Coal clasts in the South Wales (UK) and central Bohemian basins (Czech Republic) : implications for the timing of maturation and fracture permeability

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Coal clasts, common within channel lag deposits in the Bolsovian (Westphalian C) and Westphalian D of the South Wales and central Bohemian basins, represent reworked previously deposited coal-forming material. Analysis of clast shape, coal petrology and palynology suggests that three types of clast are present: (1) large elongate rafts of coal, with axial ratios up to 90:1, with regular, often "fish-tail" terminations and showing post-depositional compaction relative to the enclosing sandstone; (2) rafts of similar dimensions to (1), but showing no evidence for differential compaction and terminated by cleat fractures; (3) smal near-equidimensional pebbles that either show no evidence for differential compaction or in which the surrounding sandstone shows greater compaction than the coal pebble. Both types 1 and 2 rafts have miospore assenblage ages that are indistinguishable from coal seams in adjacent sediments and show a similar range of vitrinite-dominated, maceral group composition. Both types of rafts were found only in the South Wales coal basin. The pebbles have miospore assemblages suggesting derivation from coal seams ranging from a similar age to those of the rafts to Langsettian (Westphalian A) and with a wider range of maceral group composition than the rafts.