

# Floristic notes from aquatic stands of Central Greece (Sterea Ellas)

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# Floristic notes from aquatic stands of Central Greece (Sterea Ellas)

LEMONIA KOUMPLI-SOVANTZI  
&  
IRINI VALLIANATOU

## ABSTRACT

KOUMPLI-SOVANTZI, L. & I. VALLIANATOU (1994). Floristic notes from aquatic stands of Central Greece (Sterea Ellas). *Candollea* 49: 195-207. In English, English and French abstracts.

This paper lists a total of 164 taxa of vascular plants (161 flowering plants, 3 ferns) found in and around some aquatic ecosystems of Central Greece, some of which are investigated for the first time.

## RÉSUMÉ

KOUMPLI-SOVANTZI, L. & I. VALLIANATOU (1994). Notes floristiques des stations humides de la Grèce centrale. *Candollea* 49: 195-207. En anglais, résumés anglais et français.

164 taxa de plantes vasculaires (161 plantes à fleur, 3 fougères) de stations humides ont été récoltés en Grèce centrale. Quelques-unes d'entre elles sont étudiées pour la première fois.

**KEY-WORDS:** Floristics — Aquatic habitats — Central Greece.

## Introduction

In C. Greece a limited number of aquatic ecosystems (lakes, rivers, rivulets, streams, canals, springs, lagoons, pools, marshes, saltworks) is found. The present floristic study deals with the plants living in the water or on the shores and banks of some of them.

Some parts of C. Greece are well or reasonably well explored areas and some others ill-explored (GREUTER & al., 1976). Its aquatic ecosystems must be considered as not completely investigated, despite the fact that recently some of them have been the object of several publications.

Going from the west to the east, the vegetation of the Mesolongi lagoon has been treated by WOLFF (1968), the aquatic flora of the province of Aitolias & Akarnanias by KOUMPLI-SOVANTZI (1983, 1989), the vegetation of the lake Lisimakhia by KOUMPLI-SOVANTZI & VALLIANATOU (1985), the vegetation of the delta of the Akheloos river by SEVERIN & al. (1989-1990), the flora of Sperkhios valley by STEPHANIDES (1948), the evolution of the halophytic vegetation of the two largest plains of Attiki (Athens and Marathon) by ECONOMIDOU (1975), whilst the Marathon plain (marsh of Skhinia) has been also dealt with the following publications: HARITONIDOU (1977, 1983), PHITOS (1988) and BROFAS & KARETSOS (1992).

The purpose of this study is to contribute to the floristic knowledge of the aquatic habitats of Central Greece, completing the floristic lists of the already investigated ecosystems or giving for the first time lists of the rest.

Between 1983 and 1992 the authors paid sixteen short visits to the investigated ecosystems; during these visits plant specimens were collected and some measurements of the salinity, conductivity and pH were taken. The authors have in mind to continue this study, visiting other ecosystems of the area in the near future.

### List of localities

The aquatic ecosystems under study are found at the Provinces of Aitolias & Akarnanias, Fokidhos, Fthiotidhos, Voiotias and Attikis. The investigated localities are indicated with dots and numbers on the map (Fig. 1) and are shortly described below.

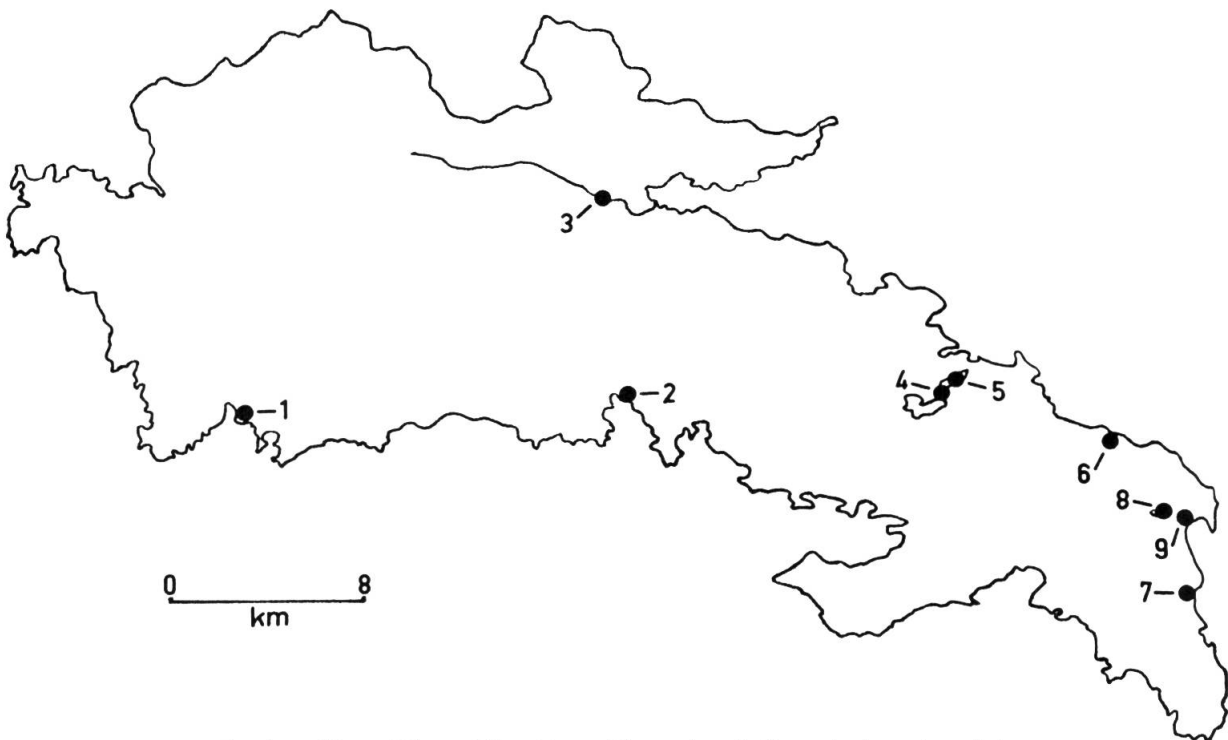


Fig. 1. — Map of Sterea Ellas. Dots with numbers indicate the investigated sites.

#### I. *Nomos Aitolias & Akarnanias*

1. Mesolongi: saltworks (canals, ditches and pans separated by banks).

#### II. *Nomos Fokidhos*

2. Kira: rivulet (width = 4 m, depth = 0.5 m; 13.10.1990: salinity = 6‰, conductivity = 8000  $\mu$ mhos, pH = 7.9; 23.8.1992: salinity 8‰, conductivity = 15 000  $\mu$ mhos, pH = 7.0); wetland.

#### III. *Nomos Fthiotidhos*

3. Sperkhios river: bank of the river, near the bridge on the National road Athens — Lamia.

#### IV. *Nomos Voiotias*

4. Iliki-Paralimni: canal which connects lake Iliki and lake Paralimni (29.8.1992: salinity = 0.5‰, pH = 8.4, conductivity = 400  $\mu$ mhos).
5. Lake Paralimni (29.8.1992: salinity = 0.8‰, pH 8.6, conductivity = 1150  $\mu$ mhos).

V. *Nomos Attikis*

6. Oropos: vernal coastal pool becoming quite dry in summer (29.5.1992: salinity = 12‰, conductivity = 17 500 µmhos, pH = 7.2).
7. Loutsas: streamlet of water flowing towards the Vraonas bay.
8. Marathon: technical lake (29.9.1992: salinity = 0.5‰, conductivity = 780 µmhos, pH = 7.9); rivulet (29.9.1992: salinity = 0.2‰, conductivity = 600 µmhos, pH = 7.7).
9. Skhinias: canal (width = 4 m, depth = 1.5 m, 29.9.1992: salinity = 2‰, conductivity = 2600 µmhos, pH = 7.4); marsh; pools.

**Species list**

The following catalogue of taxa is based on the authors' collections (Herb. L. Koumpli-Sovantzi and I. Vallianatou, duplicates in ATHU). The collectors' name are abbreviated by the capital letters *K. S.* and *V.* respectively and followed by the collecting numbers appear on the list after the localities and the corresponding collecting dates. When no collecting number is cited the report is based on field notes by the authors.

The determinations were mainly made according to CASPER & KRAUSCH (1980-1981), COOK & al. (1974), DAVIS (1965-1988), FASSETT (1957) and TUTIN & al. (1964-1980). Nomenclature follows that of TUTIN & al. (1964-1980) except for the part revised by GREUTER & al. (1984, 1986, 1989) where the latter is followed.

**P T E R I D O P H Y T A***Equisetaceae*

*Equisetum arvense* L. — Sperkhios river (9.5.1983: *K. S. 185I*).

*Equisetum ramosissimum* Desf. — Marathon (29.9.1992: *K. S. 458Ia*).

*Equisetum telmateia* Ehrh. — Marathon (29.9.1992: *K. S. 458I*).

**A N G I O S P E R M A E — D I C O T Y L E D O N E S***Salicaceae*

*Salix alba* L. — Sperkhios river (9.5.1983: *K. S. 1853*); Marathon (29.9.1992: *K. S. 4584*).

*Populus alba* L. — Sperkhios river (9.5.1983: *K. S. 1859*); Marathon (29.9.1992: *K. S. 4589*).

*Polygonaceae*

*Polygonum aviculare* L. — Mesolongi (3.6.1991: *K. S. 4413*).

*Persicaria lapathifolia* (L.) S. F. Gray — Iliki-Paralimni (29.8.1992: *K. S. 454I*); Marathon (29.9.1992: *K. S. 459I*).

*Rumex conglomeratus* Murray — Mesolongi (3.6.1991: *K. S. 441I*).

*Rumex* cf. *obtusifolius* L. subsp. *transiens* (Simkovic) Rech. fil. — Mesolongi (3.6.1991: K. S. 4412).

*Rumex palustris* Sm. — Iliki-Paralimni (29.8.1992: K. S. 4540a).

#### *Chenopodiaceae*

*Beta maritima* L. — Mesolongi (3.6.1991: K. S. 4422).

*Chenopodium ambrosioides* L. — Sperkhios river (9.5.1983: K. S. 1855).

*Chenopodium botrys* L. — Mesolongi (3.6.1991: K. S. 4423).

*Atriplex portulacoides* L. — Mesolongi (3.6.1991: K. S. 4416); Oropos (27.4.1992: V. 5904, 29.8.1992: K. S. 4561).

*Atriplex prostrata* DC. — Mesolongi (3.6.1991: K. S. 4415, 20.10.1991: K. S. 4450).

*Halocnemum strobilaceum* (Pallas) MB. — Mesolongi (20.10.1991: K. S. 4448).

*Arthrocnemum macrostachyum* (Moris) Moris — Mesolongi (3.6.1991: K. S. 4424); Skhinias (10.11.1991: K. S. 4476); Oropos (29.8.1992: K. S. 4557).

*Sarcocornia perennis* (Miller) A. J. Scott — Mesolongi (20.10.1991: K. S. 4452); Skhinias (10.11.1991: K. S. 4475, 29.8.1992: K. S. 4626); Oropos (27.4.1992: V. 5916, 29.9.1992: K. S. 4558).

*Salicornia europaea* L. — Mesolongi (3.6.1991: K. S. 4425).

*Suaeda maritima* (L.) Dumort. — Mesolongi (20.10.1991: K. S. 4453); Oropos (29.8.1992: K. S. 4560).

*Suaeda vera* J. F. Gmelin — Skhinias (29.9.1992: K. S. 4627).

*Salsola soda* L. — Mesolongi (3.6.1991: K. S. 4426, 20.10.1991: K. S. 4451); Oropos (29.8.1992: K. S. 4559).

#### *Amaranthaceae*

*Amaranthus albus* L. — Sperkhios river (9.5.1983: K. S. 1846).

*Amaranthus retroflexus* L. — Sperkhios river (9.5.1983: K. S. 1856).

#### *Caryophyllaceae*

*Herniaria hirsuta* L. — Skhinias (26.5.1988: K. S. 3513).

*Spergularia salina* J. Presl & C. Presl — Skhinias (26.5.1988: K. S. 3509); Oropos (27.4.1992: V. 5908); Mesolongi (3.6.1991: K. S. 4417).

*Silene colorata* Poir. — Mesolongi (3.6.1991: K. S. 4419).

*Silene gallica* L. — Mesolongi (3.6.1991: K. S. 4420).

*Petrorhagia velutina* (Guss.) P. W. Ball & Heywood — Mesolongi (3.6.1991: K. S. 4421).

*Velezia rigida* L. — Mesolongi (3.6.1991: K. S. 4418).

*Ceratophyllaceae*

*Ceratophyllum demersum* L. — Paralimni (15.7.1983: K. S. 1895).

*Ranunculaceae*

*Nigella damascena* L. — Mesolongi (3.6.1991: K. S. 4414).

*Ranunculus sceleratus* L. — Iliki-Paralimni (29.8.1992: K. S. 4542).

*Papaveraceae*

*Fumaria capreolata* L. — Oropos (27.4.1992: V. 5900).

*Cruciferae*

*Hymenolobus procumbens* (L.) Nutt. — Oropos (27.4.1992: V. 5915).

*Sinapis alba* L. subsp. *alba* — Oropos (27.4.1992: V. 5905).

*Platanaceae*

*Platanus orientalis* L. — Sperkhios river (9.5.1983: K. S. 1845); Marathon (29.9.1992: K. S. 4592).

*Rosaceae*

*Rubus* sp. — Sperkhios river (9.5.1983: K. S. 1847).

*Potentilla reptans* L. — Marathon (29.9.1992: K. S. 4576).

*Leguminosae*

*Ononis reclinata* L. — Mesolongi (3.6.1991: K. S. 4408).

*Melilotus indicus* (L.) All. — Oropos (27.4.1992: V. 5906).

*Melilotus neapolitanus* Ten. — Mesolongi (3.6.1991: K. S. 4407).

*Melilotus segetalis* (Brot.) Ser. — Mesolongi (3.6.1991: K. S. 4406).

*Medicago lupulina* L. — Marathon (29.9.1992: K. S. 4577).

*Trifolium angustifolium* L. — Mesolongi (3.6.1991: K. S. 4402).

*Trifolium campestre* Schreber — Mesolongi (3.6.1991: K. S. 4403).

*Trifolium infamia-ponertii* Greuter — Skhinias (26.5.1988: K. S. 3517).

*Trifolium nigrescens* Viv. — Skhinias (26.5.1988: K. S. 3522); Mesolongi (3.6.1991: K. S. 4405).

*Trifolium pallidum* Waldst. & Kit. — Mesolongi (3.5.1991: K. S. 4404).

*Trifolium resupinatum* L. — Skhinias (26.5.1988: K. S. 3514).

*Scorpiurus muricatus* L. — Mesolongi (3.6.1991: K. S. 4401).

#### *Euphorbiaceae*

*Euphorbia oblongata* Griseb. — Marathon (29.9.1992: K. S. 4582).

*Euphorbia prostrata* Aiton — Sperkhios river (9.5.1983: K. S. 1843).

*Euphorbia hirsuta* Vahl — Mesolongi (3.6.1991: K. S. 4400).

#### *Guttiferae*

*Hypericum perforatum* L. — Marathon (29.9.1992: K. S. 4586).

#### *Tamaricaceae*

*Tamarix hampeana* Boiss. & Heldr. — Skhinias (26.5.1988: K. S. 3521).

*Tamarix smyrnensis* Bunge — Marathon (29.9.1992: K. S. 4598).

#### *Frankeniaceae*

*Frankenia pulverulenta* L. — Mesolongi (3.6.1991: K. S. 4410).

#### *Lythraceae*

*Lythrum junceum* Banks & Solander — Mesolongi (20.10.1991: K. S. 4449).

#### *Onagraceae*

*Epilobium hirsutum* L. — Iliki-Paralimni (29.8.1992: K. S. 4543); Marathon (29.9.1992: K. S. 4601).

#### *Haloragaceae*

*Myriophyllum spicatum* L. — Paralimni (15.7.1983: K. S. 1894, 29.8.1992: K. S. 4551); Marathon (29.9.1992: K. S. 4602).

#### *Umbelliferae*

*Foeniculum vulgare* Miller subsp. *piperitum* (Ucria) Coutinho — Skhinias (29.9.1992: K. S. 4608).

*Bupleurum fruticosum* L. — Marathon (29.9.1992: K. S. 4596).

*Bupleurum gracile* D'Urv. — Mesolongi (3.6.1991: K. S. 4399).

*Apium nodiflorum* (L.) Lag. — Skhinias (10.11.1991: K. S. 4483, 29.9.1992: K. S. 4604); Marathon (29.9.1992: K. S. 4584).

*Torilis nodosa* (L.) Gaertner — Mesolongi (3.6.1991: K. S. 4398).

#### *Primulaceae*

*Anagallis arvensis* L. — Mesolongi (3.6.1991: K. S. 4397); Oropos (27.4.1992: V. 5903).

*Samolus valerandi* L. — Marathon (29.9.1992: K. S. 4583); Skhinias (29.9.1992).

#### *Plumbaginaceae*

*Limonium narbonense* Miller — Mesolongi (20.10.1991: K. S. 4457); Skhinias (29.9.1992: K. S. 4616).

*Limonium virgatum* (Willd.) Fourr. — Skhinias (29.9.1992: K. S. 4624).

#### *Gentianaceae*

*Centaurium spicatum* (L.) Fritsch — Skhinias (10.11.1991: K. S. 4470).

*Centaurium tenuiflorum* (Hoffmanns. & Link) Fritsch subsp. *acutiflorum* (Schott) Zeltner — Mesolongi (3.6.1991: K. S. 4396); Marathon (29.9.1992: K. S. 4575).

#### *Apocynaceae*

*Nerium oleander* L. — Sperkios river (9.5.1983: K. S. 1848); Marathon (29.9.1992: K. S. 4593).

#### *Convolvulaceae*

*Cressa cretica* L. — Mesolongi (20.10.1991: K. S. 4455).

*Calystegia sepium* (L.) R. Br. subsp. *sepium* — Skhinias (29.9.1992: K. S. 4611).

#### *Boraginaceae*

*Anchusa hybrida* Ten. — Skhinias (26.5.1988: K. S. 3518).

#### *Verbenaceae*

*Vitex agnus-castus* L. — Mesolongi (3.6.1991); Marathon (29.9.1992: K. S. 4597).

*Verbena officinalis* L. — Marathon (29.9.1992: K. S. 4588).

*Lippia nodiflora* (L.) Michx — Iliki-Paralimni (29.8.1992: K. S. 4549).



*Callitrichaceae*

*Callitriche truncata* Guss. subsp. *truncata* — Loutsia (5.11.1990: K. S. 4231).

*Labiatae*

*Lycopus europaeus* L. — Sperkhios river (9.5.1983: K. S. 1841); Iliki-Paralimni (29.8.1992: K. S. 4548).

*Mentha aquatica* L. — Marathon (29.9.1992: K. S. 4580).

*Mentha pulegium* L. — Iliki-Paralimni (29.8.1992: K. S. 4547); Marathon (29.9.1992: K. S. 4579).

*Solanaceae*

*Solanum luteum* Miller subsp. *alatum* (Moench) Dostal — Sperkhios river (9.5.1983: K. S. 1842).

*Solanum nigrum* L. — Sperkhios river (9.5.1983: K. S. 1838).

*Scrophulariaceae*

*Veronica anagalloides* Guss. — Iliki-Paralimni (29.8.1992: K. S. 4546).

*Plantaginaceae*

*Plantago coronopus* L. — Skhinias (26.5.1988: K. S. 3503a); Oropos (27.4.1992: V. 5913); Mesolongi (3.6.1991: K. S. 4391).

*Plantago crassifolia* Forskål — Skhinias (26.5.1988: K. S. 3503, 10.11.1991: K. S. 4474, 29.9.1992: K. S. 4615).

*Plantago lagopus* L. — Skhinias (26.5.1988: K. S. 3516); Mesolongi (3.6.1991: K. S. 4392).

*Plantago major* L. (s.l.) — Marathon (29.9.1992: K. S. 4590).

*Caprifoliaceae*

*Sambucus nigra* L. — Sperkhios river (9.5.1983: K. S. 1860).

*Compositae*

*Aster squamatus* (Sprengel) Hieron. — Sperkhios river (9.5.1983: K. S. 1836); Iliki-Paralimni (29.8.1992: K. S. 4550); Marathon (29.9.1992: K. S. 4599); Skhinias (29.9.1992: K. S. 4605).

*Aster tripolium* L. — Kira (5.5.1991: K. S. 4346); Mesolongi (20.10.1991: K. S. 4458); Skhinias (10.11.1991: K. S. 4468).

*Conyza albida* Sprengel — Marathon (29.9.1992: K. S. 4600).

*Conyza canadensis* (L.) Cronq. — Sperkhios river (9.5.1983: K. S. 1839).

- Inula crithmoides* L. — Mesolongi (3.6.1991); Skhinias (29.9.1992: K. S. 4625).  
*Dittrichia viscosa* (L.) W. Greuter subsp. *viscosa* — Skhinias (29.9.1992: K. S. 4618).  
*Xanthium strumarium* L. subsp. *italicum* (Moretti) D. Löve — Marathon (29.9.1992: K. S. 4587).  
*Chamomilla recutita* (L.) Rauschert — Oropos (27.4.1992: V. 5914).  
*Galactites tomentosa* Moench — Mesolongi (3.6.1991: K. S. 4395).  
*Hedypnois cretica* (L.) Dum.-Courset — Skhinias (26.5.1988: K. S. 3512).  
*Picris echioides* L. — Sperkhios river (9.5.1983: K. S. 1837); Mesolongi (3.6.1991: K. S. 4393).  
*Tragopogon brevirostris* DC. — Skhinias (10.11.1991: K. S. 4467).  
*Crepis foetida* L. subsp. *rhoeadifolia* (Bieb.) Čelak. — Mesolongi (3.6.1991: K. S. 4394).

## ANGIOSPERMAE — MONOCOTYLEDONES

### *Alismataceae*

- Alisma lanceolatum* With. — Skhinias (20.4.1991: K. S. 4233, specimen without flowers).

### *Juncaginaceae*

- Triglochin bulbosa* L. subsp. *barrelieri* (Loisel.) Rouy — Oropos (27.4.1992: V. 5917, 29.8.1992: K. S. 4554).

### *Potamogetonaceae*

- Potamogeton crispus* L. — Paralimni (15.7.1983: K. S. 1896).  
*Potamogeton nodosus* Poiret — Skhinias (26.5.1988: K. S. 3530, 10.11.1991: K. S. 4481); Paralimni (15.7.1983: K. S. 1892).  
*Potamogeton pectinatus* L. — Skhinias (26.5.1988: K. S. 3531, 10.11.1991: K. S. 4479).

### *Ruppiaceae*

- Ruppia cirrhosa* (Petagna) Grande — Mesolongi (20.10.1991: K. S. 4460).  
*Ruppia maritima* L. — Kira (30.7.1990: K. S. 4209, 13.10.1990: K. S. 4228); Oropos (27.4.1992: V. 5898).

### *Zosteraceae*

- Zostera noltii* Hornem. — Mesolongi (20.10.1991: K. S. 4461).

*Zannichelliaceae*

*Zannichellia palustris* L. — Skhinias (26.5.1988: K. S. 3529, 10.11.1991: K. S. 4482).

*Cymodocea nodosa* (Ucria) Ascherson — Mesolongi, (20.10.1991: K. S. 4462).

*Juncaceae*

*Juncus acutus* L. — Skhinias (26.5.1988: K. S. 3525, 10.11.1991: K. S. 4465); Mesolongi (3.6.1991: K. S. 4389).

*Juncus articulatus* L. — Sperkhios river (9.5.1983: K. S. 1870); Iliki-Paralimni (29.8.1992: K. S. 4533); Skhinias (29.9.1992: K. S. 4612).

*Juncus bufonius* L. — Skhinias (26.5.1988: K. S. 3510).

*Juncus heldreichianus* Marsson — Skhinias (10.11.1991: K. S. 4466, 29.9.1992: K. S. 4617).

*Juncus littoralis* C. A. Meyer — Skhinias (29.9.1992: K. S. 4614):

*Juncus maritimus* Lam. — Skhinias (10.11.1991: K. S. 4473); Oropos (27.4.1992: V. 5901, 29.8.1992: K. S. 4552).

*Juncus subulatus* Forskål — Skhinias (26.5.1988: K. S. 3507, 20.4.1991: K. S. 4235, 10.11.1991: K. S. 4478, 29.9.1992: K. S. 4621); Oropos (29.8.1992: K. S. 4553); Mesolongi (3.6.1991: K. S. 4388).

*Gramineae*

*Lolium multiflorum* Lam. — Mesolongi (3.6.1991: K. S. 4386).

*Lolium rigidum* Gaudin subsp. *lepturoides* (Boiss.) Sennen & Mauricio — Skhinias (26.5.1988: K. S. 3505).

*Sphenopus divaricatus* (Gouan) Reichenb. — Mesolongi (3.6.1991: K. S. 4387); Oropos (27.4.1992: V. 5907).

*Puccinellia distans* (L.) Parl. — Oropos (27.4.1992: V. 5902).

*Puccinellia festuciformis* (s.l.) — Mesolongi (3.6.1991: K. S. 4378); Skhinias (10.11.1991: K. S. 4469, 29.9.1992: K. S. 4623).

*Cynosurus echinatus* L. — Skhinias (26.5.1988: K. S. 3519).

*Bromus intermedius* Guss. — Mesolongi (3.6.1991: K. S. 4379).

*Elymus elongatus* (Host) Runemark subsp. *ponticus* (Podp.) Melderis — Mesolongi (20.10.1991: K. S. 4459).

*Elymus flaccidifolius* (Boiss. & Heldr.) Melderis — Skhinias (29.9.1992: K. S. 4619).

*Elymus repens* (L.) Gould — Marathon (29.9.1992: K. S. 4595).

*Hordeum marinum* Hudson — Mesolongi (3.6.1991: K. S. 4380); Oropos (27.4.1992: V. 5909).

*Hordeum murinum* L. subsp. *leporinum* (Link) Arcangeli — Skhinias (26.5.1988: K. S. 3515); Mesolongi (3.6.1991: K. S. 4381).

*Gaudinia fragilis* (L.) Beauv. — Mesolongi (3.6.1991: K. S. 4382).

*Lophochloa cristata* (L.) Hyl. — Skhinias (26.5.1988: K. S. 3511).

- Lagurus ovatus* L. — Skhinias (26.5.1988: K. S. 3523).
- Agrostis stolonifera* L. — Marathon (29.9.1992: K. S. 4574).
- Polypogon maritimus* Willd. subsp. *maritimus* — Mesolongi (3.6.1991: K. S. 4374).
- Polypogon monspeliensis* (L.) Desf. — Skhinias (26.5.1988: K. S. 3504); Mesolongi (3.6.1991: K. S. 4373); Iliki-Paralimni (29.8.1992: K. S. 4538).
- Phleum subulatum* (Savi) Ascherson & Graebner subsp. *subulatum* — Mesolongi (3.6.1991: K. S. 4377).
- Parapholis filiformis* (Roth) C. E. Hubbard — Mesolongi (3.6.1991: K. S. 4383).
- Parapholis incurva* (L.) C. E. Hubbard — Mesolongi (3.6.1991: K. S. 4384).
- Parapholis marginata* Runemark — Oropos (27.4.1992: V. 5912).
- Phalaris minor* Retz. — Mesolongi (3.6.1991: K. S. 4375); Oropos (27.4.1992: V. 911).
- Phalaris paradoxa* L. — Mesolongi (3.6.1991: K. S. 4376).
- Stipa capensis* Thunb. — Mesolongi (3.6.1991: K. S. 4372).
- Phragmites australis* (Cav.) Trin. ex Steudel — Sperkhios river (9.5.1983: K. S. 1840); Mesolongi (3.6.1991); Iliki-Paralimni (29.8.1992: K. S. 4530); Skhinias (29.9.1992: K. S. 4609); Marathon (29.9.1992: K. S. 4578).
- Aeluropus littoralis* (Gouan) Parl. — Mesolongi (20.10.1991: K. S. 4456); Oropos (29.8.1992: K. S. 4555); Skhinias (29.9.1992: K. S. 4620).
- Crypsis alopecuroides* (Piller & Mitterp.) Schrader — Iliki-Paralimni (29.8.1992: K. S. 4539).
- Echinochloa crus-galli* (L.) Beauv. — Iliki-Paralimni (29.8.1992: K. S. 4535).
- Digitaria sanguinalis* (L.) Scop. — Iliki-Paralimni (29.8.1992: K. S. 4534).
- Paspalum distichum* L. — Sperkhios river (9.5.1983: K. S. 1868); Iliki-Paralimni (29.8.1992: K. S. 4537).

#### *Typhaceae*

- Typha domingensis* (Pers.) Steudel — Skhinias (10.11.1991: K. S. 4471, 29.9.1992: K. S. 4606); Iliki-Paralimni (29.8.1992; K. S. 4531).
- Typha latifolia* L. — Iliki-Paralimni (29.8.1992: K. S. 4532).

#### *Cyperaceae*

- Scirpus cernuus* Vahl — Skhinias (26.5.1988: K. S. 3506).
- Scirpus holoschoenus* L. — Skhinias (26.5.1988: K. S. 3520, 10.11.1991: K. S. 4472, 29.9.1992: K. S. 4613); Iliki-Paralimni (29.8.1992: K. S. 4536).
- Scirpus litoralis* Schrader — Skhinias (26.5.1988: K. S. 3508, 20.4.1991: K. S. 4236, 29.9.1992: K. S. 4607).
- Scirpus maritimus* L. subsp. *maritimus* — Skhinias (20.4.1991: K. S. 4234).
- Fimbristylis bisumbellata* (Forskål) Bubani — Sperkhios river (9.5.1983: K. S. 1863).
- Cyperus difformis* L. — Sperkhios river (9.5.1983: K. S. 1877).

*Cyperus fuscus* L. — Sperkhios river (9.5.1983: K. S. 1866); Iliki-Paralimni (29.8.1992: K. S. 4540).

*Cyperus laevigatus* L. subsp. *distachyos* (All.) Maire & Weiller — Kira (5.5.1991: K. S. 4347).

*Schoenus nigricans* L. — Skhinias (10.11.1991: K. S. 4477).

*Carex extensa* Good. — Kira (5.5.1991: K. S. 4348).

### Conclusions

The present study on 9 aquatic ecosystems contributes to the knowledge of their flora and of the flora of Central Greece (Sterea Ellas) in general. The authors give a list of 164 taxa of vascular plants: 3 Pteridophytes and 161 Spermatophytes (101 Dicotyledones and 60 Monocotyledones). They are belonging to 113 genera and 45 families. The most diverse families are Gramineae (31 taxa) and Leguminosae (16 taxa) followed by Compositae (13 taxa), Chenopodiaceae (12 taxa) and Cyperaceae (10 taxa).

The number of families, genera and taxa of each examined ecosystem is reported in Table 1; the areas of Mesolongi saltworks and Skhinia marsh house the longest numbers of entities because of their size and the variety of their habitats. Moreover the authors have examined these two ecosystems more intensively than the others, some of which — especially Sperkhios river — require further investigation.

The areas under study belong to two ecosystem types: fresh water and estuarine ecosystems. From the clear aquatic plants the species *Ceratophyllum demersum*, *Myriophyllum spicatum*, *Potamogeton crispus* and *P. nodosus* inhabit the first ecosystem type, whilst the species *Ruppia cirrhosa*, *R. maritima*, *Zostera noltii*, *Cymodocea nodosa*, *Potamogeton pectinatus* and *Zanichellia palustris* live in the second type. The floristic composition of the areas around the water of the two ecosystem types also appear a remarkable difference.

<i>Ecosystems</i>	<i>Families</i>	<i>Genera</i>	<i>Taxa</i>
1. Mesolongi saltworks (canals, ditches, pans separated by banks) . . . . .	21	54	67
2. Kira (rivulet) . . . . .	3	4	4
3. Sperkhios river (bank) . . . . .	15	20	22
4. Iliki-Paralimni (canal) . . . . .	11	19	20
5. Lake Paralimni . . . . .	3	3	4
6. Oropos (pool) . . . . .	12	22	23
7. Loutsia (streamlet) . . . . .	1	1	1
8. Marathon (technical lake) . . . . .	20	27	29
9. Skhinias (canal, marsh, pools) . . . . .	19	37	53

Table 1. — Floristic composition of the 9 examined ecosystems.

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