

The latest addition is a heat-resistant variant of *Cl. welchii*. What usually happens is that a gravy or stew containing some of the organisms is cooked the day before use. The spores survive the cooking and oxygen is driven off, so that when the dish cools a perfect anaerobic culture medium is formed. By the next day there are millions of organisms. Symptoms of poisoning develop about 12 hours after ingestion.

Deaf children present special problems: diagnosis is sometimes difficult, yet the earlier they can be brought under treatment the better the prognosis. Both in Manchester and in London these problems are being studied. Testing techniques to which deaf children respond have been worked out, and it is now appreciated that even the youngest of deaf schoolchildren can benefit from the use of a hearing-aid.

No one underestimates the importance of being able to prevent poliomyelitis; but the scarcity of gamma globulin and the short duration of the immunity conferred by it (about a month) have led the Council's workers to look elsewhere for a prophylactic. Now that the virus can be grown in tissue culture there is every hope that before long a safe and effective vaccine will be prepared.

#### New Thyroid Hormone

A new thyroid hormone has been discovered, called triiodothyronine, which may prove to be the active principle of the thyroid gland, thyroxine being its precursor. The age of the human erythrocyte has been worked out by independent studies in Britain and America, and in both the average life span proved to be 120 days. The British workers reached the answer by transfusion experiments, and the Americans by using a non-radioactive isotope of nitrogen.

As might be expected, there have been a number of studies of pituitary function. One concerns lactation. The act of suckling has been shown to release posterior pituitary secretion by a nervous reflex; the pituitary hormone, identified as oxytocic hormone, acts on the mammary glands to cause ejection of milk. The flooding of the blood stream with this hormone explains why suckling helps contraction of the uterus after labour, an age-old but hitherto unexplained clinical observation. It is likely, too, that disturbances of lactation due to emotional stress are caused, at least in part, by interference with this milk-ejection reflex. Other studies of pituitary function have been concerned with its dependence on the hypothalamus. It seems that adrenaline or some similar substance plays a part in regulating the activity of the anterior pituitary.

Lastly, there are sections on chromatography and drug resistance. The first traces the history of chromatography from its discovery in 1906 by the Russian botanist Tswett—a discovery which was neglected for 25 years until work on vitamin A led to its reinvestigation—up to the development of partition chromatography, for which Martin and Synge were awarded the 1952 Nobel Prize for Chemistry. Partition chromatography has been successfully employed recently in the isolation of both vitamin B<sub>12</sub> and triiodothyronine, and for the determination of the complete amino-acid sequence in the peptide chains of insulin.

How drug resistance develops is still largely unknown. Sometimes it is by the production of an enzyme which destroys the antibiotic; sometimes by the side-stepping of a blocked metabolite; in most cases the mechanism is not understood. Nor is it clear whether bacteria change their responsiveness to a drug as a result of a sudden mutation or, gradually, by a process of enzyme adaptation. These and similar problems are being studied in no fewer than five of the Council's units.

The remainder of the report is essentially a work of reference. It provides an outline of the Council's present research programme; a list of research establishments (with staff and summaries of research); details of work aided by grants; a note on research fellowships and studentships; a complete bibliography; and lists of the Council's principal advisory committees.

## THE SCIENTIFIC EXHIBITION

### IMPROVEMENTS AT CARDIFF

The Scientific Exhibition, a new feature of the Annual Meeting last year in Dublin, was more pleasingly arranged and technically improved at Cardiff. The only faults—in two or three stands—were over-enthusiasm in trying to present too many facts, and over-decoration approaching the whimsical.

The Department of Pathology and Bacteriology of the Welsh National School of Medicine (Professor J. GOUGH and Mr. J. E. WENTWORTH) showed a technique of mounting thin sections of organs on laboratory filter paper, their natural colours preserved by ethylene or propylene glycol derivatives. These sections, which are particularly useful to demonstrate pneumoconiosis, emphysema, and haemosiderosis, can be filed with patients' case notes and usefully compared by transillumination with the radiographs taken during life. Pneumoconiosis in coal workers was demonstrated by the Medical Research Council Pneumoconiosis Research Unit, Llandough Hospital, Cardiff (Dr. J. C. GILSON). Diagrams and photographs indicated clearly the two stages of the disease—the simple pneumoconiosis caused only by dust, and the second stage complicated by infection. An exhibit by the Departments of Bacteriology and Dermatology of Leeds University Medical School and General Infirmary (Dr. C. J. P. LA TOUCHE) showed the features of ringworm infection transmitted to man by domestic animals, and the St. David's Hospital, Cardiff, Departments of Obstetrics and Child Health (Professor A. G. WATKINS) described the functioning of a breast-milk bank—one of the most effective exhibits because of its simplicity. For the same reason the larger demonstration on tuberculosis by the Sections of Diseases of the Chest and Preventive Medicine attracted the eye and the attention: it showed by diagrams, photographs, slides, and pathological specimens the prevention, treatment, and aftercare of tuberculous infection.

Abdominal radiography in the differential diagnosis of atypical appendicitis, particularly in children and elderly adults, was demonstrated by well-selected and well-labelled radiographs from the Cardiff Royal Infirmary Department of Surgery and Radiology (Mr. L. P. THOMAS, Mr. R. J. WILLIAMS, and Dr. H. BRYAN L. WILLIAMS), and the diagnosis and treatment of cancer of the rectum were the subject of an exhibit—largely with models—by the Gordon Hospital for Gastro-intestinal Diseases, London (Mr. A. LAWRENCE ABEL, Mr. STANLEY O. AYLETT, Mr. GORDON S. RAMSAY, and Mr. H. GORDON UNGLEY). Mr. ABEL, with Dr. J. H. O. EARLE, Mr. W. P. GREENING, and Mr. MICHAEL H. HARMER, of the Royal Cancer Hospital, London, also presented pictorially the early diagnosis of malignant disease.

### Student Health Services

Student health services of different types—exemplified by the advisory system of Cambridge University, the general-practitioner care provided by Birmingham University, and the care afforded by other universities with halls of residence—were shown attractively by the University of Wales Student Health Service, of which Dr. GRAHAM GRANT is senior health officer. Pictures of the new students' accommodation at St. Bartholomew's and other hospitals seemed pleasantly to surprise old graduates brought up in the dustier conventional club-like common-rooms. The Nuffield Department of Industrial Health, University of Durham (Professor R. C. BROWNE and Dr. R. I. MCCALLUM) showed a mechanical gnasher for simulating the normal action of teeth; apparatus indicating human response to different types of indicators on machines, and a display of recent research on coal-miners' nystagmus. The Department of Surgery of Guy's Hospital, London (Mr. R. S. LAWRIE), demonstrated diseases of the thyroid gland in one of the exhibits that have for some years been set up monthly for undergraduate medical students by the department. The carotid circulation was presented by models, angiograms, and diagrams by the Welsh National School of Medicine (Professor

LAMBERT ROGERS), the heart in health and disease shown by 20 life-size coloured models from the United Cardiff Hospitals (Dr. JOHN D. SPILLANE), and the anatomy of hydrocephalus by the Departments of Neurosurgery, Neuro-radiology, and Medical Illustration of Manchester Royal Infirmary.

### Service Medicine

From the Medical Department of the Navy, the Royal Naval Physiological Laboratory demonstrated the effects of underwater blast and oxygen poisoning. The Medical Branch of the Royal Air Force showed equipment used in extreme cold and in casualty air evacuation. And the Royal Army Medical College explained in a clear and simple demonstration the prevention, diagnosis, and treatment of the enteric group of fevers in the Army. The incidence, investigation, and infectivity of poliomyelitis in England and Wales were set out by the Ministry of Health and Public Health Laboratory Service (Dr. W. H. BRADLEY, Dr. W. C. COCKBURN, Dr. A. P. GOFFE, Dr. F. O. MACCALLUM, and Dr. D. THOMSON), and Mr. A. J. EVANS and Mr. H. C. KILLEY, of the Rooksdown House, Basingstoke, Plastic and Oral Surgery Unit showed the treatment of fractures of the facial skeleton and of acute severe burns. The hepatic circulation and the effect of milk diet on malaria were demonstrated by the Liverpool School of Tropical Medicine, Department of Tropical Medicine (Professor B. G. MAEGRAITH), the common types of arthritis and their treatment shown by the Empire Rheumatism Council, London, and rehabilitation of the hemiplegic described by the United Cardiff Hospitals, Department of Physical Medicine (Dr. KENNETH N. LLOYD). The features of accidental antepartum haemorrhage were set out by the National Maternity Hospital, Dublin (Dr. A. P. BARRY); Dr. P. BAUWENS, of the Department of Physical Medicine, St. Thomas's Hospital, London, demonstrated electrodiagnosis; and Professor KENELM H. DIGBY, of the Royal College of Surgeons of England, indicated methods of investigating the functions of the subepithelial lymphatic glands.

Other exhibitors were the City of Cardiff Public Health Department (Dr. J. GREENWOOD WILSON); the National Association for the Prevention of Tuberculosis; the Welsh National School of Medicine Medical Unit, and the Department of Radiology, United Cardiff Hospitals; the United Cardiff Hospitals Department of Urology (Mr. D. G. MORRIS and Mr. R. A. MOGG); the Medical Group of the Royal Photographic Society, London; and Mr. DENIS J. BROWNE, of the Hospital for Sick Children, London, who showed apparatus for orthopaedic treatment by controlled movement.

## PHARMACEUTICAL EXHIBITION

The Pharmaceutical Society of Great Britain is to be congratulated on its delightful little exhibition, which occupied in all only five show-cases in the hall of the University College of South Wales. The exhibition, arranged with taste and of considerable interest, was designed to illustrate certain aspects of pharmaceutical history in relation to medicine.

The handsome specimens of seventeenth and eighteenth century pottery were the objects of much admiration, even by those who have not yet studied the subject of drug jars and ointment pots. The Lambeth Delft displayed was very fine, but preference must be given to the more ornate Italian jars. A few formulae from pharmacopoeias of the seventeenth and eighteenth centuries added to the interest. The most exotic was that for the preparation of lohoch of foxes' lungs ("prepared as usual"). It is also amusing to find that the sixty ingredients of Venice treacle were dissolved in old canary, no doubt much the most agreeable component.

Of the nineteenth century feeding-bottles laid out, pride of place must be given to a patent one with a metal teat, which "effectively supplies the place of the natural breast." Medicine bottles and feeding-cups were also on show.

The exhibition contained a number of examples of pharmacopoeias ranging in date from 1618 to 1953, and including the first London, first British, and first Irish pharmacopoeia. Of the early herbals shown, the most interesting was one of 1497, open at a page on urine testing, illustrated appropriately.

Three early nineteenth century medicine cabinets carried by physicians, apothecaries, and ship surgeons were on view. Purges such as Turkey rhubarb and calomel figure prominently in their contents, a testimony to the rigours of medical treatment not so long ago. Photographs of pharmacists' premises included one of "Ye oldest chymist shoppe in England," and documents included some from the Guild of Pepperers and the Guild of Grocers.

Lastly there was a useful "child's guide" to the development of English pharmacy in the form of a chronology of events and personalities.

## Nova et Vetera

### SWEDISH PIONEER OF MEDICINE

Petrus Hoffvenius is deservedly known as the father of Swedish medicine, and Linnaeus the botanist is as famous abroad as he is in his own country. But they need not overshadow another Swedish pioneer of medicine, Lars Roberg, who in many respects was far ahead of his time—on which he made his mark. He did so in spite of certain flaws in his character which, not to put too fine a point on it, were atrocious. According to Dr. Wolfram Kock,\* one of Roberg's historians, Roberg was rated as a bad-tempered and stingy old curmudgeon, but these vices were largely atoned for by his gifted, forceful, and far-seeing personality. This quarrelsome bachelor was born on January 24, 1664, in Stockholm, where his father was the proprietor of an apothecary's establishment. It was presumably a source of some wealth, for son Lars was able as a young man to visit Germany, France, England, and Holland after he had begun his medical studies in Upsala in 1678. In 1689 the degree of Doctor of Medicine was conferred on him in Leyden. Returning to Sweden, Roberg taught anatomy in Stockholm. In 1697 he was appointed professor of medicine in Upsala, and in 1717 he became Rector of the University of Upsala. When he died on May 21, 1742, his literary output included 42 *disputationes* and several other important works, including the first Swedish textbook of anatomy, *Characteres Morburum* (Upsala, 1729).

It is to the credit of Linnaeus, who followed Roberg in one of his appointments, that the manuscripts of several of his public addresses came to be published in book form in 1747, only a few years after his death. Linnaeus also contributed a preface to this volume, pointing out how effectively it revealed the scholarly gifts and other good qualities of his predecessor. These addresses are a remarkable mirror of Roberg's time, of the conditions under which his pupils emerged as doctors. His advice to them reflected not only much worldly wisdom but a critical sense of the relative value of the written word and personal observation. He did not believe much in the mastery of many languages or many books, and the list of books he recommended was very short even for those times. It included the Bible, a hymn book, a law book, an almanack, a "good lexicon," and Polheim's "small handbook," which his pupils were advised to learn by heart.

Far better than books was the knowledge to be gained by first-hand contact with plants and animals. Every opportunity was to be taken to examine the anatomy of the latter, particularly cattle when slaughtered. Much useful knowledge was also to be gleaned from the kitchen and all that went on there. Lectures were to be attended even though the listener did not understand more than half of what he heard. Attendance in moderation at taverns and

\*Svenska Läkartidningen, May 8, 1953.