Sedimentology (1981) **28**, 737–738

DISCUSSION

The shape of rock particles, a critical review

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Barrett's (1980) critical review of shape measures omitted any reference to a compound shape measure developed in 1963 (Janke, 1963, 1966). This measure formed the basis for the only published equations known to this author predicting settling velocities of a wide size- and shape-range of non-spherical particles over an appreciable range of settling velocities, through the Stokes regime to Reynolds numbers of about 100,000. The form factor of the measure was also shown to be useful in quantitatively representing shape aspects of sieving data (Janke, 1970),

If the Janke papers are read, many might agree that the heuristic of design is no less plausible than that of the other geometrical measures discussed by Barrett. None of them offers analytical proofs. However, this is not the main point. The optimality of any measure has to be demonstrated by empirical testing based upon significant processes which involve the measure. As test processes for a shape measure, settling velocity and sieving must be considered significant processes in sedimentology. Something seems very wrong when a measure which has been shown to be predictive of these processes can be omitted from a 'critical review' of shape measures without comment.

0037-0746/81/1000-0737 $02.00

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