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**Primary Mud-Clast Conglomerates: Under-Utilized Clues to Sedimentary Processes in Lower Paleozoic Terrestrial to Shallow Marine Environments**

Intraclast conglomerates comprised of clasts of mudstone within a host matrix are one of the most common features of the sedimentary rock record. However, despite such features having been recorded from almost all environments and ages, little previous research has been aimed at cataloging the wide variety of mud-clast forms that may be observed. This poster presents a catalog of mud-clasts from Lower Paleozoic sediments and the term Primary Mud-Clast Conglomerate (PMCC) is introduced as a blanket expression for all the observed forms. The potential for PMCCs to be used to infer sedimentary processes in specific paleoenvironments is illustrated within two case studies – the fluvial-nearshore sediments of the late Silurian Ringerike Group of Norway, and the shallow marine strata of the Middle Cambrian Caerfai Bay Sandstones of Wales. These case studies demonstrate that many specific mud-clast forms are fully dependent on erosional and transport processes that are restricted to certain sub-environments of the general depositional setting (e.g. brittle detachment of “plates” in a low energy fluvial setting vs. diapiric soft-sediment detachment of “bulbs” in a high energy fluvial setting). Thus it is argued that the use of mud-clasts as paleoenvironmental and facies indicators is a valuable – but currently under-utilized tool in local and regional sedimentological studies. It is suggested that further efforts to refine and adapt a catalog of mud-clast forms may eventually lead to a better understanding of their affinities to specific processes and environments and that such a catalog could potentially be applicable to more general investigations.