Rhesus and ABO Incompatibility

SIR,—The dispute as it arises between Dr. J. C. Woodrow (1 March, p. 572) and Dr. W. Q. Ascari and others (15 February, p. 399) over the degree of protection afforded against Rhesus sensitization to group O negative mothers carrying group A or B foetuses is relevant also to the matter of haemolytic disease of the newborn due to ABO sensitization.

It has always seemed odd that this same protective mechanism did not preclude the occurrence of haemolytic disease of the newborn due to ABO sensitization. Although this is reckoned to be of minor significance in Britain, I found in Jamaica over a six-year period studied¹ that between 9 and 20 exchanges for ABO incompatibility were carried out each year in University College Hospital, whereas Rhesus sensitization accounted for an average of three exchanges per year. A comparison of blood groupings is as follows:

Blood Group	Jamaican Population ¹	English Population
O	55.8%	47%
A	20%	42%
B	21.5%	8%
AB	2.7%	3%
Rh positive ..	97%	83%
Rh negative ..	3%	17%

This explains the low incidence of Rh sensitization encountered in Jamaica. The fluctuant and comparatively high rate of ABO sensitization may be perhaps due to such extraneous cause as bowel infection. Thus de Gruchy mentions T.A.B. vaccine as a source of ABO antibodies.²—I am, etc.,

B. G. P. MACNAMARA.

George Eliot Hospital,
Nuneaton, Warwickshire.

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- ¹ Gibbs, W. N., *W. Indian med. J.*, 1963, 12, 103.
² de Gruchy, G. C., *Clinical Haematology in Medical Practice*, 1964. Oxford, Blackwell.

Importation of Disease

SIR,—Professor B. G. Maegraith's letter (1 March, p. 573) is most timely in stressing once again the danger of the importation of exotic disease acquired in various parts of the world now so fulsomely advertised by some tourist agencies. One of the most malarious countries of West Africa has recently been described by its Government agency as a "tourist paradise," and many malarious areas of East Africa and Asia are now easily accessible to the enterprising traveller with limited means. Several cases of malaria have been contracted during the past few years in some holiday resorts on the Mediterranean coast of Africa.

Those of us who know the real situation are seriously concerned with the present trends of easy and rapid mass travel to areas where the danger of acquiring a number of tropical diseases, and malaria in particular, is far from negligible. At this time of the year many young people organize collective safaris to various parts of Africa and Asia, and the Ross Institute receives a large number of

a number of useful recommendations were approved by the W.H.O.¹ There is no doubt that one way of dealing with a potentially dangerous situation is that advocated by Professor Maegraith, namely the revision of the card issued by the Ministry of Health drawing the attention of arriving passengers to the possibility of having contracted an infectious disease while abroad. Better awareness of the possibility of malarial origin of any pyrexia in people who return from the subtropics or tropics would also be beneficial. One also wonders whether tourist or travel agencies should not be more aware of their responsibility to their customers in warning them of the potential risks and indicating elementary precautions. Surely this would not involve much more work than the present need to comply with international sanitary regulations covering protective inoculations.

The Annual Report of the Chief Medical Officer of Health for 1967² gives the following figures for cases of malaria notified in this country over the past 10 years:

Year:	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967
Malaria contracted abroad ..	136	113	83	82	88	128	93	88	71	62	92
Malaria induced	109	85	69	81	36	45	46	36	37	33	19

inquiries some of which indicate a complete lack of awareness of the danger of tropical disease and of the elementary precautions, including drug prophylaxis, to be observed by the prospective tourist even if his stay does not exceed a few days.

The World Health Organization has produced a fair amount of epidemiological data indicating the malariousness of a given area, but these maps are bound to be insufficiently detailed. One should stress that although the global malaria eradication programme has made great progress at the periphery of the equatorial malaria belt, most of tropical Africa and many countries of Asia and South America contain areas where the transmission of the disease continues virtually unabated. The possibility of including malaria in the international sanitary regulations has been discussed but rejected as impractical, although

Four deaths were reported for 92 notifications of malaria in 1967; this is a very high fatality figure if the number of notifications quoted above is correct. However, it is not unlikely that the number of notified cases of either severe falciparum infections or relatively benign infections with other plasmodia is well below the actual figure. It is odd that in spite of the considerable increase of Britain's immigrant population from the malarious areas of East Africa or Asia and a steady increase of tourism, the trend of the tabulated figures has not changed, and one can hardly escape the suspicion that a number of cases remain either undiagnosed or unreported. Perhaps the inclusion of malaria in the list of notified infectious diseases given each week in the *B.M.J.* would increase the awareness of this problem and emphasize the importance of better data.

In the Table the cases of "induced" malaria include both therapeutic malaria and accidental malaria due to transfusion. Of

the latter the total number of cases reported in this country in the past 10 years is about five. It appears that the quoted figures for "induced" malaria include presumed cases of therapeutic malaria induced also in other countries using infected material (blood or mosquitoes) supplied by United Kingdom sources.—I am, etc.,

L. J. BRUCE-CHWATT.

London School of Hygiene
and Tropical Medicine,
London W.C.1.

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- ¹ W.H.O. (1967). *Prevention of the Re-introduction of Malaria*. Report of a W.H.O. meeting. W.H.O. Tech. Rep. Ser. No. 374.
² Ministry of Health (1968). *On the State of Public Health. The Annual Report of the Chief Medical Officer of the Ministry of Health for the Year 1967*. London, H.M.S.O.

SIR,—I write to support Professor B. S. Maegraith (1 March, p. 573) in his plea for a greater awareness among both public and doctors of the risks of acquiring disease abroad. Two examples may be of interest.

A girl contracted typhoid fever while on holiday in Italy. Falling ill on her return, the diagnosis was not made for some time, thus denying her the benefits of modern treatment.

A sharp outbreak of diphtheria occurred, causing two deaths, in a district previously free for 18 years.¹ Among the carriers found was a girl recently returned from Cyprus.

It would seem prudent to routinely inquire about recent travel abroad when history-taking.—I am, etc.,

D. P. ADAMS.

Public Health Department,
Saltergate, Chesterfield,
Derby.

REFERENCE

- ¹ Adams, D. P., *Med. Offr.*, 1967, 118, 199.

Heatstroke

SIR,—The two cases of fatal hyperthermia reported by Dr. A. T. Hawthorne and others (21 December, p. 750) have the features of heatstroke. The only difference between the usual case of heatstroke and these two is that it happened under general anaesthesia, and therefore the first clinical sign of heatstroke, change in behaviour, progressing to coma, was not present. We all agree today¹⁻³ that heatstroke is not necessarily due to exposure to external heat. In recent reports from the Tel Hashomer Hospital in Israel¹ this point was made clear. Heatstroke is due to excessive "body heat" *per se*. Any mechanism which increases body temperature to the point where heat-dissipation becomes insufficient can cause heatstroke.

The aetiology of heatstroke is variable, but the pathogenesis is similar in all cases. It is the widespread cellular damage due to heat which is the base of the process. There are several factors which could explain why an anaesthetized patient will have a rise of temperature to dangerous levels: (1) excessive room temperature; (2) idiosyncrasy to different drugs; (3) pyrogens in intravenous solutions; (4) mismatched blood transfusions; (5) excessive muscle work ("twitchings"); (6) infection related to underlying disease, etc.

There are also several factors which diminish the capacity for heat dissipation: (1) Covering of the body with several layers of surgical