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MICROSCOPY OF VEGETATIVE ORGANS OF *DATURA STRAMONIUM* L. IN ANTHROPOGENIC ECOTOPES

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Introduction. *Datura stramonium* belongs to the Solanaceae family. The leaves of *Datura stramonium* contain tropane alkaloids (up to 1.9%): hyoscyamine, atropine, scopolamine, and are included in asthma medicines: "Astatol" and "Astatin". They also contain up to 0.004% of dark brown essential oil with the smell of tobacco, up to 0.1% carotene, 1.7% tannins, and a lot of vitamin C. Durman is cultivated as a medicinal raw material.

Object of the study: *Datura stramonium* collected in anthropogenic ecotope 10.08.2023 in the town of Sviyazhsk, Republic of Tatarstan.

Objective: to identify the morpho-anatomical diagnostic features of the vegetative organs of *Datura stramonium* Linn.

Materials and methods:

- Fixed material in 70% ethanol solution
- Microscopy - LOMO 'MIKMED-5' binocular microscope and Leica DM2500P microscope.
- Binocular MBS-9

Photographing and identification of cell size implemented using Leica Application Suite (Leica DM2500P microscope application) at low magnification (10x/0.25) and high magnification (40x/0.65).



Fig. 1. *Datura stramonium* in an anthropogenic ecotope.



Fig. 2. Flower of *Datura stramonium*.



Fig. 3. Fruit of *Datura stramonium*. Side and top view.



Fig. 7. Upper epidermis of the leaf of *Datura stramonium*.

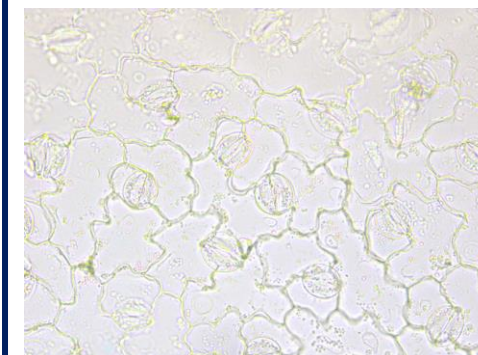
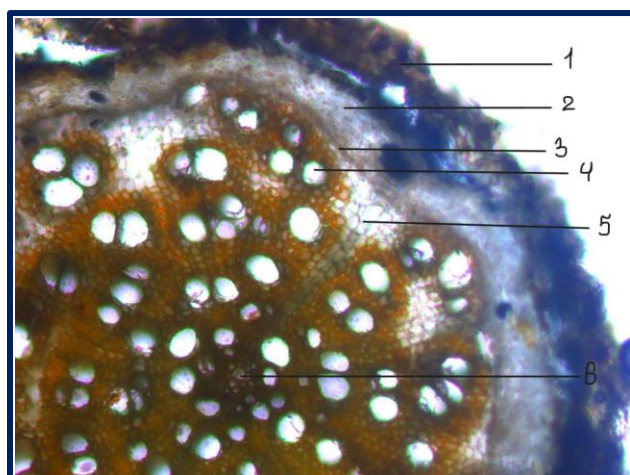


Fig. 8. Lower epidermis of the leaf of *Datura stramonium*.

The leaf of *Datura stramonium* are amphistomatic. The cells of the upper and lower epidermis are irregularly shaped. The stomatal apparatus of the upper and lower epidermis of the leaf is of the anomocytic type.

The stomatal coefficient on the upper epidermis is 22, and on the lower epidermis it is 31.

The stomatal index on the upper epidermis at 1mm² is 150, on the lower epidermis, respectively, 225.



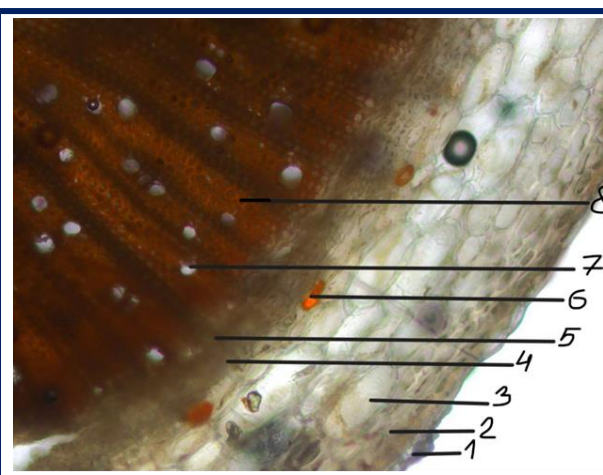
I) Cover Tissue:

1. Cork

II) Central axial cylinder:

2. Phloem.
3. Cambium
4. Xylem vessel
5. The medullary ray
6. Primary xylem

Fig.4. Cross section of the root of *Datura stramonium* (magnification. x10)



I) Covering tissue:

1. Epidermis

II) Primary bark:

2. Lamellar collenchyma
3. Chlorenchyma
- III) Central axial cylinder:**
4. Phloem
5. Cambium
6. Pericyclic sclerenchyma
7. Xylem vessels
8. Libriform

Fig.5. Cross section of the stem of *Datura stramonium* (magnification. x40)

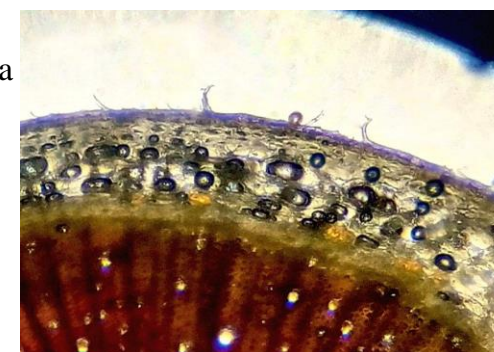


Fig.6. Cross section of the stem of *Datura stramonium*. Unicellular hair

Conclusions

1. The root of the *Datura stramonium* is of secondary structure
2. The stem is of non-tufted type of structure. The primary bark is differentiated into 3 tissues and has a lamellar collenchyma. There is a libriform in the xylem of the central axial cylinder.
3. The leaf is amphistomatic. The stomatal apparatus is of anomocytic type.