evidence of irritation or allergic reaction for a treatment period which varied from 4 to 11 months. In order to make certain that these were not temporary remissions, one year was permitted to elapse before the clinical report was made, the first patient having healed by February 1945 and the last by November 1945.

It is hoped that this preliminary communication will stimulate further exploration of the treatment of tuberculous lesions with glycerol peroxide solutions.

References

1. Brown, E. A., Abramson, H. A., Gorin, M., Kauffmann, H. O., and Shanley, E. C. *J. Amer. pharm. Ass.*, 1946, **35**, 304.
2. Brown, E. A., Krabek, W., and Skiffington, Rita. *New Engl. med. J.*, 1946, **234**, 468.
3. Brown, E. A., Krabek, W., and Skiffington, Rita. Unpublished data.
4. Slanetz, L. W., and Brown, E. A. *J. dent. Res.*, 1946, **25**, 223.

Depletion of Vitamin A Reserves in the Livers of Cattle

Paul R. Frey and Rue Jensen

Departments of Chemistry and *Veterinary Pathology and Bacteriology, Colorado Agricultural Experiment Station, Fort Collins*

In a recent publication (*2*) the writers reported on the depletion of vitamin A reserves in the livers of steers while in the feed lot. One-hundred twenty Hereford steers, about 18 months of age, were taken from native grass pasture and placed on a fattening ration consistent with good feeding practice. Table 1 gives the slaughtering data and the average vitamin A content of the livers. Vitamin A was determined by the method of Davies (*1*).

TABLE 1

Days in the feed lot	No. of animals slaughtered	Vitamin A reserves (μg. vitamin A/gram liver)
0	22	51.4
41	19	23.7
76	20	11.9
119	19	5.3
166	40	1.9

A relationship in the above data has recently been pointed out by Norris Embree, of Distillation Products, Inc. It was mentioned (*2*) that the curve obtained by plotting the data in Table 1 shows a decreasing rate of loss of vitamin A reserves throughout the experimental period. Dr. Embree cited an article by K. C. D. Hickman (*3*), also of Distillation Products, Inc., which appeared while the above publication was in press and in which Dr. Hickman proposed the hypothesis that the rate of depletion of the body reserves of a vitamin are directly proportional to the total reserves of that particular vitamin in the body. Further, when an animal is subjected to vitamin therapy, it should be possible to calculate a period of half adjustment.

To determine the validity of Dr. Hickman's hypothesis, the data in Table 1 were subjected to analysis. Vitamin A reserves were plotted against days in the feed lot and vitamin A values determined at intervals of 40 days. Table 2 gives the values obtained.

TABLE 2

Days in the feed lot	Vitamin A reserves (μg. vitamin A/gram liver)	Drop in 40 days (%)
0	51.4	—
40	24.2	47
80	11.1	46
120	5.2	47
160	2.2	42

It will be observed that the percentage drop in vitamin A reserve in the liver at the end of each 40-day period is practically constant. This supports Dr. Hickman's hypothesis as regards the rate of depletion of body reserves of a vitamin.

References

1. Davies, A. W. *Biochem. J.*, 1933, **27**, 1770.
2. Frey, P. R., and Jensen, R. *J. Nutrition*, 1946, **32**, 133.
3. Hickman, K. C. D. *Interne*, April 1946, p. 278.

Thromboplastic Properties of Penicillin and Streptomycin

David I. Macht[1]

Department of Pharmacology, Laboratories of the Sinai Hospital, Baltimore, Maryland

Moldavsky, Hasselbrook, and Cateno (*6*) have described some interesting findings with the blood of patients receiving parenteral injections of penicillin. In a series of human subjects studies on the clotting of blood before and after administration of penicillin revealed that the clotting time was much shorter after injections of the antibiotic than the normal clotting time was before injection. In connection with a study of blood in hemophilia the present writer and Dr. Marcus Ostro repeated the above observations on normal clinical subjects and confirmed the findings made by Moldavsky and his associates, but, curiously enough, when injections of penicillin were given to two patients suffering from hemophilia, no shortening of coagulation time was produced by the drug (*5*).

Inasmuch as it has been discovered experimentally on animals and confirmed by clinical observations that drugs belonging to the digitaloid group show a definite tendency to promote coagulation of blood (*2*, *3*), and inasmuch as more recently certain widely employed mercurial diuretics have also been found to produce such a thromboplastic effect leading occasionally to fatal thrombotic accidents (*4*), an extensive investigation was undertaken to ascertain the frequency and degree of the thromboplastic effects of penicillin on the blood of higher animals. For this purpose not only the ordinary

[1] Grateful acknowledgment is made to the Commercial Solvents Corporation and its medical director, Dr. Lawrence Smith, for valuable aid in carrying out this research.