occlusion, particularly in the vertebral arteries, and illustrated this with some impressive pictures.

Dr. A. BARHAM CARTER (Ashford, Middlesex) showed in a controlled clinical trial that the immediate results in patients with worsening strokes could be significantly improved by anticoagulants, particularly if treatment was begun early, and thought that phenindione was a safer oral anticoagulant than coumarin. Professor J. S. MEYER (Detroit) said the use of fibrinolysins might become more widespread once they had been tested for effectiveness and toxicity, but thought that their marketing had been premature. In completed strokes there was contradictory evidence on both their dangers and their beneficial effects. From New York Professor IRVING S. WRIGHT, Dr. ELLEN MCDEVITT, and Dr. S. N. GROCH thought that long-term anticoagulant therapy was justified and in a controlled series showed effective protection from recurrence of cerebral infarction, from pulmonary embolism, and from myocardial infarction, with only 16% of haemorrhagic complications and no increase in death rate attributable to treatment. On the other hand, Dr. ROBERT BAKER (Los Angeles) in a similar, well-controlled series found no protection from further cerebral infarction, protection from recurrent transient ischaemic attacks, and an increase in death rate from cerebral haemorrhage in the treated group.

Surgery

The surgical results of treatment were very impressive, but it was agreed that the surgeon's material was highly selective and therefore not comparable with that of the physician. Dr. MICHAEL DEBAKEY and Dr. E. STANLEY CRAWFORD (Houston, Texas) pointed out the difficulty of selecting patients for surgery as the multiplicity of lesions commonly found made for uncertainty as to which particular occlusive phenomenon was the cause of the patient's symptoms. They thought that a 50% reduction in the diameter of the internal carotid artery was necessary before symptoms occurred; and if a single stenotic carotid lesion was shown angiographically and ischaemic symptoms were present, then this case was ideal for surgery. Age was no contraindication in itself, but a short expectation of life from widespread atherosclerosis was. If the occlusion was complete most speakers thought operation contraindicated, but Dr. DEBAKEY showed some good results with bypass graft operations even in this event. This Houston school showed some remarkable results in progressing strokes. In 27 patients, of whom 22 had internal carotid occlusions and 5 vertebral, 17 were asymptomatic in a follow-up of six months to four years and no deaths were attributable to operation. A film of the technique of operation was shown, and after removal of the atherosclerotic plaque and occluding thrombus a patch graft was used to prevent residual stenosis. Professor C. ROB (Rochester, N.Y.) did not think this patch was often necessary, and in a personal series found that after 2½ years 15% of his patients had a subsequent stroke.

Main Stumbling-block

The final impression was that the multiplicity of atherosclerotic lesions in the extracranial portions of the arteries supplying the brain is one of the greatest stumbling-blocks in diagnosis and treatment. If diagnosis is to be exact and surgery to be of any use, arteriography is essential, though not without danger. This investigation may be made efficiently by different techniques, but should be done by experts with surgeons at hand experienced in vascular work. Anticoagulant therapy is of use in selected cases, but indications and contraindications need further definition.

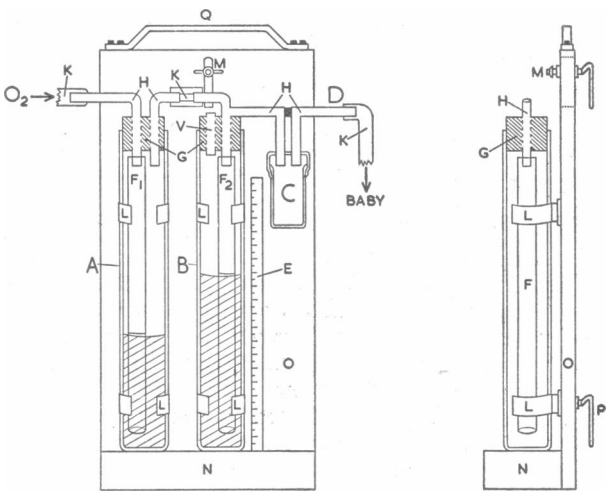
The conference closed with some well-chosen and thoughtful words from one of the most distinguished participants, Professor H. G. WOLFF (New York), who thought that workers in this field should realize they are still in an experimental stage with need of clearer understanding of terminology, of less harmful methods of investigation, and of more easily controlled therapy.

New Appliances

SIMPLE WOULFE BOTTLE AND SAFETY-VALVE UNIT FOR USE IN NEONATAL RESUSCITATION

Dr. C. G. H. NEWMAN,* paediatric registrar, the Whittington Hospital, London N.19, writes: New safety measures may never be used when their virtues are offset by disadvantages such as bulk, clumsiness in use, or expense. It is generally accepted that when administering oxygen intratracheally to newborn infants there may be some risk of applying too high pressures, particularly when the administrator is relatively inexperienced. This risk can be avoided by the use of a safety valve. Such valves are incorporated in resuscitation trolleys, but are often omitted when no such specialized and expensive equipment is available. A simple and inexpensive unit incorporating such a safety valve has been built at the Whittington Hospital from materials freely available in hospital workshops, and it is suggested that some such device might find a place in labour wards and elsewhere where intratracheal oxygen may have to be administered to neonates.

The basic plan is as follows (see Fig.). Oxygen flows from the cylinder through the equivalent of a Woulfe bottle (A)—in fact, a catheter-sterilizing tube, with rubber bung and metal and plastic tubing arranged as shown. The principle of this humidifier is conventional. The humidified gas then flows through the metal tubing to the outlet at D, via a water-trap at C.



Drawing (not to scale) showing general plan and components. A, Woulfe's bottle. B, Safety-valve bottle. C, Water-trap. D, Outlet. E, Pressure scale. F. Plastic tubing: 3/16 in. (4.7 mm.) diameter, 16 in. (40.6 cm.) long. G, Rubber bung, perforated as shown. H, Brass or stainless-steel tubing. K, Rubber tubing. L, Terry clip. M, Adjustable mounting-clip for oxygen carrier and slot. N, Base block. O, Base plate. P, Mounting-clip (fixed). Q, Carrying-handle. V, Gas escape vent.

A safety valve is inserted into the side of the metal tubing just before the water-trap. It is a simple hydrostatic valve, made by modifying a second Woulfe bottle tube (B). The only difference between A and B is their connexions. B has a vent (V) through the rubber bung free to the atmosphere, and the long inner tube is connected into the side of the tube carrying gas to the baby. Gas can bubble out down the inner tube (F_2) and up again to escape through the vent (V) whenever its pressure exceeds the hydrostatic pressure preventing its escape. (In fact, the height of water above the lower open end of F_2.) The height of water in B determines the "blow off" pressure of the safety valve. The actual pressures measured at the outlet D in centimetres

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of water at different levels in B were found to be about 5 cm. higher than the actual level in centimetres. This is presumably due to factors such as friction and viscosity, and might well vary slightly between different units.

It is therefore possible to limit the pressure at which gas can be delivered at D by adjusting the water level in the safety valve B. This is done by varying the water level in tube B by removing the rubber bung and either pouring water out or adding to it. Should pressure tend to rise either from back pressure from the infant's lungs or because of increased flow rate from the cylinder, gas will exceed the hydrostatic pressure in the valve and will escape. This will prevent potentially harmful rises of pressure in the patient's air passages.

The unit is virtually unbreakable. The components are easy to clean and to sterilize, and, as it is unnecessary to remove the metal tubing from the rubber bungs, assembly is easy and relatively proof against error.

The following is a list of the components as assembled in the hospital workshop: 2 plastic catheter sterilizing tubes, complete with rubber bungs. 2 lengths (15½ in.; 39 cm.) of plastic tubing, external diameter 3/16 in. (4.7 mm.). Brass and rubber tubing, as illustrated. Flattened brass strip for carrying-handle and clips for attaching to oxygen-cylinder carrier. Nut and bolt for adjustable clip. 4 Terry clips for holding catheter-sterilizing tubes. Base plate, 6 by 21 in. (15 by 53 cm.), with footpiece.

It would be preferable to use plated tubing instead of brass. The materials are inexpensive. (Registered design pending.)

I thank Mr. H. Kourik and his staff for their helpful suggestions and for manufacturing the prototype. A perfected version is being made by, and is available from, Messrs. A. L. Hawkins & Co. Ltd., 15 New Cavendish Street, London W.1.

Nova et Vetera

HISTORY OF SCIENTIFIC IDEAS

Science derives from the Greeks and was one with their philosophy. They had a rational conception of the cosmos as an orderly whole working by laws discoverable by speculation and observation. So science for long was termed "Natural Philosophy." The development of modern science has disturbed this happy relationship, and Osler feared it might prove her undoing. In his famous presidential address to the Classical Association at Oxford (*Brit. med. J.*, 1919, **2**, 1) he said:

"Specialism, now a necessity, has fragmented the specialties themselves in a way that makes the outlook hazardous. The workers lose all sense of proportion in a maze of minutiae. Everywhere men are in small coteries intensely absorbed in subjects of deep interest, but of very limited scope."

With the aim of uniting once more philosophy and science, Professor Gillespie, who holds the chair of the history of science at Princeton University, has written this learned and debatable book,* which traces the development of scientific philosophy by means of the history of science from Galileo to Einstein. The medical reader will find that due weight is given to the lore of Paracelsus, to Harvey's great discovery, and to the insight of John Locke and of T. H. Huxley. In regard to other medical pioneers the author is strangely reticent. There is but brief reference to the vision of Pasteur and the work of Robert Koch and Virchow, while nothing is said of the knowledge revealed by Lister, Ferrier, Horsley, Sherrington, and others, or of the latter-day triumphs of physiology, pathology, and biochemistry, which surely all contribute to the modern concept of a philosophy of science. To atone for this reticence the contributions of the physicists, chemists, geologists, biologists, astronomers, and mathematicians are traced with sedulous care and often with biographical detail. Lamarck, Cuvier, Darwin, Lyell, and Mendel receive their just meed of praise, while the influence of the work of Lavoisier, Goethe, Diderot, and others is perhaps somewhat overemphasized. But Professor Gillespie's hero is James Clerk Maxwell, the prince of nineteenth-century physicists, "whose unification of light and electro-magnetism in field theory worked the aether right into the bone and texture of classical physics."

This book shows that scientific philosophy is yet in the making. Even though in the light of modern discovery some of the gathered pebbles are beginning to assume a definite pattern, the scientists and philosophers still gaze upon an unknown and illimitable ocean.

ARTHUR S. MACNALTY

**The Edge of Objectivity. An Essay in the History of Scientific Ideas.* By Charles Coulston Gillespie. (Pp. 562+vii; illustrated. 42s.) Princeton, N.J.: Princeton University Press. London: Oxford University Press. 1960.

PARÉ'S CASE REPORTS

The passages selected from the writings of Ambroise Paré which are offered in this volume* have been available in English since 1634, when Thomas Johnson's translation was first published. This folio volume is now expensive, and, as Dr. Hamby writes in his introduction: "Charming as it is, Johnson's Elizabethan English gives the modern reader a little distorted flavour to the old Frenchman and his work. He has even become considered 'quaint,' I fear, in the same use of the term reserved for antimacassars and bogus antiques of other sorts. The word applied to Paré is as insulting as it would be in the case of George Washington or Benjamin Franklin."

It is true that case reports have a perennial interest for any doctor. These laconic and straightforward accounts, lifted from the exposition and discussion of outmoded ideas in which they are embedded in Paré's original text, reveal the man and the medical practice of his time in an unequivocal fashion. That the sixteenth century was a turbulent period for France is a historical fact, but the general attitude to cruelty and violence at that time is brought home to us when we find it unconsciously reflected by one who has always been considered the most humane of surgeons. He tells us how a beggar had obtained alms by feigning leprosy and was condemned to be whipped through the streets on three successive Sundays. On the third Sunday, "excited by the cries of the people, the executioner worked so with his lash that he [the beggar] died a little later . . . which was no great loss to the country." Another malingerer, a woman, was kicked and beaten by the doctor examining her; but fortunately the remaining accounts show us the doctor in his customary role of one who treats the effects of violence rather than one who inflicts it. Gunshot and sword wounds were common enough and are well represented here, but the case of the child crushed by a coach wheel must be one of the earliest

**The Case Reports and Autopsy Records of Ambroise Paré.* Compiled and edited by Wallace Hamby, M.D., F.A.C.S. Translated from J. P. Malgaigne's *Œuvres Complètes d'Ambroise Paré*. Paris, 1840. (Pp. 214+xx. 52s.) Springfield, Illinois: Charles C. Thomas. 1960.