when A_1 cells were used were fully active in the presence of A_2 cells. These results were obtained when both normal and immune anti- A agglutinins were used in the inhibition tests.

The A substance in the three active A_1B cyst fluids reported above appears to be of the type which shows low activity when examined in inhibition tests using A_1 test cells. Assayed against the same sera but using A_2 cells, the material showed considerable activity. Materials which possess a serological behaviour similar to that induced by heat treatment of fully active A substance can therefore be encountered in native cyst fluids⁴.

These results indicate clearly the importance of examining serologically preparations of blood-group B substance or their partial degradation products, with both natural and immune group agglutinins, before concluding that the original serological specificity has been completely lost. Similarly, inhibition tests made to determine the activity of A preparations should employ A_2 as well as A_1 test cells. By these means important differences in the serological characters of preparations of the A and B substances can be revealed. The effect of different reagents, including enzymes, on the purified substances is being examined in greater detail in the light of these findings and will be reported elsewhere.

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A Relationship between the Secretion of the Blood Group Antigens and the Presence of anti-O or anti-H in Human Serum

HUMAN and animal sera exist which agglutinate red blood cells of group O and A_2 more strongly than those of other groups; these have been known for many years as anti- O sera. In 1948 Morgan and Watkins¹ divided such sera into two kinds: those which could be inhibited by saliva from secretors of all A_1A_2BO groups, anti- H , and those which could not be inhibited, anti- O . Both types are found in human serum.

In this Unit it has been felt for some time that, apart from this clear distinction, the two types of antisera are indistinguishable in their reaction with red cells of the different ABO and *Lewis* groups. It occurred to me that one antibody (anti- H) if developed in a non-secretor person might be susceptible to inhibition *in vitro* by 'secretor' saliva, while the same antibody (anti- O) if developed in a secretor person might be immune to inhibition.

No information about the saliva of donors of anti- O and anti- H sera was available to test this possibility; there was, however, information about their *Lewis* groups, and these groups, as Grubb² and subsequent workers have shown, are closely correlated with secretion of the A , B and H antigens in the saliva.

(All $Le(a+)$ persons so far tested are non-secretors, and more than 98 per cent of $Le(a-)$ people are secretors³.)

Miss E. W. Ikin and Dr. A. E. Mourant very kindly provided fifteen samples of undifferentiated anti- O or anti- H sera, together with the *Lewis* groups of the donors. These sera, together with four others, were then classified by inhibition tests with saliva from secretor persons of group O . In each case, saliva from non-secretor persons of group O was used as a control. Details of two further examples of anti- H were kindly provided by Prof. Morgan⁴. The total count is:

Antibody in serum of donor	{	anti- H anti- O	Red cells of donor	
			$Le(a+)$	$Le(a-)$
			8	0
			1	12

The probability that this lack of proportion is due to chance is 1 in 22,610.

Since 22 per cent of Europeans are $Le(a+)$, the disturbance is mainly in the top row of the 2×2 table; from these results it would seem that when anti- H is made it is made by $Le(a+)$ people.

Conversely, it may be that anti- O is usually made by $Le(a-)$ persons, though the existence of the exception shows that this is not always so. The collection of sufficient data to show any significant disturbance in the second row of the 2×2 table may take a long time, for much larger numbers of donors of this rather rare serum, anti- O , will be needed.

It is difficult to imagine that the presence of the $Le(a+)$ character on the red cells determines that the antibody in the serum is to be anti- H ; the decisive factor is more likely to be the non-secretor environment in which the antibody is made.

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Acetylcholine Esterase of the White Components of Blood

A PAPER by Zajicek and Datta¹ describing the presence of a high concentration of acetylcholine esterase or 'true' cholinesterase in the thrombocytes of rat blood recently came to my attention. I have known for some time that considerable 'true' cholinesterase is to be found in the white layer of centrifuged rat blood, and while I was working at the Medical Research Laboratories of the Defence Research Board, Ottawa, Canada, I showed by substrate and inhibitor studies that this is a typical 'true' cholinesterase. It was my opinion at that time that the enzyme was in the leucocytes rather than in the platelets; but in all other respects my work with rat blood confirmed the findings of the above authors.

After coming to England, I extended these observations to other species and found that the enzyme was present in very high concentration in the white layer of centrifuged mouse blood which consisted almost entirely of platelets, and in the same layer of cat blood; but I have not found any comparable activity in the white layer of the blood of man, or