

anaemia, but evaluating the cause of the recurrent iron deficiency in a patient with hiatus hernia but no other abnormal findings is often difficult in practice, especially if the patient is a woman of menstrual age. The presence of occult blood in several specimens of stools is helpful when present, but if it is not it is sometimes possible to prove that bleeding is occurring in the stomach by aspiration of the gastric contents after the intravenous injection of red cells which have been labelled with radioactive chromium. Once the site of bleeding has been proved the problem of surgical cure can be approached with greater assurance, particularly in those patients who have few symptoms from their hernia.

Lymphatics and the Gut

A low level of plasma proteins caused by abnormal loss of albumin and other fractions into the lumen of the gut, "exudative enteropathy," may now be diagnosed by several methods in routine use. Like loss of protein in the urine, exudative enteropathy is not a specific disease but is a disorder that is being recognized with increasing frequency in a number of diseases.¹ That ulcerative colitis and Crohn's disease should show an excessive loss of protein is no surprise, for it needs little imagination to visualize a weeping mucosa. Similarly an abnormal mucosa that fails to absorb, as in idiopathic steatorrhoea and coeliac disease, may well be thought of as leaking in the opposite direction. These images must bring a thought to the lymphatics, for albumin is continually passing through the capillary wall and returning to the circulation via the lymphatics; indeed, probably about half the total circulating albumin may take this path every 24 hours. An obstruction to this circulation in the gut might be predicted to cause an abnormal loss of protein into the lumen, and this has been described several times in the past few years.^{2,3} The evidence of lymphatic abnormality has been obtained by biopsy of the small intestine, when villi have been shown to be grossly swollen owing to distension of the central lacteals (intestinal lymphangiectasis), and on laparotomy, when the mesenteric lymphatics were found to be distended. Steatorrhoea and chylous effusions have been frequently noted in these cases.

The aetiology of these lymphatic abnormalities has not always been clear, though the early onset in some cases pointed to a congenital origin. A most elegant demonstration of lymphatic abnormality has been given by M. Pomerantz and T. A. Waldmann,⁴ who noted that oedema in these patients might be asymmetrical and bear little relation to the level of albumin in the plasma. This led them to investigate the lymphatics of the legs and posterior abdominal wall in four patients with intestinal lymphangiectasis by lymphangiography, a technique which in Great Britain has owed a great deal to J. B. Kinmonth and his colleagues.^{5,6} Three patients had hypoplasia of the leg lymphatics, and in one the thoracic

duct was blocked at the level of the eleventh thoracic vertebra. The other patient, who had chylous ascites, showed a remarkable feature in that no inguinal, pelvic, or retroperitoneal lymph-nodes could be detected and the thoracic duct was double and tortuous. These observations marry well with a recent report by Kinmonth and G. W. Taylor⁷ on chylous reflux, a backflow of chyle down lymphatics to the pelvic organs and legs. They describe two syndromes; in the first the lymphatics are large and incompetent (mega-lymphatics), and in the second the lymphatics of the leg are scanty or virtually absent. Of five patients with the second type all had chylous effusions and four had low levels of plasma proteins. Though protein loss into the gut was not measured it seems likely that these patients also had abnormalities of the lymphatics in their intestines.

Hence there is good evidence in some of these patients of a generalized abnormality of lymphatics which is congenital in origin. The final link has not yet been completed, for though lymphangiography in the legs will define the lymphatics of the posterior abdominal wall and the thoracic duct, there is no method yet available which shows the lymphatics of the gut and mesentery.

Not all these cases are congenital in origin, since tumour deposits can block the lymphatics in the mesentery and cause this picture. Hypoproteinaemia due to loss of protein into the gut has also been reported in a few cases of cardiac failure where the venous pressure is high, and it is presumed that the obstruction here is to the flow of lymph into the superior vena cava.⁸ The next few years should bring the completion of this story.

First Admissions to Mental Hospitals

The clearest evidence for the claim that there has been a revolution in psychiatric practice since the war is the regular decline in the length of time for which beds are occupied in mental hospitals despite a steadily increasing number of admissions. But this may be only part of the picture, for seriously ill people may now be cared for (and perhaps even neglected) outside hospital instead of remaining in-patients for long periods, as in the past. More information is needed on how the individual patient's contact with medical and social services can be directly related to his illness. A full picture can come only from detailed national statistics supplemented by intensive local investigations.

Miss E. M. Brooke's latest work¹ is therefore most welcome. She has taken all statutory patients first admitted to designated mental hospitals in England and Wales in 1954 and 1955 and collated the subsequent records of their admissions to and discharges from hospital. There were 127 first admissions per 100,000 of the total population in 1954 (113 for males and 140 for females). Single persons were admitted more frequently than married, though this was less true of women than of men. The commonest diagnoses at admission were manic-depressive psychosis (26%), schizophrenia (16%), and senile psychosis (15%). At the end of the 2-year follow-up period 8% of men and 11% of women were still in hospital. Many of the patients in this long-stay group

¹ *Brit. med. J.*, 1962, 2, 841.

² Jarnum, S., and Petersen, V. P., *Lancet*, 1961, 1, 417.

³ Waldmann, T. A., Steinfeld, J. L., Dutcher, T. F., Davidson, J. D., and Gordon, R. S., *Gastroenterology*, 1961, 41, 197.

⁴ Pomerantz, M., and Waldmann, T. A., *ibid.*, 1963, 45, 703.

⁵ Kinmonth, J. B., Taylor, G. W., and Harper, R. K., *Brit. med. J.*, 1955, 1, 940.

⁶ Gough, M. H., Guiney, E. J., and Kinmonth, J. B., *ibid.*, 1963, 1, 1181.

⁷ Kinmonth, J. B., and Taylor, G. W., *Gastroenterology*, 1964, 46, 529.

⁸ Davidson, J. D., Waldmann, T. A., Goodman, D. S., and Gordon, R. S., *Lancet*, 1961, 1, 899.

¹ Brooke, E. M., *A Cohort Study of Patients First Admitted to Mental Hospitals in 1954 and 1955*, 1963. H.M.S.O.

were suffering from schizophrenia (both sexes equally) and senile psychosis (mainly women). About three-quarters of all the patients in the 1954 cohort were discharged and not readmitted during the 2-year period. Patients discharged after a hospital stay of less than one month or more than six months were more likely to be readmitted than those staying for intermediate periods. The figures for 1955 are much the same except that the numbers admitted continued to increase and the proportion retained for as long as two years declined a little. Though these data have their limitations the further studies promised by the General Register Office will be looked forward to with great interest. For in conjunction with the more intensive investigations which are being conducted elsewhere they should at last provide a basis for rational planning.

Health in the New China

People who have lived in a particular country often carry traces of the environmental influences of that country long after they have moved elsewhere. For instance, immigrants to New Zealand from the United Kingdom have a higher incidence of lung cancer than persons born in New Zealand.¹ A recent report² has attempted to assess objectively present-day health conditions on the Chinese mainland, and to compare the findings with other reports of the progress made in combating health problems in China. A group of 80 children coming from China to Macau on the way to Hong Kong was compared with a group of 120 children living in villages in Hong Kong territory. The two groups were constructed to be comparable and both were composed entirely of children aged between 5 and 7 years of age who were of Cantonese ancestry; one group comprised children of farmers or labourers in villages in Hong Kong close to the Chinese border, while the other was made up of similar children from villages in nearby Kwangtung.

Both groups were studied for evidence of the use of preventive health services (proportion with vaccination scars), past exposure to respiratory infection (examination for mumps antibody, and positive tuberculin tests), the prevalence of gastro-intestinal infections (examination of faeces for helminth ova, and blood for antibodies to salmonellae), and hookworm infection and malaria (examination of faeces and blood). Nutrition was assessed by determining the packed-cell volume of the blood, the total plasma-protein concentration, and the ratio of urea-nitrogen to creatinine in the urine.

No differences were found between the two groups in nutrition or the incidence of vaccination scars, antibodies to salmonellae, positive tuberculin tests, or hookworm ova. More children from China had helminth ova in their faeces, from which it was concluded that the patriotic health movement in 1953³ had had little lasting effect on village hygiene. Again, more children from China had mumps antibody in their blood than children from the villages near Hong Kong, possibly owing to the establishment in China of nurseries and kindergartens in rural communities to care for the children of working mothers.

¹ Eastcott, D. F., *Lancet*, 1956, 1, 37.

² Worth, R. M., *Amer. J. Hyg.*, 1963, 78, 349.

³ Jones, F. A., *Brit. med. J.*, 1957, 2, 1105.

⁴ Kung-chuo, H., *ibid.*, 1960, 2, 1875.

The report also gives the results of questioning a number of doctors leaving China. All were said to have agreed that from 1949 to 1958 public co-operation in health programmes had resulted in a fall in the incidence of many infectious diseases. After 1958 there had been increased apathy, and though strict rationing had limited the number of deaths from the severe food shortage of 1959-62 there had been a rise in incidence of certain infectious diseases, and a return of prostitution and venereal diseases, formerly stated to have been under control.

The Drugged Sperm

If Dr. Lutwak-Mann's findings communicated in a preliminary report at page 1090 of the *B.M.J.* this week are confirmed in other animal species, a new pharmacological hazard will have come upon the scene. This is that a drug administered to the male may interfere with the embryonic development or survival of offspring he subsequently sires. Though post-mortem findings are unfortunately not available, it appears most probable that the rabbits in Dr. Lutwak-Mann's experiments died from causes which were congenital in origin, and that administration of thalidomide to the buck prior to fertilization had caused the congenital defects. While there is a remote possibility that the dams absorbed a highly toxic metabolite or contaminant of thalidomide from the seminal fluid, the balance of probability suggests that the faulty development of the embryo was due to some influence from thalidomide on the sperms during their formation.

A variety of noxious stimuli affect spermatogenesis. They include x-radiation, stress of various kinds,¹⁻³ alkylating agents,^{4,5} and arsenic.⁶ In some animals, including the rabbit, the age of the ovum at fertilization affects the viability of the embryo.⁷ Ovulation in the rabbit differs from that in man and other primates in that it depends on copulation for its induction and follows it after some nine hours.⁸ Thus any process which results in a deficiency or defect in the production of sperm may lead to the fertilization of an aged ovum, with a consequent risk of embryopathy. If Dr. Lutwak-Mann's experimental results are to be explained on this basis the risk to the human embryo of administering a drug to the father before fertilization is likely to be slight. But there is a more serious possibility. As drugs are devised which interfere in increasingly subtle ways with the metabolic processes of the cell, there must be a real danger that a compound will turn up which is capable of disrupting the delicately balanced processes of mitosis and meiosis so as to produce chromosomal aberration, foetal malformation, and neoplasm.⁹ While this danger must be borne in mind it should not be overemphasized lest valuable therapeutic agents are lost before they leave the laboratory. Nowhere does the influence of evolution seem to be more capriciously active in producing anatomical and physiological variation than in the

¹ Sand, K., *Die Physiologie des Hodens*, 1933. Kabitzsch, Leipzig.

² Meschaks, P., in *Mammalian Germ Cells*, Ciba Foundation Symposium, edited by G. E. W. Wolstenholme, M. P. Cameron, and J. S. Freeman, 1953, p. 37. Churchill, London.

³ Harrison, R. G., *Brit. J. Urol.*, 1956, 28, 422.

⁴ Jackson, H., Fox, B. W., and Craig, A. W., *Brit. J. Pharmacol.*, 1959, 14, 149.

⁵ Steinberger, E., *J. Reprod. Fertil.*, 1962, 3, 250.

⁶ Gunn, R. M. C., Sanders, R. N., and Granger, W., *Bull. Coun. sci. industr. Res. Aust.*, No. 148.

⁷ Young, W. C., and Blandau, R. J., *Science*, 1936, 84, 270.

⁸ Hammond, J., *J. exp. Biol.*, 1934, 11, 307.

⁹ *Brit. med. J.*, 1964, 1, 195.