

# *Moscvoistrobus* - a new genus of Carboniferous lycopods from the Moscow Region (Russia)

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## ABSTRACT

Naugolnykh SV & Orlova OA 2006. *Moscvoistrobus* - a new genus of Carboniferous lycopods from the Moscow Region (Russia). *The Palaeobotanist* 55(1-3): 1-14.

A new taxon of heterosporous lycopsid strobilus, *Moscvoistrobus mirabile* gen. et sp. nov. is described from a clay shale of the Serpukhovian (Namurian, Lower Carboniferous) deposits in the Zaborie quarry, located near the town of Serpukhov, Moscow Region, Russia. The strobilus is preserved in natural connection to the leafy branch, attached to a shoot. The outer surface of the shoot has a thin longitudinal ribbing. Small subtriangular leaves are helically arranged on the shoot. The strobilus has a spherical shape, which is unusual for Carboniferous lycopods. The apex is round and base is wedge-shaped. Three lanceolate sporophylls with acuminate, flexuous tips are clearly seen in the upper part of the strobilus. The edges of the sporophylls are serrate in their upper part. Mega- and microsporangia are irregularly arranged. The microspores are of *Lycospora*-type. Megaspores are gulate. *Moscvoistrobus mirabile* could be compared to strobili of the Lepidocarpaceae, but exact systematic position of the genus is still problematic.

**Key-words**—Carboniferous, Russian Platform, Lycophytes, Heterosporic plant.

# Addition to the Mesozoic flora of the Rajmahal Hills, Jharkhand, India

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## ABSTRACT

Sharma BD, Suthar OP & Bohra DR. Addition to the Mesozoic flora of the Rajmahal Hills, Jharkhand, India. *The Palaeobotanist* 55(1-3): 15-27.

Anatomy is described of three new organ genera—stem, petiole and leaflet of petrified cycadean plants. In addition, information about a bisexual bennettitalean fructification is

given and free nucelli of conifer seeds are recorded. Comparison and critical remarks are given on the fossil plants included in this paper.

**Key-words**—Anatomy, Petrified cycadean plants, Bennettitalean fructification, Conifer seeds, Lower Cretaceous.

## Non-geniculate coralline algae from the Uttatur Group (Early Cretaceous), south India

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### ABSTRACT

Misra PK, Jauhri AK, Singh SK, Kishore S & Rajanikanth A 2006. Non-geniculate coralline algae from the Uttatur Group (Early Cretaceous), south India. *The Palaeobotanist* 55 (1-3): 29-40.

The present paper records 8 species of non-geniculate coralline algae from the Early Cretaceous of the Uttatur Group, Tiruchirapalli District, Tamil Nadu, south India. Of these, six species are distributed among three genera of the corallinaceae family: three species belong to *Amphiroa*, one species is assigned to *Lithothamnion* and two species are placed with *Lithophyllum*. Two species are referable to *Sporolithon* of Sporolithaceae. Taxonomic differentiation is based on growth form, cell fusions and nature of conceptacle pore.

The species of *Amphiroa* are recorded for the first time from the study area while *Amphiroa kaskaella* is recorded for the first time from India. *Amphiroa foliacea* and *A. guatemalense* are documented for the first time from the Uttatur Group (Cretaceous) of the Cauvery Basin. The algal association suggests depositional environments ranging from shallower to deeper parts of sea. The abundance of coralline algae indicates reefal environment.

**Key-words**—Calcareous algae, Rhodophyceae, Kallakudi Limestone, Uttatur Group, Early Cretaceous.

## Additional features of *Aristolochioxylon prakashii* Kulkarni & Patil from Nawargaon Intertrappeans, Maharashtra

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#### ABSTRACT

Datar K & Patil KS 2006. Additional features of *Aristolochioxylon prakashii* Kulkarni & Patil from Nawargaon Intertrappeans, Maharashtra. The Palaeobotanist 55(1-3): 41-44.

The present paper deals with the additional characters of *Aristolochioxylon prakashii* Kulkarni and Patil recovered from Nawargaon Intertrappeans, district Wardha, Maharashtra. It is characterised in having complete cortex, less primary xylem poles and intact parenchymatous pith. This is the second report of occurrence of family Aristolochiaceae from Deccan Intertrappean beds of Wardha District.

**Key-words**—*Aristolochioxylon*, Deccan Intertrappean beds, Maharashtra, India.

## *Morelletpora* (a dasycladacean alga) from the Fulra Limestone Formation of the south western Kachchh

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#### ABSTRACT

Humane SK & Kundal P 2006. *Morelletpora* (a dasycladacean alga) from the Fulra Limestone Formation of the south western Kachchh. The Palaeobotanist 55(1-3): 45-50.

The carbonates of the Fulra Limestone Formation (Late Middle Eocene) revealed the presence of *Morelletpora* sp. from southwestern Kachchh, India. Earlier the genus *Morelletpora* was reported from the Khairabad Limestone (Ranikot beds) of the Nammal Gorge, Salt Range (Punjab, Pakistan). This dasycladacean alga has been recovered for the first time from the marine limestones of the Jadwa Stream section of south western Kachchh. The presence of dasycladacean alga, *Morelletpora* suggests that this carbonate shelf of the Fulra Limestone Formation was deposited at very shallow marine water.

**Key-words**—*Morelletpora*, Dasycladacean alga, Taxonomy, Late Middle Eocene, Kachchh.

## Palynology of Vastan lignite (Surat District), Gujarat: its age, palaeoecology and depositional environment

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#### ABSTRACT

Mandal J & Guleria JS 2006. Palynology of Vastan lignite (Surat District), Gujarat: its age, palaeoecology and depositional environment. *The Palaeobotanist* 55(1-3): 51-66.

The paper deals with the palynological investigation of lignite of Vastan lignite mine, located near Surat in Gujarat, western India. A rich and diverse palynoassemblage comprising 71 genera and 82 species of pollen-spores, algal-fungal remains and dinoflagellate cysts has been recovered for the first time from the mine. The study has added to our knowledge the occurrence of one new genus and four new species of angiospermous pollen. The assemblage is dominated by angiospermous pollen and can be distinguished from contemporaneous assemblages by high frequency of polycolpate taxa and scarcity of pteridophytic spores. The assemblage suggests deposition of Vastan lignite during the early Eocene in deltaic conditions under brackish water influence and depicts prevalence of humid tropical climate.

**Key-words**—Palaeopalynology, Palaeoecology, Early Eocene, Vastan lignite, Gujarat.

## Petrified Neogene woods of Tripura

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#### ABSTRACT

Mehrotra RC, Bhattacharyya A & Shah SK 2006. Petrified Neogene woods of Tripura. *The Palaeobotanist* 55(1-3): 67-76.

A large number of fossil woods were collected from three new fossiliferous localities situated in the South Tripura District, India where rocks of the Tipam Group (Late Miocene) are exposed. Three of these woods, namely *Bauhinia*, *Dipterocarpoxyton* and *Glutoxyton* have been described out of which first two are reported for the first time from this region. Their presence indicates the existence of tropical evergreen forests in the South Tripura District during the Late Miocene.

**Key-words**—Fossil woods, South Tripura District, Late Miocene, Palaeoecology

## Fossil leaf impressions from Siwalik sediments of Himalayan foot hills of Uttaranchal, India and their significance

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#### ABSTRACT

Shashi, Pandey SM & Tripathi PP 2006. Fossil leaf impressions from Siwalik sediments of Himalayan foot hills of Uttaranchal, India and their significance. *The Palaeobotanist* 55(1-3): 77-87.

Morphotaxonomical study of well preserved angiospermous leaf impressions collected from Siwalik sediments of Purniyagiri near Tanakpur, Uttaranchal records five species viz., *Mitrephora siwalika* Antal & Awasthi, *Sterculia tertiara* sp. nov., *Millettia purniyagiriensis* sp. nov., *Cynometra siwalika* Awasthi & Prasad and *Chonemorpha miocenica* Prasad & Awasthi. These species compare with the extant taxa *Mitrephora maingayi* (Anonaceae), *Sterculia ensifolia* (Sterculiaceae), *Millettia auriculata*, *Cynometra polyandra* (Fabaceae) and *Chonemorpha macrophylla* (Apocynaceae) respectively. The habit, habitat and the present day distribution of the comparable extant taxa indicate that tropical evergreen forest was flourishing under warm humid climate in the area during the Siwalik times as compared to mixed deciduous forest there at present.

**Key-words**—Angiospermous leaf impression, Morphotaxonomy, Palaeoclimate, Siwalik (Middle Miocene), Uttaranchal.

## The Early Holocene vegetation and climate in Naradu Glacier Valley of Kinnaur District, Himachal Pradesh

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#### ABSTRACT

Bhattacharyya A, Ranhotra PS, Ganjoo RK & Koul MN 2006. The Early Holocene vegetation and climate in Naradu Glacier Valley of Kinnaur District, Himachal Pradesh. *The Palaeobotanist* 55(1-3): 89-96.

The pollen record recovered from a 2.5 m thick glacio-lacustrine deposit at 4,125 m a.m.s.l in the Naradu Glacier Valley, Kinnaur District reveals the Early Holocene vegetation and climatic history of the region for about 1,650 years. The high percentage of pollen of extra local elements, both conifers and broad-leaved taxa along with good amount pollen of local trees, shrubs and herbs indicate that tree line ecotone zone might have been closer to the site due to improved climatic conditions compared to present. This is attributed to the effect of the strengthening of SW monsoon in India. However, an increase in local steppe elements around 10,640 yrs B.P. (12,720 Cal yrs B.P.) and 8,990 yrs B.P. (10,190 Cal yrs B.P.) suggests that the climate was comparatively less moist. This

phase around 12,720 Cal yrs B.P. could possibly be linked to the Younger Dryas, a well-known global event.

**Key-words**—Pollen analysis, Naradu Glacier lake, Early Holocene, Younger Dryas, Himachal Pradesh.

# Reconstruction of past climate of Indian subcontinent for the last 40 ka BP based on multi proxy data and correlation with global data—a review

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## ABSTRACT

Sekar B 2006. Reconstruction of past climate of Indian subcontinent for the last 40 ka BP based on multi proxy data and correlation with global data—a review. *The Palaeobotanist* 55(1-3): 97-113.

The contribution attempts to reconstruct the past climate of different regions of the Indian subcontinent for the last 40 ka before present (BP) on the basis of  $^{14}\text{C}$  dating, chemical analysis, pollen analytical studies and carbon isotope analysis ( $\delta^{13}\text{C}$ ). A correlation of data from India with other global sites is also attempted. Review of the published data shows heterogeneous climatic conditions in different parts of India. The climate in highland regions of India especially in Ladakh, Jammu & Kashmir (J & K) and neighbouring areas was alternating from dry arid to brief ameliorations during the last 31.4 ka BP (Beyond Calibration Range (BCR)). The climate in the Gangetic plain, representing humid and subtropical climate zone, was alternating from warm humid to cool humid primarily due to changes in SW monsoon in the region during the last 40.0 ka BP (BCR). The climate in arid zones in western India especially Rajasthan and parts of Gujarat was predominantly arid with a brief wet and humid climate during the above period. In semi arid zone in Nilgiris and Palni Hill regions of south India the climate was alternating from moist humid to dry arid phase. One of the tropical wet and dry climatic zones of India namely Orissa was experiencing predominantly wet and occasional dry climate. The beginning of the Holocene warming and onset of humid phase was suggested in several climatic regions of India during 11.4-7.6 ka Cal BP. Amelioration of climate was observed in different regions during 2.0 ka Cal BP as well as during the present time. It is inferred from several proxy data from diversified climatic and geographical region.

**Key-words**—Palaeoclimate, Multiproxy data, Indian sub-continent, Global correlation.