Adapting the glucose channel on the SMA 6/60 for creatinine determinations in blood and urine

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With the predetermined channels the SMA 6/60 is somewhat rigid and not easily modified. However, the glucose channel is wasteful, and we have therefore modified it as follows.

The method is basically the one described by Technicon for a one-channel analyser, with slight modifications in the manifold (see flow diagram). The proportions of the reagents one to another have mainly been kept the same, except for the amount of sample which was increased to give a better sensitivity.

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Reagents

NaCl 0.9% (diluent)	+ 1 ml/l Brij 35
H ₂ O (recipient)	+ 1 ml/l Brij 35
Picric acid (saturated)	+ 1 ml/l Brij 35
NaOH 0.5 N	+ 1 ml/l Brij 35

The filter (460 mμ) has been replaced by one of 505 mμ. Special care has to be taken to get a good bubble pattern. Brij 35 (1 ml/l) was added to all the reagents as wetting agent. If two time-delay coils are used instead of one, it is better to have an upwards flow in both of them to avoid pressure variations which result again in an uneven bubble pattern.

The original chart paper can be used if the usual calculation of

Reading of test × concentration of standard

Reading of standard

is made out, or indeed if a table of the standard readings against standard concentrations has been drawn up, on which the results can be read off. Although we did not extend our standard curve (0.15 mg% creatinine) above the equivalent of 325 mg% glucose the results were very satisfactory. The present chart paper, however, with its glucose scale, is unsuitable as a means of reporting the creatinine results directly to the ward.

Fig. Flow chart for the glucose channel on the SMA 6/60 as adapted. Since this method was submitted the flow rate of the cell has been changed by altering the waste line from 0.045 to 0.056.