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Heteropterys is the largest genus of Malpighiaceae with ca. 140 species. All species are found in the Neotropics except *H. leona*, which occurs in both the Caribbean and coastal West Africa. The genus is characterized by a noteworthy synapomorphy: the dorsal wing of the samara is elongated and thickened along the abaxial edge, and the lateral wings are strongly reduced or absent. A molecular phylogenetic analysis was performed on the genus using plastid (*matK*, *nadhF*, *rbcL*, *trnL-F*) and nuclear (*nrITS*, *PHYC*) sequence data. Independent and combined analyses show similar results: the genus is monophyletic, and subgenus *Parabanisteria*, subsections *Aptychia* and *Stenophyllarion* (subg. *Heteropterys*), and series *Metallophyllis* (subg. *Heteropterys*) all form well-supported clades. The series *Madarophyllis* are included with *Metallophyllis* clade and the subgenus *Heteropterys* and series *Xanthopetalis* not reveal a monophyletic group. However, future rearrangements will be necessary to improve the infrageneric taxonomy of the genus. This study provides comments on representative taxa, geographical distribution, habitat, and pollen morphology.

P1181. Phylogenetic relationships of Quinaceae (Malpighiales): insights from trnL-trnF sequence data

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The small neotropical family Quinaceae, together with Ochnaceae and Medusagynaceae, forms a well-supported clade within Malpighiales. Phylogenetic analyses using molecular data (*rbcL*, *ndhF*, 18S) have resulted in unclear relationships and/or delimitation of these three families, the reason why they recently were merged into Ochnaceae sensu lato. In order to provide further insights into their relationships, we analysed DNA sequences of the trnL-trnF region of the plastid genome in combination with morphology. Quinaceae were recovered as a well-supported monophyletic group with Medusagynaceae as the closest sister taxon. Both lineages form the sister group to Ochnaceae. Reconstruction of the breeding system modes showed that perfect flowers (*Froesia*) are the ancestral state in Quinaceae, while dioecy (*Lacunaria*) and androdioecy (*Quiina*, *Touroulia*) are derived.

P1182. Leaf morphology, anatomy and ultrastructure in four European Salix species

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Four European *Salix* species were analyzed: *S. alba*, *S. triandra*, *S. viminalis* and *S. purpurea*. The taxa belong to two subgenera and different sections. Preliminary observations showed a marked interspecific variation in leaf morphology, mainly concerning formation of the wax layer. A detailed analysis using SEM revealed that the layer varies from an amorphous film (*S. viminalis*) to large crystalloid structures (*S. alba*). Additional anatomical and ultrastructural investigations with LM and TEM provided valuable information, which supplements the scarce published data. Anatomical investigations involved traits like: leaf blade thickness, stomata density, epidermis and hypodermis thickness, number of cell layers in palisade and spongy mesophyll. Interspecific variation was proved also by ultrastructural analysis. The study revealed substantial differences between the four taxa, which could be important for taxonomic research on the genus *Salix*.

P1183. Biosystematics and chorology of the genus Nymphaea L. (Nymphaeaceae) in Sardinia (Italy).

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Nymphaea L. is a cosmopolitan genus composed of ca. 50 species divided into five subgenera. Among them the subgenus *Nymphaea* Planchon [=subgen. *Castalia* (Salisb.) DC.], characterized by diurnal anthesis, is present in the Mediterranean region, Sardinia and Sicily islands included, with one species *N. alba* L. Recently, the presence of this taxon in Sardinia and Sicily was given as "probably extinct" or "perhaps extint".

In this note the results of one-year-long observations on five natural populations, selected and sampled mainly in the N-NW Sardinia, are reported and the presence of *Nymphaea* in the island is obviously confirmed. Through the study of flower, fruit and seed morphology, rhizome and leaf morphology and anatomy and from first observations on phenology and reproductive biology, the attribution of the Sardinian "morphotypes" to the taxon *N. alba* is discussed. A citotaxonomic study, based on chromosome counts from germinating seeds is also presented.

P1184. Diversity of putative nymphaealean waterplants in the Lower Cretaceous of the Araripe Basin, Brazil

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The Aptian Crato Formation (Sergipea variverrucata palynozone) of NE Brazil contain angiosperm remains, mostly magnoliids. These include three taxa of water plants with nymphaealean features, such as creeping rhizomes and peltate leaves. The first taxon bears thin ovate petiolate peltate small leaves with actinodromous venation. Solitary flowering structures on peduncles also derive from the rhizome. The flowers contain up to 12 apocarpous free carpels, including small seeds with hilum, that are spirally attached to the flat receptacle. Carpel arrangement and seeds are similar to the Cabombaceae. The second taxon has petiolate, nearly orbicular, crenate, actinodromous leaves. Floral features are missing, but its general habit is close to that of members of extant Nymphaeaceae. The third taxon, also characterized by a horizontal rhizome with roots, bears relatively large petiolate peltate leaves with an entire to slightly sinuate margin and an actinodromous venation. One solitary multipartite flower sits on a thick peduncle of which the anatomical features are preserved. This plant might belong to the Nymphaeales or alternatively to the Nelumbonaceae.

P1185. White water-lily flowers behavior (Nymphaea candida J. et C. Presl.) in different photoperiods

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Water lily (*Nymphaea*, Nymphaeaceae) flowers are established as a good example of "plant clock". Our aim is to find the main factors that cause the behavior of *Nymphaea candida* flowers in natural habitat during different photoperiods.

Continuous observations were held during three field seasons on 41 flowers in Northern Russia population for six 24-hours days in Arctic day photoperiod; and 91 flowers in Middle Russia for 15 days in natural conditions, plus also in experiments without light and with single flash illumination in the mid-night. We estimated the degree of openness and degree of submergence of each flower.

Common tendencies for the change of flower openness look like circadian cycles. The degree of flower submergence changes with hardly seen periodicity, which usually expressed in weak nonlinear trend. Therewith, we observed coordinated changes of flower openness and flower submergence in one lake of Northern Russia and did not observe them in the other lake.

We propose that flower openness and flower submergence change independently of each other and their changes are synchronized by the changing of dark and light day-periods.

P1186. Host specialization in Orobanche foetida

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Orobanche foetida is widely distributed in Mediterranean area on wild legume plants, but has not been reported on cultivated legume species, except on faba bean in Tunisia.

A population of *O. foetida* collected on *Astragalus lusitanicus* in Spain and another population collected on faba bean in Tunisia were studied to compare the pathogenicity on faba bean. The Spanish population was no infective on faba bean and seeds were poorly stimulated by all faba bean accessions. However, a substantial proportion of geminated seeds were able to contact and start attachment of faba bean roots, although failed to get