

22nd MEETING
OF THE
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Programme & Abstracts

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Angelo Troia



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The role of *Characeae* in the communities of the vegetation class *Potametea*

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The stonewort vegetation is commonly classified into the phytosociological class *Charetea fragilis* F. Fukarek ex Krausch 1964; however, the *Characeae* are not exclusively found in vegetation stands ascribed to this class but also in other habitat types. In our preliminary investigations, we draw the attention to the relationship between the classes *Charetea fragilis* and *Potametea pectinati* Klika in Klika & Novák 1941 in some Sicilian biotopes.

In some cases, the *Charetea* vegetation is ecologically and spatially distinct, although close, from that referable to the *Potametea*. In some other cases, one or more species of *Characeae* are structurally intrinsic to the vegetation of *Potametea*: one example is offered by the pools next to the Maulazzo dam [Nebrodi Mts.], where *Chara* cf. *conimbrigensis* A.G. Cunha enters the *Groenlandietum densae* Segal ex Schipper et al. in Schaminée et al. 1995, growing together with *Groenlandia densa* (L.) Fourr., *Potamogeton natans* L., *Callitriche* sp. pl.

Another relevant case is the relationship of some *Nitella* species, such as *N. capillaris* (Krock.) J. Groves & Bull.-Webst. and *N. opaca* (C. Agardh ex Bruzelius) C. Agardh, with vegetation ascribed to the phytosociological alliance *Batrachion fluitantis* Neuhäusl 1959.

In particular, the occurrence of the two different *Nitella* species goes along with two different species of *Ranunculus* subg. *Batrachium*, i.e. *Ranunculus saniculifolius* Viv. and *R. aquatilis* L., respectively, in two different sites. In these cases, phenology could be an important adaptive trait, with the *Characeae* developing earlier (between the end of winter and the beginning of spring) so to avoid the competition of the angiosperms that progressively develop during the spring months.

Phenology is worth to be further investigated for the interactions not only between *Characeae* and angiosperms, but also between *Characeae* and other freshwater algae, such as the filamentous *Spirogyra* sp. pl., ascribed to the *Zygnematales* order of *Charophyceae*. However, this succession was not observed in pools fed by water springs, that keep the water temperature lower across the season. It is likely that the regression of *Characeae* as water temperature increases is regulated by competition with the vascular plant species and/or other more thermophilous representatives of the algal flora. In small water ponds, the livestock grazing and trampling is another important ecological factor to be investigated, also for its effects on water turbidity and nutrient concentrations.