

STUDIES IN THE CLASSIFICATION AND NOMEN-  
CLATURE OF THE BACTERIA

VIII. THE SUBGROUPS AND GENERA OF THE ACTINOMYCETALES

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Order III. **Actinomycetales.** *Nom. Nov.*

Synonyms:

*Actinomycetes* Balbiani, 1886, p. 542.

*Trichobacteriacei* Fischer, 1895, p. 138 in part.

*Mold-like organisms, not typically water forms, saprophytic or parasitic. Sheath not impregnated with iron, true hyphae with branching often evident, conidia may be developed, but never endospores. Without granules of free sulphur and without bacteriopurpurin. Never producing a pseudoplasmodium. Always non-motile.*

The order *Actinomycetales* contains a single family, *Actinomycetaceae*.

Family I. **Actinomycetaceae.** *Fam. nov.*

Characters same as those of the order.

The following names have been used for genera which may be included in this family.

*Actinobacillus* Brumpt, 1900, p. 849

*Actinobacterium* Haass, 1906, p. 180

*Actinocladothrix* Affanassieff, 1888, p. 79

*Actinomyces* Harz, 1877, p. 125

*Cohnistreptothrix* Pinoy, 1911

*Viscomyces* Rivolta and Micellone, 1879, p. 145

*Leptotrichia* Trevisan, 1879, p. 138

- Micromyces* Gruber, 1891, p. 648  
 not *Micromyces* Dangeard, 1888, p. 55  
*Nocardia* Trevisan, 1889, p. 9  
*Streptothrix* Cohn, 1875, p. 186  
 not Corda, 1839  
*Thermoactinomyces* Tsilinsky, 1899, p. 500  
*Rasmussenia* De Toni and Trevisan, 1889, p. 930

The genus *Actinobacterium* has had no definite specific names ascribed to it.

The following are invalid because previously used for other distinct groups of organisms: *Micromyces* and *Streptothrix*.

The name *Actinocladothrix* was used by Affanassieff in the combination *Bacterium actinocladothrix*, but several authors have listed the name as though it had been used as a genus.

The following generic names are therefore to be considered, or at least are not invalid for any of the preceding reason: *Actinobacillus*, *Actinomyces*, *Cohnistreptothrix*, *Discomyces*, *Leptotrichia*, *Nocardia*, *Thermoactinomyces*, *Rasmussenia*.

The genera may be differentiated by the following key.

*Key to the genera of Actinomycetaceae*

- A. No evident aerial threads or conidia formed. Usually parasitic. Often anaërobic or microaërophilic.
1. Threads usually not branched.
    - a. Threads disjointing very readily; long mycelial threads uncommon.  
Genus 1. *Actinobacillus*
    - b. Threads longer, not disjointing into short rods.  
Genus 2. *Leptotrichia*
  2. Threads more or less branched, frequently clubbed in tissues.  
Genus 3. *Actinomyces*
- B. Aërial threads and conidia evident on culture media.... Genus 4. *Nocardia*

Genus 1. *Actinobacillus* Brumpt, 1900, p. 849

*Filament formation; resembling streptobacilli. In lesions no mycelium formed, but at peripheries finger shaped branched cells are visible. Gram negative. Not acid fast.*

Possibly the genus belongs with the *Bacteriaceae*. It is evidently a transition form.

The type species is *Actinobacillus lignieresii* Brumpt, the cause of actinobacillosis in cattle.

Genus 2. *Leptotrichia* Trevisan, 1879, p. 138

Synonyms:

*Leptothrix* Robin, 1847, p. 345

not *Leptothrix* Kuetzing, 1843, p. 198

*Rasmussenia* Trevisan, 1889, p. 930

*Rod shaped or filamentous cells, non motile, unbranched, without aërial hyphae or conidia; parasites or facultative parasites.*

The type species is *Leptotrichia buccalis* (Robin) Trevisan. This genus is commonly termed *Leptothrix*, but certainly forms as unlike as *Leptothrix ochracea* and *Leptotrichia buccalis* do not belong in the same genus. *Leptotrichia* was created by Trevisan in 1879 with *L. buccalis* as the only species, but in 1889 he enlarged the genus, removing the mouth forms to the genus, *Rasmussenia*.

Genus 3. *Actinomyces* Harz, 1877, p. 125

Synonyms:

*Streptothrix* Cohn, 1875, p. 186

not *Streptothrix* Corda

*Discomyces* Rivolta and Micellone, 1879, p. 145

*Micromyces* Gruber, 1891, p. 648

not *Micromyces* Dangeard, 1888, p. 55

*Nocardia* Trevisan (in part)

*Oospora* Sauvageau and Radais, 1892, p. 242

not *Oöspora* Wallroth, 1833, p. 182

*Cohnistreptothrix* Pinoy, 1911

*Branched filaments, resembling mycelium, breaking up into segments which may function as conidia. Usually parasitic. Clubbed ends conspicuous in lesions. Not producing aërial hyphae or conidia.*

The type species is *Actinomyces bovis* Harz, the cause of bovine actinomycosis.

Genus 4. *Nocardia* Trevisan, 1889, p. 9

## Synonyms:

*Actinomyces* of many authors*Streptothrix* of many authors*Thermoactinomyces* Tsilinsky, 1899, p. 500

*Branched filaments, resembling a mycelium, readily breaking up into segments. Usually saprophytic. Aërial threads and conidia commonly produced.*

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