erage time of anesthesia was 38 minutes. In the other group, which included hysterectomies, etc., the average dose of pentothal sodium was 1.4 Gm. and the average anesthesia time was seventy-one minutes.

In the obstetric cases there were no untoward fetal or maternal complications. Seven of the infants were drowsy but did not show signs of asphyxia. There were no maternal or fetal deaths. No unusual degree of postoperative bleeding was noticed. Postoperative vomiting and distention were not present in any of the cases. Amnesia of events was marked. No circulatory, pulmonary, or metabolic complications were encountered. Laryngeal spasm occurred in a few cases. Deepening of the anesthesia and adjustment of the airway corrected this difficulty. Coughing and hiccups disappeared after anesthesia was deepened.

Sodium pentothal does not give good relaxation for extensive abdominal procedures but supplementary agents can be used. Intravenous anesthesia is indicated for extremely nervous and apprehensive patients, for patients who are intolerant to pain of local or spinal anesthesia, for those who are fearful of inhalation anesthesia as well as frail, and debilitated patients in whom other methods are contraindicated. Contraindications to pentothal anesthesia include advanced cardiac disease with dyspnea, toxemia and obstruction of the airways. 2 references.

P. A. M.


Differences of opinion have been evident among physiologists, pharmacologists and anesthetists regarding the status of nitrous oxide. At present the opinions seem to favor the contention that nitrous oxide with oxygen in atmospheric proportions will produce light surgical anesthesia. Nitrous oxide and oxygen provide a general anesthetic which is not inflammable nor explosive and which is relatively nontoxic. The use of premedication with narcotic drugs and nerve blocks with local anesthetic drugs increase the usefulness of nitrous oxide. Decision to study the use of curare with nitrous oxide was based on a desire to extend the physiological advantages of nitrous oxide. Observations were made on 160 cases in which nitrous oxide anesthesia was used with curare for relaxation. It was found that, even when curare was administered in sufficiently large doses to produce adequate relaxation, there was evidence of insufficient pain relief. Demerol, given intravenously in doses of 50 to 100 mg., was found to fortify the pain-relieving qualities of nitrous oxide and oxygen with less respiratory depression than that observed following equivalent doses of morphine. Curare should be administered only after complete freedom from the effects of painful stimuli has been guaranteed. One must be prepared to deal with the additive depressant action of demerol and curare on the respiration. The respirations should be supplemented by rhythmic inflation of the lungs. The airway should be perfectly free. Endotracheal intubation is highly desirable.

Underventilation will be noticed more quickly during nitrous oxide anesthesia than during ether or cyclopropane anesthesia. Frequent gas analyses are made to insure 20 per cent oxygen with nitrous oxide. The blood pressure may increase from accumulation of carbon dioxide. The treatment is supplemental ventilation. The blood pressure may also rise from insufficient pain relief. The treatment in this case is supplemental anesthesia. Curare
should be given only after adequate pain relief has been assured. The dose of curare, after nitrous oxide induction and intravenous administration of demerol, may be 80 or 100 mg. to provide relaxation sufficient for intubation. Additional doses of curare may be given as needed. Subsequent amounts range between 40 and 60 mg. of curare. During long operations, four hours or more, it may be necessary to give additional demerol.

The effects of nitrous oxide are almost immediately reversed. Recovery from the depressant effects of intravenous demerol may require one-half hour. The cough reflex may return in an additional hour or an hour and a half. The effect of curare lasts approximately one-half hour after its intravenous injection. There is a certain amount of cumulative effect from repeated doses of demerol and also from repeated doses of curare. The safety of the method depends on the ability of the anesthetist to apply his physiological knowledge to a clinical procedure.

P. A. M.

ANDISON, A. W.: Caesarean Section.

A series of 158 cases in which cesarean sections were performed form the basis for the comments of the author. Anesthesia in 68 of the cases was ether following induction with ethyl chloride or chloroform. Ether is not the best anesthetic but is often the only one available. Ether makes for poor retraction of the uterine muscle following delivery by cesarean section so that there is often very free bleeding. Spinal anesthesia was used in only five cases. There is good uterine retraction and little postpartum hemorrhage with spinal anesthesia. Sixty-four cases were done with infiltration anesthesia. Novocaine 0.5 per cent was used and between 250 and 300 cc. was

the amount usually required. The uterine retraction was excellent and the placenta separates without delay. The fetus usually cries as soon as the head is delivered. The postoperative course is without complications due to the anesthetic. Local anesthesia is especially useful for patients with cardiae disease, diabetes or eclampsia.

Local anesthesia is not suitable for all patients. When an additional intra-abdominal operation is contemplated, or when the patient is apprehensive, some other form of anesthesia may be considered. Medication with morphine gr. ½, omnopon gr. ½ or demerol with scopolamine may be given as the operation is commenced.

Eighteen cases of cesarean section were done under cyclopropane anesthesia. There were some occasions when the fetus seemed to be adversely affected. In one case the fetus was stillborn. Pituitrin shock appears to be accentuated when it occurs under cyclopropane anesthesia and may cause a fatality. One should use pitocin or preferably ergometrine, as an oxytocic agent when using this anesthetic agent.

F. A. M.

WAINWRIGHT, G. A. F.: Recent Advances in Pentothal Anaesthesia.

Since its introduction in 1934, pentothal sodium has attained increasing acceptance by the surgeon and the anesthetist. Until recently it was generally considered that the transition from one stage to another was too rapid and the signs too inconsistent to classify the various planes and stages of pentothal anesthesia. Since weaker solutions of the drug are being used it has become evident that there are definite stages of pentothal anesthesia comparable to the stages of ether and other volatile anesthetics. Pentothal has been given by rectum as a basal anesthetic. There