
Eunotiales (Bacillariophyceae) of continental waters of the state of São Paulo: floristic survey.

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Abstract

Diatoms (Bacillariophyceae) constitute an expressive part of the freshwater algal flora. They are abundant in the planktonic communities, but mostly in the periphyton of marine and continental water systems. Knowledge of the group in the state of São Paulo still is extremely small, including that of the Eunotiales, an order composed of 2 families, namely the Eunotiaceae with 2 genera (*Actinella* and *Eunotia*) and the Peroniaceae with the single genus *Peronia*. Literature regarding the São Paulo State Eunotiales is composed of 18 papers, from which only 7 deal with the taxonomy of the group. In addition, there was no reference to the occurrence of representatives of the family Peroniaceae in the state. Present floristic survey of the São Paulo State Eunotiales is based on 138 semipermanent mountings prepared from 141 sample units that were gathered from 75 localities in the state. One hundred and thirteen of those mountings were already deposited in the Herbário Científico do Estado “Maria Eneyda P. Kauffmann Fidalgo” (SP), Instituto de Botânica, Secretaria do Meio Ambiente do Estado de São Paulo. The remaining 25 were prepared from collections conducted during the years 2000 and 2001. Forty two species and 3 varieties that are not the typical of their respective species were presently identified, totaling 42 taxa, from which 4 are classified in the genus *Actinella* and 38 in *Eunotia*. Fifteen out of the 42 taxa are presently cited for the first time for the state of São Paulo. Sampling localities were defined as to cover as uniform as possible the whole area of the state. Furthermore, the sampling program considered both lentic and lotic aquatic environments as well as planktonic and periphytic habitats. The following taxa presented the broadest geographical distribution in the state of São Paulo: *Eunotia sudetica* O.F. Muller (occurred in 56% of total localities studied), *E. flexuosa* Brébisson *ex* Kützing (45%), *E. bilunaris* (Ehrenberg) Souza (44%), and *E. camelus* Ehrenberg (40%). Taxonomic identification of specific and infraspecific taxa of Eunotiales was based on the best available classical and recent literature. For each taxon identified the following information was given: (1) complete bibliographical reference to the work containing the taxon’s original description and/or diagnosis; (2) morphological description including the greatest possible number of diacritic and diagnostic characteristics; (3) measurements of taxonomical

interest; (4) geographical distribution in the state of São Paulo; (5) list of sampling unities from which the taxon was identified; (6) taxonomical comments; and (7) illustrations as photographs taken both with the regular optical and the scanning electron microscopes, whose purpose was to demonstrate the polymorphism detected in the taxon. Regular procedure was, whenever possible, to analyze small populations of representatives of each taxon, aiming at identifying every possible polymorphism as well as whose characteristics were the most relevant for the distinction of species and taxonomic varieties within each genus.

Key-words: taxonomy, floristic survey, Bacillariophyceae, diatoms, Brazil.

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