esterification with phthalic anhydride and pyridine after 10 days was 100 per cent. Maleic anhydride had no effect upon the present vitamin D[4]. There is thus no evidence that the vitamin D in all the fats investigated is not the same. A detailed report will appear in the near future.

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Effect of Low Temperature upon Trypanosomes (*Trypanosoma equiperdum*) in Mammals

THE study of dormancy and under-cooling of animals has shown that the process of cooling sharply slows down all physiological functions. Yet the decrease in the rate of different functions is not the same[1,2]. In connexion with these observations a new question has arisen: In what way will the fall of temperature of the body of an animal influence micro-organisms infecting it?

Experiments were made with two species of bats, namely, *Nyctalus noctula*, Schr., and *Pipistrellus nathusii*, Keys. et Blas, which were infected with *Trypanosoma equiperdum*. For inoculation, blood was taken from the tails of white mice when the number of trypanosomes in the blood attained 9–10 in the field of vision. Into the skin of the abdomen of bats 0·01 c.c. of blood was introduced. A group of these animals was kept in an active state at a temperature of + 20° to 25° to study the normal course of infection. The second group of animals was placed immediately after the inoculation into cold boxes with a temperature of + 10° and + 3°. Every day from the vein of the membrane of the 'wing', blood was taken and the number of trypanosomes was counted in the dark field. The temperature of the bodies of bats was determined by means of a thermopile as described previously[2].

Trypanosomes multiplied very quickly in the blood of bats in the active state. During the period of 4–5 days the number of parasites in the blood reached 10–20 in a field of vision, on the 6–7 day the trypanosomes were abundant, and on the 9–13 day the animals died.

In experiments with animals placed immediately after infection into ice-boxes with a temperature of + 10° and + 3°–4° it could be seen that the infection in the organism of bats does not develop during a period of 8–15 days. Having raised the temperature after the expiration of this period and having kept the bats in this condition for about 3–5 days, we were still unable to detect any traces of infection. Subsequent infection of them with a new virus was quite successful, which showed the absence of immunity. In other words, the absence of blood parasites was retained from the first infection.

We also conducted experiments by cooling the animals after infection had already developed. For this purpose, a group of active (control) animals, at the moment when the number of trypanosomes in their blood reached a high level, that is, 1–10 trypanosomes per field of vision, were transferred to ice-boxes. After a cooling period of 3–8 days (at temperatures of + 3° and + 10°) the parasites completely disappeared from the blood of the bats. 2–4 days after the disappearance of trypanosomes from the blood, the animals were warmed, and placed in the same conditions as those under control (with a body temperature of 33°–37°).

The blood of the bats during 2–5 days after their being warmed was also without any parasites. Experiments with repeated infection have shown the absence of immunity in the animals, in other words, the absence in their organisms of trypanosomes from the first inoculation.

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Parexocœtus, a Red Sea Flying Fish in the Mediterranean

FLYING fish from the eastern part of the Mediterranean are very little known, and most identifications have not been controlled by comparison with material from the Atlantic.

Dr. E. Liebman, of Jerusalem, has recently sent me two specimens from the Palestine coast, both of which are adults (standard lengths 95–103 mm.) of the primitive genus *Parexocœtus*, Bleeker. *Parexocœtus* has not been recorded from the Mediterranean before. They belong to the species *P. mento*, C. and V., as defined in my recent revision of the Atlantic Exocœtids[1]; but whether they are derived from the Atlantic subspecies *atlanticus*, Bruun, or are of Red Sea origin may be questioned. Klunzinger's species *gryllus* from the Red Sea is certainly a *Parexocœtus*, and most likely a subspecies of *P. mento*. The numerical characters of the two specimens received (*D.* 9–10, *A.* 11, *P.* 13–14, vert. 36–37, gill-rakers 28–29) indicate closer relationship to *P. m. gryllus* than to *P. m. atlanticus*, which is only known from the Cape Verde region.

Therefore it seems very possible that *P. mento*, one of the neritic flying fish, has passed through the Suez Canal and found a new breeding place in the innermost, warmest part of the Mediterranean.

It would be of great interest to study closely the racial characters of the Mediterranean and Red Sea populations of this flying fish and the eight or nine other species of fish, which Liebman[2] has recently recorded as Red Sea immigrants into the Mediterranean. Naturally, equal interest would be connected with immigrants in opposite direction. If no investigator is available to take up this question at present, it is suggested that museums and biological stations of that region should take immediate steps to secure abundant material for a future study. The life-conditions in the two seas are so different that environmental influence, sooner or later, will almost certainly be traced in the immigrated stocks. In any event, this large-scale experiment on geographical differentiation deserves to be followed very closely.

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