

## Preliminary Remarks

Hans-Ulrich Bergmeyer

Substrates are the partners of reactions catalysed by enzymes. They are measured with the same enzymes by which they are transformed metabolically.

The determination of substrates has always been of great importance for biochemical research (*e.g.* refer to<sup>1)</sup>). The clinical laboratory also obtains information from the analysis of metabolic products (*e.g.* in serum or in material obtained by biopsy), which is of theoretical and practical use in the diagnosis of disease. Pathological metabolic disturbances (*e.g.* in diabetes mellitus<sup>2)</sup>) or metabolic processes occurring under unphysiological conditions (*e.g.* anoxia, ischaemia<sup>3)</sup>) are accompanied by significant changes in the concentration of individual metabolic intermediates. For a long time enzymatic analysis has played a valuable role in food and agricultural chemistry.

The methods for the determination of substrates normally cause no difficulties. Problems only occur when methods, which have been tested solely on pure solutions, are applied to biological material.

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<sup>1)</sup> *Th. Bücher* and *M. Klingenberg*, *Angew. Chem.* 70, 552 [1958].

<sup>2)</sup> *H. Holzer*, *St. Goldschmidt*, *H. Lamprecht* and *E. Helmreich*, *Hoppe-Seylers Z. physiol. Chem.* 297, 1 [1954].

<sup>3)</sup> *W. Thorn*, *G. Pfeleiderer* and *R. Frowein*, *Pflügers Arch. ges. Physiol. Pharmacol.* 261, 334 [1955].