Plasmic fabric analysis of glacial sediments using quantitative image analysis methods and GIS techniques

Zaniewski, K.

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8. CONCLUSIONS

The method described in this thesis is so far only a theoretical development. It requires that the technique be tested in a practical application. There are two possible approaches to this. One would be to test the method on a random set of thin sections showing a variety of types of plasmic fabric. This approach would require a substantial number of thin section samples and would require samples of outstanding quality from the point of view of plasmic fabric patterns. An alternative testing method would be to use the technique on a smaller number of thin sections, which have already been used in micromorphological studies. The main advantage of this approach is that it would not require a new set of thin section descriptions. The process of description may then be influenced by the need to emphasise plasmic fabric and to quantify as much as possible. It is better to use preexisting descriptions and to build on the base of knowledge already acquired. The results of the image analysis process would then contribute to the previous research topic. At the same time it would be a simple matter of noting any discrepancies or new information available through image analysis.

For the purpose of technique evaluation I have chosen to use a thin section sample from Moneydie, Scotland. This sample has already been analysed previously using the most current, quantitative and qualitative, description and interpretation techniques (Menzies and van der Meer, 1998). The site of this study was analysed in macro- and micro-scale showing a variety of sediment structures and, more significantly for this thesis, plasmic fabrics. Three additional thin sections showing examples of Antarctic diamictons were also selected. These include C.116 from the McMurdo Dry Valleys area, Mi.315 from Mt. Provender, Shackleton Range, Mi.316 from the Nansen Ice-Shelf, North Victoria Land.

The results of the evaluation will be available as a separate publication (next chapter).