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Palynology of an Early Permian coal seam from the Karoo Supergroup of Botswana

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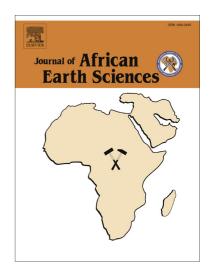
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ACCEPTED MANUSCRIPT

1	Palynology of an Early Permian coal seam from the Karoo Supergroup of
2	Botswana
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9	Abstract
10	Two borehole cores from the south-east area of the Mmamantswe coalfield (Mmamabula
11	area) Botswana, provided 124 samples for palynological analysis. The assemblage is
12	dominated by trilete and alete spores, indicating a parent flora of mostly lower order
13	lycopods, sphenophytes and ferns. Distinctive taxa at Mmamantswe include Brevitriletes
14	levis, Cannanoropollis densus, Gondisporites raniganjensis, Platysaccus radialis,
15	Scheuringipollenites ovatus, and Verrucosisporites naumovae. Saccate pollen is less common,
16	suggesting the assemblage reflects the local vegetation of the coal swamp. The Mmamantswe
17	microflora has been sub-divided into two assemblage zones, with the lower Assemblage Zone
18	1 correlating with Assemblage Zone 1 of Anderson (northern Karoo Basin, South Africa),
19	Biozone B of the Waterberg (South Africa) and the Milorgfjella assemblage (Dronning Maud
20	Land, Antarctica). The upper Assemblage Zone 2 of Mmamantswe is correlated with
21	Assemblage Zone 2 of Anderson (northern Karoo Basin, South Africa), Biozone C of the
22	Waterberg (South Africa), and the No. 2 Seam assemblage (Witbank coalfield, South Africa).
23	On the basis of these correlations the Mmamantswe microfloral assemblage is assigned to the
24	Asselian, Sakmarian and Early Artinskian periods.
25	
26	

Keywords

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28 Palynology; coal; Karoo; Botswana; Permian; Gondwana

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