Letters to the Editor

countries or in laboratories where the use of blood is a problem and technical expertise is limited the improved selectivity of the blood free medium will simplify the isolation of *C jejuni* from faecal specimens.

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Batch screening method for the detection of bacteriuria

With reference to the comments made by Dr Maskell¹ concerning our published work,² we believe that certain points need clarification.

We support the opinion that it is not feasible to pass a midstream specimen of urine into the narrow necked 5 ml boric acid container, in which we receive our specimens; but this objection also applies to the 30 ml universal size container. Wide necked containers of various forms are recommended for collecting midstream specimens,³ and some containers such as "honey jars" are expensive to recycle. Our solution is to use disposable 200 ml paper cups, referred to by the Americans as "Dixie cups," which cost less than one penny each. When gently squeezed the cups fold to form a delicate pouring spout. The lack of absolute sterility does not affect the culture result in midstream specimens, although they should not be used where catheter or ureteric urine is being collected.

With regard to the toxic effect of boric acid on bacteria in urine, the percentage of false negatives of 16% quoted by Dr Maskell is inaccurate. The studies referred to were not true comparisons, and the dip slide method used as the reference method is liable to an error of over estimation of about 10%. The percentage of organisms falling into the category of 10^7 - 10^8 organisms/l and $>10^8$ organisms/l mixed culture was 27.8% with the dip slide method, which is an unacceptably high percentage suggesting a poor standard of specimens. The authors concluded that the loss in positivity may be more apparent than real and that it was difficult to show a significant reduction in count in under 24 h.

Our own experience in a laboratory serving several acute hospitals and scattered domiciliary practices is that boric acid preservative solves more problems than it creates and is an excellent preservative for both white and red blood cells.

It is unfortunate that our published method of urine culture could be interpreted as a protocol introducing undue delay; the whole aim of our service in Bury is to provide rapid information for clinical use. We prepare a full plate culture and direct sensitivity on all urines with >10 white blood cells per mm³ and aim to report on quantitative urine bacterial growth with a direct sensitivity test result and presumptive identity of organisms⁴ on the morning after the day of receipt of the specimen. This puts out between 85-90% of reports, and where further work is needed an interim report may be issued.

We believe that our approach is a cost effective method of providing rapid clinical reports. In processing over 30 000 urine specimens a year we can have less than a whole time equivalent of scientific officer time being dedicated to urinary work.

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The pathology of meconium ileus equivalent

Dr I Jeffrey *et al*¹ describe sulphomucin in the ileum of adults with cystic fibrosis. They may be interested to learn that Dr S Spicer and I found sulphomucin in duodenum (where normally only sialomucins reside) in patients with cystic fibrosis and also in non-cystic fibrosis patients with duodenal ulcers.² It thus seems unlikely that it is unique to that disorder. Moreover, increased sulphomucins are found in other epithelial sites in non-cystic fibrosis inflammatory disorders. Although it is tempting to explain the increased viscosity and other properties of cystic fibrosis mucus on this basis of increased sulphate content, the finding is probably non-specific.

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Dr Jeffrey and colleagues comment as follows:

We are grateful to Dr Lev for the interest he has shown in our case report and we are, of course, familiar with his and Dr Spicer's early publication on the histochemistry of mucus in cystic fibrosis. Their paper was not quoted because, to a large extent, their qualitative work has been confirmed and superseded by the quantitative study of Morrissey and Tymvois,¹ who cite the 1965 article.

We agree with Dr Lev that the presence of sulphomucin in the small intestine is not unique to cystic fibrosis. Indeed, trace amounts of sulphomucin can be detected even in normal small intestinal mucosa (Wells, unpublished observations) though the acidic mucin component is, as we

stated, "almost exclusively non-sulphated". This does not detract, however, from the important finding of intense focal sulphomucin positivity in our case. We also agree that increased sulphomucins may be found in other epithelial sites in non-cystic fibrosis inflammatory disorders. In our paper we made no attempt to attribute directly the increased viscosity and other properties of cystic fibrosis mucus to increased sulphate production, though this was obviously implied. None the less, if this is the case it seems likely that the amount of sulphomucin produced, and not merely its presence, would be a decisive factor. Furthermore, any such effect would tend to be heightened in the terminal ileum due to the consistency of the faecal stream and the reduced diameter of the gut at the ileo-caecal valve.

In 1965 Dr Lev and Dr Spicer stated that "the histochemically observed increase in sulfomucin (in cystic fibrosis) may be related to the abnormality of the secretion." While it is difficult to draw general conclusions from a single case we are surely implying no more than that. It is interesting that, 19 years on, Dr Lev appears to be modifying his conclusions in a letter to this journal.

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Computers in histopathology

Details of our word and data processing system have already been published.¹⁻⁴ The recent article by Dr Subbuswamy and others⁵ prompts us to describe an unpublished aspect of our system: the reference storage and retrieval facility. This development has been made possible by the design of the histopathology system, which allows areas of new interest to be accommodated easily. Such flexibility is of major benefit and should be aimed for in all systems.

Our laboratory sees relatively large

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Fig. 1

numbers of cutaneous malignant melanoma, about 80-100 a year, and a special interest in this condition developed some years ago. With the advent of the histopathology computer (a DEC PDP 11/23) we took the chance to computerise the references gathered on this subject—currently about 300. The computer was simply programmed to provide a format on to which details of each article can be entered (Fig. 1). This required about 1 h of work. The first three sections are for the author's details, and the choice of only the first three authors was quite deliberate; more could have been accommodated with ease. The next sections are for title, journal, year, volume, and page entries, followed by a section for an abstract or notes to be written. Finally, come the sections marked "codes" and "identity". We have categorised the melanoma published work into 29 subtypes according to a simple

numerical system (Fig. 2). The relevant numbers are inserted into the "codes" section, depending on the nature of the article—for example, MM01 for an article concerning prognosis. Most articles cover more than one aspect of the 29 subsections and so several code entries for each article is common. The section "identity" allows individual consultants to identify those items which they have specifically inserted should this be so desired.

With all entries appropriately coded it is possible to identify with ease common groups of emphasis—for example, all papers concerned with melanoma thickness. The computer takes literally only a minute to identify these common groups and then offers the choice of a view or print option, either numerically or alphabetically. Similar selections, singly or in combination, can be made on other parameters—for example, author, journal, or year—thereby

Format of Code=MMxx		
1=Prognosis	12=Regression	24=Non-skin sites
2=Type	13=LN	25=Mixed lesions
3=Immunology	14=Cther melanin tumours	26=Animals
4=Histogenesis & Lesional evolution	15=Lymphocytes	27=Pregnancy and Children
5=Behavior(clinical)	16=LN and other metastases	28=Incidence
6=Markers	17=Aetiology	29=Recurrence
7=Management/Treatment	18=Staging	
8=Thickness	19=Site	
9=Levels	20=Cthers	
10=Epidemiology	21=Chemistry	
11=Histology	22=Pathology	
	23=Borderline lesions	

Fig. 2