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# Conference Reports

## 5th International Symposium on the Jurassic System, Vancouver, Canada 12-25, August, 1998.

Main theme of this Symposium was the choronostratigraphy of the Jurassic System. In view of the incoming information in various disciplines of geological sciences, the stages and stratotypes need reframing. The presentations of research papers were held mainly under General Session, Special Session and Poster Session. In this Symposium, around one hundred fifty geoscientists and biostratigraphers participated from about twenty five countries. About hundred research papers were presented.

*General Session*—Mainly dealt with biostratigraphy of Lower, Middle and Upper Jurassic sequences explored in various parts of the world. The invertebrate fauna hold the key in Jurassic Biostratigraphy, which include - Ammonoids, Brachiopods, Radiolarians, etc. Study of spore-pollen, although not worked-out in much detail in Jurassic sequences, still accountable as supportive tool in biostrastigraphy. However, dinoflagellate cysts attain priority in palynostratigraphy. Isotopic studies have drawn attention as an important tool in chronostratigraphy.

*Special Session*—Focussed on research papers, further grouped into following themes, so that the precise information could be obtained.

(i) The Jurassic of Western Canada
(ii) Extinction and Recovery
(iii) Terrestrial Ecosystems
(iv) Tethyan-Pacific connections : The Hispanic corridor
(v) Time scale calibration
(vi) Sequence Stratigraphy

*Poster Session*—About twenty-five posters were displayed having wide spectrum of the studies for detailed discussions on-Sequence Stratigraphy in lithofacies, correlation of Ammonoid based stratigraphy with other fungal zones or Isotopic studies.

*Presentations at the Symposium*—Numerical ocean-models are proposed to unravel the Jurassic seaways. Besides, an updated data of bivalve mollusks are analysed to understand Hispanic corridor during Late Triassic to Middle Jurassic times. Search for possible GSSP candidate as stratotypes for various stages-Oxfordian-Kimmeridgian, Callovian-Oxfordian, and Sinemurian-Pliensbchian, have put forth a serious problem of biostratigraphic correlation between different biogeographic provinces. The reasons offerered are not so good collectively for microfossils, geochemical and chemostratigraphical studies. The selection of reference section needs an integrated stratigraphic approach. The potential GSSP candidates have been proposed in NW Spain and south west Germany.

Sequence Stratigraphic analysis in Jurassic sedimentation is favoured by both excellent outcrop conditions and well established biostratigraphic scale. The deposit sequences display significant variations in their thickness and facies which help to analyse and interpret depositional environments. In Western Tethys, review of available data has revealed stratigraphy within the palaeogeographic domain of Alpine Belt and Saharian Craton.

The correlation between the stable Carbon-isotope curves to ammonite zonations is attempted in southern Spain. The applicability of Strontium-isotope stratigraphy as a global tool has been attempted and results show that in most cases biostrastigraphy correlates well with Sr-isotope data through most of Jurassic and Early Cretaceous sequences.

Plant communities help interpret palaeoclimatic and palaeoecologic impacts during the sedimentation in a time span as derived from the studies of Jurassic flora in New Zealand, Scotland and North China. Worldwide correlation of ammonite faunal zones based on Euroboral and Alpine data for the Upper Sinemurian, Early Hettangian have been putforth. Besides, preservational variations in ammonite associations have been observed. These enable to distinguish taphonomic cycles resulting in relative sea-level changes. Such taphonomic data are important for sequence stratigraphy.

Extinction and recovery of fauna in both marine and nonmarine realms suffered heavy losses among the invertebrates, ammonoids, bivalves, etc. The timing of extinction has appeared to be restricted to a short interval that is at or top of the Rhaetain stage. Due to the lack of complete fossiliferous stratigraphic sections, causes of extinction patterns remain unknown.

The taphonomic mode of preservation of-Dinosaurs and foraminiferal fossils that also have diverse groups including small vertebrates–invertebrates and plants indicate significantly the ranges of time of exposure to taphonomic processes. These findings are useful in interpreting palaeoenvironment and accumulation of sediments in the depositional basin.

Palynostratigraphic studies have also supplemented in the Jurassic sequences, besides dinoflagellatge cysts in the assemblages are significantly accounted for biostratigraphy.

Multidisciplinary Chronostratigraphy has been attempted on terrestrial Jurassic-Cretaceous sequences in China. It includes-Tethyan Ammonite Zonation, Magnetostratigraphy, Isotopic-geochronology and Sequence Stratigraphy.

In the areas of NE China, located in Circum-Pacific ac-

tive belt of volcanic structure, the chronostratigraphic analysis is being attempted through Jurassic-Cretaceous volcanic-rocks. Abundant fossils including-fauna, plants and spore-pollen found in the sediments deposited in between volcanics have proved significant in the chronology of Mesozoic stratigraphic sequences.

Biostratigraphy and sedimentary developments have been worked out in the Jurassic strata from Central Nepal and Southern Tibet. The Jurassic depositional cycle in this region has been interpreted in having two major depositional diastems during which chamositic oolite had deposited.

The numerical and analytical results show that potentially palaeobiogeographical and isotopic investigations in target areas could contribute significantly in the palaeoclimatic understanding of the Jurassic period. The hypotheses for extinction and recovery of fauna and flora at boundary levels need further testing with geochemical and paleoecological data from a wider variety of facies. The Sequence Stratigraphy is still in its developing phase. It needs principal concern towards sedimentary cyclicity, astronomical time scales and sequence recognition. In the domain of western Tethys, comparisons have to be made along the northern edge or Tethys and adjoining territories. Study of spore-pollen in the faunally controlled sections is being suggested. So that palynoevent-sequence of species could find its placement along with other biostratigraphic zonations. To refine the Sr-isotopic curves, more data base is needed, so that it could be calibrated with global cross-correlation of different biostratigraphic schemes. Further work is required with multidisciplinary approaches for chronostratigraphy to resolve the ages of the Stages, Zones and Biohorizons.

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## Systematic Wood Anatomy Symposium 7th Latin American Botanical Congress, Mexico, October 18-24, 1998.

The conference jointly organised by various Latin American associations/societies of Botany such as Sociedad Botanica be Mexico, A.C., Association Latinoamericana de Botanica; Red Latinoamericana de Botanica; Univ. Autonoma Metropolitana Mexico; Univ. National Autonoma de Mexico; Inst. de Ecologia, UNAM, Comision Nac. para et Concocimiento y Uso de la Biodiversidad & CONABIO and dealt with all aspects of botany. It was attended by about 1000 delegates belonging to over 25 countries from American Continents, Europe and Asia. However, most of the delegates were from Latin American countries. More than one hundred seventy papers were presented orally in 35 sessions arranged simultaneously. Posters of over 1000 papers were put up in different sessions.

A number of papers were presented on anatomy of wood, leaf, fruit, stem, root and rhizome of various genera. Wood anatomy of family Anacardiaceae was dealt in great deal based on large data comprising 60 genera and 800 species. Xylotomy of 26 species of *Quercus* growing in Mexico was reported. Different species of oaks (Red, Black & White) have been separated on the basis of wood anatomy. Quantity of crystals in parenchyma cells and quantity of fibre cells have been considered as an important differentiating characters.

Stilt roots of *Rhizophora* have been called as Rhizophore as in the case of *Selaginella*. Stilt roots of *Rhizophora* are not the roots but stems which ultimately give rise to very small roots. Such type of rhizophores have also been reported in *Vernonia, Dioscoria* and *Smilax*. A tropical genus *Tebeuia* of Bignoniaceae occurring from Argentina to Mexico has been found suitable for the dendrochronological studies. A paper discussed the current status of comparative wood anatomy. Data was presented on the wood anatomy of Brazil, Chile and Mexican woods. New data on the anatomy of *Cheilanthus, Dryopteris* and *Lycopodium* was presented. Perforated ray cells were reported in the wood of genus *Cordia* of family Boraginaceae. Tracheid cavities were reported in Cycadaceae (*Cycas revoluta*).

Some interesting papers on palaeobotany reported lycopods from Carboniferous sediments of Peru, microfossils from the Permian of Brazil, and 70 million years old Cretaceous fossils representing infructescence, leaves etc. belonging to various families such as Isoetaceae, Taxodiaceae, Musaceae, Strelitizaceae, Araceae, Pandanaceae, Halorgaceae, Hemamelidaceae, Rhamnaceae, Lauraceae and Moraceae were reported from Mexico. Microalgae has also been reported from the sediments.

Dicot fossil woods were reported for the first time from the Tertiary sediments of Guatemala. Some dicots were also reported from the Oligocene deposits of Mexico. A paper discussed the palaeogeograhpy of Cycadales. Role of Tertiary highlands in biogeography and evolution of North American Tertiary flora was discussed. A paper discussing interaction between the vegetation of North and South America during Tertiary was presented.

There were papers on history of botany, history of herbaria, ethnobotany, on medicinal plants, extraction of alkaloid/flavonoids from *Ageratum, Dioscoria* and from the members of Annonaceae and Melastomaceae. Papers on morphology and taxonomy of pollens belonging to various genera and families and on pollination biology were presented.

A number of papers were presented on foliar anatomy and on family Cactaceae, impact of El Nino in forest fire, on the phylogeny of *Quercus* molecular phylogeny of *Desmodium* using nucleotide sequence of the rbcl gene and bryophytic and pteridophytic diversity in rain forests of South America.

It was recommended to increase the growth of froests in order to increase the biomass, production of quality timber and its proper and maximum utilization.

There was general agreement that there should be better co-operation amongst the various botanical bodies/organisations of the Latin American countries as well as with other botanical organisations to achieve excellence in botanical researches and in the efforts of conserving rare plant material. The wider co-operation will also help in procuring rare and other relevant living material from different parts of the world.

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## 4th International Conference on Biodeterioration of Cultural Property, Teheran, Iran, 21 - 25 November, 1998 and 3rd International Symposium on Conservation and Restoration of Historical objects and Architectural decorations, Teheran, Iran, 29 November - 2 December, 1998

The "4th International Conference on Biodeterioration of Cultural Property" was held at Iranian National Museum Teheran, Iran from 21st-25th November, 1998. Over 100 participants from Australia, Britain, China, Egypt, France, Germany, India, Iran, Italy, Japan, Korea, Norway, Poland, Romania, Thailand, Turkey and U.S.A., assembled in Teheran. The Main objectives of the conferences were to find out ways for co-operation between scientists and conservators from different countries to understand problems of biodeterioration and to make precise identification of biodeteriorants in order to prevent their harmful effects. During his address, the Director, RCCCR, Dr Abdolrasool Vatandoust, emphasised that due to emergence of new deteriorants the deterioration rate has increased during the 20th century. Second speaker Dr Hideo Arial, President ICBCP stressed promotion of the multidisciplinary approaches to control the biodeterioration problem. Dr H.M.M. Najafi, Director, Ayat-Allah-Al-Uzma-Marashi-Najafir-Library considered the microrganisms more important destructive elements than fire and suggested precautionary measures can play important role than remedy for the prevention of properties. He further emphasized climatic characters and told that Iran is located in hot and arid area so its properties are more exposed to the biodeterioration factors. Under 10 scientific sessions 40 contributions dealt with General principles of biodeterioration, Manuscripts, Books, Stones, Wood, Textiles, Architecture, Experiments, Treatment and preservation, and Control methods, etc. were presented and discussed. The study on "Fungal remains from Tertiary deposits exposed at Sirmaur District, Himachal Pradesh, India", revealed that during Subathu, Dagshai formations the environment of deposition at Dadahu-Jamtah area was favourable for the growth of numerous fungi and saprophytic forms which destroyed the palaeovegetation. The corresponding taxa grow on various materials and effective measures can be taken to control the biodeterioration of cultural properties wherever it is caused by similar fungi.

The "3rd International Symposium on Conservation and Restoration of Historical objects and Architectural decorations" was held at same venue, from 29th November-2nd December, 1998. Over 400 participants (generally Iranians) were assembled. Other participating countries were Britain, India, Japan, Romania and Jordan. Its main objective was to create a proper platform for experts of different countries to exchange their views and to review the potentials in the restoration activities at international level. During the inaugural address Dr Vatandoust said that if biodeterioration rate continues we will lose not only our properties but also contact with past. Second speaker Madam Parvin Partouie, Vice-Chancellor for Research, University of Art gave emphasis for establishment of communication network among different countries through which relevant activities can be exchanged. Third speaker Mr Seied Mohammad Baheshti, Director, Iranian Cultural Heritage Organization emphasized that any historical object is like a window to the past so we should preserve them. Scientific sessions encompassed Theoretical principals of conservation, General conservation for papers, manuscripts, books; Conservation science, archaeology and conservation, Pathology and conservation projects, Deterioration processes, Materials science and Technology. 38 papers dealing with different aspects of conservation and restoration were presented and discussed.

An exhibition displaying latest developments in the field of biodeterioration, conservation and restoration methods, relevant projects, materials, tools and literatures, etc. was arranged. Two excursions (1. to Tehran-Qom-Esfahan and 2. to Tehran-Ghomrud-Kashan-Abyanes) were organized to visit ancient sites and historic monuments in order to investigate and discuss problems related with biodeterioration and conservation, etc.

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