

## PROJECT 237: GONDWANA FLORAS

Project Leader: O. RÖSLER

### DESCRIPTION

The primary objective is to produce an up-to-date summary of the Upper Silurian to Lower Tertiary floras of the Gondwanic Continents.

Individual and group research on special topics are intended to fill some important gaps. The final version of the summary will include some relevant taxonomic, biostratigraphic and paleophytogeographic problems treated on an intercontinental scale.

### SUMMARY OF ACHIEVEMENTS

The first meeting of the project was held in Medellín (Columbia, S.A.) in July 1986, when the project officially began. At this meeting it was planned to develop three main interrelated sets of activities: first, a broad summary; second, specific topics related to less developed areas, and, third, training opportunities.

**THE BROAD SUMMARY:** Some of the similarities observed in "stages" of the upper Silurian to Tertiary floral successions of South America, Africa, India, Australia, Antarctica and other Gondwana related area present a more or less clear relation with events that affected all these Gondwana segments. Among others, these events are: late Paleozoic glaciation, Permo-Triassic progressive aridization; Cretaceous to early Tertiary break up of Gondwana; separation of the Gondwana segments; and the Tertiary onset of the glaciation in Antarctica.

Some of the differences observed among the approximately synchronous stages of such floral successions seems to reflect significant floral provincialism, for instance, that of the late Permian.

The progress made in some areas permits new approaches to the problems related to the evolution of the limits of the Gondwana floras.

**SPECIFIC TOPICS:** Some topics needed for consistency in the general summary are poorly known. Thus, research on them is encouraged under the scope of Project 237.

Devonian vascular plants are little known in many areas of the Gondwana region. New occurrences are under study, for instance, those of the Furnas and Ponta Grossa Formations.

Carboniferous plants are better known in Australia and Argentina, where a good deal of research has been recently done. Other occurrences are still unstudied or in need of revision. Thus new field research has been made in the Kasa Formation (Bolivia), the Paracas Formation (Peru), the Poti and Itararé Formations (Brazil), yielding new collections which are now the objects of study.

All over the Gondwana, the better known Permian *Glossopteris* flora is related to the coal seams. The project stimulated research on the lesser known latest Permian Gond-

wana flora, and the first results are coming out with the systematic studies of sphenopsids, glossopterids and pteridophylls. Permian and Triassic plants of the Transantarctic Mountains are also under study.

New Paleozoic and Mesozoic plants and palynomorphs of the northern border of the Gondwana continent have been collected, mainly in North Africa and South America. Part of this material is being studied as a collaboration between Projects 237 and 242. Tertiary floras, including those of the Antarctic Peninsula, were studied as part of the Project 237 and the first articles are ready for publication.

**TRAINING OPPORTUNITIES:** The opportunity of training students from developing countries in the scope of Project 237 is planned; the first experience was made in the University of Sao Paulo from August to November of 1986 with Brazilian master students. Elements of Paleobotany, Advanced Paleobotany and Paleophytogeography, each one with a minimum of 60 hours of teaching were organized. These training opportunities are planned to include the development of the above mentioned research topics, and are to be related to the geology of the regions of origin of the candidates.

## 1 D. MESOZOIC AND CENOZOIC PROJECTS

### PROJECT 171: CIRCUM-PACIFIC JURASSIC

Project Leader: G.E.G. WESTERMANN

### DESCRIPTION

The aim of the project is to assemble all or representative workers (c. 150) on Jurassic-related projects in this area, often from Europe, into an informal body in order to (1) introduce people from developing, isolated countries to foreign researchers working in their own country, often unknown to them, and vice versa; (2) exchange latest research results in news letters (free of charge or fees); (3) meet at biannual Field Meetings with UNESCO's financial support (three held in Canada, Argentina and Japan respectively, with many of the participants never having left their homeland before!); (4) circulate special papers on topical themes for immediate news dispersal; (5) the publication in *Newsl. Strat.* of the "Range Chart Project", a series of papers dealing with the precise vertical ranges and zones of different taxa; and (6) to publish a synthesis in book-form toward the end of the project.

### SUMMARY OF ACHIEVEMENTS

**TAXA RANGE-CHARTS:** Multi-taxial range-charts are being compiled for all Jurassic stages, at the species-level or, if impossible or unfeasible, at the subgenus- or genus-level. Publications will be in *Newsletters on Stratigraphy*. These charts are to provide the data-base for multi-taxial regional zonations where not yet known; for the improvement of super-regional zonations and correlations; and for global time-correlations, in particular with the well established European standard zones