

THE HISTORY OF TAXONOMY AND UPTODATE CLASSIFICATION OF CHLAMYDIA

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Summary. Described classification does not take into account previous analysis of the ribosomal operon or prior identified obligatory intracellular organisms that have a chlamydia-like developmental cycle of replication. Neither it provides a systematic rationale for identifying new strains. In this study, phylogenetic analyses of the 16S and 23S rRNA genes are presented with corroborating genetic and phenotypic information to show that the order *Chlamydiales* contains at least four distinct groups at the family level and that within the *Chlamydiaceae* are two distinct lineages which branch into nine separate clusters. In this report a reclassification of the order *Chlamydiales* and its current taxa is proposed. This proposal retains currently known strains with > 90 16S rRNA identity in the family *Chlamydiaceae* and separates other chlamydia-like organisms that have 80-90 16S rRNA relatedness to the *Chlamydiaceae* into new families. Chlamydiae that were previously described as 'Candidatus *Parachlamydia acanthamoebae*' Amann, Springer, Schonhuber, Ludwig, Schmid, Muler and Michel 1997, become members of *Parachlamydiaceae* fam. Nov., *Parachlamydia acanthamoebae* gen. Nov., sp. nov. 'Simkania' strain Z becomes the founding member of *Simkaniaceae* fam. Nov., *Simkania negevensis* gen. Nov., sp. nov. The fourth group, which includes strain WSU 86-1044, was left unnamed. The *Chlamydiaceae*, which currently has only the genus *Chlamydia*, is divided into two genera, *Chlamydia* and *Chlamydophila* gen. nov. Two new species, *Chlamydia muridarum* sp. nov., and *Chlamydia suis* sp. nov., join *Chlamydia trachomatis* in the emended genus *Chlamydia*. *Chlamydophila* gen. nov. assimilates the current species, *Chlamydia pecorum*, *Chlamydia pneumoniae* and *Chlamydia psittaci*, to form *Chlamydophila pecorum* comb. nov., *Chlamydophila pneumoniae* comb. nov., and *Chlamydophila psittaci* comb. nov. Three new *Chlamydophila* species are derived from *Chlamydia psittaci*: *Chlamydophila abortus* gen. nov., sp. nov., *Chlamydophila caviae* gen. nov., sp. nov., and *Chlamydophila felis* gen., sp. nov. Emended descriptions for the order *Chlamydiales* and for the family *Chlamydiaceae* are provided. These families, genera and species are readily distinguished by analysis of signature sequences in the 16S and 23S ribosomal genes.

Keywords: *Chlamydia*, *Chlamydophila*, classification, taxonomy.