Палеоботанический онлайн семинар 2022

Палеоботаническая комиссия РАН

Дорогие коллеги!

Следующее заседание нашего семинара состоится **3 ноября, в четверг, в 20.00**. Обратите внимание на время начала. Будет представлен доклад «Integrating Cretaceous fossils into the phylogeny of living angiosperms: the case of the now-relict family Chloranthaceae» (James Doyle). На второй странице пдф-версии этого объявления – тезисы. Подключиться можно по ссылке: **https://zoom.us/j/9104791704** Идентификатор конференции: **910 479 1704**. Пожалуйста, в своем профиле в zoom указывайте фамилию и имя.

Позднее в ноябре и декабре мы надеемся прослушать следующие доклады: А.В.Храмов «Эволюция насекомоопыления глазами палеоэнтомолога», Е.В.Карасев, А.Г. Сенников «Признаки педогенеза и ризолиты из терминальной перми центральной России» и Sun Ge «Recent advance on study of Early Cretaceous angiosperms and their bearing strata from eastern Northeast China, with discussion on the correlation to those from South Primorye, Russia».

Мы будем рады всех вновь увидеть на нашем семинаре!

С наилучшими пожеланиями, Наталья Завьялова

P.S. Записи прошедших семинаров смотрите на https://www.youtube.com/channel/UCzMV6ES2n8mHFYn6qV4qFxA

Integrating Cretaceous fossils into the phylogeny of living angiosperms: the case of the now-relict family Chloranthaceae

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Chloranthaceae were among the first common angiosperm lines in the mid-Cretaceous, at which time they were much more diverse morphologically than the four relict living genera. Phylogenetic analyses clarify the position of these fossils in molecular phylogenies of living angiosperms and their implications for morphological evolution in Chloranthaceae. The Cenomanian mesofossil *Couperites*, represented by uniovulate carpels with adhering pollen of the *Clavatipollenites* type, is not securely related to Chloranthaceae. By contrast, Albian plants that produced *Asteropollis* pollen, which had three tepals adnate to a single carpel, are nested within crown group Chloranthaceae, associated with *Hedyosmum*; seed anatomy and more labile *in situ* pollen place them on the stem lineage of *Hedyosmum* rather than in the crown group. The Albian mesofossil *Canrightiopsis*, which had three stamens attached to the back of a carpel, is inferred to be sister to *Sarcandra* and *Chloranthus*. This corroborates earlier inferences from later Cretaceous fossils (*Chloranthistemon*) that the bizarre trilobate androecium of *Chloranthus* was derived by fusion of three stamens. By contrast, Albian bisexual flowers named *Canrightia*, which phylogenetic analyses attach to the stem lineage of Chloranthaceae, illustrate an intermediate stage in reduction from the many-parted flower of the first angiosperms. Other fossils support morphological and molecular analyses that identify the reduced aquatic genus *Ceratophyllum* as the sister group of Chloranthaceae. Albian plants with pollen of the *Pennipollis* type appear to be related to Chloranthaceae and/or *Ceratophyllum*, not to monocots as originally proposed. The Albian mesofossil genus *Appomattoxia*, which has pollen of the *Tucanopollis* type, has equivocal affinities, but *Pseudoasterophyllites*, a Cenomanian halophyte with similar pollen and stems with reduced leaves, shows better evidence of being a link between Chloranthaceae and *Ceratophyllum*. These results imply that flowers of Chloranthaceae became unisexual before losing their perianth, while the bisexual flowers of *Canrightiopsis*, *Sarcandra*, and *Chloranthus* may be secondarily derived from unisexual flowers. Impressions of leaves and inflorescences from the Albian of Spain indicate that Chloranthaceae had reached a modern level in non-floral characters too, but they also appear to be stem relatives of modern clades rather than crown group members of any genera. The unexpected importance of Chloranthaceae during the rise to dominance of angiosperms may reflect adaptation to more open habitats and a reversion from insect to wind pollination as the family spread out from the tropical belt.