Rh, rh. Hr AND SOMATIC MANIFESTATION OF A RECESSIVE CHARACTER IN THE PRESENCE OF THE DOMINANT CHARACTER

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Rh and rh

THE new constituent of the human rbc (red blood corpuscle corpuscles) has been described previously in this *Journal* (Greval, 1943). It is the normal constituent of the rbc of the common brown monkey of India, *Macacus rhesus*. Rh is obtained by detaching two letters from the beginning of the specific name and capitalising the first letter.

In the human rbc the substance Rh is absent from a small percentage of subjects. Like O-A-B and M-N it has a racial distribution: white Americans, 85 per cent. Rh^+ and 15 per cent. Rh^- (Landsteiner and Wiener, 1940); Red Indians 99·2 per cent. Rh^+ and 0·8 Rh^- (Landsteiner, Wiener and Matson, 1942); Negroes 89·8* per cent. Rh^+ and 9·1 per cent. Rh^- (Wiener, Sonn and Belkin, 1943); Calcutta Indians 90 per cent. Rh^+ and 10 per cent. Rh^- (Greval and Roy Choudhury, 1943; Das Guta, 1944).

The genetic constitution of the Rh^+ and Rh^- subjects was quite simple three years ago: there were two allelomorphs, the dominant Rh and the recessive rh. The positive, phenotype Rh, comprised genotype RhRh and genotype Rhrh whilst the negative, phenotype rh, comprised, of course, genotype rhrh only.

Things have moved very fast during the last two years. Now there are six allelomorphs, Rh, Rh_1, Rh_2, Rh', Rh", and rh (Wiener, Sonn and Belkin, 1944).

Anti Hr and St. Sera

Human sera have been found which coming from Rh^+ mothers agglutinate the rbc of Rh^- subjects and *also of some Rh+ subjects* (McCall, Race and Taylor, 1944). The latter have been proved by a study of the bloods of the family to be Rhrh in genotype. In these positive reactions an anti-substance prepared against rh carrying rbc is acting on rh carrying rbc as expected and also on Rhrh carrying rbc: there is no objection immunologically. Genetically, however, rh should not exist alongside Rh in the rbc. It should only exist on a special spot on the chromosome. Its existence elsewhere establishes the *somatic manifestation of a recessive character in the presence of the dominant character* against the definition of dominance and recessiveness.

Another example of the recessive character existing alongside a dominant character in a locality other than the chromosome also occurs in the human rbc. Certain abnormal human sera agglutinate rbc O and also rbc A_2 which are 'mostly heterozygous (of genotype A.R.)' (Wiener, 1934). R = Recessive = O.

Histologically the human rbc, like the mammalian rbc in general, are different from other animal cells in not possessing a nucleus and, therefore, chromosomes. Is the physical basis of the recessive character distributed in the general mass of the rbc and, therefore, free to react immunologically?

Alternatively a scrutiny of reactions of the abnormal anti-O sera and the anti-Hr and St. sera is indicated, in view of the fact that the first item is now rather old and in need of re-examination, and the second and third are too recent to be regarded as established facts.

* Rare types of Rh probably not determined. (S.D. S.G.)

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MARFANIL—SECOND TO PENICILLIN

IN North Africa the Germans carried among their medicinal supplies a sulphonamide preparation called Marfanil. This compound, chemically 4-amino-methyl-benzene sulphonamide, was administered neat or in tablets containing 50 per cent. of marfanil and 50 per cent. of sulphanilamide. Tests made with captured marfanil were recently described in the *Lancet* by G. A. C. Mitchel, W. S. Rees and C. N. Robinson (May 13, p. 627), who rank the drug as second only to Penicillin. "Of the many substances we have tested in the treatment of infected wounds penicillin alone has given better results than marfanil", they comment. "At present for technical reasons it may prove easier to produce marfanil in much larger amounts than penicillin and thus, even although the former is less effective, further investigation of marfanil is indicated. It is possible also that penicillin used in conjunction with marfanil may give better results than when it is mixed with sulphanilamide or sulphathiazole." Marfanil remains active in the presence of pus. Professor A. Fleming, who has investigated it, finds that it is a much weaker bacteriostatic agent than sulphathiazole (against a certain streptococcus) but is not inhibited by p-aminobenzoic acid or pus.

(*Discovery*, June 1944, p. 190.)