- (8) U. S. P. XI (1936), page 474.
- (9) Woodman, A. G., "Food Analysis," 3rd Edition (1931), page 281.
- (10) Ritter, G. J., and Mitchell, R. L., "Modified Cross and Bevan Method for Determining Cellulose in Wood" (U. S. Forest Products Laboratory, Madison, Wisconsin, 1934).
- (11) Kamm, O., "Qualitative Organic Analysis" (1936), page 134.
- (12) Dickson, A. D., Otterson, H., and Link, K. P., J. Am. Chem. Soc., 52 (1930), 775.
  - (13) U. S. P. XI (1936), page 474.
- (14) Trease, G. E., "A Textbook of Pharmacognosy" (1935), pages 110 and 210; Gathercoal, E. N., and Wirth, E. A., "A Textbook of Pharmacognosy" (1936), pages 146–147.
- (15) Smith, A. C., and Jordan, C. B., U. S. P Subcommittee Bulletin (unpublished).
- (16) Carre, M. H., and Haynes, D., *Biochem. J.*, 16 (1922), 60.
- (17) Carre, M. H., and Horne, A. S., Ann. Bot. 41 (1927), 193.
- (18) Davison, F. F., and Williman, J. J., *Bot. Gaz.*, 83 (1927), 348.
- (19) MacKee, G. M., "X-ray and Radium in the Treatment of Diseases of the Skin," 3rd Edition (1938), page 320.
- (20) Norman, A. G., "The Biochemistry of Cellulose, Polyuronides Lignin, etc.," 1st Edition (1937), pages 121–150.
  - (21) Personal communication from K. P. Link.
- (22) Morrow, C. A., and Sandstrom, W. M., "Biochemical Laboratory Methods" (1935), pages 107-113.
- (23) Bodansky, M., and Fay, M., "Laboratory Manual of Physiological Chemistry," 2nd Edition (1931), pages 52-62.
- (24) Woodman, A. G., "Food Analysis," 3rd Edition (1931), pages 287-289.
- (25) Moore, S., and Link, K. P., J. Biol. Chem., 133 (1940), 293.

## Book Review

Laboratory Instruction in Biochemistry, by ISRAEL S. KLEINER and LOUIS B. DOTTI. 188 pages.  $7^3/_4$  x  $10^1/_2$  (loose leaf). 1940. St. Louis: C. V. Mosby Co. \$1.50.

This is a collection of laboratory experiments in elementary biochemistry on individual punched sheets which can be included in a laboratory notebook. The collection is intended for medical students and includes simple directions for elementary experiments in the biochemistry of carbohydrates, fats, proteins, milk, blood, urine, metabolism, food, etc. While intended primarily for medical students, it should also be of interest to pharmacy teachers and students.—A. G. D.

## Further Observations on the Use of Aloe vera Leaf in the Treatment of Third Degree X-Ray Reactions\*

By Tom D. Rowet, B. K. Lovell‡ and Lloyd M. Parks\*\*

In 1940 one of us (T. D. R.) published a preliminary report on the use of fresh Aloe vera jell in the treatment of third degree xray reactions on white rats (1). Attention was called at that time to the modern use of this leaf in the treatment of such reactions in humans. It should also be pointed out that various species of Aloe have been employed for centuries to promote the healing of wounds and fire burns. Thus, Turner in 1568 (2) cited the use of "the herbe Aloe is to hele wounds," and Coxe in 1818 (3) referred to the use of powdered aloe "to check heamorrhagies in recent wounds." Various other references have from time to time mentioned aloe, either fresh or dry, as a healing agent. The present report deals with further observations on the use of the fresh jell, or pulp, of the leaf, as well as other portions of the leaf, in the treatment of experimentally produced third degree X-ray reactions on the skin of white rats.

The procedure followed in producing the X-ray reactions and the method of treatment in the present report are essentially the same as those described in the first report, with the following differences: rats were given a single dose of 4000 r instead of in divided doses since it was found that a single dose at this level was not toxic; ether was used for anesthesia in place of pentobarbital; control areas received no treatment of any

Supported in part by a grant from the American Pharmaceutical Association.

Presented to the Scientific Section of the A. Ph. A., Detroit meeting, 1941.

- † Associate Professor of Pharmacy, Medical College of Virginia.
- \*\* Assistant Professor of Pharmacy, University of Wisconsin.

<sup>\*</sup> Based on a portion of a thesis submitted to the Faculty of the University of Wisconsin in partial fulfilment of the requirements for the degree of Doctor of Philosophy by Tom D. Rowe.