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Eugeniusz BIESIADKA¹ and Witold KOWALIK²

Water mites (Hydracarina) of the Western Bieszczady Mountains. 1. Stagnant waters.

Acta Hydrobiol., 22, 279-298.

Abstract - The occurrence of water mites was analysed in different types of stagnant waters: dam reservoirs, Duszatyn Lakes, fish ponds, small permanent water bodies, oxbow lakes, and periodical water bodies. The water mite fauna in the stagnant waters of the Western Bieszczady Mts chiefly consists of species typical of mountane and submontane water bodies connected with river nets, and of species widely distributed in small reservoirs, characterized by high eurytopy. Species of the spring fauna of astatic waters are less frequent, being more numerous in the lowland part of Poland.

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Jan BRAŃSKI

Sediment run-off from the catchment area of the Carpathian rivers.

Acta Hydrobiol., 22, 89-100.

Abstract - With the use of observations and measurements of the load of suspension discharge in the Carpathian rivers, the sediment run-off from their catchment area was determined. Data from the observation period of 1951-1975 and from 22 observation points were used in the computation. The mean annual load of suspension discharge (t) in the controlled river cross sections and the indices of sediment run-off (tons km⁻²) from the different catchment areas were computed. The problem of using the sediment run-off indices in evaluating the intensity of the denudation processes in the catchment areas is discussed.

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J.C. CANTERAS

The organic pollution of River Cubillas (Granada, South Spain).

Acta Hydrobiol., 22, 439-448.

Abstract - The River Cubillas, in the province of Granada (Spain) has been surveyed during one year for organic pollution entering the river from olive-mills located at its banks. Samples were taken monthly at six sampling stations, up and downstreams from the main sewage sources. The study reveals that the number of correlations between variables - which include dissolved oxygen, nitrite, nitrate, phosphate and bacteria - increases with pollution growth. Given the hydrographic features of the river - low flow, strong summer shortage, and so on - it shows itself to be incapable of bearing this strong pollution amount and it only could receive, as a maxima, pollution coming from one source lone.

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Bazyli CZECZUGA

Carotenoids in fish. 25. Cobitidae from Polish waters.

Acta Hydrobiol., 22, 147-155.

Abstract - Using column and thin-layer chromatography the content of carotenoids in the separate parts of the body of the thunder-fish, loach, and spined loach was investigated. The analysis showed qualitative and quantitative differences between the investigated fish species.

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Bazyli CZECZUGA and Włodzimierz MIRONIUK

Investigations on carotenoids in insects. 2. Water insects.

Acta Hydrobiol., 22, 29-35.

Abstract - The occurrence and the total content of carotenoids in larvae of 9 species belonging to Odonata, in nymphs of 12 species of Ephemeroptera and Plecoptera, as well as in adult insects of which 8 belonged to Heteroptera and 1 species to Odonata were investigated by the method of column and thin layer chromatography.

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Emil DRATNAL¹ and Krzysztof KASPRZAK²

The response of the invertebrate fauna to organic pollution in a well oxygenated karst stream exemplified by the Prędnik Stream (South Poland).

Acta Hydrobiol., 22, 263-278.

Abstract - The response of benthic invertebrates to organic pollution of a well oxygenated stream was observed during three periods; before and after the waste treatment plant was put in operation, and four years later. Two zones were found below the wastewater influx: the zone of qualitative conversion with a tendency to reduce the composition and favour the predominance of single species, and below, the zone of restoration of the composition and very intensive development of abundance. During the last period the first zone is appeared.

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Pertti ELORANTA

Annual succession of phytoplankton in one heated pond in central Finland.

Acta Hydrobiol., 22, 421-438.

Abstract - The water of the studied pond (area 3.07 hectares, maximum depth 7.5 m, average depth 3.8 m) is used except the summer months for cooling of one small thermal power plant. Thus the pond is open almost all the year round. The phytoplankton biomass reached the first maximum in March (10.3 g m⁻³) made by cryptophytes and *Asterionella gracillima* (Hantzsch) Heib. The autumn maximum was in September (11.2 g m⁻³) made by *Cyclotella meneghiniana* Kütz. Green algae (Volvocales in spring, Chlorococcales and Desmidiaceae in summer) dominated except in June from April to August. The average of the phytoplankton biomass was for the whole year 3.34 g m⁻³ and 4.44 g m⁻³ for the growing season (March-September). The biomass minimum during the darkest winter in late December-January was <0.2 g

m⁻³. The chlorophyll *a* concentration of the hytoplankton fresh weight biomass varied between 0.2 and 0.7% (average ca. 0.34%). The maxima of the Shannon diversity (calculated with natural logarithms and on the biomass basis of each species) were at the time of maximum species richness in summer ($H'=2.5-2.9$) and at time of phytoplankton minimum in winter ($H'=2.7-2.8$). No significant correlation was found between Shannon diversity and the logarithm of the phytoplankton biomass.

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Andrzej FALNIOWSKI

The anatomical determination of Polish Lymnaeidae (Mollusca, Basommatophora).

Acta Hydrobiol., 22, 327-335.

Abstract - The limited usefulness of conchological features in the species determination in Lymnaeidae is stressed and a historical outline of anatomical investigations in this family is submitted. Next comes a short description of the taxonomical anatomy of Lymnaeidae and the techniques of fixation and dissection, useful in the anatomical determination of Lymnaeidae. Then the key to the determination of Polish Lymnaeidae is presented (among the European Lymnaeidae the key does not include only *Lymnaea glabra* (O.F. Müller, 1774)) based on anatomical features only.

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Tadeusz JANUSZKIEWICZ and Krzysztof R. JANUSZKIEWICZ

Chemical composition of recent bottom sediments of the Lake Zagnanie.

Acta Hydrobiol., 22, 157-178.

Abstract - The chemical composition of the upper layer (15 to 20 cm thick) of the bottom sediments of the Lake Zagnanie lying in the Kashubian Lake District has been examined. Fresh material after preliminary dewatering by dripping off and complete dehydration at 105 °C and grinding to powder has been subjected to analysis. The sediments were dissolved in 10% HCl and in *aqua regia* and fused with a mixture of soda. The pH of the sediments, their humidity, loss on ignition, the amount of dissoluble parts, content of ammonia nitrogen, total nitrogen, phosphates, total phosphorus, sulphates, total sulphur, SiO₂, CaO, MgO, Fe₂O₃, Al₂O₃, MnO, and TiO₂ were determined. Spatial distribution of the components, quantitative atomic relations, and interrelations occurring between the components were presented. The role of manganese in the process of depositing phosphorous in the sediments was exposed. The sediments of the Lake Zagnanie were determined as sapropelous and included into a mixed type.

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Zbigniew JARA¹ and Franciszek MARKIEWICZ²

Occurrence of virus inflammation of the swimbladder (aerocystis) in the carp (*Cyprinus carpio* L.) bred in Poland in the years 1962-1974.

Acta Hydrobiol., 22, 101-114.

Abstract - In the years 1962-1963 on the territory of the south-east provinces of Poland the virus inflammation of the swimbladder (VIS, aerocystis) appeared in some fish farms. During the years 1966 and 1967 it spread over the remaining voivodships. Throughout the whole analysed period, i.e. in the years 1962-1974 three regions could be differentiated in Poland on the basis of the global extensity of the virus inflammation of the swimbladder, expressed by the E_i coefficient ($E_i = 10 * (\text{total cases during 13 years}) / 13$). These regions are: the southern voivodships with the highest E_i coefficient, the central ones with a lower E_i

coefficient, and the northern ones with the lowest E_i coefficient. Our opinion is that the spread and extensity of aerocystis in Poland were chiefly influenced by the transport of carp fry and by disturbances in the physical and chemical conditions of water bodies (intensification of breeding methods and the pollution of waters).

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Krzysztof JOP

Hydrochemical characteristics and pollution of the River Biała Przemsza catchment basin.

Acta Hydrobiol., 22, 179-190.

Abstract - The basic chemical composition and the concentration of Zn, Fe, Cu, Pb, Cd, Ni in the drainage area of the Biała Przemsza in the region of occurrence of natural deposits of zinc and lead were described. The water and sediments samples taken monthly from sixteen stations during 1977 were analysed. The character of the introduced pollution and its sources were discussed. Upon chemical analysis it has been possible to distinguish sectors considerably differing in their level of pollution.

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Krzysztof JOP

Hydrochemical characteristics of the stream Drwinka and estimate of its self-purification ability.

Acta Hydrobiol., 22, 249-262.

Abstract - The basic chemical composition and the concentration of Zn, Fe, Cu, Pb, Cd, Ni in the organically polluted stream Drwinka were described. The water and sediments samples from eight stations were studied during 1977 and analysed monthly. The kind of pollution and its sources were discussed. On the basis of the decrease in the concentration of most elements in the ionic composition of Drwinka's water at successive stations, three distinctly differing zones of the stream were distinguished.

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Henryk KASZA

The management of the catchment area of the Goczałkowice reservoir and its effect on the amount of nitrogen and phosphorus migration from it.

Acta Hydrobiol., 22, 37-53.

Abstract - Combining the run-off per unit of nitrogen or phosphorus from particular partial catchment areas of the tributaries of the Goczałkowice reservoir, or the mean content of these compounds in the waters of the rivers analysed, with the chosen elements of the catchment area management (percentage of arable land in the catchment area, percentage of green areas in the catchment area, percentage of forest in the catchment area, the content of N and P in human faeces, the content of N or P in mineral and organic fertilizers of animal origin) an attempt was made to show the degree of the influence of economic activity of man on the migration of biogenous compounds from the subsoil of the catchment area of the reservoir.

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Barbara KAWECKA

Sessile algae in European mountain streams. 1. The ecological characteristics of communities.

Acta Hydrobiol., 22, 361-420.

Abstract - Communities of sessile algae were investigated in the streams of Kebnekaise Mts (Swedish Lapland), the Tatra Mts (Poland), the Alps (Austria), Fagaras Mts (Romania), and Rila Mts (Bulgaria). Seven algae communities characteristic for unpolluted streams and three communities characteristic for streams polluted chiefly by domestic sewage, were identified. Differences between diatom communities as dependent on the type of habitat were found. Changes in the numbers of taxa and their abundance and in the index of diatom biomass were found to appear throughout the year.

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Andrzej KOWNACKI¹ and Marta KOWNACKA²

***Diamesa martae* sp. n. (Diptera: Chironomidae) and geographical distribution of the species of *Diamesa latitarsis* group.**

Acta Hydrobiol., 22, 313-326.

Abstract - *Diamesa martae* sp. n. is described from the High Caucasus Mts and Ötztaler Alps. The geographical distribution of the other species of *Diamesa latitarsis* group is discussed. Most of the species of these group are distributed inside the palearctic region, especially its European part. The available information permits to distinguish two development centres of that group: the Alps and the Caucasus. The larvae and pupae of these species live in very cold water in glacial or high mountain streams.

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Andrzej KOWNACKI¹ and R.. ZOSIDZE²

Taxocens of Chironomidae (Diptera) in some rivers and streams of the Adzhar ASSR (Little Caucasus Mts).

Acta Hydrobiol., 22, 67-87.

Abstract - In the investigated rivers and streams of the Adzhar ASSR, flowing down the western slopes of the Little Caucasus Mts and feeding the Black Sea, 82 taxonomic units of Chironomidae were identified including a few species new to the fauna of the Caucasus. It was found that in these rivers the Chironomidae taxocens were similar to those found in the montane and submontane rivers of Europe and did not form a separate type. However, it is characteristic that most of them are typical of the rhithron throughout the course of the river. Only in the River Čoloki the rhithron and potamon taxocens could be differentiated. The variation in the composition, dominance structure, number and biomass of Chironomidae which were observed in the different rivers did not coincide with altitude changes. Greater differences were frequently found between the individual rivers than between the upper and middle course of a river. It can be claimed that in this case the factors decisive for the distribution of Chironomidae taxocens are: the type of substratum, the chemism and turbidity of water, and the annual variation in water yields.

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T.S. KOUSSOURIS and J.D. PHOTIS

Some hydrobiological characteristics in Amvrakia lake, Western Greece.

Acta Hydrobiol., 22, 337-344.

Abstract - The results, of an original investigation, on some hydrobiological parameters in Amvrakia lake (Western Greece) are reported. Amvrakia lake is tectonic lake, 13 km² in area, with high fluctuations in water level. High to mean values of dissolved oxygen were recorded in the homogenous water column in February, while in June its low values at deep waters were accompanied by hydrogen sulfide presence. The thermocline was found between 11-13 m, deep. Aquatic macrovegetation, along the lake's shoreline, was lacking. The main components of plankton were, *Cyclotella ocellata* (Ehr.) Kütz. and *Closterium*, *Scenedesmus*, *Pediastrum*, *Ankistrodesmus* species in February, while in June, the dominant species belong to some pennales diatoms and the Chlorophyceae *Elakatothrix gelatinosa* Wille, *Staurastrum leptocladum* Wille and *Closterium* spp. Among the zooplankton the appearance of *Tintinnopsis lacustris* (Entz) Kahl and of *Brachionus angularis* Gosse, *B. calyciflorus* Pall., *Polyarthra vulgaris* Carl., *Filinia longiseta* (Ehr.) and *Keratella quadrata* (Müll.) were characteristic.

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Franciszek MARKIEWICZ¹ and Kazimierz MIGAŁA²

Trichodinid invasion (Peritricha, Urceolariidae) on young eels (*Anguilla anguilla* L.) grown in aquaria..

Acta Hydrobiol., 22, 229-236.

Abstract - A mass trichodinid invasion on young eels (*Anguilla anguilla* L.) grown in aquaria was described. The following two trichodinid species were identified: *Trichodina fultoni* Davis, 1947 and *T. anguilli* Wu, 1961, this being the first occurrence of *T. fultoni* on eels noted in Poland. It was found that this species was highly pathogenic in relation to young eels under aquarium conditions. The parasite induced marked external symptoms of disease and also fish death. The other species, *T. anguilli* was periodically found on the skin of fish and caused less damage.

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Kazimierz MATUSIAK

Prof. dr hab. Kazimierz Pasternak, 1924-1979.

Acta Hydrobiol., 22, 117-126.

Abstract - [Biography with list of publications].

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Modest MISZTAL

Comparison of the chemical composition of the waters of the Lake Piaseczno (Łęczyńsko-Włodawskie Lake District) and of the shallow ground waters in its catchment area.

Acta Hydrobiol., 22, 239-247.

Abstract - Over the period of a year and a half water samples were collected from the lake and from farm wells situated in its vicinity. Potassium, sodium, calcium, manganese, phosphorus, and pH were determined in the waters. Concentrations of the given elements in the waters were compared against the background of the level of the lake waters and ground waters as well as of atmospheric conditions. Very high concentrations of determined elements in ground waters in comparison with concentrations in lake waters were stated. Variations of concentration of calcium, phosphorus, and pH in the waters were similar, whereas the inflow of sodium into ground waters depended on the rainfall intensity.

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Modest MISZTAL

Nutrient run-off from the catchment area to a small lake with no effluent.

Acta Hydrobiol., 22, 55-66.

Abstract - The laws regulating the run-off of biogenic substances from differently utilized sectors of a small catchment area into the bottom sediments of the littoral of a lake with no effluent were investigated. Due reference was made to the influence of atmospheric conditions, mainly rainfall, on these phenomena. The ways in which biogenes of cation character and phosphorus penetrate into the lake were differentiated, and the relation between the quantity of biogen discharge and atmospheric conditions were determined.

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Maria PAWLACZYK-SZPIŁOWA, Helena SZTAJER and Danuta LESZCZYŃSKA
Heterotrophic microflora of the reservoir at Lubachów. 2. Vertical distribution of bacteria predominating in the reservoir at Lubachów in the annual cycle.

Acta Hydrobiol., 22, 13-27.

Abstract - The qualitative bacteria composition and its changes were investigated against the background of thermal and oxygen conditions, BOD₅ and some other indices of pollution. In addition the results made it possible to determine the distribution of predominating genera in the vertical water column of the reservoir at Lubachów in the annual cycle.

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Andrzej W. SKALSKI

***Niphargus casimiriensis* sp. n., a new species of hypogean amphipod from Poland (Crustacea: Niphargidae).**

Acta Hydrobiol., 22, 217-227.

Abstract - A new species of the genus *Niphargus* Schiödte, 1849; *N. casimiriensis* sp.n. is described from the underground waters of north-western part of the Lubelska Upland (Małopolski Przełom Wisły - Małopolska Gap of the Vistula). It appears closely related to *N. leopoliensis* Jaworowski, 1893.

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Krzysztof SROKOSZ

Chironomidae communities of the River Nida and its tributaries.

Acta Hydrobiol., 22, 191-215.

Abstract - The subject of the work was Chironomidae fauna of the lowland River Nida. In the collected samples 148 taxonomic units were found. Using the domination index, three types of Chironomidae communities were differentiated in the longitudinal profile of the river. In addition, the distribution and structure of Chironomidae communities were investigated in four types of habitats: the sandy, sandy-silty and silty bottoms, and submersed vegetation.

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Karol STARMACH

Communities of algae in frog spawn.

Acta Hydrobiol., 22, 127-145.

Abstract - In the course of some years the occurrence of algae in frog spawn assembling in the spring season in the pools and ponds in the vicinity of the town of Mszana Dolna, in the district of Nowy Sącz was investigated. 8 species of Chrysophyceae, 22 of Xanthophyceae, 106 of Bacillariophyceae 12 of Chlorophyceae, 19 of Cyanophyceae were found as a whole. The following new species or forms were described: *Chrysocapsa vernalis* Starm. f. *minor* n. f., *Heterothrix mucicola* Ettl f. *major* n. f., *H. mollis* sp. nova ad interim, *Chlamydomonas subconica* sp. n. The gelatinous masses of frog spawn are often inhabited by numerous species of algae, no species, however, develops in masses. In the author's opinion it is an environment in which the algae are to a certain extent, mechanically arrested, but have no greater chance of development.

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Karol STARMACH

On some species of the genus *Homoeothrix* (Cyanophyceae): *H. juliana* (Born. et Flah.) Kirchner, *H. nordstedtii* (Born. et Flah.) Komárek et Kann, and *H. balearica* (Born. et Flah.) Lemm..

Acta Hydrobiol., 22, 1-12.

Abstract - The paper concerns three species of *Homoeothrix*: *H. juliana* (Born. et Flah.) Kirchner, *H. nordstedtii* (Born. et Flah.) Komárek et Kann, *H. balearica* (Born. et Flah.) Lemm. Original drawings of the species discussed were presented and in *H. nordstedtii* and *H. balearica* the tiers structure of trichomes, i.e. the ability of growing of new trichomes on the tops of hairs, was described. In the species of *Homoeothrix* genus the hairs end simply the growth of trichomes.

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Andrzej WITKOWSKI and Jan BŁACHUTA

Natural hybrids *Alburnus alburnus* (L.) X *Leuciscus cephalus* (L.) and *Rutilus rutilus* (L.) X *Abramis brama* (L.) from the Rivers San and Biebrza.

Acta Hydrobiol., 22, 473-487.

Abstract - Basing on the biometrical analysis natural hybrids *Alburnus alburnus* (L.) X *Leuciscus cephalus* (L.) from the River San and *Rutilus rutilus* (L.) X *Abramis brama* (L.) from the River Biebrza have been described. For the 18 analysed features the hybrids from the River San presented 9 intermediate and 5

individual features, whereas the hybrids from the River Biebrza showed 21 intermediate and 6 individual features for the 29 meristic and plastic features analysed. Moreover, an attempt was made at elucidating the causes of hybridization of these species in both rivers.

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Anna WORONIECKA-STASIAK

Chemical composition of interstitial waters in bottom sediments of some Polish lakes of the Wigry group (Northern Poland).

Acta Hydrobiol., 22, 347-360.

Abstract - The weight percent of interstitial waters in nine different lakes of the acido-dystrophic, pond, eutrophic, alpha-mesotrophic, and alkalitrophic type, and the basic chemical composition of these sediments and of saturating waters has been determined. An acid reaction between 5.6-6.9 was found in all these waters. In harmonic lakes it was conditioned by the occurrence of free CO₂, and in disharmonic lakes by the occurrence of free CO₂ and organic acids, chiefly humic ones. The dependence between the alkalinity and the pH of the interstitial waters was linear. The interstitial waters were found to be a source of organic compounds and mineral salts of the hypolimnion. Large amounts of iron and phosphorus were found in these waters. These elements usually appeared in mineral (reactive) form but they also occurred in bound form in organic complexes. The interstitial waters frequently contained large amounts of ammonium salts; in harmonic lakes the absence of nitrites and nitrates was noted owing to the denitrification which was frequently inhabited under acido-dystrophic conditions.

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Maciej ZALEWSKI and Ewa SUSZYCKA

Attempt at establishing the effect of water pollution on the legibility of scale of the roach (*Rutilus rutilus* (L.)).

Acta Hydrobiol., 22, 299-311.

Abstract - The structure of scales of the roach *Rutilus rutilus* (L.) from a river in the region of the barbel (the river Pilica), caught at two stations of different pollution degree, has been investigated. It was shown that a higher pollution degree of the water causes a worse legibility of scales and earlier formation of annuli in corresponding generations. Analysing the relationship between the date of annulus formation and the fish age an earlier formation of the annulus was found to occur in older individuals.

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Roman ŻUREK

The effect of suspended materials on the zooplankton. 1. Natural environments.

Acta Hydrobiol., 22, 449-471.

Abstract - The influence of suspension upon zooplankton population in ponds, upland and lowland reservoirs was investigated. Suspension of pond containing a great deal of phytoplankton (max. turbidity 1200 mg SiO₂ dm⁻³ or 123 mg of mineral fixed residue) was significantly noxious for *Keratella cochlearis*, *K. quadrata*, *Trichocerca cylindrica*, *Ceriodaphnia pulchella*, *Daphnia pulex*, *Chaoborus crystallinus*. Seston from lowland reservoir (max. turbidity 119.5 mg SiO₂ dm⁻³) significantly and negatively influenced *Daphnia cucullata*, cladocerans as a whole and copepods. It stimulated development of rotifers. In upland

reservoir at turbidity over 300 mg SiO₂ dm⁻³ (max. turbidity 898 mg SiO₂ dm⁻³) zooplankton was practically absent. For all species occurring there, negative dependence with turbidity was found.

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