

started without result. This stage might have lasted between 1 and 2 minutes. Then suddenly the fingernails blanched, the pulse, which up to then had been full and slow at 60 per minute (normal rate 66-70) and apparently regular, become impalpable, and the face became greyish. While nikethamide was being prepared for injection, the heart region was slapped with a cold wet towel. After this slapping had been done twice the heart restarted, the colour improved, and the pulse became palpable and returned to its normal rate within a few seconds. Oxygen was administered by rhythmical compression of the bag and the patient's normal colour was restored immediately. Nikethamide was not required. Oxygen was continued for another five minutes. Recovery of consciousness was slightly retarded. There was a little retching, but no actual vomiting, and the patient was fully awake and dressed 20 minutes after all this had happened. He was kept in and observed for several hours and seen on frequent return visits. There were no after effects except for a slight headache within the first hour. . . .

"A child of 1½ years, coming to operation for inguinal hernia, premedicated with gr. 1½ of phenobarbitone and gr. 1/100 of atropine, was anaesthetised with nitrous oxide, oxygen and trilene, on the closed-circuit CO<sub>2</sub>-absorption unit. A rash appeared during induction, which was so unusual that I sent a messenger to the ward to ask the nurse if any rash was observed when she was washing the patient; she had seen none. The spots were scattered on the abdomen and chest and fairly symmetrical on the front of both thighs. There was no tendency for the spots to run together, as in an ether rash, except slightly on the thighs. It was maculopapular in type, slightly raised, and did not disappear on pressure; the colour was brighter

than that of an ether rash. On deepening the anaesthesia the rash disappeared gradually."

J. C. M.

MUSHIN, W. W.: *A New Circle Type Carbon Dioxide Absorber*. Brit. Anaesth. 18: 97-111 (Jan.) 1943.

"Over two years ago Messrs. Coxett and Son Ltd. showed me an experimental model of a carbon dioxide absorber with ether vaporiser, possessing some interesting features, which were capable of improvement from the anaesthetist's point of view. As a result of our discussion certain essential requirements and other desirable, if not essential, features were agreed. In due course a new design based on this specification was produced and laboratory tests on an experimental model were made. These results were so encouraging that a clinical trial was made which confirmed in use the laboratory results." 2 references.

J. C. M.

AYRE, PHILIP: *The Anaesthetic Record*. Brit. J. Anaesth. 18: 180-184 (July) 1943.

"The present anaesthetic record and operation chart has been designed with strict regard to practical considerations, and represents an attempt to provide the maximum of essential information concerning the patient with the minimum of clerical labour: it is intended for routine use in hospital, including maxillo-facial, thoracic, neurosurgical and other 'special' clinics. It is compact (9½ inches by 8 inches) and contains sections for recording the pre-operative condition of the patient, anaesthetic agents and technique, a four-hour operation chart and a space for recording post-operative progress. . . . When filling in the anaesthetic record, it should be remembered that it is not the duty of the anaesthetist to make a complete clinical record of the

case, and only those pathological conditions directly affecting the anaesthesia need be considered in detail. Broadly speaking, the special points which concern the anaesthetist are as follows: (1) Anatomical conditions obstructing free respiration, e.g. nasal obstruction, adenoids and tonsils, enlargement of the thyroid gland, oedema of the glottis. (2) Heart disease with symptoms of myocardial decompensation, especially when associated with mitral stenosis or aortic incompetence. (3) Reduced vital capacity due to pulmonary disease, e.g. pneumothorax, empyema, bronchiectasis, lung abscess, tuberculosis, emphysema and other lung affections. (4) Conditions interfering with the transport of oxygen by the blood, e.g. anaemia, blood diseases, haemorrhage or shock. (5) Acidosis and ketosis due to starvation, diabetes or nephritis. (6) Alkalosis and dehydration resulting from prolonged vomiting, e.g. acute intestinal obstruction, pyloric stenosis, cerebral tumor. (7) Toxaemia or septicaemia complicating acute surgical conditions, e.g. cellulitis, osteomyelitis, peritonitis. (8) Lowered vitality due to malignant cachexia, chronic sepsis or general debility. (9) Impairment of hepatic or renal function. (10) Injury or disease of the central nervous system." 2 references.

J. C. M. C.

ARROWOOD, J. G.: *General Anesthesia in Dentistry and Oral Surgery*. Am. J. Orthodontics 29: 652-657 (Dec.) 1943.

From the point of view of anaesthesia, procedures of dentistry and oral surgery can be divided into two groups: (1) those of short duration necessitating only analgesia or light anaesthesia, which can be done in office or outpatient clinic; (2) major operations demanding hospitalization and deep anaesthesia.

Many dental procedures performed in the office require analgesia only. Since 1844, nitrous oxide has been used by preference for this purpose. With the use of nitrous oxide, it has to be borne in mind that it is not possible to produce deep surgical anaesthesia and maintain adequate oxygenation at the same time with this agent, and it is a mistake to try to use this gas without the admixture of adequate amount (at least 15 to 20 per cent) of oxygen. Henegan and also Gavel advocated the use of nitrous oxide and oxygen mixtures which contained sufficient oxygen and were still suitable for the performance of very painful preparations. Recently Chapman, Arrowood and Beecher studied the pain threshold lowering effect of nitrous oxide and oxygen mixtures containing 10, 20 or 30 per cent of nitrous oxide respectively. They found that 20 per cent nitrous oxide had approximately the same analgesic effect as 15 mg. of morphine without showing any of the unwanted side effects (nausea, vomiting) of morphine. They also point out that optimal results can be obtained with any given nitrous oxide concentration after ten to fifteen minutes. This time is necessary for the patient to reach a state of saturation.

In cases where surgical depth of anaesthesia is necessary in ambulatory patients, it is imperative to evaluate the physical condition of the patient. This evaluation should consist of careful questioning of the patient, especially with regard to allergic conditions, heart and pulmonary diseases influencing cardiac reserve and vital capacity. Pulse and blood pressure should also be observed. The two agents most commonly used for ambulatory patients requiring surgical anaesthesia are again nitrous oxide and pentothal.

Chapman, Arrowood and Beecher have shown that no patient retained consciousness beyond 75 per cent ni-