Abstract
The diploma thesis is focused on revision of the type collection of two similar arborescent Carboniferous lycopsids *Lepidodendron lycopodioides* and *Lepidodendron selaginoides*. Both species are often misinterpreted in the literature due to their obscure definition by Sternberg. Both species were revised morphometrically, allowing for their redefinition based on morphological characters. The emended diagnosis of both species is provided. Using of existing names of the species was solved in accordance with the International botanical code.

Changes in various parameters during ontogenetic development of *L. lycopodioides* and *L. selaginoides* were described in detail by using morphometric analysis and both species were redefined.