MEDICINE

Three Share Nobel Prize

The 1956 Nobel Prize in Medicine is awarded jointly to three doctors who developed and perfected the process of slipping a catheter directly into the heart.

➤ A TINY hollow nylon tube is run up the vein in the arm to the inside of the heart. X-ray fluoroscopy is used to follow and guide the catheter as it slides along. Blood is extracted through the tube and blood pressure is measured. The object is the study and diagnosis of heart, circulation and pulmonary conditions in health and disease.

This daring medical procedure is recognized by the 1956 Nobel Prize in Medicine awarded to two American and one German physicians engaged in medical research.

It began about 1929 when Dr. Werner Forssman at Eberswalde Surgical Clinic,

HEART CATHETERIZATION — This photograph shows how the catheter tip appears during studies of the heart's action. Here the catheter is inserted in the right saphenous vein, and the tip has been advanced through the tricuspid valve into the right ventricle.

Berlin, despite lack of encouragement from his colleagues, slipped an oiled tube up his arm vein into his heart.

The story is that he then walked up two flights of stairs to the X-ray room to obtain photographs proving he had actually done this. Now his pioneering is recognized by the Nobel award.

This process was utilized by the other new Nobelists Drs. Dickinson W. Richards and Andre Cournand of Columbia University's College of Physicians and Surgeons and Bellevue Hospital, New York, in more than 25 years of perfecting the catheterization method and its application for studying and understanding what happens in heart and lung diseases.

This process was used in the study of pulmonary circulation, in which the functions of lung and heart are closely associated.

Cardiac output or flow of blood, going from the right heart through the capillaries in the lung for oxygen supply and carbon dioxide elimination, has never been measured directly. To do this, blood samples are obtained before the lung is reached, which means reaching through the tube directly into the heart, and compared with blood that has left the lung on its journey through the arterial system.

The process of inserting the tube through the veins is painless as the veins have no sensory nerves.

The three Nobelists will share a prize of $38,633 and will go to Stockholm in December to receive this world's top science honor.

Early in the war, the United States requested that a study of all patients who were admitted to Bellevue Hospital in a state of traumatic shock be made by this method, for knowledge of desirable treatment of battlefield shock cases.

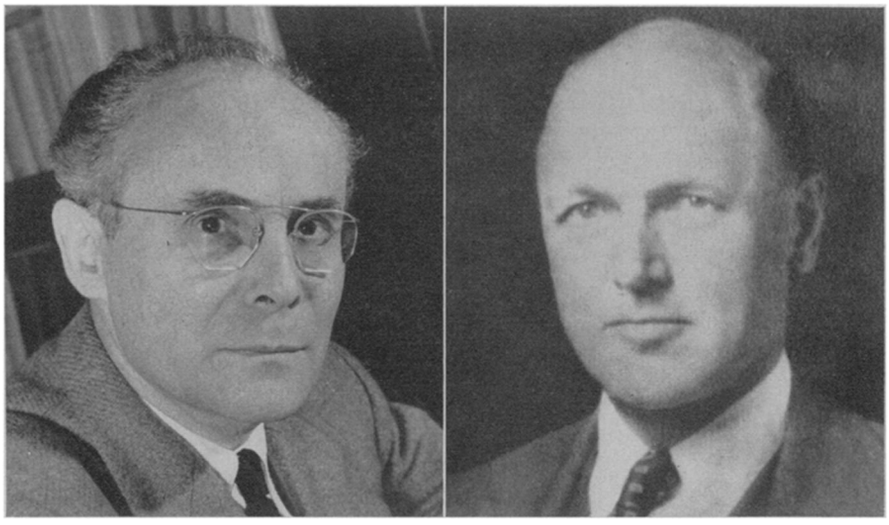
Based on research sponsored by the Office of Scientific Research and Development and the National Research Council, precise knowledge of the state of circulation in shock, and how the state was best modified by treatment with blood substitutes: gelatin, plasma, whole blood, adrenal cortical extract, etc., was required. The volume of blood was measured, quantity lost, quality studied.

It was found by Dr. Cournand and his associates that enormous quantities of blood could be lost, and that an adequate supply would restore circulation. Blood volume and heart output can be reduced 35 to 40% in severe cases, it was found.

The catheter process serves two purposes, the proper diagnosis of certain cardiac conditions and a research method for investigating the basic performance of the circulatory system. It has saved the lives of thousands of persons by making sure they could be operated on, and it has been used to diagnose heart conditions previously not possible.

Science News Letter, October 27, 1956

NOBEL PRIZE WINNER—German Dr. Werner Forssman is one of three heart specialists jointly awarded the 1956 Nobel Prize in Medicine.



AMERICAN NOBELISTS—Drs. Andre Cournand, left, and Dr. Dickinson W. Richards share with Dr. Werner Forssman this year's Nobel Prize in Medicine.