

## THE DIRECT TRANSFUSION OF BLOOD: ITS VALUE IN HEMORRHAGE AND SHOCK IN THE TREATMENT OF THE WOUNDED IN WAR

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BY LIEUT.-COL. A. PRIMROSE, M.B., C.M., EDIN., M.R.C.S.,  
ENGLAND, AND MAJOR E. S. RYERSON, M.B., TORONTO.

No. 4 Canadian General Hospital, with the British Forces in Greece.

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The direct transfusion of human blood from one individual to another is an operation of great antiquity, but in the history of medicine it has never been as extensively employed as it is to-day. From time to time transfusion of blood has been abandoned, largely because of technical difficulties in its performance, but of late years, as the result of the introduction of more perfect and less complex methods, the operation has become much more generally employed. Its value as a therapeutic measure in the treatment of many pathological conditions has in recent years been established on a scientific basis. Thus, it has proved of great service in the treatment of hemorrhage, shock, illuminating gas poisoning, and of more doubtful value in pernicious anemia and certain toxemias.

The writers will not review the observations which have been made, in recent medical literature, regarding the value of transfusion in the multitudinous conditions in which it has been used; we propose to restrict our observations to the value of direct transfusion of blood in the emergencies of military surgery. There may be some question as to its efficacy in many of the conditions in which it has been employed, but in hemorrhage and shock, more particularly in shock accompanied by hemorrhage, its value has been proved beyond a shadow of doubt. We may assert that we have no more efficient means at our command to save life in cases of severe hemorrhage than by the direct transfusion of human blood from one individual to another. This has been proved not only in traumatic hemorrhage (primary and secondary), but in hemorrhage from such conditions as gastric ulcer, typhoid ulcer, ruptured extra-uterine pregnancies, the hemorrhages of the new-born and in hemophilia.

If we enquire into facts which are known regarding the effect of introducing human blood into the vascular system of an individual suffering from hemorrhage, we realize the diffi-