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ABSTRACTS
P0477. Programmed Cell Death in the development of Tiliacora (Borrelieae) trichoehes
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Tiliacora use their epidermal trichomes for absorbing water and mineral and organic nutrients from the atmosphere. The absorbing
trichomes in Tiliacora has a nail-like shape and is formed by an axis of 1-4 cells, connected to the internal tissues of the leaf and to an external shield (or head). This last structure is mono-layered and formed by dead cells extending their surface over the epidermis. The solutions coming from the external environment go through the shield cells and follow a way through the axis cells of the trichome to reach the underlying mesophyll parenchyma.

The studies on trichomes of Tiliacora, like in observation on the ontogeny of Tiliacora trichomes are of 1904, with Light Microscopy. Also because of the ultrastructural studies in Tiliacora are relatively few and not recent.

In the contribution we discuss the ultrastructure of the ontogeny of Tiliacora trichomes, with particular attention to the last stage in which the trichome dies at maturity. The ultrastructural features of these cells in the last stage of their development are similar to those observed in other cases of Programmed Cell Death in plants.

P0478. Inflorescence morphology in Balanophoraceae:
Moving in a twilight zone
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The taxonomically distributed holopod and root-parasitic family Balanophoraceae has partitioned, mostly sparsely inflorescences with a remarkable variety of different designs. Contrary to other authors, all inflorescences are initiated endogenously in subterranean globose or sometimes elongated tubers. Racemes form a character, as do Mysopoteleoidae, Heliocereaceae and Balanophoraceae. Heliocereaceae and Balanophoraceae do not form the so-called "rachis" (subfamily). Trifoliate leaves with interspersed staminal whorls are found in the family. Structures covering the spadix, formerly described as axes ("spadices"), turned out to be transformed bracts. But it is still unclear if these "spadices" originate from various individual bracts or few multiple split bracts.

P0479. Acquisition of root hemiparasitism and other life history traits in Santalales
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Based on molecular analyses, we examined the acquisition of hemiparasitism in Santalales, particularly Clusiaceae s.l. Mapping of life history characters on molecular diagrams suggests a simple origin for an unusual root hemiparasite that can be assumed to be one of two phylogenetic types. The first is an understory shrub with relatively small fruits. This type, likely occurring in a humid forest, is reminiscent of the extant genus Psychotria. The second type is a small tree with relatively large fruits. This type is likely found in dryer areas (e.g., margins of humid forests and savannas) and is reminiscent of the extant genus Psychoglossum. Other trends seen in Santalales include five independent acquisitions of the missing habit, several independent derivations of an herbaceous habit within Santalaceae, reduction in leaf size, venation and changes in phyllotaxy (Santalaceae and Loniceraceae), and pollination syndromes (Loniceraceae).

P0480. Taxonomic Revision of the genus Uncinia (Lamiaceae):
Moving in North America and Central America
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