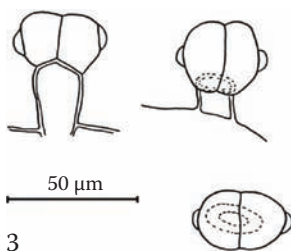
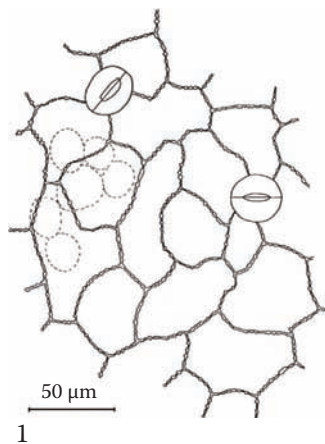


Digitalis lanata* Ehrh.*Grecian Foxglove Leaf*****Folium Digitalis lanatae*****Scrophulariaceae**

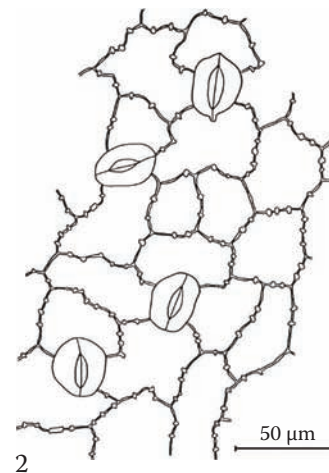
Species of *Digitalis* were used by English herbalists and led to the discovery of the cardioactive glycoside digoxin that is used in modern medicine today. This particular species has occurred as an adulterant of lance-leaved plantain, *Plantago lanceolata*, due to the morphological similarity of the leaves. The two species, however, can be readily differentiated by comparison of the trichomes. *D. lanata* is characterized by the presence of glandular trichomes with a unicellular stalk and bicellular head; those of *P. lanceolata* consist of a unicellular stalk and multicellular, narrow, conical head. According to Trease and Evans's *Pharmacognosy* (Evans 1996), Grecian foxglove leaves have two types of glandular trichomes: those similar to the ones in the following descriptions, with a unicellular stalk and bicellular head, and those with a uniseriate stalk of 3–10 cells and a unicellular head. The latter type of glandular trichome was not found in the samples examined for this text.



Surface view: Epidermal cells of both surfaces are irregularly polygonal with beaded wall thickenings; anomocytic stomata ~30 μm long on both surfaces; glandular trichomes on both surfaces ~20–30 μm long with a unicellular stalk and bicellular head composed of spheroidal cells; each cell of the glandular head may have a small spheroidal lateral protuberance, or the protuberance may be absent or present on only one of the cells; crystals are absent; long, thin-walled covering trichomes, ~2 mm long, occur along the margins, but these are generally broken off during handling and processing and generally absent in commercial material.

Transverse section: Bifacial; slightly papillous epidermis, anticlinal cell walls with distinct pitting; one to three rows of densely packed palisade cells.

Powder: Fragments of beaded epidermis with anomocytic stomata; occasional glandular trichomes; parenchyma; vascular tissue.

**Drawings**

1. Upper epidermis showing cells with beaded wall thickenings, anomocytic stomata, and the underlying palisade cells (sv).
2. Lower epidermis showing cells with beaded wall thickenings and anomocytic stomata (sv).
3. Glandular trichomes showing the small lateral spheroidal structures that protrude from the glandular head cells (*lat v* and *sv*, top and bottom respectively).