engineering to make use of the talents and services of women. Psychologists tell us that there is, statistically, no essential difference between the kind of mental aptitudes found in men and in women. Why are there not just as many female engineers as male, thus doubling the potential supply? Why indeed? There are some good reasons involving home-making, motherhood, and the social custom that requires little girls to play with dolls instead of electric trains. But these reasons are not enough, and a nation-wide effort must also be made to secure and utilise the scientific talents of our womenfolk.

The discovery of even a fair percentage of the scientific talent available in any country must in itself be regarded as a major step, since on that will depend ultimately an adequate supply of manpower, through higher education and advanced training.

NOBEL AWARD FOR PHYSIOLOGY AND MEDICINE—1956

THREE pioneers in the development of cardiac catheterization have been chosen to receive the Nobel Prize in Physiology and Medicine this year. One of these, Dr. Werner Forssmann, of Bad Kreuznach, West Germany, is the first man known to have inserted a catheter into the living human heart through a blood vessel in a limb. The other two are Professors André F. Cournand and Dickinson W. Richards, of New York, prominent among those various workers who in the last 15 years have added greatly to our knowledge of cardiac function by means of this technique.

At the age of 25, Dr. Forssmann, who is now 52, described how with the help of a colleague he inserted a cannula into his own right antecubital vein, and passed through it a well-lubricated ureteric catheter for 35 cm. At this point the colleague, considering the experiment to be dangerous, ended it. A week later Forssmann by himself undertook a second experiment, this time inserting a catheter for 65 cm. into the left antecubital vein. He walked from the operating-room where he carried out this manœuvre to the X-ray apparatus, and a radiograph was taken. This was reproduced with his article, and clearly shows the catheter lying in the right auricle. At the conclusion of the article, Forssmann referred to the "many prospects of new possibilities for research into metabolism and heart function" that his experiments had opened up.

Professor Richards, aged 60, and Professor Cournand, 61, of Columbia University, and the Bellevue Hospital, New York, were encouraged by Forssmann's experiments to try cardiac catheterization in their studies of cardio-respiratory physiology. Their work, begun on chimpanzees in the later 1930's, and soon continued in the human subject, confirmed the safety of the procedure and showed the wealth of new information to be gained by it. Their studies of gaseous exchange and blood pressure in the heart and pulmonary arteries from about 1940 onwards have greatly extended the benefit, especially by surgery, which it is now possible to offer to patients with heart diseases.

Cardiac catheterization consists of passing a radio-opaque nylon catheter directly into the heart from a vein in the arm. This allows of that accurate diagnosis which is essential to successful surgical treatment of heart disease. In addition it has provided much additional useful information on the behaviour of the heart and circulation in a great variety of drugs. Indeed, Professor J. McMichael, of London, another pioneer in this field, has described catheterization of the heart as the most significant advance in cardiological method in the present generation. As a diagnostic procedure it is now performed as a routine in all the larger cardiac clinics.—*British Medical Journal*, 1956, p. 990.