

AGE STAGES MORPHOLOGICAL CRITERIAS
OF THE *CIRCAEA LUTETIANA* L.

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Circaea lutetiana L. (Onagraceae Juss.) it occurs in all the main parts of the middle part of the Russian Federation, the Caucasus, southern Siberia, the Far East and the Crimean Mountains. In the Red List of 23 region and republics of Russia wrote that the quantity and structure of *C. lutetiana* populations have not studied sufficiently. The purpose of the research was to reveal the morphological features characterizing different age states of *C. lutetiana* to establish the duration of the ontogenesis phases of this species and to determine its quantity in phytocoenoses of beech forest on the northern macroslope of the Crimean Mountains (752 m).

Four coenopopulations from the similar ecotopes were investigate. Coenopopulation №1 consisted of 92 vegetative individuals and 124 generative (monocoenose area 2.5 m²). Coenopopulation № 2 contains 162 vegetative individuals, 82 generative (area – 2.7 m²). Coenopopulation № 3 consists of 28 vegetative individuals and 4 generative (1.4 m²), grows in conditions of the highest recreational load. Coenopopulation №4 created a phytocoenose with *Dactylis glomerata* L. and *Carex divulsa* Stokes; there are 23 vegetative individuals and 72 generative (4 m²).

The following particularity of ontogeny and morphometric criterions age stages of the *C. latetiana* it has been established. Fruits with seeds appear in late July – early August. Seeds germinate from May to July of the following year, after a dormitio period. Plantula (p) is very brittle and shallow (height about 5 mm), they have two cotyledonous whole leaves measuring 3×2 mm. Length of leaf petiole up to 3 mm. Rhizome has a length of 0.5–1 cm and only begins to be expressed. Juvenalis (j) individuals retains cotyledonous leaves and has 1-2 pairs of oppositely arranged whole-leaf leaves with a heart-shaped base and acute apex. The embryonic leaves die at this stage, in their place there are boundaries that save until the virginal age. This criterion give distinguish the genet from the ramet.

Immature (im) individuals has a stem height of 5–10 cm, at the top of it appears pubescence of small soft hairs. Individuals have 2–3 pairs of ovate-lanceolate leaves. The leaf blade is long, pointed, with small, rare denticles along the margins and with short pressed hairs. Rhizome penetrates to a depth of 3–5 cm, with a developed system of abundantly branching accessory roots. The first stolons on the rhizome appears.

At the end of this or at the beginning of the next growing season, *C. lutetiana* passes into virginal (v) individuals. The number of pairs of leaves from 4 to 6, the leaf is elliptical, with a pointed tip (length 10–30 mm, width 15–50 mm), rhizome branched, forms stolons at the beginning of the growing season. By the next season virginal plant flowering and passes into a generative state (g).

In the first year the flowering plant has 1 (rarely 2) an upright densely pubescent 7 cm peduncles with 5–9 flowers – this is g₁. The appearance of a branch from the peduncles indicates the onset of the age state – g₂. The number of peduncles at this age from 3 to 5

(10–12 flowers each), each flower ties up the fruit. In plants of age g_3 , the number of peduncles is up to 5, but not all flowers bear fruit.

1. The density of *C. lutetiana* individuals varies from 23–24 (№ 3 and № 4) of individuals per 1 m² to 86–90 individuals per 1 m² (№ 1 and № 2).

2. The individuals of age stages (p, j, im, v) differ in the type of leaf plates, often pairs of leaves, the length of the rhizome, the ability to form stolons. The individuals g_1 , g_2 , g_3 are distinguished by the number of peduncles, the number of flowers and their ability to form fruits and seeds.

4. The main way of reproduction of the *C. lutetiana* population is vegetative reproduction.

5. *C. lutetiana* is a species that is shrinking intensively under the influence of anthropogenic impact which leads to its inhibition and a decrease in population (№ 3).

Keywords: *Circaea lutetiana*, morphological criteria, age conditions, cenopopulation, Crimea.

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