

Effect of Abiotic Factors upon Morphological Variability of *Fleuria lacustris* Larvae (Diptera, Chironomidae)

Hydrobiological Journal

pages 15-22

DOI: 10.1615/HydrobJ.v56.i5.20

I. V. Shevchenko

Kherson Hydrobiological Station of the NAS of Ukraine, Kherson, "Nyzhniodniprovskiyi" National Natural Park, Kherson, Ukraine

Ye. I. Korzhov

Kherson State Agrarian University Kherson, Ukraine

P. S. Kutishchev

Kherson State Agrarian University Kherson, Ukraine

O. V. Honcharova

Kherson State Agrarian University Kherson, Ukraine

V. Yu. Shevchenko

Kherson State Agrarian University Kherson, Ukraine

ABSTRACT

The article deals with peculiarities of the influence of abiotic factors of different types water bodies on the morphological variability of *Fleuria lacustris* Kieffer, 1924, larvae. The effect of the external water exchange intensity and other hydrological and hydrochemical parameters on distribution of larvae and the quantitative characteristics of the species are considered.

KEY WORDS: Chironomidae, larvae, Fleuria lacustris, water exchange, water transparency, depth, hydrological regime, lower section of the Dnieper River

REFERENCES

1. Analitychna khimiya povekhnevnykh vod. 2007. (Analytical chemistry of surface waters.) Kyiv, Naukova Dumka Press. 456 pp. [Ukr.].
2. Aliokin, O.A., A.D. Semionov & B.A. Skopintsev. 1973. Rukovodstvo po khimicheskomu analizu vod sushy. (Guidance of chemical analysis of surface waters.) Leningrad, Gidrometeoizdat Press. 272 pp. [Rus.].
3. Aleksenko, T.L., Ye.I. Korzhov & I.V. Shevchenko. 2018. Communities structure and bioproductivity of macrozoobenthos of the Kardashyn liman. Pryrodnychiy almanakh 25:4-9. [Ukr.].
4. Kitayev, S.P. 2007. Osnovy limnologii dlia gidrobiologov i ikhtiologov. (Fundamentals of limnology for hydrobiologists and ichthyologists.) Petrozavodsk. 395 pp. [Rus.].

5. Konstantinov, A.S. 1986. *Obshchaya gidrobiologiya. (Principles of hydrobiology.)* Moscow, Vysshaya shkola Press. 472 pp. [Rus.].
6. Korzhov, Ye.I. & O.V. Goncharova. 2020. Forming of the waters' salinity in the Dnieper-Bug estuary region under the impact of climatic factors. Pp. 315-330 in: *Actual problems of natural sciences: modern scientific discussions: Collective monograph.* Riga, Baltija Publishing. [Ukr.].
7. Korzhov, Ye.I. 2013. External water exchange of the riverbed and lacustrine systems of the lower Dnieper in modern period. *Gidrologiya, gidrokimiya i gidroekologiya* 2: 37-45. [Ukr.].
8. Korzhov, Ye.I. & A.M. Kucheriava. 2018. Peculiarities of external water exchange impact on hydrochemical regime of the floodland water bodies of the Lower Dnieper section. *Hydrobiol. J.* 54(6): 104-113.
9. Korzhov, Ye.I. 2013. Peculiarities of the bottom sediments forming in the water bodies of the lower Dnieper section with different external water exchange intensity. Pp. 27-32 in: *Naukovi chytannia, prysviacheni 95-richchiu NAN Ukrainy. Vyp. 6. (Scientific workshop, devoted to 95th anniversary of NAS of Ukraine. Iss. 6.).* Kherson Vysheymyrskiy Publisher. [Ukr.].
10. Korzhov, Ye.I., L.M. Samoylenko & A.M. Zhur. 2014. Effect of water transparence on zoo-plankton quantitative parameters in the water bodies of the lower Dnieper section. Pp. 148-150 in: *Materialy 6-i Vseukr. konf. Traven, 2014, Dnipropetrovsk. (Proc. Of 6th All-Ukrainian conf. May, 2014, Dnipropetrovsk.)* Dnipropetrovsk, Accent Press. [Ukr.].
11. *Metody gidroekologichnykh doslidzhen' poverkhnevnykh vod. Za red. V.D. Romanenka. 2006. (Methods of hydroecological studies of the surface waters. Ed. by V.D. Romanenko.)* Kyiv, LOGOS Press. 408 pp. [Ukr.].
12. Motyl' *Chironomus plumosus* L. (Diptera, Chironomidae). Pod red. N.Yu. Sokolovoy. 1983. (Bloodworm *Chironomus plumosus* L. (Diptera, Chironomidae). Ed. by N.Yu. Sokolova.) Moscow, Nauka Press. 310 pp. [Rus.].
13. Ovechko, S.V., Ye.I. Korzhov & V.L. Gilman. 2015. *Naukovo-praktychni rekomendatsii shchodo pokrashchennia ekologichnogo stanu slaboprotochnykh vodoym ponyzzia Dnipra. (Scientific and practical recommendations on improvement of ecological state of the low-flowing water bodies of the lower Dnieper section.)* Kherson. 28 pp. [Ukr.].
14. Korzhov, Ye.I. 2018. *Naukovo-praktychni rekomendatsii shchodopokrashchennia stanu vodnykh ecosystem gyrlovoi dilianky Dnipra shliakhom reguliuvannia ikh zovnishniogo vodoobminu. (Scientific and practical recommendations on improvement of state of the aquatic ecosystems of the Dnieper estuary region by regulation of their external water exchange.)* Kherson. 52 pp. [Ukr.].
15. *Opredelitel' presnovodnykh bespozvonochnykh Rossii i sopredel'nykh territoriy. T. 4. Vysschiye nasekomiye. Dvukrylye. Pod red. S. Ya. Tsalolikhina. 1999. (Determinative key of the freshwater invertebrates of Russia and adjacent territories. Vol. 4. Higher insects. Diptera. Ed. by S.Ya. Tsalolikhin.)* 1000 pp. [Rus.].
16. Pankratova, V.Ya. 1983. *Lichinki i kukolki komarovpodsemeystva Chironominae fauny SSSR. (Diptera, Chironomidae = Tendipedidae) (Larvae and pupae of mosquitos of subfamily Chironominae in fauna of USSR (Diptera, Chironomidae = Tendipedidae)* Leningrad, Nauka Press. 296 pp. [Rus.].
17. Rozhdestvenskiy, A.V. & A.I. Chebotariov. 1974. *Statisticheskiye metody v gidrologii. (Statistical methods in hydrology.)* Leningrad, Gidrometeoizdat Press. 482 [Rus.].
18. Shevchenko, I.V. 2018. Larvae of dipterans in structure of macrozoobenthos in the lower Dnieper section. *Pryrodnychiy almanakh* 25: 89-99. [Ukr.].
19. Shevchenko, I.V. 2015. Recommendations regarding determination of dipterans of the family Chironomidae of the lower Dnieper section. Pp. 54-58 in: *Naukovi chytannia, prysviacheni Dniu nauky. Ekologichni doslidzhennia Dniprovsko-Buzkogo regionu. Zbirnyk naukovykh prats. (Scientific workshop, devoted to the Science day. Ecological*

- studies in the Dnieper-Bug region. Collected papers.) Kherson Vyshemyrskiy Publisher. [Ukr.].
20. Shkolniy, Ye.P. & I.D. Loyeva. 1999. Obrobka ta analiz gidrometeorologichnou informatsii. (Processing and analysis of hydrometeorological information.) Kyiv. 600 pp. [Ukr.].
 21. Cranston, P. Chiro Key. Access mode: <http://chirokey.skullisland.info/>.
 22. Korzhov, Ye. 2020. Analysis of possible negative environmental and socio-economic consequences of freshwater drain reduction to the Dnieper-Bug mouth region. Pp. 84-90 in: Perspectives of world science and education. Abstracts of the 8th International scientific and practical conference. CPN Publishing Group. Osaka.
 23. Korzhov, Ye. I. Ecohydrological investigation of plain river section in the area of small hydro-electric power station influence. Pp. 135-154 in: Current state, challenges and prospects for research in natural sciences. Lviv-Torun, Liha-Pres. 2019. B. 45.
 24. Korzhov, Ye.I. & A.M. Kucheriava .2018. Peculiarities of external water exchange impact on hydrochemical regime of the floodland water bodies of the lower Dnieper Section. Hydrobiol. J. 54(6): 104-113.
 25. Timchenko, V.M., Ye.I. Korzhov, O.A. Guliayeva & S.V. Batog. 2015. Dynamics of environmentally significant elements of hydrological regime of the lower Dnieper section. Ibid. 51(6): 75-83.