From (1) and (3)

$$V_{GA} - (\lambda_{OA} \times V_A) = V_{ICO_2} + V_{IO_2}$$

Dividing both sides by V_{GI} to convert to fractional concentration:

$$\therefore \quad F_{ICO_2} + F_{IO_2} = \frac{V_{GA} - (\lambda_{OA} \times V_A)}{V_{GI}} \qquad (5)$$

B. *Exposure to Carbon Dioxide Absorber*

$$V_{GA} = V_{ACO_2} + V_{AN_2O}$$
$$= V_{ICO_2} + \lambda_{CA} \cdot V_A \cdot F_{FN_2O}$$
$$= V_{ICO_2} + \lambda_{CA} \cdot V_A \frac{(V_{GF} - V_{IO_2})}{V_{GF}}$$

Multiplying both sides by V_{GF}, rearranging, and converting to fractional concentration gives:

$$V_{GF} \cdot F_{ICO_2} - \lambda_{CA} \cdot V_A F_{IO_2} = \frac{V_{GF}(V_{GA} - \lambda_{CA} V_A)}{V_{GI}} \qquad (6)$$

Equation (4) gives the fractional concentration of N_2O directly. Equations (5) and (6) enable calculation of F_{O_2}, and F_{CO_2}. Equation (6) assumes no solution of oxygen in the reagent. As long as the sample contains less than 50 per cent oxygen this assumption results in no appreciable error. If more than 50 per cent oxygen is present, the CO_2 absorber should be equilibrated with oxygen before use, as suggested by Scholander in the original method.

Surgery

POSTOPERATIVE HEPATITIS Fifteen patients are reported who developed postoperative hepatitis after receiving halothane anesthesia. Nine of these had multiple administrations of the agent; eight of these cases became jaundiced within 8 days of the last surgical procedure. In the reported cases transfusion was essentially ruled out as a causal agent as were other possible hepatotoxic medications. Two of the patients had pre-existing liver disease; none gave historic evidence of recent exposure to infectious hepatitis. The evidence of these cases is suggestive but not conclusive that hepatotoxicity is more frequent after multiple exposures to halothane and in those patients with a history of previous liver disease. *(Mendel, E., and Trostel, R.: Hepatitis following Halothane Anesthesia, Pacific Med. 75: 28 (Jan.) 1967.)*

STERILIZATION OF APPARATUS The use of anesthesia equipment results in contamination of that equipment in as high as 80 per cent of the items employed. (No protection is offered by the soda-lime cannister on anesthesia machines, although this has been reported.) Adverse reactions to potent germicidal agents applied to apparatus have long since been reported and have eliminated otherwise satisfactory methods of sterilization. No difficulty of this sort was experienced with buffered glutaraldehyde which was found to be superior to hexachlorophene and a 70 per cent alcohol soak. The sterilizing action of ethylene-oxide gas has been reported and its application to decontamination of anesthesia apparatus has been suggested. Because of the various requirements of processing, especially the time element and the bulkiness of quite large amounts of rubber articles, it often is not feasible to adopt this method. A carefully documented relationship between contaminated anesthesia apparatus and the incidence of postoperative infections should be studied further. In the interim, decontamination by use of buffered glutaraldehyde is superior to many presently used techniques. *(Meeks, C. H., and others: Sterilization of Anesthesia Apparatus, J.A.M.A. 199: 276 (Jan.) 1967.)*