Air Transport, Insects and Disease

I HAVE read with much interest Dr. A. D. Imms's review (in *NATURE*, January 13, p. 76) of Mr. Sarel Whitfield's paper entitled "Air Transport, Insects and Disease", and agree with both the author and the reviewer that the present position of this problem is still unsatisfactory.

In Dr. Imms's opinion, "no adequate and reliable control of insects in aircraft has been discovered", which is true of insects in general, but is scarcely so of the class of insects to which he especially refers, namely, the carriers of malaria and yellow-fever. The evidence brought forward in our paper¹, supported as it was by the opinion of reliable observers, shows that adequate control of mosquitoes in aircraft can be effected if the measures devised by us, and by Dr. Park Ross, are carried out.

The reason why these measures have not been generally adopted is, first, because the provisions of the International Sanitary Convention on Aerial Navigation place the responsibility for insect destruction on the ground sanitary authorities of the various countries through which the aircraft passes; and secondly, because these local Governments are averse to delegating their responsibility under the Convention to aircraft companies, with the result that a variety of different insecticides is still being used, and the manner of their application is equally varied.

Dr. Imms's criticism is valid when applied to some other arthropods, and we have had correspondence recently regarding the possible carriage in aircraft of the cotton boll worm and of the Japanese beetle. We realize that the procedure devised for mosquitoes would be entirely ineffectual when applied to such parasites, and eminent entomologists, both at home and abroad, have been asked to advise us regarding a substance lethal to these arthropods and yet of practical application in a passenger-carrying aeroplane.

Until such a preparation has been found, it is obviously impossible for aircraft companies to proceed in the matter. We consider that we have a method, adequate and trustworthy, against mosquitoes; but until the biochemical side of the problem has been extended, we cannot take measures to destroy the more resistant parasites which may carry veterinary or agricultural disease.

If Mr. Whitfield's valuable monograph, and Dr. Imms's review of it, serve to direct attention to the nature of the problem awaiting solution, they will have done a great service to aerial transport.

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¹ Mackie, F. P., and Crabtree, H. S., "Destruction of Mosquitoes in Aircraft", *Lancet*, 447 (August 20, 1938).

Points from Foregoing Letters

THE presence of steric inhibition of coplanarity in certain polymethine (cyanine) sensitizing dyes is discussed by S. E. Sheppard, R. H. Lambert and R. D. Walker. It is adduced as a cause of modified spectral absorption and inefficiency of optical sensitizing of silver halides.

A. G. Mistretta and F. F. Nord describe experiments and give indications of a rule with regard to the relation between solvent and yield in the Gattermann synthesis using sodium cyanide.

P. J. G. de Vos finds a second maximum in the curve for cosmic ray secondaries from copper similar to that observed by other workers using lead.

In view of the large number of 'free' electrons present in graphite, namely, one per carbon atom, and the very low degeneracy temperature of the electron gas, indicated by the magnetic data, it is pointed out by K. S. Krishnan that the electronic specific heat in graphite should be much larger than in most metals. The available experimental data support this conclusion.

It is known that both liver and yeast relieve some of the symptoms of pellagra and pernicious anaemia, and also that both contain vitamin B₆. R. W. Vilter, H. S. Schiro and T. D. Spies have administered heavy doses of this vitamin, intravenously and orally, to patients suffering from pellagra and pernicious anaemia, with beneficial results.

P. C. Williams states that the atrophy of the ovaries that follows hypophysectomy may be prevented, in the immature rat, by the implantation of a tablet of the synthetic oestrogen stilboestrol two days after the operation. The ovaries thus main-

tained respond to the injection of pregnant mare serum, both quantitatively and qualitatively, much more like the ovaries of intact rats than like those of untreated hypophysectomized rats.

W. W. Carington and S. G. Soal, working with simple drawings and with special cards respectively, under the most rigorous possible conditions, find significant cognitive relationships between the test material and the guesses made. In the first case, percipients score more hits on the drawings used in the experiment in which they were concerned than on those of other experiments; in the second, two sample percipients have been found to score heavily above expectation on the three cards preceding, coinciding with and following the guess, taken as a group.

Certain lambs of the New Zealand Romney breed are born with great abundance of so-called halo hairs in the fleece. F. W. Dry, P. R. McMahon and J. A. Sutherland have examined this condition genetically. Mendelian inheritance of the character is indicated, but no agreement has been reached as to the factors and mechanism concerned.

The Chief Medical Officer of Imperial Airways, Ltd., writes to confirm a comment made by Dr. A. D. Imms that the present position with regard to air transport in its relation to the transmission of disease by insects is unsatisfactory. He states that satisfactory measures against mosquitoes have been devised, but are not generally adopted because the responsibility for taking action is in the hands of the ground sanitary authorities instead of the aircraft companies. Measures against insects other than the mosquito are being sought.