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Introduction

Introducción

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The Tethys ocean and the evolving North Atlantic Ocean have only one marine link in the Jurassic-Cretaceous: the seaway around the Iberian plate. Sometimes this seaway is deep and narrow - like in the Jurassic of the southern margin of the Iberian Plate. In some periods of the Cretaceous, seaways between the two oceans are broader and the whole Iberian Plate is a small insular in a vast tropical ocean extending along the palaeo-equator. In any case, basins situated along or on the Iberian Plate exhibit a variety of diverse and different biofacies patterns, from shallow-marine biofacies types to deep-sea biofacies. And these patterns can be studied today within a small geographical range in great detail. However, this volume cannot cover each type of biofacies that exist in the Jurassic-Cretaceous of Iberia. Instead of, the focus lies on case histories of some selected study of facies development in a certain context and in a certain period.

In the contribution of **Matthias Gahr**, a palaeoecological analysis of Lower Toarcian benthic mollusc and brachiopod faunas from the Lusitanian Basin (Portugal) and the Celtiberian Chains (Spain) is given. This palaeoecological approach is combined with a sequence stratigraphic interpretation of the investigated sections and therefore linked with an interpretation of sea level changes. The evolution of the macrofauna in the Spanish Toarcian is interpreted on the background of an Early Toarcian mass extinction recognized world-wide. For the interpretation of extinction patterns, not only palaeoenvironmental changes are important, but also biological competition within a benthic faunal assemblage.

In the paper of **Wallrabe-Adams** *et al.*, data from several DSDP/ODP-Legs, submersible dives and dredge holes surronding the Iberian Plate were presented. Especially most recent data on the Upper Jurassic to Lower Tertiary sedimentary succession from ODP Leg 173 (Iberia Abyssal Plain) was analysed. These results record the development of the continental margin from the prerifting shallow-marine shelf state in the Tithonian, the clastic rifting deposits related to the tilting of the fault blocks developed by crustal thinning, and the first calcareous marine sediments of the Lower Cretaceous, which were followed by Cretaceous to early Tertiary deep-marine clays and turbidites. These data were correlated to other ODP legs and to onshore basins of the Iberian Plate in order to document tectono-sedimentary sequences. It appeared that most facies similarities of ODP Leg 173 exist with the Subbetic sediment series of the central Betic Cordillera. In spite of large differences in bio- and lithofacies in other areas, synchronous tectonic events make it possible to correlate tectono-sedimentary sequences around Iberia. The major tectonic events recognisable in nearly all areas are the rifting phase in the late Jurassic, the break-up of the North Atlantic ("break-up unconformity") in the upper Early Cretaceous (Aptian/Albian), and the Eurasian Iberian plate collision in the late Eocene (Pyrenean orogenic phase).

The lithostratigraphy and facies development of the Lower Aptian in the central part of the North Cantabrian Basin was studied in the work of **Markus Wilmsen**. He describes lithostratigraphy and biostratigraphy of this important period of the north Spanish continental margin, where the transition of clastic-dominated lithofacies (Wealden) to carbonate-dominated lithofacies (Urgonian) occurs. In response to transgressive development, an earliest Aptian carbonate ramp depositional system was established above the clastic Wealden deposits. But shortly after its establishment, the juvenile carbonate ramp system was drowned in the early Early Aptian. There is strong evidence, that the drowning occurred in response to synsedimentary tectonics associated with an eustatic sea-level rise and environmental perturbations caused by the Early Aptian oceanic anoxic event Ia. The Early Aptian ramp carbonates are overlain by deeper water marls and renewed clastic deposition for a short period. Renewed flooding of the Cantabrian area during the late Early Aptian established a shallow-marine, attached carbonate platform which introduces Urgonian-type sedimentation on the North Spanish continental margin.

Beatriz Chacón and Javier Martín-Chivelet present an integrated sedimentological and biostratigraphical study of the Campanian to Palaeocene succession of Caravaca de la Cruz (Prebetic and Subbetic Zone, southeastern Spain). Their deep-sea succession is divided in four stratigraphic periods on the basis of their sedimentological and palaeoecological features. The four intervals are bounded by episodes of rapid environmental change. These episodes (latest Campanian, middle Maastrichtian and latest Maastrichtian) are reflected in the stratigraphic succession by abrupt transition in facies, and are correlated with regional stratigraphic unconformities in the more proximal and shallower sections of the Prebetic domain. The unconformities are interpreted as regional tectonic events and their origin is discussed.

The group around **Malcolm B. Hart** discusses the mid-Cretaceous carbonate succession exposed along the valley of the Rio Mondego (Lusitanian Basin, Western Portuguese Margin, Portugal). The sedimentary series is described and their microfauna is documented. The succession records the Cenomanian-Turonian transition within a shallow-water environment. The Cenomanian-Turonian boundary event is discussed from the background of an ejecta horizon exposed on the coast at Praia da Vitória near Nazaré, Portugal.

Benthic foraminifers contribute to an important part of Jurassic biofacies of the Iberian Plate. This group is studied from the Lower and Middle Jurassic of the epicontinental western Basque-Cantabrian Basin and five benthic foraminiferal assemblages are recognized, each one related to a specific trophic paleoenvironment created by paleoceanography and relative sea-level change. Benthic foraminifers show also variation with age and variation with changes in the paleoenvironment related to transgression-regression-cycles.

Benthic foraminifers were also studied from the Basque-Cantabrian Basin in a transect from the inner carbonate ramp to deep-sea sediments. The functional morphology and life style of foraminifers was used to determine their former position on the carbonate ramp. The abundance pattern and distribution of benthic foraminiferal species in a palaeoslope model of the Late Cretaceous carbonate ramp. With this paleoslope model it was possible to estimate the waterdepth range of many species of benthic foraminifers in the Late Cretaceous Basque-Cantabrian Basin.

I wish to express my thanks to the reviewers of this volume for they patience and their thorough work on the papers. I thank also the editors of Journal of Iberian Geology for the invitation in editing this special volume for the journal. I thank the editorial staff in Madrid for all their collaboration.

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Dr. Kai-Uwe Gräfe