

THE PATTERN OF DISTRIBUTION OF THE FRESHWATER FAUNA  
OF THE BALKAN PENINSULA

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Each river drainage in the Balkan Peninsula has its own faunistic peculiarities. The Danube Basin's aquatic fauna has a marked central European character. Two of the ten endemic fishes of the basin are confined to its southern and south-western (*i.e.* its Balkanic) sector. Many genera of higher crustaceans and hydrobioid snails, especially hypogean taxa, are endemic to the south-western area of the Danube Basin, some of them are related to western Balkanic genera, however, the area also features a lot of endemic species belonging to western or Holo-balkan genera.

Central European and Danubian fish and aquatic invertebrates are also present in the rivers of the northern Aegean watershed; there are differences between the eastern Aegean rivers (R. Maritza, R. Mesta, R. Struma) and the western ones (R. Vardar and others). In the eastern Aegean rivers are present widely distributed European species inhabiting standing or slowly running water, while in the western rivers live rheophilic species, shared only with the Danube or with a few other neighbouring rivers; none of them live either in the eastern Aegean drainages or in the western Balkanic ones.

The aquatic fauna of the western Balkan is the richest in Europe and includes a very high number of endemic genera and species. Most species have restricted distributions in the western Balkan area; the four Dalmatian riverine drainages and especially the lakes of Skadar and Ohrid each have their own endemics. The southern Balkans includes numerous endemics too, most having quite restricted ranges. Several genera and species are restricted to two or three of the five Balkan districts. These taxa can be designated as "Balkan" in wide sense.

The efficiency of water divides as barriers differs amongst various groups. These provide very efficient barriers for fishes, crayfishes and large sized molluscs, and so explains the great differences between the fish faunas of the western Balkan and the Danube drainages. Water divides are, on the contrary, less efficient barriers for hypogean aquatic animals such as hydrobioid snails and aquatic insects - the genera and species of these groups, present in the south-western tributaries of the Danube, have marked west Balkanic ties.

The following historical biogeographical categories can be identified:

- those with central European or Palearctic ties: species more widely distributed and with different ages in the Peninsula. The central European species present in the Aegean rivers dispersed through the Black Sea when it was a brackish water body, whilst the Danubian rheophilic species dispersed by mean of river captures from the Danube's tributaries in the R. Vardar.
- those with Anatolian or western Asian affinities, *e.g.* the fish genus *Pseudophoxinus*, the subgenera *Luciobarbus* of *Barbus* and *Bicanestrinia* of *Cobitis*, and a speciose lineage of hydrobioid snails (raised by Radoman to family rank "Orientallinidae").
- members of lineages of marine Tethyan origin: species of the epigean snail genera *Theodoxus* and *Melanopsis* and a numerous hypogean species of atyd and peracarid crustaceans.
- offshoots of the Mediterranean marine fauna.

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