Abstract

This thesis summarizes palynological and paleontological study of the middle part of the Cracow Sandstone Series which is divided into the Łaziska (Bolsovian) and the Libiąz Beds (Asturian). Samples were obtained from the borehole G5 Dab nearby Jaworzno from both coal and non-coal sediments. Palynological study confirmed the stratigraphical gap between these two beds by observation of dissapearance of nine miospore taxons at the bottom of the Libiąz Beds (*Torispora, Converrucosisporites, Schulzospora, Gillespieisporites, Schopfites, Convolutispora, Cristatisporites, Tripartites, Cingulizonates*). Different ecological demands during the coal and non-coal sedimentation were confirmed. The sedimentation of the Łaziska coal seams is characterized by alternation of lycospore and densospore phases which confirmes alternation of the contrasting plant assamblages with a predominance of the arborescent lycopsids *Lepidodendron* and *Lepidophloios* and sub-arborescent lycopsid *Omphalophloios*. Arborescent lycopsids preferred planar (rheotrophic) mires. Plant assamblages with predominance of the lycopsid *Omphalophloios* colonized drier peat swamps with fluctuating water level (ombrothrophic). Peat swamp vegetation in Libiąz Beds was damper with localy transitional phase with increased incidence of the genus *Laevigatosporites*. The sedimentation of the non-coal samples is characterized by variation of the lycospore and incursion phase and generally drier conditions. Łaziska non-coal samples contain increased incidence of the genus *Florinites* which probably indicates the existence of drier environment in basin lowlands. During the sedimentation of non-coal samples, Libiąz Beds environment had probably changed several times as evidenced by changes of the lycospore and incursion phase.

Keywords: palynology, miospores, Carboniferous, Upper Silesian basin, Łaziska and Libiąz Beds