

Rare and exotic diatoms in the Duero River basin (NW Spain), with notes on their ecology and world distribution

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During a diatom survey performed in the Duero River Basin (NW Spain) in summer 2004 and 2005 several diatom taxa considered in the literature as rare, exotic or invasive for European freshwaters (*Achnantheidium catenatum*, *A. rivulare*, *A. subhudsonis*, *Capartogramma crucicola*, *Diadesmis confervacea*, *Eolimna comperei*, *Hippodonta pseudoacceptata*, *Gomphoneis eriensis* var. *variabilis*, *G. minuta*, *Gomphonema lagenula*, *G. pumilum* var. *rigidum* and *Reimeria uniseriata*) were found. Some of them are new records for the Spanish flora, and their absence in modern checklists may indicate their recent introduction in the Iberian Peninsula. Others are found in relatively large numbers and/or widely distributed, reflecting a somewhat invasive ecological behaviour. The environmental singularities of the Duero Basin are hypothesized as the main factor leading to the acclimatization and dispersion of these exotic algae. Measured physical and chemical variables in the sampling stations provide environmental data for the inference of the autoecological profile of these species. Additionally, updated data on their world distribution are given. The ecological relevancy of the presence and proliferation of these diatom taxa in the Duero Basin is discussed. Additionally, the diatom *Didymosphenia geminata*, commonly considered a taxon restricted to pristine habitats in mountainous areas of circumboreal regions, has recently appeared in several stations in northern Spain, and now forms large growths in rivers such as the Revinuesa River (Duero Basin), where it is considered an aggressive invasive species with dramatic ecological and economic impacts. This nuisance organism grows attached in streambeds and may impact freshwater fish, aquatic plants and insects, causing severe disturbance in food webs.