ORAL

REVIEW OF THE GENUS *BURSAPHELENCHUS* FUCHS, 1937 (NEMATODA, APHELENCHIDA) WITH SOME CONCLUSIONS ON THE HOST-PARASITE AND VECTOR-PARASITE EVOLUTION

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INTRODUCTION AND GOALS: Genus *Bursaphelenchus* includes several pests of the world importance for the rural economy, the most dangerous are the *Bursaphelenchus xylophilus* (the pinewood nematode caused decline of the pine trees in south Asia and in one spot area in Europe, Portugal, Peninsula de Setubal) and the *Bursaphelenchus cocophilus*, causing the decline of coco-palm plantations in Carribean and Latin American regions. The peculiarity of the host-parasite association of the genus that the nematode life cycle includes three trophic components: plant (mostly a tree), insect vector and a fungus. Goals of the presentation is to list all species of the world fauna and all efficient diagnostic characters, then create the identification tool and analyze the similarity of species and possible ways and causes of the host-parasite evolution of the group.

RESULTS: Complete list of species with synonymy and a catalogue of all efficient diagnostic characters with their states, selected from papers of the most experienced taxonomists of the genus, are given for the genus *Bursaphelenchus*. List of known records of *Bursaphelenchus* species with names of natural vectors and plants and their families is given (for world pests the most important groups of trees and insects are listed). The tabular, traditional and computer-aided keys are presented. Dendrograms of species relationships (UPGMA, standard distance: mean character difference) based on all efficient taxonomic characters and separately on the spicule characters only, are given. Discussion whether the species groups are natural or purely diagnostic ones is based on the relationships dendrograms and the vector and associated plant ranges of *Bursaphelenchus* species; the *xylophilus* species group (*B. xylophilus, B. abruptus, B. baujardi, B. conicaudatus, B. eroshenkii, B. fraudulentus, B. kolymensis, B. luxuriosae; B. mucronatus*), the *hunti* group (*B. hunti, B. seani, B. kevini* and *B. fungivorus*) are probably the natural ones.

CONCLUSIONS: The parasitic nematode association includes three trophic components: plant, insect vector and fungus. The initial insect-plant complex Scolytidae-Pinaceae is changeable and only in rare occasions the change of the preferred vector to Cerambycidae (the *xylophilus* group), Hymenoptera (the *hunti* group) led to formation of the natural species-groups. From the analysis it is clear that although the vector range is changeable it is comparatively more important for the evolution of the genus *Bursaphelenchus* than associations with plants at the family level. Data on the fungi species (3rd component in natural *Bursaphelenchus* associations) are insufficient for the detailed comparative analysis.