its incidence or prevalence is still lacking, and it is unlikely to affect more than a small proportion of persons liable to develop a high serum cholesterol in adult life. Population studies are therefore required to determine the range of serum cholesterol concentration in childhood and its association with levels in adult life, and with the subsequent development of coronary artery disease. Results from prospective studies will not be available for many years, but meanwhile much can already be learnt from careful short-term observations.

Such a study has recently been reported by R. C. Godfrey and his colleagues[5] from Busselton in Western Australia. In 1967, as part of a population study, the serum cholesterol concentration of 1,292 school children was estimated. A gradual rise in the medium value throughout school life was found in the boys and girls, with a preadolescent rise comparable to that reported in other studies.[6] In 1969 the cholesterol concentrations of the children whose levels had been in the highest, middle, and lowest 5% in 1967 were determined again. A highly significant correlation was found between the two sets of values, thus indicating that a single cholesterol estimation had predictive value, at least over a two-year period.

With regard to the actual concentrations, the median value at six years of age was 160mg/100 ml and at 17 years had risen to 183/100 ml. But the authors emphasize that at each age the range was wide. In 173 children the concentration was greater than 200mg/100 ml; 32 of these had levels above 238mg/100ml, and 7 had levels above 270mg/100 ml. These "cut-off" points were chosen because they were the limiting values for the upper two quartiles in the prospective study of London busmen by J. N. Morris and colleagues,[7] who had shown an increased number of attacks of coronary heart disease in these two groups. Godfrey and his colleagues, on the basis of the findings in the Busselton study, speculate that a level of 200mg/100 ml in a 6-year-old boy may represent a risk equivalent to that predicted by a value of 238mg/100 ml in an adult, and calculate that 79 children in their group (6%) would carry such an increased risk.

In 929 of the Busselton children serum cholesterol concentrations were compared with those of their parents. A highly significant correlation was found throughout the whole range of concentrations. It was not possible to determine the extent to which dietary or genetic factors or both together were responsible for the correlation of cholesterol levels in these families. In the children with levels greater than 250mg/100 ml genetic factors were considered more important. This association of serum cholesterol concentration in the parents and the children has also been found by S. Deutscher and his colleagues[8] in Tecumseh, Michigan, and by A. Drash[9] and his group in Pittsburgh. Furthermore, the Michigan workers showed a relationship between increased risk factors in children and increased mortality in their parents from coronary heart disease; and Drash found the incidence of vascular disease to be much higher in the parents in his "high-cholesterol" families (200-230mg/100 ml) than in the parents of a group of insulin-independent diabetic children.

Further epidemiological studies are required before limits can be set or advice given about preventive measures on a population basis. Cholesterol estimations should certainly be undertaken in children when there is a clear history of early coronary artery disease or familial hyperlipoproteinaemia, but the time has not yet come for routine estimation of serum cholesterol in children.

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Malaria Risk to Travellers

The risk of contracting exotic diseases in tropical and subtropical countries is greater than many travellers realize.[1-5] A stop of only a few hours in a malarial place has more than once resulted in death from the malignant tertian disease, which has a high fatality rate. Yet writers of holiday articles in the press and agencies that organize tours to the warm countries habitually fail to mention in their glowing descriptions that tropical diseases, and especially malaria, present the visitor with a real risk.

A recent report of the World Health Organization[6] indicates that the total number of notified cases of malaria in 25 European countries rose from 2,966 in 1969 to 3,412 in 1970 and to 4,987 in 1971. Nearly 90% of these cases were reported from Portugal. Clearly this is related to military operations in Portuguese territories in Africa. But other countries showing a substantial increase of cases of malaria are the United Kingdom, the Federal Republic of Germany, Greece, Italy, and the Netherlands. The number of cases reported in 1971 from England and Wales was 269, and the addition of cases in Scotland brings the total to 294, the highest annual figure recorded over the past 15 years.

Some 92% of all cases of malaria seen in Europe during the years 1969-71 originated in Africa, and though only one-quarter of these cases were due to the malignant tertian type (*Plasmodium falciparum*) they had a fatality rate close to 2%. In England and Wales in 1971 no fewer than 138 of the 269 cases of malaria (52%) were due to *P. falciparum*, and there were eight deaths. Death is usually due to missed diagnosis or to delay in the treatment of the *P. falciparum* infection, which in a nonimmune person may develop with dramatic suddenness and severity. The pattern of these sad episodes is similar in most of the European countries.[4-7]

Travellers exposed to the disease in tropical or subtropical countries are often careless about the preventive measures, including chemoprophylaxis.[3] On their return from overseas febrile symptoms combined with other complaints are often diagnosed as "influenza" or "gastroenteritis" and they are given palliative treatment, if any. Within a day or two the patient may suddenly show signs of the central nervous system being affected, or hyperpyrexia, or renal failure. An emergency admission to hospital may lead to the correct diagnosis, but even prompt treatment may fail if the *P. falciparum* infection is severe.[4]

To improve the general knowledge of the malaria risk in

today's shrinking world the World Health Organization has prepared a special issue of the *Weekly Epidemiological Record*[9] giving information for international travellers. It covers (*a*) the list of countries and areas where the risk of contracting malaria is present, even though it may be remote; (*b*) advice on how to protect travellers from that risk; and (*c*) guidance on what to do if fever develops on returning home. The document is divided into two parts. One part presents data on the risk of malaria in some 220 countries and territories all over the world. The second part gives an outline of preventive measures, including chemoprophylaxis. A succinct table of appropriate drugs and their dosages is appended together with a map showing the epidemiological assessment of the status of malaria in 1972.

This document is a useful source of the information that travel agencies, tourist information centres, and other organizations dealing with international travel ought to give their clients. It will also help doctors faced with inquiries about proposed or previous visits abroad.

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Extensive Resections for Cancer of the Large Bowel

Despite considerable individual exceptions, in general the malignancy of carcinomas varies greatly according to the viscus in which they arise. Thus, carcinomas of the bronchus or oesophagus carry a particularly unfavourable prognosis and are seldom amenable to eradication by surgery or irradiation with any prospect of lasting cure. Carcinoma of the stomach is usually a somewhat more favourable lesion. For example, of a large series of cases seen in the hospitals of the Birmingham area, about 5% were alive and well five years later, and the crude five-year survival rate for those patients fortunate enough to have been able to proceed to a radical operation was 15·6%.[1] Even more promising for surgical treatment, as a rule, are carcinomas of the rectum and colon. Some 50% of the patients followed up by various authors [2-6] after radical operation for carcinoma of the rectum were alive and well five years afterwards, and it is usually reckoned that the survival rate for patients who have had radical surgery for carcinoma of the colon is even better.[4-7] Admittedly these figures of survival mostly represent the achievements of particularly experienced surgeons working in specialized or major centres, and the patients admitted to them may be to some extent selected. The outcome of surgery for colorectal cancer throughout the country as a whole may be rather less satisfactory.[8 9] But these superlative results set a standard of excellence towards which all surgeons should aspire.

Obviously if a patient is to enjoy the benefits of radical surgery for carcinoma of the bowel his growth must be considered to be resectable. Consequently it behoves the surgeon operating on such cases not to be easily deterred from excision by local fixation of the lesion, provided it is not associated with peritoneal or extensive hepatic deposits. Adherence to other viscera and to the abdominal parietes may sometimes present the surgeon with a formidable fixed mass necessitating for its removal an extensive resection of colon or rectum together with en-bloc excision of part or the whole of adjoining organs. These may be the uterus and uterine appendages, vagina, urinary bladder, seminal vesicles, prostate, loops of small intestine, kidney and ureter, stomach, duodenum, spleen or pancreas, or the musculo-aponeurotic layers of the abdominal wall may too have to be excised. Naturally the prognosis after multivisceral resections could scarcely be expected to be as good as after simple resections of non-adherent growths, but it is often much better than was expected at the time of operation. For one thing, as J. C. Goligher[10] and R. V. Cooke,[11] have emphasized, though the carcinoma may have appeared to the surgeon to have extended into the adherent viscus or parietes, sometimes when the specimen is examined by the pathologist subsequently the adhesions are found to be purely inflammatory and not to contain growth. Secondly, even if malignant infiltration is present, complete eradication of the lesion may still be possible, as shown by the reports of many long-term survivors after such operations.[11-15] For example, of 11 patients subjected to multiple resections by Cooke,[11] six survived for over five years (four over 12 years); of 21 patients reported by J. van Prohaska and colleagues,[12] all of whom had cancerous infiltration of the adjoining resected organs, nine achieved five-year survival; and of six cases recently published by Harold Ellis and colleagues[15] requiring concomitant partial excision of the duodenum one has survived over six years and the two others are still living and well 3½ and two years respectively afterwards.

There is a further consideration the surgeon has to bear in mind when faced with very adherent colorectal growths of this kind. It is that, even when complete cure is not obtained by multiple organ resection and the patient eventually succumbs from recurrence in two or three years' time, a greater degree of palliation is usually afforded temporarily when the primary growth has thus been removed than when it has been merely bypassed or a proximal colostomy alone has been performed.[1]

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