it is absolutely imperative that a good filter be used in the final administration set. . . . If the refrigerator is operating, the plasma may be refrozen immediately, or thawing may be allowed to continue at 37° C. and the plasma stored as liquid plasma from that time on, or it may be then refrozen. In any event, much of the prothrombin and complement will be lost, and this advantage of preservation in the frozen state will therefore no longer exist. . . .

"The standard Army-Navy package of dried plasma can survive a wider range of temperature variation without denaturing or precipitating protein than can any of the other blood derivatives or forms of preservation. The package should not be permitted to freeze, nor should it be permitted to stand for any length of time above 55° C. . . . Every medical officer who is expected to use plasma should familiarize himself with the directions of the restoration and administration of the standard Army-Navy package of dried plasma and follow them explicitly. . . . The Subcommittee on Blood Substitutes of the National Research Council has recently recommended, and the Division of Biologics Control of the National Institute of Health has approved, the substitution of 0.1 per cent citric acid for the 0.1 per cent sodium chloride in the pyrogen-free distilled water used at present to restore dried plasma. . . . A review of the results obtained from the plasma prepared at the Naval Medical School, and of the entire literature, has led us to the conclusion that the dangers from properly prepared pooled human plasma are practically nil. . . . The experience in this war with the use of blood derivatives in the prevention and treatment of shock due to trauma or burns has confirmed, beyond all question, the wisdom of administering an adequate amount early, preferably before the onset of symptoms of shock. . . . Five hundred to 1000 cc. of plasma or 25 to 50 gm. of albumin is an advisable initial dose following a severe injury or burn. . . . In burns, a rough but useful rule for estimating the first day's dosage is to administer 100 cc. of plasma for each 1 per cent of the body surface burned, up to a maximum of 4000 or 5000 cc. Estimation of the area involved should be by Berkow's chart. . . . The use of whole-blood transfusions supplementing plasma or albumin may be of extreme importance in determining the prognosis of a wounded patient. The need for red cells may be masked initially by hemoconcentration. In burns, moderate anemia is prone to develop and is affected apparently only by blood transfusions. The rate of administration of these derivatives should not exceed 10 cc. per minute for plasma or 5 cc. per minute for albumin unless clinical shock is present. In that eventuality it may be advisable to administer the material with double this speed. . . . In all medical establishments that prepare rubber tubing and glassware for drawing blood and administering blood, plasma, albumin or other solutions, the personnel detailed to such preparation should be thoroughly conversant with the so-called 'pyrogen-free' technic. Unless such technic has been scrupulously followed, it is impossible to evaluate properly untoward reactions following intravenous infusions." 12 references.

J. C. M. C.

POWELL, C. E.; LEE, H. M., AND SWANSON, E. E.: *Barbituric Acid Derivatives: Relationship Between Action on Smooth Muscle and Frog's Heart, and Chemical Structure.* J. Am. Pharm. A., Scient. Ed. **32**: 128–133 (May) 1943.

"In a previous communication, it was observed that there is an obvious relationship between the pharmacological action and the chemical struc-

ture of certain barbituric acid derivatives. . . . The present investigation is a study of a series of 5,5-substituted barbituric and thiobarbituric acids. . . . These barbituric acid derivatives were tested on the isolated rabbit's intestine, isolated guinea pig's uterus and perfused frog's heart. . . . As the number of C atoms increased in the substituted alkyl chain, the inhibition or sedative action increased on the isolated intestine of rabbits and frogs and the isolated uterus of guinea pigs. The same degree of depression was observed in the perfused frog's heart. Sodium 1,3-dimethyl-butyl-ethyl barbiturate, a convulsant when injected in warm-blooded animals and a depressant to cold-blooded animals, produced stimulation or contraction on the isolated intestinal strips of rabbits, but depressed the isolated frog's intestine and perfused frog's heart." 13 references.

J. C. M. C.

SEEBERG, V. P., AND DILLE, J. M.: *The Comparative Rate of Gastrointestinal Absorption of Barbital, Sodium Barbital and Elixir of Barbital N.F. VII.* J. Am. Pharm. A., Scient. Ed. **32**: 133–137 (May) 1943.

"Barbiturates are generally administered orally in the form of tablets, capsules or elixirs using either the acid form of the barbiturate or the sodium salt. Absorption from the gastrointestinal tract is generally considered to be satisfactory, but differences in the rate of absorption are to be expected between different pharmaceutical preparations. . . . The preparation being studied was administered orally to a 24-hour starved cat. A period of one-half hour was allowed to elapse after administration during which the onset and degree of depression were noted. At the end of this period the cat was killed by exsanguination. The blood and the contents of the stomach, intestine and colon were assayed separately for barbital. Comparison of these values indicates the rate of absorption. . . .

"Tablets of sodium barbital administered after crushing are absorbed more rapidly from the gastrointestinal tract of 24-hour starved cats than crushed tablets of barbital or barbital administered in the form of the Elixir of Barbital N.F. VII. Crushed tablets of barbital are absorbed at about the same rate as the elixir. After oral administration only small amounts of the drug reach the colon indicating that absorption takes place mainly in the small intestine. Absorption of isotonic solutions from the ligated intestine is about the same for barbital and sodium barbital provided that both are in solution. Absorption of barbital after administration of the Elixir of Barbital N.F. VII is much slower than was expected. While depression was greater than the blood level of barbital would indicate, this can be explained by the presence of alcohol in the elixir. The delayed absorption of the barbital in the elixir probably occurs because the glycerin present delays the passage of the elixir into the intestine from the stomach." 6 references.

J. C. M. C.

SEEBERG, V. P.: *A Rapidly Absorbed Elixir of Sodium Barbital.* J. Am. Pharm. A., Scient. Ed. **32**: 137–138 (May) 1943.

"A new elixir of sodium barbital containing no glycerin was found to be absorbed rapidly from the gastrointestinal tract of cats and therefore possesses advantages over the glycerin-containing elixir of barbital." 3 references.

J. C. M. C.

SAKLAD, MEYER; SAKLAD, ELIHU, AND SELLMAN, PRISCILLA: *Inhalation Therapy.* Rhode Island M. J. **26**: 65–68 (May). 1943.

"The first and most important indication for inhalation therapy is in con-