

GEOLOGICAL SOCIETY SPECIAL PUBLICATION NO. 339

The Terrestrialization Process:
Modelling Complex Interactions at the
Biosphere–Geosphere Interface

EDITED BY

M. VECOLI

Université Lille, France

G. CLÉMENT

Muséum national d'Histoire naturelle (MNHN), France

and

B. MEYER-BERTHAUD

UMR AMAP (botAnique et bioinforMatique de l'Architecture des Plantes), France

TECHNISCHE
INFORMATIONSBIBLIOTHEK
UNIVERSITÄTSBIBLIOTHEK
HANNOVER

2010

Published by
The Geological Society
London

Contents

VECOLI, M., MEYER-BERTHAUD, B. & CLÉMENT, G. The terrestrialization process: modelling complex interactions at the biosphere–geosphere interface–Introduction	1
JANVIER, P. Terrestrialization: the early emergence of the concept	5
VERSTEEGH, G. J. M. & RIBOULLEAU, A. An organic geochemical perspective on terrestrialization	11
STROTHER, P. K., SERVAIS, T. & VECOLI, M. The effects of terrestrialization on marine ecosystems: the fall of CO ₂	37
STEEMANS, P., WELLMAN, C. H. & GERRIENNE, P. Palaeogeographic and palaeoclimatic considerations based on Ordovician to Lochkovian vegetation	49
MEYER-BERTHAUD, B., SORIA, A. & DECOMBEIX, A.-L. The land plant cover in the Devonian: a reassessment of the evolution of the tree habit	59
PRESTIANNI, C. & GERRIENNE, P. Early seed plant radiation: an ecological hypothesis	71
GERRIENNE, P., MEYER-BERTHAUD, B., LARDEUX, H. & RÉGNAULT, S. First record of <i>Rellimia</i> Leclercq & Bonamo (Aneurophytales) from Gondwana, with comments on the earliest lignophytes	81
ASTIN, T. R., MARSHALL, J. E. A., BLOM, H. & BERRY, C. M. The sedimentary environment of the Late Devonian East Greenland tetrapods	93
CRESSLER, W. L. III, DAESCHLER, E. B., SLINGERLAND, R. & PETERSON, D. A. Terrestrialization in the Late Devonian: a palaeoecological overview of the Red Hill site, Pennsylvania, USA	111
BLIECK, A., CLÉMENT, G. & STREEL, M. The biostratigraphical distribution of earliest tetrapods (Late Devonian): a revised version with comments on biodiversification	129
SANCHEZ, S., STEYER, J. S., SCHOCH, R. R. & DE RICQLÈS, A. Palaeoecological and palaeoenvironmental influences revealed by long-bone palaeohistology: the example of the Permian branchiosaurid <i>Apateon</i>	139
LAURIN, M. & SOLER-GIJÓN, R. Osmotic tolerance and habitat of early stegocephalians: indirect evidence from parsimony, taphonomy, palaeobiogeography, physiology and morphology	151
Index	181