

Handwritten: *Wingfield, J. ...*

certainly have no lacking of the red cells in the circulating blood. The possibility of phagocytic destruction of red cells in the liver cannot so readily be disposed of, and we have no means of determining this factor. The blood count does not help us to any extent, because we find, for example, that if a litre of blood is transfused into a patient who is exsanguinated the blood count is not necessarily altered, in spite of the fact that the red cells are low in our patient at the time. Thus, recently a patient with a red count of 3,000,000, received a litre of blood from a donor with a red count of 5,000,000. Two hours subsequently the red cells in the recipient were still 3,000,000, but his color was markedly improved, and his blood pressure and pulse were maintained at normal. Obviously, the introduction of the more concentrated blood resulted in an osmosis which quickly restored the former equilibrium and resulted in a dilution of the mixed blood now circulating. There was no evidence of hemolysis, and the result of transfusion was to increase probably by one-third or more the amount of blood circulating in his vascular system. The result was vast improvement in his general condition, with cessation of hemorrhage and rapid healing of his wound.

Cases illustrating the beneficial effect of the direct transfusion of human blood in hemorrhage have come under the observation of each of us. Unfortunately, one's clinical notes of cases occurring at home are not available for the record of complete details in this paper, but the main facts regarding two such may be cited. A lad, 16 years of age, had a deep cut inflicted by an axe, in the calf of the leg. The wound suppurated and secondary hemorrhage from the posterior tibial artery occurred. He was sent to hospital, and in the clinic the artery was tied high in the wound; hemorrhage recurring, the vessel was ligatured through a fresh incision at the lower end of the popliteal space. Subsequently the wound continued to suppurate, the pulse was rapid and thready, and he steadily lost ground. Direct transfusion of blood was undertaken, the lad's brother acted as donor, and by means of Crile's cannulae the operation was performed and a considerable amount of blood was transfused. Towards the end of the operation the lad spontaneously expressed himself as feeling better, his pulse was no longer rapid, and the blood pressure improved. Subsequently the wound became healthy, no further hemorrhage occurred, and he made an uninterrupted recovery. Another instance in the clinic of one of us was the case of a girl exsan-