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Quantitative study on the seasonal food habits of Baetis rhodani (Pictet) in the River Ely, South Wales, U. K.

Baetis rhodani (Pictet) is an ephemeropteran common among lotic invertebrate assemblages in South Wales. The larvae of *B. rhodani* and five random samples of stones within a 250x 250 mm quadrat were collected while holding a net against downstream every fortnight from the River Ely at Peterston-Super-Ely, South Wales during January to November 1992. The larvae were collected by kick –a sampling across the riffle area and preserved immediately in 4% formaldehyde.

The stones were scraped and the materials of 100 micrometers to 1m size were separated, identified and counted at suitable magnifications using a Sedgewick-Rafter counting chamber. Gut contents of different –sized larvae were suspended in a solution of 5% fomaldehyde and glycerine (4:1) and washed into a 0.45 micrometer membrane

filter fitted to a filter column. The paticles dispersed on each filter were identified and counted at suitable magnifications after clearing each filter with the immersion oil.

Both gut contents and periphyton mainly consisted of detritus, diatoms, *Cladophora*, sand particles and black organic particles. Fifteen taxa of diatoms were also present in both categories depending on the season. Significant differences ($p<0.05$) in the proportions of main components and some diatom taxa observed in the guts were apparent in the four seasons. Significant positive correlations were apparent between the proportions of detritus, total diatoms and some major diatom taxa observed in the guts and those observed in the periophyton.