If during the Mesolithic period the same methods of using fire were practised, the existence of such prevalent hazel vegetation would not be unexpected; in any event there is a certain concordance in the maps of the distribution of the hazel maximum in the boreal period, for example, that given by Erdtman for Europe, and the distribution of the Campignien culture period, as generally indicated by prehistorians.

In this connexion it is interesting that hazel in North America is seldom if ever mentioned by authors from that country (for literature see Sears[5]). Detailed studies on the connexion of the hazel period with the prehistoric cultures would probably be interesting.

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March 13.

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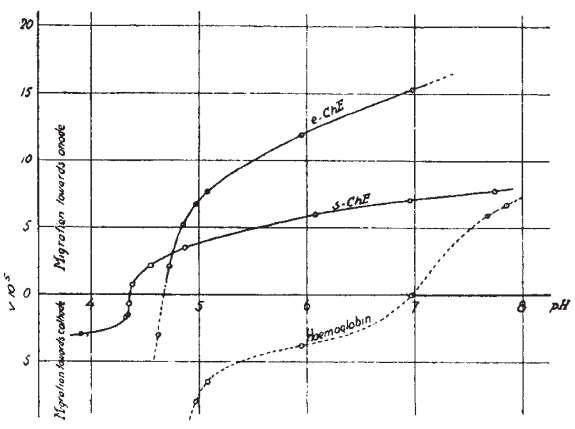
Choline Esterases

A DEFINITE proof that two distinct choline esterases really exist has been sought by Bader *et al.*[1], who call for an "electrophoretic or closer elementary analysis". I have reported such an analysis in a recent paper[2], which has obviously not reached these authors.

I have shown that a true chemically established difference exists between the acetylcholine-hydrolysing enzymes in horse blood serum and red blood cells. Cataphoretic investigations show that a large difference exists between the rates of migration of the two enzymes in the electric field. This is shown in the accompanying figure (for details, see the original paper). Furthermore, erythrocyte choline esterase seems considerably more sensitive to *p*H than serum choline esterase.



It may thus be definitely stated that the choline esterases from blood serum and erythrocytes are not identical.

The next question to be decided is whether choline esterase from blood cells is identical with the enzyme in brain. Work by Canadian and Swiss schools have shown that this is in fact the case. I am at present engaged in an attempt to prove this chemically. Preliminary examinations have shown the permanence towards *p*H-changes of the brain choline esterase (ox) is much the same as that of erythrocyte choline esterase. Thus the brain choline esterase is wholly destroyed at *p*H $\approx$ 4·7 and has lost 40 per cent of its activity at *p*H $\approx$ 6. The corresponding figures for the erythrocyte choline esterase are *p*H $\approx$ 4·5 and 50 per cent at *p*H $\approx$ 5, for serum choline esterase *p*H $\approx$ 2 and no loss of activity at *p*H $\approx$ 6.

In a letter addressed to Dr. Zeller in Basel in October 1943, I expressed the opinion that it is highly probable that we must henceforth take into consideration even more types of choline esterase. Many facts suggest this. Thus the enzyme in mollusc hepatopancreas and choline esterase in the venom of *Cobra* have not the same properties as either of the two types mentioned above. Indeed we know very little about the specificity of choline esterase in invertebrates. An investigation in this sphere is being planned.

I largely agree with Richter and Croft[3] in their statement that "it would appear more accurate to describe the choline esterases as a group of enzymes showing considerably divergent properties rather than to regard choline esterase as a single entity".

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A Theory of Telepathy

IN his recent review[1], Dr. E. J. Dingwall includes a quotation which refers to an alleged disintegration of memory in trance personalities.

This should not be considered without reference to the natural disintegration of memory throughout life. If any personality is observed through life from the time of his graduating or passing professional examinations, there is a gradual dispersal of the knowledge gained, in spite of the fact that his environment is such that the knowledge would be of considerable value. If we assume a continuation of this process after the death of the body, then, in view of the fact that the new environment no longer demands retention of earth-memories, it is surely remarkable that they persist as long as they do.

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Devizes.

[1] *Nature*, **155**, 619 (1945).

Custody of Uranium

MANY of us have used specimens of pitchblende as demonstration pieces, perhaps to take autophotographs during the course of a lecture. The newly disclosed potential menace of a pound weight of such material brings with it a warning that those entrusted with the custody of any uranium-bearing minerals should take their obligations seriously; from careless hands uranium might pass to unscrupulous ones.

SIDNEY RUSS.

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