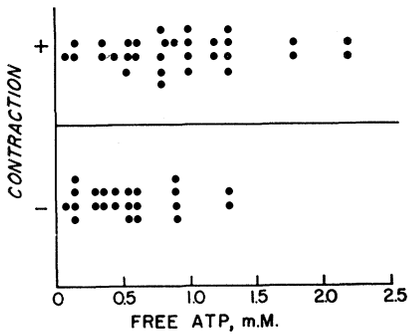

Fig. 3. Absence of correlation between the concentration of free ATP and contraction.

cium binding (*9*). It may be concluded that, in the case of muscle, calcium in the form of its ATP complex is not available to stabilize the muscle membrane. The action potentials so evoked set off the contractile process. Thus the effect of ATP applied to living muscle is unrelated to contraction per se.

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27 September 1955

High Incidence Blood Group Found in Venezuelan Indians

To date no single blood group found exclusively in discrete geographic or ethnical human divisions has been described. It is only through the incidence of the well-known blood groups that the various human stocks can be characterized in a general way (*1*). We present here (*2*) data on the incidence of what appears to be a new blood system with possible anthropological implications.

In 1954, Levine, Koch, McGee, and Hill (*3*) mentioned a new "private" blood factor called "Diego," which was detected in the serum of a Venezuelan woman who had been sensitized through several pregnancies. They found that this serum produced agglutination of the husband's red cells but did not agglutinate the red cells from 200 North American persons. Lately, with no further comments, this finding has been quoted in other publications (*4*). This year, serum was collected during a new pregnancy of the original patient, giving us an opportunity to study the incidence of the Diego factor in her husband's relatives and in various representative sections of the Venezuelan population.

In the study of the family (Ca. family) in which this factor was originally detected, we found eight positive cases out of 29 tested. In the general population from Caracas, we were surprised to find that several unrelated individuals carried this factor. Inquiry about the ancestry and physical features of the various positive cases and of the Ca. family revealed the probability that they all possessed ancestors from Carib Indian stock. The results of 826 tests in groups of people from various Venezuelan regions are given in Fig. 1. They were tested against anti-Diego serum by the indirect Coombs test.

It would seem that the Diego factor is not a "private" blood group, but rather that its incidence is high in Indians, especially in Carib Indians, and in people with mixed Indian ancestry. Since the Indians studied came originally from Brazil, it could be that this factor is prevalent in Brazil and other neighboring countries. The Indian element enters in a high proportion of the general Venezuelan population. This probably explains the positive tests found in the populations of Caracas and Barcelona. The cases found in the Negro population studied may also be explained by mixture with Indians.

From the genetic point of view, the study of the Ca. family and of several Indian families shows that the factor is inherited as a dominant Mendelian character with no sex linkage (examples in Fig. 2). The factor may be followed in some cases through several generations (four in one of the families). Apparently, the antibody is not of the naturally occurring type but is an immune "incomplete" one. Detailed study of the positive cases show that the antibody (anti-Diego

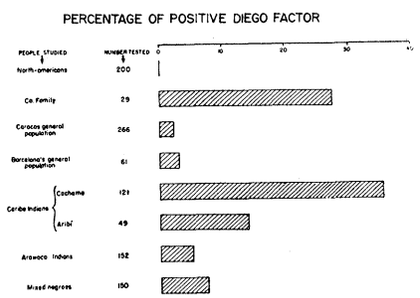

Fig. 1. Results of 826 tests.

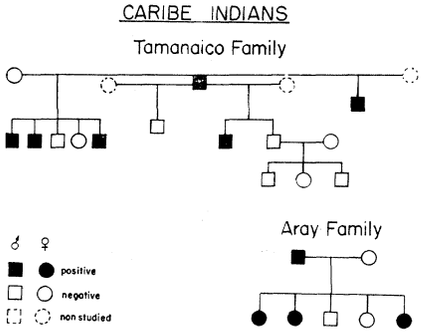

Fig. 2. Examples of genetic studies.

serum), which can be called anti-Di^a, was developed by a homozygous Di^b/Di^b (Mrs. Ca., the original patient). The individuals who reacted against the anti-Diego serum were Di^a/Di^b or Di^a/Di^a, indicating that this blood system is formed by at least two allelic genes. We can postulate that eventually anti-Di^b will be found.

If in the future it can be demonstrated that the Diego factor occurs exclusively or predominantly in Indian populations, it would be wise to change the name of this antigen to a more correct one, such as "Indian factor," related to its anthropological implications.

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26 September 1955

Spiral Male Nuclei in Ragweed Pollen

Stamens from ragweed (*Ambrosia*) growing on the premises of the Southern Illinois University were stained with iron-acetocarmine solution and observed under the microscope at 1000 diameters magnification. At the metaphase of the first meiotic division of the pollen mother cell, 18 round chromosomes were counted. Since the basic number of chromosomes in Compositae is nine, it is not surprising that the chromosome number of the ragweed is $n = 18$.

The chromosomes are regularly arranged on the equatorial plane of the first meiotic division (Figs. 1 and 2). At diakinesis, chiasmata were observed in