



MICROMORPHOLOGY OF FLOWERS AND THE STRUCTURE OF FLORAL NECTARIES IN *OROBANCHE ALSATICA* KIRSCHL.

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Orobanche alsatica Kirschl. is a very rare perennial plant included in the Polish Red Data Book. The hosts of this European-West Asian parasite are representatives of the family Apiaceae, primarily from the genera *Peucedanum* and *Seseli*. The species prefers alkaline substrates and sun-exposed slopes and hills. In Poland, it occurs most frequently in xerothermic grasslands and xerothermic fringe.

The morphology of *O. alsatica* flowers, with special emphasis on the structure of the nectaries, was studied using light microscopy and scanning electron microscopy (SEM). The analysed plants originated from the Lublin Upland.

The flowers of the species are characterised by the presence of a double perianth. The sepals are richly glandular, free; the outer sepals are dark red and the inner ones are yellow-green. Fused petals (5) form a bilabiate, dirty yellow corolla with dark red secretory trichomes on the abaxial surface. The stamens (4) with long, white S-shaped filaments are attached at the base to the corolla. There are glandular and non-glandular trichomes at the basal part of the filaments. Brown, oval anthers are characterised by the presence of a beak-like apex. The upper

pistil is composed of an oval ovary and an arched style with a bipartite, fleshy, yellow stigma bearing numerous papillae.

The *O. alsatica* nectary is formed by the basal part of the ovary at the corolla tube base. The secretory gland is intensively yellow and asymmetrical – on one side of the ovary it is higher and forms different height and size 4-5 protuberances, while on the other side it is very low. Nectar is secreted through modified stomata located primarily in the central part of the nectary. Stomatal cells are surrounded by 6-8 other epidermal cells and are located below these. The stomata are very regularly (linearly) arranged forming a ring across the apical part of the protuberances. The stomata function asynchronously, as evidenced by the presence of both open and closed stomata. Dried nectar forming granularities or/and layers was frequently noticed on the stomatal cell surface or inside the porus.

The epidermal cells of the nectary had smaller sizes, were more equidimensional, and had fewer cuticular striae than the neighbouring cells covering the ovary. Numerous different size starch grains were present in the epidermal cells of the gland and in the secretory cell layers.