

The fauna of mayflies (Ephemeroptera) of the Gauja river

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Abstract

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The article contains data on 37 species of Ephemeroptera observed in the Gauja river. The total of 51 Ephemeroptera species is stated in Latvia and 46 species were found in Gauja. Eight species – *Ephemera danica*, *Ephemerella notata*, *Procloeon bifidum*, *Heptagenia coerulans*, *Caenis macrura*, *Caenis robusta*, *Leptophlebia marginata* and *Leptophlebia vespertina* are observed for the first time for the Gauja River. *Ephemerella notata* is a new species for Latvia. The species *Baetopus balticus*, *Ametropus fragilis*, *Metretopus borealis*, *Centroptilum nanum*, *Ephemerella mucronata* and *Habrophlebia lauta* are mentioned in literature, but were not found in 1998.

Key words: Ephemeroptera, fauna, Gauja river, Latvia.

Introduction

The first studies on the Ephemeroptera fauna were undertaken at the end of 18th century. L.Danka (Danka 1943) published the first data. Ephemeroptera fauna of Latvian rivers was described by O.Kačalova (Kačalova 1971, 1972), R.Kazlauskas and R.Savaitite (Kazlauskas, Savaitite 1962, 1963), Z.Spuris (Spuris 1966, 1968, 1982) M.Kalniņš and A.Poppels (Kalniņš, Poppels 1999). According to the data obtained from the literature there were stated 34 species of Ephemeroptera in the Gauja river.

Material and methods

Macroinvertebrates including the Ephemeroptera fauna have been sampled along the stretch of Gauja River from Taurene as far as Carnikava at 32 sampling sites. Samples were collected in the rhitral and potomal by Ekman-Berge sampler and entomological net. M.Kalniņš and author of the article collected samples.

There were collected and determined about 2300 larvae of Ephemeroptera belonging to 27 species from 10 genera. Data obtained from literature and data obtained from our

expedition in 1998 showed the biological diversity of Ephemeroptera fauna. In total 46 species of Ephemeroptera are found in the Gauja river.

List of species and distribution

Sampling sites are mentioned according the literature (authors in brackets) and to the results of studies in 1998.

Polymitarcys virgo Olivier, 1791

Gauja at Cēsis (Kazlauskas, Savaitite 1962); Gauja at Murjāņi (Kačalova, Skrube 1971); Gauja (Kačalova 1972); Gauja upstream Strenči.

Potamanthus luteus Linnaeus, 1758

Gauja at Mellepe, Sapa, Cēsis, Sigulda, Murjāņi (Kazlauskas, Savaitite 1962); Gauja (Kačalova 1972); Gauja at Cēsis (Kalniņš, Poppels 1999); Gauja at Sigulda, channel of Baltezers.

Ephemera danica Müller, 1764

Gauja at Taurene, Līgatne.

Ephemera lineata Eaton, 1870

Gauja at Mustjegi (Kačalova, Skrube 1971); Gauja (Kačalova 1972); Gauja at Taurene, Lejasciems, Rēveļi, Velēna, Sikšņi, Valmiera.

Ephemera vulgata Linnaeus, 1758

Gauja at Mustjegi, Vireši, Jaunpiebalga (Kačalova, Skrube 1971); Gauja (Kačalova 1972); Gauja at Taurene, Jaunpiebalga, Rēveļi, Lejasciems, Līgatne, Sigulda.

Siphonurus alternatus Say, 1824

Gauja at Valmiera, Cēsis (Kazlauskas, Savaitite 1962); Gauja at Taurene, Jaunpiebalga, Rēveļi, Lejasciems, Vireši, Gaujiena, Zīle, Strenči, Līgatne, Sigulda.

Baetis atrebatinus Eaton, 1870

Gauja at Mellepe, Valmiera, Sapa, Cēsis, Sigulda, Murjāņi (Kazlauskas, Savaitite 1962); Gauja at Gaujiena, Cēsis (Kalniņš, Poppels 1999); Gauja at Taurene, Jaunpiebalga, Rēveļi, Velēna, Sikšņi, Vireši, Gaujiena, Zīle, Strenči, Valmiera, Liepa, Cēsis, Līgatne, Sigulda.

Baetis fuscatus Linnaeus, 1761

Gauja at Mellepe, Valmiera, Sapa, Cēsis, Sigulda, Murjāņi (Kazlauskas, Savaitite 1962); Gauja at Gaujiena, Valmiera, Cēsis (Kalniņš, Poppels 1999); Gauja at Taurene, Rēveļi, Sikšņi, Vireši, Gaujiena, Valmiera, Strenči, Cēsis, Līgatne.

Baetis muticus Linnaeus, 1758

Gauja at Sapa (Kazlauskas, Savaitite 1962); Gauja at Taurene, Jaunpiebalga, Rēveļi, Velēna, Vireši, Gaujiena, Zīle, Strenči, Līgatne.

Baetis niger Linnaeus, 1761

Gauja at Cēsis (Kazlauskas, Savaitite 1962); Gauja at Taurene, Rēveļi, Velēna, Sikšņi, Gaujiena, Zīle, Strenči, Cēsis, Līgatne, Sigulda.

Baetis rhodani Pictet, 1843-1845

Gauja at Cēsis (Kazlauskas, Savaitite 1962); Gauja at Taurene (Kalniņš, Poppels 1999); Gauja at Jaunpiebalga, Rēveļi, Gaujiena, Zīle, Līgatne.

Baetis vernus Curtis, 1834

Gauja at Mellepe, Valmiera, Sapa, Cēsis, Sigulda, Murjāņi (Kazlauskas, Savaitite 1962); Gauja at Taurene, Jaunpiebalga, Lejasciems, Gaujiena, Cēsis (Kalniņš, Poppels 1999); Gauja at Taurene, Jaunpiebalga, Rēveļi, Lejasciems, Sikšņi, Zīle, Strenči, Valmiera, Liepa, Cēsis, Līgatne, Sigulda, Murjāņi, channel of Baltezers.

Baetopus balticus Kazlauskas, 1962

Gauja at Murjāņi (Kazlauskas, Savaitite 1962).

Centroptilum luteolum Müller, 1776

Gauja at Mellepe, Valmiera, Sapa, Cēsis, Sigulda, Murjāņi (Kazlauskas, Savaitite 1962); Gauja at Cēsis (Kalniņš, Poppels 1999); Gauja at Vireši, Zīle, Strenči, Valmiera, Cēsis, Līgatne, Sigulda.

Centroptilum nanum Bogoescu, 1951

Gauja (Spuris 1966); Gauja at Cēsis (Kazlauskas, Savaitite 1962).

Centroptilum pennulatum Eaton, 1870

Gauja at Sapa, Cēsis, Sigulda, Murjāņi (Kazlauskas, Savaitite 1962); Gauja at Rēveļi, Strenči, Liepa, Cēsis, Sigulda, Murjāņi, Carnikava.

Cloeon dipterum Linnaeus, 1761

Gauja at Jaunpiebalga (Kačalova, Skrube 1971), Gauja at Cēsis (Kazlauskas, Savaitite 1962); Gauja at Vireši, Strenči, Liepa, Cēsis, Sigulda, Carnikava.

Cloeon inscriptum Bengtsson, 1912

Gauja at Cēsis (Kazlauskas, Savaitite 1962).

Procloeon bifidum Bengtsson, 1912

Gauja at Rēveļi, Liepa, Murjāņi, Carnikava.

Procloeon ornatum Tschernova, 1982.

Gauja (Spuris 1966); Gauja at Mellepe, Valmiera, Sapa, Cēsis, Sigulda, Murjāņi (Kazlauskas, Savaitite 1962); Gauja at Lejasciems (Kalniņš, Poppels 1999); Gauja at Cēsis.

Ametropus fragilis Albarda, 1878

Gauja at Sigulda, Murjāņi (Kačalova, Skrube 1971); Gauja (Kačalova 1972).

Metretopus borealis Eaton, 1871

Gauja (Spuris 1966); Gauja at Cēsis (Kazlauskas, Savaitite 1962).

Ecdyonurus fluminum Pictet, 1843-1845

Gauja at Mellupes Cēsis (Kazlauskas, Savaitite 1962); Gauja at Līgatne, Sigulda.

Heptagenia coeruleans Rostock, 1877

Gauja at Līgatne.

Heptagenia flava Rostock, 1877

Gauja at Mellepe, Sapa, Cēsis, Sigulda, Murjāņi (Kazlauskas, Savaitite 1962); Gauja at Lejasciems, Cēsis (Kalniņš, Poppels 1999); Gauja at Rēveļi, Sikšņi, Zīle, Cēsis, Līgatne, Sigulda.

Heptagenia fuscogrisea Retzius, 1783

Gauja at Jaunpiebalga, Mustjegi (Kačalova, Skrube 1971); Gauja (Kačalova 1972); Gauja at Jaunpiebalga, Rēveļi, Lejasciems, Vireši, Zīle, Strenči, Liepa, Cēsis, Līgatne, Sigulda.

Heptagenia lateralis Curtis, 1834

Gauja at Mellepe, Valmiera, Sapa, Cēsis, Sigulda, Murjāņi (Kazlauskas, Savaitite 1962); Gauja at Rēveļi, Sikšņi, Liepa, Cēsis, Līgatne, Sigulda, Murjāņi, channel of Baltezers.

Heptagenia sulphurea Müller, 1776

Gauja pat Strenči (Kačalova, Skrube 1971); Gauja (Kačalova 1972); Gauja at Cēsis, Sigulda (Kazlauskas, Savaitite 1962); Gauja at Taurene, Jaunpiebalga, Rēveļi, Lejasciems, Sikšņi, Gaujiena, Zīle, Valmiera, Liepa, Cēsis, Līgatne, Sigulda, Murjāni, Carnikava.

Leptophlebia marginata Linnaeus, 1767

Gauja at Taurene, Velēna, Lejasciems, Vireši.

Leptophlebia vespertina Linnaeus, 1758

Gauja at Taurene, Jaunpiebalga, Rēveļi, Vireši, Zīle, Valmiera, Carnikava.

Paraleptophlebia cincta Retzius, 1783

Gauja at Jaunpiebalga (Kačalova, Skrube 1971); Gauja at Sigulda (Kazlauskas, Savaitite 1962); Gauja at Taurene, Jaunpiebalga, Cēsis.

Paraleptophlebia submarginata Stephens, 1836

Gauja at Mustjegi (Kačalova, Skrube 1971); Gauja at Taurene, Jaunpiebalga, Rēveļi, Sikšņi, Zīle, Strenči, Cēsis, Līgatne, channel of Baltezers, Carnikava.

Habrophlebia fusca Curtis, 1834

Gauja at Sapa, Cēsis (Kazlauskas, Savaitite 1962); Gauja at Taurene, Jaunpiebalga, Strenči.

Habrophlebia lauta Eaton, 1884

Gauja at Sigulda (Kazlauskas, Savaitite 1962).

Ephemerella ignita Poda, 1761

Gauja at Strenči (Kačalova, Skrube 1971); Gauja (Kačalova 1972); Gauja at Mellepe, Valmiera, Sapa, Cēsis, Sigulda, Murjāni (Kazlauskas, Savaitite 1962); Gauja at Taurene, Jaunpiebalga, Lejasciems, Gaujiena, Cēsis (Kalniņš, Poppels 1999); Gauja at Taurene, Jaunpiebalga, Rēveļi, Ranka, Velēna, Lejasciems, Sikšņi, Vireši, Gaujiena, Zīle, Strenči, Valmiera, Liepa, Cēsis, Līgatne, Sigulda, Murjāni, Carnikava.

Ephemerella mucronata Bengtsson, 1909

Gauja at Strenči (Kačalova, Skrube 1971).

Ephemerella notata Eaton, 1887

Gauja at Velēna.

Caenis horaria Linnaeus, 1758

Gauja at Taurene, Gaujiena (Kalniņš, Poppels 1999); Gauja at Taurene, Jaunpiebalga, Rēveļi, Velēna, Lejasciems, Sikšņi, Gaujiena, Strenči, Liepa, Cēsis, Līgatne, Sigulda, Carnikava.

Caenis luctuosa Burmeister, 1839

Gauja (Kačalova 1972); Gauja at Jaunpiebalga, Strenči, Valmiera, Cēsis, Līgatne, Sigulda, Carnikava.

Caenis macrura Stephens, 1836

Gauja at Taurene, Jaunpiebalga, Velēna, Strenči, Valmiera, Cēsis, Līgatne, Sigulda, Murjāni, Carnikava.

Caenis robusta Eaton, 1884

Gauja at Taurene, Jaunpiebalga, Rēveļi, Lejasciems, Gaujiena, Cēsis, Sigulda, Carnikava.

Brachycercus harrisella Curtis, 1834

Gauja (Kačalova 1972); Gauja at Mellepe, Valmiera, Sapa, Sigulda (Kazlauskas, Savaitite 1962); Gauja at Carnikava (Kalniņš, Poppels 1999); Gauja at Taurene, Gaujiena,

Zīle, Strenči, Valmiera, Liepa, Cēsis, Līgatne, Sigulda, Murjāni, channel of Baltezers, Carnikava.

Kopsavilkums

1998.gada pētījumu laikā Gaujā atrasti 32 sugu viendienīšu kāpuri. Kopā ar literatūrā minētajām sugām pašlaik Gaujā konstatētas 46 viendienīšu sugas. Pavisam Latvijā konstatēta 51 viendienīšu suga. No tām 8 sugas Gaujā konstatētas pirmoreiz – *Ephemera danica*, *Ephemerella notata*, *Procloeon bifidum*, *Heptagenia coeruleans*, *Caenis macrura*, *Caenis robusta*, *Leptophlebia marginata* un *Leptophlebia vespertina*. Bet *Ephemerella notata* ir jauna Latvijas faunai. No agrāk atrastajām sugām netika konstatētas *Baetopus balticus*, *Ametropus fragilis*, *Metretopus borealis*, *Centroptilum nanum*, *Ephemerella mucronata* un *Habrophlebia lauta*.

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