

# CLASSIFICATION, COMMUNITY STRUCTURE and BIOMONITORING WATER QUALITY of JIU-HUA RIVER.

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Benthic aquatic insects were sampled and associated with water quality for the first time in S.E.China in 1989. Samples were taken by sweep nets and by brushing stones at 5 sites in three tributaries of Jiu-hua River in the tourism region in An-hui Province, with two sites in third order streams, two sites in forth order streams and one site in a fifth order stream, in June, August and October.

6445 individuals were collected belonging to 124 species, 86 genera, 49 families and 9 orders. The Trichoptera were represented by 41 species in 31 genera and 12 families; Ephemeroptera by 26 species in 18 genera and 10 families; Coleoptera by 16 species in 11 genera and 5 families; Diptera by 14 species in 14 genera and 7 families; Plecoptera by 9 species in 9 genera and 4 families; Odonata by 8 species in 8 genera and 5 families; Hemiptera by 5 species in 5 genera and 4 families; Megaloptera by 3 species in 3 genera and 1 family; and Lepidoptera by 2 species in 1 genus and 1 family.

A comparison of species diversity, richness and Family Biotic Monitoring Index at each site shows that: (1) no one of the three tributaries was polluted by tourism. The species diversity and richness in third and fourth order streams are over 4 and 60 respectively, in the fifth order stream over 3 and 30 respectively; (2) the highest species diversity and richness were at site D in a forth order stream, but the best Family Biotic Monitoring Index was at site B and C in third order streams, because site D had more tolerant species. Faunal data at each site shows that the third order streams were dominated by Trichoptera, the forth order by Ephemeroptera, Trichoptera and Diptera, and the fifth order by Ephemeroptera. No Trichoptera or Plecoptera were found in the fifth order site E in June and August, because the water temperature was over 27°C, but in October, when the water temperature declined to 19°C, a few Trichoptera and Plecoptera were found.

Some necessary physical and chemical data are provided. The principles of the River Continuum Concept were applied for the first time in China.

# ZOBODAT - [www.zobodat.at](http://www.zobodat.at)

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

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