graduates in such a team have every opportunity for job satisfaction and an efficient use of their long period of training.—I am, etc.,

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Rupture of Uterus during Prostaglandin-induced Abortion

SIR,—Dr. I. Z. MacKenzie and his colleagues (21 December, p. 683), in their detailed analysis of the morbidity of prostaglandin-induced abortion, state that they have been unable to find any report of uterine rupture as a complication of pharmacologically-induced abortion. I wish to record the histories of two patients both of whom sustained rupture of the uterus during the middle trimester and in both of whom prostaglandin E_2 was used as an oxytocic.

Case 1. A woman aged 29 years was admitted with 15 weeks' amenorrhoea in her third pregnancy and slight vaginal bleeding for two weeks. The fetus was dead. In spite of a high-concentration oxytocin infusion and dilatation of the cervix under general anaesthesia on the seventh day of admission abortion did not follow. Four days later intravenous prostaglandin E_2 was infused (7.5 mg over 25 hours). The cervix dilated slightly but a left adnexal mass became palpable. The fetus and placenta were evacuated under general anaesthesia and the uterus packed. When the pack was removed 24 hours later severe haemorrhage followed. At laparotomy a complete rupture of the lower uterine segment was discovered. Subtotal hysterectomy and ligation of the left internal iliac artery proved necessary and 3.3 l of blood was transfused. An abdominal drain was required and the bladder drained continuously. Fortunately the patient recovered uneventfully with the help of antibiotics.

Case 2. A woman aged 35 years was admitted with 24 weeks' amenorrhoea in her sixth pregnancy, slight uterine bleeding, and colicky abdominal pain. The fetus was dead. Apart from three normal deliveries she had had a spontaneous middle trimester abortion and evacuation of the uterus after an incomplete abortion at the twelfth week. Despite a high-concentration oxytocin infusion the cervix dilated very slowly. Forty-eight hours after admission the membranes ruptured and offensive fluid drained. Prostaglandin E_2 was infused intravenously over the next five hours. The concentration used was that recommended by the makers, 5 mg/l, and the dose no more than 10 µg/min. The cervix did not dilate. Moderately severe pain and tenderness developed in the right iliac fossa. At laparotomy a large right broad-ligament haematoma was evacuated, subtotal hysterectomy performed, and 1.1 l of blood was transfused as well as dextran 70. The abdomen was closed with drainage and a self-retaining catheter inserted. Mild pelvic peritonitis responded to penicillin and kanamycin. Though she recovered well and was discharged on the twelfth day she was readmitted on the 21st day with a pulmonary infarction which was treated successfully with intravenous heparin and later with warfarin.

Both of these patients had fetal death in utero and were managed with oxytocin as well as prostaglandin E_2 and undoubtedly differ in many ways from a patient terminated in the middle trimester who has a live fetus. It may well be that uterine infection and multiparity predisposed to rupture, yet there was no evidence of old scarring found in the excised uteri. In both these patients the uterine rupture was associated with very considerable morbidity from anaemia, infection, and in one patient from pulmonary infarction. Rupture of the uterus in the middle trimester is very uncommon and the fact that prostaglandin E_2 was used in both these cases may be coincidental, but it would seem reasonable to list rupture of the uterus as a complication of prostaglandin-induced termination if only under exceptional circumstances.

I am grateful to my colleague Mr. J. C. Newbold for permission to record the details of the first patient.

—I am, etc.,

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Epidemiology of Cowpox

SIR,—Though your report from the Epidemiology Research Laboratory on cowpox (4 January, p. 46) deals principally with infection without direct contact with cows it also raises some other interesting points about cowpox virus.

Your contributors correctly assess the extent of human infection. However, I am not certain that bovine infection is as rare as they and others^{1,2} indicate. Nor is it certain that the incidence is declining as has recently been suggested.³ Eight human cases since 1967 compares well with 10 cases from 1944-50 studied by Downie,⁴ who suggested that infection was as common as in Jenner's time. Cases are investigated only when either human infection occurs or when many cattle are involved; in a recent outbreak 75% of the herd was infected before veterinary advice was sought.³

Downie⁴ suggests that cowpox virus is maintained via trivial infection in cows which would probably go unnoticed. The virus would not survive for long in the soil and there is no evidence that other animal hosts are involved. I have recently compared the biological characteristics of 10 British cowpox virus isolates. The results (to be published) indicate that at least five different virus strains are currently in circulation. For example, viruses isolated in 1937, 1965, and 1971 were indistinguishable from each other whereas three viruses separately isolated in 1969 and 1971 were quite distinct. A substantial total incidence of bovine infection is required to maintain these separate strains.

Finally, your report describes a human infection considerably more severe than smallpox vaccination. Such severity in unvaccinated individuals has been noted previously;⁴ even infection of well-vaccinated individuals can be more severe than vaccination. From a survey of the literature (to be published) I calculate the serious complication rate (death or encephalitis) in human cowpox as 3%, far higher than the 15 per million for smallpox vaccination.⁵

Whether the incidence and severity of human cowpox infection will increase with the cessation of smallpox vaccination is a question to which the answer will be awaited with interest.—I am, etc.,

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1 Miller, W. C., and West, G. P., *Black's Veterinary Dictionary*, 9th edn. London, Black, 1970.

2 Lauder, I. M., et al., *Veterinary Record*, 1971, 89, 571.

3 Gibbs, E. P. J., Johnson, R. H., and Collings, D. F., *Veterinary Record*, 1973, 92, 56.

4 Downie, A. W., *British Medical Journal*, 1951, 2, 251.

5 Dick, G., *Progress in Medical Virology*, 1966, 8, 1.

Problem of the Dangerous Offender

SIR,—I remain unreassured on reading in your pages (14 December, p. 640) Dr. P. D. Scott's thesis, much of which he propounded

on 8 November to the Thames Valley Division of the Royal College of Psychiatrists.

(1) "The law," he writes, "is already so flexible that most objectives can be achieved without new legislation. . . . It would perhaps help if approved parts of the prison system could be designated as hospitals . . . so that hospital orders could be effected . . . in prison. . . ." This is precisely what could not happen without controversial new legislation. A hospital order under section 60 of the Mental Health Act 1959 is not for any necessary length of time and could not therefore be made to coincide with the term of a sentence. For this reason, among others, I cannot envisage the linking of Broadmoor and the other special hospitals with the prison service.

(2) I consider the Department of Health and Social Security's mere 18 months in the semisecure unit,¹ mentioned by Dr. Scott, to be unrealistic. Reform of severely distorted personalities may take many years, far longer than prisons can hold them most times, and requires an approach of progressive resocialization into the community. But if hospitals where prisoners could be locked up indefinitely came to be contained in prisons where terms of sentence were otherwise all finite, what devices would not prisoners use to avoid the loathed and stigmatized "loony bins where you stay for ever"?

(3) If, as he advocated at Broadmoor, Dr. Scott's policy were to set up hospital units in the larger long-stay prisons it would sabotage that principle of progressive resocialization into the community that would stimulate the strongest drive to reform. Broadmoor and Grendon Underwood are already so isolated as to find difficulty in establishing links with their residents' communities, much less establish an adequate system of half-way housing. The same difficulty will be great enough from a regional "medium security" non-prison unit; by pushing these units into such isolated major prisons as Dartmoor or the huge metropolitan prisons it will become overmastering.

I am all for the best possible link-up of the psychiatric part (which is only one part, after all) of the prison medical service with N.H.S. psychiatry. I am of the opinion that many mentally abnormal offenders, and indeed non-offenders, need long-term and closely supervised care. But now that thought is being directed away from the custodial disposal of offenders towards, for example, compulsory community service, should we not try to think out better ideas than Dr. Scott's for the slow but methodical rehabilitation into society of the dangerously mentally abnormal?—I am, etc.,

SEYMOUR SPENCER

Oxford

¹ Department of Health and Social Security, *Security in N.H.S. Psychiatric Hospitals*, E.C.D. 168/73. London, D.H.S.S., 1973.

Secure Hospital Units

SIR,—We wish to support Mr. M. R. Bury and Dr. J. A. O. Russell (24 August, p. 519) in their criticism of the proposal to establish regional security units for mentally abnormal persons. We agree with them that neither the circular H.S.C. (I.S.) 61 nor the reports of the Butler Committee¹ or the Department of Health and Social Security's