1971. *Ibid.*

Nocardia Trevisan 1889

Trevisan, V. 1889. I Generi e le Specie delle Battieriacee. Zanaboni and Gabuzzi, Milano. **Type species:** *N. asteroides* (Eppinger 1891) Blanchard 1896

Description: Bergey 8.

N. amarae Lechevalier and Lechevalier 1974

Lechevalier, M.P. and H.A. Lechevalier. 1974. International Journal of Systematic Bacteriology **24**:278-288. **Type strain:** ATCC 27808

Description: Lechevalier, M.P. and H.A. Lechevalier. 1974. Ibid.

N. asteroides (Eppinger 1891) Blanchard 1896

Eppinger, H. 1891. Beitrage zur pathologischen Anatomie **9**:287-328; Blanchard, R. 1896 in Bouchard, C. Traite de Pathologie Generale, Vol. 2, G. Masson, Paris. pp. 1-932. **Type strain:** ATCC 19247

Description: Gordon, R.E. and J.M. Mihm. 1957. Journal of Bacteriology **73**: 15-27.

N. autotrophica (Takamiya and Tubaki 1956) Hirsch 1961

Takamiya, A. and K. Tubaki. 1956. Archiv fur Mikrobiologie **25**:58-64; Hirsch, P. 1961. Archiv fur Mikrobiologie **39**:360-373. **Type strain:** ATCC 19727

Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:69-189.

N. brasiliensis (Lindenberg 1909) Pinoy 1913

Lindenberg, A. 1909. Archives de Parasitologie **13**:265-282; Pinoy, E. 1913. Bulletin de l'Institut Pasteur **11**:929-938. **Type strain:** ATCC 19296

Description: Gordon, R.E. and J.M. Mihm. 1959. Journal of General Microbiology **20**:129-135.

N. calcarrea Metcalf and Brown 1957

Metcalf, G. and M. Brown. 1957. Journal of General Microbiology **17**:567-572. **Type strain:** ATCC 19369

Description: Metcalf, G. and M. Brown. 1957. Ibid.

N. carnea (Rossi Doria 1891) Castellani and Chalmers 1913

Rossi Doria, T. 1891. Annali dell' Istituto d'Igiene Sperimentale, Universita Roma **1**: 399-438; Castellani, A. and A.J. Chalmers. 1913. Manual of Tropical Medicine, 2nd ed. Bailliere, Tindall and Cox,

London. **Type strain:** ATCC 6847

Description: Gordon, R.E., S.K. Mishra and D.A. Barnett. 1978. Journal of General Microbiology **109**:69-78.

N. cellulans Metcalf and Brown 1957

Metcalf, G. and M. Brown. 1957. Journal of General Microbiology **17**:567-572. **Type strain:** ATCC 12830

Description: Metcalf, G. and M. Brown. 1957. Ibid.

N. coeliaca (Gray and Thornton 1928) Waksman and Henrici 1948

Gray, P.H.H. and H.G. Thornton. 1928. Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. **73**:74-96; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). Bergey's Manual of Determinative Bacteriology, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 892-928. **Type strain:** ATCC 17041

Description: Gordon, R.E., D.A. Barnett, J.E. Handerhan and C. Hor-Nay Pang. 1974. * International Journal of Systematic Bacteriology **24**:54-63.

N. corynebacterioides Serrano, Tablante, Serrano, San Blas and Imaeda 1972

Serrano, J.A., R.V. Tablante, A.A. Serrano, G.C. San Blas and T. Imaeda. 1972. Journal of General Microbiology **70**:339-349. **Type strain:** ATCC 14898

Description: Serrano, J.A., R.V. Tablante, A.A. Serrano, G.C. San Blas and T. Imaeda. 1972. Ibid.

N. farcinica Trevisan 1889

Trevisan, V. 1889. I. Generi e le Specie delle Battieriacee. Zanaboni and Gabuzzi, Milano. **Type strain:** ATCC 3318

Description: Trevisan, V. 1889. Ibid.

N. globerula (Gray 1928) Waksman and Henrici 1948

Gray, P.H.H. 1928. Proceedings of the Royal Society Series B **102**:263-280; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). Bergey's Manual of Determinative Bacteriology, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 892-928. **Type strain:** ATCC 19370

Description: Bergey 8.

N. hydrocarbonoxydans Nolfo and Hirsch 1962

Nolfo, G. and P. Hirsch. 1962. Archiv fur

- Mikrobiologie 44:266-277. **Type strain:** ATCC 15104
Description: Nolof, G. and P. Hirsch. 1962. *Ibid.*
- N. mediterranei** (Margalith and Beretta 1960) Thiemann, Zucco and Pelizza 1969
 Margalith, P. and G. Beretta. 1960. *Mycopathologia et Mycologia Applicata* 12:189-195; Thiemann, J.E., G. Zucco and G. Pelizza. 1969. *Archiv fur Mikrobiologie* 67:147-155. **Type strain:** ATCC 13685
Description: Thiemann, J.E., G. Zucco and G. Pelizza. 1969. *Ibid.*
- N. orientalis** (Pittenger and Brigham 1956) Pridham and Lyons 1969
 Pittenger, R.C. and R.B. Brigham. 1956. *Antibiotics and Chemotherapy* 6:642-647; Pridham, T.G. and A.J. Lyons. 1969. *Developments in Industrial Microbiology* 10:183-221. **Type strain:** ATCC 19795
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* 18:69-189.
- N. otitidis-caviarum** Snijders 1924
 Snijders, E.P. 1924. *Geneeskundig Tijdschrift voor Nederlandsch-Indie* 64:85-87. **Type strain:** ATCC 14629
Description: Bergey 8.
- N. petroleophila** Hirsch and Engel 1956
 Hirsch, P. and H. Engel. 1956. *Berichte der Deutschen Botanischen Gesellschaft* 69:441-454. **Type strain:** ATCC 15777
Description: Hirsch, P. and H. Engel. 1956. *Ibid.*
- N. restricta** (Turfitt 1944) McClung 1974
 Turfitt, G.E. 1944. *Journal of Bacteriology* 47:487-493; McClung, N.M. 1974 *Bergey 8*. **Type strain:** DSM 43199
Description: Bergey 8.
- N. saturnea** Hirsch 1960
 Hirsch, P. 1960. *Archiv fur Mikrobiologie* 35:391-414. **Type strain:** ATCC 15809
Description: Hirsch, P. 1960. *Ibid.*
- N. transvalensis** Pijper and Pullinger 1927
 Pijper, A. and B.D. Pullinger. 1927. *Journal of Tropical Medicine and Hygiene* 30:153-156. **Type strain:** ATCC 6865
Description: Gordon, R.E., S.K. Mishra and D.A. Barnett. 1978. *Journal of General Microbiology* 109:69-78.
- N. vaccinii** Demaree and Smith 1952
 Demaree, J.B. and N.R. Smith. 1952. *Phytopathology* 42:249-252. **Type strain:** ATCC 11092
Description: Demaree, J.B. and N.R. Smith. 1952. *Ibid.*
- Nocardioides** Prauser 1976
 Prauser, H. 1976. *International Journal of Systematic Bacteriology* 26:58-65. **Type species:** *N. albus* Prauser 1976
Description: Prauser, H. 1976. *Ibid.*
- N. albus** Prauser 1976
 Prauser, H. 1976. *International Journal of Systematic Bacteriology* 26:58-65. **Type strain:** ATCC 27980
Description: Prauser, H. 1976. *Ibid.*
- Nocardiopsis** Meyer 1976
 Meyer, J. 1976. *International Journal of Systematic Bacteriology* 26:487-493. **Type species:** *N. dassonvillei* Meyer 1976
Description: Meyer, J. 1976. *Ibid.*
- N. dassonvillei** Meyer 1976
 Meyer, J. 1976. *International Journal of Systematic Bacteriology* 26:487-493. **Type strain:** ATCC 23218
Description: Meyer, J. 1976. *Ibid.*
- Obesumbacterium** Shimwell 1963
 Shimwell, J.L. 1963. *Brewers Journal* 99:759-760. **Type species:** *O. proteus* Shimwell 1963
Description: Shimwell, J.L. 1963. *Ibid.*
- O. proteus** Shimwell 1963
 Shimwell, J.L. 1963. *Brewers Journal* 99:759-760. **Type strain:** NCIB 8771
Description: Shimwell, J.L. 1963. *Ibid.*
- Oceanospirillum** Hylemon, Wells, Krieg and Jannasch 1973
 Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *International Journal of Systematic Bacteriology* 23:340-380. **Type species:** *O. linum* (Williams and Rittenberg 1957) Hylemon, Wells, Krieg and Jannasch 1973
Description: Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *Ibid.*
- O. beijerinckii** (Williams and Rittenberg 1957) Hylemon, Wells, Krieg and Jannasch 1973
 Williams, M.A. and S.C. Rittenberg. 1957. *International Bulletin of Bacterio-*

- logical Nomenclature and Taxonomy 7: 49-110; Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. International Journal of Systematic Bacteriology 23:340-380. **Type strain:** ATCC 12754
Description: Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *Ibid.*
- O. hiroshimense** (Terasaki 1973) Terasaki 1979
 Terasaki, Y. 1973. Bulletin of the Suzugamine Women's College, Natural Science 17:1-71; Terasaki, Y. 1979. International Journal of Systematic Bacteriology 29:130-144. **Type strain:** IFO 13616
Description: Terasaki, Y. 1979. *Ibid.*
- O. japonicum** (Watanabe 1959) Hylemon, Wells, Krieg and Jannasch 1973
 Watanabe, N. 1959. Botanical Magazine (Tokyo) 72:77-86; Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. International Journal of Systematic Bacteriology 23:340-380. **Type strain:** ATCC 19191
Description: Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *Ibid.*
- O. linum** (Williams and Rittenberg 1957) Hylemon, Wells, Krieg and Jannasch 1973
 Williams, M.A. and S.C. Rittenberg. 1957. International Bulletin of Bacteriological Nomenclature and Taxonomy 7: 49-110; Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. International Journal of Systematic Bacteriology 23:340-380. **Type strain:** ATCC 11336
Description: Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *Ibid.*
- O. maris** Hylemon, Wells, Krieg and Jannasch 1973
 Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. International Journal of Systematic Bacteriology 23: 340-380. **Type strain:** ATCC 27509
Description: Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *Ibid.*
- O. minutulum** (Watanabe 1959) Hylemon, Wells, Krieg and Jannasch 1973
 Watanabe, N. 1959. Botanical Magazine (Tokyo) 72:77-86; Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. International Journal of Systematic Bacteriology 23:340-380. **Type strain:** ATCC 19193
Description: Hylemon, P.B., J.S. Wells Jr., N.R. Krieg and H.W. Jannasch. 1973. *Ibid.*
- O. multiglobuliferum** (Terasaki 1973) Terasaki 1979
 Terasaki, Y. 1973. Bulletin of the Suzugamine Women's College, Natural Science 17:1-71; Terasaki, Y. 1979. International Journal of Systematic Bacteriology 29:130-144. **Type strain:** IFO 13614
Description: Terasaki, Y. 1979. *Ibid.*
- O. pelagicum** (Terasaki 1973) Terasaki 1979
 Terasaki, Y. 1973. Bulletin of the Suzugamine Women's College, Natural Science 17:1-71; Terasaki, Y. 1979. International Journal of Systematic Bacteriology 29:130-144. **Type strain:** IFO 13612
Description: Terasaki, Y. 1979. *Ibid.*
- O. pusillum** (Terasaki 1973) Terasaki 1979
 Terasaki, Y. 1973. Bulletin of the Suzugamine Women's College, Natural Science 17:1-71; Terasaki, Y. 1979. International Journal of Systematic Bacteriology 29:130-144. **Type strain:** IFO 13613
Description: Terasaki, Y. 1979. *Ibid.*
- Oerskovia** Prauser, Lechevalier and Lechevalier 1970
 Prauser, H., M.P. Lechevalier and H.A. Lechevalier. 1970. Applied Microbiology 19:534. **Type species:** *O. turbata* (Erikson 1954) Prauser, Lechevalier and Lechevalier 1970
Description: Prauser, H., M.P. Lechevalier and H.A. Lechevalier. 1970. *Ibid.*
- O. turbata** (Erikson 1954) Prauser, Lechevalier and Lechevalier 1970
 Erikson, D. 1954. Journal of General Microbiology 11:198-208; Prauser, H., M.P. Lechevalier and H.A. Lechevalier. 1970. Applied Microbiology 19:534. **Type strain:** ATCC 25835
Description: Prauser, H., M.P. Lechevalier and H.A. Lechevalier. 1970. *Ibid.*

- O. xanthineolytica** Lechevalier 1972
Lechevalier, M.P. 1972. International Journal of Systematic Bacteriology **22**: 260-264. **Type strain**: ATCC 27402
Description: Lechevalier, M.P. 1972. Ibid.
- Oscillospira** Chatton and Perard 1913
Chatton, E. and C. Perard. 1913. Comptes Rendus des Seances de la Societe de Biologie (Paris) **74**:1159-1162. **Type species**: *O. guilliermondi* Chatton and Perard 1913
Description: Bergey 8.
- O. guilliermondi** Chatton and Perard 1913
Chatton, E. and C. Perard. 1913. Comptes Rendus des Seances de la Societe de Biologie (Paris) **74**:1159-1162. **Type strain**: no culture isolated.
Description: Bergey 8.
- Paracoccus** Davis 1969
Davis, D.H. 1969 in Davis, D.H., M. Doudoroff, R.Y. Stanier and M. Mandel. International Journal of Systematic Bacteriology **19**:375-390. **Type species**: *P. denitrificans* (Beijerinck and Minkman 1910) Davis 1969
Description: Bergey 8.
- P. denitrificans** (Beijerinck and Minkman 1910) Davis 1969
Beijerinck, M.W. and D.C.J. Minkman. 1910. Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. **25**:30-63; Davis, D.H. 1969 in Davis, D.H., M. Doudoroff, R.Y. Stanier and M. Mandel. International Journal of Systematic Bacteriology **19**: 375-390. **Type strain**: ATCC 17741
Description: Davis, D.H. 1969. Ibid.
- P. halodenitrificans** (Robinson and Gibbons 1952) Davis 1969
Robinson, J. and N.E. Gibbons. 1952. Canadian Journal of Botany **30**:147-154; Davis, D.H. 1969 in Davis, D.H., M. Doudoroff, R.Y. Stanier and M. Mandel. International Journal of Systematic Bacteriology **19**:375-390. **Type strain**: ATCC 13511
Description: Bergey 8.
- Pasteurella** Trevisan 1887
Trevisan, V. 1887. Reale Istituto Lombardo Rendiconti (Ser 2) **20**:88-105. **Type species**: *P. multocida* (Lehmann and Neumann 1899) Rosenbusch and Merchant 1939
Description: Bergey 8.
- P. aerogenes** McAllister and Carter 1974
McAllister, H.A. and G.R. Carter. 1974. American Journal of Veterinary Research **35**:917-922. **Type strain**: ATCC 27883
Description: McAllister, H.A. and G.R. Carter. 1974. Ibid.
- P. gallicida** (Burrill 1883) Buchanan 1925
Burrill, T.J. 1883. The American Naturalist **17**:319-320; Buchanan, R.E. 1925. General systematic bacteriology. The Williams and Wilkins Co., Baltimore. pp. 412-415. **Type strain**: NCTC 10322
Description: Buchanan, R.E. 1925. Ibid.
- P. gallinarum** Hall, Heddleston, Legenhausen and Hughes 1955
Hall, W.J., K.L. Heddleston, D.H. Legenhausen and R.W. Hughes. 1955. American Journal of Veterinary Research **16**:598-604. **Type strain**: ATCC 13361
Description: Mraz, O., P. Jelen and J. Bohacek. 1977. Acta Veterinaria Brno **46**: 135-147.
- P. haemolytica** Newsome and Cross 1932
Newsome, I.E. and F. Cross. 1932. Journal of the American Veterinary Medical Association **80**:711-719. **Type strain**: NCTC 9380
Description: Bergey 8.
- P. multocida** (Lehmann and Neumann 1899) Rosenbusch and Merchant 1939
Lehmann, K.B. and R. Neumann. 1899. Lehmann's Medizin, Handatlaten Band X. Atlas and Grundriss der Bakteriologie und Lehrbuch der speziellen bakteriologischen Diagnostik. 2 Auflage, Munchen. p. 196; Rosenbusch, C.T. and I.A. Merchant. 1939. Journal of Bacteriology **37**:69-89. **Type strain**: NCTC 10322
Description: Bergey 8.
- P. pneumotropica** Jawetz 1950
Jawetz, E. 1950. Journal of Infectious Diseases **86**:172-183. **Type strain**: NCTC 8141
Description: Bergey 8.
- P. ureae** Jones 1962
Jones, D.M. 1962. Journal of Pathology and Bacteriology **83**:143-151. **Type strain**: ATCC 25976
Description: Jones, D.M. 1962. Ibid.

Pasteuria Metchnikoff 1888

Metchnikoff, E. 1888. *Annales de l'Institut Pasteur (Paris)* **2**:165-170. **Type species:** *P. ramosa* Metchnikoff 1888

Description: Bergey 8.

P. ramosa Metchnikoff 1888

Metchnikoff, E. 1888. *Annales de l'Institut Pasteur (Paris)* **2**:165-170. **Type strain:** ATCC 27377

Description: Staley, J.T. 1973. *Canadian Journal of Microbiology* **19**:609-614.

Pectinatus Lee, Mabee and Jangaard 1978

Lee, S.Y., M.S. Mabee and N.O. Jangaard. 1978. *International Journal of Systematic Bacteriology* **28**:582-594. **Type species:** *P. cerevisiophilus* Lee, Mabee and Jangaard 1978

Description: Lee, S.Y., M.S. Mabee and N.O. Jangaard. 1978. *Ibid.*

P. cerevisiophilus Lee, Mabee and Jangaard 1978

Lee, S.Y., M.S. Mabee and N.O. Jangaard. 1978. *International Journal of Systematic Bacteriology* **28**:582-594. **Type strain:** ATCC 29359

Description: Lee, S.Y., M.S. Mabee and N.O. Jangaard. 1978. *Ibid.*

Pectobacterium Waldee 1945

Waldee, E.L. 1945. *Iowa State Journal of Science* **19**:435-484. **Type species:** *P. carotovorum* (Jones 1901) Waldee 1945

Description: Waldee, E.L. 1945. *Ibid.*

P. carnegiana (Standring 1942) Brenner, Steigerwalt, Miklos and Fanning 1973 (See also *Erwinia carnegiana*)

Standring, E.T. 1942 in Lightle, P.C., E.T. Standring and J.G. Brown. *Phytopathology* **32**:303-313; Brenner, D.J., A.G. Steigerwalt, G.V. Miklos and G.R. Fanning. 1973. *International Journal of Systematic Bacteriology* **23**:205-216. **Type strain:** NCPPB 439

Description: Bergey 8.

P. carotovorum (Jones 1901) Waldee 1945 (See also *Erwinia carotovora*)

Jones, L.R. 1901. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **7**:12-21; Waldee, E.L. 1945. *Iowa State Journal of Science* **19**:435-484.

Type strain: ATCC 15713

Description: Bergey 8.

P. chrysanthemi (Burkholder, McFadden and Dimock 1953) Brenner, Steigerwalt, Miklos and Fanning 1973 (See also *Erwinia chrysanthemi*)

Burkholder, W.H., L.A. McFadden and A.V. Dimock. 1953. *Phytopathology* **43**:522-526; Brenner, D.J., A.G. Steigerwalt, G.V. Miklos and G.R. Fanning. 1973. *International Journal of Systematic Bacteriology* **23**:205-216. **Type strain:** ATCC 11663

Description: Bergey 8.

P. cypripedii (Hori 1911) Brenner, Steigerwalt, Miklos and Fanning 1973 (See also *Erwinia cypripedii*)

Hori, S. 1911. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **31**:85-92; Brenner, D.J., A.G. Steigerwalt, G.V. Miklos and G.R. Fanning. 1973. *International Journal of Systematic Bacteriology* **23**:205-216. **Type strain:** PDDCC 1591

Description: Bergey 8.

P. rhapontici (Millard 1924) Patel and Kulkarni 1951 (See also *Erwinia rhapontici*)

Millard, W.A. 1924. *Bulletin of the University of Leeds and the Yorkshire Council for Agricultural Education* **134**:1-28; Patel, M.K. and Y.S. Kulkarni. 1951. *Indian Phytopathology* **4**:74-84. **Type strain:** ATCC 29283

Description: Bergey 8.

Pediococcus Balcke 1884

Balcke, J. 1884. *Wochenschrift für Brauerei* **1**:257 **Type species:** *P. damnosus* Claussen 1903

Description: Bergey 8.

P. acidilactici Lindner 1887

Lindner, P. 1887. *Wochenschrift für Brauerei* **4**:437-440. **Type strain:** NCDO 1859

Description: Garvie, E.I. 1974. *International Journal of Systematic Bacteriology* **24**:301-306.

P. damnosus Claussen 1903

Claussen, N.H. 1903. *Compte Rendu des Travaux du Laboratoire de Carlsberg* **6**:64-83. **Type strain:** NCDO 1832

Description: Garvie, E.I. 1974. *Interna-*

- tional Journal of Systematic Bacteriology 24:301-306.
- P. dextrinicus** (Coster and White 1964) Back 1978
Coster, E. and H.R. White. 1964. Journal of General Microbiology 37:15-31; Back, W. 1978. International Journal of Systematic Bacteriology 28:523-527. **Type strain:** DSM 20335
Description: Back, W. 1978. Ibid.
- P. halophilus** Mees 1934
Mees, R.H. 1934. Thesis. Technical University Delft, Holland. pp. 1-110. **Type strain:** NCDO 1635
Description: Gunther, H.L. and H.R. White. 1961. Journal of General Microbiology 26:185-197.
- P. parvulus** Gunther and White 1961
Gunther, H.L. and H.R. White. 1961. Journal of General Microbiology 26:185-197. **Type strain:** NCDO 1634
Description: Gunther, H.L., E. Coster and H.R. White. 1962. International Bulletin of Bacteriological Nomenclature and Taxonomy 12:189-190.
- P. pentosaceus** Mees 1934
Mees, R.H. 1934. Thesis. Technical University, Delft, Holland. pp. 1-110. **Type strain:** NCDO 990
Description: Garvie, E.I. 1974. International Journal of Systematic Bacteriology 24:301-306.
- Pedomicrobium** Aristovskaya 1961
Aristovskaya, T.V. 1961. Doklady Akademii Nauk SSSR 136:954-957. **Type species:** *P. ferrugineum* Aristovskaya 1961
Description: Bergey 8.
- P. ferrugineum** Aristovskaya 1961
Aristovskaya, T.V. 1961. Doklady Akademii Nauk SSSR 136:954-957. **Type strain:** IFAM S-1290
Description: Bergey 8.
- P. manganicum** Aristovskaya 1961
Aristovskaya, T.V. 1961. Doklady Akademii Nauk SSSR 136:954-957. **Type strain:** IFAM E-1129
Description: Bergey 8.
- Pelodictyon** Lauterborn 1913
Lauterborn, R. 1913. Allgemeine Botanische Zeitschrift 19:97-100. **Type species:** *P. clathratiforme* (Szafer 1911) Lauterborn 1913
Description: Bergey 8.
- P. clathratiforme** (Szafer 1911) Lauterborn 1913
Szafer, W. 1911. Bulletin de l'Academie des Sciences de Cracovie, Serie B. pp. 160-167; Lauterborn, R. 1913. Allgemeine Botanische Zeitschrift 19:97-100. **Type strain:** no pure culture.
Description: Bergey 8.
- P. luteolum** (Schmidle 1901) Pfennig and Truper 1971
Schmidle, W. 1901. Beihefte zum Botanischen Zentralblatt 10:179-180; Pfennig, N. and H.G. Truper. 1971. International Journal of Systematic Bacteriology 21:11-14. **Type strain:** DSM 273
Description: Bergey 8.
- P. phaeum** Gorlenko 1972
Gorlenko, V.M. 1972. Mikrobiologiya 41:370-372. **Type strain:** DSM 728
Description: Gorlenko, V.M. 1972. Ibid.
- Peptococcus** Kluyver and van Niel 1936
Kluyver, A.J. and C.B. van Niel. 1936. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. 94:369-403. **Type species:** *P. niger* (Hall 1930) Kluyver and van Niel 1936
Description: Bergey 8.
- P. asaccharolyticus** (Distaso 1912) Douglas 1957
Distaso, A. 1912. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I. 62:433-468; Douglas, H.C. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). Bergey's Manual of Determinative Bacteriology, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 474-480. **Type strain:** ATCC 14963
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- P. glycinophilus** (Cardon and Barker 1946) Douglas 1957
Cardon, B.P. and H.A. Barker. 1946. Journal of Bacteriology 52:629-634; Douglas, H.C. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds).

- Bergey's Manual of Determinative Bacteriology, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 474-480. **Type strain:** ATCC 23195
Description: Douglas, H.C. 1957. *Ibid.*
- P. indolicus** (Christiansen 1934) Sorensen 1975
 Christiansen, M. 1934. *Acta Pathologica et Microbiologica Scandinavica*, Supplement 18:42-63; Sorensen, G. 1975. *Acta Veterinaria Scandinavica* 16:218-225. **Type strain:** ATCC 29427
Description: Sorensen, G. 1973. *Acta Veterinaria Scandinavica* 14:301-326.
- P. magnus** (Prevot 1933) Holdeman and Moore 1972
 Prevot, A.R. 1933. *Annales Societe Nature* 15:23-260; Holdeman, L.V. and W.E.C. Moore (eds). 1972. *Anaerobe Laboratory Manual*. Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia. **Type strain:** ATCC 15794
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- P. niger** (Hall 1930) Kluyver and van Niel 1936
 Hall, I.C. 1930. *Journal of Bacteriology* 20:407-415; Kluyver, A.J. and C.B. van Niel. 1936. *Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* 94:369-403. **Type strain:** ATCC 27731
Description: Wilkins, T.D., W.E.C. Moore, S.E.H. West and L.V. Holdeman. 1975. *International Journal of Systematic Bacteriology* 25:47-49.
- P. prevotii** (Foubert and Douglas 1948) Douglas 1957
 Foubert Jr., E.L. and H.C. Douglas. 1948. *Journal of Bacteriology* 56:25-34; Douglas, H.C. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 474-480. **Type strain:** ATCC 9321
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- P. saccharolyticus** (Foubert and Douglas 1948) Douglas 1957
 Foubert Jr., E.L. and H.C. Douglas. 1948. *Journal of Bacteriology* 56:25-34; Douglas, H.C. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 474-480. **Type strain:** ATCC 14953
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- Peptostreptococcus** Kluyver and van Niel 1936
 Kluyver, A.J. and C.B. van Niel. 1936. *Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* 94:369-403. **Type species:** *P. anaerobius* (Natvig 1905) Kluyver and van Niel 1936
Description: Bergey 8.
- P. anaerobius** (Natvig 1905) Kluyver and van Niel 1936
 Natvig, H. 1905. *Archiv fur Gynakologie (Berlin)* 76:701-858; Kluyver, A.J. and C.B. van Niel. 1936. *Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* 94:369-403. **Type strain:** ATCC 27337
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- P. micros** (Prevot 1933) Smith 1957
 Prevot, A.R. 1933. *Annales des Sciences Naturelles* 15:23-260; Smith, L.D.S. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 533-541. **Type strain:** VPI 5464
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- P. parvulus** (Weinberg, Nativelle and Prevot 1937) Smith 1957

- Weinberg, M., R. Nativelle and A.R. Prevot. 1937. *Les Microbes Anaerobies*. Masson et Cie, Paris. pp. 1-1186; Smith, L.D.S. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 533-541. **Type strain:** VPI 0546
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- P. productus** (Prevot 1941) Smith 1957
 Prevot, A.R. 1941. *Comptes Rendus des Seances de la Societe de Biologie (Paris)* **135**:105-107; Smith, L.D.S. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 533-541. **Type strain:** ATCC 27340
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- Photobacterium** Beijerinck 1889
 Beijerinck, M.W. 1889. *Archives Neerlandaises des Science Exactes et Naturelles* **23**:401-415. **Type species:** *P. phosphoreum* (Cohn 1878) Ford 1927
Description: Bergey 8.
- P. angustum** Reichelt, Baumann and Baumann 1979
 Reichelt, J.L., P. Baumann and L. Baumann. 1979 in *International Journal of Systematic Bacteriology* **29**:79-80; Effective publication Reichelt, J.L., P. Baumann and L. Baumann. 1976. *Archives of Microbiology* **110**:101-120. **Type strain:** ATCC 25915
Description: Baumann, P., L. Baumann and M. Mandel. 1971. *Journal of Bacteriology* **107**:268-294.
- P. fischeri** (Beijerinck 1889) Reichelt and Baumann 1973 (See also *Vibrio fischeri*)
 Beijerinck, M.W. 1889. *Archives Neerlandaises des Science Exactes et Naturelles* **23**:401-415; Reichelt, J.L. and P. Baumann. 1973. *Archiv fur Mikrobiologie* **94**: 283-330. **Type strain:** ATCC 7744
Description: Reichelt, J.L. and P. Baumann. 1973. *Ibid.*
- P. leiognathi** Boisvert, Chatelain and Bassot 1967
 Boisvert, H., R. Chatelain and J.-M. Bassot. 1967. *Annales de l'Institut Pasteur (Paris)* **112**:520-524. **Type strain:** ATCC 25521
Description: Reichelt, J.L. and P. Baumann. 1975. *International Journal of Systematic Bacteriology* **25**:208-209.
- P. phosphoreum** (Cohn 1878) Beijerinck 1889
 Cohn, F. 1878. Letter to J. Penn which describes *Micrococcus phosphoreum*. *Versameling van stukken betreffende het geneeskundig staats toezich*, 126-130; Beijerinck, M.W. 1889. *Archives Neerlandaises des Science Exactes et Naturelles* **23**:401-415. **Type strain:** ATCC 11040
Description: Reichelt, J.L. and P. Baumann. 1973. *Archiv fur Mikrobiologie* **94**: 283-330.
- Pilimelia** Kane 1966
 Kane, W.D. 1966. *Journal of the Elisha Mitchell Scientific Society* **82**:220-230. **Type species:** *P. terevasa* Kane 1966
Description: Bergey 8.
- P. anulata** Kane 1966
 Kane, W.D. 1966. *Journal of the Elisha Mitchell Scientific Society* **82**:220-230. **Type strain:** ATCC 25604
Description: Bergey 8.
- P. terevasa** Kane 1966
 Kane, W.D. 1966. *Journal of the Elisha Mitchell Scientific Society* **82**:220-230. **Type strain:** ATCC 25603
Description: Bergey 8.
- Planctomyces** Gimesi 1924
 Gimesi, N. 1924. *Budapest, Kiadja a Magyar Ciszterci. Rend*, pp. 1-8. **Type species:** *P. bekefii* Gimesi 1924
Description: Bergey 8.
- P. bekefii** Gimesi 1924
 Gimesi, N. 1924. *Budapest, Kiadja a Magyar Ciszterci. Rend*, pp. 1-8. **Type strain:** no culture isolated.
Description: Bergey 8.
- Planobispora** Thiemann and Beretta 1968
 Thiemann, J.E. and G. Beretta. 1968.

Archiv fur Mikrobiologie 62:157-166.

Type species: *P. longispora* Thiemann and Beretta 1968

Description: Bergey 8.

P. longispora Thiemann and Beretta 1968

Thiemann, J.E. and G. Beretta. 1968. Archiv fur Mikrobiologie 62:157-166.

Type strain: ATCC 23867

Description: Bergey 8.

P. rosea Thiemann 1970

Thiemann, J.E. 1970 in Prauser, H. (ed). The Actinomycetales. The Jena International Symposium on Taxonomy, Sept. 1968. VEB Gustav Fischer Verlag Jena. pp. 245-257. **Type strain:** ATCC 23866

Description: Bergey 8.

Planococcus Migula 1894

Migula, W. 1894. Arbeiten aus dem Bakteriologischen Institut der Technischen Hochschule zu Karlsruhe 1:235-238. **Type species:** *P. citreus* Migula 1894

Description: Bergey 8.

P. citreus Migula 1894

Migula, W. 1894. Arbeiten aus dem Bakteriologischen Institut der Technischen Hochschule zu Karlsruhe 1:235-238. **Type strain:** ATCC 14404

Description: Kocur, M., Z. Pacova, W. Hodgkiss and T. Martinec. 1970. International Journal of Systematic Bacteriology 20:241-248.

P. halophilus Novitsky and Kushner 1976

Novitsky, T.J. and D.J. Kushner. 1976. International Journal of Systematic Bacteriology 26:53-57. **Type strain:** ATCC 27964

Description: Novitsky, T.J. and D.J. Kushner. 1976. Ibid.

Planomonospora Thiemann, Pagani and Beretta 1967

Thiemann, J.E., H. Pagani and G. Beretta. 1967. Giornale di Microbiologia 15:27-38. **Type species:** *P. parontospora* Thiemann, Pagani and Beretta 1967

Description: Bergey 8.

P. parontospora Thiemann, Pagani and Beretta 1967

Thiemann, J.E., H. Pagani and G. Beretta. 1967. Giornale di Microbiologia 15:27-38. **Type strain:** ATCC 23863

Description: Bergey 8.

P. parontospora subsp. *antibiotica* Thiemann, Coronelli, Pagani, Beretta, Tamoni and Arioli 1968

Thiemann, J.E., C. Coronelli, H. Pagani, G. Beretta, G. Tamoni and V. Arioli. 1968. Journal of Antibiotics (Tokyo) Series A 21:525-531. **Type strain:** ATCC 23864

Description: Bergey 8.

P. parontospora subsp. *parontospora* Thiemann, Pagani and Beretta 1967

Thiemann, J.E., H. Pagani and G. Beretta. 1967. Giornale di Microbiologia 15:27-38. **Type strain:** ATCC 23863

Description: Bergey 8.

P. venezuelensis Thiemann 1970

Thiemann, J.E. 1970 in Prauser, H. (ed). The Actinomycetales. The Jena International Symposium on Taxonomy, Sept. 1968. VEB Gustav Fischer Verlag Jena. pp. 245-257. **Type strain:** ATCC 23865

Description: Thiemann, J.E. 1970. Ibid.

Pleisomonas Habs and Schubert 1962

Habs, H. and R.H.W. Schubert. 1962. Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I. 186:316-327. **Type species:** *P. shigelloides* (Bader 1954) Habs and Schubert 1962

Description: Bergey 8.

P. shigelloides (Bader 1954) Habs and Schubert 1962

Bader, R.E. 1954. Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I. 140:450-456; Habs, H. and R.H.W. Schubert. 1962. Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I. 186:316-327. **Type strain:** ATCC 14029

Description: Bergey 8.

Polyangium Link 1809

Link, H.F. 1809. Gesellschaft fur Natur (Berlin) 3:3-42. **Type species:** *P. vitellinum* Link 1809

Description: Bergey 8.

P. fumosum Krzemieniewska and Krzemieniewski 1930

Krzemieniewska, H. and S. Krzemieniewski. 1930. Acta Societatis Botanicorum

- Poloniae 7:250-273. **Type strain:** Windsor M257
Description: Bergey 8.
- P. minor** (Peterson 1959) McCurdy 1970
 Peterson, J.E. 1959. *Mycologia* **51**:1-8; McCurdy, H.D. 1970. *International Journal of Systematic Bacteriology* **20**:283-296. **Type strain:** UMH Peterson 44
Description: Peterson, J.E. 1959. *Ibid.*
- P. rugiseptum** (Peterson 1959) McCurdy 1970
 Peterson, J.E. 1959. *Mycologia* **51**:1-8; McCurdy, H.D. 1970. *International Journal of Systematic Bacteriology* **20**:283-296. **Type strain:** UMH Peterson 51
Description: Peterson, J.E. 1959. *Ibid.*
- P. vitellinum** Link 1809
 Link, H.F. 1809. *Gesellschaft fur Natur (Berlin)* **3**:3-42. **Type strain:** TC 4564
Description: Bergey 8.
- Promicromonospora** Krassilnikov, Kalakoutsii and Kirillova 1961
 Krassilnikov, N.A., L.V. Kalakoutsii and N.F. Kirillova. 1961. *Bulletin of the Academy of Sciences USSR (Series Biology)* **1**:107-112. **Type species:** *P. citrea* Krassilnikov, Kalakoutsii and Kirillova 1961
Description: Krassilnikov, N.A., L.V. Kalakoutsii and N.F. Kirillova. 1961. *Ibid.*
- P. citrea** Krassilnikov, Kalakoutsii and Kirillova 1961
 Krassilnikov, N.A., L.V. Kalakoutsii and N.F. Kirillova. 1961. *Bulletin of the Academy of Sciences USSR (Series Biology)* **1**:107-112. **Type strain:** ATCC 15908
Description: Krassilnikov, N.A., L.V. Kalakoutsii and N.F. Kirillova. 1961. *Ibid.*
- Propionibacterium** Orla-Jensen 1909
 Orla-Jensen, S. 1909. *Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **22**:305-346. **Type species:** *P. freudenreichii* van Niel 1928
Description: Bergey 8.
- P. acidipropionici** Orla-Jensen 1909
 Orla-Jensen, S. 1909. *Zentralblatt fur Bakteriologie Parasitenkunde, Infektionskrankheiten und Hygiene. Ab-*
- teilung II.* **22**:305-346. **Type strain:** ATCC 25562
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- P. acnes** (Gilchrist 1900) Douglas and Gunter 1946
 Gilchrist, T.C. 1900. *Johns Hopkins Hospital Report* **9**:409-430; Douglas, H.D. and S.E. Gunter. 1946. *Journal of Bacteriology* **52**:15-23. **Type strain:** ATCC 6919
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- P. avidum** (Eggerth 1935) Moore and Holdeman 1969
 Eggerth, A.H. 1935. *Journal of Bacteriology* **30**:277-299; Moore, W.E.C. and L.V. Holdeman. 1969 in Cato, E.P., C.S. Cummins, L.V. Holdeman, J.L. Johnson, W.E.C. Moore, R.M. Smibert and L.D.S. Smith (eds). *Outline of clinical methods in anaerobic bacteriology.* Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia. **Type strain:** ATCC 25577
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- P. freudenreichii** van Niel 1928
 van Niel, C.B. 1928. *The propionic acid bacteria.* Uitgeverszaak and Boissevain and Co., Haarlem, Holland. pp. 1-187. **Type strain:** ATCC 6207
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- P. freudenreichii** subsp. *freudenreichii* (van Niel 1928) Moore and Holdeman 1970
 van Niel, C.B. 1928. *The propionic acid bacteria.* Uitgeverszaak and Boissevain and Co., Haarlem, Holland. pp. 1-187; Moore, W.E.C. and L.V. Holdeman. 1970 in Cato, E.P., C.S. Cummins, L.V.

Holdeman, J.L. Johnson, W.E.C. Moore, R.M. Smibert and L.D.S. Smith (eds). Outline of clinical methods in anaerobic bacteriology, 2nd revision. Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia. pp. 15-21. **Type strain:** ATCC 6207

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

P. freudenreichii subsp. *shermanii* (van Niel 1928) Holdeman and Moore 1970

van Niel, C.B. 1928. The propionic acid bacteria. N.V. Uitgeverszaak and J.W. Boissevain and Co., Haarlem, Holland. pp. 1-187; Moore, W.E.C. and L.V. Holdeman. 1970 in Cato, E.P., C.S. Cummins, L.V. Holdeman, J.L. Johnson, W.E.C. Moore, R.M. Smibert and L.D.S. Smith (eds). Outline of clinical methods in anaerobic bacteriology, 2nd revision. Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia. pp. 15-21. **Type strain:** ATCC 9614

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

P. granulosum (Prevot 1938) Moore and Holdeman 1970

Prevot, A.R. 1938. Annales de l'Institut Pasteur (Paris) **60**:285-307; Moore, W.E.C. and L.V. Holdeman. 1970 in Cato, E.P., C.S. Cummins, L.V. Holdeman, J.L. Johnson, W.E.C. Moore, R.M. Smibert and L.D.S. Smith (eds). Outline of clinical methods in anaerobic bacteriology, 2nd revision. Virginia Polytechnic Institute Anaerobe Laboratory, Blacksburg, Virginia. pp. 15-21. **Type strain:** ATCC 25564

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

P. jensenii van Niel 1928

van Niel, C.B. 1928. The propionic acid bacteria. Uitgeverszaak and Boissevain and Co., Haarlem, Holland. pp. 1-187.

Type strain: ATCC 4868

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

P. lymphophilum (Torrey 1916) Johnson and Cummins 1972

Torrey, J.C. 1916. Journal of Medical Research **34**:65-80; Johnson, J.L. and C.S. Cummins. 1972. Journal of Bacteriology **109**:1047-1066. **Type strain:** ATCC 27520

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

P. thoenii van Niel 1928

van Niel, C.B. 1928. The propionic acid bacteria. Uitgeverszaak and Boissevain and Co., Haarlem, Holland. pp. 1-187. **Type strain:** ATCC 4874

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

Prosthecochloris Gorlenko 1970

Gorlenko, V.M. 1970. Zeitschrift fur Allgemeine Mikrobiologie **10**:147-149. **Type species:** *P. aestuarii* Gorlenko 1970 **Description:** Bergey 8.

P. aestuarii Gorlenko 1970

Gorlenko, V.M. 1970. Zeitschrift fur Allgemeine Mikrobiologie **10**:147-149. **Type strain:** DSM 271 **Description:** Bergey 8.

Prosthecomicrobium Staley 1968

Staley, J.T. 1968. Journal of Bacteriology **95**:1921-1942. **Type species:** *P. pneumaticum* Staley 1968 **Description:** Bergey 8.

P. enhydrium Staley 1968

Staley, J.T. 1968. Journal of Bacteriology **95**:1921-1942. **Type strain:** ATCC 23634 **Description:** Staley, J.T. 1968. Ibid.

P. pneumaticum Staley 1968

Staley, J.T. 1968. Journal of Bacteriology **95**:1921-1942. **Type strain:** ATCC 23633 **Description:** Staley, J.T. 1968. Ibid.

Proteus Hauser 1885

Hauser, G. 1885. *Über Faulnisbakterien und deren Beziehungen zur Septicämie. Ein Beitrag zur Morphologie der Spaltpilze.* Vogel, Leipzig. **Type species:** *P. vulgaris* Hauser 1885

Description: Bergey 8.

P. inconstans (Orstein 1920) Shaw and Clarke 1955

Orstein, M. 1920. *Zeitschrift für Hygiene* 91:152-178; Shaw, C. and P.H. Clarke. 1955. *Journal of General Microbiology* 13:155-161. **Type strain:** ATCC 9886

Description: Shaw, C. and P.H. Clarke. 1955. *Ibid.*

P. mirabilis Hauser 1885

Hauser, G. 1885. *Über Faulnisbakterien und deren Beziehungen zur Septicämie. Ein Beitrag zur Morphologie der Spaltpilze.* Vogel, Leipzig. p. 34. **Type strain:** ATCC 29906

Description: Rustigian, R. and C.A. Stuart. 1943. *Proceedings of the Society for Experimental Biology and Medicine* 53:241-243.

P. morganii (Winslow, Kligler and Rothberg 1919) Yale 1939 (See also *Morganella morganii*)

Winslow, C.E.A., I.J. Kligler and W. Rothberg. 1919. *Journal of Bacteriology* 4:429-503; Yale, M.W. 1939 in Bergey, D.H., R.S. Breed, E.G.D. Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacteriology*, 5th ed. The Williams and Wilkins Co., Baltimore. pp. 430-436. **Type strain:** ATCC 25830

Description: Rustigian, R. and C.A. Stuart. 1943. *Proceedings of the Society for Experimental Biology and Medicine* 53:241-243.

P. myxofaciens Cosenza and Podgwaite 1966

Cosenza, B.J. and J.D. Podgwaite. 1966. *Antonie van Leeuwenhoek Journal of Microbiology and Serology* 32:187-191. **Type strain:** ATCC 19692

Description: Cosenza, B.J. and J.D. Podgwaite. 1966. *Ibid.*

P. rettgeri (Hadley, Elkins and Caldwell 1918) Rustigian and Stuart 1943 (See also *Providencia rettgeri*)

Hadley, P., M.W. Elkins and D.W. Caldwell. 1918. *Bulletin of the Rhode*

Island Agricultural Experimental Station 174:1-216; Rustigian, R. and C.A. Stuart. 1943. *Proceedings of the Society for Experimental Biology and Medicine* 53:241-243. **Type strain:** ATCC 29944

Description: Rustigian, R. and C.A. Stuart. 1943. *Ibid.*

P. vulgaris Hauser 1885

Hauser, G. 1885. *Über Faulnisbakterien und deren Beziehungen zur Septicämie. Ein Beitrag zur Morphologie der Spaltpilze.* Vogel. Leipzig. p. 12. **Type strain:** ATCC 13315

Description: Rustigian, R. and C.A. Stuart. 1943. *Proceedings of the Society for Experimental Biology and Medicine* 53:241-243.

Providencia Ewing 1962

Ewing, W.H. 1962. *International Bulletin of Bacteriological Nomenclature and Taxonomy* 12:93-102. **Type species:** *P. alcalifaciens* (de Salles Gomes 1944) Ewing 1962

Description: Ewing, W.H. 1962. *Ibid.*

P. alcalifaciens (de Salles Gomes 1944) Ewing 1962

de Salles Gomes, L. 1944. *Revista do Instituto Adolfo Lutz* 14:182-195; Ewing, W.H. 1962. *International Bulletin of Bacteriological Nomenclature and Taxonomy* 12:93-102. **Type strain:** ATCC 9886

Description: Ewing, W.H. 1962. *Ibid.*

P. rettgeri (Hadley, Elkins and Caldwell 1918)

Brenner, Farmer, Fanning, Steigerwalt, Klykken, Wathen, Hickman and Ewing 1978 (See also *Proteus rettgeri*)

Hadley, P., M.W. Elkins and D.W. Caldwell. 1918. *Bulletin of the Rhode Island Agricultural Experimental Station* 174:1-216; Brenner, D.J., J.J. Farmer III, G.R. Fanning, A.G. Steigerwalt, P. Klykken, H.G. Wathen, F.W. Hickman and W.H. Ewing. 1978. *International Journal of Systematic Bacteriology* 28:269-282. **Type strain:** ATCC 29944

Description: Rustigian, R. and C.A. Stuart. 1943. *Proceedings of the Society for Experimental Biology and Medicine* 53:241-243.

P. stuartii (Buttiaux, Osteux, Fresnoy and Moriamez 1954) Ewing 1962

Buttiaux, R., R. Osteux, R. Fresnoy and

- J. Moriamez. 1954. *Annales de l'Institut Pasteur (Paris)* 87:375-386; Ewing, W.H. 1962. *International Bulletin of Bacteriological Nomenclature and Taxonomy* 12: 93-102. **Type strain:** ATCC 29914
Description: Ewing, W.H. 1962. *Ibid.*
- Pseudomonas Migula** 1894
Migula, W. 1894. *Arbeiten aus dem Bakteriologischen Institut der Technischen Hochschule zu Karlsruhe* 1:235-238. **Type species:** *P. aeruginosa* (Schroeter 1872) Migula 1900
Description: Bergey 8.
- P. acidovorans** den Dooren de Jong 1926
den Dooren de Jong, L.E. 1926. *Bijdrage tot de kennis van het Mineralisatieproces*. Thesis. Technische Hoogeschool, Delft. pp. 1-199. **Type strain:** ATCC 15668
Description: Bergey 8.
- P. aeruginosa** (Schroeter 1872) Migula 1900
Schroeter, J. 1872 in Cohn, F. 1875. *Beitrage zur Biologie der Pflanzen*, J.U. Kern's Verlag, Breslau. pp. 109-126; Migula, W. 1900. *System der Bakterien*, Vol. 2. Gustav Fischer, Jena. **Type strain:** ATCC 10145
Description: Bergey 8.
- P. agarici** Young 1970
Young, J.M. 1970. *New Zealand Journal of Agricultural Research* 13:977-990. **Type strain:** ATCC 25941
Description: Young, J.M. 1970. *Ibid.*
- P. alcaligenes** Monias 1928
Monias, B.L. 1928. *Journal of Infectious Diseases* 43:330-334. **Type strain:** ATCC 14909
Description: Bergey 8.
- P. aminovorans** den Dooren de Jong 1926
den Dooren de Jong, L.E. 1926. *Bijdrage tot de kennis van het mineralisatieproces*. Thesis. Technische Hoogeschool, Delft. pp. 1-199. **Type strain:** ATCC 23314
Description: den Dooren de Jong, L.E. 1926. *Ibid.*
- P. amygdali** Psallidas and Panagopoulos 1975
Psallidas, P.G. and C.G. Panagopoulos. 1975. *Annales de l'Institut Phytopathologique Benaki N.S.* 11:94-108. **Type strain:** NCPPB 2607
Description: Psallidas, P.G. and C.G. Panagopoulos. 1975. *Ibid.*
- P. andropogonis** (Smith 1911) Stapp 1928
Smith, E.F. 1911. *Carnegie Institute, Washington* 2:1-368; Stapp, C. 1928 in Sorauer, Handbuch der Pflanzenkrankheiten, 5th ed. Paul Parey, Berlin. pp. 758. **Type strain:** ATCC 23061
Description: Goto, M. and M.P. Starr. 1971. *Annals of the Phytopathological Society of Japan* 37:233-241.
- P. anguilliseptica** Wakabayashi and Egusa 1972
Wakabayashi, H. and S. Egusa. 1972. *Bulletin of the Japanese Society of Scientific Fisheries* 38:577-587. **Type strain:** NCMB 1949
Description: Wakabayashi, H. and S. Egusa. 1972. *Ibid.*
- P. asplenii** (Ark and Tompkins 1946) Savulescu 1947
Ark, P.A. and C.M. Tompkins. 1946. *Phytopathology* 36:758-761; Savulescu, T. 1947. *Analele Academiei Romane Series III Tom 22, Memoire* 4:1-26. **Type strain:** ATCC 23835
Description: Ark, P.A. and C.M. Tompkins. 1946. *Ibid.*
- P. aurantiaca** Nakhimovskaya 1948
Nakhimovskaya, M.I. 1948. *Mikrobiologiya* 17:58-65. **Type strain:** NCIB 10068
Description: Nakhimovskaya, M.I. 1948. *Ibid.*
- P. aureofaciens** Kluyver 1956
Kluyver, A.J. 1956. *Journal of Bacteriology* 72:406-411. **Type strain:** ATCC 13985
Description: Bergey 8.
- P. avenae** Manns 1909
Manns, T.F. 1909. *Bulletin of the Ohio Agriculture Experiment Station* 210:91-167. **Type strain:** NCPPB 1011
Description: Schaad, N.W., C.I. Kado and D.R. Sumner. 1975. *International Journal of Systematic Bacteriology* 25:133-137.
- P. azotoformans** Iizuka and Komagata 1963
Iizuka, H. and K. Komagata. 1963. *Journal of the Agricultural Chemical Society of Japan* 37:137-141. **Type strain:** IAM 1603
Description: Iizuka, H. and K. Komagata. 1963. *Ibid.*
- P. beijerinckii** Hof 1935
Hof, T. 1935. *Recueil des Travaux Botaniques Neerlandais* 32:151-173. **Type strain:** ATCC 19372
Description: Haynes, W.C. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith

- (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 89-183.
- P. betle** (Ragunathan 1928) Savulescu 1947
Ragunathan, C. 1928. *Annals of the Royal Botanical Garden of Peradeniya, Ceylon* **11**:51-61; Savulescu, T. 1947. *Analele Academiei Romane Series III Tom 22, Memoire* **4**:1-26. **Type strain:** ATCC 19861
Description: Ragunathan, C. 1928. *Ibid.*
- P. boreopolis** Gray and Thornton 1928
Gray, P.H.H. and H.G. Thornton. 1928. *Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **73**:74-96. **Type strain:** NCIB 9401
Description: Haynes, W.C. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. p. 101.
- P. caricapapayae** Robbs 1956
Robbs, C.F. 1956. *Revista da Sociedade Brasileira de Agronomia* **12**:73-76. **Type strain:** NCPPB 1873
Description: Robbs, C.F. 1956. *Ibid.*
- P. caryophylli** (Burkholder 1942) Starr and Burkholder 1942
Burkholder, W.H. 1942. *Phytopathology* **32**:141-149; Starr, M.P. and W.H. Burkholder. 1942. *Phytopathology* **32**:598-604. **Type strain:** ATCC 25418
Description: Burkholder, W.J. 1942. *Ibid.*
- P. cattleyae** (Pavarino 1911) Savulescu 1947
Pavarino, G.L. 1911. *Atti della Reale Accademia dei Lincei* **20**:233-237; Savulescu, T. 1947. *Analele Academiei Romane Series III Tom 22, Memoire* **4**:1-26. **Type strain:** NCPPB 961
Description: Ark, P.A. and H.E. Thomas. 1946. *Phytopathology* **36**:695-698.
- P. chlororaphis** (Guignard and Sauvageau 1894) Bergey, Harrison, Breed, Hammer and Huntoon 1930
Guignard, L. and C. Sauvageau. 1894. *Comptes Rendus des Seances de la Societe de Biologie, Paris, Series 10, 1*: 841-843; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon (eds). 1930. *Bergey's Manual of Determinative Bacteriology*, 3rd ed. The Williams and Wilkins Co., Baltimore. pp. 1-589. **Type strain:** ATCC 9446
Description: Bergey 8.
- P. cichorii** (Swingle 1925) Stapp 1928
Swingle, D.B. 1925. *Phytopathology* **15**: 730; Stapp, C. 1928. In Sorauer, *Handbuch der Pflanzenkrankheiten*, 5th ed. Paul Parey, Berlin. pp. 758. **Type strain:** ATCC 10857
Description: Bergey 8.
- P. cissicola** (Takimoto 1939) Burkholder 1948
Takimoto, S. 1939. *Annals of the Phytopathological Society, Japan* **9**:41-43; Burkholder, W.H. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacteriology*, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 82-150. **Type strain:** NCPPB 2982
Description: Goto, M. and T. Makino. 1977. *Annals of the Phytopathological Society, Japan* **43**:40-45.
- P. citronellolis** Seubert 1960
Seubert, W. 1960. *Journal of Bacteriology* **79**:426-434. **Type strain:** ATCC 13674
Description: Seubert, W. 1960. *Ibid.*
- P. cocovenans** van Damme, Johannes, Cox and Berends 1960
van Damme, P.A., A.G. Johannes, H.C. Cox and W. Berends. 1960. *Recueil des Travaux Chimiques des Pays-Bas* **79**:255-267. **Type strain:** NCIB 9450
Description: van Damme, P.A., A.G. Johannes, H.C. Cox and W. Berends. 1960. *Ibid.*
- P. delafieldii** Davis 1970
Davis, D.H. 1970 in Davis, D.H., R.Y. Stanier, M. Doudoroff and M. Mandel. *Archiv fur Mikrobiologie* **70**:1-13. **Type strain:** ATCC 17505
Description: Bergey 8.
- P. diminuta** Leifson and Hugh 1954
Leifson, E. and R. Hugh. 1954. *Journal of General Microbiology* **10**:68-70. **Type strain:** ATCC 11568
Description: Leifson, E. and R. Hugh. 1954. *Ibid.*
- P. doudoroffii** Baumann, Baumann, Mandel and Allen 1972
Baumann, L., P. Baumann, M. Mandel and R.D. Allen. 1972. *Journal of Bacteriology* **110**:402-429. **Type strain:** ATCC 27123
Description: Baumann, L., P. Baumann,

- M. Mandel and R.D. Allen. 1972. *Ibid.*
- P. echinoides** Heumann 1962
Heumann, W. 1962. *Biologisches Zentralblatt* **81**:341-354. **Type strain:** ATCC 14820
Description: Heumann, W. 1962. *Ibid.*
- P. elongata** Humm 1946
Humm, H.J. 1946. *Bulletin of Duke University Marine Station* **3**:45-75. **Type strain:** ATCC 10144
Description: Humm, H.J. 1946. *Ibid.*
- P. facilis** (Schatz and Bovell 1952) Davis 1969
Schatz, A. and C.R. Bovell. 1952. *Journal of Bacteriology* **63**:87-98; Davis, D.H. 1969 in Davis, D.H., R.Y. Stanier, M. Doudoroff and M. Mandel. *International Journal of Systematic Bacteriology* **19**: 375-390. **Type strain:** ATCC 11228
Description: Bergey 8.
- P. flava** (Niklewski 1910) Davis 1969
Niklewski, B. 1910. *Jahrbuch für Wissenschaftliche Botanik* **48**:113-142; Davis, D.H. 1969 in Davis, D.H., R.Y. Stanier, M. Doudoroff and M. Mandel. *International Journal of Systematic Bacteriology* **19**:375-390. **Type strain:** DSM 619
Description: Bergey 8.
- P. flectens** Johnson 1956
Johnson, J.C. 1956. *Queensland Journal of Agricultural Science* **13**:127-158. **Type strain:** ATCC 12775
Description: Johnson, J.C. 1956. *Ibid.*
- P. fluorescens** Migula 1895
Migula, W. 1895 in Engler, A. and K. Prantl (eds). *Die Natürlichen Pflanzenfamilien*, W. Engelmann, Leipzig, Teil I, Abteilung Ia. pp. 20-30. **Type strain:** ATCC 13525
Description: Bergey 8.
- P. fragi** (Eichholz 1902) Gruber 1905
Eichholz, W. 1902. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene*. Abteilung II. **9**:425-428; Gruber, T. 1905. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene*. Abteilung II. **14**:122-123. **Type strain:** ATCC 4973
Description: Haynes, W.C. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. p. 110.
- P. fulva** Iizuka and Komagata 1963
Iizuka, H. and K. Komagata. 1963. *Journal of the Agricultural Chemical Society of Japan* **37**:137-141. **Type strain:** IAM 1529
Description: Iizuka, H. and K. Komagata. 1963. *Ibid.*
- P. gelidicola** Kadota 1951
Kadota, H. 1951. *Memoirs of the College of Science, Kyoto University* **59**:54-67. **Type strain:** IAM 1127
Description: Kadota, H. 1951. *Ibid.*
- P. geniculata** (Wright 1895) Chester 1901
Wright, J.H. 1895. *Memoirs of the National Academy of Science* **7**:422-484; Chester, F.D. 1901. *A manual of determinative bacteriology*. The Macmillan Co., New York. pp. 1-401. **Type strain:** ATCC 19374
Description: Haynes, W.C. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. p. 105.
- P. gladioli** Severini 1913
Severini, G. 1913. *Annali di Botanica (Roma)* **11**:413-424. **Type strain:** NCPPB 1891
Description: Hildebrand, D.C., N.J. Palleroni and M. Doudoroff. 1973. *International Journal of Systematic Bacteriology* **23**:433-437.
- P. glathei** Zolg and Ottow 1975
Zolg, W. and J.C.G. Ottow. 1975. *Zeitschrift für Allgemeine Mikrobiologie* **15**:287-299. **Type strain:** ATCC 29195
Description: Zolg, W. and J.C.G. Ottow. 1975. *Ibid.*
- P. glumae** Kurita and Tabei 1967
Kurita, T. and H. Tabei. 1967. *Annals of the Phytopathological Society, Japan* **33**: 111. **Type strain:** NCPPB 2981
Description: Kurita, T. and H. Tabei. 1967. *Ibid.*
- P. hibiscicola** Moniz 1963
Moniz, L. 1963. *Current Science* **32**:177. **Type strain:** ATCC 19867
Description: Moniz, L. 1963. *Ibid.*
- P. huttiensis** Leifson 1962
Leifson, E. 1962. *International Bulletin of Bacteriological Nomenclature and Taxonomy* **12**:161-170. **Type strain:** ATCC

14670

Description: Leifson, E. 1962. *Ibid.***P. indigofera** (Voges 1893) Migula 1900

Voges, O. 1893. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I. 14:301-314; Migula, W. 1900. System der Bakterien, Vol. 2. Gustav Fischer, Jena. **Type strain:** ATCC 19706

Description: Elazari-Volcani, B. 1939. Archiv für Mikrobiologie 10:343-358.

P. iners Iizuka and Komagata 1964

Iizuka, H. and K. Komagata. 1964. Journal of General and Applied Microbiology 10:223-231. **Type strain:** IAM 1419
Description: Iizuka, H. and K. Komagata. 1964. *Ibid.*

P. lanceolata Leifson 1962

Leifson, E. 1962. International Bulletin of Bacteriological Nomenclature and Taxonomy 12:161-170. **Type strain:** ATCC 14669

Description: Leifson, E. 1962. *Ibid.***P. lemoignei** Delafield, Doudoroff, Palleroni, Lusty and Contopoulou 1965

Delafield, F.P., M. Doudoroff, N.J. Palleroni, C.J. Lusty and C.R. Contopoulou. 1965. Journal of Bacteriology 90:1455-1466. **Type strain:** ATCC 17989

Description: Delafield, F.P., M. Doudoroff, N.J. Palleroni, C.L. Lusty and C.R. Contopoulou. 1965. *Ibid.*

P. mallei (Zopf 1885) Redfearn, Palleroni and Stanier 1966

Zopf, W. 1885. Die Spaltpilze, 3rd ed. Edward Trewendt, Breslau. pp. 1-127; Redfearn, M.S., N.J. Palleroni and R.Y. Stanier. 1966. Journal of General Microbiology 43:293-313. **Type strain:** ATCC 23344

Description: Bergey 8.**P. marginalis** (Brown 1918) Stevens 1925

Brown, N.A. 1918. Journal of Agricultural Research 13:367-388; Stevens, F.L. 1925. Plant Disease Fungi. MacMillan Co., New York. pp. 469. **Type strain:** ATCC 10844

Description: Burkholder, W.J. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). Bergey's Manual of Determinative Bacteriology, 7th ed. The Williams

and Wilkins Co., Baltimore. p. 135.

P. marina (Cobet, Wirsén and Jones 1970) Baumann, Baumann, Mandel and Allen 1972

Cobet, A.B., C. Wirsén and G.E. Jones. 1970. Journal of General Microbiology 62:159-169; Baumann, L., P. Baumann, M. Mandel and R.D. Allen. 1972. Journal of Bacteriology 110:402-429. **Type strain:** ATCC 25374

Description: Baumann, L., P. Baumann, M. Mandel and R.D. Allen. 1972. *Ibid.*

P. mendocina Palleroni 1970

Palleroni, N.J. 1970 in Palleroni, N.J., M. Doudoroff, R.Y. Stanier, R.E. Solanes and M. Mandel. Journal of General Microbiology 60:215-231. **Type strain:** ATCC 25411

Description: Bergey 8.**P. mephitica** Claydon and Hammer 1939

Claydon, T.J. and B.W. Hammer. 1939. Journal of Bacteriology 37:252-258. **Type strain:** NCIB 9672

Description: Haynes, W.C. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). Bergey's Manual of Determinative Bacteriology, 7th ed. The Williams and Wilkins Co., Baltimore. p. 111.

P. mesophilica Austin and Goodfellow 1979

Austin, B. and M. Goodfellow. 1979. International Journal of Systematic Bacteriology 29:373-378. **Type strain:** ATCC 29983

Description: Austin, B. and M. Goodfellow. 1979. *Ibid.*

P. mucidolens Levine and Anderson 1932

Levine, M. and D.Q. Anderson. 1932. Journal of Bacteriology 23:337-347. **Type strain:** ATCC 4685

Description: Levine, M. and D.Q. Anderson. 1932. *Ibid.*

P. nautica Baumann, Baumann, Mandel and Allen 1972

Baumann, L., P. Baumann, M. Mandel and R.D. Allen. 1972. Journal of Bacteriology 110:402-429. **Type strain:** ATCC 27132

Description: Baumann, L., P. Baumann, M. Mandel and R.D. Allen. 1972. *Ibid.*

P. nitroreducens Iizuka and Komagata 1964

Iizuka, H. and K. Komagata. 1964. Journal of General and Applied Microbiology 10:207-221. **Type strain:** IAM 1439

- Description:** Iizuka, H. and K. Komagata. 1964. *Ibid.*
- P. oleovorans** Lee and Chandler 1941
Lee, M. and A.C. Chandler. 1941. *Journal of Bacteriology* **41**:373-386. **Type strain:** ATCC 8062
Description: Lee, M. and A.C. Chandler. 1941. *Ibid.*
- P. palleronii** Davis 1970
Davis, D.H. 1970 in Davis, D.H., R.Y. Stanier, M. Doudoroff and M. Mandel. *Archiv fur Mikrobiologie* **70**:1-13. **Type strain:** ATCC 17724
Description: Davis, D.H., R.Y. Stanier, M. Doudoroff and M. Mandel. 1970. *Ibid.*
- P. paucimobilis** Holmes, Owen, Evans, Malnick and Willcox 1977
Holmes, B., R.J. Owen, A. Evans, H. Malnick and W.R. Willcox. 1977. *International Journal of Systematic Bacteriology* **27**:133-146. **Type strain:** ATCC 29837
Description: Holmes, B., R.J. Owen, A. Evans, H. Malnick and W.R. Willcox. 1977. *Ibid.*
- P. pertucinogena** Kawai and Yabuuchi 1975
Kawai, Y. and E. Yabuuchi. 1975. *International Journal of Systematic Bacteriology* **25**:317-323. **Type strain:** ATCC 190
Description: Kawai, Y. and E. Yabuuchi. 1975. *Ibid.*
- P. phenazinium** Bell and Turner 1973
Bell, S.C. and J.M. Turner. 1973. *Biochemical Society Transactions* **1**:751-753. **Type strain:** NCIB 11027
Description: Bell, S.C. and J.M. Turner. 1973. *Ibid.*
- P. pickettii** Ralston, Palleroni and Doudoroff 1973
Ralston, E., N.J. Palleroni and M. Doudoroff. 1973. *International Journal of Systematic Bacteriology* **23**:15-19. **Type strain:** ATCC 27511
Description: Ralston, E., N.J. Palleroni and M. Doudoroff. 1973. *Ibid.*
- P. pictorum** Gray and Thornton 1928
Gray, P.H.H. and H.G. Thornton. 1928. *Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **73**:74-96. **Type strain:** ATCC 23328
Description: Gray, P.H.H. and H.G. Thornton. 1928. *Ibid.*
- P. pseudoalcaligenes** Stanier 1966
Stanier, R.Y. 1966 in Stanier, R.Y., N.J. Palleroni and M. Doudoroff. *Journal of General Microbiology* **43**:159-271. **Type strain:** ATCC 17440
Description: Bergey 8.
- P. pseudoalcaligenes** subsp. *citrulli* Schaad, Sowell, Goth, Colwell and Webb 1978
Schaad, N.W., G. Sowell, R.W. Goth, R.R. Colwell and R.E. Webb. 1978. *International Journal of Systematic Bacteriology* **28**:117-125. **Type strain:** ATCC 29625
Description: Schaad, N.W., G. Sowell, R.W. Goth, R.R. Colwell and R.E. Webb. 1978. *Ibid.*
- P. pseudoalcaligenes** subsp. *pseudoalcaligenes* Stanier 1966
Stanier, R.Y. 1966 in Stanier, R.Y., N.J. Palleroni and M. Doudoroff. *Journal of General Microbiology* **43**:159-271. **Type strain:** ATCC 17440
Description: Bergey 8.
- P. pseudoflava** Auling, Reh, Lee and Schlegel 1978
Auling, G., M. Reh, C.M. Lee and H.G. Schlegel. 1978. *International Journal of Systematic Bacteriology* **28**:82-95. **Type strain:** DSM 1034
Description: Auling, G., M. Reh, C.M. Lee and H.G. Schlegel. 1978. *Ibid.*
- P. pseudomallei** (Whitmore 1913) Haynes 1957
Whitmore, A. 1913. *Journal of Hygiene* **13**:1-34; Haynes, W.C. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 89-152. **Type strain:** ATCC 23343
Description: Brindle, C.S. and S.T. Cowan. 1951. *Journal of Pathology and Bacteriology* **63**:571-575.
- P. putida** (Trevisan 1889) Migula 1895
Trevisan, V. 1889. *I Generi e le Specie delle Battieriacee*. Zanaboni and Gabuzzi, Milano; Migula, W. 1895 in Engler, A. and K. Prantl (eds). *Die Naturlichen Pflanzenfamilien*, W. Engelmann, Leipzig, Teil I, Abteilung Ia. pp. 1-44. **Type strain:** ATCC 12633
Description: Bergey 8.

- P. pyrocinia** Imanaka, Kousaka, Tamura and Arima 1965
Imanaka, H., M. Kousaka, G. Tamura and K. Arima. 1965. *Journal of Antibiotics* (Tokyo) Series A **18**:205-206. **Type strain:** ATCC 15958
Description: Imanaka, H., M. Kousaka, G. Tamura and K. Arima. 1965. *Ibid.*
- P. radiora** Ito and Iizuka 1971
Ito, H. and H. Iizuka. 1971. *Agricultural and Biological Chemistry* **35**:1566-1571. **Type strain:** ATCC 27329
Description: Ito, H. and H. Iizuka. 1971. *Ibid.*
- P. resinovorans** Delaporte, Raymond and Daste 1961
Delaporte, B., M. Raymond and P. Daste. 1961. *Comptes Rendus des Seances de l'Academie des Sciences Paris* **252**:1073-1075. **Type strain:** ATCC 14235
Description: Delaporte, B., M. Raymond and P. Daste. 1961. *Ibid.*
- P. rhodos** Heumann 1962
Heumann, W. 1962. *Biologisches Zentralblatt* **81**:341-354. **Type strain:** ATCC 14821
Description: Heumann, W. 1962. *Ibid.*
- P. rubrilineans** (Lee, Purdy, Barnum and Martin 1925) Stapp 1928
Lee, H.A., H.A. Purdy, C.C. Barnum and J.P. Martin. 1925. *Bulletin, Experiment Station of the Hawaiian Sugar Planters' Association* pp. 64-74; Stapp, C. 1928 in Sorauer, *Handbuch der Pflanzenkrankheiten*, 5th ed. Paul Parey, Berlin. pp. 758. **Type strain:** ATCC 19307
Description: Hayward, A.C. 1962. *Mauritius Sugar Industry Research Institute Occasional Paper No. 13*:13-27.
- P. rubrisubalbicans** (Christopher and Edgerton 1930) Krassilnikov 1949
Christopher, W.N. and C.W. Edgerton. 1930. *Journal of Agricultural Research* **41**:259-267; Krassilnikov, N.A. 1949. *Moskva - Leningrad, Izdatel'stvo Akademii Nauk SSSR*. pp.1-830. **Type strain:** ATCC 19308
Description: Hayward, A.C. 1962. *Mauritius Sugar Industry Research Institute Occasional Paper No. 13*:pp. 27.
- P. saccharophila** Doudoroff 1940
Doudoroff, M. 1940. *Enzymologia* **9**:59-72. **Type strain:** ATCC 15946
Description: Bergey 8.
- P. solanacearum** (Smith 1896) Smith 1914
Smith, E.F. 1896. *Bulletin, Division of Vegetable Physiology and Pathology, United States Department of Agriculture* **12**:1-28; Smith, E.F. 1914. *Carnegie Institute, Washington* **3**:1-309. **Type strain:** ATCC 11696
Description: Bergey 8.
- P. spinosa** Leifson 1962
Leifson, E. 1962. *International Bulletin of Bacteriological Nomenclature and Taxonomy* **12**:89-92. **Type strain:** ATCC 14606
Description: Leifson, E. 1962. *Ibid.*
- P. straminea** Iizuka and Komagata 1963
Iizuka, H. and K. Komagata. 1963. *Journal of the Agricultural Chemical Society of Japan* **37**:137-141. **Type strain:** IAM 1598
Description: Iizuka, H. and K. Komagata. 1963. *Ibid.*
- P. stutzeri** (Lehmann and Neumann 1896) Sijderius 1946
Lehmann, K.B. and R. Neumann. 1896. *Atlas and Grundriss der Bakteriologie und Lehrbuch der speziellen bakteriologischen Diagnostik*. 1st ed. J.F. Lehmann, Munchen; Sijderius, R. 1946. *Heterotrophe Bakterien, die thiosulfaat oxydeeren*. Thesis, University Amsterdam, pp. 1-146. **Type strain:** ATCC 17588
Description: Bergey 8.
- P. synxantha** (Ehrenberg 1840) Holland 1920
Ehrenberg, C.G. 1840. *Bericht Bekannt Verhandlungen der Koniglich-Preussischen Akademie der Wissenschaftlichen*, Berlin **1840**:197-219; Holland, D.F. 1920 in Winslow, C.E.A., J. Broadhurst, R.E. Buchanan, C. Krumwiede Jr., L.A. Rogers and G.H. Smith. *Journal of Bacteriology* **5**:191-229. **Type strain:** ATCC 9890
Description: Haynes, W.C. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. p. 104.
- P. syringae** van Hall 1902
van Hall, C.J.J. 1902. *Inaugural Dissertation*. Amsterdam. pp. 198. **Type strain:** ATCC 19310
Description: Bergey 8.
- P. taetrolens** Haynes 1957

Haynes, W.C. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 89-152. **Type strain:** ATCC 4683

Description: Haynes, W.C. 1957. *Ibid.*

- P. testosteroni** Marcus and Talalay 1956
 Marcus, P.I. and P. Talalay. 1956. *Journal of Biological Chemistry* **218**:661.
Type strain: ATCC 11996

Description: Bergey 8.

- P. tolaasii** Paine 1919
 Paine, S.G. 1919. *Annals of Applied Biology* **5**:206-219. **Type strain:** NCPPB 2192

Description: Burkholder, W.H. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. p. 136.

- P. vesicularis** (Busing, Doll and Freytag 1953) Galarneault and Leifson 1964
 Busing, K.H., W. Doll and K. Freytag. 1953. *Archiv fur Mikrobiologie* **19**:52-86; Galarneault, T.P. and E. Leifson. 1964. *International Bulletin of Bacteriological Nomenclature and Taxonomy* **14**:165-168.
Type strain: ATCC 11426

Description: Bergey 8.

- P. viridiflava** (Burkholder 1930) Dowson 1939
 Burkholder, W.H. 1930. *Memoirs, Cornell University Agricultural Experiment Station* **127**:1-88; Dowson, W.J. 1939. *Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **100**:177-193. **Type strain:** ATCC 13223

Description: Billing, E. 1970. *Journal of Applied Bacteriology* **33**:492-500.

- P. woodsii** (Smith 1911) Stevens 1925
 Smith, E.F. 1911. *Carnegie Institute, Washington* **2**:1-368; Stevens, F.L. 1925. *Plant disease fungi*. MacMillan. New York. **Type strain:** ATCC 19311
Description: Burkholder, W.H. and C.E.F. Guterma. 1935. *Phytopathology* **25**:114-120.

Pseudonocardia Henssen 1957

Henssen, A. 1957. *Archiv fur Mikrobiologie* **26**:373-414. **Type species:** *P. thermophila* Henssen 1957

Description: Bergey 8.

- P. spinosa** Schafer 1971
 Schafer, D. 1971 in Henssen, A. and D. Schafer. *International Journal of Systematic Bacteriology* **21**:29-34. **Type strain:** ATCC 25924
Description: Bergey 8.
- P. thermophila** Henssen 1957
 Henssen, A. 1957. *Archiv fur Mikrobiologie* **26**:373-414. **Type strain:** ATCC 19285
Description: Bergey 8.

Rhizobium Frank 1889

Frank, B. 1889. *Berichte der Deutschen Botanischen Gesellschaft* **7**:332-346. **Type species:** *R. leguminosarum* (Frank 1879) Frank 1889
Description: Bergey 8.

- R. japonicum** (Kirchner 1896) Buchanan 1926
 Kirchner, O. 1896. *Beitrage zur Biologie der Pflanzen* **7**:213-224; Buchanan, R.E. 1926. *Proceedings of the Iowa Academy of Science* **33**:81-90. **Type strain:** ATCC 10324

Description: Bergey 8.

- R. leguminosarum** (Frank 1879) Frank 1889
 Frank, B. 1879. *Bericht der Deutschen Botanischen Gesellschaft* **37**:394-399; Frank, B. 1889. *Berichte der Deutschen Botanischen Gesellschaft* **7**:332-346. **Type strain:** ATCC 10004

Description: Bergey 8.

- R. lupini** (Schroeter 1886) Eckhardt, Baldwin and Fred 1931
 Schroeter, J. 1885-1889 in Cohn, F. *Kryptogamenflora von Schlesien. Band 3, Heft 3, Pilze* J.U. Kern's Verlag, Breslau. pp. 1-814; Eckhardt, M.M., I.R. Baldwin and E.B. Fred. 1931. *Journal of Bacteriology* **21**:273-285. **Type strain:** ATCC 10319

Description: Bergey 8.

- R. meliloti** Dangeard 1926
 Dangeard, P.A. 1926. *Botaniste (Paris)* **16**:1-275. **Type strain:** ATCC 9930
Description: Bergey 8.

- R. phaseoli** Dangeard 1926
 Dangeard, P.A. 1926. *Botaniste (Paris)* **16**:1-275. **Type strain:** ATCC 14482
Description: Bergey 8.

- R. trifolii** Dangeard 1926
 Dangeard, P.A. 1926. *Botaniste (Paris)* **16**:1-275. **Type strain:** ATCC 14480

Description: Bergey 8.

Rhodococcus Zopf 1891

Zopf, W. 1891. *Berichte der Deutschen Botanischen Gesellschaft* 9:22-28. **Type species:** *R. rhodochrous* (Zopf 1891) Tsukamura 1974

Description: Goodfellow, M. and G. Alderson. 1977. *Journal of General Microbiology* 100:99-122.

R. bronchialis (Tsukamura 1971) Tsukamura 1974

Tsukamura, M. 1971. *Journal of General Microbiology* 68:15-26; Tsukamura, M. 1974. *Japanese Journal of Microbiology* 18:37-44. **Type strain:** ATCC 25592

Description: Goodfellow, M. and G. Alderson. 1977. *Journal of General Microbiology* 100:99-122.

R. coprophilus Rowbotham and Cross 1979

Rowbotham, T.J. and T. Cross. 1979. *International Journal of Systematic Bacteriology* 29:79-80; Effective publication Rowbotham, T.J. and T. Cross. 1977. *Journal of General Microbiology* 100:123-138. **Type strain:** ATCC 29080

Description: Rowbotham, T.J. and T. Cross. 1977. *Ibid.*

R. corallinus (Bergey, Harrison, Breed, Hammer and Huntoon 1923) Goodfellow and Alderson 1979

Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. *Bergey's Manual of Determinative Bacteriology*, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442; Goodfellow, M. and G. Alderson. 1979. *International Journal of Systematic Bacteriology* 29:79-80; Effective publication Goodfellow, M. and G. Alderson. 1977. *Journal of General Microbiology* 100:99-122. **Type strain:** ATCC 25593

Description: Goodfellow, M. and G. Alderson. 1977. *Ibid.*

R. equi (Magnusson 1923) Goodfellow and Alderson 1979

Magnusson, H. 1923. *Archiv für Wissenschaftliche und Praktische Tierheilkunde* 50:22-38; Goodfellow, M. and G. Alderson. 1979. *International Journal of Systematic Bacteriology* 29:79-80; Effective publication Goodfellow, M. and G. Alderson. 1977. *Journal of General*

Microbiology 100:99-122. **Type strain:** ATCC 25729

Description: Goodfellow, M. and G. Alderson. 1977. *Ibid.*

R. erythropolis (Gray and Thornton 1928) Goodfellow and Alderson 1979

Gray, P.H.H. and H.G. Thornton. 1928. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* 73:74-96; Goodfellow, M. and G. Alderson. 1979. *International Journal of Systematic Bacteriology* 29:79-80; Effective publication Goodfellow, M. and G. Alderson. 1977. *Journal of General Microbiology* 100:99-122. **Type strain:** ATCC 4277

Description: Goodfellow, M. and G. Alderson. 1977. *Ibid.*

R. rhodnii Goodfellow and Alderson 1979

Goodfellow, M. and G. Alderson. 1979. *International Journal of Systematic Bacteriology* 29:79-80; Effective publication Goodfellow, M. and G. Alderson. 1977. *Journal of General Microbiology* 100:99-122. **Type strain:** KCC A-0203

Description: Goodfellow, M. and G. Alderson. 1977. *Ibid.*

R. rhodochrous (Zopf 1891) Tsukamura 1974

Zopf, W. 1891. *Berichte der Deutschen Botanischen Gesellschaft* 9:22-28; Tsukamura, M. 1974. *Japanese Journal of Microbiology* 18:37-44. **Type strain:** ATCC 13808

Description: Goodfellow, M. and G. Alderson. 1977. *Journal of General Microbiology* 100:99-122.

R. ruber (Kruse 1896) Goodfellow and Alderson 1979

Kruse, W. 1896 in Flugge, C. *Die Mikroorganismen*. Vol. 2, pp. 48-66; Goodfellow, M. and G. Alderson. 1979. *International Journal of Systematic Bacteriology* 29:79-80; Effective publication Goodfellow, M. and G. Alderson. 1977. *Journal of General Microbiology* 100:99-122. **Type strain:** KCC A-0205

Description: Goodfellow, M. and G. Alderson. 1977. *Ibid.*

R. rubropertinctus (Hefferan 1904) Goodfellow and Alderson 1979

Hefferan, M. 1904. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.*

- 11:397-404; Goodfellow, M. and G. Alderson. 1979. *International Journal of Systematic Bacteriology* **29**:79-80; Effective publication Goodfellow, M. and G. Alderson. 1977. *Journal of General Microbiology* **100**:99-122. **Type strain:** ATCC 14352
Description: Goodfellow, M. and G. Alderson. 1977. *Ibid.*
- R. terrae** (Tsukamura 1971) Tsukamura 1974
Tsukamura, M. 1971. *Journal of General Microbiology* **68**:15-26; Tsukamura, M. 1974. *Japanese Journal of Microbiology* **18**:37-44. **Type strain:** ATCC 25594
Description: Goodfellow, M. and G. Alderson. 1977. *Journal of General Microbiology* **100**:99-122.
- Rhodocyclus** Pfennig 1978
Pfennig N. 1978. *International Journal of Systematic Bacteriology* **28**:283-288. **Type species:** *R. purpureus* Pfennig 1978
Description: Pfennig, N. 1978. *Ibid.*
- R. purpureus** Pfennig 1978
Pfennig, N. 1978. *International Journal of Systematic Bacteriology* **28**:283-288. **Type strain:** DSM 168
Description: Pfennig, N. 1978. *Ibid.*
- Rhodomicrobium** Duchow and Douglas 1949
Duchow, E. and H.C. Douglas. 1949. *Journal of Bacteriology* **58**:409-416. **Type species:** *R. vannielii* Duchow and Douglas 1949
Description: Bergey 8.
- R. vannielii** Duchow and Douglas 1949
Duchow, E. and H.C. Douglas. 1949. *Journal of Bacteriology* **58**:409-416. **Type strain:** ATCC 17100
Description: Bergey 8.
- Rhodopseudomonas** Kluyver and van Niel 1937
Kluyver, A.J. and C.B. van Niel. 1937. *Archiv fur Mikrobiologie* **8**:99-124. **Type species:** *R. palustris* (Molisch 1907) van Niel 1944
Description: Bergey 8.
- R. acidophila** Pfennig 1969
Pfennig, N. 1969. *Journal of Bacteriology* **99**:597-602. **Type strain:** ATCC 25092
Description: Bergey 8.
- R. capsulata** (Molisch 1907) van Niel 1944
Molisch, H. 1907. Die Purpurbakterien nach neuen Untersuchungen. G. Fischer, Jena I-VII, pp. 1-95; van Niel, C.B. 1944. *Bacteriological Reviews* **8**:1-118. **Type strain:** ATCC 11166
Description: Weaver, P.F., J.D. Wall and H. Gest. 1975. *Archives of Microbiology* **105**:207-216.
- R. gelatinosa** (Molisch 1907) van Niel 1944
Molisch, H. 1907. Die Purpurbakterien nach neuen Untersuchungen. G. Fischer, Jena I-VII, pp. 1-95; van Niel, C.B. 1944. *Bacteriological Reviews* **8**:1-118. **Type strain:** ATCC 17011
Description: Bergey 8.
- R. globiformis** Pfennig 1974
Pfennig, N. 1974. *Archives of Microbiology* **100**:197-206. **Type strain:** DSM 161
Description: Pfennig, N. 1974. *Ibid.*
- R. palustris** (Molisch 1907) van Niel 1944
Molisch, H. 1907. Die Purpurbakterien nach neuen Untersuchungen. G. Fischer, Jena I-VII, pp. 1-95; van Niel, C.B. 1944. *Bacteriological Reviews* **8**:1-118. **Type strain:** ATCC 17001
Description: Bergey 8.
- R. sphaeroides** van Niel 1944
van Niel, C.B. 1944. *Bacteriological Reviews* **8**:1-118. **Type strain:** ATCC 17023
Description: Bergey 8.
- R. sulfidophila** Hansen and Veldkamp 1973
Hansen, T.A. and H. Veldkamp. 1973. *Archiv fur Mikrobiologie* **92**:45-58. **Type strain:** DSM 1374
Description: Hansen, T.A. and H. Veldkamp. 1973. *Ibid.*
- R. sulfoviridis** Keppen and Gorlenko 1975
Keppen, O.I. and V.M. Gorlenko. 1975. *Mikrobiologiya* **44**:258-264. **Type strain:** DSM 729
Description: Keppen, O.I. and V.M. Gorlenko. 1975. *Ibid.*
- R. viridis** Drews and Giesbrecht 1966
Drews, G. and P. Giesbrecht. 1966. *Archiv fur Mikrobiologie* **53**:255-262. **Type strain:** ATCC 19567
Description: Bergey 8.
- Rhodospirillum** Molisch 1907
Molisch, H. 1907. Die Purpurbakterien nach neuen Untersuchungen. G. Fischer, Jena I-VII, pp. 1-95. **Type species:** *R.*

- rubrum* (Esmarch 1887) Molisch 1907
Description: Bergey 8.
- R. fulvum** van Niel 1944
 van Niel, C.B. 1944. Bacteriological Reviews 8:1-118. **Type strain:** ATCC 157980
Description: Bergey 8.
- R. molischianum** Giesberger 1947
 Giesberger, G. 1947. Antonie van Leeuwenhoek Journal of Microbiology and Serology 13:135-148. **Type strain:** ATCC 14031
Description: Bergey 8.
- R. photometricum** Molisch 1907
 Molisch, H. 1907. Die Purpurbakterien nach neuen Untersuchungen. G. Fischer, Jena I-VII, pp. 1-95. **Type strain:** DSM 122
Description: Bergey 8.
- R. rubrum** (Esmarch 1887) Molisch 1907
 Esmarch, E. 1887. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I. 1: 225-230; Molisch, H. 1907. Die Purpurbakterien nach neuen Untersuchungen. G. Fischer, Jena I-VII, pp. 1-95. **Type strain:** ATCC 11170
Description: Bergey 8.
- R. tenue** Pfennig 1969
 Pfennig, N. 1969. Journal of Bacteriology 99:619-920. **Type strain:** ATCC 25093
Description: Bergey 8.
- Rickettsia** da Rocha-Lima 1916
 da Rocha-Lima, H. 1916. Berliner Klinische Wochenschrift 53:567-569. **Type species:** *R. prowazekii* da Rocha-Lima 1916
Description: Bergey 8.
- R. akari** Huebner, Jellison and Pomerantz 1946
 Huebner, R.J., W.L. Jellison and C. Pomerantz. 1946. Public Health Report 61:1677-1682. **Type strain:** ATCC VR 148
Description: Bergey 8.
- R. australis** Philip 1950
 Philip, C.B. 1950 in Pullen, R.L. Communicable Diseases. Lea and Febiger Co., Philadelphia. pp. 781-788. **Type strain:** NIAID Phillips 32
Description: Bergey 8.
- R. canada** McKiel, Bell and Lackmann 1967
 McKiel, J.A., E.J. Bell and D.B. Lackmann. 1967. Canadian Journal of Microbiology 13:503-510. **Type strain:** ATCC VR 610
Description: Bergey 8.
- R. conorii** Brumpt 1932
 Brumpt, E. 1932. Comptes Rendus des Seances de la Societe de Biologie Filiales 110:1199-1202. **Type strain:** NIAID Malish 7
Description: Bergey 8.
- R. parkeri** Lackman, Bell, Stoenner and Pickens 1965
 Lackman, D.B., E.J. Bell, H.G. Stoenner and E.G. Pickens. 1965. Health Laboratory Science 2:135-141. **Type strain:** NIAID maculatum 20
Description: Bergey 8.
- R. prowazekii** da Rocha-Lima 1916
 da Rocha-Lima, H. 1916. Berliner Klinische Wochenschrift 53:567-569. **Type strain:** ATCC VR 142
Description: Bergey 8.
- R. rickettsii** (Wolbach 1919) Brumpt 1922
 Wolbach, S. 1919. Journal of Medical Research 41:1-197; Brumpt, E. 1922. Precis de Parasitologie. 3rd ed. Masson et Cie, Paris. **Type strain:** ATCC VR 149
Description: Bergey 8.
- R. sennetsu** Misao and Kobayashi 1956
 Misao, R. and Y. Kobayashi. 1956. Journal of the Japanese Association for Infectious Diseases 30:453-465. **Type strain:** ATCC VR 367
Description: Bergey 8.
- R. sibirica** Zdrodovskii 1948
 Zdrodovskii, P.F. 1948. Academy of Medical Science Moscow. **Type strain:** ATCC VR 151
Description: Bergey 8.
- R. tsutsugamushi** (Hayashi 1920) Ogata 1931
 Hayashi, N. 1920. Journal of Parasitology 7:53-68; Ogata, N. 1931. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I. 122:249-253. **Type strain:** ATCC VR 150
Description: Bergey 8.
- R. typhi** (Wolbach and Todd 1920) Philip 1943
 Wolbach, S.B. and J.L. Todd. 1920. Annales de l'Institut Pasteur (Paris) 34: 153-158; Philip, C.B. 1943. American Journal of Hygiene 37:301-309. **Type strain:** ATCC VR 144
Description: Bergey 8.

Rickettsiella Philip 1956

Philip, C.B. 1956. Canadian Journal of Microbiology 2:261-270. **Type species:** *R. popilliae* (Dutky and Gooden 1952) Philip 1956

Description: Bergey 8.

R. popilliae (Dutky and Gooden 1952) Philip 1956

Dutky, S.R. and E.L. Gooden. 1952. Journal of Bacteriology 63:743-750; Philip, C.B. 1956. Canadian Journal of Microbiology 2:261-270. **Type strain:** no culture isolated.

Description: Bergey 8.

R. stethorae Hall and Badgley 1957

Hall, I.M. and M.E. Badgley. 1957. Journal of Bacteriology 74:452-455. **Type strain:** no culture isolated.

Description: Bergey 8.

Rochalimaea (Macchiavello 1947) Krieg 1961

Macchiavello, A. 1947. Prima Reunione Interamericana del Tifo, Mexico. pp. 405-426; Krieg, A. 1961. Grundlagen der Insekten-pathologie. Dr. Dietrich Steinkopff. Verlag, Darmstadt. **Type species:** *R. quintana* (Schmincke 1917) Krieg 1961

Description: Bergey 8.

R. quintana (Schmincke 1917) Krieg 1961

Schmincke, A. 1917. Munchener Medizinische Wochenschrift 64:961; Krieg, A. 1961. Grundlagen der Insekten-pathologie. Dr. Dietrich Steinkopff. Verlag, Darmstadt. **Type strain:** ATCC VR 358

Description: Bergey 8.

Rothia Georg and Brown 1967

Georg, L.K. and J.M. Brown. 1967. International Journal of Systematic Bacteriology 17:79-88. **Type species:** *R. dentocariosa* (Onishi 1949) Georg and Brown 1967

Description: Bergey 8.

R. dentocariosa (Onishi 1949) Georg and Brown 1967

Onishi, M. 1949. Journal of Dental Research 6:273-282; Georg, L.K. and J.M. Brown. 1967. International Journal of Systematic Bacteriology 17:79-88. **Type strain:** ATCC 17931

Description: Bergey 8.

Ruminococcus Sijpesteijn 1948

Sijpesteijn, A.K. 1948. Cellulose-decomposing bacteria from the rumen of cattle. Thesis. University of Leiden, The Netherlands. p. 152. **Type species:** *R. flavefaciens* Sijpesteijn 1948

Description: Bergey 8.

R. albus Hungate 1957

Hungate, R.E. 1957. Canadian Journal of Microbiology 3:289-311. **Type strain:** ATCC 27210

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

R. bromii Moore, Cato and Holdeman 1972

Moore, W.E.C., E.P. Cato and L.V. Holdeman. 1972. International Journal of Systematic Bacteriology 22:78-80. **Type strain:** ATCC 27255

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

R. callidus Holdeman and Moore 1974

Holdeman, L.V. and W.E.C. Moore. 1974. International Journal of Systematic Bacteriology 24:260-277. **Type strain:** VPI 57-31

Description: Holdeman, L.V. and W.E.C. Moore. 1974. Ibid.

R. flavefaciens Sijpesteijn 1948

Sijpesteijn, A.K. 1948. Cellulose-decomposing bacteria from the rumen of cattle. Thesis, University of Leiden, The Netherlands. **Type strain:** ATCC 19208

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

R. gnavus Moore, Johnson and Holdeman 1976

Moore, W.E.C., J.L. Johnson and L.V. Holdeman. 1976. International Journal of Systematic Bacteriology 26:238-252. **Type strain:** ATCC 29149

Description: Moore, W.E.C., J.L. Johnson and L.V. Holdeman. 1976. Ibid.

R. lactaris Moore, Johnson and Holdeman 1976

- Moore, W.E.C., J.L. Johnson and L.V. Holdeman. 1976. *International Journal of Systematic Bacteriology* **26**:238-252. **Type strain:** ATCC 29176
Description: Moore, W.E.C., J.L. Johnson and L.V. Holdeman. 1976. *Ibid.*
- R. obeum** Moore, Johnson and Holdeman 1976
 Moore, W.E.C., J.L. Johnson and L.V. Holdeman. 1976. *International Journal of Systematic Bacteriology* **26**:238-252. **Type strain:** ATCC 29174
Description: Moore, W.E.C., J.L. Johnson and L.V. Holdeman. 1976. *Ibid.*
- R. torques** Holdeman and Moore 1974
 Holdeman, L.V. and W.E.C. Moore. 1974. *International Journal of Systematic Bacteriology* **24**:260-277. **Type strain:** ATCC 27756
Description: Holdeman, L.V. and W.E.C. Moore. 1976. *Ibid.*
- Runella** Larkin and Williams 1978
 Larkin, J.M. and P.M. Williams. 1978. *International Journal of Systematic Bacteriology* **28**:32-36. **Type species:** *R. slithyformis* Larkin and Williams 1978
Description: Larkin, J.M. and P.M. Williams. 1978. *Ibid.*
- R. slithyformis** Larkin and Williams 1978
 Larkin, J.M. and P.M. Williams. 1978. *International Journal of Systematic Bacteriology* **28**:32-36. **Type strain:** ATCC 29530
Description: Larkin, J.M. and P.M. Williams. 1978. *Ibid.*
- Saccharomonospora** Nonomura and Ohara 1971
 Nonomura, H. and Y. Ohara. 1971. *Journal of Fermentation Technology* **49**:895-903. **Type species:** *S. viridis* (Schuurmans, Olson and San Clemente 1956) Nonomura and Ohara 1971
Description: Nonomura, H. and Y. Ohara. 1971. *Ibid.*
- S. viridis** (Schuurmans, Olson and San Clemente 1956) Nonomura and Ohara 1971
 Schuurmans, D.M., B.H. Olson and C.L. San Clemente. 1956. *Applied Microbiology* **4**:61-66; Nonomura, H. and Y. Ohara. 1971. *Journal of Fermentation Technology* **49**:895-903. **Type strain:** ATCC 15386
Description: Nonomura, H. and Y. Ohara. 1971. *Ibid.*
- Saccharopolyspora** Lacey and Goodfellow 1975
 Lacey, J. and M. Goodfellow. 1975. *Journal of General Microbiology* **88**:76-78. **Type species:** *S. hirsuta* Lacey and Goodfellow 1975
Description: Lacey, J. and M. Goodfellow. 1975. *Ibid.*
- S. hirsuta** Lacey and Goodfellow 1975
 Lacey, J. and M. Goodfellow. 1975. *Journal of General Microbiology* **88**:76-78. **Type strain:** ATCC 27875
Description: Lacey, J. and M. Goodfellow. 1975. *Ibid.*
- Salmonella** Lignieres 1900
 Lignieres, J. 1900. *Bulletin of the Society for Central Medical Veterinarians* **18**:389-431. **Type species:** *S. cholerae-suis* (Smith 1894) Weldin 1927
Description: Bergey 8.
- S. arizonae** (Borman 1957) Kauffman 1964
 Borman, E.K. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 346-348; Kauffman, F. 1964 in van Oye, E. *The world problem of salmonellosis*. Junk Publications, The Hague. **Type strain:** ATCC 13314
Description: Kauffman, F. 1964. *Ibid.*
- S. cholerae-suis** (Smith 1894) Weldin 1927
 Smith, T. 1894. *Bulletin of the United States Bureau of Animal Industry* **6**:6-40; Weldin, J.C. 1927. *Iowa State Journal of Science* **1**:121-197. **Type strain:** ATCC 13312
Description: Bergey 8.
- S. enteritidis** (Gaertner 1888) Castellani and Chalmers 1919
 Gaertner, E. 1888. *Korrespondenzblatt des Allgemeinen arztlichen Vereins von Thuringen* **17**:573-600; Castellani, A. and A.J. Chalmers. 1919. *Manual of tropical medicine*, 3rd ed. Williams, Wood and Co., New York. p. 939. **Type strain:** ATCC 13076
Description: Bergey 8.
- S. typhi** (Schroeter 1886) Warren and Scott 1930
 Schroeter, J. 1885-1889 in Cohn, F. *Kryptogamenflora von Schlesien*. Band 3,

Heft 3, Pilze. J.U. Kern's Verlag, Breslau, pp. 1-814; Warren S.H. and W.M. Scott. 1930. *Journal of Hygiene* **29**:415-417. **Type strain**: ATCC 19430

Description: Bergey 8.

S. typhimurium (Loeffler 1892) Castellani and Chalmers 1919

Loeffler, F. 1892. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I.* **11**:129-141; Castellani, A. and A.J. Chalmers. 1919. *Manual of tropical medicine*, 3rd ed. Williams, Wood and Co., New York. p. 939. **Type strain**: ATCC 13311

Description: Bergey 8.

Saprosira Gross 1911

Gross, J. 1911. *Mitteilungen aus der Zoologischen Station zu Neapel* **20**:188-203. **Type species**: *S. grandis* Gross 1911

Description: Bergey 8.

S. grandis Gross 1911

Gross, J. 1911. *Mitteilungen aus der Zoologischen Station zu Neapel* **20**:188-203. **Type strain**: ATCC 23119

Description: Bergey 8.

Sarcina Goodsir 1842

Goodsir, J. 1842. *Edinburgh Medical Surgery Journal* **57**:430-443. **Type species**: *S. ventriculi* Goodsir 1842

Description: Bergey 8.

S. maxima Lindner 1888

Lindner, P. 1888. *Inaugural Dissertation*, Friedrich-Wilhelms Universität, pp. 1-59. **Type strain**: DSM 316

Description: Bergey 8.

S. ventriculi Goodsir 1842

Goodsir, J. 1842. *Edinburgh Medical Surgery Journal* **57**:430-443. **Type strain**: ATCC 19633

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

Selenomonas von Prowazek 1913

von Prowazek, S. 1913. *Zentralblatt für Bakteriologie Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I.* **70**:32-36. **Type species**: *S. sputigena* (Flügge 1886) Boskamp 1922

Description: Bergey 8.

S. ruminantium (Certes 1889) Wenyon 1926

Certes, A. 1889. *Bulletin de la Societe Zoologie Francaise* **14**:70-73; Wenyon, C.M. 1926. *Protozoology*, Vol. 1. Bailliere, Tindall and Cox, London. pp. 1-778. **Type strain**: ATCC 12561

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

S. ruminantium subsp. *lactilytica* Bryant 1956

Bryant, M.P. 1956. *Journal of Bacteriology* **72**:162-167. **Type strain**: ATCC 19205

Description: Bergey 8.

S. ruminantium subsp. *ruminantium* Bryant 1974

Bryant, M.P. 1974 in *Bergey 8*. **Type strain**: ATCC 12561

Description: Bergey 8.

S. sputigena (Flügge 1886) Boskamp 1922

Flügge, C. 1886. *Die Mikroorganismen*. F.C.W. Vogel, Leipzig; Boskamp, E. 1922. *Zentralblatt für Bakteriologie Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I.* **88**:58-73. **Type strain**: VPI 10068

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

Seliberia Aristovskaya and Parinkina 1963

Aristovskaya, T.V. and O.M. Parinkina. 1963. *Bulletin of the Academy of Sciences USSR (Series Biology)* **218**:49-56. **Type species**: *S. stellata* Aristovskaya and Parinkina 1963

Description: Bergey 8.

S. stellata Aristovskaya and Parinkina 1963

Aristovskaya, T.V. and O.M. Parinkina. 1963. *Bulletin of the Academy of Sciences USSR (Series Biology)* **218**:49-56. **Type strain**: INMI N-9

Description: Bergey 8.

Serpens Hespell 1977

Hespell, R.B. 1977. *International Journal of Systematic Bacteriology* **27**:371-381. **Type species**: *S. flexibilis* Hespell 1977

Description: Hespell, R.B. 1977. *Ibid.*

S. flexibilis Hespell 1977

Hespell, R.B. 1977. *International Journal of Systematic Bacteriology* **27**:371-381.

Type strain: ATCC 29606

Description: Hespell, R.B. 1977. *Ibid.*

Serratia Bizio 1823

Bizio, B. 1823. *Biblioteca Italiana o sia Giornale di Letteratura, Scienz e Arti (Anno VIII)* **30**:275-295. **Type species:** *S. marcescens* Bizio 1823

Description: Bergey 8.

S. fonticola Gavini, Ferragut, Izard, Trinel, Leclerc, Lefebvre and Mossel 1979

Gavini, F., C. Ferragut, D. Izard, P.A. Trinel, H. Leclerc, B. Lefebvre and D.A.A. Mossel. 1979. *International Journal of Systematic Bacteriology* **29**:92-101. **Type strain:** ATCC 29844

Description: Gavini, F., C. Ferragut, D. Izard, P.A. Trinel, H. Leclerc, B. Lefebvre and D.A.A. Mossel. 1979. *Ibid.*

S. liquefaciens (Grimes and Hennerty 1961)

Bascomb, Lapage, Willcox and Curtis 1971

Grimes, M. and P.J. Hennerty. 1961. *Scientific Proceedings of the Royal Society Dublin* **20**:89-97; Bascomb, S., S.P. Lapage, W.R. Willcox and M.A. Curtis. 1971. *Journal of General Microbiology* **66**:279-295. **Type strain:** ATCC 27592

Description: Bascomb, S., S.P. Lapage, W.R. Willcox and M.A. Curtis. 1971. *Ibid.*

S. marcescens Bizio 1823

Bizio, B. 1823. *Biblioteca Italianna o sia Giornale di Letteratura, Scienze e Arti (Anno VIII)* **30**:275-295. **Type strain:** ATCC 13880

Description: Grimont, P.A.D., F. Grimont, H.L.C. Dulong de Rosnay and P.H.A. Sneath. 1977. *Journal of General Microbiology* **98**:39-66.

S. marinorubra ZoBell and Upham 1944

ZoBell, C.E. and H.C. Upham. 1944. *Bulletin Scripps Institution of Oceanography University of California (Technical Series)* **5**:239-292. **Type strain:** ATCC 27593

Description: Grimont, P.A.D., F. Grimont, H.L.C. Dulong de Rosnay and P.H.A. Sneath. 1977. *Journal of General*

Microbiology **98**:39-66.

S. odorifera Grimont, Grimont, Richard, Davis, Steigerwalt and Brenner 1978

Grimont, P.A.D., F. Grimont, C. Richard, B.R. Davis, A.G. Steigerwalt and D.J. Brenner. 1978. *International Journal of Systematic Bacteriology* **28**:453-463. **Type strain:** CDC 1979-77

Description: Grimont, P.A.D., F. Grimont, C. Richard, B.R. Davis, A.G. Steigerwalt and D.J. Brenner. 1978. *Ibid.*

S. plymuthica (Dyar 1895) Bergey, Harrison, Breed, Hammer and Huntoon 1923

Dyar, H.G. 1895. *Annals of the New York Academy of Sciences* **8**:322-380; Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. *Bergey's Manual Determinative Bacteriology*, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442. **Type strain:** ATCC 183

Description: Grimont, P.A.D., F. Grimont, H.L.C. Dulong de Rosnay and P.H.A. Sneath. 1977. *Journal of General Microbiology* **98**:39-66.

S. proteamaculans (Paine and Stansfield 1919)

Grimont, Grimont and Starr 1978
Paine, S.G. and H. Stansfield. 1919. *Annals of Applied Biology* **6**:27-39; Grimont, P.A.D., F. Grimont and M.P. Starr. 1978. *International Journal of Systematic Bacteriology* **28**:503-510. **Type strain:** ATCC 19323

Description: Grimont, P.A.D., F. Grimont and M.P. Starr. 1978. *Ibid.*

S. rubidaea (Stapp 1940) Ewing, Davis, Fife and Lessel 1973

Stapp, C. 1940. *Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **102**:251-266; Ewing, W.H., B.R. Davis, M.A. Fife and E.F. Lessel. 1973. *International Journal of Systematic Bacteriology* **23**:217-225. **Type strain:** ATCC 27593

Description: Ewing, W.H., B.R. Davis, M.A. Fife and E.F. Lessel. 1973. *Ibid.*

Shigella Castellani and Chalmers 1919

Castellani, A. and A.J. Chalmers. 1919. *Manual of tropical medicine*, 3rd ed. Williams, Wood and Co., New York. **Type species:** *S. dysenteriae* (Shiga 1898)

- Castellani and Chalmers 1919
Description: Bergey 8.
- S. boydii** Ewing 1949
 Ewing, W.H. 1949. *Journal of Bacteriology* **57**:633-638. **Type strain:** ATCC 8700
Description: Ewing, W.H. 1949. *Ibid.*
- S. dysenteriae** (Shiga 1898) Castellani and Chalmers 1919
 Shiga, K. 1898. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I.* **24**:817-828; Castellani, A. and A.J. Chalmers. 1919. *Manual of tropical medicine*, 3rd ed. Williams, Wood and Co., New York. p. 935. **Type strain:** ATCC 13313
Description: Bergey 8.
- S. flexneri** Castellani and Chalmers 1919
 Castellani, A. and A.J. Chalmers. 1919. *Manual of tropical medicine*, 3rd ed. Williams, Wood and Co., New York. p. 937. **Type strain:** ATCC 29903
Description: Bergey 8.
- S. sonnei** (Levine 1920) Weldin 1927
 Levine, M. 1920. *Journal of Infectious Diseases* **27**:31-39; Weldin, J.C. 1927. *Iowa State Journal of Science* **1**:121-197. **Type strain:** ATCC 29930
Description: Bergey 8.
- Simonsiella** Schmid 1922
 Schmid, G. 1922 in Simons, H. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I.* **88**:501-510. **Type species:** *S. muelleri* Schmid 1922
Description: Bergey 8.
- S. crassa** Schmid 1922
 Schmid, G. 1922 in Simons, H. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I.* **88**:501-510. **Type strain:** ATCC 15533
Description: Bergey 8.
- S. muelleri** Schmid 1922
 Schmid, G. 1922 in Simons, H. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I.* **88**:501-510. **Type strain:** ATCC 29453
Description: Kuhn, D.A. and D.A. Gregory. 1978. *Current Microbiology* **1**:11-14.
- S. steedae** Kuhn and Gregory 1979
 Kuhn, D.A. and D.A. Gregory. 1979 in *International Journal of Systematic Bacteriology* **29**:79-80; Effective publication Kuhn, D.A. and D.A. Gregory. 1978. *Current Microbiology* **1**:11-14. **Type strain:** ATCC 27409
Description: Kuhn, D.A. and D.A. Gregory. 1978. *Ibid.*
- Sphaerotilus** Kutzing 1833
 Kutzing, F.T. 1833. *Linnaea* **8**:335-387. **Type species:** *S. natans* Kutzing 1833
Description: Bergey 8.
- S. natans** Kutzing 1833
 Kutzing, F.T. 1833. *Linnaea* **8**:335-387. **Type strain:** ATCC 13338
Description: Stokes, J.L. 1954. *Journal of Bacteriology* **67**:278-291.
- Spirillospora** Couch 1963
 Couch, N.J. 1963. *Journal of the Elisha Mitchell Scientific Society* **79**:53-70. **Type species:** *S. albida* Couch 1963
Description: Bergey 8.
- S. albida** Couch 1963
 Couch, J.N. 1963. *Journal of the Elisha Mitchell Scientific Society* **79**:53-70. **Type strain:** ATCC 15331
Description: Bergey 8.
- Spirillum** Ehrenberg 1832
 Ehrenberg, C.G. 1832. *Abhandlungen der Königlichen Akademie der Wissenschaften zu Berlin* 1830, pp. 1-88. **Type species:** *S. volutans* Ehrenberg 1832
Description: Bergey 8.
- S. volutans** Ehrenberg 1832
 Ehrenberg, C.G. 1832. *Abhandlungen der Königlichen Akademie der Wissenschaften zu Berlin* 1830, pp. 1-88. **Type strain:** ATCC 19554
Description: Hylemon, P.B., J.S. Wells Jr., J.H. Bowdre, T.O. MacAdoo and N.R. Krieg. 1973. *International Journal of Systematic Bacteriology* **23**:20-27.
- Spirochaeta** Ehrenberg 1835
 Ehrenberg, C.G. 1835. *Abhandlungen der Preussischen Akademie der Wissenschaften (Berlin) aus den Jahre 1833-1835*, pp. 143-336. **Type species:** *S. plicatilis* Ehrenberg 1835
Description: Bergey 8.

- S. halophila** Greenberg and Canale-Parola 1977
Greenberg, E.P. and E. Canale-Parola. 1977 in International Journal of Systematic Bacteriology 27:306; Effective publication Greenberg, E.P. and E. Canale-Parola. 1976. Archives of Microbiology 110:185-194. **Type strain:** ATCC 29478
Description: Greenberg, E.P. and E. Canale-Parola. 1976. *Ibid.*
- S. plicatilis** Ehrenberg 1835
Ehrenberg, C.G. 1835. Abhandlungen der Preussischen Akademie der Wissenschaften (Berlin) aus den Jahre 1833-1835, pp. 143-336. **Type strain:** no culture available.
Description: Bergey 8.
- S. stenostrepta** Zuelzer 1912
Zuelzer, M. 1912. Archiv fur Protistenkunde 24:1-59. **Type strain:** ATCC 25083
Description: Bergey 8.
- Spiroplasma** Saglio, Lhospital, Lafleche, Dupont, Bove, Tully and Freundt 1973
Saglio, P., M. Lhospital, D. Lafleche, G. Dupont, J.M. Bove, J.G. Tully and E.A. Freundt. 1973. International Journal of Systematic Bacteriology 23:191-204. **Type species:** *S. citri* Saglio, Lhospital, Lafleche, Dupont, Bove, Tully and Freundt 1973
Description: Bergey 8.
- S. citri** Saglio, Lhospital, Lafleche, Dupont, Bove, Tully and Freundt 1973
Saglio, P., M. Lhospital, D. Lafleche, G. Dupont, J.M. Bove, J.G. Tully and E.A. Freundt. 1973. International Journal of Systematic Bacteriology 23:191-204. **Type strain:** ATCC 27556
Description: Saglio, P., M. Lhospital, D. Lafleche, G. Dupont, J.M. Bove, J.G. Tully and E.A. Freundt. 1973. *Ibid.*
- Spirosoma** Migula 1894
Migula, W. 1894. Arbeiten aus dem Bakteriologischen Institut der Technischen Hochschule zu Karlsruhe 1:235-238. **Type species:** *S. linguale* Migula 1894
Description: Larkin, J.M., P.M. Williams and R. Taylor. 1977. International Journal of Systematic Bacteriology 27: 147-156.
- S. linguale** Migula 1894
Migula, W. 1894. Arbeiten aus dem Bakteriologischen Institut der Technischen Hochschule zu Karlsruhe 1:235-238. **Type strain:** DSM 74
Description: Larkin, J.M., P.M. Williams and R. Taylor. 1977. International Journal of Systematic Bacteriology 27: 147-156.
- Sporichthya** Lechevalier, Lechevalier and Holbert 1968
Lechevalier, M.P., H.A. Lechevalier and P.E. Holbert. 1968. Annales de l'Institut Pasteur (Paris) 114:277-285. **Type species:** *S. polymorpha* Lechevalier, Lechevalier and Holbert 1968
Description: Bergey 8.
- S. polymorpha** Lechevalier, Lechevalier and Holbert 1968
Lechevalier, H.A., M.P. Lechevalier and P.E. Holbert. 1968. Annales de l'Institut Pasteur (Paris) 114:277-285. **Type strain:** ATCC 23823
Description: Lechevalier, M.P., H.A. Lechevalier and P.E. Holbert. 1968. *Ibid.*
- Sporocytophaga** Stanier 1940
Stanier, R.Y. 1940. Journal of Bacteriology 40:619-636. **Type species:** *S. myxococcoides* (Krzemieniewska 1933) Stanier 1940
Description: Bergey 8.
- S. myxococcoides** (Krzemieniewska 1933) Stanier 1940
Krzemieniewska, H. 1933. Archiv fur Mikrobiologie 4:394-408; Stanier, R.Y. 1940. Journal of Bacteriology 40:619-636. **Type strain:** ATCC 10010
Description: Bergey 8.
- Sporolactobacillus** Kitahara and Suzuki 1963
Kitahara, K. and J. Suzuki. 1963. Journal of General and Applied Microbiology 9: 59-71. **Type species:** *S. inulinus* (Kitahara and Suzuki 1963) Kitahara and Lai 1967
Description: Bergey 8.
- S. inulinus** (Kitahara and Suzuki 1963) Kitahara and Lai 1967
Kitahara, K. and J. Suzuki. 1963. Journal of General and Applied Microbiology 9: 59-71; Kitahara, K. and C.L. Lai. 1967. Journal of General and Applied Microbiology 13:197-203. **Type strain:** ATCC 15538

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

Sporosarcina Kluver and van Niel 1936

Kluver, A.J. and C.B. van Niel. 1936. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. **94**:369-403. **Type species:** *S. ureae* (Beijerinck 1901) Kluver and van Niel 1936
Description: Bergey 8.

S. ureae (Beijerinck 1901) Kluver and van Niel 1936

Beijerinck, M.W. 1901. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. **7**:33-61; Kluver, A.J. and C.B. van Niel. 1936. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. **94**:369-403. **Type strain:** ATCC 6473
Description: Bergey 8.

Staphylococcus Rosenbach 1884

Rosenbach, F.J. 1884. Microorganismen bei den Wund-Infektions-Krankheiten des Menschen. J.F. Bergmann, Wiesbaden. pp. 1-122. **Type species:** *S. aureus* Rosenbach 1884
Description: Bergey 8.

S. aureus Rosenbach 1884

Rosenbach, F.J. 1884. Microorganismen bei den Wund-Infektions-Krankheiten des Menschen. J.F. Bergmann, Wiesbaden. pp. 1-122. **Type strain:** ATCC 12600
Description: Bergey 8.

S. capitis Kloos and Schleifer 1975

Kloos, W.E. and K.H. Schleifer. 1975. International Journal of Systematic Bacteriology **25**:62-79. **Type strain:** ATCC 27840
Description: Kloos, W.E. and K.H. Schleifer. 1975. *Ibid.*

S. cohnii Schleifer and Kloos 1975

Schleifer, K.H. and W.E. Kloos. 1975. International Journal of Systematic Bacteriology **25**:50-61. **Type strain:** ATCC 29974
Description: Schleifer, K.H. and W.E. Kloos. 1975. *Ibid.*

S. epidermidis (Winslow and Winslow 1908) Evans 1916

Winslow, C.E.A. and A.R. Winslow. 1908. The systematic relationships of the Coccaceae. John Wiley, New York; Evans, A.C. 1916. Journal of Infectious Diseases **18**:437-476. **Type strain:** ATCC 14990

Description: Bergey 8.

S. haemolyticus Schleifer and Kloos 1975

Schleifer, K.H. and W.E. Kloos. 1975. International Journal of Systematic Bacteriology **25**:50-61. **Type strain:** ATCC 29970

Description: Schleifer, K.H. and W.E. Kloos. 1975. *Ibid.*

S. hominis Kloos and Schleifer 1975

Kloos, W.E. and K.H. Schleifer. 1975. International Journal of Systematic Bacteriology **25**:62-79. **Type strain:** ATCC 27844

Description: Kloos, W.E. and K.H. Schleifer. 1975. *Ibid.*

S. hyicus (Sompolinski 1953) Devriese, Hajek, Oeding, Meyer and Schleifer 1978

Sompolinski, D. 1953. Schweizerisches Archiv für Tierheilkunde **95**:302-339; Devriese, L.A., V. Hajek, P. Oeding, S.A. Meyer and K.H. Schleifer. 1978. International Journal of Systematic Bacteriology **28**:482-490. **Type strain:** ATCC 11249

Description: Devriese, L.A., V. Hajek, P. Oeding, S.A. Meyer and K.H. Schleifer. 1978. *Ibid.*

S. hyicus subsp. *chromogenes* Devriese, Hajek, Oeding, Meyer and Schleifer 1978

Devriese, L.A., V. Hajek, P. Oeding, S.A. Meyer and K.H. Schleifer. 1978. International Journal of Systematic Bacteriology **28**:482-490. **Type strain:** NCTC 10530

Description: Devriese, L.A., V. Hajek, P. Oeding, S.A. Meyer and K.H. Schleifer. 1978. *Ibid.*

S. hyicus subsp. *hyicus* (Sompolinski 1953) Devriese, Hajek, Oeding, Meyer and Schleifer 1978

Sompolinski, D. 1953. Schweizerisches Archiv für Tierheilkunde **95**:302-339; Devriese, L.A., V. Hajek, P. Oeding, S.A. Meyer and K.H. Schleifer. 1978. International Journal of Systematic Bacteriology **28**:482-490. **Type strain:** ATCC 11249

- Description:** Devriese, L.A., V. Hajek, P. Oeding, S.A. Meyer and K.H. Schleifer. 1978. *Ibid.*
- S. intermedius** Hajek 1976
Hajek, V. 1976. *International Journal of Systematic Bacteriology* **26**:401-408. **Type strain:** ATCC 29663
Description: Hajek, V. 1976. *Ibid.*
- S. saprophyticus** (Fairbrother 1940) Shaw, Stitt and Cowan 1951
Fairbrother, R.W. 1940. *Journal of Pathology and Bacteriology* **50**:83-88; Shaw, C., J.M. Stitt and S.T. Cowan. 1951. *Journal of General Microbiology* **5**: 1010-1023. **Type strain:** ATCC 15305
Description: Bergey 8.
- S. sciuri** Kloos, Schleifer and Smith 1976
Kloos, W.E., K.H. Schleifer and R.F. Smith. 1976. *International Journal of Systematic Bacteriology* **26**:22-37. **Type strain:** ATCC 29062
Description: Kloos, W.E., K.H. Schleifer and R.F. Smith. 1976. *Ibid.*
- S. sciuri** subsp. *lentus* Kloos, Schleifer and Smith 1976
Kloos, W.E., K.H. Schleifer and R.F. Smith. 1976. *International Journal of Systematic Bacteriology* **26**:22-37. **Type strain:** ATCC 29070
Description: Kloos, W.E., K.H. Schleifer and R.F. Smith. 1976. *Ibid.*
- S. sciuri** subsp. *sciuri* Kloos, Schleifer and Smith 1976
Kloos, W.E., K.H. Schleifer and R.F. Smith. 1976. *International Journal of Systematic Bacteriology* **26**:22-37. **Type strain:** ATCC 29062
Description: Kloos, W.E., K.H. Schleifer and R.F. Smith. 1976. *Ibid.*
- S. simulans** Kloos and Schleifer 1975
Kloos, W.E. and K.H. Schleifer. 1975. *International Journal of Systematic Bacteriology* **25**:62-79. **Type strain:** ATCC 27848
Description: Kloos, W.E. and K.H. Schleifer. 1975. *Ibid.*
- S. warneri** Kloos and Schleifer 1975
Kloos, W.E. and K.H. Schleifer. 1975. *International Journal of Systematic Bacteriology* **25**:62-79. **Type strain:** ATCC 27836
Description: Kloos, W.E. and K.H. Schleifer. 1975. *Ibid.*
- S. xylosus** Schleifer and Kloos 1975
Schleifer, K.H. and W.E. Kloos. 1975. *International Journal of Systematic Bacteriology* **25**:50-61. **Type strain:** ATCC 29971
Description: Schleifer, K.H. and W.E. Kloos. 1975. *Ibid.*
- Stibiobacter** Lyalikova 1974
Lyalikova, N.N. 1974. *Mikrobiologiya* **43**: 799-805. **Type species:** *S. senarmontii* Lyalikova 1974
Description: Lyalikova, N.N. 1974. *Ibid.*
- S. senarmontii** Lyalikova 1974
Lyalikova, N.N. 1974. *Mikrobiologiya* **43**: 799-805. **Type strain:** VKM MV-1130
Description: Lyalikova, N.N. 1974. *Ibid.*
- Stigmatella** Berkeley and Curtis 1875
Berkeley, M.J. and Curtis. 1875 in Berkeley, M.J. *Grevillea* **3**:97-112. **Type species:** *S. aurantiaca* Berkeley and Curtis 1875
Description: Bergey 8.
- S. aurantiaca** Berkeley and Curtis 1875
Berkeley, M.J. and Curtis. 1875 in Berkeley, M.J. *Grevillea* **3**:97-112. **Type strain:** ATCC 25190
Description: Reichenbach, H. and M. Dworkin. 1969. *Journal of General Microbiology* **58**:3-14.
- S. erecta** (Schroeter 1886) McCurdy 1971
Schroeter, J. 1885-1889 in Cohn, F. *Kryptogamenflora von Schlesien. Band 3, Heft 3, Pilze* J.U. Kern's Verlag, Breslau. pp. 1-814; McCurdy, H.D. 1971. *International Journal of Systematic Bacteriology* **21**:40-49. **Type strain:** ATCC 25191
Description: McCurdy, H.D. 1971. *Ibid.*
- Streptobacillus** Levaditi, Nicolau and Poincloux 1925
Levaditi, C., S. Nicolau and P. Poincloux. 1925. *Compte Rendu Hebdomadaire des Seances de l'Academie des Sciences (Paris)* **180**:1188-1190. **Type species:** *S. moniliformis* Levaditi, Nicolau and Poincloux 1925
Description: Bergey 8.
- S. moniliformis** Levaditi, Nicolau and Poincloux 1925
Levaditi, C., S. Nicolau and P. Poincloux. 1925. *Compte Rendu Hebdomadaire des*

- Seances de l'Academie des Sciences (Paris) 180:1188-1190. **Type strain:** ATCC 14647
Description: Bergey 8.
- Streptococcus** Rosenbach 1884
Rosenbach, F.J. 1884. Microorganismen bei den Wund-Infektions- Krankheiten des Menschen. K.F. Bergmann, Wiesbaden, pp. 1-122. **Type species:** *S. pyogenes* Rosenbach 1884
Description: Bergey 8.
- S. acidominimus** Ayers and Mudge 1922
Ayers, S.H. and C.S. Mudge. 1922. Journal of Infectious Diseases 31:40-50. **Type strain:** NCDO 2025
Description: Bergey 8.
- S. agalactiae** Lehmann and Neumann 1896
Lehmann, K.B. and R. Neumann. 1896. Atlas und Grundriss der Bakteriologie und Lehrbuch der speziellen bakteriologischen Diagnostik. 1st ed. J.F. Lehmann, Munchen. **Type strain:** NCTC 8181
Description: Bergey 8.
- S. anginosus** (Andrewes and Horder 1906) Smith and Sherman 1938
Andrewes, F.W. and T.J. Horder. 1906. Lancet 2:708-713; Smith, F.R. and J.M. Sherman. 1939. Journal of Infectious Diseases 62:189. **Type strain:** NCTC 10713
Description: Bergey 8.
- S. bovis** Orla-Jensen 1919
Orla-Jensen, S. 1919. The lactic acid bacteria. Host, Copenhagen. pp. 1-196. **Type strain:** NCDO 597
Description: Garvie, E.I. and A.J. Bramley. 1979. Journal of Applied Bacteriology 46:557-566.
- S. constellatus** (Prevot 1924) Holdeman and Moore 1974
Prevot, A.R. 1924. Comptes Rendus des Seances de la Societe de Biologie (Paris) 91:426-428; Holdeman, L.V. and W.E.C. Moore. 1974. International Journal of Systematic Bacteriology 24:260-277. **Type strain:** ATCC 27823
Description: Holdeman, L.V. and W.E.C. Moore. 1974. Ibid.
- S. cremoris** Orla-Jensen 1919
Orla-Jensen, S. 1919. The lactic acid bacteria. Host, Copenhagen. pp. 1-196. **Type strain:** NCDO 607
Description: Whitehead, H.R., C.A.E. Briggs, E.I. Garvie and L.G.M. Newland. 1956. Journal of Dairy Research 23:315-318.
- S. cricetus** Coykendall 1977
Coykendall, A.L. 1977. International Journal of Systematic Bacteriology 27:26-30. **Type strain:** ATCC 19642
Description: Coykendall, A.L. 1977. Ibid.
- S. equi** Sand and Jensen 1888
Sand, G. and C.O. Jensen. 1888. Deutsche Zeitschrift fur Tiermedizin und Vergleichende Pathologie 13:437-464. **Type strain:** NCTC 9682
Description: Bergey 8.
- S. equinus** Andrewes and Horder 1906
Andrewes, F.W. and T.J. Horder. 1906. Lancet 2:708-713. **Type strain:** ATCC 9812
Description: Fuller, R. and L.G.M. Newland. 1963. Journal of General Microbiology 31:431-434.
- S. faecalis** Andrewes and Horder 1906
Andrewes, F.W. and T.J. Horder. 1906. Lancet 2:708-713. **Type strain:** NCTC 775
Description: Shattock, P.Y.F. and A.T.R. Mattick. 1943. Journal of Hygiene Cambridge 43:173-188.
- S. faecium** Orla-Jensen 1919
Orla-Jensen, S. 1919. The lactic acid bacteria. Host, Copenhagen. pp. 1-196. **Type strain:** NCTC 7171
Description: Bergey 8.
- S. hansenii** Holdeman and Moore 1974
Holdeman, L.V. and W.E.C. Moore. 1974. International Journal of Systematic Bacteriology 24:260-277. **Type strain:** ATCC 27752
Description: Holdeman, L.V. and W.E.C. Moore. 1974. Ibid.
- S. iniae** Pier and Madin 1976
Pier, G.B. and S.H. Madin. International Journal of Systematic Bacteriology 26: 545-553. **Type strain:** ATCC 29178
Description: Pier, G.B. and S.H. Madin. 1976. Ibid.
- S. intermedius** Prevot 1925
Prevot, A.R. 1925. Annales de l'Institut Pasteur (Paris) 39:417-447. **Type strain:** ATCC 27335
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe

Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

S. lactis (Lister 1873) Lohnis 1909

Lister, J. 1873. Quarterly Journal of Microbiological Science 13:380-408; Lohnis, F. 1909. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. 22: 553-555. **Type strain:** NCDO 604

Description: Shattock, P.Y.F. and A.T.R. Mattick. 1943. Journal of Hygiene Cambridge 43:173-188.

S. mitis Andrewes and Horder 1906

Andrewes, F.W. and T.J. Horder. 1906. Lancet 2:708-713. **Type strain:** NCTC 3165

Description: Bergey 8.

S. morbillorum (Prevot 1933) Holdeman and Moore 1974

Prevot, A.R. 1933. Annales des sciences naturelles 15:23-260; Holdeman, L.V. and W.E.C. Moore. 1974. International Journal of Systematic Bacteriology 24:260-277. **Type strain:** ATCC 27824

Description: Holdeman, L.V. and W.E.C. Moore. 1974. Ibid.

S. mutans Clarke 1924

Clarke, J.K. 1924. British Journal of Experimental Pathology 5:141-147. **Type strain:** ATCC 25175

Description: Coykendall, A.L. 1977. International Journal of Systematic Bacteriology 27:26-30.

S. pleomorphus Barnes, Impey, Stevens and Peel 1979

Barnes, E.M., C.S. Impey, B.J.H. Stevens and J.L. Peel. 1977. International Journal of Systematic Bacteriology 29:79-80; Effective publication Barnes, E.M., C.S. Impey, B.J.H. Stevens and J.L. Peel. 1977. Journal of General Microbiology 102:45-53. **Type strain:** NCTC 11087

Description: Barnes, E.M., C.S. Impey, B.J.H. Stevens and J.L. Peel. 1977. Ibid.

S. pneumoniae (Klein 1884) Chester 1901

Klein, E. 1884. Practitioner 32:321-352; Chester, F.D. 1901. A manual of determinative bacteriology. The MacMillan Co., New York. pp. 1-401. **Type strain:** NCTC 7465

Description: Bergey 8.

S. pyogenes Rosenbach 1884

Rosenbach, F.J. 1884. Microorganismen bei den Wund-Infektions- Krankheiten des Menschen. J.F. Bergmann, Wiesbaden pp. 1-122. **Type strain:** ATCC 12344

Description: Bergey 8.

S. raffinolactis Orla-Jensen and Hansen 1932

Orla-Jensen, A.D. and P.A. Hansen. 1932. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. 86:6-29. **Type strain:** NCDO 617

Description: Garvie, E.I. 1979. International Journal of Systematic Bacteriology 29:152.

S. rattus Coykendall 1977

Coykendall, A.L. 1977. International Journal of Systematic Bacteriology 27:26-30. **Type strain:** ATCC 19645

Description: Coykendall, A.L. 1977. Ibid.

S. salivarius Andrewes and Horder 1906

Andrewes, F.W. and T.J. Horder. 1906. Lancet 2:708-713. **Type strain:** ATCC 7073

Description: Bergey 8.

S. sanguis White and Niven 1946

White, J.C. and C.F. Niven Jr. 1946. Journal of Bacteriology 51:717-722. **Type strain:** ATCC 10556

Description: Bergey 8.

S. thermophilus Orla-Jensen 1919

Orla-Jensen, S. 1919. The lactic acid bacteria. Host, Copenhagen. pp. 1-196. **Type strain:** NCDO 573

Description: Bergey 8.

S. uberis Diernhofer 1932

Diernhofer, K. 1932. Milchwirtschaftliche Forschungen 13:368-374. **Type strain:** NCTC 3858

Description: Garvie, E.I. and A.J. Bramley. 1979. Journal of Applied Bacteriology 46:295-304.

Streptomyces Waksman and Henrici 1943

Waksman, S.A. and A.T. Henrici. 1943. Journal of Bacteriology 46:337-341. **Type species:** *S. albus* (Rossi Doria 1891) Waksman and Henrici 1943

Description: Bergey 8.

S. aburaviensis Nishimura, Kimura, Tawara,

Sasaki, Nakajima, Shimaoka, Okamoto, Shimohara and Isono 1957

Nishimura, H., T. Kimura, K. Tawara, K. Sasaki, K. Nakajima, N. Shimaoka, S.

- Okamoto, M. Shimohara and J. Isono. 1957. *Journal of Antibiotics* (Tokyo) Series A **10**:205-212. **Type strain**: ATCC 23869
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. achromogenes** Okami and Umezawa 1953
 Okami, Y. and H. Umezawa. 1953 in Umezawa, H., T. Takeuchi, Y. Okami and T. Tazaki. *Japanese Journal of Medical Science and Biology* **6**:261-268. **Type strain**: ATCC 12767
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. achromogenes** subsp. *achromogenes* Okami and Umezawa 1953
 Okami, Y. and H. Umezawa. 1953 in Umezawa, H., T. Takeuchi, Y. Okami and T. Tazaki. *Japanese Journal of Medical Science and Biology* **6**:261-268. **Type strain**: ATCC 12767
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. achromogenes** subsp. *rubradiris* Bhuyan, Owen and Dietz 1965
 Bhuyan, B.K., S.P. Owen and A. Dietz. 1965. *Antimicrobial Agents and Chemotherapy* **1964**:91-96. **Type strain**: CBS 566.70
Description: Bhuyan, B.K., S.P. Owen and A. Dietz. 1965. *Ibid.*
- S. acrimycini** (Preobrazhenskaya, Blinov and Ryabova 1957) Pridham, Hesseltine and Benedict 1958
 Preobrazhenskaya, T.P., N.O. Blinov and I.D. Ryabova. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. *Problems of classification of actinomycetes-antagonists.* Government Publishing House of Medical Literature, Medgiz, Moscow. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. *Applied Microbiology* **6**:52-79. **Type strain**: ATCC 19885
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. afghaniensis** Shimo, Shiga, Tomosugi and Kamoi 1959
 Shimo, M., T. Shiga, T. Tomosugi and I. Kamoi. 1959. *Journal of Antibiotics* (Tokyo) Series A **12**:1-6. **Type strain**: ATCC 23871
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. alanosinicus** Thiemann and Beretta 1966
 Thiemann, J.E. and G. Beretta. 1966. *Journal of Antibiotics* (Tokyo) Series A **19**:155-160. **Type strain**: ATCC 15710
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. albaduncus** Tsukiura, Okanishi, Ohmor, Koshiyama, Miyaki, Kitazima and Kawaguchi 1964
 Tsukiura, H., M. Okanishi, T. Ohmor, H. Koshiyama, T. Miyaki, H. Kitazima and H. Kawaguchi. 1964. *Journal of Antibiotics* (Tokyo) Series A **17**:39-47. **Type strain**: ATCC 14698
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. albidoflavus** (Rossi Doria 1891) Waksman and Henrici 1948
 Rossi Doria, T. 1891. *Annali dell' Istituto d'Igiene Sperimentale della Rendiconti Universita di Roma* **1**:399-438; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacteriology*, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain**: ATCC 25422
Description: Shirling, E.B. and D. Gottlieb. 1969. *International Journal of Systematic Bacteriology* **19**:391-512.
- S. albofaciens** Thirumalachar and Bhatt 1960
 Thirumalachar, M.J. and V.V. Bhatt. 1960. *Hindustan Antibiotics Bulletin* **3**:61-63. **Type strain**: ATCC 25184
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. alboflavus** (Waksman and Curtis 1916) Waksman and Henrici 1948
 Waksman, S.A. and R.E. Curtis. 1916. *Soil Science* **1**:99-134; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacter-*

- iology, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 12626
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. albogriseolus** Benedict, Shotwell, Pridham, Lindenfelser and Haynes 1954
 Benedict, R.G., O.L. Shotwell, T.G. Pridham, L.A. Lindenfelser and W.C. Haynes. 1954. *Antibiotics and Chemotherapy* **4**:653-656. **Type strain:** NRRL B-1305
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. albolongus** Tsukiura, Okanishi, Koshiyama, Ohmori, Miyaki and Kawaguchi 1964
 Tsukiura, H., M. Okanishi, H. Koshiyama, T. Ohmori, T. Miyaki and H. Kawaguchi. 1964. *Journal of Antibiotics (Tokyo) Series A* **17**:223-229. **Type strain:** ATCC 27414
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. alboniger** Porter, Hewitt, Hesseltine, Krupka, Lowery, Wallace, Bohonos and Williams 1952
 Porter, J.N., R.I. Hewitt, C.W. Hesseltine, G. Krupka, J.A. Lowery, W.S. Wallace, N. Bohonos and J.H. Williams. 1952. *Antibiotics and Chemotherapy* **2**:409-410. **Type strain:** ATCC 12461
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. albospinus** Wang, Hamada, Okami and Umezawa 1966
 Wang, E.L., M. Hamada, Y. Okami and H. Umezawa. 1966. *Journal of Antibiotics (Tokyo) Series A* **19**:216-221. **Type strain:** ATCC 29808
Description: Wang, E.L., M. Hamada, Y. Okami and H. Umezawa. 1966. *Ibid.*
- S. albosporeus** (Krainsky 1914) Waksman and Henrici 1948
 Krainsky, A. 1914. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **41**:649-688; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacteriology*, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 15394
Description: Pridham, T.G., A.J. Lyons Jr. and H.L. Seckinger. 1965. *International Bulletin of Bacteriological Nomenclature and Taxonomy* **15**:191-237.
- S. albosporeus** subsp. *albosporeus* (Krainsky 1914) Waksman and Henrici 1948
 Krainsky, A. 1914. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **41**:649-688; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacteriology*, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 15394
Description: Pridham, T.G., A.J. Lyons Jr. and H.L. Seckinger. 1965. *International Bulletin of Bacteriological Nomenclature and Taxonomy* **15**:191-237.
- S. albosporeus** subsp. *labilomyceticus* Okami, Suzuki and Umezawa 1963
 Okami, Y., M. Suzuki and H. Umezawa. 1963. *Journal of Antibiotics (Tokyo) Series A* **16**:152-154. **Type strain:** NIHJ 425
Description: Okami, Y., M. Suzuki and H. Umezawa. 1963. *Ibid.*
- S. albovinaceus** (Kudrina 1957) Pridham, Hesseltine and Benedict 1958
 Kudrina, E.S. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. *Problems in the classification of actinomycetes-antagonists*. State Publishing House of Medical Literature, Medgiz, Moscow, USSR; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. *Applied Microbiology* **6**:52-79. **Type strain:** ATCC 15823
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. alboviridis** (Duche 1934) Pridham, Hesseltine and Benedict 1958
 Duche, J. 1934. *Encyclopedie Mycologique* **6**:1-375; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. *Applied Microbiology* **6**:52-79. **Type**

- strain:** ATCC 25425
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology **19**:391-512.
- S. albulus** Routien 1969
 Routien, J.B. 1969 in Pridham, T.G. and A.J. Lyons, Jr. Developments in Industrial Microbiology **10**:183-221. **Type strain:** ATCC 12757
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- S. albus** (Rossi Doria 1891) Waksman and Henrici 1943
 Rossi Doria, T. 1891. Annali dell' Istituto d'Igiene Sperimentale della Rendiconti Universita di Roma **1**:399-438; Waksman, S.A. and A.T. Henrici. 1943. Journal of Bacteriology **46**:337-341. **Type strain:** ATCC 3004
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology **19**:391-512.
- S. albus** subsp. *albus* (Rossi Doria 1891) Waksman and Henrici 1943
 Rossi Doria, T. 1891. Annali dell' Istituto d'Igiene Sperimentale della Rendiconti Universita di Roma **1**:399-438; Waksman, S.A. and A.T. Henrici. 1943. Journal of Bacteriology **46**:337-341. **Type strain:** ATCC 3004
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology **19**:391-512.
- S. albus** subsp. *pathodicicus* Nagatsu, Anzai and Suzuki 1962
 Nagatsu, J., K. Anzai and S. Suzuki. 1962. Journal of Antibiotics (Tokyo) Series A **15**:103-106. **Type strain:** ATCC 14510
Description: Bergey 8.
- S. almquistii** (Duche 1934) Pridham, Hesseltine and Benedict 1958
 Duche, J. 1934. Encyclopedie Mycologique **6**:1-375; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. Applied Microbiology **6**:52-79. **Type strain:** ATCC 618
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology **19**:391-512.
- S. althioticus** Yamaguchi, Nakayama, Takeda, Tawara, Maeda, Takeuchi and Umezawa 1957
 Yamaguchi, H., Y. Nakayama, K. Takeda, K. Tawara, K. Maeda, T. Takeuchi and H. Umezawa. 1957. Journal of Antibiotics (Tokyo) Series A **10**:195-200. **Type strain:** ATCC 19724
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:69-189.
- S. amakusaensis** Nagatsu, Anzai, Ohkuma and Suzuki 1963
 Nagatsu, J., K. Anzai, K. Ohkuma and S. Suzuki. 1963. Journal of Antibiotics (Tokyo) Series A **16**:207-210. **Type strain:** ATCC 23876
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:279-392.
- S. ambofaciens** Pinnert-Sindico 1954
 Pinnert-Sindico, S. 1954. Annales de l'Institut Pasteur (Paris) **87**:702-707. **Type strain:** ATCC 23877
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:279-392.
- S. aminophilus** Foster 1961
 Foster, W.J. 1961 in Oswald, E.J., R.J. Reedy and W.A. Randall. 1956 in Hutter, R. 1961. Archiv fur Mikrobiologie **38**:367-383. **Type strain:** ATCC 14961
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:279-392.
- S. anandii** Batra and Bajaj 1965
 Batra, S.K. and B.S. Bajaj. 1965. Indian Journal of Experimental Biology **3**:240-242. **Type strain:** ATCC 19388
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- S. anthocyanicus** (Krassilnikov, Sorokina, Alferova and Bezzubenkova 1965) Pridham 1970
 Krassilnikov, N.A., E.J. Sorokina, V.A. Alferova and A.P. Bezzubenkova. 1965 in Krassilnikov, N.A. (ed). Biology of selected groups of Actinomycetes (in Russian). Institute of Microbiology, Academy of Science, Publishing Firm 'Nauka', Moscow, USSR. pp. 74-123; Pridham, T.G. 1970. Bulletin of the United States Department of Agriculture **1424**:1-55.

- Type strain:** ATCC 19821
Description: Bergey 8.
- S. antibioticus** (Waksman and Woodruff 1941)
 Waksman and Henrici 1948
 Waksman, S.A. and H.B. Woodruff. 1941. *Journal of Bacteriology* **42**:231-249;
 Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacteriology*, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 8663
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. antimycoticus** Waksman 1957
 Waksman, S.A. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. pp. 744-825. **Type strain:** NRRL 2421
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. anulatus** (Beijerinck 1912) Waksman 1957
 Beijerinck, M.W. 1912. *Folia Mikrobiologia* (Delft) **1**:4-100; Waksman, S.A. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*, 7th ed. The Williams and Wilkins Co., Baltimore. **Type strain:** CBS 100.18
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. arabicus** Shibata, Nakazawa, Miyake, Inoue and Okabori 1957
 Shibata, M., K. Nakazawa, A. Miyake, M. Inoue and A. Okabori. 1957. *Annual Report of the Takeda Research Laboratory* **16**:32-37. **Type strain:** ATCC 23881
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. arenae** Pridham, Hesseltine and Benedict 1958
 Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. *Applied Microbiology* **6**:52-79. **Type strain:** NRRL 2377
Description: Shirling, E.B. and D. Gottlieb. 1969. *International Journal of Systematic Bacteriology* **19**:391-512.
- S. argenteolus** Tresner, Davies and Backus 1961
 Tresner, H.D., M.C. Davies and E.J. Backus. 1961. *Journal of Bacteriology* **81**:70-80. **Type strain:** ATCC 11009
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. atratus** Shibata, Higashide, Yamamoto and Nakazawa 1962
 Shibata, M., E. Higashide, H. Yamamoto and K. Nakazawa. 1962. *Agricultural and Biological Chemistry* **26**:228-233. **Type strain:** IFO 3897
Description: Shibata, M., E. Higashide, H. Yamamoto and K. Nakazawa. 1962. *Ibid.*
- S. atroolivaceus** (Preobrazhenskaya, Blinov and Ryabova 1957) Pridham, Hesseltine and Benedict 1958
 Preobrazhenskaya, T.P., N.O. Blinov and I.D. Ryabova. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. *Problems in the classification of actinomycetes-antagonists*. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. *Applied Microbiology* **6**:52-79. **Type strain:** ATCC 19725
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. aurantiacus** (Rossi Doria 1891) Waksman 1953
 Rossi Doria, T. 1891. *Annali dell' Istituto d'Igiene Sperimentale della Rendiconti Università di Roma* **1**:399-438; Waksman, S.A. 1953 in Waksman, S.A. and H.A. Lechevalier. *Guide to the classification and identification of the actinomycetes and their antibiotics*. The Williams and Wilkins Co., Baltimore. pp. 1-246. **Type strain:** ATCC 19822
Description: Shirling, E.B. and D. Gottlieb. 1969. *International Journal of Systematic Bacteriology* **19**:391-512.
- S. aurantiogriseus** (Preobrazhenskaya 1957) Pridham, Hesseltine and Benedict 1958
 Preobrazhenskaya, T.P. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. *Problems of classification of*

- actinomycetes-antagonists. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. *Applied Microbiology* **6**:52-79. **Type strain:** ATCC 19887
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. aureocirculatus** (Krassilnikov and Yuan 1965) Pridham 1970
 Krassilnikov, N.A. and T. Yuan. 1965 in Krassilnikov, N.A. (ed). *Biology of individual groups of Actinomycetes (in Russian)*. pp. 28-57; Pridham, T.G. 1970. *Bulletin of the United States Department of Agriculture* **1424**:1-55. **Type strain:** ATCC 19823
Description: Shirling, E.B. and D. Gottlieb. 1969. *International Journal of Systematic Bacteriology* **19**:391-512.
- S. aureofaciens** Duggar 1948
 Duggar, B. 1948. *Annals of the New York Academy of Science* **51**:177-181. **Type strain:** NRRL 2209
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. aureovorticillatus** (Krassilnikov and Yuan 1960) Pridham 1970
 Krassilnikov, N.A. and C.-S. Yuan. 1960. *Mikrobiologiya* **29**:482-489 (English Translation 354-358); Pridham, T.G. 1970. *Bulletin of the United States Department of Agriculture* **1424**:1-55. **Type strain:** ATCC 15854
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. avellaneus** Baldacci and Grein 1966
 Baldacci, E. and A. Grein. 1966. *Giornale di Microbiologia* **14**:185-198. **Type strain:** ATCC 23730
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. avidinii** Stapley, Mata, Miller, Demny and Woodruff 1964
 Stapley, E.O., J.M. Mata, I.M. Miller, T.C. Demny and H.B. Woodruff. 1964. *Antimicrobial Agents and Chemotherapy* **1963**:20-27. **Type strain:** NRRL 3077
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. azureus** Kelly, Kutscher and Tuoti 1959
 Kelly, J., A.H. Kutscher and F. Tuoti. 1959. *Oral Surgery, Oral Medicine and Oral Pathology* **12**:1334-1339. **Type strain:** ATCC 14921
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. baarnensis** Pridham, Hesseltine and Benedict 1958
 Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. *Applied Microbiology* **6**:52-79. **Type strain:** CBS 306.55
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. bacillaris** (Krassilnikov 1958) Pridham 1970
 Krassilnikov, N.A. 1958. *Folia Biologica (Praha)* **4**:257-265; Pridham, T.G. 1970. *Bulletin of the United States Department of Agriculture* **1424**:1-55. **Type strain:** ATCC 15855
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. badius** (Kudrina 1957) Pridham, Hesseltine and Benedict 1958
 Kudrina, E.S. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. *Problems of classification of actinomycetes-antagonists*. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. *Applied Microbiology* **6**:52-79. **Type strain:** ATCC 19888
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. bambergiensis** Wallhausser, Neemann, Prave and Steigler 1966
 Wallhausser, K., G. Neemann, P. Prave and A. Steigler. 1966. *Antimicrobial Agents and Chemotherapy* **1965**:734-736. **Type strain:** ATCC 13879
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. bellus** Margalith and Beretta 1960
 Margalith, P. and G. Beretta. 1960.

- Mycopathologia et Mycologia Applicata 12:189-195. **Type strain:** ATCC 14925
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology 18:279-392.
- S. bikiniensis** Johnstone and Waksman 1947
 Johnstone, D.B. and S.A. Waksman. 1947. Proceedings of the Society for Experimental Biology and Medicine 65: 294-295. **Type strain:** ATCC 11062
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology 18:279-392.
- S. bluensis** Mason, Dietz and Hanka 1963
 Mason, D.J., A. Dietz and L.J. Hanka. 1963. Antimicrobial Agents and Chemotherapy 1962:607-613. **Type strain:** NRRL 2876
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology 22:265-394.
- S. bobili** (Waksman and Curtis 1916) Waksman and Henrici 1948
 Waksman, S.A. and R.E. Curtis. 1916. Soil Science 1:99-134; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). Bergey's Manual of Determinative Bacteriology, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 3310
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology 18:279-392.
- S. bottropensis** Waksman 1961
 Waksman, S.A. 1961. The Actinomycetes. Vol. 2. Classification, identification and descriptions of genera and species. The Williams and Wilkins Co., Baltimore. pp. 1-363. **Type strain:** ATCC 25435
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology 19:391-512.
- S. cacaoi** (Waksman 1932) Waksman and Henrici 1948
 Waksman, S.A. 1932 in Bunting, R.H. Annals of Applied Biology 19:515-517; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). Bergey's Manual of Determinative Bacteriology, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 3082
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology 18:69-189.
- S. cacaoi** subsp. *asoensis* Isono, Nagatsu, Kawashima and Suzuki 1965
 Isono, K., J. Nagatsu, Y. Kawashima and S. Suzuki. 1965. Agricultural and Biological Chemistry 29:848-854. **Type strain:** IFO 13813
Description: Isono, K., J. Nagatsu, Y. Kawashima and S. Suzuki. 1965. Ibid.
- S. cacaoi** subsp. *cacaoi* (Waksman 1932) Waksman and Henrici 1948
 Waksman, S.A. 1932 in Bunting, R.H. Annals of Applied Biology 19:515-517; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). Bergey's Manual of Determinative Bacteriology, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 3082
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology 18:69-189.
- S. caelestis** De Boer, Dietz, Wilkins, Lewis and Savage 1955
 De Boer, C., A. Dietz, J.R. Wilkins, C.N. Lewis and G.M. Savage. 1955. Antibiotics Annual 1954:831-841. **Type strain:** NRRL 2418
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology 18:69-189.
- S. caeruleus** (Baldacci 1944) Pridham, Hessel-tine and Benedict 1958
 Baldacci, E. 1944. Atti dell'Istituto Botanico della Universita Laboratorio Crittogamico di Pavia Series 5, 3:139-193; Pridham, T.G., C.W. Hessel-tine and R.G. Benedict. 1958. Applied Microbiology 6: 52-79. **Type strain:** ATCC 27421
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology 22:265-394.
- S. californicus** (Waksman and Curtis 1916) Waksman and Henrici 1948
 Waksman, S.A. and R.E. Curtis. 1916. Soil Science 1:99-134; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). Bergey's Manual of Determinative Bacteriology, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:**

- ATCC 3312
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:69-189.
- S. calvus** Backus, Tresner and Campbell 1957
 Backus, E.J., H.D. Tresner and T.H. Campbell. 1957. Antibiotics and Chemotherapy **7**:532-541. **Type strain:** ATCC 13382
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:279-392.
- S. canarius** Vavra and Dietz 1965
 Vavra, J. and A. Dietz. 1965. Antimicrobial Agents and Chemotherapy **1964**:75-79. **Type strain:** NRRL 2976
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- S. canescens** Waksman 1957
 Waksman, S.A. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). Bergey's Manual of Determinative Bacteriology, 7th ed. The Williams and Wilkins Co., Baltimore. **Type strain:** ATCC 19736
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:69-189.
- S. canus** Heinemann, Kaplan, Muir and Hooper 1953
 Heinemann, B., M.A. Kaplan, R.D. Muir and I.R. Hooper. 1953. Antibiotics and Chemotherapy **3**:1239-1242. **Type strain:** ATCC 12237
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:69-189.
- S. capoamus** Goncalves de Lima, Albert and Goncalves de Lima 1964
 Goncalves de Lima, V.O., C.A. Albert and O. Goncalves de Lima. 1964. Anais da Academia Brasileira de Ciencias **36**:317-322. **Type strain:** ATCC 19006
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- S. catenulae** Davisson and Finlay 1961
 Davisson, J.W. and A.C. Finlay. 1961 in Waksman, S.A. The Actinomycetes. Vol. 2. Classification, identification and descriptions of genera and species. The Williams and Wilkins Co., Baltimore. pp. 1-363. **Type strain:** ATCC 12476
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:279-392.
- S. cavourensis** Skarbek and Brady 1978
 Skarbek, J.D. and L.R. Brady. 1978. International Journal of Systematic Bacteriology **28**:45-53. **Type strain:** ATCC 14889
Description: Skarbek, J.D. and L.R. Brady. 1978. Ibid.
- S. cavourensis** subsp. *cavourensis* Skarbek and Brady 1978
 Skarbek, J.D. and L.R. Brady. 1978. International Journal of Systematic Bacteriology **28**:45-53. **Type strain:** ATCC 14889
Description: Skarbek, J.D. and L.R. Brady. 1978. Ibid.
- S. cavourensis** subsp. *washingtonensis* Skarbek and Brady 1978
 Skarbek, J.D. and L.R. Brady. 1978. International Journal of Systematic Bacteriology **28**:45-53. **Type strain:** ATCC 27732
Description: Skarbek, J.D. and L.R. Brady. 1978. Ibid.
- S. cellostaticus** Hamada 1958
 Hamada, S. 1958. Tohoku Journal of Experimental Medicine **67**:173-179. **Type strain:** ATCC 23894
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:279-392.
- S. celluloflavus** Nishimura, Kimura and Kuroya 1953
 Nishimura, H., T. Kimura and M. Kuroya. 1953. Journal of Antibiotics (Tokyo) Series A **6**:57-65. **Type strain:** IFO 13780
Description: Bergey 8.
- S. cellulosa** (Krainsky 1914) Waksman and Henrici 1948
 Krainsky, A. 1914. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. **41**:649-688; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). Bergey's Manual of Determinative Bacteriology, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** CBS 122.18
Description: Shirling, E.B. and D.

- Gottlieb. 1969. *International Journal of Systematic Bacteriology* **19**:391-512.
- S. champavatii** Uma and Narasimha Rao 1959
Uma, B.N. and P.L. Narasimha Rao. 1959. *Indian Institute of Sciences Golden Jubilee Research Vol. 1909-1959*. Bangalore, India. pp. 130-141. **Type strain:** NRRL B-5682
Description: Bergey 8.
- S. chartreusis** Leach, Calhoun, Johnson, Teeters and Jackson 1953
Leach, B.E., K.M. Calhoun, L.E. Johnson, C.M. Teeters and W.G. Jackson. 1953. *Journal of the American Chemical Society* **75**:4011-4012. **Type strain:** NRRL 2287
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. chattanoogaensis** Burns and Holtman 1959
Burns, J. and D.F. Holtman. 1959. *Antibiotics and Chemotherapy* **9**:398-405. **Type strain:** ATCC 13358
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. chibaensis** Suzuki, Nakamura, Okuma and Tomiyama 1958
Suzuki, S., G. Nakamura, K. Okuma and Y. Tomiyama. 1958. *Journal of Antibiotics (Tokyo) Series A* **11**:81-83. **Type strain:** ATCC 23895
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. chrestomyceticus** Canevazzi and Scotti 1959
Canevazzi, G. and T. Scotti. 1959. *Giornale di Microbiologia* **7**:242-250. **Type strain:** ATCC 14947
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. chromofuscus** (Preobrazhenskaya, Blinov and Ryabova 1957) Pridham, Hesseltine and Benedict 1958
Preobrazhenskaya, E.S., N.O. Blinov and I.D. Ryabova. 1957 in *Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. Problems of classification of actinomycetes-antagonists*. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. *Applied Microbiology* **6**:52-79. **Type strain:** ATCC 23896
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. chryseus** (Krassilnikov, Korenyako and Nikitina 1965) Pridham 1970
Krassilnikov, N.A., A.I. Korenyako and N.I. Nikitina. 1965 in Krassilnikov, N.A. (ed). *Biology of selected groups of actinomycetes (in Russian)*. Institute of Microbiology, Academy of Science, Publishing Firm 'Nauka', Moscow, USSR. pp. 1-372; Pridham, T.G. 1970. *Bulletin of the United States Department of Agriculture* **1424**:1-55. **Type strain:** ATCC 19829
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. chrysomallus** Lindenbein 1952
Lindenbein, W. 1952. *Archiv fur Mikrobiologie* **17**:361-383. **Type strain:** ATCC 11523
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. chrysomallus** subsp. *chrysomallus* Lindenbein 1952
Lindenbein, W. 1952. *Archiv fur Mikrobiologie* **17**:361-383. **Type strain:** ATCC 11523
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. chrysomallus** subsp. *fumigatus* Frommer 1959
Frommer, W. 1959. *Archiv fur Mikrobiologie* **32**:187-206. **Type strain:** NRRL B-2289
Description: Hutter, R. 1963. *Giornale di Microbiologia* **11**:191-246.
- S. cinereoruber** Corbaz, Ettliger, Keller-Schierlein and Zahner 1957
Corbaz, R., L. Ettliger, W. Keller-Schierlein and H. Zahner. 1957. *Archiv fur Mikrobiologie* **25**:325-332. **Type strain:** ATCC 19740
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. cinereoruber** subsp. *cinereoruber* Corbaz,

- Ettlinger, Keller-Schierlein and Zahner 1957
- Corbaz, R., L. Ettlinger, W. Keller-Schierlein and H. Zahner. 1957. *Archiv fur Mikrobiologie* **25**:325-332. **Type strain:** ATCC 19740
- Description:** Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. cinereoruber** subsp. *fructofermentans* Corbaz, Ettlinger, Keller-Schierlein and Zahner 1957
- Corbaz, R., L. Ettlinger, W. Keller-Schierlein and H. Zahner. 1957. *Archiv fur Mikrobiologie* **25**:325-332. **Type strain:** NRRL 2588
- Description:** Ettlinger, L., R. Corbaz and R. Hutter. 1958. *Archiv fur Mikrobiologie* **31**:326-358.
- S. cinerochromogenes** Miyairi, Takashima, Shimizu and Sakai 1966
- Miyairi, N., M. Takashima, K. Shimizu and H. Sakai. 1966. *Journal of Antibiotics (Tokyo) Series A* **19**:56-62. **Type strain:** IFO 13922
- Description:** Miyairi, N., M. Takashima, K. Shimizu and H. Sakai. 1966. *Ibid.*
- S. cinnabarinus** (Ryabova and Preobrazhenskaya 1957) Pridham, Hesseltine and Benedict 1958
- Ryabova, I.D. and T.P. Preobrazhenskaya. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. *Problems of classification of actinomycetes-antagonists*. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. *Applied Microbiology* **6**:52-79. **Type strain:** ATCC 23617
- Description:** Shirling, E.B. and D. Gottlieb. 1969. *International Journal of Systematic Bacteriology* **19**:391-512.
- S. cinnamomensis** Okami 1952
- Okami, Y. 1952 in Maeda, K., Y. Okami, H. Kosaka, O. Taya and H. Umezawa. *Journal of Antibiotics (Tokyo)* **5**:572-573. **Type strain:** ATCC 12308
- Description:** Ettlinger, L., R. Corbaz and R. Hutter. 1958. *Archiv fur Mikrobiologie* **31**:326-358.
- S. cirratus** Koshiyama, Okanishi, Ohmori, Miyaki, Tsukiura, Matsuzaki and Kawaguchi 1963
- Koshiyama, H., M. Okanishi, T. Ohmori, T. Miyaki, H. Tsukiura, M. Matsuzaki and H. Kawaguchi. 1963. *Journal of Antibiotics (Tokyo) Series A* **16**:59-66. **Type strain:** ATCC 14699
- Description:** Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. citreofluorescens** (Korenyako, Krassilnikov, Nikitina and Sokolova 1960) Pridham 1970
- Korenyako, A.I., N.A. Krasillnilov, N.I. Nikitina and A.I. Sokolova. 1960 in Rautenshtein, Ya. I. *Transactions of the Institute of Microbiology, Academy of Science USSR* **8**:1-344; Pridham, T.G. 1970. *Bulletin of the United States Department of Agriculture* **1424**:1-55. **Type strain:** ATCC 15858
- Description:** Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. clavifer** (Millard and Burr 1926) Waksman 1953
- Millard, W.A. and S. Burr. 1926. *Annals of Applied Biology* **13**:580-644; Waksman, S.A. 1953 in Waksman, S.A. and H.A. Lechevalier. *Guide to the classification and identification of the actinomycetes and their antibiotics*. The Williams and Wilkins Co., Baltimore. pp. 1-246. **Type strain:** CBS 101.27
- Description:** Bergery 8.
- S. clavuligerus** Higgins and Kastner 1971
- Higgins, C.E. and R.E. Kastner. 1971. *International Journal of Systematic Bacteriology* **21**:326-331. **Type strain:** NRRL 3585
- Description:** Higgins, C.E. and R.E. Kastner. 1971. *Ibid.*
- S. coelescens** (Krassilnikov, Sorokina, Alferova and Bezzubenkova 1965) Pridham 1970
- Krassilnikov, N.A., E.J. Sorokina, V.A. Alferova and A.P. Bezzubenkova. 1965 in Krassilnikov, N.A. (ed). *Biology of selected groups of actinomycetes (in Russian)*. Institute of Microbiology, Academy of Science, Publishing Firm 'Nauka', Moscow, USSR. pp. 1-372; Pridham, T.G. 1970. *Bulletin of the United States Department of Agriculture* **1424**:1-55.

- Type strain:** ATCC 19830
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. coelicolor** (Muller 1908) Waksman and Henrici 1948
 Muller, R. 1908. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung I.* **46**:195-222; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacteriology*, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** CBS 210.27
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. coeruleofuscus** (Preobrazhenskaya 1957) Pridham, Hesseltine and Benedict 1958
 Preobrazhenskaya, T.P. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. *Problems of classification of actinomycetes-antagonists.* Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. *Applied Microbiology* **6**:52-79. **Type strain:** ATCC 23618
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. coeruleorubidus** (Preobrazhenskaya 1957) Pridham, Hesseltine and Benedict 1958
 Preobrazhenskaya, T.P. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. *Problems of classification of actinomycetes-antagonists.* Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. *Applied Microbiology* **6**:52-79. **Type strain:** ATCC 13740
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. coerulescens** (Preobrazhenskaya 1957) Pridham, Hesseltine and Benedict 1958
 Preobrazhenskaya, T.P. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. *Problems of classification of actinomycetes-antagonists.* Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. *Applied Microbiology* **6**:52-79. **Type strain:** ATCC 19896
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. collinus** Lindenbein 1952
 Lindenbein, W. 1952. *Archiv für Mikrobiologie* **17**:361-383. **Type strain:** ATCC 19743
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. colombiensis** Pridham, Hesseltine and Benedict 1958
 Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. *Applied Microbiology* **6**:52-79. **Type strain:** ATCC 27425
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. corchorusii** Ahmad and Bhuiyan 1958
 Ahmad, K. and J.A.M. Bhuiyan. 1958. *Pakistan Journal of Biological and Agricultural Sciences* **1**:137-143. **Type strain:** ATCC 25444
Description: Shirling, E.B. and D. Gottlieb. 1969. *International Journal of Systematic Bacteriology* **19**:391-512.
- S. cremeus** (Kudrina 1957) Pridham, Hesseltine and Benedict 1958
 Kudrina, E.S. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. *Problems in the classification of actinomycetes-antagonists.* State Publishing House of Medical Literature, Medgiz, Moscow. USSR; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. *Applied Microbiology* **6**:52-79. **Type strain:** ATCC 19897
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. crystallinus** Tresner, Davies and Backus 1961
 Tresner, H.D., M.C. Davies and E.J. Backus. 1961. *Journal of Bacteriology* **81**:70-80. **Type strain:** NRRL B-3629
Description: Bergey 8.

S. curacoi Cataldi 1963

Cataldi, M. 1963 in Trejo, W. and R.E. Bennett. *Journal of Bacteriology* **85**:676-690. **Type strain:** ATCC 13385

Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.

S. cuspidosporus Higashide, Hasegawa, Shibata, Mizuno and Akaike 1966

Higashide, E., T. Hasegawa, M. Shibata, K. Mizuno and H. Akaike. 1966. *Annual Report of the Takeda Research Laboratory* **25**:1-14. **Type strain:** IFO 12378

Description: Higashide, E., T. Hasegawa, M. Shibata, K. Mizuno and H. Akaike. 1966. *Ibid.*

S. cyaneofuscatus (Kudrina 1957) Pridham, Hesselstine and Benedict 1958

Kudrina, E.S. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. *Problems of classification of actinomycetes-antagonists.* Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesselstine and R.G. Benedict. 1958. *Applied Microbiology* **6**:52-79. **Type strain:** ATCC 23619

Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.

S. cyaneus (Krassilnikov 1941) Waksman 1953

Krassilnikov, N.A. 1941. *Guide to the bacteria and Actinomycetes (in Russian).* Institute of Microbiology, Academy of Science, Publishing Firm 'Nauka', Moscow, USSR. pp. 1-830; Waksman, S.A. 1953 in Waksman, S.A. and H.A. Lechevalier. *Guide to the classification and identification of the Actinomycetes and their antibiotics.* The Williams and Wilkins Co., Baltimore. pp. 1-245. **Type strain:** ATCC 14923

Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.

S. cyanoalbus (Krassilnikov and Agre 1960) Pridham 1970

Krassilnikov, N.A. and N.S. Agre. 1960 in Rautenshtein, Ya. I. *Transactions of the Institute of Microbiology, Academy of Science USSR* **8**:1-344; Pridham, T.G. 1970. *Bulletin of the United States*

Department of Agriculture **1424**:1-55. **Type strain:** ATCC 15859

Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.

S. daghestanicus (Sveshnikova 1957) Pridham, Hesselstine and Benedict 1958

Sveshnikova, M.A. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. *Problems of classification of actinomycetes-antagonists.* Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesselstine and R.G. Benedict. 1958. *Applied Microbiology* **6**:52-79. **Type strain:** ATCC 23620

Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.

S. diastaticus (Krainsky 1914) Waksman and Henrici 1948

Krainsky, A. 1914. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **41**:649-688; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacteriology*, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 3315

Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.

S. diastaticus subsp. *ardesiacus* (Baldacci, Grein and Spalla 1955) Pridham, Hesselstine and Benedict 1958

Baldacci, E., A. Grein and C. Spalla. 1955. *Giornale di Microbiologia* **1**:127-143; Pridham, T.G., C.W. Hesselstine and R.G. Benedict. 1958. *Applied Microbiology* **6**:52-79. **Type strain:** CBS 100.56

Description: Hutter, R. 1964. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **117**:603-661.

S. diastaticus subsp. *diastaticus* (Krainsky 1914) Waksman and Henrici 1948

Krainsky, A. 1914. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **41**:649-688; Waksman, S.A. and A.T.

- Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacteriology*, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 3315
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. diastatochromogenes** (Krainsky 1914) Waksman and Henrici 1948
Krainsky, A. 1914. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **41**:649-688; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacteriology*, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 12309
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. djakartensis** Huber, Wallhausser, Fries, Steigler and Weidenmuller 1962
Huber, G., K.H. Wallhausser, L. Fries, A. Steigler and H.-L. Weidenmuller. 1962. *Arzneimittel Forschung* **12**:1191-1195. **Type strain:** DSM 40743
Description: Bergey 8.
- S. durhamensis** Gordon and Lapa 1966
Gordon, M.A. and E.W. Lapa. 1966. *Applied Microbiology* **14**:754-760. **Type strain:** ATCC 23194
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. echinatus** Corbaz, Ettliger, Gaumann, Keller-Schierlein, Kradolfer, Neipp, Prelog, Reusser and Zahner 1957
Corbaz, R., L. Ettliger, E. Gaumann, W. Keller-Schierlein, F. Kradolfer, L. Neipp, V. Prelog, P. Reusser and H. Zahner. 1957. *Helvetica Chimica Acta* **40**:199-204. **Type strain:** ATCC 19748
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. ederensis** Wallhausser, Neemann, Prave and Steigler 1966
Wallhausser, K.H., G. Neemann, P. Prave and A. Steigler. 1966. *Antimicrobi-*
- al Agents and Chemotherapy* **1965**:734-736. **Type strain:** ATCC 15304
Description: Bergey 8.
- S. endus** Anderson and Gottlieb 1952
Anderson, H.W. and D. Gottlieb. 1952. *Economic Botany* **6**:294-308. **Type strain:** NRRL 2339
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. erumpens** Calot and Cercos 1963
Calot, L. and A.P. Cercos. 1963. *Annales de l'Institut Pasteur (Paris)* **105**:159-161. **Type strain:** ATCC 23266
Description: Bergey 8.
- S. erythraeus** (Waksman 1923) Waksman and Henrici 1948
Waksman, S.A. 1923 in Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. *Bergey's Manual of Determinative Bacteriology*, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 339-371; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacteriology*, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 11635
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. erythrogriseus** Falcao de Morais and Dalia Maia 1959
Falcao de Morais, J.O. and M.H. Dalia Maia. 1959. *Revista do Instituto de Antibioticos, Universidade do Recife* **2**:63-67. **Type strain:** CBS 485.74
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. eurythermus** Corbaz, Ettliger, Gaumann, Keller-Schierlein, Kradolfer, Neipp, Prelog, Reusser and Zahner 1957
Corbaz, R., L. Ettliger, E. Gaumann, W. Keller-Schierlein, F. Kradolfer, L. Neipp, V. Prelog, P. Reusser and H. Zahner. 1957. *Helvetica Chimica Acta* **40**:199-203. **Type strain:** ATCC 14975
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. exfoliatus** (Waksman and Curtis 1916)

Waksman and Henrici 1948

Waksman, S.A. and R.E. Curtis. 1916. *Soil Science* 1:99-134; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacteriology*, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 12627

Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* 18:69-189.

S. felleus Lindenbein 1952

Lindenbein, W. 1952. *Archiv fur Mikrobiologie* 17:361-383. **Type strain:** ATCC 19752

Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* 18:69-189.

S. filamentosus Okami and Umezawa 1953

Okami, Y. and H. Umezawa. 1953 in Okami, Y., T. Okuda, T. Takeuchi, K. Nitta and H. Umezawa. *Journal of Antibiotics (Tokyo) Series A* 6:153-157. **Type strain:** ATCC 19753

Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* 18:69-189.

S. filipinensis Ammann, Gottlieb, Brock, Carter and Whitfield 1955

Ammann, A., D. Gottlieb, T.D. Brock, H.E. Carter and G.B. Whitfield. 1955. *Phytopathology* 45:559-563. **Type strain:** NRRL 2437

Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* 18:279-392.

S. fimbriatus (Millard and Burr 1926) Waksman and Lechevalier 1953

Millard, W.A. and S. Burr. 1926. *Annals of Applied Biology* 13:580-644; Waksman, S.A. and H.A. Lechevalier. 1953. *Guide to the classification and identification of the actinomycetes and their antibiotics*. The Williams and Wilkins Co., Baltimore. pp. 1-246. **Type strain:** ATCC 15051

Description: Bergey 8.

S. fimicarius (Duche 1934) Waksman and Henrici 1948

Duche, J. 1934. *Encyclopedie Mycologique* 6:1-375; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). *Bergey's*

Manual of Determinative Bacteriology, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** CBS 420.34

Description: Shirling, E.B. and D. Gottlieb. 1969. *International Journal of Systematic Bacteriology* 19:391-512.

S. finlayi (Szabo, Martin, Buti and Partai 1963) Pridham 1970

Szabo, I., M. Marton, I. Buti and G. Partai. 1963. *Acta Microbiologica Academiae Scientiarum Hungaricae* 10:207-214; Pridham, T.G. 1970. *Bulletin of the United States Department of Agriculture* 1424:1-55. **Type strain:** ATCC 23340

Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* 18:279-392.

S. flaveolus (Waksman 1923) Waksman and Henrici 1948

Waksman, S.A. 1923 in Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. *Bergey's Manual of Determinative Bacteriology*, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 339-371; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacteriology*, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 3319

Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* 18:69-189.

S. flavidovirens (Kudrina 1957) Pridham, Hesselstine and Benedict 1958

Kudrina, E.S. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. *Problems of classification of actinomycetes-antagonists*. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesselstine and R.G. Benedict. 1958. *Applied Microbiology* 6:52-79. **Type strain:** ATCC 19900

Description: Shirling, E.B. and D. Gottlieb. 1969. *International Journal of Systematic Bacteriology* 19:391-512.

S. flavogriseus (Duche 1934) Waksman and Lechevalier 1953

Duche, J. 1934. *Encyclopedie Mycolo-*

- gique 6:1-375; Waksman, S.A. and H.A. Lechevalier. 1953. Guide to the classification and identification of the actinomycetes and their antibiotics. The Williams and Wilkins Co., Baltimore. pp. 1-246. **Type strain:** CBS 101.34
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology 19:391-512.
- S. flavotricini** (Preobrazhenskaya and Sveshnikova 1957) Pridham, Hesseltine and Benedict 1958
 Preobrazhenskaya, T.P. and M.A. Sveshnikova. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. Problems of classification of actinomycetes-antagonists. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. Applied Microbiology 6:52-79. **Type strain:** ATCC 23621
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology 18:69-189.
- S. flavovirens** (Waksman 1923) Waksman and Henrici 1948
 Waksman, S.A. 1923 in Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. Bergey's Manual of Determinative Bacteriology, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 339-371; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). Bergey's Manual of Determinative Bacteriology, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 3320
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology 18:69-189.
- S. flocculus** (Duche 1934) Waksman and Henrici 1948
 Duche, J. 1934. Encyclopedie Mycologique 6:1-375; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). Bergey's Manual of Determinative Bacteriology, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 25453
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology 19:391-512.
- S. floridae** Bartz, Ehrlich, Mold, Penner and Smith 1951
 Bartz, Q., J. Ehrlich, J.D. Mold, M.A. Penner and R.M. Smith. 1951. American Review of Tuberculosis 63:4-6. **Type strain:** NRRL 2423
Description: Ettlinger, L., R. Corbaz and R. Hutter. 1958. Archiv fur Mikrobiologie 31:326-358.
- S. fluorescens** (Krassilnikov 1958) Pridham 1970
 Krassilnikov, N.A. 1958. Folia Biologica (Praha) 4:257-265; Pridham, T.G. 1970. Bulletin of the United States Department of Agriculture 1424:1-55. **Type strain:** ATCC 15860
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology 18:279-392.
- S. fradiae** (Waksman and Curtis 1916) Waksman and Henrici 1948
 Waksman, S.A. and R.E. Curtis. 1916. Soil Science 1:99-134; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). Bergey's Manual of Determinative Bacteriology, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 10745
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology 18:69-189.
- S. fragilis** Anderson, Ehrlich, Sun and Burkholder 1956
 Anderson, L.E., J. Ehrlich, S.H. Sun and P.R. Burkholder. 1956. Antibiotics and Chemotherapy 6:100-115. **Type strain:** NRRL 2424
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology 18:279-392.
- S. fulvissimus** (Jensen 1930) Waksman and Henrici 1948
 Jensen, H.L. 1930. Proceedings of the Linnean Society of New South Wales 55: 231-249; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). Bergey's Manual of Determinative Bacteriology, 6th ed. The Williams and Wilkins Co.,

- Baltimore. pp. 929-980. **Type strain:** NRRL B-1453
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- S. fumanus** (Sveshnikova 1957) Pridham, Hesseltine and Benedict 1958
 Sveshnikova, M.A. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. Problems of classification of actinomycetes-antagonists. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. Applied Microbiology **6**:52-79. **Type strain:** ATCC 19904
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology **19**:391-512.
- S. galbus** Frommer 1959
 Frommer, W. 1959. Archiv fur Mikrobiologie **32**:187-206. **Type strain:** ATCC 23910
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:279-392.
- S. galilaeus** Ettlinger, Corbaz and Hutter 1958
 Ettlinger, L., R. Corbaz and R. Hutter. 1958. Archiv fur Mikrobiologie **31**:326-358. **Type strain:** NRRL 2722
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- S. gancidicus** Suzuki 1957
 Suzuki, M. 1957. Journal Chiba Medical Society **33**:535-542. **Type strain:** NRRL B-1872
Description: Bergey 8.
- S. gardneri** (Waksman 1942) Waksman 1961
 Waksman, S.A. 1942 in Waksman, S.A., E.S. Horning, M. Welsch and H.B. Woodruff. Soil Science **54**:281-296; Waksman, S.A. 1961. The Actinomycetes. Vol. 2. Classification, identification and descriptions of genera and species. The Williams and Wilkins Co., Baltimore. pp. 1-363. **Type strain:** ATCC 9604
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:279-392.
- S. gelaticus** (Waksman 1923) Waksman and Henrici 1948
 Waksman, S.A. 1923 in Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. Bergey's Manual of Determinative Bacteriology, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 339-371; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). Bergey's Manual of Determinative Bacteriology, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 3323
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:279-392.
- S. geysiriensis** Wallhausser, Neesemann, Prave and Steigler 1966
 Wallhausser, K.H., G. Neesemann, P. Prave and A. Steigler. 1966. Antimicrobial Agents and Chemotherapy **1965**:734-736. **Type strain:** ATCC 15303
Description: Bergey 8.
- S. ghanaensis** Wallhausser, Neesemann, Prave and Steigler 1966
 Wallhausser, K.H., G. Neesemann, P. Prave and A. Steigler. 1966. Antimicrobial Agents and Chemotherapy **1965**:734-736. **Type strain:** ATCC 14672
Description: Bergey 8.
- S. gibsonii** (Erikson 1935) Waksman and Henrici 1948
 Erikson, D. 1935. Medical Research Council (Great Britain) Special Report Series **203**:5-61; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). Bergey's Manual of Determinative Bacteriology, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 6852
Description: Bergey 8.
- S. glaucescens** (Preobrazhenskaya 1957) Pridham, Hesseltine and Benedict 1958
 Preobrazhenskaya, T.P. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. Problems of classification of actinomycetes-antagonists. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. Applied Microbiology **6**:52-79. **Type strain:** ATCC 23622

- Description:** Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. globisporus** (Krassilnikov 1941) Waksman 1953
 Krassilnikov, N.A. 1941. *Guide to the Bacteria and Actinomycetes* (in Russian). Akademiya Nauk SSSR, Moscow. pp. 1-830; Waksman, S.A. 1953 in Waksman, S.A. and H.A. Lechevalier. *Guide to the classification and identification of the Actinomycetes and their antibiotics*. The Williams and Wilkins Co., Baltimore. pp. 1-246. **Type strain:** ATCC 15864
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. globisporus** subsp. *caucasicus* (Kudrina 1957) Pridham, Hesseltine and Benedict 1958
 Kudrina, E.S. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. *Problems of classification of actinomycetes-antagonists*. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. *Applied Microbiology* **6**:52-79. **Type strain:** ATCC 19907
Description: Bergey 8.
- S. globisporus** subsp. *flavofuscus* (Kudrina 1957) Pridham, Hesseltine and Benedict 1958
 Kudrina, E.S. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. *Problems of classification of actinomycetes-antagonists*. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. *Applied Microbiology* **6**:52-79. **Type strain:** ATCC 19908
Description: Bergey 8.
- S. globisporus** subsp. *globisporus* (Krassilnikov 1941) Waksman 1953
 Krassilnikov, N.A. 1941. *Guide to the Bacteria and Actinomycetes* (in Russian). Akademiya Nauk SSSR, Moscow. pp. 1-830; Waksman, S.A. 1953 in Waksman, S.A. and H.A. Lechevalier. *Guide to the classification and identification of the Actinomycetes and their antibiotics*. The Williams and Wilkins Co., Baltimore. pp. 1-246. **Type strain:** ATCC 15864
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. globosus** (Krassilnikov 1941) Waksman 1953
 Krassilnikov, N.A. 1941. *Guide to the Bacteria and Actinomycetes* (in Russian). Akademiya Nauk SSSR, Moscow. pp. 1-830; Waksman, S.A. 1953 in Waksman, S.A. and H.A. Lechevalier. **Type strain:** NRRL B-2292
Description: Bergey 8.
- S. glomeroaurantiacus** (Krassilnikov and Yuan 1965) Pridham 1970
 Krassilnikov, N.A. and T. Yuan. 1965 in Krassilnikov, N.A. (ed). *Biology of individual groups of Actinomycetes* (in Russian). pp. 28-57; Pridham, T.G. 1970. *Bulletin of the United States Department of Agriculture* **1424**:1-55. **Type strain:** ATCC 15866
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. gobitricini** (Preobrazhenskaya and Sveshnikova 1957) Pridham, Hesseltine and Benedict 1958
 Preobrazhenskaya, T.P. and M.A. Sveshnikova. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. *Problems of classification of actinomycetes-antagonists*. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. *Applied Microbiology* **6**:52-79. **Type strain:** CBS 123.60
Description: Bergey 8.
- S. goshikiensis** Niida 1966
 Niida, T. 1966 in Shirling, E.B. and D. Gottlieb. *International Journal of Systematic Bacteriology* **16**:313-340. **Type strain:** ATCC 23914
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. gougerotii** (Duche 1934) Waksman and Henrici 1948
 Duche, J. 1934. *Encyclopedie Mycologique* **6**:1-375; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D.

- Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacteriology*, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** CBS 422.34
Description: Shirling, E.B. and D. Gottlieb. 1969. *International Journal of Systematic Bacteriology* **19**:391-512.
- S. graminofaciens** Charney, Fisher, Curran, Machlowitz and Tytell 1953
 Charney, J., W.P. Fisher, C. Curran, R.A. Machlowitz and A.A. Tytell. 1953. *Antibiotics and Chemotherapy* **3**:1283-1286. **Type strain:** ATCC 12705
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. griseinus** Waksman 1959
 Waksman, S.A. 1959. *Proceedings of the National Academy of Science, U.S.A.* **45**: 1043-1047. **Type strain:** ATCC 23915
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. griseoaurantiacus** (Krassilnikov and Yuan 1965) Pridham 1970
 Krassilnikov, N.A. and T. Yuan. 1965. in Krassilnikov, N.A. (ed). *Biology of individual groups of Actinomycetes* (in Russian). pp. 28-57; Pridham, T.G. 1970. *Bulletin of the United States Department of Agriculture* **1424**:1-55. **Type strain:** ATCC 19840
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. griseobrunneus** Waksman 1961
 Waksman, S.A. 1961. *The Actinomycetes*. Vol. 2. Classification, identification and descriptions of genera and species. The Williams and Wilkins Co., Baltimore. pp. 1-363. **Type strain:** ATCC 19762
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. griseochromogenes** Fukunaga 1955
 Fukunaga, K. 1955 in Fukunaga, K., T. Misato, I. Ishii and M. Asakawa. *Bulletin of the Agricultural Chemical Society of Japan* **19**:181-188. **Type strain:** ATCC 14511
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. griseoflavus** (Krainsky 1914) Waksman and Henrici 1948
 Krainsky, A. 1914. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **41**:649-688; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacteriology*, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 25456
Description: Shirling, E.B. and D. Gottlieb. 1969. *International Journal of Systematic Bacteriology* **19**:391-512.
- S. griseofuscus** Sakamoto, Kondo, Yumoto and Arishima 1962
 Sakamoto, J.M., S.-i. Kondo, H. Yumoto and M. Arishima. 1962. *Journal of Antibiotics (Tokyo) Series A* **15**:98-102. **Type strain:** ATCC 23916
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. griseoincarnatus** (Preobrazhenskaya, Ryabova and Blinov 1957) Pridham, Hesseltine and Benedict 1958
 Preobrazhenskaya, T.P., I.D. Ryabova and N.O. Blinov. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. *Problems of classification of actinomycetes-antagonists*. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. *Applied Microbiology* **6**:52-79. **Type strain:** ATCC 23623
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. griseoalbus** (Kudrina 1957) Pridham, Hesseltine and Benedict 1958
 Kudrina, E.S. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. *Problems of classification of actinomycetes-antagonists*. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. *Applied Microbiology* **6**:52-79. **Type**

- strain:** ATCC 23624
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology **19**:391-512.
- S. griseolus** (Waksman 1923) Waksman and Henrici 1948
 Waksman, S.A. 1923 in Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Hinton. Bergey's Manual of Determinative Bacteriology, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 339-371; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). Bergey's Manual of Determinative Bacteriology, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 3325
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:69-189.
- S. griseoluteus** Umezawa, Hayano, Maeda, Ogata and Okami 1950
 Umezawa, H., S. Hayano, K. Maeda, Y. Ogata and Y. Okami. 1950. Japanese Medical Journal **3**:111-117. **Type strain:** ATCC 12768
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- S. griseomycini** (Preobrazhenskaya, Blinov and Ryabova 1957) Pridham, Hesseltine and Benedict 1958
 Preobrazhenskaya, T.P., N.O. Blinov and I.D. Ryabova. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. Problems of classification of actinomycetes-antagonists. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. Applied Microbiology **6**:52-79. **Type strain:** ATCC 23625
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:69-189.
- S. griseoplanus** Backus, Tresner and Campbell 1957
 Backus, E.J., H.D. Tresner and T.H. Campbell. 1957. Antibiotics and Chemotherapy **7**:532-541. **Type strain:** ATCC 19766
- Description:** Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:69-189.
- S. griseorubens** (Preobrazhenskaya, Blinov and Ryabova 1957) Pridham, Hesseltine and Benedict 1958
 Preobrazhenskaya, T.P., N.O. Blinov and I.D. Ryabova. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. Problems of classification of actinomycetes-antagonists. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. Applied Microbiology **6**:52-79. **Type strain:** ATCC 19909
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:69-189.
- S. griseoruber** Yamaguchi and Saburi 1955
 Yamaguchi, T. and Y. Saburi. 1955. Journal of General and Applied Microbiology **1**:201-235. **Type strain:** ATCC 23919
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:279-392.
- S. griseorubiginosus** (Ryabova and Preobrazhenskaya 1957) Pridham, Hesseltine and Benedict 1958
 Ryabova, I.D. and T.P. Preobrazhenskaya. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. Problems of classification of actinomycetes-antagonists. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. Applied Microbiology **6**:52-79. **Type strain:** ATCC 23627
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology **19**:391-512.
- S. griseosporus** Niida and Ogasawara 1960
 Niida, T. and M. Ogasawara. 1960. Scientific Reports of Meiji Seika Kaisha **3**:23-26. **Type strain:** ATCC 27435
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- S. griseostramineus** (Preobrazhenskaya, Kudri-

- na, Blinov and Ryabova 1957) Pridham, Hesseltine and Benedict 1958
 Preobrazhenskaya, T.P., E.S. Kudrina, N.O. Blinov and I.D. Ryabova. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. Problems of classification of actinomycetes-antagonists. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. *Applied Microbiology* **6**: 52-79. **Type strain:** ATCC 23628
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. griseoviridis** Anderson, Ehrlich, Sun and Burkholder 1956
 Anderson, L.E., J. Ehrlich, S.H. Sun and P.R. Burkholder. 1956. *Antibiotics and Chemotherapy* **6**:100-115. **Type strain:** NRRL 2427
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. griseus** (Krainsky 1914) Waksman and Henrici 1948
 Krainsky, A. 1914. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **41**:649-688; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacteriology*, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 23345
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. griseus** subsp. *alpha* (Ciferri 1927) Pridham 1970
 Ciferri, R. 1927. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **71**:80-93; Pridham, T.G. 1970. *Bulletin of the United States Department of Agriculture* **1424**:1-55. **Type strain:** CBS 219.25
Description: Bergey 8.
- S. griseus** subsp. *cretosus* Pridham 1970
 Pridham, T.G. 1970. *Bulletin of the United States Department of Agriculture* **1424**:1-55. **Type strain:** CBS 137.21
Description: Bergey 8.
- S. griseus** subsp. (Krainsky 1914) Waksman and Henrici 1948
 Waksman and Henrici 1948
 Krainsky, A. 1914. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **41**:649-688; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacteriology*, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 23345
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. griseus** subsp. *solivfaciens* Pridham 1970
 Pridham, T.G. 1970. *Bulletin of the United States Department of Agriculture* **1424**:1-55. **Type strain:** NRRL B-1561
Description: Bergey 8.
- S. halstedii** (Waksman and Curtis 1916) Waksman and Henrici 1948
 Waksman, S.A. and R.E. Curtis. 1916. *Soil Science* **1**:99-134; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacteriology*, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 10897
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. hawaiiensis** Cron, Whitehead, Hooper, Heinemann and Lein 1956
 Cron, M.J., D.F. Whitehead, I.R. Hooper, B. Heinemann and J. Lein. 1956. *Antibiotics and Chemotherapy* **6**:63-67. **Type strain:** ATCC 12236
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. helveticus** (Krassilnikov, Korenyako and Nikitina 1965) Pridham 1970
 Krassilnikov, N.A., A.I. Korenyako and N.I. Nikitina. 1965 in Krassilnikov N.A. *Biology of selected groups of actinomycetes (in Russian)*. Institute of Microbiology, Academy of Science, Publishing Firm 'Nauka', Moscow, USSR. pp. 1-372; Pridham, T.G. 1970. *Bulletin of the United States Department of Agriculture*

- 1424:1-55. Type strain:** ATCC 19841
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- S. herbaricolor** Kawato and Shinobu 1959
 Kawato, N. and R. Shinobu. 1959. Memoirs of the Osaka University of the Liberal Arts and Education B. Natural Science **8**:114-119. **Type strain:** ATCC 23922
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:279-392.
- S. hirsutus** Ettlinger, Corbaz and Hutter 1958
 Ettlinger, L., R. Corbaz and R. Hutter. 1958. Archiv fur Mikrobiologie **31**:326-358. **Type strain:** ATCC 19773
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:69-189.
- S. humidus** Nakazawa and Shibata 1956
 Nakazawa, K. and M. Shibata. 1956 in Imamura, A., M. Hori, K. Nakazawa, M. Shibata, S. Tatsuoka and A. Miyake. Proceedings of the Japanese Academy of Science **32**:648-653. **Type strain:** ATCC 12760
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:279-392.
- S. hydrogenans** Lindner, Junk, Neemann and Schmidt-Thome 1958
 Lindner, F., R. Junk, G. Neemann and J. Schmidt-Thome. 1958. Hoppe-Seyler's Zeitschrift fur Physiologische Chemie **313**:117-123. **Type strain:** ATCC 19631
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- S. hygroscopicus** (Jensen 1931) Waksman and Henrici 1948
 Jensen, H.L. 1931. Proceedings of the Linnean Society of New South Wales **56**:345-370; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). Bergey's Manual of Determinative Bacteriology, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 27438
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- S. hygroscopicus** subsp. *angustmyceticus* Yuntsen, Ohkuma, Ishii and Yonehara 1956
 Yuntsen, H., K. Ohkuma, Y. Ishii and H. Yonehara. 1956. Journal of Antibiotics (Tokyo) Series A **9**:195-201. **Type strain:** ATCC 15484
Description: Bergey 8.
- S. hygroscopicus** subsp. *decoyicus* Vavra, Dietz, Churchill, Siminoff and Koepsell 1959
 Vavra, J.J., A. Dietz, B.W. Churchill, P. Siminoff and H.J. Koepsell. 1959. Antibiotics and Chemotherapy **9**:427-431. **Type strain:** NRRL 2666
Description: Bergey 8.
- S. hygroscopicus** subsp. *glebosus* Ohmori, Okanishi and Kawaguchi 1962
 Ohmori, T., M. Okanishi and H. Kawaguchi. 1962. Journal of Antibiotics (Tokyo) Series A **15**:21-27. **Type strain:** ATCC 14607
Description: Ohmori, T., M. Okanishi and H. Kawaguchi. 1962. Ibid.
- S. hygroscopicus** subsp. *hygroscopicus* (Jensen 1931) Waksman and Henrici 1948
 Jensen, H.L. 1931. Proceedings of the Linnean Society of New South Wales **56**:345-370; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). Bergey's Manual of Determinative Bacteriology, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 27438
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- S. hygroscopicus** subsp. *ossamyceticus* Schmitz, Jubinski, Hooper, Crook, Price and Lein 1965
 Schmitz, H., S.D. Jubinski, I.R. Hooper, K.E. Crook Jr., K.E. Price and J. Lein. 1965. Journal of Antibiotics (Tokyo) Series A **18**:82-88. **Type strain:** ATCC 15420
Description: Schmitz, H., S.D. Jubinski, I.R. Hooper, K.E. Crook Jr., K.E. Price and J. Lein. 1965. Ibid.
- S. iakyrus** deQuerioz and Albert 1962
 deQuerioz, V.M. and C.A. Albert. 1962. Revista do Instituto de Antibioticos, Universidade do Recife **4**:33-46. **Type strain:** ATCC 15375

- Description:** Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. indigoferus** Shinobu and Kawato 1960
Shinobu, R. and M. Kawato. 1960. *Memoirs of the Osaka University of the Liberal Arts and Education B Natural Science* **9**:49-53. **Type strain:** ATCC 23924
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. intermedius** (Kruger 1904) Waksman 1953
Kruger, F. 1904. *Arbeiten aus der Biologischen Abteilung für Land- und Forstwirtschaft am Kaiserlichen Gesundheitsamte Band IV, Heft 3, Verlagsbuchhandlung Paul Parey, Verlagsbuchhandlung Julius Springer, Berlin.* pp. 275-318; Waksman, S.A. 1953 in Waksman, S.A. and H.A. Lechevalier. *Guide to the classification and identification of the Actinomycetes and their antibiotics. The Williams and Wilkins Co., Baltimore.* pp. 1-246. **Type strain:** ATCC 3329
Description: Shirling, E.B. and D. Gottlieb. 1969. *International Journal of Systematic Bacteriology* **19**:391-512.
- S. inusitatus** Hasegawa, Yamano and Masahiko 1978
Hasegawa, T., T. Yamano and Y. Masahiko. 1978. *International Journal of Systematic Bacteriology* **28**:407-410. **Type strain:** IFO 13601
Description: Hasegawa, T., T. Yamano and Y. Masahiko. 1978. *Ibid.*
- S. ipomoeae** (Person and Martin 1940) Waksman and Henrici 1948
Person, L.H. and W.J. Martin. 1940. *Phytopathology* **30**:913-926; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacteriology*, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 25462
Description: Shirling, E.B. and D. Gottlieb. 1969. *International Journal of Systematic Bacteriology* **19**:391-512.
- S. janthinus** (Artamonova and Krassilnikov 1960) Pridham 1970
Artamonova, O.I. and N.A. Krassilnikov. 1960 in Rautenshtein, Ya. I. *Transactions of the Institute of Microbiology, Academy of Sciences USSR* **8**:1-344; Pridham, T.G. 1970. *Bulletin of the United States Department of Agriculture* **1424**:1-55. **Type strain:** ATCC 15870
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. kanamyceticus** Okami and Umezawa 1957
Okami, Y. and H. Umezawa 1957 in Umezawa, H., M. Ueda, K. Maeda, K. Yagashita, S. Kondo, Y. Okami, R. Utahara, Y. Osato, K. Nitta and T. Takeuchi. *Journal of Antibiotics (Tokyo) Series A* **10**:181-188. **Type strain:** ATCC 12853
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. katrae** Gupta and Chopra 1963
Gupta, K.C. and I.C. Chopra. 1963. *Indian Journal of Microbiology* **3**:1-4. **Type strain:** ATCC 27440
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. kurssanovii** (Preobrazhenskaya, Kudrina, Ryabova and Blinov 1957) Pridham, Hesselstine and Benedict 1958
Preobrazhenskaya, T.P., E.S. Kudrina, I.D. Ryabova and N.O. Blinov. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. *Problems of classification of actinomycetes-antagonists. Government Publishing House of Medical Literature, Medgiz, Moscow.* pp. 1-398; Pridham, T.G., C.W. Hesselstine and R.G. Benedict. 1958. *Applied Microbiology* **6**:52-79. **Type strain:** ATCC 15824
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. lanatus** Frommer 1959
Frommer, W. 1959. *Archiv für Mikrobiologie* **32**:187-206. **Type strain:** ATCC 19775
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. lateritius** (Sveshnikova 1957) Pridham, Hesselstine and Benedict 1958

- Sveshnikova, M.A. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. Problems of classification of actinomycetes-antagonists. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. *Applied Microbiology* 6:52-79. **Type strain:** ATCC 19913
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* 18:69-189.
- S. laurentii** Trejo, Dean, Pluscec, Meyers and Brown 1979
 Trejo, W.H., L.D. Dean, J. Pluscec, E. Meyers and W.E. Brown. 1979. *International Journal of Systematic Bacteriology* 29:79-80; Effective publication Trejo, W.H., L.D. Dean, J. Pluscec, E. Meyers and W.E. Brown. 1977. *Journal of Antibiotics* 30:639-643. **Type strain:** ATCC 31255
Description: Trejo, W.H., L.D. Dean, J. Pluscec, E. Meyers and W.E. Brown. 1977. *Ibid.*
- S. lavendofoliae** (Kuchaeva, Krassilnikov, Tapytkova and Gesheva 1961) Pridham 1970
 Kuchaeva, A.G., N.A. Krassilnikov, S.D. Tapytkova and R.L. Gesheva. 1961. *Izvestiya Na Mikrobiologicheskaya Institut, Bulgarian Academy of sciences, Class of Biological sciences, Sofia* 13:103-124; Pridham, T.G. 1970. *Bulletin of the United States Department of Agriculture* 1424:1-55. **Type strain:** ATCC 15872
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* 18:279-392.
- S. lavendulae** (Waksman and Curtis 1916) Waksman and Henrici 1948
 Waksman, S.A. and R.E. Curtis. 1916. *Soil Science* 1:99-134; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacteriology*, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 8664
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* 18:69-189.
- S. lavendulae** subsp. *grasseri* (Kuchaeva, Krassilnikov, Tapytkova and Gesheva 1961) Pridham 1970
 Kuchaeva, A.G., N.A. Krassilnikov, S.D. Tapytkova and R.L. Gesheva. 1961. *Izvestiya Na Mikrobiologicheskaya Institut, Bulgarian Academy of sciences, Class of Biological sciences, Sofia* 13:103-124; Pridham, T.G. 1970. *Bulletin of the United States Department of Agriculture* 1424:1-55. **Type strain:** ATCC 15875
Description: Bergey 8.
- S. lavendulae** subsp. *lavendulae* (Waksman and Curtis 1916) Waksman and Henrici 1948
 Waksman, S.A. and R.E. Curtis. 1916. *Soil Science* 1:99-134; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacteriology*, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 8664
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* 18:69-189.
- S. lavdulocolor** (Kuchaeva, Krassilnikov, Tapytkova and Gesheva 1961) Pridham 1970
 Kuchaeva, A.G., N.A. Krassilnikov, S.D. Tapytkova and R.L. Gesheva. 1961. *Izvestiya Na Mikrobiologicheskaya Institut, Bulgarian Academy of sciences, Class of Biological sciences, Sofia* 13:103-124; Pridham, T.G. 1970. *Bulletin of the United States Department of Agriculture* 1424:1-55. **Type strain:** ATCC 15871
Description: Bergey 8.
- S. libani** Baldacci and Grein 1966
 Baldacci, E. and A. Grein. 1966. *Giornale di Microbiologia* 14:185-198. **Type strain:** CBS 753.72
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* 22:265-394.
- S. libani** subsp. *libani* Baldacci and Grein 1966
 Baldacci, E. and A. Grein. 1966. *Giornale di Microbiologia* 14:185-198. **Type strain:** CBS 753.72
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* 22:265-394.
- S. libani** subsp. *rufus* Baldacci and Grein 1966
 Baldacci, E. and A. Grein. 1966. *Giornale di Microbiologia* 14:185-198. **Type strain:** ATCC 23731

- Description:** Bergey 8.
- S. limosus** Lindenbein 1952
Lindenbein, W. 1952. *Archiv fur Mikrobiologie* **17**:361-383. **Type strain:** ATCC 19778
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. lincolnsensis** Mason, Dietz and DeBoer 1963
Mason, D.J., A. Dietz and C. DeBoer. 1963. *Antimicrobial Agents and Chemotherapy* **1962**:554-559. **Type strain:** NRRL 2936
Description: Shirling, E.B. and D. Gottlieb. 1969. *International Journal of Systematic Bacteriology* **19**:391-512.
- S. lipmanii** (Waksman and Curtis 1916) Waksman and Henrici 1948
Waksman, S.A. and R.E. Curtis. 1916. *Soil Science* **1**:99-134; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacteriology*, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 3331
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. litmocidini** (Ryabova and Preobrazhenskaya 1957) Pridham, Hesseltine and Benedict 1958
Ryabova, I.D. and T.P. Preobrazhenskaya. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. *Problems of classification of actinomycetes-antagonists*. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. *Applied Microbiology* **6**:52-79. **Type strain:** ATCC 19914
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. lomondensis** Johnson and Dietz 1969
Johnson, L.E. and A. Dietz. 1969. *Applied Microbiology* **17**:755-759. **Type strain:** NRRL 3252
Description: Johnson, L.E. and A. Dietz. 1969. *Ibid.*
- S. longisporoflavus** Waksman 1953
Waksman, S.A. 1953 in Waksman, S.A. and H.A. Lechevalier. *Guide to the classification and identification of the Actinomycetes and their antibiotics*. The Williams and Wilkins Co., Baltimore. pp. 1-246. **Type strain:** ATCC 19915
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. longispororuber** Waksman 1953
Waksman, S.A. 1953 in Waksman, S.A. and H.A. Lechevalier. *Guide to the classification and identification of the Actinomycetes and their antibiotics*. The Williams and Wilkins Co., Baltimore. pp. 1-246. **Type strain:** ATCC 27443
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. longisporus** (Krassilnikov 1941) Waksman 1953
Krassilnikov, N.A. 1941. *Guide to the bacteria and Actinomycetes (in Russian)*. Akademiya Nauk SSSR, Moscow. pp. 1-830; Waksman, S.A. 1953 in Waksman, S.A. and H.A. Lechevalier. *Guide to the classification and identification of the Actinomycetes and their antibiotics*. The Williams and Wilkins Co., Baltimore. pp. 1-246. **Type strain:** ATCC 23931
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. lucensis** Arcamone, Bertazzoli, Canevazzi, diMarco, Ghione and Grein 1957
Arcamone, F., C. Bertazzoli, G. Canevazzi, A. diMarco, M. Ghione and A. Grein. 1957. *Giornale di Microbiologia* **4**:119-128. **Type strain:** ATCC 17804
Description: Shirling, E.B. and D. Gottlieb. 1969. *International Journal of Systematic Bacteriology* **19**:391-512.
- S. luridus** (Krassilnikov, Korenyako, Meksina, Valedinskaya and Veselov 1957) Waksman 1961
Krassilnikov, N.A., A.I. Korenyako, M.M. Meksina, L.K. Valedinskaya and N.M. Veselov. 1957. *Mikrobiologiya* **26**:558-564; Waksman, S.A. 1961. *The Actinomycetes*. Vol. 2. Classification, identification and descriptions of genera and species. The Williams and Wilkins Co., Baltimore. pp. 1-363. **Type strain:** ATCC 19782

- Description:** Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. lusitanus** Villax 1963
Villax, I. 1963. *Antimicrobial Agents and Chemotherapy* **1962**:661-668. **Type strain:** NCIB 9585
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. luteogriseus** Schmitz, Deak, Crook and Hooper 1964
Schmitz, H., S.B. Deak, K.E. Crook Jr. and I.R. Hooper. 1964. *Antimicrobial Agents and Chemotherapy* **1963**:89-94. **Type strain:** ATCC 15072
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. lydicus** De Boer, Dietz, Silver and Savage 1956
De Boer, C., A. Dietz, W.S. Silver and G.M. Savage. 1956. *Antibiotics Annual 1955-1956*:886-892. **Type strain:** NRRL 2433
Description: Shirling, E.B. and D. Gottlieb. 1969. *International Journal of Systematic Bacteriology* **19**:391-512.
- S. massasporeus** Shinobu and Kawato 1959
Shinobu, R. and M. Kawato. 1959. *Botanical Magazine (Tokyo)* **72**:283-288. **Type strain:** ATCC 19785
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. matensis** Margalith, Beretta and Timbal 1959
Margalith, P., G. Beretta and M.T. Timbal. 1959. *Antibiotics and Chemotherapy* **9**:71-75. **Type strain:** ATCC 23935
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. mauvecolor** Okami and Umezawa 1960
Okami, Y. and H. Umezawa. 1960 in Murase, M., T. Hikiji, K. Nitta, Y. Okami, T. Takeuchi and H. Umezawa. *Journal of Antibiotics (Tokyo) Series A* **14**:113-118. **Type strain:** ATCC 29835
Description: Murase, M., T. Hikiji, K. Nitta, Y. Okami, T. Takeuchi and H. Umezawa. 1960. *Ibid.*
- S. mediolani** Arcamone, Camerino, Cotta, Franceschi, Grein, Penco and Spalla 1969
Arcamone, F., B. Camerino, E. Cotta, G. Franceschi, A. Grein, S. Penco and C. Spalla. 1969. *Experientia* **24**:241-242. **Type strain:** NCIB 10969
Description: Bianchi, M.L., A. Grein, P. Julita, M.P. Marnati and C. Spalla. 1970. *Zeitschrift fur Allgemeine Mikrobiologie* **10**:237-244.
- S. melanogenes** Sugawara and Onuma 1957
Sugawara, A. and M. Onuma. 1957. *Journal of Antibiotics (Tokyo) Series A* **10**:138-142. **Type strain:** ATCC 23937
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. melanosporofaciens** Arcamone, Bertazzoli, Ghione and Scotti 1959
Arcamone, F., C. Bertazzoli, M. Ghione and T. Scotti. 1959. *Giornale di Microbiologia* **7**:207-216. **Type strain:** ATCC 25473
Description: Shirling, E.B. and D. Gottlieb. 1969. *International Journal of Systematic Bacteriology* **19**:391-512.
- S. michiganensis** Corbaz, Ettliger, Keller-Schierlein and Zahner 1957
Corbaz, R., L. Ettliger, W. Keller-Schierlein and H. Zahner. 1957. *Archiv fur Mikrobiologie* **26**:192-208. **Type strain:** ATCC 14970
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. microflavus** (Krainsky 1914) Waksman and Henrici 1948
Krainsky, A. 1914. *Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **41**:649-688; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). *Bergey's Manual of Determinative Bacteriology*, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** CBS 124.18
Description: Shirling, E.B. and D. Gottlieb. 1969. *International Journal of Systematic Bacteriology* **19**:391-512.
- S. minutiscleroticus** (Thirumalachar 1965) Pridham 1970
Thirumalachar, M.J. 1965 in Thirumalachar, M.J., P.W. Rahalkar, P.V. Desh-

- mukh and R.S. Sukapure. *Hindustan Antibiotics Bulletin* 8:6-9; Pridham, T.G. 1970. *Bulletin of the United States Department of Agriculture* 1424:1-55. **Type strain:** ATCC 17757
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* 22:265-394.
- S. mirabilis** Ruschmann 1952
 Ruschmann, G. 1952. *Pharmazie* 7:542-550. **Type strain:** ATCC 27447
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* 22:265-394.
- S. misakiensis** Nakamura 1961
 Nakamura, G. 1961. *Journal of Antibiotics (Tokyo) Series A* 14:86-89. **Type strain:** ATCC 23938
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* 18:279-392.
- S. misionensis** Cercos, Eilberg, Goyena, Souto, Vautier and Widuezynski 1962
 Cercos, A.P., B.L. Eilberg, J.G. Goyena, J. Souto, E.E. Vautier and I. Widuezynski. 1962. *Revista de Investigaciones Agrícolas* 16:5-27. **Type strain:** ATCC 14991
Description: Shirling, E.B. and D. Gottlieb. 1969. *International Journal of Systematic Bacteriology* 19:391-512.
- S. murinus** Frommer 1959
 Frommer, W. 1959. *Archiv für Mikrobiologie* 32:187-206. **Type strain:** ATCC 19788
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* 18:69-189.
- S. mutabilis** (Preobrazhenskaya and Ryabova 1957) Pridham, Hesselstine and Benedict 1958
 Preobrazhenskaya, T.P. and I.D. Ryabova. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. *Problems in the classification of actinomycetes-antagonists*. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesselstine and R.G. Benedict. 1958. *Applied Microbiology* 6:52-79. **Type strain:** ATCC 19919
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* 18:69-189.
- S. naganishii** Yamaguchi and Saburi 1955
 Yamaguchi, H. and Y. Saburi. 1955. *Journal of General and Applied Microbiology* 1:201-135. **Type strain:** ATCC 23939
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* 18:279-392.
- S. narbonensis** Corbaz, Ettlinger, Gaumann, Keller-Schierlein, Kradolfer, Kyburz, Neipp, Prelog, Reusser and Zahner 1955
 Corbaz, R., L. Ettlinger, E. Gaumann, W. Keller-Schierlein, F. Kradolfer, E. Kyburz, L. Neipp, V. Prelog, R. Reusser and H. Zahner. 1955. *Helvetica Chimica Acta* 38:935-942. **Type strain:** ATCC 19790
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* 18:69-189.
- S. nashvillensis** McVeigh and Reyes 1961
 McVeigh, I. and C.R. Reyes. 1961. *Antibiotics and Chemotherapy* 11:312-319. **Type strain:** ATCC 25476
Description: Shirling, E.B. and D. Gottlieb. 1969. *International Journal of Systematic Bacteriology* 19:391-512.
- S. neyagawaensis** Yamamoto, Nakazawa, Horii and Miyake 1960
 Yamamoto, H., K. Nakazawa, S. Horii and A. Miyake. 1960. *Journal of the Agricultural Chemical Society of Japan* 34:268-272. **Type strain:** ATCC 27449
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* 22:265-394.
- S. nigrescens** (Sveshnikova 1957) Pridham, Hesselstine and Benedict 1958
 Sveshnikova, M.H. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. *Problems in the classification of actinomycetes-antagonists*. State Publishing House of Medical Literature, Medgiz, Moscow, USSR; Pridham, T.G., C.W. Hesselstine and R.G. Benedict. 1958. *Applied Microbiology* 6:52-79. **Type strain:** ATCC 23941
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* 18:279-392.

- S. nigrificans** Waksman 1961
Waksman, S.A. 1961. The Actinomycetes. Vol. 2. Classification, identification and descriptions of genera and species. The Williams and Wilkins Co., Baltimore. pp. 1-363. **Type strain:** ATCC 19791
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:69-189.
- S. nitrosporeus** Okami 1952
Okami, Y. 1952. Classification of the antagonistic ray fungi of Japan of the family Streptomycetaceae (in Japanese). Doctoral Dissertation, Hokkaido University. **Type strain:** ATCC 12769
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:69-189.
- S. niveoruber** Ettlenger, Corbaz and Hutter 1958
Ettlenger, L., R. Corbaz and R. Hutter. 1958. Archiv fur Mikrobiologie **31**:326-358. **Type strain:** ATCC 14971
Description: Ettlenger, L., R. Corbaz and R. Hutter. 1958. Ibid.
- S. niveus** Smith, Dietz, Sokolski and Savage 1956
Smith, C.G., A. Dietz, W.T. Sokolski and G.M. Savage. 1956. Antibiotics and Chemotherapy **6**:135-142. **Type strain:** NRRL 2466
Description: Hutter, R. 1963. Giornale di Microbiologia **11**:191-246.
- S. noboritoensis** Isono, Yamashita, Tomiyama, Suzuki and Sakai 1957
Isoni, K., S. Yamashita, Y. Tomiyama, S. Suzuki and H. Sakai. 1957. Journal of Antibiotics (Tokyo) Series A **10**:21-30. **Type strain:** ATCC 25477
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology **19**:391-512.
- S. nodosus** Trejo 1961
Trejo, W. 1961 in Waksman, S.A. The Actinomycetes. Vol. 2. Classification, identification and descriptions of genera and species. The Williams and Wilkins Co., Baltimore. pp. 1-363. **Type strain:** ATCC 14899
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:279-392.
- S. nogalater** Bhuyan and Dietz 1966
Bhuyan, B.K. and A. Dietz. 1966. Antimicrobial Agents and Chemotherapy **1965**:836-844. **Type strain:** NRRL 3035
Description: Bhuyan, B.K. and A. Dietz. 1966. Ibid.
- S. nojiriensis** Ishida, Kumagai, Niida, Hamamoto and Shomura 1967
Ishida, N., K. Kumagai, T. Niida, K. Hamamoto and T. Shomura. 1967. Journal of Antibiotics (Tokyo) Series A **20**:62-65. **Type strain:** ATCC 29781
Description: Ishida, N., K. Kumagai, T. Niida, K. Hamamoto and T. Shomura. 1967. Ibid.
- S. noursei** Brown, Hazen and Mason 1953
Brown, R., E.L. Hazen and A. Mason. 1953. Science **117**:609-610. **Type strain:** ATCC 11455
Description: Ettlenger, L., R. Corbaz and R. Hutter. 1958. Archiv fur Mikrobiologie **31**:326-358.
- S. novaecaesareae** Waksman and Henrici 1948
Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). Bergey's Manual of Determinative Bacteriology, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 27452
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- S. ochraceiscleroticus** Pridham 1970
Pridham, T.G. 1970. Bulletin of the United States Department of Agriculture **1424**:1-55. **Type strain:** ATCC 15814
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- S. odorifer** (Rullmann 1895) Waksman 1953
Rullmann, W. 1895. Inaugural Dissertation. Akademische Buchdruckerei von F. Strauv, Munchen, pp. 1-47; Waksman, S.A. 1953 in Waksman, S.A. and H.A. Lechevalier. Guide to the classification and identification of the Actinomycetes and their antibiotics. The Williams and Wilkins Co., Baltimore. pp. 1-246. **Type strain:** ATCC 6246
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- S. olivaceiscleroticus** Pridham 1970
Pridham, T.G. 1970. Bulletin of the

United States Department of Agriculture
1424:1-55. **Type strain:** ATCC 15722

Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology 22:265-394.

- S. olivaceoviridis** (Preobrazhenskaya and Ryabova 1957) Pridham, Hesseltine and Benedict 1958

Preobrazhenskaya, T.P. and I.D. Ryabova. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. Problems of classification of actinomycetes-antagonists. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. Applied Microbiology 6:52-79. **Type strain:** ATCC 23630

Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology 19:391-512.

- S. olivaceus** (Waksman 1923) Waksman and Henrici 1948

Waksman, S.A. 1923 in Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. Bergey's Manual of Determinative Bacteriology, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 339-371; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). Bergey's Manual of Determinative Bacteriology, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 3335

Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology 18:68-189.

- S. olivochromogenes** (Waksman 1923) Waksman and Henrici 1948

Waksman, S.A. 1923 in Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. Bergey's Manual of Determinative Bacteriology, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 339-371; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). Bergey's Manual of Determinative Bacteriology, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 3336

Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology 19:391-512.

- S. olivoviridis** (Kuchaeva, Krassilnikov, Skryabin and Taptykova 1960) Pridham 1970
Kuchaeva, A.G., N.A. Krassilnikov, G.K. Skryabin and S.D. Taptykova. 1960 in Rautenshtein, Ya. I. Transactions of the Institute of Microbiology, Academy of Sciences USSR 8:1-344; Pridham, T.G. 1970. Bulletin of the United States Department of Agriculture 1424:1-55. **Type strain:** ATCC 15882

Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology 18:279-392.

- S. omiyaensis** Umezawa and Okami 1950
Umezawa, H. and Y. Okami. 1950 in Umezawa, H., T. Tazaki, Y. Okami and S. Fukuyama. Journal of Antibiotics (Tokyo) 3:292-296. **Type strain:** ATCC 27454

Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology 22:265-394.

- S. pactum** Bhuyan, Dietz and Smith 1962
Bhuyan, B.K., A. Dietz and C.G. Smith. 1962. Antimicrobial Agents and Chemotherapy 1961:184-190. **Type strain:** NRRL 2939

Description: Bhuyan, B.K., A. Dietz and C.G. Smith. 1962. Ibid.

- S. parvullus** Waksman and Gregory 1954
Waksman, S.A. and F.J. Gregory. 1954. Antibiotics and Chemotherapy 4:1050-1056. **Type strain:** ATCC 12434

Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology 18:69-189.

- S. parvus** (Krainsky 1914) Waksman and Henrici 1948

Krainsky, A. 1914. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. 41:649-688; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). Bergey's Manual of Determinative Bacteriology, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** NRRL B-1455

Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of

- Systematic Bacteriology 22:265-394.
- S. peucetius** Grein, Spalla, Di Marco and Canevazzi 1963
Grein, A., C. Spalla, A. Di Marco and G. Canevazzi. 1963. Giornale de Microbiologia 11:109-118. **Type strain:** ATCC 29050
Description: Bergey 8.
- S. phaeochromogenes** (Conn 1917) Waksman 1957
Conn, H.J. 1917. Bulletin of the New York State Agricultural Experiment Station 60:3-25; Waksman, S.A. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). Bergey's Manual of Determinative Bacteriology, 7th ed. The Williams and Wilkins Co., Baltimore. p. 778. **Type strain:** ATCC 3338
Description: Ettlinger, L., R. Corbaz and R. Hutter. 1958. Archiv fur Mikrobiologie 32:326-358.
- S. phaeofaciens** Maeda, Okami, Taya and Umezawa 1952
Maeda, K., Y. Okami, O. Taya and H. Umezawa. 1952. Japanese Medical Journal 5:237-338. **Type strain:** ATCC 15034
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology 22:265-394.
- S. phaeopurpureus** Shinobu 1957
Shinobu, R. 1957. Memoirs of the Osaka University of the Liberal Arts and Education B Natural Science 6:63-73. **Type strain:** ATCC 23946
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology 18:279-392.
- S. phaeoviridis** Shinobu 1957
Shinobu, R. 1957. Memoirs of the Osaka University of the Liberal Arts and Education B Natural Science 6:63-73. **Type strain:** ATCC 23947
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology 18:279-392.
- S. pilosus** Ettlinger, Corbaz and Hutter 1958
Ettlinger, L., R. Corbaz and R. Hutter. 1958. Archiv fur Mikrobiologie 31:326-358. **Type strain:** ATCC 19797
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology 18:69-189.
- S. platensis** Tresner and Backus 1956
Tresner, H.D. and E.J. Backus. 1956. Applied Microbiology 4:243-250. **Type strain:** NRRL 2364
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology 18:279-392.
- S. plicatus** Pridham, Hesseltine and Benedict 1958
Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. Applied Microbiology 6:52-79. **Type strain:** NRRL 2428
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology 19:391-512.
- S. pluricologrescens** Okami and Umezawa 1961
Okami, Y. and H. Umezawa. 1961 in Waksman, S.A. The Actinomycetes. Vol. 2. Classification, identification and descriptions of genera and species. The Williams and Wilkins Co., Baltimore. pp. 259-260. **Type strain:** ATCC 19798
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology 18:69-189.
- S. polychromogenes** Hageman, Penasse and Teillon 1964
Hageman, G., L. Penasse and J. Teillon. 1964 in Hutter, R. Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. 117:603-661. **Type strain:** ATCC 12595
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology 19:391-512.
- S. poonensis** (Thirumalachar 1960) Pridham 1970
Thirumalachar, M.J. 1960 in Kalakoutskii, L.V. and N.A. Krassilnikov in Rautenshtein, Ya. I. Transactions of the Institute of Microbiology, Academy of Sciences USSR 8:1-344; Pridham, T.G. 1970. Bulletin of the United States Department of Agriculture 1424:1-55. **Type strain:** ATCC 15723
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology 22:265-394.
- S. praecox** (Millard and Burr 1926) Waksman 1953
Millard, W.A. and S. Burr. 1926. Annals of Applied Biology 13:580-644; Waksman, S.A. 1953 in Waksman, S.A. and H.A. Lechevalier. Guide to the classification and identification of the Actinomycetes

- and their antibiotics. The Williams and Wilkins Co., Baltimore. pp. 1-246. **Type strain:** ATCC 3374
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology **19**:391-512.
- S. prasinopilosus** Ettlinger, Corbaz and Hutter 1958
 Ettlinger, L., R. Corbaz and R. Hutter. 1958. Archiv fur Mikrobiologie **31**:326-358. **Type strain:** ATCC 19799
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:69-189.
- S. prasinosporus** Tresner, Hayes and Backus 1966
 Tresner, H., J.A. Hayes and E.J. Backus. 1966. International Journal of Systematic Bacteriology **16**:161-169. **Type strain:** ATCC 17918
Description: Tresner, H., J.A. Hayes and E.J. Backus. 1966. Ibid.
- S. prasinus** Ettlinger, Corbaz and Hutter 1958
 Ettlinger, L., R. Corbaz and R. Hutter. 1958. Archiv fur Mikrobiologie **31**:326-358. **Type strain:** ATCC 19800
Description: Ettlinger, L., R. Corbaz and R. Hutter. 1958. Ibid.
- S. prunicolor** (Ryabova and Preobrazhenskaya 1957) Pridham, Hesseltine and Benedict 1958
 Ryabova, I.D. and T.P. Preobrazhenskaya. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. Problems of classification of actinomycetes-antagonists. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. Applied Microbiology **6**:52-79. **Type strain:** ATCC 25487
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology **19**:391-512.
- S. psammoticus** Virgilio and Hengeller 1960
 Virgilio, A. and C. Hengeller. 1960. Farmaco, Edizione Scientifica **15**:164-174. **Type strain:** CBS 175.61
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology **19**:391-512.
- S. pseudogriseolus** Okami and Umezawa 1955
 Okami, Y. and H. Umezawa. 1955 in Okami, Y., R. Utahara, H. Oyagi, S. Makamura, H. Umezawa, K. Yanagisawa and Y. Tsunematsu. Journal of Antibiotics (Tokyo) Series A **8**:126-131. **Type strain:** ATCC 12770
Description: Hutter, R. 1967. Systematik der Streptomyceten unter besonderer Berucksichtigung der von ihnen gebildeten Antibiotica. Bibl. Microbiol. Fasc. 6.5. Karger AG, Basel, Switzerland. pp. 262-288.
- S. pseudovenezuelae** (Kuchaeva, Krassilnikov, Taptykova and Gesheva 1961) Pridham 1970
 Kuchaeva, A.G., N.A. Krassilnikov, S.D. Taptykova and R.L. Gesheva. 1961. Izvestiya Na Mikrobiologicheskii Institut, Bulgarian Academy of Sciences, Class of Biological Sciences, Sofia **13**:103-124; Pridham, T.G. 1970. Bulletin of the United States Department of Agriculture **1424**:1-55. **Type strain:** ATCC 23951
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:279-392.
- S. pulveraceus** Shibata, Higashide, Kanzaki, Yamamoto and Nakazawa 1961
 Shibata, M., E. Higashide, T. Kanzaki, H. Yamamoto and K. Nakazawa. 1961. Agricultural and Biological Chemistry **25**:171-175. **Type strain:** ATCC 13875
Description: Shibata, M., E. Higashide, T. Kanzaki, H. Yamamoto and K. Nakazawa. 1961. Ibid.
- S. puniceus** Patelski 1951
 Patelski, R.A. 1951 in Routien, J.B. and A. Hofmann. Antibiotics and Chemotherapy **1**:387-389. **Type strain:** ATCC 19801
Description: Hutter, R. 1963. Giornale di Microbiologia **11**:191-246.
- S. purpeofuscus** Yamaguichi and Saburi 1955
 Yamaguichi, T. and Y. Saburi. 1955. Journal of General and Applied Microbiology **1**:201-235. **Type strain:** ATCC 23952
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:279-392.
- S. purpurascens** Lindenbein 1952
 Lindenbein, W. 1952. Archiv fur Mikrobiologie **17**:361-383. **Type strain:** ATCC 25489

- Description:** Shirling, E.B. and D. Gottlieb. 1969. *International Journal of Systematic Bacteriology* **19**:391-512.
- S. purpurogeneiscleroticus** Pridham 1970
Pridham, T.G. 1970. *Bulletin of the United States Department of Agriculture* **1424**:1-55. **Type strain:** ATCC 19348
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. racemochromogenes** Sugai 1956
Sugai, T. 1956. *Journal of Antibiotics (Tokyo) Series B* **9**:170-179. **Type strain:** ATCC 23954
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. rameus** Shibata 1959
Shibata, M. 1959. *Journal of Antibiotics (Tokyo) Series B* **12**:398-400. **Type strain:** ATCC 21273
Description: Shibata, M. 1959. *Ibid.*
- S. ramulosus** Ettlinger, Gaumann, Hutter, Keller-Schierlein, Kradolfer, Neipp, Prelog and Zahner 1958
Ettlinger, L., E. Gaumann, R. Hutter, W. Keller-Schierlein, F. Kradolfer, L. Neipp, V. Prelog and H. Zahner. 1958. *Helvetica Chimica Acta* **41**:216-219. **Type strain:** ATCC 19802
Description: Ettlinger, L., E. Gaumann, R. Hutter, W. Keller-Schierlein, F. Kradolfer, L. Neipp, V. Prelog and H. Zahner. 1958. *Ibid.*
- S. rangoon** (Erikson 1935) Pridham, Hesselstine and Benedict 1958
Erikson, D. 1935. *Medical Research Council (Great Britain) Special Report Series* **203**:5-61; Pridham, T.G., C.W. Hesselstine and R.G. Benedict. 1958. *Applied Microbiology* **6**:52-79. **Type strain:** ATCC 6860
Description: Shirling, E.B. and D. Gottlieb. 1969. *International Journal of Systematic Bacteriology* **19**:391-512.
- S. recifensis** (Goncalves de Lima, Machado, Araujo, Falcao de Morais and Biermann 1955) Falcao de Morais, Goncalves de Lima and Dalia Maia 1957
Goncalves de Lima, O., M.P. Machado, L. de A. Araujo, J.O. Falcao de Morais and H. Biermann. 1955. *Anais da Sociedade de Biologia de Pernambuco* **13**: 21-36; Falcao de Morais, J.O., O. Goncalves de Lima and M.H. Dalia Maia. 1957. *Anais da Sociedade de Biologia de Pernambuco* **15**:239-253. **Type strain:** ATCC 19803
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. regensis** Gupta, Sobti and Chopra 1963
Gupta, K.C., R.R. Sobti and I.C. Chopra. 1963. *Hindustan Antibiotics Bulletin* **6**:12-16. **Type strain:** ATCC 27461
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. resistomycificus** Lindenbein 1952
Lindenbein, W. 1952. *Archiv fur Mikrobiologie* **17**:361-383. **Type strain:** NRRL 2290
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. rimosus** Sobin, Finlay and Kane 1953
Sobin, B.A., A.C. Finlay and J.H. Kane. 1953 in Waksman, S.A. and H.A. Lechevalier. *Guide to the classification and identification of the Actinomycetes and their antibiotics*. The Williams and Wilkins Co., Baltimore. pp. 1-246. **Type strain:** NRRL 2234
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. rimosus** subsp. *paromomycinus* Coffey, Anderson, Fisher, Galbraith, Hillegas, Kohberger, Thompson, Weston and Ehrlich 1959
Coffey, G.L., L.E. Anderson, M.W. Fisher, M.M. Galbraith, A.B. Hillegas, D.L. Kohberger, P.E. Thompson, K.S. Weston and J. Ehrlich. 1959. *Antibiotics and Chemotherapy* **9**:730-738. **Type strain:** NRRL 2455
Description: Bergey 8.
- S. rimosus** subsp. *rimosus* Sobin, Finlay and Kane 1953
Sobin, B.A., A.C. Finlay and J.H. Kane. 1953 in Waksman, S.A. and H.A. Lechevalier. *Guide to the classification and identification of the Actinomycetes and their antibiotics*. The Williams and Wilkins Co., Baltimore. pp. 1-246. **Type strain:** NRRL 2234

- Description:** Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:279-392.
- S. rishiriensis** Kawaguchi, Tsukiura, Okanishi, Miyaki, Ohmori, Fujisawa and Koshiyama 1965
Kawaguchi, H., H. Tsukiura, M. Okanishi, T. Miyaki, T. Ohmori, K. Fujisawa and H. Koshiyama. 1965. Journal of Antibiotics (Tokyo) Series A **18**:1-10. **Type strain:** ATCC 14812
- Description:** Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- S. rochei** Berger, Jampolsky and Goldberg 1953
Berger, J., L.M. Jampolsky and M.W. Goldberg. 1953 in Waksman, S.A. and H.A. Lechevalier. Guide to the classification and identification of the Actinomycetes and their antibiotics. The Williams and Wilkins Co., Baltimore. pp. 1-246. **Type strain:** ATCC 10739
- Description:** Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:279-392.
- S. roseiscleroticus** Pridham 1970
Pridham, T.G. 1970. Bulletin of the United States Department of Agriculture **1424**:1-55. **Type strain:** ATCC 17755
- Description:** Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- S. roseodiataticus** (Duche 1934) Waksman 1953
Duche, J. 1934. Encyclopedie Mycologique **6**:1-375; Waksman, S.A. 1953 in Waksman, S.A. and H.A. Lechevalier. Guide to the classification and identification of the actinomycetes and their antibiotics. The Williams and Wilkins Co., Baltimore. pp. 1-246. **Type strain:** CBS 102.34
- Description:** Ettlinger, L., R. Corbaz and R. Hutter. 1958. Archiv fur Mikrobiologie **31**:326-358.
- S. roseoflavus** Arai 1951
Arai, T. 1951. Journal of Antibiotics (Tokyo) Series A **4**:215-221. **Type strain:** NRRL B-2789
- Description:** Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- S. roseofulvus** (Preobrazhenskaya 1957) Pridham, Hesseltine and Benedict 1958
Preobrazhenskaya, T.P. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. Problems of classification of actinomycetes-antagonists. Government Publishing House of Medical Literature Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. Applied Microbiology **6**:52-79. **Type strain:** ATCC 19921
- Description:** Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:69-189.
- S. roseolilacinus** (Preobrazhenskaya and Sveshnikova 1957) Pridham, Hesseltine and Benedict 1958
Preobrazhenskaya, T.P. and M.A. Sveshnikova. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. Problems of classification of actinomycetes-antagonists. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. Applied Microbiology **6**:52-79. **Type strain:** ATCC 19922
- Description:** Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:69-189.
- S. roseolus** (Preobrazhenskaya and Sveshnikova 1957) Pridham, Hesseltine and Benedict 1958
Preobrazhenskaya, T.P. and M.A. Sveshnikova. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. Problems of classification of actinomycetes-antagonists. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1968. Applied Microbiology **6**:52-79. **Type strain:** ATCC 23210
- Description:** Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:69-189.
- S. roseosporus** Falcao de Moraes and Dalia Maia 1961
Falcao de Moraes, J.O. and M.H. Dalia Maia. 1961. Revista do Instituto de Antibioticos, Universidade do Recife **3**:33-

60. **Type strain:** ATCC 23958
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:279-392.
- S. roseoviolaceus** (Sveshnikova 1957) Pridham, Hesselstine and Benedict 1958
 Sveshnikova, M.A. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. Problems of classification of actinomycetes-antagonists. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesselstine and R.G. Benedict. 1958. Applied Microbiology **6**:52-79. **Type strain:** ATCC 25493
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology **19**:391-512.
- S. roseoviridis** (Preobrazhenskaya 1957) Pridham, Hesselstine and Benedict 1958
 Preobrazhenskaya, T.P. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. Problems of classification of actinomycetes-antagonists. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesselstine and R.G. Benedict. 1958. Applied Microbiology **6**:52-79. **Type strain:** ATCC 23959
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:279-392.
- S. rubiginosohelvolus** (Kudrina 1957) Pridham, Hesselstine and Benedict 1958
 Kudrina, E.S. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. Problems of classification of actinomycetes-antagonists. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesselstine and R.G. Benedict. 1958. Applied Microbiology **6**:52-79. **Type strain:** ATCC 19926
Description: Shirling, E.B. and D. Gottlieb. 1968.
- S. rubiginosus** (Preobrazhenskaya, Blinov and Ryabova 1957) Pridham, Hesselstine and Benedict 1958
 Preobrazhenskaya, T.P., N.O. Blinov and I.D. Ryabova. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. Problems of classification of actinomycetes-antagonists. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesselstine and R.G. Benedict. 1958. Applied Microbiology **6**:52-79. **Type strain:** ATCC 19927
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:279-392.
- S. rutgersensis** (Waksman and Curtis 1916) Waksman and Henrici 1948
 Waksman, S.A. and R.E. Curtis. 1916. Soil Science **1**:99-134; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). Bergey's Manual of Determinative Bacteriology, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 3350
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:69-189.
- S. rutgersensis** subsp. *castelarensis* Cercos 1954
 Cercos, A.P. 1954. Revista de Investigaciones Agricolas **8**:263-283. **Type strain:** ATCC 15191
Description: Bergey 8.
- S. rutgersensis** subsp. *rutgersensis* (Waksman and Curtis 1916) Waksman and Henrici 1948
 Waksman, S.A. and R.E. Curtis. 1916. Soil Science **1**:99-134; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). Bergey's Manual of Determinative Bacteriology, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 3350
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:69-189.
- S. sampsonii** (Millard and Burr 1926) Waksman 1953
 Millard, W.A. and S. Burr. 1926. Annals of Applied Biology **13**:580-644; Waksman, S.A. 1953 in Waksman, S.A. and H.A. Lechevalier. Guide to the classification and identification of the actinomycetes and their antibiotics. The Williams and Wilkins Co., Baltimore. pp. 1-246. **Type**

- strain:** ATCC 25495
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology **19**:391-512.
- S. sclerotialis** Pridham 1970
 Pridham, T.G. 1970. Bulletin of the United States Department of Agriculture **1424**:1-55. **Type strain:** ATCC 15721
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- S. setonii** (Millard and Burr 1926) Waksman 1953
 Millard, W.A. and S. Burr. 1926. Annals of Applied Biology **13**:580-644; Waksman, S.A. 1953 in Waksman, S.A. and H.A. Lechevalier. Guide to the classification and identification of the actinomycetes and their antibiotics. The Williams and Wilkins Co., Baltimore. pp. 1-246. **Type strain:** ATCC 25497
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- S. showdoensis** Nishimura, Mayama, Komatsu, Kato, Shimaoka and Tanaka 1964
 Nishimura, H., M. Mayama, Y. Komatsu, H. Kato, N. Shimaoka and Y. Tanaka. 1964. Journal of Antibiotics (Tokyo) Series A **17**:148-155. **Type strain:** ATCC 15105
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- S. sindenensis** Nakazawa and Fujii 1957
 Nakazawa, K. and S. Fujii. 1957. Annual Report Takeda Research Laboratory **16**: 109-110. **Type strain:** ATCC 23963
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:279-392.
- S. sioyaensis** Nishimura, Okamoto, Mayama, Ohtsuka, Nakajima, Tawara, Shimohira and Shimaoka 1961
 Nishimura, H., S. Okamoto, M. Mayama, H. Ohtsuka, K. Nakajima, K. Tawara, M. Shimohira and N. Shimaoka. 1961. Journal of Antibiotics (Tokyo) Series A **14**:255-263. **Type strain:** ATCC 13989
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:69-189.
- S. somaliensis** (Brumpt 1906) Waksman and Henrici 1948
 Brumpt, E. 1906. Archives de Parasitologie **10**:489-527; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). Bergey's Manual of Determinative Bacteriology, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 33201
Description: Waksman, S.A. and A.T. Henrici. 1948. Ibid.
- S. sparsogenes** Owen, Dietz and Camiener 1963
 Owen, S.P., A. Dietz and G.W. Camiener. 1963. Antimicrobial Agents and Chemotherapy **1962**:772-779. **Type strain:** NRRL 2940
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology **19**:391-512.
- S. spectabilis** Mason, Dietz and Smith 1961
 Mason, D.J., A. Dietz and R.M. Smith. 1961. Antibiotics and Chemotherapy **11**: 118-122. **Type strain:** NRRL 2494
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- S. spheroides** Wallick, Harris, Reagan, Ruger and Woodruff 1956
 Wallick, H., D.A. Harris, M.A. Reagan, M. Ruger and H.B. Woodruff. 1956. Antibiotics Annual **1955-56**:909-917. **Type strain:** NRRL 2449
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:279-392.
- S. spiroverticillatus** Shinobu 1958
 Shinobu, R. 1958. Botanical Magazine (Tokyo) **71**:87-93. **Type strain:** ATCC 19811
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:69-189.
- S. subrutilus** Arai, Kuroda, Yamagishi and Katoh 1964
 Arai, T., S. Kuroda, S. Yamagishi and Y. Katoh. 1964. Journal of Antibiotics (Tokyo) Series A **17**:23-28. **Type strain:** ATCC 27467
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology **22**:265-394.
- S. sulphureus** (Gasperini 1894) Waksman 1953
 Gasperini, G. 1894. Processi verbali della

- Societa Toscana di Scienze naturali di Pisa 9:64-89; Waksman, S.A. 1953 in Waksman, S.A. and H.A. Lechevalier. Guide to the classification and identification of the actinomycetes and their antibiotics. The Williams and Wilkins Co., Baltimore. pp. 1-246. **Type strain:** ATCC 27468
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology 22:265-394.
- S. tanashiensis** Hata, Ohki and Higuchi 1952
 Hata, T., N. Ohki and T. Higuchi. 1952. Journal of Antibiotics (Tokyo) Series A 5:529-534. **Type strain:** ATCC 23967
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology 18:279-392.
- S. tendae** Ettliger, Corbaz and Hutter 1958
 Ettliger, L., R. Corbaz and R. Hutter. 1958. Archiv fur Mikrobiologie 31:326-358. **Type strain:** ATCC 19812
Description: Ettliger, L., R. Corbaz and R. Hutter. 1958. Ibid.
- S. termitum** Duche, Heim and Laboureur 1951
 Duche, J., R. Heim and P. Laboureur. 1951 in Heim, R. Bulletin de la Societe Mycologique France 67:359-364. **Type strain:** ATCC 25499
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology 19:391-512.
- S. thermodiastaticus** (Bergey, Harrison, Breed, Hammer and Huntoon 1923) Waksman 1953
 Bergey, D.H., F.C. Harrison, R.S. Breed, B.W. Hammer and F.M. Huntoon. 1923. Bergey's Manual of Determinative Bacteriology, 1st ed. The Williams and Wilkins Co., Baltimore. pp. 1-442; Waksman, S.A. 1953 in Waksman, S.A. and H.A. Lechevalier. Guide to the classification and identification of the actinomycetes and their antibiotics. The Williams and Wilkins Co., Baltimore. pp. 1-246. **Type strain:** ATCC 27472
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology 22:265-394.
- S. thermonitrificans** Desai and Dhala 1967
 Desai, A.J. and S.A. Dhala. 1967. Antonie van Leeuwenhoek Journal of Microbiology and Serology 33:137-144.
Type strain: ATCC 23385
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology 22:265-394.
- S. thermoviolaceus** Henssen 1957
 Henssen, A. 1957. Archiv fur Mikrobiologie 26:373-414. **Type strain:** ATCC 19283
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology 22:265-394.
- S. thermoviolaceus** subsp. *apingens* Henssen 1957
 Henssen, A. 1957. Archiv fur Mikrobiologie 26:373-414. **Type strain:** ATCC 19994
Description: Bergey 8.
- S. thermoviolaceus** subsp. *thermoviolaceus* Henssen 1957
 Henssen, A. 1957. Archiv fur Mikrobiologie 26:373-414. **Type strain:** ATCC 19283
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology 22:265-394.
- S. thermovulgaris** Henssen 1957
 Henssen, A. 1957. Archiv fur Mikrobiologie 26:373-414. **Type strain:** ATCC 19284
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology 19:391-512.
- S. torulosus** Lyons and Pridham 1971
 Lyons, A.J. and T.G. Pridham. 1971. Applied Microbiology 22:190-193. **Type strain:** NRRL B-3889
Description: Lyons, A.J. and T.G. Pridham. 1971. Ibid.
- S. toxytricini** (Preobrazhenskaya and Sveshnikova 1957) Pridham, Hesseltine and Benedict 1958
 Preobrazhenskaya, T.P. and M.A. Sveshnikova. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. Problems of classification of actinomycetes-antagonists. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. Applied Microbiology 6:52-79. **Type strain:** ATCC 19813
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology 18:69-189.
- S. tricolor** (Wollenweber 1920) Waksman 1961
 Wollenweber, H.W. 1920. Arbeiten des

- Forschungsinstitutes für Kartoffelbau, Verlagsbuchhandlung Paul Parey, Berlin, No. 2, pp. 1-102; Waksman, S.A. 1961. The Actinomycetes. Vol. 2. Classification, identification and descriptions of genera and species. The Williams and Wilkins Co., Baltimore. pp. 1-363. **Type strain:** CBS 103.21
Description: Bergey 8.
- S. tubercidicus** Nakamura 1961
 Nakamura, G. 1961. Journal of Antibiotics (Tokyo) Series A 14:90-93. **Type strain:** ATCC 25502
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology 19:391-512.
- S. tuiurus** Albert and Malaquias de Querioz 1963
 Albert, C.A. and V.M. Malaquias de Querioz. 1963. Revista do Instituto de Antibioticos, Universidade do Recife 5:43-51. **Type strain:** ATCC 19007
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology 22:265-394.
- S. umbrinus** (Sveshnikova 1957) Pridham, Hessel-tine and Benedict 1958
 Sveshnikova, M.A. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. Problems of classification of actinomycetes-antagonists. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hessel-tine and R.G. Benedict. 1958. Applied Microbiology 6:52-79. **Type strain:** ATCC 19929
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology 19:391-512.
- S. variabilis** (Preobrazhenskaya, Ryabova and Blinov 1957) Pridham, Hessel-tine and Benedict 1958
 Preobrazhenskaya, T.P., I.D. Ryabova and N.O. Blinov. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. Problems of classification of actino-mycetes-antagonists. Government Publish-ing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hessel-tine and R.G. Benedict. 1958. Applied Microbiology 6:52-79. **Type strain:** ATCC 19930
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology 18:69-189.
- S. varsoviensis** Kurylowicz and Woznicka 1967
 Kurylowicz, W. and W. Woznicka. 1967. Medycyna Doswiadczalna i Mikrobiologia 19:1-9. **Type strain:** ATCC 25505
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology 19:391-512.
- S. vastus** Szabo and Marton 1958
 Szabo, I. and M. Marton. 1958. Agro-kemia es Talajtan 7:243-262. **Type strain:** ATCC 25506
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology 19:391-512.
- S. venezuelae** Ehrlich, Gottlieb, Burkholder, Anderson and Pridham 1948
 Ehrlich, J., D. Gottlieb, P.R. Burkholder, L.E. Anderson and T.G. Pridham. 1948. Journal of Bacteriology 56:467-477. **Type strain:** NRRL 2277
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology 19:391-512.
- S. vinaceus** Jones 1952
 Jones, K.L. 1952. Papers from the Michigan Academy of Science, Arts and Letters 37:47-48. **Type strain:** NRRL 2382
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology 22:265-394.
- S. vinaceusdrappus** Pridham, Hessel-tine and Benedict 1958
 Pridham, T.G., C.W. Hessel-tine and R.G. Benedict. 1958. Applied Microbiology 6: 52-79. **Type strain:** NRRL 2363
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology 19:391-512.
- S. violaceochromogenes** (Ryabova and Preobra-zhenskaya 1957) Pridham 1970
 Ryabova, I.D. and T.P. Preobrazhenskaya. 1957 in Gauze, G.F., T.P. Preobrazhen-skaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. Problems of classification of actinomycetes-antagon-ists. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G. 1970. Bulletin of

- the United States Department of Agriculture 1424:1-55. **Type strain:** ATCC 19932
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology 19:391-512.
- S. violaceolatus** (Krassilnikov, Sorokina, Alferova and Bezzubenkova 1965) Pridham 1970
 Krassilnikov, N.A., E.J. Sorokina, V.A. Alferova and A.P. Bezzubenkova. 1965 in Krassilnikov, N.A. (ed). Biology of selected groups of actinomycetes (in Russian). Institute of Microbiology, Academy of Science, Publishing Firm 'Nauka', Moscow, USSR. pp. 1-372; Pridham, T.G. 1970. Bulletin of the United States Department of Agriculture 1424:1-55. **Type strain:** ATCC 19847
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology 19:391-512.
- S. violaceoniger** (Waksman and Curtis 1916) Pridham, Hesseltine and Benedict 1958
 Waksman, S.A. and R.E. Curtis. 1916. Soil Science 1:99-134; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. Applied Microbiology 6:52-79. **Type strain:** NRRL B-1476
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology 22:265-394.
- S. violaceorectus** (Ryabova and Preobrazhenskaya 1957) Pridham, Hesseltine and Benedict 1958
 Ryabova, I.D. and T.P. Preobrazhenskaya. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. Problems of classification of actinomycetes-antagonists. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. Applied Microbiology 6:52-79. **Type strain:** ATCC 25514
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology 19:391-512.
- S. violaceoruber** (Waksman and Curtis 1916) Pridham 1970
 Waksman, S.A. and R.E. Cutris. 1916. Soil Science 1:99-134; Pridham, T.G. 1970. Bulletin of the United States Department of Agriculture 1424:1-55. **Type strain:** ATCC 14980
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology 18:69-189.
- S. violaceus** (Rossi Doria 1891) Waksman 1953
 Rossi Doria, T. 1891. Annali dell' Istituto d'Igiene Sperimentale della Rendiconti Universita di Roma 1:399-438; Waksman, S.A. 1953 in Waksman, S.A. and H.A. Lechevalier. Guide to the classification and identification of the actinomycetes and their antibiotics. The Williams and Wilkins Co., Baltimore. pp. 1-246. **Type strain:** ATCC 15888
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology 19:391-512.
- S. violarius** (Artamonova and Krassilnikov 1960) Pridham 1970
 Artamonova, O.I. and N.A. Krassilnikov. 1960 in Rautenshtein, Ya. I. Transactions of the Institute of Microbiology, Academy of Science USSR 8:1-344; Pridham, T.G. 1970. Bulletin of the United States Department of Agriculture 1424:1-55. **Type strain:** ATCC 15891
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology 19:391-512.
- S. violascens** (Preobrazhenskaya and Sveshnikova 1957) Pridham, Hesseltine and Benedict 1958
 Preobrazhenskaya, T.P. and M.A. Sveshnikova. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. Problems of classification of actinomycetes-antagonists. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesseltine and R.G. Benedict. 1958. Applied Microbiology 6:52-79. **Type strain:** ATCC 23968
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology 18:279-392.
- S. violatus** (Artamonova and Krassilnikov 1960) Pridham 1970
 Artamonova, O.I. and N.A. Krassilnikov. 1960 in Rautenshtein, Ya. I. Transactions of the Institute of Microbiology, Academy

- of Science USSR 8:1-344; Pridham, T.G. 1970. Bulletin of the United States Department of Agriculture 1424:1-55. **Type strain:** ATCC 15892
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology 22:265-394.
- S. virginiae** Grundy, Whitman, Rdzok, Rdzok, Hanes and Sylvester 1952
 Grundy, W.E., A.L. Whitman, E.G. Rdzok, E.J. Rdzok, M.E. Hanes and J.C. Sylvester. 1952. Antibiotics and Chemotherapy 2:399-408. **Type strain:** ATCC 19817
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology 18:69-189.
- S. viridiviolaceus** (Ryabova and Preobrazhenskaya 1957) Pridham, Hesselstine and Benedict 1958
 Ryabova, I.D. and T.P. Preobrazhenskaya. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. Problems of classification of actinomycetes-antagonists. Government Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Pridham, T.G., C.W. Hesselstine and R.G. Benedict. 1958. Applied Microbiology 6:52-79. **Type strain:** ATCC 27478
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology 22:265-394.
- S. viridochromogenes** (Krainsky 1914) Waksman and Henrici 1948
 Krainsky, A. 1914. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. 41:649-688; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). Bergey's Manual of Determinative Bacteriology, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 14920
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology 22:265-394.
- S. viridodiastaticus** (Baldacci, Grein and Spalla 1955) Pridham, Hesselstine and Benedict 1958
 Baldacci, E., A. Grein and C. Spalla. 1955. Giornale di Microbiologia 1:127-143; Pridham, T.G., C.W. Hesselstine and R.G. Benedict. 1958. Applied Microbiology 6:52-79. **Type strain:** ATCC 25518
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology 19:391-512.
- S. viridosporus** Pridham, Hesselstine and Benedict 1958
 Pridham, T.G., C.W. Hesselstine and R.G. Benedict. 1958. Applied Microbiology 6:52-79. **Type strain:** NRRL 2414
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology 22:265-394.
- S. werraensis** Wallhausser, Huber, Neesemann, Prave and Zepf 1964
 Wallhausser, K.H., G. Huber, G. Neesemann, P. Prave and K. Zepf. 1964. Arzneimittel Forschung 14:356-360. **Type strain:** ATCC 14424
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology 22:265-394.
- S. willmorei** (Erikson 1935) Waksman and Henrici 1948
 Erikson, D. 1935. Medical Research Council (Great Britain) Special Report Series 203:5-61; Waksman, S.A. and A.T. Henrici. 1948 in Breed, R.S., E.G.D. Murray and A.P. Hitchens (eds). Bergey's Manual of Determinative Bacteriology, 6th ed. The Williams and Wilkins Co., Baltimore. pp. 929-980. **Type strain:** ATCC 6867
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology 22:265-394.
- S. xanthochromogenes** Arishima, Sakamoto and Sato 1956
 Arishima, M., J.M. Sakamoto and T. Sato. 1956. Journal of the Agricultural Chemical Society of Japan 30:469-471. **Type strain:** ATCC 19818
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology 18:69-189.
- S. xanthocidicus** Asahi, Nagatsu and Suzuki 1966
 Asahi, K., J. Nagatsu and S. Suzuki. 1966. Journal of Antibiotics (Tokyo) Series A 19:195-199. **Type strain:** ATCC 27480

- Description:** Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. xantholiticus** (Konev and Tsyganov 1962) Pridham 1970
Konev, I.E. and V.A. Tsyganov. 1962. *Mikrobiologiya* **31**:1023-1028; Pridham, T.G. 1970. *Bulletin of the United States Department of Agriculture* **1424**:1-55. **Type strain:** ATCC 27481
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. xanthophaeus** Lindenbein 1952
Lindenbein, W. 1952. *Archiv fur Mikrobiologie* **17**:361-383. **Type strain:** ATCC 19819
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. yokosukanensis** Nakamura 1961
Nakamura, G. 1961. *Journal of Antibiotics (Tokyo) Series A* **14**:94-97. **Type strain:** ATCC 25520
Description: Shirling, E.B. and D. Gottlieb. 1969. *International Journal of Systematic Bacteriology* **19**:391-512.
- S. zaomyceticus** Hinuma 1954
Hinuma, Y. 1954. *Journal of Antibiotics (Tokyo) Series A* **7**:134-136. **Type strain:** ATCC 27482
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- Streptosporangium** Couch 1955
Couch, J.N. 1955. *Journal of the Elisha Mitchell Scientific Society* **71**:148-155. **Type species:** *S. roseum* Couch 1955
Description: Bergey 8.
- S. albidum** Furumai, Ogawa and Okuda 1968
Furumai, T., H. Ogawa and T. Okuda. 1968. *Journal of Antibiotics (Tokyo)* **21**:179-181. **Type strain:** ATCC 25243
Description: Bergey 8.
- S. album** Nonomura and Ohara 1960
Nonomura, H. and Y. Ohara. 1960. *Journal of Fermentation Technology* **38**:405-409. **Type strain:** DSM 43023
Description: Bergey 8.
- S. amethystogenes** Nonomura and Ohara 1960
Nonomura, H. and Y. Ohara. 1960. *Journal of Fermentation Technology* **38**:405-409. **Type strain:** KCC A-2006
Description: Bergey 8.
- S. corrugatum** Williams and Sharples 1976
Williams, S.T. and G.P. Sharples. 1976. *International Journal of Systematic Bacteriology* **26**:45-52. **Type strain:** ATCC 29331
Description: Williams, S.T. and G.P. Sharples. 1976. *Ibid.*
- S. indianesis** Gupta 1965
Gupta, K.C. 1965. *Journal of Antibiotics (Tokyo) Series A* **18**:125-127. **Type strain:** KCC A-0053
Description: Gupta, K.C. 1965. *Ibid.*
- S. longisporum** Schafer 1969
Schafer, D. 1969. *Archiv fur Mikrobiologie* **66**:365-373. **Type strain:** ATCC 25212
Description: Bergey 8.
- S. nondiastaticum** Nonomura and Ohara 1969
Nonomura, H. and Y. Ohara. 1969. *Journal of Fermentation Technology* **47**:701-709. **Type strain:** ATCC 27101
Description: Bergey 8.
- S. pseudovulgare** Nonomura and Ohara 1969
Nonomura, H. and Y. Ohara. 1969. *Journal of Fermentation Technology* **47**:701-709. **Type strain:** ATCC 27100
Description: Bergey 8.
- S. roseum** Couch 1955
Couch, J.N. 1955. *Journal of the Elisha Mitchell Scientific Society* **71**:148-155. **Type strain:** ATCC 12428
Description: Bergey 8.
- S. violaceochromogenes** Kawamoto, Takasawa, Okachi, Kohakura, Takahashi and Nara 1975
Kawamoto, I., S. Takasawa, R. Okachi, M. Kohakura, I. Takahashi and T. Nara. 1975. *Journal of Antibiotics (Tokyo)* **28**:358-365. **Type strain:** ATCC 21807
Description: Kawamoto, I., S. Takasawa, R. Okachi, M. Kohakura, I. Takahashi and T. Nara. 1975. *Ibid.*
- S. viridialbum** Nonomura and Ohara 1960
Nonomura, H. and Y. Ohara. 1960. *Journal of Fermentation Technology* **38**:405-409. **Type strain:** KCC A-027
Description: Bergey 8.
- S. viridogriseum** Okuda, Furumai, Watanabe, Okugawa and Kimura 1966
Okuda, T., T. Furumai, E. Watanabe, Y. Okugawa and S. Kimura. 1966. *Journal of Antibiotics (Tokyo)* **19**:121-127. **Type**

- strain: ATCC 25242
Description: Bergey 8.
- S. viridogriseum** subsp. *kofuense* Nonomura and Ohara 1969
 Nonomura, H. and Y. Ohara. 1969. Journal of Fermentation Technology **47**: 701-709. **Type strain:** ATCC 27102
Description: Bergey 8.
- S. viridogriseum** subsp. *viridogriseum* Okuda, Furumai, Watanabe, Okugawa and Kimura 1966
 Okuda, T., T. Furumai, E. Watanabe, Y. Okugawa and S. Kimura. 1966. Journal of Antibiotics (Tokyo) **19**:121-127. **Type strain:** ATCC 25242
Description: Bergey 8.
- S. vulgare** Nonomura and Ohara 1960
 Nonomura, H. and Y. Ohara. 1960. Journal of Fermentation Technology **38**: 405-409. **Type strain:** KCC A-0028
Description: Bergey 8.
- Streptovercillium** Baldacci 1958
 Baldacci, E. 1958. Giornale di Microbiologia **6**:10-27. **Type species:** *S. baldaccii* Farina and Locci 1966
Description: Bergey 8.
- S. abikoense** (Umezawa, Tazaki and Fukuyama 1951) Locci, Baldacci and Petrolini Baldan 1969
 Umezawa, H., T. Tazaki and S. Fukuyama. 1951. Japanese Medical Journal **4**: 331-346; Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. Giornale di Microbiologia **17**:1-60. **Type strain:** ATCC 12766
Description: Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. Ibid.
- S. albireticuli** (Nakazawa 1955) Locci, Baldacci and Petrolini Baldan 1969
 Nakazawa, K. 1955. Journal of the Agricultural Chemical Society of Japan **29**:647-649; Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. Giornale di Microbiologia **17**:1-60. **Type strain:** ATCC 19721
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:69-189.
- S. album** Locci, Baldacci and Petrolini Baldan 1969
 Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. Giornale di Microbiologia **17**:1-60. **Type strain:** NRRL 2401
Description: Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. Ibid.
- S. arduum** (De Boer, Dietz, Lummis and Savage 1961) Locci, Baldacci and Petrolini Baldan 1969
 De Boer, C., A. Dietz, N.E. Lummis and G.M. Savage. 1961. Antimicrobial Agents Annual pp. 17-22; Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. Giornale di Microbiologia **17**:1-60. **Type strain:** NRRL 2817
Description: Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. Ibid.
- S. aureoversales** Locci, Baldacci and Petrolini Baldan 1969
 Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. Giornale di Microbiologia **17**:1-60. **Type strain:** ATCC 15853
Description: Shirling, E.B. and D. Gottlieb. 1969. International Journal of Systematic Bacteriology **19**:391-512.
- S. baldaccii** Farina and Locci 1966
 Farina, G. and R. Locci. 1966. Giornale di Microbiologia **14**:33-52. **Type strain:** ATCC 23654
Description: Farina, G. and R. Locci. 1966. Ibid.
- S. biverticillatum** (Preobrazhenskaya 1957) Farina and Locci 1966
 Preobrazhenskaya, T.P. 1957 in Gauze, G.F., T.P. Preobrazhenskaya, E.S. Kudrina, N.O. Blinov, I.D. Ryabova and M.A. Sveshnikova. Problems in the classification of actinomycetes-antagonists. Publishing House of Medical Literature, Medgiz, Moscow. pp. 1-398; Farina, G. and R. Locci. 1966. Giornale di Microbiologia **14**:33-52. **Type strain:** ATCC 23615
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology **18**:279-392.
- S. blastmyceticum** (Watanabe, Tanaka, Fukuhara, Miyairi, Yonehara and Umezawa 1957) Locci, Baldacci and Petrolini Baldan 1969
 Watanabe, K., T. Tanaka, K. Fukuhara, N. Miyairi, H. Yonehara and H. Umezawa. 1957. Journal of Antibiotics (Tokyo) Series A **10**:39-45; Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. Giornale di Microbiologia **17**:1-60. **Type strain:** ATCC 19731

- Description:** Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:69-189.
- S. cinnamoneum** (Benedict, Dvonch, Shotwell, Pridham and Lindenfelser 1952) Baldacci, Farina and Locci 1966
Benedict, R.G., W. Dvonch, O.L. Shotwell, T.G. Pridham and L.A. Lindenfelser. 1952. *Antibiotics and Chemotherapy* **2**:591-594; Baldacci, E., G. Farina and R. Locci. 1966. *Giornale di Microbiologia* **14**:153-171. **Type strain:** NRRL B-1285
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. cinnamoneum** subsp. *albosporum* Thirumalachar 1968
Thirumalachar, M.J. 1968 in Rahalkar, P.W. and M.J. Thirumalachar. *Hindustan Antibiotics Bulletin* **11**:90-96. **Type strain:** ATCC 25186
Description: Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. *Giornale di Microbiologia* **17**:1-60.
- S. cinnamoneum** subsp. *cinnamoneum* Baldacci and Locci 1974
Baldacci, E. and R. Locci. 1974. *Bergey* **8**. **Type strain:** NRRL B-1285
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* **18**:279-392.
- S. cinnamoneum** subsp. *lanosum* Thirumalachar 1968
Thirumalachar, M.J. 1968 in Rahalkar, P.W. and M.J. Thirumalachar. *Hindustan Antibiotics Bulletin* **11**:90-96. **Type strain:** ATCC 25187
Description: Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. *Giornale di Microbiologia* **17**:1-60.
- S. cinnamoneum** subsp. *sparsum* Thirumalachar 1968
Thirumalachar, M.J. 1968 in Rahalkar, P.W. and M.J. Thirumalachar. *Hindustan Antibiotics Bulletin* **11**:90-96. **Type strain:** ATCC 25185
Description: Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. *Giornale di Microbiologia* **17**:1-60.
- S. distallicum** Locci, Baldacci and Petrolini Baldan 1969
Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. *Giornale di Microbiologia* **17**:1-60. **Type strain:** NRRL 2886
Description: Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. *Ibid.*
- S. ehimense** (Shibata, Honjo, Tokui and Nakazawa 1954) Locci, Baldacci and Petrolini Baldan 1969
Shibata, M., M. Honjo, Y. Tokui and N. Nakazawa. 1954. *Journal of Antibiotics (Tokyo) Series B* **7**:168; Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. *Giornale di Microbiologia* **17**:1-60. **Type strain:** ATCC 23903
Description: Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. *Ibid.*
- S. eurocidicum** (Okami, Utahara, Nakamura and Umezawa 1954) Locci, Baldacci and Petrolini Baldan 1969
Okami, Y., R. Utahara, S. Nakamura and H. Umezawa. 1954. *Journal of Antibiotics (Tokyo) Series A* **7**:98-103; Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. *Giornale di Microbiologia* **17**:1-60. **Type strain:** ATCC 27428
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. fervens** (De Boer, Dietz, Evans and Michaels 1960) Locci, Baldacci and Petrolini Baldan 1969
De Boer, C., A. Dietz, J.S. Evans and R.M. Michaels. 1960. *Antibiotics Annual* pp. 220-226; Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. *Giornale di Microbiologia* **17**:1-60. **Type strain:** NRRL 2755
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. fervens** subsp. *fervens* Baldacci and Locci 1974
Baldacci, E. and R. Locci. 1974. *Bergey* **8**. **Type strain:** NRRL 2755
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* **22**:265-394.
- S. fervens** subsp. *melrosporus* Mason, Lummis and Dietz 1965
Mason, D.J., W.L. Lummis and A. Dietz. 1965. *Antimicrobial Agents and Chemotherapy* **1964**:110-113. **Type strain:** NRRL 3117
Description: Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. *Giornale di*

- Microbiologia 17:1-60.
- S. flavopersicum** (Oliver, Goldstein, Bower, Holper and Otto 1961) Locci, Baldacci and Petrolini Baldan 1969
Oliver, T.J., A. Goldstein, R.R. Bower, J.C. Holper and R.H. Otto. 1961. Antimicrobial Agents and Chemotherapy 1960:495-502; Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. Giornale di Microbiologia 17:1-60. **Type strain:** NRRL 2820
Description: Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. Ibid.
- S. griseocarneum** (Benedict, Stodola, Shotwell, Borud and Lindenfelser 1950) Baldacci, Farina and Locci 1966
Benedict, R.G., F.H. Stodola, O.L. Shotwell, A.M. Borud and L.A. Lindenfelser. 1950. Science (Washington) 112:77-78; Baldacci, E., G. Farina and R. Locci. 1966. Giornale di Microbiologia 14:153-171. **Type strain:** NRRL B-1068
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology 18:69-189.
- S. griseoverticillatum** (Shinobu and Shimada 1962) Locci, Baldacci and Petrolini Baldan 1969
Shinobu, R. and Y. Shimada. 1962. Botanical Magazine (Tokyo) 75:170-175; Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. Giornale di Microbiologia 17:1-60. **Type strain:** ATCC 27436
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology 22:265-394.
- S. hachijoense** (Hosoya, Komatsu, Soeda and Sonoda 1952) Locci, Baldacci and Petrolini Baldan 1969
Hosoya, S., N. Komatsu, M. Soeda and Y. Sonoda. 1952. Japanese Journal of Experimental Medicine 22:505-509; Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. Giornale di Microbiologia 17:1-60. **Type strain:** ATCC 19769
Description: Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. Ibid.
- S. hirosimense** (Shinobu 1955) Farina and Locci 1966
Shinobu, R. 1955. Seibutsugakkaishi 6:43-46; Farina, G. and R. Locci. 1966. Giornale di Microbiologia 14:33-52. **Type strain:** ATCC 19772
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology 18:69-189.
- S. kashmirensis** (Gupta and Chopra 1963) Locci, Baldacci and Petrolini Baldan 1969
Gupta, K.C. and I.C. Chopra. 1963. Hindustan Antibiotics Bulletin 5:110-112; Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. Giornale di Microbiologia 17:1-60. **Type strain:** ATCC 27439
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology 22:265-394.
- S. kentuckense** (Barr and Carman 1956) Baldacci, Farina and Locci 1966
Barr, F.S. and P.E. Carman. 1956. Antibiotics and Chemotherapy 6:286-289; Baldacci, E., G. Farina and R. Locci. 1966. Giornale di Microbiologia 14:153-171. **Type strain:** ATCC 12691
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology 18:279-392.
- S. kishiwadense** (Shinobu and Kayamura 1964) Locci, Baldacci and Petrolini Baldan 1969
Shinobu, R. and Y. Kayamura. 1964. Botanical Magazine (Tokyo) 77:176-180; Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. Giornale di Microbiologia 17:1-60. **Type strain:** ATCC 25464
Description: Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. Ibid.
- S. ladakanum** Hanka, Evans, Mason and Dietz 1966
Hanka, L.J., J.S. Evans, D.J. Mason and A. Dietz. 1967. Antimicrobial Agents and Chemotherapy 1966:619-624. **Type strain:** NRRL 3191
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology 22:265-394.
- S. lavenduligriseum** Locci, Baldacci and Petrolini Baldan 1969
Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. Giornale di Microbiologia 17:1-60. **Type strain:** ATCC 13306
Description: Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. Ibid.
- S. lilacinum** (Nakazawa, Tanabe, Shibata, Miyake and Takewaka 1956) Locci, Baldacci and Petrolini Baldan 1969
Nakazawa, K., K. Tanabe, M. Shibata, A. Miyake and T. Takewaka. 1956.

- Journal of Antibiotics (Tokyo) Series B 9: 81; Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. *Giornale di Microbiologia* 17:1-60. **Type strain:** ATCC 23930
Description: Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. *Ibid.*
- S. luteovorticillatum** (Shinobu 1956) Locci, Baldacci and Petrolini Baldan 1969
 Shinobu, R. 1956. *Memoirs of the Osaka University of the Liberal Arts and Education B* 5:84-93; Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. *Giornale di Microbiologia* 17:1-60. **Type strain:** ATCC 23933
Description: Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. *Ibid.*
- S. mashuense** (Sawazaki, Suzuki, Nakamura, Kawasaki, Yamashita, Isono, Anzai, Serizawa and Sekiyama 1955) Locci, Baldacci and Petrolini Baldan 1969
 Sawazaki, T., S. Suzuki, G. Nakamura, M. Kawasaki, S. Yamashita, K. Isono, K. Anzai, Y. Serizawa and Y. Sekiyama. 1955. *Journal of Antibiotics (Tokyo) Series A* 8:44-47; Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. *Giornale di Microbiologia* 17:1-60. **Type strain:** ATCC 23934
Description: Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. *Ibid.*
- S. mobarraense** (Nagatsu and Suzuki 1963) Locci, Baldacci and Petrolini Baldan 1969
 Nagatsu, J. and S. Suzuki. 1963 in Tamura, S., N. Takahashi, S. Miyamoto, R. Mori, S. Suzuki and J. Nagatsu. 1963. *Agricultural and Biological Chemistry* 27: 576-582; Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. *Giornale di Microbiologia* 17:1-60. **Type strain:** ATCC 29032
Description: Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. *Ibid.*
- S. netropsis** (Finlay, Hochstein, Sobin and Murphy 1951) Baldacci, Farina and Locci 1966
 Finlay, A.C., F.A. Hochstein, B.A. Sobin and F.X. Murphy. 1951. *Journal of the American Chemical Society* 73:341-343; Baldacci, E., G. Farina and R. Locci. 1966. *Giornale di Microbiologia* 14:153-171. **Type strain:** NRRL 2268
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* 18:279-392.
- S. olivoreticulum** (Arai, Nakada and Suzuki 1957) Baldacci, Farina and Locci 1966
 Arai, M., T. Nakada and M. Suzuki. 1957. *Antibiotics and Chemotherapy* 7: 435-442; Baldacci, E., G. Farina and R. Locci. 1966. *Giornale di Microbiologia* 14:153-171. **Type strain:** ATCC 23943
Description: Shirling, E.B. and D. Gottlieb. 1968. *International Journal of Systematic Bacteriology* 18:279-392.
- S. olivovorticillatum** (Shinobu 1956) Baldacci, Farina and Locci 1966
 Shinobu, R. 1956. *Memoirs of the Osaka University of the Liberal Arts and Education B* 5:84-93; Baldacci, E., G. Farina and R. Locci. 1966. *Giornale di Microbiologia* 14:153-171. **Type strain:** NRRL B-1994
Description: Baldacci, E., G. Farina and R. Locci. 1966. *Ibid.*
- S. orinoci** Cassinelli, Grein, Orezzi, Pennella and Sanfilippo 1967
 Cassinelli, G., A. Grein, P. Orezzi, P. Pennella and A. Sanfilippo. 1967. *Archiv fur Mikrobiologie* 55:358-368. **Type strain:** ATCC 23202
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* 22:265-394.
- S. parvisporogenum** Locci, Baldacci and Petrolini Baldan 1969
 Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. *Giornale di Microbiologia* 17:1-60. **Type strain:** ATCC 12568
Description: Shirling, E.B. and D. Gottlieb. 1972. *International Journal of Systematic Bacteriology* 22:265-394.
- S. rectivorticillatum** (Krassilnikov and Yuan 1965) Locci, Baldacci and Petrolini Baldan 1969
 Krassilnikov, N.A. and T. Yuan. 1965 in Krassilnikov, N.A. (ed). *Biology of individual groups of Actinomycetes (in Russian)*. Institute of Microbiology, Academy of Science, Publishing Firm 'Nauka', Moscow, USSR. pp. 28-57; Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. *Giornale di Microbiologia* 17:1-60. **Type strain:** ATCC 19845
Description: Shirling, E.B. and D. Gottlieb. 1969. *International Journal of*

Systematic Bacteriology 19:391-512.

- S. roseovorticillatum** (Shinobu 1956) Farina and Locci 1966
Shinobu, R. 1956. Memoirs of the Osaka University of the Liberal Arts and Education B 5:84-93; Farina, G. and R. Locci. 1966. Giornale di Microbiologia 14:33-52. **Type strain:** ATCC 19807
Description: Shirling, E.B. and D. Gottlieb. 1968. International Journal of Systematic Bacteriology 18:69-189.
- S. salmonis** (Baldacci, Farina and Locci 1966) Locci, Baldacci and Petrolini Baldan 1969
Baldacci, E., G. Farina and R. Locci. 1966. Giornale di Microbiologia 14:153-171; Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. Giornale di Microbiologia 17:1-60. **Type strain:** NRRL B-1472
Description: Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. Ibid.
- S. septatum** Locci, Baldacci and Petrolini Baldan 1969
Locci, R., E. Baldacci and B. Petrolini Baldan. 1969. Giornale di Microbiologia 17:1-60. **Type strain:** NRRL 2974
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology 22:265-394.
- S. thioluteum** (Okami 1952) Baldacci, Farina and Locci 1966
Okami, Y. 1952. Doctoral Dissertation, Hokkaido University; Baldacci, E., G. Farina and R. Locci. 1966. Giornale di Microbiologia 14:153-171. **Type strain:** CBS 642.72
Description: Shirling, E.B. and D. Gottlieb. 1972. International Journal of Systematic Bacteriology 22:265-394.
- Succinimonas** Bryant, Small, Bouma and Chu 1958
Bryant, M.P., N. Small, C. Bouma and H. Chu. 1958. Journal of Bacteriology 76:15-23. **Type species:** *S. amylolytica* Bryant, Small, Bouma and Chu 1958
Description: Bergey 8.
- S. amylolytica** Bryant, Small, Bouma and Chu 1958
Bryant, M.P., N. Small, C. Bouma and H. Chu. 1958. Journal of Bacteriology 76:15-23. **Type strain:** ATCC 19206
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- Succinivibrio** Bryant and Small 1956
Bryant, M.P. and N. Small. 1956. Journal of Bacteriology 72:22-26. **Type species:** *S. dextrinosolvans* Bryant and Small 1956
Description: Bergey 8.
- S. dextrinosolvans** Bryant and Small 1956
Bryant, M.P. and N. Small. 1956. Journal of Bacteriology 72:22-26. **Type strain:** ATCC 19716
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- Sulfolobus** Brock, Brock, Belly and Weiss 1972
Brock, T.D., K.M. Brock, R.T. Belly and R.L. Weiss. 1972. Archiv fur Mikrobiologie 84:54-68. **Type species:** *S. acidocaldarius* Brock, Brock, Belly and Weiss 1972
Description: Brock, T.D., K.M. Brock, R.T. Belly and R.L. Weiss. 1972. Ibid.
- S. acidocaldarius** Brock, Brock, Belly and Weiss 1972
Brock, T.D., K.M. Brock, R.T. Belly and R.L. Weiss. 1972. Archiv fur Mikrobiologie 84:54-68. **Type strain:** DSM 639
Description: Brock, T.D., K.M. Brock, R.T. Belly and R.L. Weiss. 1972. Ibid.
- Symbiotes** Philip 1956
Philip, C.B. 1956. Canadian Journal of Microbiology 2:261-270. **Type species:** *S. lectularius* (Arkwright, Atkin and Bacot 1921) Philip 1956
Description: Bergey 8.
- S. lectularius** (Arkwright, Atkin and Bacot 1921) Philip 1956
Arkwright, J.A., E.E. Atkin and A. Bacot. 1921. Parasitology 13:27-36; Philip, C.B. 1956. Canadian Journal of Microbiology 2:261-270. **Type strain:** no culture isolated.
Description: Bergey 8.
- Thermoactinomyces** Tsiklinsky 1899

- Tsiklinsky, P. 1899. *Annales de l'Institut Pasteur (Paris)* **13**:500-505. **Type species:** *T. vulgaris* Tsiklinsky 1899
Description: Bergey 8.
- T. candidus** Kurup, Barboriak, Fink and Lechevalier 1975
Kurup, V.P., J.J. Barboriak, J.N. Fink and M.P. Lechevalier. 1975. *International Journal of Systematic Bacteriology* **25**: 150-154. **Type strain:** ATCC 27868
Description: Kurup, V.P., J.J. Barboriak, J.N. Fink and M.P. Lechevalier. 1975. *Ibid.*
- T. dichotomica** (Krassilnikov and Agre 1964) Cross and Goodfellow 1973
Krassilnikov, N.A. and N.S. Agre. 1964. *Mikrobiologiya* **33**:935-943; Cross, T. and M. Goodfellow. 1973 in Sykes, G. and F.A. Skinner (eds). *Actinomycetales, characteristics and practical importance*. Academic Press, London. pp. 11-112. **Type strain:** strain 114 (Department Soil Biology, Moscow University)
Description: Krassilnikov, N.A. and N.S. Agre. 1964. *Ibid.*
- T. peptonophilus** Nonomura and Ohara 1971
Nonomura, H. and Y. Ohara. 1971. *Journal of Fermentation Technology* **49**: 895-903. **Type strain:** ATCC 27302
Description: Nonomura, H. and Y. Ohara. 1971. *Ibid.*
- T. sacchari** Lacey 1971
Lacey, J. 1971. *Journal of General Microbiology* **66**:327-338. **Type strain:** ATCC 27375
Description: Lacey, J. 1971. *Ibid.*
- T. vulgaris** Tsiklinsky 1899
Tsiklinsky, P. 1899. *Annales de l'Institut Pasteur (Paris)* **13**:500-505. **Type strain:** KCC A-0162
Description: Bergey 8.
- Thermomicrobium** Jackson, Ramaley and Meinschein 1973
Jackson, T.J., R.F. Ramaley and W.G. Meinschein. 1973. *International Journal of Systematic Bacteriology* **23**:28-36. **Type species:** *T. roseum* Jackson, Ramaley and Meinschein 1973
Description: Jackson, T.J., R.F. Ramaley and W.G. Meinschein. 1973. *Ibid.*
- T. fosteri** Phillips and Perry 1976
Phillips Jr., W.E. and J.J. Perry. 1976. *International Journal of Systematic Bacteriology* **26**:220-225. **Type strain:** ATCC 29033
Description: Phillips Jr., W.E. and J.J. Perry. 1976. *Ibid.*
- T. roseum** Jackson, Ramaley and Meinschein 1973
Jackson, T.J., R.F. Ramaley and W.G. Meinschein. 1973. *International Journal of Systematic Bacteriology* **23**:28-36. **Type strain:** ATCC 27502
Description: Jackson, T.J., R.F. Ramaley and W.G. Meinschein. 1973. *Ibid.*
- Thermomonospora** Henssen 1957
Henssen, A. 1957. *Archiv fur Mikrobiologie* **26**:373-414. **Type species:** *T. curvata* Henssen 1957
Description: Bergey 8.
- T. alba** (Locci, Baldacci and Petrolini Baldan 1967) Cross and Goodfellow 1973
Locci, R., E. Baldacci and B. Petrolini Baldan. 1967. *Giornale di Microbiologia* **15**:79-91; Cross, T. and M. Goodfellow. 1973 in Sykes, G. and F.A. Skinner. *Actinomycetales, characteristics and practical importance*. Academic Press, London. pp. 11-112. **Type strain:** IPV 1900
Description: Cross, T. and M. Goodfellow. 1973. *Ibid.*
- T. curvata** Henssen 1957
Henssen, A. 1957. *Archiv fur Mikrobiologie* **26**:373-414. **Type strain:** ATCC 19995
Description: Bergey 8.
- T. mesophila** Nonomura and Ohara 1971
Nonomura, H. and Y. Ohara. 1971. *Journal of Fermentation Technology* **49**: 895-903. **Type strain:** ATCC 27303
Description: Nonomura, H. and Y. Ohara. 1971. *Ibid.*
- T. mesoviformis** Nonomura and Ohara 1974
Nonomura, H. and Y. Ohara. 1974. *Journal of Fermentation Technology* **52**: 10-13. **Type strain:** ATCC 27644
Description: Nonomura, H. and Y. Ohara. 1974. *Ibid.*
- Thermoplasma** Darland, Brock, Samsonoff and Conti 1970
Darland, G., T.D. Brock, W. Samsonoff and S.F. Conti. 1970. *Science (Washington)* **170**:1416-1418. **Type species:** *T.*

acidophilum Darland, Brock, Samsonoff and Conti 1970

Description: Bergey 8.

T. acidophilum Darland, Brock, Samsonoff and Conti 1970

Darland, G., T.D. Brock, W. Samsonoff and S.F. Conti. 1970. *Science* (Washington) **170**:1416-1418. **Type strain:** AMRC-C165

Description: Brock, T.D. 1978. *Thermophilic microorganisms and life at high temperatures*. Springer-Verlag, New York. pp. 92-116.

Thermus Brock and Freeze 1969

Brock, T.D. and H. Freeze. 1969. *Journal of Bacteriology* **98**:289-297. **Type species:** *T. aquaticus* Brock and Freeze 1969

Description: Brock, T.D. and H. Freeze. 1969. *Ibid.*

T. aquaticus Brock and Freeze 1969

Brock, T.D. and H. Freeze. 1969. *Journal of Bacteriology* **98**:289-297. **Type strain:** ATCC 25104

Description: Brock, T.D. and H. Freeze. 1969. *Ibid.*

Thiobacillus Beijerinck 1904

Beijerinck, M.W. 1904. *Archives Neerlandaises des Sciences Exactes et Naturelles* (Section 2) **9**:131-157. **Type species:** *T. thioparus* Beijerinck 1904

Description: Bergey 8.

T. concretivorus Parker 1945

Parker, C.D. 1945. *Australian Journal of Experimental Biology and Medical Science* **23**:81-90. **Type strain:** NCIB 8345

Description: Parker, C.D. 1945. *Ibid.*

T. ferrooxidans Temple and Colmer 1951

Temple, K.L. and A.R. Colmer. 1951. *Journal of Bacteriology* **62**:605-611. **Type strain:** ATCC 23270

Description: Temple, K.L. and A.R. Colmer. 1951. *Ibid.*

T. intermedius London 1963

London, J.P. 1963. *Archiv fur Mikrobiologie* **46**:329-337. **Type strain:** ATCC 15466

Description: London, J.P. 1963. *Ibid.*

T. neapolitanus Parker 1957

Parker, C.D. 1957 in Breed, R.S., E.G.D. Murray and N.R. Smith (eds). *Bergey's Manual of Determinative Bacteriology*,

7th ed. The Williams and Wilkins Co., Baltimore. pp. 83-88. **Type strain:** NCIB 8539

Description: Bergey 8.

T. novellus Starkey 1934

Starkey, R.L. 1934. *Journal of Bacteriology* **28**:365-386. **Type strain:** ATCC 8093

Description: Bergey 8.

T. perometabolis London and Rittenberg 1967

London, J.P. and S.C. Rittenberg. 1967. *Archiv fur Mikrobiologie* **59**:218-225. **Type strain:** ATCC 23370

Description: London, J.P. and S.C. Rittenberg. 1967. *Ibid.*

T. thiooxidans Waksman and Joffe 1922

Waksman, S.A. and J.S. Joffe. 1922. *Journal of Bacteriology* **7**:239-256. **Type strain:** ATCC 19377

Description: Bergey 8.

T. thioparus Beijerinck 1904

Beijerinck, M.W. 1904. *Archives Neerlandaises des Sciences Exactes et Naturelles* (Section 2) **9**:131-157. **Type strain:** ATCC 8158

Description: Bergey 8.

Thiocapsa Winogradsky 1888

Winogradsky, S. 1888. *Beitrage zur Morphologie und Physiologie der Bacterien*. Heft I. Zur Morphologie und Physiologie der Schwefelbacterien. Arthur Felix, Leipzig. pp. 1-120. **Type species:** *T. roseopersicina* Winogradsky 1888

Description: Bergey 8.

T. pfennigii Eimhjellen 1970

Eimhjellen, K.E. 1970. *Archiv fur Mikrobiologie* **73**:193-194. **Type strain:** DSM 1375

Description: Bergey 8.

T. roseopersicina Winogradsky 1888

Winogradsky, S. 1888. *Beitrage zur Morphologie und Physiologie der Bacterien*. Heft I. Zur Morphologie und Physiologie der Schwefelbacterien. Arthur Felix, Leipzig. pp. 1-120. **Type strain:** DSM 217

Description: Bergey 8.

Thiocystis Winogradsky 1888

Winogradsky, S. 1888. *Beitrage zur Morphologie und Physiologie der Bacterien*. Heft I. Zur Morphologie und

Physiologie der Schwefelbakterien. Arthur Felix, Leipzig. pp. 1-120. **Type species:** *T. violacea* Winogradsky 1888

Description: Bergey 8.

T. gelatinosa (Winogradsky 1888) Pfennig and Truper 1971

Winogradsky, S. 1888. Beitrage zur Morphologie und Physiologie der Bacterien. Heft I. Zur Morphologie und Physiologie der Schwefelbakterien. Arthur Felix, Leipzig. pp. 1-120; Pfennig, N. and H.G. Truper. 1971. International Journal of Systematic Bacteriology **21**:11-14. **Type strain:** DSM 215

Description: Bergey 8.

T. violacea Winogradsky 1888

Winogradsky, S. 1888. Beitrage zur Morphologie und Physiologie der Bacterien. Heft I. Zur Morphologie und Physiologie der Schwefelbakterien. Arthur Felix, Leipzig. pp. 1-120. **Type strain:** DSM 207

Description: Bergey 8.

Thiodictyon Winogradsky 1888

Winogradsky, S. 1888. Beitrage zur Morphologie und Physiologie der Bacterien. Heft I. Zur Morphologie und Physiologie der Schwefelbakterien. Arthur Felix, Leipzig. pp. 1-120. **Type species:** *T. elegans* Winogradsky 1888

Description: Bergey 8.

T. bacillosum (Winogradsky 1888) Pfennig and Truper 1971

Winogradsky, S. 1888. Beitrage zur Morphologie und Physiologie der Bacterien. Heft I. Zur Morphologie und Physiologie der Schwefelbakterien. Arthur Felix, Leipzig. pp. 1-120; Pfennig, N. and H.G. Truper. 1971. International Journal of Systematic Bacteriology **21**:11-14. **Type strain:** DSM 234

Description: Bergey 8.

T. elegans Winogradsky 1888

Winogradsky, S. 1888. Beitrage zur Morphologie und Physiologie der Bacterien. Heft I. Zur Morphologie und Physiologie der Schwefelbakterien. Arthur Felix, Leipzig. pp. 1-120. **Type strain:** DSM 232

Description: Bergey 8.

Thiomicrospira Kuenen and Veldkamp 1972

Kuenen, J.G. and H. Veldkamp. 1972. Antonie van Leeuwenhoek Journal of Microbiology and Serology **38**:241-256.

Type species: *T. pelophila* Kuenen and Veldkamp 1972

Description: Kuenen, J.G. and H. Veldkamp. 1972. *Ibid.*

T. denitrificans Timmer-ten Hoor 1975

Timmer-ten Hoor, A. 1975. Netherlands Journal of Sea Research **9**:343-351. **Type strain:** DSM 1251

Description: Timmer-ten Hoor, A. 1975. *Ibid.*

T. pelophila Kuenen and Veldkamp 1972

Kuenen, J.G. and H. Veldkamp. 1972. Antonie van Leeuwenhoek Journal of Microbiology and Serology **38**:241-256.

Type strain: ATCC 27801

Description: Kuenen, J.G. and H. Veldkamp. 1972. *Ibid.*

Thiopedia Winogradsky 1888

Winogradsky, S. 1888. Beitrage zur Morphologie und Physiologie der Bacterien. Heft I. Zur Morphologie und Physiologie der Schwefelbakterien. Arthur Felix, Leipzig. pp. 1-120. **Type species:** *T. rosea* Winogradsky 1888

Description: Bergey 8.

T. rosea Winogradsky 1888

Winogradsky, S. 1888. Beitrage zur Morphologie und Physiologie der Bacterien. Heft I. Zur Morphologie und Physiologie der Schwefelbakterien. Arthur Felix, Leipzig. pp. 1-120. **Type strain:** no pure culture.

Description: Bergey 8.

Thioploca Lauterborn 1907

Lauterborn, R. 1907. Berichte der Deutschen Botanischen Gesellschaft **25**:238-242. **Type species:** *T. schmidlei* Lauterborn 1907

Description: Bergey 8.

T. schmidlei Lauterborn 1907

Lauterborn, R. 1907. Berichte der Deutschen Botanischen Gesellschaft **25**:238-242. **Type strain:** no culture isolated.

Description: Lauterborn, R. 1907. *Ibid.*

Thiospira Visloukh 1914

Visloukh, S.M. 1914. Zhurnal Mikrobiologii **1**:42-51. **Type species:** *T. winogradskyi*

(Omelianski 1905) Visloukh 1914

Description: Bergey 8.

T. winogradskyi (Omelianski 1905) Visloukh 1914

Omelianski, W. 1905. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. 14:769-772; Visloukh, S.M. 1914. Zhurnal Mikrobiologii 1:42-51. **Type strain:** no culture available.

Description: Bergey 8.

Thiospirillum Winogradsky 1888

Winogradsky, S. 1888. Beiträge zur Morphologie und Physiologie der Bakterien. Heft I. Zur Morphologie und Physiologie der Schwefelbakterien. Arthur Felix, Leipzig. pp. 1-120. **Type species:** *T. jenense* (Ehrenberg 1838) Migula 1900

Description: Bergey 8.

T. jenense (Ehrenberg 1838) Migula 1900

Ehrenberg, C.G. 1838. Die Infusionsthierchen als vollkommene Organismen. L. Voss, Leipzig; Migula, W. 1900. System der Bakterien, Vol. 2. Gustav Fischer, Jena. **Type strain:** DSM 216

Description: Bergey 8.

Thiothrix Winogradsky 1888

Winogradsky, S. 1888. Beiträge zur Morphologie und Physiologie der Bakterien. Heft 1. Zur Morphologie und Physiologie der Schwefelbakterien. Arthur Felix, Leipzig. pp. 1-120. **Type species:** *T. nivea* (Rabenhorst 1865) Winogradsky 1888

Description: Bergey 8.

T. nivea (Rabenhorst 1865) Winogradsky 1888

Rabenhorst, L. 1865. Flora Europaea Algarum aquae dulcis et submarinae. E. Kummer, Leipzig, Section II. pp. 1-319; Winogradsky, S. 1888. Beiträge zur Morphologie und Physiologie der Bakterien. Heft 1. Zur Morphologie und Physiologie der Schwefelbakterien. Arthur Felix, Leipzig. pp. 1-120. **Type strain:** no culture isolated.

Description: Bland, J.A. and J.T. Staley. 1978. Archives of Microbiology 117:79-87.

Thiovulum Hinze 1913

Hinze, G. 1913. Berichte der Deutschen

Botanischen Gesellschaft 31:189-202. **Type species:** *T. majus* Hinze 1913

Description: Bergey 8.

T. majus Hinze 1913

Hinze, G. 1913. Berichte der Deutschen Botanischen Gesellschaft 31:189-202. **Type strain:** no culture isolated.

Description: de Boer, W.E., J.W.M. La Riviere and A.L. Houwink. 1961. Antonie van Leeuwenhoek Journal of Microbiology and Serology 27:447-456.

Toxothrix Molisch 1925

Molisch, H. 1925. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. 65:130-139. **Type species:** *T. trichogenes* (Cholodny 1924) Beger 1953

Description: Bergey 8.

T. trichogenes (Cholodny 1924) Beger 1953

Cholodny, N. 1924. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. 61:292-298; Beger, H. 1953 in Beger, H. and Bringmann. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. 107:318-334. **Type strain:** no culture isolated.

Description: Krul, J.M., P. Hirsch and J.T. Staley. 1970. Antonie van Leeuwenhoek Journal of Microbiology and Serology 36:409-420.

Treponema Schaudinn 1905

Schaudinn, F. 1905. Deutsche Medizinische Wochenschrift 31:1728.

Type species: *T. pallidum* (Schaudinn and Hoffmann 1905) Schaudinn 1905

Description: Bergey 8.

T. hydysenteriae Harris, Glock, Christensen and Kinyon 1972

Harris, D.L., R.D. Glock, C.R. Christensen and J.M. Kinyon. 1972. Veterinary Medicine - Small Animal Clinician 67:61-64. **Type strain:** ATCC 27164

Description: Kinyon, J.M. and D.L. Harris. 1979. International Journal of Systematic Bacteriology 29:102-109.

T. innocens Kinyon and Harris 1979

Kinyon, J.M. and D.L. Harris. 1979. International Journal of Systematic Bacteriology 29:102-109. **Type strain:** ATCC

29796

Description: Kinyon, J.M. and D.L. Harris. 1979. *Ibid.*

T. minutum Dobell 1912

Dobell, C.C. 1912. *Archiv fur Protistenkunde* **26**:117-240. **Type strain:** CIPP 5162

Description: Bergey 8.

T. pallidum (Schaudinn and Hoffmann 1905) Schaudinn 1905

Schaudinn, F. and E. Hoffmann. 1905. *Arbeiten aus dem Kaiserlichen Gesundheitsamte (Berlin)* **22**:528-534; Schaudinn, F. 1905. *Deutsche Medizinische Wochenschrift* **31**:1728. **Type strain:** no culture available.

Description: Bergey 8.

T. paraluis-cuniculi (Jacobsthal 1920) Smibert 1974

Jacobsthal, E. 1920. *Dermatologische Wochenschrift* **71**:569-571; Smibert, R.M. 1974. *Bergey 8*. **Type strain:** no culture available.

Description: Bergey 8.

T. pertenuae (Castellani 1905) Castellani and Chalmers 1910

Castellani, A. 1905. *Journal of the Ceylon Branch of the British Medical Association* **2**:54; Castellani, A. and A.J. Chalmers. 1910. *Manual of Tropical Medicine*, 1st ed. Bailliere, Tindall and Cox, London. **Type strain:** no culture available.

Description: Bergey 8.

Ureaplasma Shepard, Lunceford, Ford, Purcell, Taylor-Robinson, Razin and Black 1974

Shepard, M.C., C.D. Lunceford, D.K. Ford, R.H. Purcell, D. Taylor-Robinson, S. Razin and F.T. Black. 1974. *International Journal of Systematic Bacteriology* **24**:160-171. **Type species:** *U. urealyticum* Shepard, Lunceford, Ford, Purcell, Taylor-Robinson, Razin and Black 1974

Description: Shepard, M.C., C.D. Lunceford, D.K. Ford, R.H. Purcell, D. Taylor-Robinson, S. Razin and F.T. Black. 1974. *Ibid.*

U. urealyticum Shepard, Lunceford, Ford, Purcell, Taylor-Robinson, Razin and Black 1974

Shepard, M.C., C.D. Lunceford, D.K. Ford, R.H. Purcell, D. Taylor-Robinson,

S. Razin and F.T. Black. 1974. *International Journal of Systematic Bacteriology* **24**:160-171. **Type strain:** ATCC 27618

Description: Shepard, M.C., C.D. Lunceford, D.K. Ford, R.H. Purcell, D. Taylor-Robinson, S. Razin and F.T. Black. 1974. *Ibid.*

Veillonella Prevot 1933

Prevot, A.R. 1933. *Annales Societe Nature* **15**:23-260. **Type species:** *V. parvula* (Veillon and Zuber 1898) Prevot 1933

Description: Bergey 8.

V. alcalescens Prevot 1933

Prevot, A.R. 1933. *Annales Societe Nature* **15**:23-260. **Type strain:** ATCC 17745

Description: Bergey 8.

V. alcalescens subsp. *alcalescens* Prevot 1933

Prevot, A.R. 1933. *Annales Societe Nature* **15**:23-260. **Type strain:** ATCC 17745

Description: Bergey 8.

V. alcalescens subsp. *criceti* Rogosa 1965

Rogosa, M. 1965. *Journal of Bacteriology* **90**:704-709. **Type strain:** ATCC 17747

Description: Bergey 8.

V. alcalescens subsp. *dispar* Rogosa 1965

Rogosa, M. 1965. *Journal of Bacteriology* **90**:704-709; **Type strain:** ATCC 17748

Description: Bergey 8.

V. alcalescens subsp. *ratti* Rogosa 1965

Rogosa, M. 1965. *Journal of Bacteriology* **90**:704-709. **Type strain:** ATCC 17746

Description: Bergey 8.

V. parvula (Veillon and Zuber 1898) Prevot 1933

Veillon, A. and A. Zuber. 1898. *Archives de Medicine Experimentale et d'Anatomie Pathologique* **10**:517-545; Prevot, A.R. 1933. *Annales Societe Naturelles* **15**:23-260. **Type strain:** ATCC 10790

Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. *Anaerobe Laboratory Manual*, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.

V. parvula subsp. *atypica* Rogosa 1965

Rogosa, M. 1965. *Journal of Bacteriology* **90**:704-709; **Type strain:** ATCC 17744

Description: Bergey 8.

- V. parvula** subsp. *parvula* Rogosa 1965
Rogosa, M. 1965. Journal of Bacteriology 90:704-709. **Type strain:** ATCC 10790
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- V. parvula** subsp. *rodentium* Rogosa 1965
Rogosa, M. 1965. Journal of Bacteriology 90:704-709; **Type strain:** ATCC 17743
Description: Bergey 8.
- Vibrio** Pacini 1854
Pacini, F. 1854. Gazette Medicale de Italiana Toscano Firenze 6:405-412. **Type species:** *V. cholerae* Pacini 1854
Description: Bergey 8.
- V. albensis** Lehmann and Neumann 1896
Lehmann, K.B. and R. Neumann. 1896. Atlas und Grundriss der Bakteriologie und Lehrbuch der speziellen bakteriologischen Diagnostik. 1st ed. J.F. Lehmann, Munchen. **Type strain:** ATCC 14547
Description: Hendrie, M.S., W. Hodgkiss and J.M. Shewan. 1970. Journal of General Microbiology 64:151-169.
- V. alginolyticus** (Miyamoto, Nakamura and Takizawa 1961) Sakazaki 1968 (See also *Beneckea alginolytica*)
Miyamoto, Y., K. Nakamura and K. Takizawa. 1961. Japanese Journal of Microbiology 5:477-486; Sakazaki, R. 1968. Japanese Journal of Medical Science and Biology 21:359-362 **Type strain:** ATCC 17749
Description: Sakazaki, R. 1968. Ibid.
- V. anguillarum** Bergeman 1909
Bergeman, A.M. 1909. Berichte der Bayerischen Biologischen Versuchs-Station 2:10-54. **Type strain:** ATCC 19264
Description: Hastein, T. and J.E. Smith. 1977. Journal of Fish Biology 11:69-75.
- V. cholerae** Pacini 1854
Pacini, F. 1854. Gazette Medicale de Italiana Toscano Firenze 6:405-412. **Type strain:** ATCC 14035
Description: Hugh, R. 1965. International Bulletin of Bacteriological Nomenclature and Taxonomy 15:13-24.
- V. costicola** Smith 1938
Smith, F.B. 1938. Proceedings of the Royal Society Queensland 49:29-52. **Type strain:** NCMB 701
Description: Bergey 8.
- V. fischeri** (Beijerinck 1889) Lehmann and Neumann 1896 (See also *Photobacterium fischeri*)
Beijerinck, M.W. 1889. Archives neerlandaises des Sciences Exactes et Naturelles 23:401-427; Lehmann, K.B. and R. Neumann. 1896. Atlas und Grundriss der Bakteriologie und Lehrbuch der speziellen bakteriologischen Diagnostik. 1st ed. J.F. Lehmann, Munchen. **Type strain:** ATCC 7744
Description: Hendrie, M.S., W. Hodgkiss and J.M. Shewan. 1971. International Journal of Systematic Bacteriology 21:217-221.
- V. metschnikovii** Gamaleia 1888
Gamaleia, M.N. 1888. Annales de l'Institut Pasteur (Paris) 2:482-488. **Type strain:** NCTC 8443
Description: Lee, J.V., T.J. Donovan and A.L. Furniss. 1978. International Journal of Systematic Bacteriology 28:99-111.
- V. parahaemolyticus** Sakazaki, Iwanami and Fukumi 1963 (See also *Beneckea parahaemolytica*)
Sakazaki, R., S. Iwanami and H. Fukumi. 1963. Japanese Journal of Medical Science and Biology 16:161-188. **Type strain:** ATCC 17802
Description: Fujino, T., R. Sakazaki and K. Tamura. 1974. International Journal of Systematic Bacteriology 24:447-449.
- V. succinogenes** Wolin, Wolin and Jacobs 1961
Wolin, M.J., E.A. Wolin and N.J. Jacobs. 1961. Journal of Bacteriology 81:911-917. **Type strain:** ATCC 29543
Description: Holdeman, L.V., E.P. Cato and W.E.C. Moore (eds). 1977. Anaerobe Laboratory Manual, 4th ed. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. pp. 1-156.
- Vitreoscilla** Pringsheim 1949
Pringsheim, E.G. 1949. Bacteriological Reviews 13:47-98. **Type species:** *V. beggiatoides* Pringsheim 1949
Description: Bergey 8.
- V. beggiatoides** Pringsheim 1949
Pringsheim, E.G. 1949. Bacteriological Reviews 13:47-98. **Type strain:** no culture available.

- Description:** Bergey 8.
- V. stercoraria** Pringsheim 1951
Pringsheim, E.G. 1951. *Journal of General Microbiology* **5**:124-149. **Type strain:** ATCC 15218
Description: Bergey 8.
- Wolbachia** Hertig 1936
Hertig, M. 1936. *Parasitology* **28**:453-486.
Type species: *W. pipientis* Hertig 1936
Description: Bergey 8.
- W. melophagi** (Noller 1917) Philip 1956
Noller, W. 1917. *Archiv für Schiffs und Tropenhygiene* **21**:53-94; Philip, C.B. 1956. *Canadian Journal of Microbiology* **2**:261-270. **Type strain:** no culture isolated.
Description: Bergey 8.
- W. persica** Suitor and Weiss 1961
Suitor Jr., E.C. and E. Weiss. 1961. *Journal of Infectious Diseases* **108**:95-106.
Type strain: ATCC VR 331
Description: Bergey 8.
- W. pipientis** Hertig 1936
Hertig, M. 1936. *Parasitology* **28**:453-486.
Type strain: no culture isolated.
Description: Bergey 8.
- Xanthobacter** Wiegel, Wilke, Baumgarten, Opitz and Schlegel 1978
Wiegel, J., D. Wilke, J. Baumgarten, R. Opitz and H.G. Schlegel. 1978. *International Journal of Systematic Bacteriology* **28**:573-581. **Type species:** *X. autotrophicus* (Baumgarten, Reh and Schlegel 1974) Wiegel, Wilke, Baumgarten, Opitz and Schlegel 1978
Description: Wiegel, J., D. Wilke, J. Baumgarten, R. Opitz and H.G. Schlegel. 1978. *Ibid.*
- X. autotrophicus** (Baumgarten, Reh and Schlegel 1974) Wiegel, Wilke, Baumgarten, Opitz and Schlegel 1978
Baumgarten, J., M. Reh and H.G. Schlegel. 1974. *Archives of Microbiology* **100**:207-217. Wiegel, J., D. Wilke, J. Baumgarten, R. Opitz and H.G. Schlegel. 1978. *International Journal of Systematic Bacteriology* **28**:573-581. **Type strain:** DSM 432
Description: Wiegel, J., D. Wilkie, J. Baumgarten, R. Opitz and H.G. Schlegel. 1978. *Ibid.*
- X. flavus** Malik and Claus 1979
Malik, K.A. and D. Claus. 1979. *International Journal of Systematic Bacteriology* **29**:283-287. **Type strain:** DSM 338
Description: Malik, K.A. and D. Claus. 1979. *Ibid.*
- Xanthomonas** Dowson 1939
Dowson, W.J. 1939. *Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II.* **100**:177-193. **Type species:** *X. campestris* (Pammel 1895) Dowson 1939
Description: Bergey 8.
- X. albilineans** (Ashby 1929) Dowson 1943
Ashby, S.F. 1929. *Tropical Agriculture, Trinidad* **6**:135-138; Dowson, W.J. 1943. *Transactions of the British Mycological Society* **26**:4-14. **Type strain:** NCPPB 2969
Description: Bergey 8.
- X. ampelina** Panagopoulos 1969
Panagopoulos, C.G. 1969. *Annales de l'Institut Phytopathologique Benaki NS* **9**:59-81. **Type strain:** NCPPB 2217
Description: Panagopoulos, C.G. 1969. *Ibid.*
- X. axonopodis** Starr and Garces 1950
Starr, M.P. and C. Garces. 1950. *Revista Facultad Nacional de Agronomia (Medellin) Colombia* **11**:73-83. **Type strain:** ATCC 19312
Description: Starr, M.P. and C. Garces. 1950. *Ibid.*
- X. campestris** (Pammel 1895) Dowson 1939
Pammel, L.H. 1895. *Bulletin of the Iowa State College Agricultural Experiment Station* **27**:130-134; Dowson, W.J. 1939. *Zentralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten. Abteilung II.* **100**:177-193. **Type strain:** NCPPB 528
Description: Bergey 8.
- X. fragariae** Kennedy and King 1962
Kennedy, B.W. and T.H. King. 1962. *Phytopathology* **52**:873-875. **Type strain:** NCPPB 1469
Description: Kennedy, B.W. and T.H. King. 1962. *Ibid.*
- Xenorhabdus** Thomas and Poinar 1979
Thomas, G.M. and G.O. Poinar Jr. 1979.

- International Journal of Systematic Bacteriology **29**:352-360. **Type species:** *X. nematophilus* (Poinar and Thomas 1965) Thomas and Poinar 1979
Description: Thomas, G.M. and G.O. Poinar Jr. 1979. *Ibid.*
- X. luminescens** Thomas and Poinar 1979
 Thomas, G.M. and G.O. Poinar Jr. 1979. International Journal of Systematic Bacteriology **29**:352-360. **Type strain:** ATCC 29999
Description: Thomas, G.M. and G.O. Poinar Jr. 1979. *Ibid.*
- X. nematophilus** (Poinar and Thomas 1965) Thomas and Poinar 1979
 Poinar Jr., G.O. and G.M. Thomas. 1965. International Bulletin of Bacteriological Nomenclature and Taxonomy **15**:249-252; Thomas, G.M. and G.O. Poinar Jr. 1979. International Journal of Systematic Bacteriology **29**:352-360. **Type strain:** ATCC 19061
Description: Thomas, G.M. and G.O. Poinar Jr. 1979. *Ibid.*
- Yersinia** van Loghem 1944
 van Loghem, J.J. 1944. Antonie van Leeuwenhoek Journal of Microbiology and Serology **10**:15-16. **Type species:** *Y. pestis* (Lehmann and Neumann 1896) van Loghem 1944
Description: Bergey 8.
- Y. enterocolitica** (Schleifstein and Coleman 1939) Frederiksen 1964
 Schleifstein, J.I. and M.B. Coleman. 1939. New York State Journal of Medicine **39**:1749-1753; Frederiksen, W. 1964. Proceedings of the XIV Scandinavian Congress of Pathology and Microbiology, Oslo 1964. Norwegian Universities Press, Oslo. pp. 103-104. **Type strain:** ATCC 9610
Description: Bottone, E.J. 1977. CRC Critical Review in Microbiology **5**:211.
- Y. pestis** (Lehmann and Neumann 1896) van Loghem 1944
 Lehmann, K.B. and R. Neumann. 1896. Atlas und Grundriss der Bakteriologie und Lehrbuch der speziellen bakteriologischen Diagnostik. 1st ed. J.F. Lehmann, Munchen. p. 194; van Loghem, J.J. 1944. Antonie van Leeuwenhoek Journal of Microbiology and Serology **10**: 15-16. **Type strain:** ATCC 19428
Description: Bergey 8.
- Y. philomiragia** Jensen, Owen and Jellison 1969
 Jensen, W.I., C.R. Owen and W.L. Jellison. 1969. Journal of Bacteriology **100**:1237-1241. **Type strain:** ATCC 25015
Description: Jensen, W.I., C.R. Owen and W.L. Jellison. 1969. *Ibid.*
- Y. pseudotuberculosis** (Pfeiffer 1889) Smith and Thal 1965
 Pfeiffer, A. 1889. Uber die bacillare Pseudotuberkulose bei Nagethieren. Verlag von George Thieme, Leipzig. pp. 1-42; Smith, J.E. and E. Thal. 1965. Acta Pathologica and Microbiologica Scandinavica **64**:213-223. **Type strain:** ATCC 29833
Description: Bergey 8.
- Y. ruckeri** Ewing, Ross, Brenner and Fanning 1978
 Ewing, W.H., A.J. Ross, D.J. Brenner and G.R. Fanning. 1978. International Journal of Systematic Bacteriology **28**:37-44. **Type strain:** ATCC 29473
Description: Ewing, W.H., A.J. Ross, D.J. Brenner and G.R. Fanning. 1978. *Ibid.*
- Zoogloea** Itzigsohn 1868
 Itzigsohn, H. 1868. Sitzungs-Berichte der Gesellschaft naturforschender Freunde zu Berlin, 19 November 1867, pp. 30-31. **Type species:** *Z. ramigera* Itzigsohn 1868
Description: Bergey 8.
- Z. ramigera** Itzigsohn 1868
 Itzigsohn, H. 1868. Sitzungs-Berichte der Gesellschaft naturforschender Freunde zu Berlin, 19 November 1867, pp. 30-31. **Type strain:** ATCC 19544
Description: Unz, R.F. 1971. International Journal of Systematic Bacteriology **21**:91-99.
- Zymomonas** Kluyver and van Niel 1936
 Kluyver, A.J. and C.B. van Niel. 1936. Zentralblatt fur Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. **94**:369-403. **Type species:** *Z. mobilis* (Lindner 1928) Kluyver and van Niel 1936
Description: Bergey 8.
- Z. mobilis** (Lindner 1928) Kluyver and van Niel 1936
 Lindner, P. 1928. Bericht des Westpreus-

sischen Botanisch-Zoologischen Vereins, 50. pp. 253-255; Kluver, A.J. and C.B. van Niel. 1936. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung II. **94**: 369-403. **Type strain**: ATCC 10988

Description: De Ley, J. and J. Swings. 1976. International Journal of Systematic Bacteriology **26**:146-157.

Z. mobilis subsp. *mobilis* (Lindner 1928) De Ley and Swings 1976

Lindner, P. 1928. Bericht des Westpreussischen Botanisch- Zoologischen Vereins, 50. pp. 253-255; De Ley, J. and

J. Swings. 1976. International Journal of Systematic Bacteriology **26**:146-157. **Type strain**: ATCC 10988

Description: De Ley, J. and J. Swings. 1976. Ibid.

Z. mobilis subsp. *pomaceae* (Millis 1956) De Ley and Swings 1976

Millis, N.F. 1956. Journal of General Microbiology **15**:521-528; De Ley, J. and J. Swings. 1976. International Journal of Systematic Bacteriology **26**:146-157. **Type strain**: ATCC 29192

Description: De Ley, J. and J. Swings. 1976. Ibid.

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