

amount of ether was required to produce anæsthesia, and a large quantity was wasted by evaporation, but it proved a most satisfactory anæsthetic.

I am, Sir, yours faithfully,
Harley-street, W., May 7th, 1913. J. EDWARD SQUIRE.

THE PROTECTION AFFORDED BY VACCINATION.

To the Editor of THE LANCET.

SIR,—To those who take an interest in the subject of grade of protection afforded by vaccination as discussed in your leading article of May 3rd (referring to Dr. Hanna's recent work on "Studies in Small-pox and Vaccination") the following statistics may be of some curious though but little scientific utility in contrasting protection from natural small-pox, as well as resistance to vaccination, in those who have undergone inoculation with small-pox virus and natural small-pox, respectively. The subjects were chiefly prisoners, and, therefore, inoculation marks could be conveniently verified by me. They included Shans, Burmese, Chinese, and a few members of the hill tribes of Vizagapatam: (a) In a group of 380 adults who had been inoculated when below 15 years of age, 5·6 per cent., and in a group of 94 who had been inoculated above that age, 3·2 per cent. had been attacked in after-life by natural small-pox. (b) 312 persons who had been inoculated below 15 years of age gave a vaccination success rate of 80·3 per cent.; 22 persons inoculated above 15 years of age gave a vaccination success rate of 81·8 per cent. (c) In 96 adults who had suffered from natural small-pox at various ages to an extent sufficient to be freely marked, and who, as Sepoys, had therefore been enlisted without vaccination, I obtained a vaccination success rate of 75 per cent. Variola-vaccine stock was used.

In judging of the high rate of attack by small-pox of the inoculated, it must be remembered their exposure to infection, probably, was very great at certain seasons when inoculation was performed broadcast in the absence of any precautionary measures. Thus, before vaccination had made its influence felt, it is reported that in Calcutta 23 per cent. of total deaths amongst Hindus was due to small-pox. But the point of interest in item (a) seems to me—if the inequality of the groups be ignored—that as with vaccination so with inoculation, repetition of the protective operation at puberty was advisable.

I am, Sir, yours faithfully,
May 5th, 1913. W. G. KING
(Col., I.M.S., ret.).

THE PHYSIOLOGY OF THE OPEN-AIR TREATMENT.

To the Editor of THE LANCET.

SIR,—The profession and public are deeply indebted to Professor Leonard E. Hill for his Brompton Hospital lecture. I number myself amongst those who I am sure will accept his general conclusions without demur. Practitioners who have spent much of their life in the tropics and sub-tropics must assent at once to the view that atmospheric temperature, moisture, and stillness are much more injurious than chemical impurity. Have we not seen develop in those who spend their whole time in the open air the identical train of symptoms that are common in the urban populations of the British Isles? And have we not noted the almost miraculous influence of a short sea trip or a short change to a cooler, drier, and more breezy climate? Still, moist, and tepid air acts in innumerable ways to reduce the tone of the system (I know no better expression). Though rarely insisted on, one of the commonest and important effects is aversion from animal food. And since flesh foods are practically our only source of digestible and assimilable protein, a high percentage of those who live in the tropics suffer from chronic protein starvation. Here sex is a determining factor. Though difficult of explanation, the fact remains that it is almost solely women who avoid meat in the tropics. Hence it is mainly women who suffer from the climate. Let anyone take a comprehensive survey of the white population in a tropical port, and the difference in the health of the sexes will at once strike him. The men, though working through the day in hot and stuffy offices and often far

from abstainers from alcohol, preserve for the most part a fair amount of health and strength. The women, though they may have little to do but look after their own comfort, and though certainly more temperate than their men folk, tend to lose, after a few years, all strength, energy, and enjoyment of life, and spend most of their time on a long verandah chair. Perhaps their most obvious symptom is their appearance of age; many women of 25, suffering from no definite ailment, look quite 40. Inquiry shows that they live almost entirely on bread and butter, tea, and fruit; hence nitrogen starvation. Treatment in such cases is always extremely satisfactory, provided only that the physician succeeds in overcoming the patient's distaste for meat. Now and then there is found to be no such distaste. The patient had always understood that meat was an improper food in hot weather. Is it not time that this view, for which there has never been any scientific basis, was abandoned?

I should like, however, to raise a point. As I understand him, Professor Hill describes the success of the open-air treatment in consumption to a general increase of metabolism. Metabolism, of course, includes anabolism and katabolism; but, unfortunately, the inclusive term is often used to denote katabolism only. Does Professor Hill use the term metabolism deliberately in order to include both the constructive and destructive varieties, or does he refer chiefly to katabolism? If the latter, then it is a little difficult to understand the value of the open-air treatment, at any rate, in consumption. For of this disease, Robin and Binet say: "While respiratory capacity is diminished, the total pulmonary ventilation is enormously increased, the CO₂ production increasing upwards of 60 per cent., and the total amount of oxygen used increasing by some 70 per cent., while the quantity of oxygen absorbed by the tissues is sometimes increased 90 per cent. Consumption then is the correct word: the disease is an active consuming process."

I am, Sir, yours faithfully,
Beckenham Park, Kent, May 12th, 1913. FRANCIS HARE.

CHAMPAGNE INJECTIONS IN SURGICAL SHOCK.

To the Editor of THE LANCET.

SIR,—I should be much obliged if you will kindly allow me to invite attention to the great value of a subcutaneous injection of good dry champagne in cases of vaso-motor depression following serious operations. The effect is as immediate as it is remarkable: the pulse improves in volume, the skin becomes warm, the clammy sweating ceases, the patient wakes up, and frequently within an hour tranquil sleep supervenes. As far as we have seen in the British Hospital no "reactionary" depression follows.

For years past we have largely employed saline injections, strychnine, camphorated oil, &c., but have found that nothing seems to "lift up" the patient like champagne. The following is the method employed. A small bottle of champagne, which contains some 400 grammes, is poured into an ordinary 500-gramme serum bottle and normal saline solution (100 grammes) added. This is injected in the usual manner into subcutaneous tissues. There is no subsequent local irritation or discomfort complained of, and the injection is repeated in six hours if the condition demands it. If a prompt evacuation of the bowels is considered expedient an injection of pituitary extract is given, and if necessary repeated in three hours. Champagne and pituitary extract is a combination that I can strongly recommend.

I should also like to invite the attention of physicians to this method of employing what I consider the most natural, the best, and most rapidly diffusible stimulant given to mankind in certain cases of pneumonia, influenza, &c., in which there is marked vaso-motor depression. And it may not be out of place to remark that we have formed a very high opinion of the tonic value of the daily administration of half a bottle of the best dry champagne during early convalescence of cases of severe toxæmia.

I am, Sir, yours faithfully,
JOHN O'CONOR, M.A., M.D., T.C.D.,
Senior Medical Officer, British Hospital, Buenos Aires.
April 19th, 1913.