

mia of haemorrhage. For this, stored blood is eminently suitable. . . . In war the commonest recipient is the fit young soldier whose cardiac musculature was in perfect order before his wounding. To him, large volumes need to be and can be administered at fast rate without fear of overloading the circulation or producing pulmonary oedema. Indeed almost the only contra-indications to enthusiastic transfusion in the wounded are injuries to the brain and central nervous system (in which little response is obtained), damage to the lung by blast, irritant gases or steam (which often causes pulmonary oedema), thoracic wounds where the circulation is mechanically impeded, and the onset of the fat embolism which may follow bone damage. In our peace-time patients, on the other hand, we have always to consider the state of the heart muscle, the lungs, the blood-vessels, and essential organs, and from these findings the nature of the transfusion fluid, the amount to be administered, and the rate at which to give it, have to be carefully decided. In war one takes many a chance one cannot afford in peace." 47 references.

J. C. M. C.

BLUM, LEON L.: *Transfusion of Blood and Blood Substitutes in the USSR*. Am. Review of Soviet Med. 2: 273-279 (Feb.) 1945.

"Bogomolets is probably known to many Americans for his development of antireticular cytotoxic serum and its relation to the problem of longevity. His studies lead him to the concept of the so-called 'colloidoclasia' as being the basic phenomenon which explains the possible effects of blood transfusion. Briefly stated, colloidoclasia consists in the action of transfused blood upon unstable cytoplasmic protein molecules, leading to their flocculation and breakdown with the formation of

autocatalysts. These substances exert a stimulating effect on many functions of the body. According to Bogomolets, colloidoclasia and autocatalysis form the basis for the stimulating effect of blood transfusion. . . .

"The concept of colloidoclasia served to define the action of transfused blood as stimulating and desensitizing and as increasing the local and general reactivity of the body. This led to numerous Russian investigations dealing with the therapeutic effect of group incompatible blood. Repeated injections of very small doses (5-8 cc.), preferably at intervals of 3-4 days, produced a marked colloidoclastic post-transfusion reaction, not severe enough to threaten life but sufficiently pronounced to increase the functional activity of the reticulo-endothelial and other systems. The use of larger doses, such as 12-15 cc. is contraindicated because it induces severe hemolytic reactions. Symptoms following injections of small doses of incompatible blood rapidly disappear without any special treatment. At the present state of our knowledge the Central Institute for Blood Transfusions recommends the therapeutic use of incompatible blood in cases of chronic or recurrent ulcers of stomach and duodenum, subacute septic states and a few other conditions."

A. W. F.

SPECK, GEORGE, AND SONN, EVE B. *An Intragroup Hemolytic Transfusion Reaction in an Rh-Positive Patient*. Am. J. Obst. & Gynec. 49: 273-275 (Feb.) 1945.

"It is now considered a fact that if a pregnant woman is Rh negative and if her fetus is Rh positive, the baby's blood may sensitize the mother and stimulate the production of Rh isoantibodies. At some subsequent time, if such a sensitized woman should be given a transfusion of Rh-positive

blood and if the titer of anti-Rh iso-antibodies in her body should be high enough, hemolysis of the donor's Rh-positive red blood cells will take place (even though the bloods are of the same blood group), giving rise to an intragroup hemolytic transfusion reaction. The same is true of certain nonpregnant individuals who are Rh negative and are given transfusions of Rh-positive blood. The first transfusion may sensitize the recipient so that the blood of subsequent transfusions will be hemolyzed.

"However, the problem is not so simple, for the Rh factor is not a single entity, but comprises at least five distinct varieties of Rh agglutinogens. . . . The practical importance of this finding is that there are three principal varieties of anti-Rh sera and unless all bloods are tested with all three types of sera, some Rh-positive bloods may be classified as Rh negative. . . .

"In addition, the subject has become even more complex since the discovery of the Hr (or St) factor, which is an antigen shared by bloods of several of the Rh types, namely, Rh-negative bloods, those containing properties Rh₁, Rh₂, and Rh", and heterozygous Rh, and Rh' bloods; while Hr is absent from homozygous Rh, and Rh' bloods. The significant feature of this is that just as an Rh-negative individual may be sensitized against Rh-positive blood, so may an Hr-negative individual be sensitized against Hr-positive blood. Furthermore, an Hr-negative individual is always Rh positive. Therefore, one is not justified in feeling completely secure when transfusing an Rh-positive individual. This is seen from the case to be presented in which a transfusion reaction occurred in an Rh-positive individual, who was given Rh-negative blood, the reverse of the usual combination which causes trouble. . . .

"A case is reported in which the

Hr factor appeared to be responsible for an intragroup hemolytic transfusion reaction.

"The use of Rh-negative blood is not the complete answer for the prevention of intragroup hemolytic transfusion reactions.

"The value of the biologic test in preventing dangerous transfusion reactions is reiterated."

A. W.

DEGOWIN, E. L.: *Isoimmunity to the Rh Factor as a Cause of Blood Transfusion Reactions*. J. Lab. Clin. Med. 30: 99-106 (Feb.) 1944.

"Some individuals whose blood is Rh negative would seem to possess the potentiality of developing anti-Rh agglutinins by either of two mechanisms: by receiving blood in repeated transfusions from Rh-positive donors or by bearing children whose blood is Rh positive. . . . Actually, although the combination of Rh-positive child and Rh-negative mother occurs in about 10% of 10 pregnancies, only 1 pregnancy in 400 results in hemolytic disease of the child. It has also been noted that not all Rh-negative recipients are immunized by repeated transfusions of Rh-positive blood. . . .

"During a period of eighteen months (March 1, 1943, to Sept. 1, 1944) a series of 5,386 consecutive blood transfusions was given to patients in the State University of Iowa Hospitals. . . . Transfusions were given without regard to the Rh type of the donor or the recipient. . . .

"The incidence of reactions due to all causes was as follows:

Transfusions without reactions	5,200
Transfusions with reactions of all types	186 (3.4%)
Total transfusions	5,386

"In the 186 reactions of all types but six were found which could be attributed to isoimmunity to the Rh ag-