**Abstract**

The pseudobulbs and subterranean organs (roots and rhizomes) of Eulophia epidendraea, and Malaxis acuminata in subfamily Epidendroideae (Orchidaceae) were investigated to determine morphology,anatomy and mycorrhizal occurrence. The examined sections showed the following common anatomi-cal characteristics. The pseudobulbs had a uniseriate epidermis. The assimilatory cells were scattered inthe form of mucilage/water storage cells in the ground tissue. The vascular bundles were collateral andembedded in the ground tissue. Raphides occurred as idioblasts. Rhizomes had an uniseriate epidermis,parenchymatous ground tissue differentiated into outer and inner zones with polygonal intercellularspaces. Vascular bundles scattered, collateral and discontinuous form in both the taxa. Aeration cellswere present in roots and rhizomes of M. acuminata. The transverse section of E. epidendraea roots hadmulti-layered velamen with spiral thickening followed by uniseriate exodermis with passage cells that had webbed tilosomes. The parenchymatous cortex contained raphides and water storage cells. Vascular bundles were 11–15 arched. Roots of M. acuminata had an uniseriate velamen, exodermis, parenchyma-tous cortex, endodermis and pericycle. The vascular bundles were radially arranged, and 11–12 arched.The xylem and phloem were embedded in sclerenchymatous tissue. The entry of the mycorrhizal fungiwas chiefly through root hairs in roots and epidermis in rhizomes of M. acuminata, and in E. epidendraea.Fungi formed pelotons in both the taxa and microsclerotia and monilioid cells in the root cortex of E.epidendraea. Additionally, Glomus- type vesicles were occasionally present in the roots of M. acuminata.Description of characteristics arising from this investigation may provide additional morphological andanatomical means of identification.