than a hundred countries where paraquat is now used, most of which have strict regulations governing the use of pesticides.

In cases of human poisoning by paraquat, and in experimental animals, the highest concentrations are found in the kidneys and liver and though these organs show signs of damage there is no subsequent proliferation of any of their component cells. It would be expected that were induction of "near anaerobic conditions" a cause of the cellular reaction these organs would show more proliferation than the lungs. Measurement of ATP concentrations in paraquat poisoned animals also shows no change. There is therefore no parallel between Warburg's theory of carcinogenesis and the actions of paraquat as Drs. Stokes and Walker suggest.—We are, etc.,

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Industrial Hygiene
Research Laboratories,
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REFERENCE

- ¹ Canning, D. M., Fletcher, K., and Swan, A. A. B., *British Medical Bulletin*, 1969, 5, 245.

SIR,—In their letter (22 August, p. 462) Drs. D. M. Stokes and D. A. Walker state that it is well established that poisoning by both paraquat and diquat is characterized by proliferation of the epithelium of the lung. The papers they quote refer only to cases of paraquat poisoning. As far as I am aware D. G. Oreopoulos and I¹ described the only case of diquat poisoning published to date, and there was no evidence of any lung lesion in this patient who recovered completely.—I am, etc.,

J. McEvoy.

Renal Unit,
Belfast City Hospital,
Belfast.

REFERENCE

- ¹ Oreopoulos, D. G., and McEvoy, J., *Postgraduate Medical Journal*, 1970, 45, 635.

Undiagnosed Abdominal Pain

SIR,—In your leading article entitled "Undiagnosed Abdominal Pain" (22 August, p. 415) you refer to Howie's suggestion "that the place of planned appendicectomy for mild or recurrent iliac fossa pain is a very restricted one,"¹ but quote figures from Ingram and Evans² showing that 90% of young women who had had diseased appendices removed were satisfied with the result, whereas only 45% with normal appendices had been satisfied post-operatively. Thus one needs some indication of those patients in whom recurrent pain in the right iliac fossa is, in fact, likely to be due to appendicular disease.

A few years ago I described a simple radiological method of demonstrating appendices using a barium mixture which contains a cellulose preparation (Raybar 75—Damancy).³ By this method presumptive diagnosis can be made of an appendix which has suffered recurrent attacks of inflammation, so that unnecessary (and sometimes harmful) operations can be

avoided. At the same time, in most cases, the terminal ileum and caecum are also well shown, so that other causes of the pain, such as regional ileitis, may be revealed.

Follow-up in this series showed an 85% improvement rate in those operated on, which corresponds closely with Ingram and Evans's figures. Furthermore, since only a limited number of films are taken with as little screening as possible, the amount of radiation is kept to a minimum.—I am, etc.,

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Fazakerley Hospital,
Liverpool.

REFERENCES

- ¹ Howie, J. G. R., *Lancet*, 1968, 1, 1365.
² Ingram, P. W., and Evans, G., *British Medical Journal*, 1965, 2, 149.
³ Goldman, M., *Clinical Radiology*, 1966, 17, 289.

Breast-milk Jaundice

SIR,—Your leading article (25 July, p. 178) comments that breast-milk jaundice is a complex problem. I wish to report certain aspects of the laboratory diagnosis of this condition which increase the complexity still further.

The inhibitory activity of human breast milk was examined by determining its effect on the conjugation of bilirubin by male rat liver slices.¹ Breast milk 0.2 ml. was added in a final incubation medium volume of 3 ml. Using this technique I have examined milk from 163 nursing mothers, including 10 specimens from mothers of babies in whom a clinical diagnosis of breast-milk jaundice had been made. Most of the specimens were examined within one week of collection. This is essential since specimens kept at -12°C . increase their inhibitory activity toward conjugation in rat liver. This was examined by retesting 17 control breast milks for inhibitory activity against bilirubin conjugation in rat liver slices after keeping for 16 weeks at -12°C . All the milks showed an increase of inhibitory activity, the mean increase being 20.3%. A number of breast milks have been further tested serially for inhibitory activity against bilirubin conjugation in rat liver slices. The results obtained with a representative breast milk are shown in the Table. The milk was kept at -12°C . after the first analysis.

Age of Specimen	Inhibitory Activity (% Inhibition of Bilirubin Conjugation)
8 hours	+5
6 days	+1
12 "	14
20 "	7
40 "	38
54 "	57
64 "	75

Each result is a mean of duplicate analyses.

This observation has practical implications in that sterilized deep-frozen breast milk is used for feeding premature infants. Sterilized breast milks from a bank have been serially tested, but in the specimens tested there was no development of inhibitory activity. It is possible that sterilization

prevents the development of inhibition but this has not yet been fully investigated.

Another puzzling factor has been the high incidence of inhibitory activity toward bilirubin conjugation in milk from the control mothers. In the 153 control milks eight gave 100% inhibition of bilirubin conjugation in rat liver slices although the infants of these mothers were not sufficiently jaundiced to warrant serum bilirubin analyses. Complete inhibition of conjugation also occurred when these milks were added to other conjugation test systems. Preliminary experiments have shown that this inhibitory milk has an effect on conjugation similar to milk from mothers of infants with breast-milk jaundice.

These problems are being investigated further but give support to your observation that this is a very complex problem and may depend on infant susceptibility as well as secretion of inhibitory substances in maternal milk.

I thank my colleagues for referring specimens to me and the South-western Regional Hospital Board for financial assistance.—I am, etc.,

TOM HARGREAVES.

Area Department of Pathology,
Exeter, Devon.

REFERENCE

- ¹ Lathe, G. H., and Walker, M., *Biochemical Journal*, 1958, 70, 705.

Unified Filing System

SIR,—Referring to the proposal made (1 August, p. 277) it may be pointed out that the numerical date indication given as example, with the sequence day, month, year, runs counter to the proposed British Standard (in draft as BSI doc. 70/4476) on "Rules for Writing Calendar Dates," which states "An all-numerical date shall be written in the following order: year-month-day."—I am, etc.,

V. BISKE.

Chester,
Cheshire.

Acute Epiglottitis

SIR,—Acute epiglottitis, a fulminating and often a fatal infection in young children, is infrequently recognized. In view of the laryngeal obstruction, urgent and specific treatment is required. Only few cases have been reported (Dr. J. D. Andrew and others 31 August 1968, p. 524), but probably many more go unrecognized. In view of a need for the widespread awareness of this condition it may be useful to report the following case.

A two-month-old baby girl was admitted to hospital on 21 September 1968 with increasing respiratory stridor and slight cyanosis. She looked ill, had a marked respiratory stridor with prominent substernal recession, and her temperature was raised to 100°F . (38°C). Clinically and radiologically her chest was clear, laryngoscopy showed supraglottic oedema. The epiglottis was inflamed and oedematous and more or less occluding the glottic opening. A Jackson Rees nasotracheal tube was passed to establish a clear airway. The tube was left in for two days while the infection was controlled