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Lambeth Group pollen assemblages shortly after the PETM – Getting warmed up for the EECO?

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The Lambeth Group in the Brixton area of S England comprises the shallow marine Upnor Formation (NP9, late Thanetian) overlain by the terrestrial Reading Formation (RFm) interfingering with the shallow marine Woolwich Formation (WFm). The succession starts with the Lower Mottled Clay (LMC, RFm), the Lower Shelly Beds and Laminated Beds (LSB and LB, WFm,), the Upper Mottled Clay (UMC, RFm) and Upper Shelly Beds (USB, WFm). An intercalated sand unit lies at the base of the UMC and, in one borehole, channel sands, directly overlie the LSB. The base of the CIE (PETM) lies at the base of the barren LMC. All samples except those from the UMC are dominated by angiosperm pollen. Most frequent and dominant are *Platycarya*, *Plicatopollis*, *Platanus*, Fagaceae (*Eotrigonobalanus, Lithocarpus*, *Trigonobalanus*), and engelhardioid types. Saccate gymnosperms are rare, and occur generally below 1 %. Cupressaceae pollen occur up to 7,6 %. The UMC is dominated by fern spores (often in lumps) and *Sparganium.* Animal-pollinated taxa also occur in lumps. Of the 171 counted taxa, 61 (36%) are interpreted as megathermal, 21 of which occur more or less frequently from the LMB to the USB: *Plicapollis*, *Sideroxylon*-type, indet Sapotaceae, Arecaceae, *Diospyros*, Anacardiaceae, Rutaceae, 3 Euphorbiaceae, *Aristogeitonia* type, Mastixioid and Nyssoid forms, *Reevesia* and *Craigia* types. The Arecaceae and *Craigia* have the highest percentages; all others occur in very low percentages (<1,5%). An overview of taxa show a general increase in diversity and amount of megathermal taxa up-stratigraphy, also the younger beds become more diverse. Several megathermal taxa have their first appearance within the LSB: *Lannea* type, two Euphorbiaceae (*Cephalocroton* and *Flueggea*), Myrtaceae (indet), Icacinaceae, *Milletia* type (Leguminosae), Arecaceae (*Elaeis*-type, Calamoideae, and Bactridinae) and a trilete thin-walled fern spore, probably assignable to *Acrostichum*. These increases and first appearances probably indicate a gradual warming climaxing in the EECO.