

CONCLUSION

Gindy and Sultan (1978) showed that grain-size analysis from thin section can be successfully applied to the study of carbonate rocks. A method of grain-size measurement has been presented that avoids some of the disadvantages inherent in the use of thin sections and exploits the relative ease whereby acetate peels can be prepared for the examination of carbonate rocks.

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GRAIN-SIZE MEASUREMENT FROM THIN SECTIONS

Peter Gutteridge
Department of Geology
University of Manchester
Oxford Road, Manchester, England

Method of grain-size measurement from thin sections have been reviewed by Gindy and Sultan (1978). Any of these can also be applied to peels. In the study mentioned above (Gutteridge 1983), peels were used instead of the traditional apparatus. Measurement of grain size was accomplished using a series of randomly oriented acetate peels. The method (1983) shows that at least 100 grains must be measured in each specimen so that a representative grain-size distribution is obtained.

ADVANTAGES OVER THE USE OF THIN SECTIONS

- The method has the following advantages over the use of thin sections:
- (1) The preparation of peels and peels is quicker and less expensive than thin sections.
 - (2) The method provides a point which is an enlargement of the original peel and so grain size can be measured more accurately than the grain size from the original peel.
 - (3) Peels provide a two-dimensional section through the rock. This method does not suffer from the effects of grain elongation described by Harrell (1981), which may be a source of error in grain-size measurement.
 - (4) Peels can be made of much larger surface than is possible with thin sections, which is advantageous in two ways. A much larger number of grains can be sampled per specimen, and, thus, a representative sample is more likely to be obtained. Also, this method can be used in the study of coarse-grained sediment where grains are of such a size that very few would be accommodated on a conventional thin section.
 - (5) Preparation of the peel does not require a mechanical microscope stage and can easily be achieved by hand.

INTRODUCTION

The use of thin sections is essential in making grain-size measurements on sedimented siliceous sediments. Carbonate rocks, however, are commonly measured in terms of peels. Peels are simpler and less expensive to produce than thin sections. A method of grain-size measurement from acetate peels is described in this paper. The method was developed by the author during a visit to James Gindy's Geology Institute, Cambridge (1983).

METHOD

Peels are acetate peels of a rock. Gindy and Sultan (1978) described the method of Gindy and Sultan (1978) in which peels are prepared by staining the rock with a solution of potassium dichromate. This method has shown that peels provide an accurate representation of grain size (G. Gindy, personal communication). To avoid bias of measurement arising from preferential grain orientation, rock specimens should be sectioned in a consistent direction. The method is a simple method to produce a peel. The peel is prepared by drawing the peel together with an opaque white bar (such as a bar drawn on the peel or a piece of card) and accurately to lower length between two glass plates and then an enlargement of the peel on the photographic paper. This will produce a negative print of the peel with the grain bar appearing as a white shadow. The degree of magnification can be determined by measuring the enlargement of the scale bar on the peel print.

Grain size can be measured from this print by means of a planimeter. A microscope with a graduated eye piece. The use of a planimeter in calculation is recommended so that the grain-size measurement can be converted to millimeters of the peel by taking account of the magnification.