

**PECULIARITIES OF ACHENE STRUCTURE IN MEMBERS OF GENUS
ARTEMISIA SECTION *ABROTANUM* SUBSECTION *NORVEGICAE*
(ASTERACEAE)**

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The goal of this study included the revealing of the most significant diagnostic traits in the structure of pericarp and spermoderm in the species of the genus *Artemisia* section *Abrotanum* subsection *Norvegicae*. The achenes of 7 species and 4 *A. arctica* subspecies subsection *Norvegicae* were studied. In 2 species and 3 *A. arctica* subspecies, the achenes were taken from plants growing in different sites of their ranges. A comprehensive morphological and anatomical study of pericarp and spermoderm was performed using stereomicroscope, light, and scanning and transmission electron microscopes.

The achenes of the subsection *Norvegica* members have no pappus, glands are found, the stomata on the corolla attachment site are probably related to nectaries, carpopodium is well shaped. In the center of the carpopodium, protruding conductive bundles with vessels are often found, that probably absorb water during germination. The ribs scarcely protrude above the pericarp surface. The number of ribs in the achenes ranges from (4) 5 to 7 (8); the species and subspecies differ little in their number. The ribs include large secretory channels, thin-walled parenchymal cells and vascular bundles. No hydrocytes were found in the ribs. Mechanical cells are found in small numbers in the vascular bundles. In the exocarp, along with the main cells, there are elongated segmented cells, more often referred to as complexes of mucilage-containing cells. The segmented cells are few, of different lengths and contain not only mucilage but oil secretion in several taxa. The species and subspecies differ by the presence or absence of mucilage-containing cell complexes and the “sliming” (turning into mucilage) of their outer cell walls. There are stacks of fibrils within the mucilage in the cells of mucilage-containing complexes but they are not U-shaped as they are in other sections of *Artemisia*. The pericarp is two-layered between ribs. Its cells are obliterated to various degrees, with the cells of the second inner layer being obliterated more often. The spermoderm is exotestal, well preserved. The endosperm is two-layered. In the studied members of the section *Abrotanum* subsection *Norvegicae*, the secretory (oil-containing) structures are important in the life support of achenes, but mucilage-containing complexes are of minor importance, unlike other *Artemisia*. It is proposed to rename the term “complexes of mucilage-containing cells” into “segmented cells”, and to use this term when describing the cells of the pericarp surface without checking the presence of mucilage in the cells on transverse or longitudinal sections. When determining the presence of a substance, write “segmented mucilage-containing cells” or “segmented oil-containing cells”.

Keywords: *Artemisia*, subsection *Norvegicae*, achenes, morphology, anatomy, secretory canals of pericarp, mucilage-containing complexes, systematics

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