both Gram-positive and Gram-negative organisms may be found. The condition is really an acute phlegmonous inflammation, similar to that occasionally found in the stomach.

(3) *Chronic Stage*.—The acute process has subsided and the granular leucocytes replaced by lymphocytes, mononuclears, and sometimes plasma cells. The lymph follicles of the mucosa are large and their actively proliferating germ centres with an occasional giant cell may suggest tuberculosis. The naked-eye appearances correspond to Dalziel's description of "an eel in a state of rigor mortis."⁵

(4) *Fibro-stenotic Stage*.—The cellular granulation tissue has now been replaced by fibroblasts which have laid down collagen fibres leading to fibrosis and contraction of the area, giving the diagnostic x-ray picture known as "the string sign of Kantor." At this stage there is usually widespread ulceration with destruction of muscle, and, as Mailer⁴ pointed out, it is now that resection is most often required. This is the lesion most often seen by the pathologist.

The sarcoid-like lesion consisting of groups of epithelioid and giant cells has led to much confusion regarding aetiology. Serial section will often show that this reaction is of the foreign-body type and associated with particles of vegetable matter which have entered the lymphatic channels through breaches of the mucosa and become encapsulated during the process of healing. Fistula formation, which appears to be relatively uncommon in this country, occurs when the septic process no longer remains confined to the lumen and wall of the bowel, but tracks to the surface.—I am, etc.,

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SIR,—I was interested in your leading article on the pathology of Crohn's disease (15 May, p. 1263) and agree with almost all your comments. I think that your observations on Crohn's disease of the colon may be usefully extended.

If patients with Crohn's disease confined to the colon are separated from patients with Crohn's disease in the colon and small intestine a different pattern of disease emerges. In the first place, as Schofield has pointed out in his recent Hunterian Lecture,¹ the patients are much older, and the sex incidence is reversed. In a series of 45 patients with primary Crohn's disease of the colon and rectum² approximately one-quarter of the cases occurred in women over 60 years of age, and the initial diagnosis in many cases was diverticulitis or carcinoma. The incidence of perianal and rectovaginal fistulae is much greater in primary Crohn's disease of the colon and rectum than in Crohn's disease affecting the small and large intestine. Most important of all, the prognosis is infinitely worse in patients with Crohn's disease affecting the small and large intestine than in patients with Crohn's disease localized to the colon and rectum. In the former at least one-third of the patients have a major recurrence after surgical resections have been carried out. In the latter there appears to be no recurrence after colectomy or proctocolectomy.

In your article you refer to the non-caseating epithelioid lesions found in Crohn's

disease as sarcoid lesions. I am sure this is a mistake, as anyone can verify by taking a dozen slides of sarcoid lymph nodes and comparing them with a dozen Crohn's disease lymph nodes. In sarcoid the lymph nodes are usually considerably enlarged and many non-caseating nodules of epithelioid cells are found inside them. In Crohn's disease the nodules are found most frequently in normal-sized nodes and only a few nodules can be seen. In sarcoid the nodules show a monotonous uniformity of size, shape, and stage of development. In Crohn's disease the nodules vary considerably in size, shape, and degree of maturity, and are usually smaller than those seen in sarcoid. In sarcoid the nodules are cellular and compact. In Crohn's disease the epithelioid cells are more loosely arranged, and the cell margins are frequently separated by oedema. The multinucleated giant cells of sarcoid often contain more than 30 nuclei, whilst those in Crohn's disease seldom contain more than 16 and appear to be formed by the fusion of endothelial cells lining affected lymphatic capillaries.—I am, etc.,

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** Many authorities do in fact use the term "sarcoid-like lesions" (or sarcoid reaction) to describe the follicles found in Crohn's disease. The alternative name "non-caseating epithelioid-cell lesion" is rather cumbersome, especially when it has to be repeated on many occasions in a paper. Lesions similar to those found in sarcoidosis are described as a tissue reaction to beryllium and zirconium, and are noted occasionally in such chronic infections as leishmaniasis and histoplasmosis.—ED., *B.M.J.*

Abuse of Digitalis

SIR,—In your excellent leader "Abuse of Digitalis" (8 May, p. 1208) there is one statement which must be challenged. Its uncritical acceptance, as written, may lead inadvertently to further avoidable deaths. This statement reads: (for digitalis-induced arrhythmias) "Potassium should be given and thiazide diuretics stopped."

While it is true that potassium deficit may sensitize the heart to the toxic effects of digitalis, an excess of potassium may well increase that toxicity. This is because hyperkalaemia, like digitalis, delays conduction in the A-V node.¹ Potassium excess also decreases excitability and contractility of cardiac tissues. These effects, therefore, added to an arrhythmia in a sick heart already poisoned by one drug, may prove lethal.

Potassium should not be given unless there is some evidence of potassium loss. Such evidence may be a history of taking kaliuretic drugs, purging or vomiting, by estimation of serum levels, or in the electrocardiogram itself. If thus indicated, potassium should be given with great care, including frequent electrocardiographic control. The presence of diminished renal function increases the hazard.

It would be indeed unfortunate if house officers and others who may meet this emer-

gency were given to understand that potassium is a cure for digitalis toxicity.—I am, etc.,

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Intravenous Regional Lignocaine

SIR,—Since publication of our article on this technique (10 April, p. 954) several letters have appeared in your columns criticizing our conclusions.

To state that we have advocated abandoning the technique is to misquote us. What we have said is that we no longer feel justified in using the technique *with lignocaine* because of the high incidence of toxic phenomena. A further study is in progress using prilocaine, and it may be that the latter may prove to be a drug of choice. We note the comments by Dr. R. L. Hargrove and his colleagues (8 May, p. 1249) on the blood-lignocaine levels, but as a full study of this was published in 1963 by Bell *et al.*¹ we did not investigate this aspect. Bell *et al.*,¹ using a dose of 3 mg./kg., found that, although the maximum peripheral blood level of lignocaine was 1.2 µg./ml., drug toxicity was evident in 50% of their patients. We agree with Dr. Hargrove and his colleagues that this is not consistent with the minimum toxic levels of 10 µg./ml. of blood reported by Bromage and Robson² and 5.29 ± 0.55 µg./ml. plasma reported by Foldes *et al.*,³ but the lignocaine levels in the coronary and cerebral arteries may be higher than those in the peripheral venous blood.

That toxic effects occur is not surprising in view of the site of injection of the drug. The maximum permissible dose of lignocaine was recently reviewed by Deacock and Simpson⁴ in a study of 13 fatalities, and it was recommended that a dose of 200 mg. (without adrenaline) for a fit adult should not be exceeded, but special warning was given that this figure was a guide only and that the site of administration—in particular its vascularity—should be taken into account. We reiterate that intravenous regional analgesia with lignocaine cannot be recommended owing to the risk of toxic effects.—We are, etc.,

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"Bedlam Melancholia"

SIR,—Whilst as a general practitioner I am very grateful for Dr. William Sargent's observations on the combined use of anti-depressant drugs (5 June, p. 1495), I must