into the third dimension, although difficulties arise in the presentation of data. The transference to peels of microchemical stains (e.g. for Ca, K, Fe, Al) can reveal the distribution of selected components (e.g. calcite, gypsum, felspars, hydrous oxides) within the soil fabric. Such techniques are capable of development to meet different needs in soil micromorphology.

LEGENDS TO FIGURES

Figure 1 : Microfabric of a Brown Earth (Flint Series: Bw) recorded in an acetate peel (3) as compared to thin-section (1 &2).

Figure 2 : Representation of a void system in a Brown Earth (Flint Series: Ap) recorded on serial peels taken at 100µm intervals.

SUMMARY

Acetate peels, widely used in palaeontology and sedimentary petrology, are a valuable source of information about soil fabric and have the advantage of being easy, quick and inexpensive to prepare. Considerable detail is preserved in the peel at the microscopic level, and although the refinements of optical relief, colour, birefringence, etc., used in thin-sections microscopy are missing, the absence of pigmentation can prove convenient in instances where the latter obscures the fabric. Peels may be prepared from the polished surfaces (1µm diamond) of either the resin impregnated block or an uncovered thin section: the peels can be studied directly under the microscope or used as a negative and enlarged photographically. Serial peels (e.g. at 100 intervals) can be used to study void systems in three dimensions.

Microchemical staining is also a well established technique in sedimentary petrology and is equally appli-

cable to soil micromorphology. Elements which can be successfully detected and located by this technique include K (e.g. in felspars), Ca (in calcite and gypsum) and Fe & Al (e.g. in the amorphous oxide fraction). The stain can be viewed on the thin-section or, in some cases more conveniently, when transferred from the thin section or block surface to an acetate peel where its distribution is unobscured by the pigments in the soil matrix : staining and peel production can also be carried out simultaneously.

This paper will discuss the procedures, scope and limitations of these techniques, illustrated by reference to specific applications.

REFERENCES

AGER, D.V. (1965) : "Serial Grinding Technique" in Handbook of Palaeontological Techniques" Ed. B. Kummel & D. Raup (Freeman).

BABEL, U. (1964) : "Chemische Reaktonen un Bodendunnschliffen". Leitz Mitt. Wiss. u. Tech. 3, 12-14.

BAJWA, I. & D.A. JENKINS (1977) : "The investigation of Clay Minerals in Soil Thin-Sections". 5th Int. Working Meeting on Soil Micromorphology, Spain.

DICKSON, J.A.D. (1965) : "A modified staining technique for carbonates in thin-section". Nature 205-587.

HAWKSEY, A. (1969) : Unpublished Project Report, U.C.N.W. Bangor.

JENKINS, D.A. (1970) : "Some Analytical Techniques applicable in Soil Micromorphology". Soil Survey Techn. Monograph No. 2, 25-32.

KATZ, A. & G.M. Friedman (1965) : "The preparation of stained acetate peels for the study of carbonate rocks". Jour. Sed. Petro., 35, 248