is greater than is realizable, and erroneous assumptions about the Hb–HbO_2 relationships and dissociation curve. Precisely which of these is involved is not clear to me at this time, and the suggestion of Prys-Roberts and ourselves to use a value for F less than 1.39 represents merely an empirical solution to the problem.

Hopefully, this interchange will provoke the interest of our physical chemist friends, who will, I believe, find this to be a challenging problem. Finally, I can only admire Dr. Van Slyke, who assiduously avoided the entire problem by labeling the method for determination of the chemically combined component "O_2 Capacity Method" and leaving for the individual the hazard of deriving Hb or F or HbO_2 from his findings.[6]

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Instrumentation in Operating Rooms

To the Editor:—The device described by Lomanto and Leeming ("A Safety Signal for Detection of Excessive Anesthetic Gas Flows," ANESTHESIOLOGY 33:663, 1970) is another example of unneeded instrumentation. Instruments can and often do not work. And, a very simple test is available to detect this problem. An anesthesiologist should breathe through the anesthetic circuit before applying it to a patient *every time* anesthesia is given. In addition to detection of the presence of anesthetic agents, valves can be checked for competence and leaks can be detected. This is an essential step in setting up.

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To the Editor:—It appears that Dr. Calmes does not understand the purpose for which the safety signal is designed. I agree that in recent times there has been a great clamor for more and more instruments in the operating room, and that the demand may be greater than the actual need. Monitors, however, should be used when indicated.

Dr. Calmes suggests that the anesthesiologist breathe through the anesthetic circuit to test for leaks and competency of valves before applying it to the patient. I disagree. This would constitute a breach of sterile technique, because in our institution all anesthetic equipment employed, from the patient to the soda lime canister, is gas-sterilized. One need not breathe through the circuit to test for leaks and competency of valves. This can be accomplished by merely occluding the Y connector and simultaneously squeezing the reservoir bag with the pop-off valve closed.

There has been much discussion about the anesthesiologist's educated hand. I am now informed that the anesthesiologist also has an educated nose. Admittedly, those gases with characteristic odors are readily detected. However, nitrous oxide, which is virtually odorless, would be extremely difficult to smell, and if it were flowing in quantities in excess of 80 per cent the sniffer would be flirting with danger. This practice is foolhardy and unnecessary, be-

cause we have at our disposal instruments which can measure these concentrations with greater accuracy. I recall an anesthesiologist who routinely sniffed the anesthetic mixture to determine whether the vaporizer were functioning and whether the strength of the odor agreed with the dial setting on the vaporizer. One day, prior to administering the anesthetic, he sniffed the gas, became lightheaded, and slipped to the floor in a stupor.

In an academic atmosphere, where residents and nurses are trained to administer anesthetics, a device or monitor which can diminish or eliminate hazards becomes a desirable piece of equipment.

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Obstetrics and Pediatrics

RESPIRATORY DISTRESS SYNDROME Two groups of investigators, one from the Montreal Children's Hospital and the other from the Toronto Sick Children's Hospital, reported separately on the use of intermittent negative-pressure ventilation (INPV) in the treatment of newborns who had respiratory distress syndrome. Each infant was placed in a tank-type respirator with the head outside and an airtight seal at the neck. The tank was capable of producing as much as 60 cm H_2O negative pressure. Criteria for inclusion in the Montreal study were: Pa_{O_2} less than 40 to 50 mm Hg breathing pure oxygen; Pa_{CO_2} greater than 70 to 75 mm Hg; and *p*H less than 7.1 to 7.2; and, in the Toronto study, central cyanosis or Pa_{O_2} less than 50 mm Hg after 15 minutes of breathing pure oxygen. Infants were supplied with warm humidified oxygen around the head while INPV was in progress. Endotracheal intubation was done in some of the patients in the Toronto study, while none of the patients in the Montreal study had tracheal tubes. Survival rates were 51.6 per cent in the Montreal study and 38 per cent in the Toronto study. Corresponding survival rates of infants on IPPB and bicarbonate were 4.5 per cent and less than 10 per cent, respectively. Although the infants received pure oxygen for prolonged periods, there were no clinical or histologic manifestations of oxygen toxicity. In the Montreal study, correction of Pa_{O_2}, *p*H, and Pa_{CO_2} required averages of 10.5, 11.6, and 22.6 hours, respectively. It was concluded that INPV was more efficient and accompanied by fewer complications than IPPB for the treatment of respiratory distress syndrome. (*Stern, L., and others: Negative Pressure Artificial Respiration: Use in Treatment of Respiratory Failure of the Newborn, Canad. Med. Ass. J. 102: 595 (March) 1970, and Linsao, L. S., and others: Negative Pressure Artificial Respiration: Use in Treatment of Respiratory Distress Syndrome of the Newborn, Canad. Med. Ass. J. 102: 602 (March) 1970.*) ABSTRACTER'S COMMENT: Management of cases of respiratory distress syndrome with intermittent negative-pressure ventilation, as reported by these two groups of authors, presents several intriguing points. There is no doubt that the survival rates reported are impressive for a disease that has notoriously defied attempts to control it. The absence of clinical and histologic manifestations of oxygen toxicity despite the prolonged use of pure oxygen is also interesting. The success of INPV where IPPB failed is somewhat perplexing in view of the similarities in the magnitude and direction of pressure gradients produced by the two systems. Finally, these two papers underscore the importance of meticulous and dedicated care by physicians and nurses, and the magnitude of the supportive facilities required for such an undertaking.