Thematic block Systematics of flowering plants 1

Lesson 7. Subclasses Dilleniidae

The purpose of the lesson: Learn how to make a morphological description of the plants, to study the systematic features of the subclass Dilleniidae.

Initial questions

1. Systematic position of the subclass Dileniidae.
2. General characteristics of the family Cruciferaceae.
3. Features of the structure of flowers of the representatives of the family Malvaceae.
4. General characteristics of the Urticaceae family.

Task 1: Study the main representatives of the family Cruciferaceae.

Using herbarium and fixed material study the morphology of plants of the cabbage family. Pay special attention to the uniformity in the structure of the flower in the majority of the representatives of this family (fig. 1).

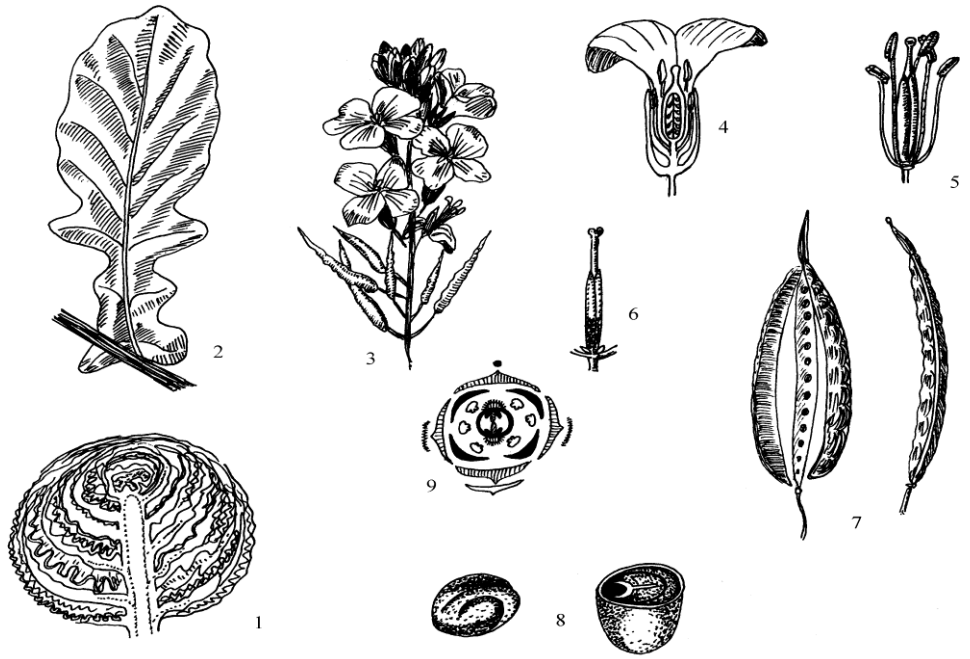

Figure 1. Vegetable cabbage (Orig.): 1 - head of cabbage of an annual plant, 2 - leaf of flowering shoot, 3 - inflorescence, 4 - flower in section, 5 - androcyte and gynoecium, 6 - gynoecium, 7 - pod, 8 - seed (general view and cross section).

Study the types of fruit in the Cabbages. Note that the variety is a variation of the pod and the pod (Figure 2).

Draw the flower of the proposed plant of the Cabbage family in a workbook. Make a formula and diagram of the flower. Sketch all types of fruits of the Cabbage family plants.

Write the morphological description of the plant in the herbarium. Record the result in the table.

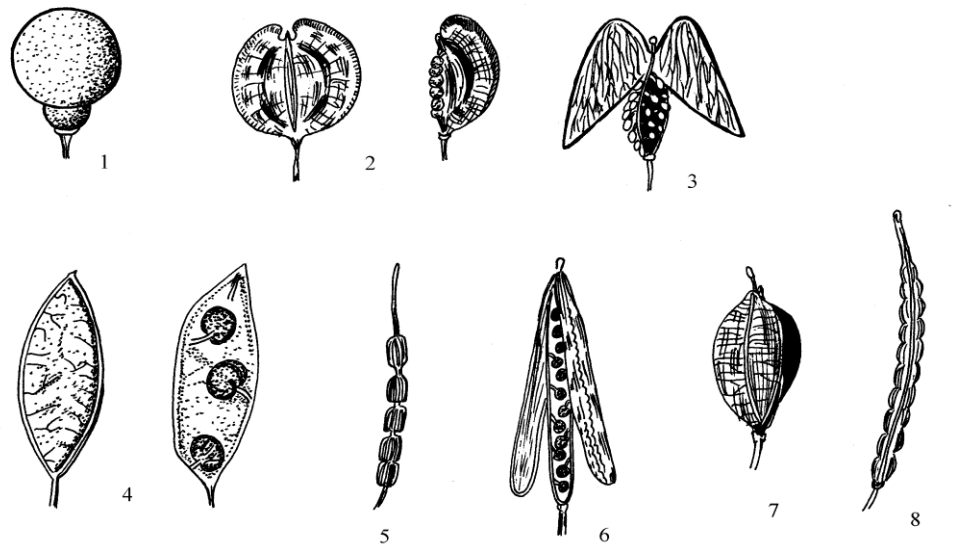

Figure 2. Fruits of the Cabbage family (Orig.): 1 - Crambe maritima, 2 - Thláspi arvénse, 3 - Capsella bursa-pastoris, 4 - Lunaria rediviva, 5 - radish, 6 - Cheiranthus, 7 - Camelina glabrata, 8 - rutabaga.

Task 10. Study the main representatives of the Malvaceae family.

Using the herbarium and fixed material, study the morphology of the plants of the Malvaceae family. Note the similarity of the structure of flowers in the representatives of different species. Draw attention to the presence of sub-capilla and the fusion of different parts of the flower. To study the types of fruits found in representatives of this family (there are two of them: capsule and schizocarpium).

Sketch in a workbook the flowers and fruits of the proposed representatives of this family. Malvae (fig. 3). Make formulas and diagrams of the flowers considered.

Make a morphological description of the proposed plant from the herbarium. Record the result in the table.

Figure 3. Representatives of the Malvaceae family (original): 1-4 Málva pusílla 1 - general view, 2 - flower in section, 3 - fruit of Schizocarpium, 4 - flower diagram. 5-7 Cotton 5 - general view, 6 - fruit capsule, 7 - flower diagram, 8-12 Althea medicinalis 8 - general view, 9 - androceum, 10 - gynoecium, 11 - schizocarpium, 12 - seed.

Task 3: Study the main representatives of the Urticaceae family.

Using herbarium and fixed material study the morphology of plants of the Urticaceae family. Draw attention to the simplification of the flower in connection with the adaptation to wind pollination, sepiacele, the difference in the structure of male and female flowers.

Draw the male and female flowers of Urticaceae, make diagrams and formulas in the workbook (fig. 3).

Make a morphological description of the proposed plant. Record the result in the table.

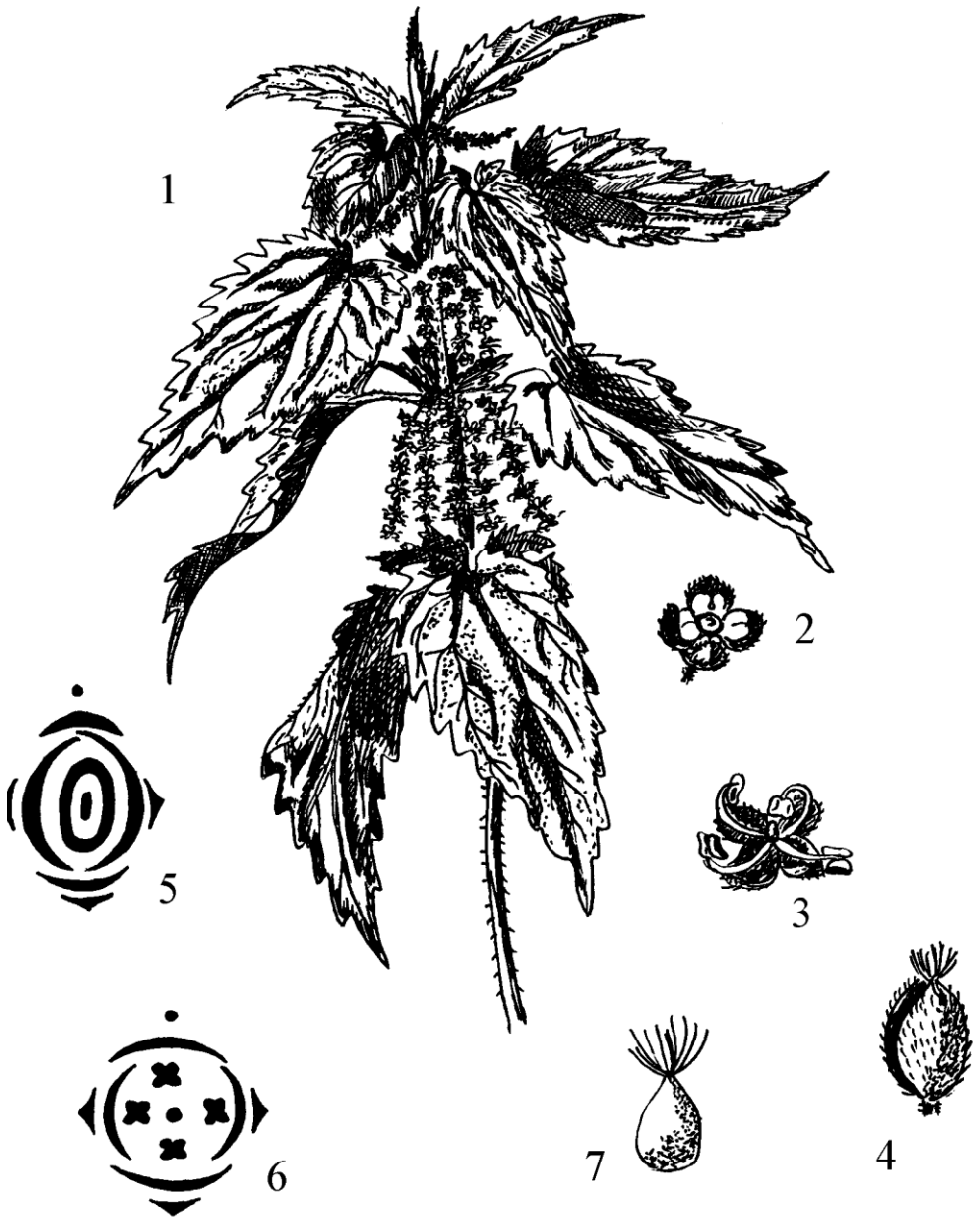

Figure 4. Nettle dioecious (original): 1 - general view, 2 - 3 male flower, 4 - female flower, 5 - female flower diagram, 6 - male flower diagram, 7 fruit seed.

Task 4 (educational research work of students). Comparison of morphological features of representatives of various families of the Ranunculid subclass.

Make a morphological description of the studied plants, formulas and diagrams of their flowers. The results should be presented in the form of a table.

Name of the plant						
Leaves, simple or complex, the shape of the leaf blade, the presence of petioles and stipules, pubescence, the shape of the leaf margine, the presence of modifications.						
Stem, branching, orientation in space, the presence of modifications, pubescence						
Root system, the presence of root modifications						
The presence of special organs of vegetative reproduction (whiskers, nodules, bulbs), their origin						
Flower Formula						
Flower Diagram						
Features of the structure of the flower (the presence of spurs, nectaries, colored calyx, etc.)						
Fruit, adaptations to seed distribution						