Buds were collected from grafts of *Picea abies* (L.) Karst. clone 04-118 (Serwy) in a clonal archive at the ‘Zwierzyniec’ Experimental Forest near Kórnik (52°15’N, 17°04’E). The grafts were 20 years old. Material was collected from the middle part of the tree crown every week from January till May, and used to analyse the spring activation of the bud.

Observation of young spruce shoots under a transmission electron microscope revealed that some cells of the buds collected and preserved in late April and early May had unique nuclei and cell walls. The walls were ‘incomplete’, because they were lacking some fragments. The nucleus was ‘trapped’ between two (seemingly shared by both) cells. Such images were recorded mainly from the peripheral meristem. They were also found in the rib meristem and in procambium cells adjacent to parenchyma cells. Such images of cell ultrastructure attest to cytomixis, which had never been recorded in spruce. Its structural characteristics do not deviate from typical examples of cytomixis found in literature. Cytomixis was described for the first time in 1901 by Könnick in *Crocus vernus*, although the term was coined 10 years later by Gates, who observed a similar phenomenon in the anthers of *Oenothera*. Also, the majority of modern reports on this subject concern cytomixis during meiotic divisions in anthers, so it is regarded as a disturbance attesting to cell degeneration. However, in this study no other ultrastructural changes which could attest to degeneration were observed. The role of cytomixis in the development of the spruce shoot apical meristem is unknown. The subject of our planned research is the determination of this role and an analysis of the further development of cytomictic cells in spruce shoot apices.

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