

PROCEEDINGS OF THE
SIXTH CONGRESS OF THE
INTERNATIONAL SOCIETY
OF BLOOD TRANSFUSION
IN CONJUNCTION WITH THE
NINTH ANNUAL MEETING OF THE
AMERICAN ASSOCIATION OF BLOOD BANKS

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*The Officers of the Congress have dedicated this volume to
Sir Lionel Ernest Howard Whitby, former Vice-President of this Society
whose inspiration and leadership in the field
of hematology and blood transfusion have left a rich heritage to all of us*

**Officers of the Sixth Congress
of the
International Society of Blood Transfusion**

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Sir Lionel Ernest Howard Whitby

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Sir Lionel Whitby died in London on 24th November, 1956 after a short illness. A few weeks previously he had returned from a lecture tour of Australia and New Zealand where he had been the Sims Commonwealth Travelling Professor of the Royal Colleges of Physicians and Surgeons, and from visits to Cuba and to the United States where he had attended the VIth International Congress of Haematology and the VIth International Blood Transfusion Congress in Boston.

Sir Lionel Whitby's career was a distinguished one. He began his medical studies after gallant service as a young combatant officer in the War 1914–1918, in which he was severely wounded. Although gifted clinically he preferred the laboratory and devoted himself to bacteriology and haematology. The years between the wars were busy and happy. As his reputation grew he acquired an extensive consultant practice, which might easily have absorbed all his energies, had he not been primarily interested in the academic aspects of his subjects. His appointment as Assistant Pathologist to the Middlesex Hospital gave him the opportunity to develop his gifts as a teacher and it was here that he carried out his fundamental work on sulphapyridine for which he was later knighted. Other testimonies of the fruitfulness of this period of his life are the two standard textbooks, *Medical Bacteriology* (1928) and *Disorders of the Blood* (1935) (the latter written jointly with C.J.C. Britton).

In 1939 he was invited to form the Army Blood Transfusion Service and to command the Army Blood Supply Depot, the parent unit of the service. Blood transfusion had been practised in the War 1914–1918, and Whitby's own life was probably saved by blood transfusion in 1917. The institution of a specific army transfusion service, however, was an innovation, bringing in its train many new scientific and administrative problems. Whitby set about this immense task with enthusiasm and developed from nothing a military transfusion service which served as a pattern for all the Allied Armies and which continues to exert considerable influence on the development of postwar civilian services. The Army Blood Supply Depot soon became a focus for visitors from all the allied countries, and the courses of instruction in resuscitation and blood transfusion were attended by several hundreds of allied medical officers as well as by civilian doctors. For his war

services, Whitby was decorated by the Governments of France and the United States.

In 1945, Whitby became Regius Professor of Physic in the University of Cambridge, an appointment which offered full scope for his abilities as a teacher, as a pathologist who had always desired the closest union between the bedside and the laboratory, and as an administrator. In 1947 he also became the Master of Downing College at which he had been an undergraduate after the first war, and from 1951–1953 he served as Vice-Chancellor of the University.

After the war Whitby emerged as an international figure in medicine and was, in great demand as a lecturer and as a member of national and international bodies. He was visiting Professor of Medicine at Harvard University in 1946, President of the British Medical Association 1948/49, President of the First International Congress of Clinical Pathology in London in 1951, President of the Third International Congress of Haematology in Cambridge in 1950, and President of the First International Congress on Medical Education in London in 1953.

Despite the many other calls upon him, Whitby retained an active interest in blood transfusion, for which he had done so much; he was a Vice-President of the International Society of Blood Transfusion until 1951, and in 1956, when *Vox Sanguinis* was reorganised, he became a member of the Journal's Editorial Advisory Board. He and Lady Whitby, herself a doctor who greatly helped him in his many activities, were familiar figures at the International Congresses of Blood Transfusion.

Whitby had great charm, an endearing personality, and an infectious zest for life, work and company which, coupled with his delightful sense of humour, made him a stimulating companion. With his unaffected manner, unchanged by the honours and promotions which came to him, and his cordial friendliness, he quickly established easy relations with people. He was a man of vigorous mental energy, and, in spite of his disability, of great physical energy. Endowed with enviable powers of concentration, once he had taken up a task he would not rest until it was completed. He had little sympathy with procrastination or indecision.

By his death, at the height of his career, medicine has suffered a grievous loss.

His many friends throughout the world mourn his death and extend their sympathy to Lady Whitby and her sons and daughter.

William d'A. Maycock

Introduction to the Proceedings of the Sixth Congress of the International Society of Blood Transfusion

The meeting held in Boston in early September, 1956, demonstrated more than ever the prominent position which blood transfusion occupies in the practice of medicine. It is now 43 years since the work of Lewisohn and d'Agote made the transfer of blood from donor to recipient a relatively simple procedure, while the discoveries of Landsteiner, Levine and Wiener made the foundation for the safer transfusion of human blood. Innumerable other workers have participated in additional developments which have made transfusion of blood stand on a firmer foundation. In the great civilized countries of the world, the transfusion of blood plays an important part in medical and surgical practice. During World War II it played a most important part in the maintenance of a low mortality in battle casualties who were admitted to hospitals.

It would be just as impossible to think of medical and surgical practice without the use of blood for transfusion as it would be to practise these areas of medicine without other type of supportive therapy. The transfusion of blood is of singular interest because of the important part that it plays in the care of so many patients. The papers presented at this Congress will add immeasurably to the knowledge that is already ours. They provide a clearer understanding of many of the processes which are involved in the transfusion of blood and which understanding is necessary for the successful transfusion of blood with advantage to the patient.

It is hoped that these Proceedings given during the first transfusion congress held in the United States of America, and participated in by scientists from all over the world, will be useful to scientists and clinicians as well. It is hoped that their background in this field will be extended to the benefit of many patients.

I. S. Ravidin

Opening Remarks

I am delighted to welcome you to the 6th International Congress of the International Society of Blood Transfusion, and the 9th Annual Meeting of the American Association of Blood Banks. In this country the first Monday in September has for years been a national holiday dedicated to labor and, therefore, known as Labor Day. The physicians have no such day dedicated to them for their work is an ever continuing one.

It is right and proper that having decided to meet in the United States the meeting be held in Boston, for in this historic area so much of American history had its origin. It is here, too, that Edwin J. Cohn and his associates began and carried on their brilliant researches, which have given new insight into the complexities of blood, and new opportunities to utilize many of the separate elements of that conglomerate mass which is called blood.

During a period of twenty-one years there have been but six congresses. Throughout the years of World War II no congress meetings were held. This is the first time you have honored us by holding a Congress in this country. This is the first time you have had an American as your President. I express to you our deep satisfaction that you have come here and my personal gratitude that you elected me as your President.

The roots of interest in this country in the problems associated with the transfusion of blood have always been strong. It was here that Alexis Carrel did the first arteriovenous suture for transfusion; where George W. Crile developed his ingenious clamps for vascular union during transfusion; where Kimpton and Brown developed the paraffined tubes; where Lindeman and Unger and many others developed other methods for the transfer of blood from donor to recipient. It remained for Richard Lewisohn of New York, and d'Agote of Buenos Aires to provide a rational method for the utilization of an anticoagulant — sodium citrate, so that blood transfusion could be more generally adopted. It was they who provided the method which transformed a complicated and uncertain procedure to be done only by surgical experts, to a simple technical operation which now can even be carried out by trained non-medical personnel.

And while all of these changes were taking place there developed a greater and greater interest in the areas where intensive research was necessary, in order to know more about the blood as a whole, about its various constituents, and about the immunohematological problems associated with the transfusion of blood. One of the great strengths of this Society has been the union of those concerned with basic research and those interested in the application of this new found knowledge to the practical aspects of blood transfusion. In this field new knowledge has found ready application, without the lag period so common to many fields of medical science and practice.

In the early years of this century blood was being transfused far more frequently for a variety of anemias, of then unknown origin, than for surgical lesions, but in the third decade of the century surgeons began more intensively to use blood to correct a deficiency of the blood volume arising from blood loss incident to injury or operation. As has so frequently happened in the history of medicine, blood transfusions were being administered without knowledge of the degree to which blood loss had taken place, and without knowledge of the physiological mechanisms involved in wound shock.

The recent developments associated with the extension of modern surgical effort have been made safe, in large part, by the availability of blood in unlimited amounts. The blood bank has become a very vital part of every modern hospital. The modern surgeon, as well as every surgical specialist, depends upon blood being immediately available should the necessity of its need arise.

A better understanding of the complications which may arise when patients with a deficient circulating blood volume are subjected to the trauma of anesthesia and operation, and of the necessity of maintaining an adequate volume subsequent to operation has led to the frequent use of blood transfusions before, during, and after many operative procedures. The physiologically minded surgeon is constantly aware of its life saving qualities.

But while the use of blood in man, both in civilian and military life, has been tremendously expanded, we have found more and more areas where intensive research is required, in order to make the procedure safer. Hundreds of investigators in your countries and in ours have solved and are continuing to solve these previously unsolved mysteries. A great deal remains to be done. At this Congress certain of these perplexing problems will be discussed and solutions may be offered. Such has been the history of our profession.

Vital among the many problems to be solved is the storage of blood for long periods of time. It is one of unparalleled importance, not only in Peace but more so in association with War: and perhaps of paramount importance in future warfare. Many of you are devoting much of your research effort to this important area. Progress has been slow, but progress has been made. Who would doubt that during these next few days, or next month, or next year the answer we have so long sought will be forthcoming.

It is right and proper that the Hematologic Congress and the Transfusion Congress take place sequentially. There are many areas of interest where no sharp cleavage can be drawn. There are areas of interest in each group, however, which do not find common ground, and where a union of forces through dissolution of one organization or the other would be harmful to the progress reasonably to be expected from both groups. It is to be hoped that the enlightened cooperation which has existed will be continued in the future; when the time comes that progress will be expedited by a union of forces, I have no doubt but that it will then be agreed upon. The hematologist looks upon himself as an internist, particularly concerned with a facet of medicine. The physiologically minded surgeon is just as much concerned with hematological progress. Between these two divisions are to be found many variations. If our goal is set the sight will be clear. We must not permit petty, selfish interests to impede progress. Such should be the altruism of our profession. The worth of an organization lies not at the core of its interests, but at the periphery, where it impinges on other fields of effort. While the members of the Society may, and should vary greatly in their efforts, rigid specialization of the Society in a single aspect of this great effort is harmful to progress.

There are many collateral aspects of international congresses. Individuals are brought together with a variety of philosophies and ideologies. They meet and find they have a much broader common meeting ground than they had expected. During the last War, I had the opportunity of taking care of a considerable body of troops of one of our enemies. After a few weeks in our hospital they requested that certain of their representatives be permitted to see me, and when they did see me, they gave me a written statement which read "We were told that Americans were devils with masks of gold, but our treatment in this hospital, by your officers, has taught us that Americans have hearts of gold".

Medicine is the most universal of all professions. Perhaps through our efforts in Congresses such as this one, more can be done for Peace and Understanding in this troubled world than by any other means.

Enjoy yourselves while you are here and while you feast on the program to be presented, feast too on the friendship which is so much a part of the life of every American.

I. S. Ravidin

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