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The Banat (south-western province of Romania) is drained by a rich riverine net, the largest rivers being the Bega and the Timiș in the north of the province, the Caraș, Nera, Berzasca, Mraconia and Cerna in the south. There are also numerous standing waters bodies; permanent ponds (but no natural lakes) as well as temporary pools.

The aquatic fauna of the Banat is incompletely known, fishes, crayfishes, molluscs, caddisflies, some groups of lower crustaceans (Anostraca, Diaptomidae, Copepoda and Cladocera) being the best known groups.

The native fishes living or having lived during the 20-th century in the inland waters of the Banat (The stretch of the Danube, that marks the southern frontier of the province not included) belong to following ecological categories:

(1) Inhabiting exclusively or mainly mountain rivers and brooks: the lampreys *Eudontomyzon danfordi* and *E. vladkovi*, the salmon *Salmo trutta m.fario*, *Hucho hucho* and *Thymallus thymallus*, the cyprinids *Phoxinus phoxinus*, *Gobio uranoscopus* and *Barbus peloponnesius petenyi*, the loach *Orthrias barbatulus*, the sculpin *Gottus gobio*.

(2) Inhabitants of lowland rivers, some of which also live in the montanic stretches of rivers or in standing waters. Most belong to Cyprinidae: *Rutilus rutilus*, *Leuciscus cephalus*, *L. idus*, *Alburnus alburnus*, *Alburnoides bipunctatus*, *Aspius aspius*, *Blicca bjoerkna*, *Abramis brama*, *A. sapa*, *A. ballerus*, *Vimba vimba*, *Pelecus cultratus*.

Chondrostoma nasus, *Rhodeus sericeus*, *Gobio gobio*, *G. albipinnatus*, *G. kessleri*, *Barbus barbus*, (the recoding of *Leuciscus leuciscus* in the Bega at Chizătău - BĂNĂRESCU, 1964 - is doubtful). Further families are Cobitidae (*Cobitis taenia danubialis* (= *elongatoides*), *C. elongata*, *Sabanejewia aurata*), Siluridae (*Silurus glanis*), Gadidae (*Lota lota*), Percidae (*Perca fluviatilis*, *Gymnocephalus cernuus*, *G. baloni*, *G. schraetser*, *Stizostedion lucioperca*,

Zingel streber, *Z. zingel*), Gobiidae (*Proterorhinus marmoratus*) and Acipenseridae (*Acipenser ruthenus*).

(3) Mainly or exclusively inhabitants of standing waters: *Esox lucius* (Esocidae), *Scardinius erythrophthalmus*, *Leucaspis delineatus*, *Tinca tinca*, *Carassius carassius* (Cyprinidae) and *Misgurnus fossilis* (Cobitidae).

Some remarks are necessary concerning the distribution of these species in the Banat (and in general in Romania):

Hucho hucho was native only in the Cerna; *Acipenser ruthenus* has occasionally been found in the Bega and the Timiș; *Cobitis elongata* is confined in Romania to the Nera and its tributary Miniș (being also present in the southern tributaries of the Danube, from Slovenia to Bulgaria);

- *Abramis ballerus*, *A.sapa* and *Pelecus cultratus* are only occasionally found in the Timiș, being evidently intruders from the Danube;
- *Eudontomyzon danfordi* was found only in the Bistra (tributary of the Timiș); it surely also lives in the Timiș and, according to unverified informations in the Cerna;
- *E.vladykovi* is restricted to the Bega, Timiș and Bistra;
- *Thymallus thymallus* is restricted to the Timiș, its tributaries and the Cerna;
- *Gobio uranoscopus* is restricted to the Bega, Timiș, Nera and Cerna, being absent from the Caraș and its tributaries;
- *Cottus gobio* lives in the same four rivers, is absent from the Caraș, but a isolated population occurs in the brook Dragoselea, tributary of the Berzasca;
- *Gymnocephalus baloni* recently described, formerly confused with *G.vernuus* has been recorded only from the Timiș, but probably occurs also in other rivers;
- *G.schraetser* and *Zingel zingel* were recorded only from the Bega and the Timiș;
- *Z.streber* has been recorded only from the Timiș, Bega, Nera (here represented by a distinct subspecies, *Z.streber nerensis*) and once from the mouth of the Cerna (probably an intruder from the Danube);
- *Proterorhinus marmoratus* has been found in 1944 in the Beregsău lowland tributary of the Bega, later in Niarat, tributary of the Beregsău which is now strongly polluted and only once in the lower Timiș;

Some of the species listed above have been extinct or their populations have decreased.

- *Hucho hucho* (local vernacular name puica) became extinct, the last specimen having been captured in 1912 in the river Cerna at Băile Herculane (information from competent local people).

The sterlet, *Acipenser ruthenus* were present in the rivers Timiș and Bega during the 30-ties, no specimen having been found since then.

The populations of the rheophilic percid species - *Gymnocephalus schraetser*, *G. baloni* and both *Zingel* have strongly declined in the river Timiș, apparently also in the Bega; on the contrary, *Z. streber nerensis* retained its abundance in the Nera. It is worth mentioning that cyprinid and cobitid species having similar ecological requirements as *Zingel streber* (*Sabanejewia aurata*, *Gobio kessleri*) or as both *Gymnocephalus* (*G. albipinnatus*) have not diminished in Timis River.

Also *Cobitis elongata* is as abundant in the river Nera as 57 years ago, when I saw it for the first time.

Although *Gobio uranoscopus*, *G. kessleri* and *Sabanejewia aurata* retained their former abundance if the river Timiș, they must be considered vulnerable, since deterioration of the water quality through pollution or hydrotechnical constructions may determine their numerical decline or even extinction at least from some sectors of the river.

Among the inhabitants stagnant waters, the crucian carp (*Carassius carassius*) has underwent a dratical decline, even total extinction in the Banat. Until the end 40-ths the species was widely distributed and quite abundant in the province being represented in large ponds and in oxbows by the deep-bodied "normal" form and in small ponds by the dwarf elongate form ("morpha humilis"). It underwent since them a strong numerical decline, possibly due to the eutrofication of waters and to competition by the introduced *C. auratus gibelio*.

Two other inhabitants of stagnant water, *Leucaspius delineatus* and *Misgurnus fossilis*, underwent local extinctions because of the draining of numerous small ponds.

A large sized economically valuable cyprinid fish, the nose (*Chondrostoma nasus*) underwent a numerical decline from several rivers in the Banat (Timiș, Bega, Cerna) but retained its abundance in the Nera.

Other species having undergone a numerical decline are the grayling (*Thymallus thymallus*) and both lampreys of the genus *Eudontomyzon*.

Several allochthonous fish species are present in the Banat. Two North American salmonids the brook trout (*Salvelinus fontinalis*) and the rainbow trout (*Oncorhynchus mykiss*) are cultured in fishery farms in mountain areas, the first one also entering brooks. Two other North American fishes, *Lepomis gibbosus* (the sunfish) and *Ictalurus nebulosus* (the brown bullhead) have been introduced in Germany and spread along the Danube, arriving in the Banat many decades ago.

More recent intruders are five East Asian cyprinid fish species.

Three valuable ones, *Ctenopharyngodon idella*, *Hypophthalmichthys molitrix* and *H. nobilis*, cultured in fish farms, only occasionally escaping in natural waters.

Carassius auratus gibelio has been introduced from the lower Danube basin, probably during the early 50-ties, together with fry of the common carp. Now it is widely distributed and abundant in all stagnant water-bodies in the Banat, being also present in lowland rivers. It has totally or almost totally replaced the native *C. carassius*, being the only introduced species that had a nocent effect on the autochthonous fish fauna.

Pseudorasbora parva, again of East Asian origin has been introduced together with fry of valuable Chinese carps in fishery farms in southern and north-western Romania and sprea throughout the country; it is now widely distributed in the Banat but, at least in large rivers, nowhere abundant.

Finally, a goby of Ponto - Caspian brackish water origin, *Neogobius fluviatilis*, that initially was restricted in Banat to the confluence of the river Cerna with the Danube, became very abundant in the damlake and entered the lower reaches of the montanic rivers flowing into this lake: Sirina, Berzasca, Mraconia and Cerna.

Three species of crayfishes are native in the flowing waters of the Banat: *Astacus torrentium*, inhabitant of montain brooks in limestone areas in the south of the province, *A. astacus* in lowlands and submontanic rivers and *A. leptodactylus* in lowland rivers, usually downstreams of the sector inhabited by the preceding species; the first two species underwent numerical, decline and local extinctions, the latter retained its abundance and even extended its range upstreams in rivers.

Five large mussels are native in the Banat: *Unio crassus* and *Pseudanodonta complanata* in rivers, *U. pictorum*, *U. tumidus* and *Anodonta cygnaea* in standing waters (SÂRBU and MONICA SÂRBU, 1998; BĂNĂRESCU unpublished remarks). All survive, *U. crassus* being quite abundant in the rivers Timiș, Bega, Caraș and Nera.

The most remarkable, aquatic snails are four species of prosobranchiates (*Holandriana holandri*, *Theodoxus danubialis*, *Esperia na esperi* and *E. acicularis*), which build an association in the rivers Nera and Caraș. The first species is restricted in Romania to these rivers, also being present in southern tributaries of the Danube and in a few rivers in the western and southern Balkan. Much has been published about this association (BOTOȘĂNEANU and ALEXANDRINA NEGREA, 1976, BĂNĂRESCU and ELENA ARION, 1981, SÂRBU and MONICA SÂRBU, 1998). In the river Nera the association retained its abundance and composition, but in the Caraș, especially in the lower reach the association underwent a strong decline due to water pollution and hydrotechnical works.

Comparing the situation of these four animal groups in the various rivers of the Banat, following conclusions are evident:

The river Nera has the best situation, the biodiversity has not declined *Cobitis elongata*, the prosobranchiate association. *Zingel streber*, *Chondrostoma nasus*, *Gobio uranoscopus*, *G.kessleri*, *Sabanejewia aurata*, the unionacean mussels have not declined.

In the upper reach of Timiș River, *Thymallus* and the lampreys have declined, *Gobio uranoscopus* retained its number, *Zingel streber* underwent a drastic decline: *Gobio kessleri*, *Sabanejewia aurata* and *Unio crassus* are still abundant.

In the river Cerna *T.thymallus* and *Chondrostoma nasus* declined *Gobio uranoscopus* retains its abundance. The lowermost stretch of the river is now covered by the Iron Gates damlake, the whole submontanic fauna is in danger of being replaced by a lowland one.

The river Caraș has the worst situation. The only remarkable element in its aquatic fauna is the prossbranchiate association and it has been showned that this became almost totally extinct from the lower reach and is in danger also in the middle one.

A special ecologic category of aquatic animals is represented by the lower crustaceans inhabiting temporary pools. Two groups of these crustaceans have been studied in the Banat: the diaptomid copepods (BĂNĂRESCU & ȘERBAN, 1954) and fairy shrimps or Anostraca (data summarized by BĂNĂRESCU and at., 1998).

Six species of diaptomids have been found in the Banat: *Hemidiaptomus hungaricus*, *Diaptomus serbicus*, *Myxodiaptomus kupelwieseri*, *Arctodiaptomus wierzejki*, *A.pectinicornis*, *Eudiaptomus vulgaris*. All were collected from the temporary pools in the small forest Überland (north-east of Timișoara), the four first listed also in other localities in the lowlands of Banat. All diaptomids became now extinct from Überland, but the species surely survive in other localities in the Banat (*E.vulgaris* has been recently found at Jena, near Lugoj).

Six species of fairy shrimps were recorded from the Banat one of them is endemic to the province: *Palpicephalus brevipalpis*, described from Überland, also found between Sag and Pădureni (S - SE of Timișoara and in the south of the province (Grădinari, Comoraște and Forotic). The other species are: *Siphonophanes grubii* (found at Überland and Lugoj), *Pristicephalus carnuntanus* (a Panonian species found at Sannicolau and Überland), *Chirocephalus spinicaudatus chyzeri* (found only at Sacul, between Lugoj and Caransebes), *Chirocephalus diaphanus romanicus* (more widely distributed: Überland, Sannicolau, Sustra, Jebel and Sacul) and *Streptocephalus torvicornis* (at Überland and Sacul).

Contrary to the diaptomids, the fairy shrimps have not underwent regression; they are still abundant. Five species have recently been collected from Überland, where all diaptomids disappeared.

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Rezumat

Autorul analizează fauna primară acvatică din bălți permanente și temporare din Banat, constatând regresul și dispariția unor specii, hrana peștilor, altădată frecvente.

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