

completed feather. As a modification of this type of development, the medullary cells of the grey feather appear to undergo a more frequent division during growth, and it may be assumed that the growth of the cell-plasm is not limited peripherally.

The structural arrangement of the medullary cells in the grey feather corresponds in general to that of most typical bird-feathers without structural blue colour. The cell-mosaic in the 'normal' green budgerigar, and in many other green and blue feathers, seems to be the outcome of continued growth and retarded cell-division.

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¹ "Vererungsstudien am Wellensittich", Zurich, 133 ff. (1932).
² *J. Sci. Hiroshima Univ.*, Ser. B/1, 3, 149 (1935).

Insects in Aircraft

THERE has, during the past months, been talk of an alternative air route, via Africa, to India and Australia. The recent survey flight of the flying boat *Guba* has brought matters a step farther forward, and in the *Daily Telegraph* of June 22 Capt. P. G. Taylor, the pilot, is said to have expressed the opinion "that as all the island bases fulfilled expectations, there was no reason why an air service should not be started at once".

I have been engaged for the past four years upon an investigation into the carriage of insects by aircraft arriving at Khartoum airport, and during the latter part of this period have been studying the question in relation to disease, particularly malaria and yellow fever. The results are shortly to be published in the *Bulletin of Entomological Research*.

In view of the present situation it would seem to be a matter of some urgency to point out certain facts that are perhaps not so widely known or appreciated as they might be.

In Africa and South America the areas of endemic yellow fever have been shown, by means of the mouse protection test, to be considerably greater in extent than was realized, even a year ago. In Africa in particular the area has been extended by recent findings considerably farther east, and according to Findlay¹ may quite possibly be found to extend to the Abyssinian foot-hills.

The discoveries by Shannon, Whitman and Franca² of the existence of the virus of 'jungle' yellow fever in the mosquitoes *Aedes leucocelaenus* Dyar and Shannon, *Haemagogus capricorni* Lutz, and certain Sabethine species, and of the ability of the two former to transmit the virus by bite; and by Findlay and MacCallum³ of the possibility of infecting monkeys with yellow fever via the alimentary canal, together with the fact that the virus, if introduced into the body cavity of the cockroach *Blattella germanica* L., keeps its activity, at 19° C., for at least 15 days, have lent additional significance to the lists of insects that (a) are able to transmit the virus of yellow fever by bite, and (b) although unable to transmit by bite, nevertheless retain the virus in their bodies for varying periods of time. These lists are steadily being added to, and the evidence deduced therefrom is reinforced by epidemiological evidence collected during field investigations of recent outbreaks of 'jungle' yellow fever.

The results of recent research upon insects collected from aircraft have shown a surprisingly large range of families and species. More than 2,000 aircraft were examined at Khartoum airport during the period July 1935–August 1938. Including unidentified specimens, 146 species of insects, numbering 1,960, were collected. If all specimens of *Musca domestica* and *M. sorbens* be included, the total would be nearly 3,000.

Including *Musca spp.*, the great majority of aeroplanes contained insects; excluding *Musca spp.* 192 aeroplanes contained insects, distributed fairly evenly over every month during the three-year period, with a slight increase during July–October. The average number of aeroplanes per month containing insects (other than *Musca spp.*) for the three years was 5.18, with a maximum of 9.5 and a minimum of 1.33. Four species of *Anopheles*, one of *Theobaldia*, three of *Mansonia*, six of *Aedes*, including two *A. ægypti* taken at Malakal, and four of *Culex* were found. The significance of the list is not confined to mosquitoes.

In view of the above facts it would seem unwise to start an airline from or via Africa to India and Australia until the problem of the control of insects in aircraft has been solved.

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¹ Soper, F. L., *Trans. Roy. Soc. Trop. Med.*, 32, 297–322 (1938).

² *Science*, 88, 110–111 (1933).

³ *NATURE*, 143, 289 (1939).

Scientific Research in the Region of Mount Everest

A RECENT communication in the press states that an Indian scientific worker, Swami Pranabananda, is proposing to lead a party of ten scientific investigators to the Himalayas to study the geology, anthropology, botany and geography of the region. He proposes to spend four months on the work at a total cost of £300. This news contrasts sharply with the English attitude towards science in mountain exploration.

As Mr. N. E. Odell recently pointed out in *NATURE* of April 1, p. 545, the scientific aspects of exploration, with the exception of geography, have been sadly neglected by the more recent expeditions to Everest. Indeed, it is largely true that "such work . . . has been in no way encouraged, but rather discouraged, by those responsible both for their organization and their leadership". From this stricture the Mount Everest Committee itself must be excused, for it has learned from experience that it can best discharge its functions by choosing a leader and leaving everything except finance to him. As the primary object of Everest Expeditions has been in the past the ascent of the mountain, it is understandable that scientific observations have been made only with great difficulty.

Expeditions to Mount Everest may have, as some believe, a spiritual significance; they may enhance British prestige; they may be of great interest to arm-chair adventurers. These, however, to 'cut out cant', are not the real motives of the climbers, who go either because it is fun or in order to satisfy a psychological need of a purely personal kind. Though the 1938 Expedition was organized with the most rigid economy and without appeal to public funds, a vast amount of money has been spent in earlier