children. Butyrolactone (66 mg./kg.) produced an equivalent effect, but appeared to be somewhat more rapid in onset of action. In a double-blind study, butyrolactone (66 mg./kg.) caused profound sleep in 34 per cent of children, compared with 17 per cent of children receiving chloral hydrate (44 mg./kg.). Moderate drowsiness, on the other hand, was more frequently seen after chloral hydrate and other standard hypnotics than after butyrolactone or 4-hydroxybutyrate. Respiratory depression and prolonged postoperative sleep were rare. Emergence delirium and postoperative restless were no more common than after other hypnotic drugs. Parasympathetic stimulation, in the form of salivary secretions and bradycardia, was more often evident during cyclopropane anesthesia after 4-hydroxybutyrate and butyrolactone than after other drugs used for premedication. With ether and halothane, however, significant disturbances of this type did not occur. Emetesis was fairly common in the period between 15 minutes and 60 minutes after administration (butyrolactone 19 per cent, 4-hydroxybutyrate 10 per cent). This usually occurred as marked drowsiness first became evident. Subsequent emesis during the anesthesia period may have been somewhat more frequent and profuse after the oral premedication, but not to a degree sufficient to cause clinical concern, especially when halothane was the anesthetic agent used. Measured gastric contents were increased by these medications in an amount approximating that of the ingested material.

Conclusion: These compounds are potent hypnotics whose place in anesthesia will depend on the results of further clinical experience. They differ from the standard hypnotics in their ability to produce a profound effect of short duration and in the relative infrequency of a sluggish mental state in those children capable of being aroused by movement to the operating room.

Serum Cholinesterase Activity During Pregnancy, Labor, and the Puerperium. SOL M. SHNIDER, M.D., Assistant Professor of Anesthesiology, Department of Anesthesia, University of California, San Francisco Medical Center, San Francisco. Succinylcholine, a drug hydrolyzed by serum cholinesterase, is frequently used in obstetrical anesthesia. Prolonged muscular paralysis occurred in a healthy multiparous patient following the use of 400 mg. of succinylcholine during elective cesarean section. Serum cholinesterase activity was 32 units one day, 25 units three days, and 61 units six weeks postpartum. (Normal, 55 to 100 units.) The Dibucaine Number was normal; liver function studies performed two weeks postpartum disclosed a normal liver profile with an abnormally low cholinesterase activity (38 units). The following study was undertaken because previous studies of serum cholinesterase activity during pregnancy, labor and the puerperium have disclosed widely conflicting data. Methods: In each of 30 healthy obstetrical patients, determinations of serum cholinesterase were performed during labor, one day and three days postpartum. In addition, 10 of these patients were studied late in pregnancy and six weeks postpartum. Cholinesterase activity was determined by a spectrophotometric procedure which measures the change in pH of a buffered acetylcholine substrate with the use of phenol red as indicator. Results: Compared to their values in non-pregnant periods, there was a 28 per cent reduction of enzyme activity during late pregnancy, a 16 per cent decrease during labor, a 25 per cent fall one day postpartum and a 32 per cent decrease three days postpartum. Compared to their values during labor, over 90 per cent of the patients showed a decrease in cholinesterase activity three days postpartum. Abnormally low cholinesterase values (below 55 units/ml.) were found in 10 per cent of the patients in late pregnancy and during labor, 20 per cent of the patients one day postpartum and in 60 per cent of the patients two days later. Conclusions: These findings suggest that succinylcholine may be more slowly metabolized during pregnancy, labor and particularly in the immediate postpartum period and may on occasion result in prolonged paralysis.

Investigations into the Teratogenic Effects of Anesthetic Agents: The Fluorinated Agents. BRADLEY E. SMITH, M.D., MARGARET L. GAUB, M.D., and FRANK MOYÁ, M.D., Department of Anesthesiology, University of Miami School of Medicine, Miami,