A double sampler unit for the AutoAnalyzer

D. EVERARD and G. SEYMOUR *From the Department of Chemical Pathology, St. Mary's Hospital, London*

It has been possible to modify the sampler module of the AutoAnalyzer to enable laboratories possessing additional recorder and colorimeter units to analyse two sets of specimens simultaneously.

Basically the device consists of a circular plastic channel of rectangular cross-section which fits on top of the normal sample plate and carries a second ring of cups (Fig. 1). The external diameter is 18.5 cm., internal diameter 14.8 cm., width of channel 1.4 cm., thickness of plastic 0.2 cm., height of internal wall 1.8 cm., and height of external wall 2 cm.

FIG. 1

The channel is secured in position by means of three holes bored in the base in such a way as to fit over the three small screws projecting from the normal sample plate. A second sample crook made from $\frac{1}{8}$ in. nickel tubing and braised to the normal one, dips into cups placed in the channel. Plastic cups $\frac{1}{8}$ in. in diameter by 1 in. long obtainable from Camlab Ltd. are used and are the same size as those sold by this firm as disposable blood sugar containers. Thus if these tubes are used for collecting blood from the patient, they may be placed directly on the modified sample plate without transferring.

This additional sample holder, together with an extra recorder and colorimeter unit, produces in effect two

Received for publication 3 September 1962

An inexpensive method for the estimation of true glucose in blood and other fluids by the AutoAnalyzer

GEORGE DISCOMBE *From the Central Middlesex Hospital, London*

An enzymic micro-method for the estimation of glucose in blood and other fluids by the AutoAnalyzer is described. It uses no more than 0.16 ml. blood and therefore can be used for capillary blood samples from the finger or ear; it is not affected by fluoride in concentrations up to molar; and the reagents cost only about 2d. per blood sample.

Huggett and Nixon (1957) described a method for the estimation of true glucose in blood which was insensitive to the presence of 10 mg. sodium fluoride per millilitre blood. They used a reagent which contained glucose oxidase, horseradish peroxidase, and *o*-dianisidine. Hill and Kessler (1961) adapted this for the AutoAnalyzer, but in doing so increased the concentration of peroxidase fortyfold, presumably to ensure that, however much fluoride were added to the blood, there would still be an excess of enzyme. This increased the cost of the reagent to an average of 9d. per blood sample, and this high cost, together with the large sample required, 0.42 ml., made the method unsuitable for most routine laboratories. The more economical method of Wincey and Marks (1961) uses formaldehyde to preserve blood samples: as it requires predilution of the blood it is less convenient.

In the absence of fluoride the concentration of peroxidase required in the Hill and Kessler method can be reduced about twentyfold. Modifications intended to remove fluoride were therefore tried, and it was found possible to use a reagent containing one fifteenth of the original concentration of peroxidase and one half to one

Received for publication 24 October 1962

A double sampler unit for the AutoAnalyzer—concluded

AutoAnalyzers, since using 15 line end-pieces any two manifolds may be combined, the dialyser has room for two units, and two heating coils may, if necessary, be fitted in one heating bath.

Using this device the following estimations have been successfully combined:—Alkaline phosphatase and bilirubin, carbon dioxide and sugar, and uric acid and inorganic phosphorus.

Double runs of the same analyses are also possible, thus with two sugar manifolds combined, it is possible to analyse 80 samples per hour.