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Difficulties encountered in defining the Permian–Triassic boundary in Buntsandstein facies of the western Peritethyan domain based on palynological data

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Abstract

This article compiles and revises all the palynostratigraphical information gathered from sediments of Buntsandstein facies across the western Peritethyan domain. Our aim is to update current knowledge on the Permian–Triassic (P/T) boundary in these materials, which is generally characterized by very poor taphonomic preservation conditions. As a result, there is a marked shortage of fossils and it is difficult to delimit useful palynostratigraphic assemblages. Nevertheless, by utilizing a new biostratigraphic approach to the entire set of data and assemblages, it is now possible to define time intervals for Buntsandstein facies in this area.

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Keywords: Permian; Triassic; Palynostratigraphy; Tethys; Iberian Peninsula; Buntsandstein

1. Introduction

The Permo–Triassic boundary in Central Europe coincides with the onset of typical Buntsandstein facies deposition. However, this depositional change is not valid for the western Peritethyan domain, as the

first deposits of Buntsandstein facies in this region have been dated as Upper Permian. These “lower Buntsandstein” facies have been dated based on the occurrence of a Thuringian palynological assemblage which occurs at several localities (e.g., Broutin et al., 1988; Ramos and et Doubinger, 1989).

The western Peritethyan domain is here defined as the geographical area along the western side of the Tethys during the Late Permian and the Early Triassic, and coincides with the contact line between Laurasia

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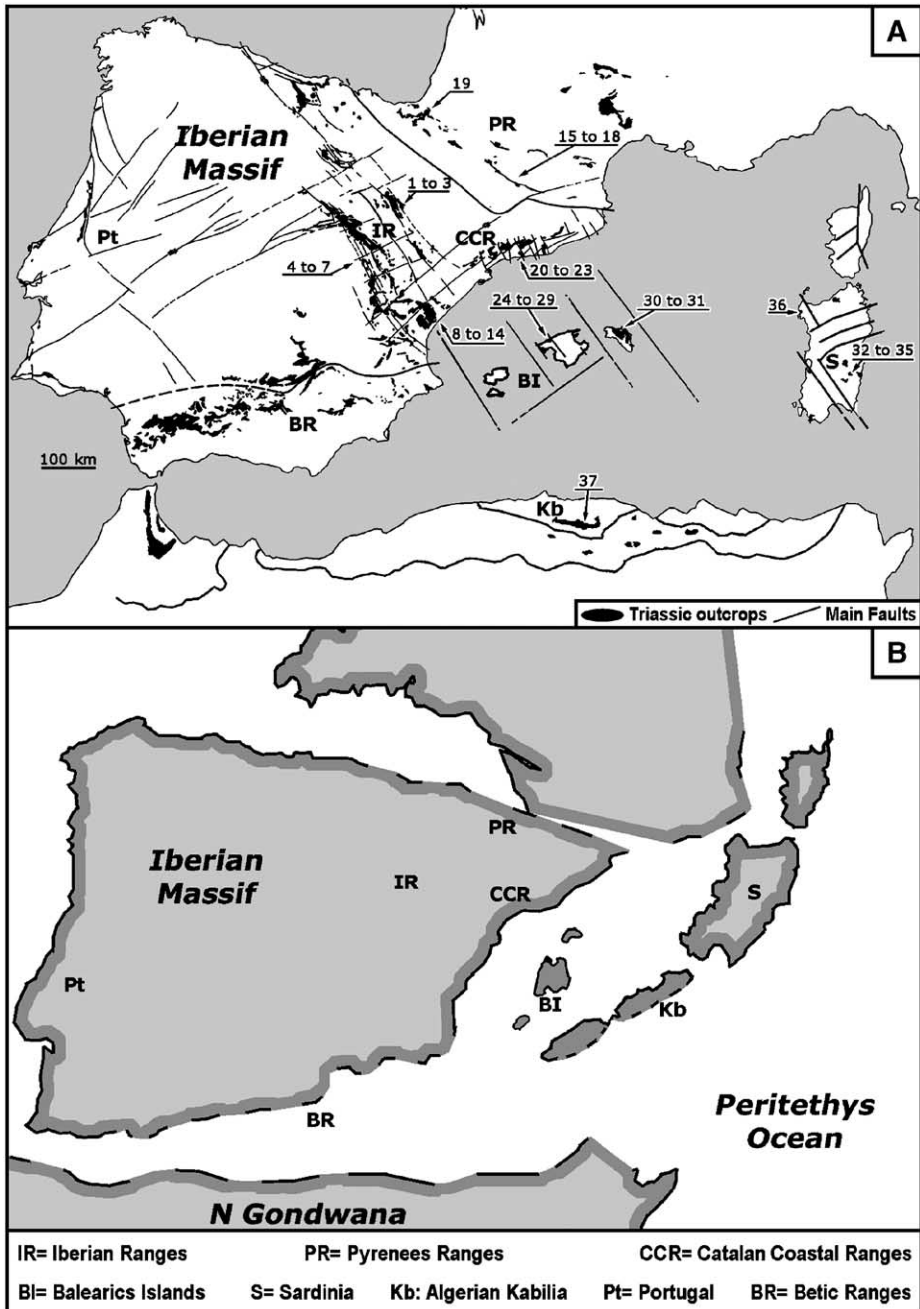


Fig. 1. A) Western Peritethys region showing geographical subdomains based on subsequent tectonic evolution. Outcrops studied: (see Table 1), IR = Iberian Ranges, 1 to 3: Aragonian or Oriental Range, 4 to 7: Castilian or Occidental Range, 8 to 14: SE of Iberian Range. PR = Pyrenees Ranges, 15 to 19: South Pyrenees, 19: Basque-Cantabrian Pyrenees. CCR = Catalan Coastal Ranges: 20 to 23. BI = Balearics Islands, 24 to 29: Majorca, 30 to 31: Menorca. S = Sardinia, 32 to 36. Kb = Algerian Kabilia, 37. Others outcrops: Pt = Portugal and BR = Betic Ranges. B) Relative palaeogeographical position of the subdomains during the P/T transition (Based on and modified from Dercourt et al., 1993).

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