

**ENVIRONMENTAL AND PHYTOCOENOTICAL CHARACTERISTICS, STRUCTURE OF COENOPOPULATIONS
AND ONTOGENY OF *LAGOCHILUS ILICIFOLIUS* (LAMIACEAE) IN TUVA**

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REFERENCES

1. Dictionary of generic names of seed plants. 1995. New York. 570 p.
2. Kalinina A. V. 1974. Ocnovnye tipy pastbishch Mongolskoy napodnoy respubliki [The basic pasture types in the Mongolian People's Republic]. Leningrad. 187 p. (In Russian)
3. Lavrenko E. M., Sumerina I. Yu. 1977. Materials for studying of geography and phytocoenology of plants of Central Asia. 3. Dwarf semishrub *Artemisia caespitosa* Ledeb. of Northern Gobi as indicator of desert steppes. — Rastitelnyy i zhivotnyy mir Mongolii. Leningrad. P. 27–45. (In Russian)
4. Meng H. H., Zhang M. L. 2011. Phylogeography of *Lagochilus ilicifolius* (Lamiaceae) in relation to Quaternary climatic oscillation and aridification in northern China. — Biochem. Syst. Ecol. 39(4–6): 787–796.
5. Meng H. H., Zhang M. L. 2013. Diversification of plant species in arid Northwest China: Species-level phylogeographical history of *Lagochilus* Bunge ex Bentham (Lamiaceae). — Mol. Phylogen. Evol. 68(3): 398–409.
6. Makunina N. I. 2010. Main types of plant communities of the steppe belt of the southern macroslope of the Tannu-ola ranges. — Rastitelnyy mir Aziatskoy Rossii. 1(5): 49–57. (In Russian)
7. Jing-Shi Q., Cheng-Gang Z., Wei W., Ting Z., Hong X., Gui-Xin C. 2015. A new lignan glucoside from *Lagochilus ilicifolius*. — Pharmacogn. Mag. 11(41): 191–195.
8. Li G., Mishig D., Pu X., Yi J., Zhang G., Luo Y. 2012. Chemical components of aerial parts of *Lagochilus ilicifolius*. — Chin. J. Appl. Environ. Biol. 18(6): 924–927.
9. Rabotnov T. A. 1950. Life-cycle of perennial grasses in meadow coenosis. — Trudy BIN AN SSSR. Ser. 3. Geobotanika. Moscow; Leningrad. 6: 7–204. (In Russian)
10. Uranov A. A. 1975. Phyto-cenopopulation age spectrum as a function of time and energy of wave processes. — Nauchnye doklady Vyshey Shkoly. Biologicheskie nauki. 2: 7–34. (In Russian)
11. Tsenopopulyatsii rasteniy (osnovnye ponyatiya i struktura) 1976. [The plant coenopopulations (basic concepts and the structure)]. Moscow. 217 p. (In Russian)
12. Tsenopopulyatsii rasteniy (ocherki populyatsionnoy biologii) 1988. [The plant coenopopulations (essays on population biology)]. Moscow. 181 p. (In Russian)

13. Serebryakov I. G. 1962. *Ekologicheskaya morfologiya rasteniy* [Ecological morphology of plants]. Moscow. 378 p. (In Russian)
14. Shafranova L. M. 1967. Morphogenesis and vital form of *Potentilla parvifolia* Fisch. in relation to the transition from low shrubs to herbs at *Potentilla* L. s. l. In: *Ontogenez i vozrastnoy sostav populyatsiy tsvetkovykh rasteniy*. Moscow. P. 35–51. (In Russian)
15. Gatsuk L. E. 1968. Morphogenesis of *Hedysarum fruticosum* Pall. at the variable levels of a sandy substrate and supposed view of its ancestor. In: *Voprosy morphogeneza tsvetkovykh rasteniy i stroeniya ikh populatsyy*. Moscow. P. 52–88. (In Russian)
16. Cheryomushkina V. A. 2004. *Biologiya lukov Yevrazii* [Biology of *Allium* species in Eurasia]. Novosibirsk. 280 p. (In Russian)
17. Cheryomushkina V. A., Astashenkov A. Yu. 2014. Morphogenesis and coenopopulation ontogenetic structure of *Nepeta podostachys* Benth (Lamiaceae) in Tajikistan. — *Rastitelnyy mir Aziatskoy Rossii*. 3(15): 32–38. (In Russian)
18. Serebryakova T. I. 1977. General «architectural model» of herbaceous perennials and their transformation patterns. — *Byul. Mosk. O-va Ispyt. Prir. Otd. Biol.* 82(5): 112–128. (In Russian)
19. Savinykh N. P. 2012. Architecture of herbs. In: *Aktualnye problemy sovremennoy biomorfologii*. Kirov. P. 342–354. (In Russian)
20. Metodicheskiye ukazaniya po ekologicheskoy otsenke kormovykh ugodiy lesoctepnoy i stepnoy zon Sibiri po Rastitelnomu pokrovu 1974. [Guidelines for environmental assessment of forage lands in forest-steppe and steppe zones of Siberia]. Moscow. 302 p. (In Russian)
21. Korolyuk A. Yu. 2006. Ecological optimum of plants of the South of Siberia. — *Botanicheskie issledovaniya Sibiri i Kazakhstana*. Barnaul-Kemerovo. 12: 3–28. (In Russian)
22. Uranov A. A., Smirnova O. V. 1969. Classification and basic features of the development of perennial plant populations. — *Byulleten Moskovskogo Obshchestva Ispytateley Prirody. Otd. Biologii*. 74(1): 119–134. (In Russian)
23. Zhivotovsky L. A. 2001. The ontogenetic state, effective density and classification of populations. — *Ekologiya*. 1: 3–7. (In Russian)
24. Zhukova L. A. 1995. *Populyatsionnaya zhizn lugovykh rasteniy* [Population life of meadow plants]. Yoshkar-Ola. 223 p.
25. Glotov N. V. 1998. On the estimation of age structure parameters of plant populations. In: *Zhizn populyatsiy v geterogennoy srede* [Plant life in heterogeneous environment]. Part 1. Yoshkar-Ola. P. 146–149. (In Russian)
26. Kovalenko I. N. 2005. The structure of populations dominating in ground layer of woody phytocoenosis at Dresnyansko-Starogutsky national natural park. I. Age structure. — *Ukrainskiy botanicheskiy zhurnal*. 62(5): 707–714. (In Ukrainian)

27. Odum Yu. 1986. *Ecologiya* [Ecology]. Moscow. Vol. 2. 376 p. (In Russian)
28. Vaynagiy I. V. 1974. On the methods for studying seed productivity of plants. — *Botanicheskiy Zhurnal*. 59(6): 826–831. (In Russian)
29. Borisova I. V., Popova T. A., Yakunin G. N. 1977. Heterogeneity of soil and steppe vegetation (*Stipa lessingiana* + *Cleistogenes squarrosa* + *Artemisia frigida* with *Caragana* spp.) in the Northern Gobi. In: *Rastitelnyy i zhivotnyy mir Mongolii*. Leningrad. P. 75–102. (In Russian)
30. Rachkovskaya E. I. 1993. *Rastitelnost gobiyskikh pustyn Mongolii* [The vegetation of the Mongolian Gobi desert]. St. Petersburg. 135 p. (In Russian)
31. Li X., Hedge I. C. 1994. *Lagochilus* Bunge ex Benthams. In: *Flora of China*. Beijing. Vol. 17. P. 166–169.
32. Ikramov M. I. 1976. *Rod lagokhilus Sredney Azii* [Genus *Lagochilus* of the Central Asia]. Tashkent. 184 p. (In Russian)
33. Zaugolnova L. B. 1994. Structure of seed plant population and related monitoring problems: Avtoref. dis. ... dokt. biol. nauk. St. Petersburg. 70 p. (In Russian)
34. Oleynikova E. M. 2014. *Ontomorphogenes i structura populyatsiy sterzhnekornevykh travyanistykh rasteniy Voronezhskoy oblasti* [Ontomorphogenesis and structure of populations of taproot grassy plants of the Voronezh region]. Voronezh. 366 p. (In Russian)
35. Zhivotovsky L. A. 1979. The ontogenetic state, effective density and classification of populations. — *Zhurnal obshchey biologii*. 4: 587–602. (In Russian)