

## History of anchialine cave research in Croatia

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The first information on an anchialine cave in Croatia was written by the Croatian geologist Josip Poljak. He described the cave Urinjska špilja near Rijeka, drew its topographical map, and reported that cave water was brackish (Poljak, 1920). In 1950's Stanko Karaman (then in Dubrovnik) studied faunistically anchihaline waters around Dubrovnik, including the cave Šipun in Cavtat. Since his first visit of the cave Šipun (1958), during 1960's, till 1980's significant research of anchihaline caves along the Adriatic coast was conducted by Boris Sket from Ljubljana. Faunistically and ecologically explored have been more than 30 anchihaline caves along the entire coast but mainly at the Kornati Islands National Park, beside the Šipun cave. This resulted in the later confirmed ecological scheme (Sket 1986, 1996) of the anchihaline water bodies: salinity stratification, local oxygen depletion, and faunistic stratification by biotic exclusion. Technically, an adapted Cvetkov net and simple sampling bottles were mostly used, but also scuba diving sampling method.

The first described snorkel dive in an anchialine cave was made by Bruno Puharić, in the Urinjska špilja cave (Puharić, 1963). Rupert Riedel, (Wien) investigated some submarine caves near Rovinj and on the Krk Island (Riedel 1966). Later on, he and Ozretić also investigated coastal anchihaline caves, mainly near Rovinj (Riedl & Ozretić, 1969). An important contribution to subsequent explorations was made by the geographer Ivo Baučić who completed the list of caves on the Adriatic coast and islands (Baučić, 1962).

In the period between 1968 and 1975 geological and paleontological research of anchialine caves were made by Srećko Božičević and Mirko Malez (Malez, 1969), mainly on Lošinj, Cres and Rab Islands. Tonči Rađa from Split investigated anchialine caves during 90's and at the beginning of this century, sampling their fauna.

Research became more intense after 2005 due to Branko Jalžić, who on the suggestion of Frano Kršinić from the Institute for Oceanography and Fisheries, started researching of anchialine caves along Croatian coast of the Adriatic Sea. Extensive field work and interdisciplinary data on water, sediment, and biota of anchialine cave environment was done by members of the Croatian Biospeleological Society, Croatian Natural History Museum and Ruđer Bošković Institute (Žic et al. 2008). From this associated research, F. Kršinić described new genera and species of copepod crustaceans (Kršinić, 2005, 2005a, 2008). Recent research of some anchialine caves was done on Hvar and Krk Islands by the Natural History Museum of Rijeka (Arko-Pijevac et al., 2001) and the University of Zagreb (Gottstein et al., 2007; Novosel et al. 2007).

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