

decaffeination processes. It is recommended* that another collaborative study be made, particularly of the conditions to be used in the digestion, and that the micro Bailey-Andrew procedure be adopted as first action.

Acknowledgments

The Associate Referee is grateful for the co-operation of the following collaborators: Robert H. Dick, Food and Drug Administration, New York 14, N.Y.

Gordon W. Fuller, Department of National Health and Welfare, Ottawa, Ontario, Canada

Jean A. Gaul, Food and Drug Administration, New Orleans 16, La.

Lawrence Kogan, Fleischmann Laboratories, Standard Brands Inc., Stamford, Conn.

Avanelle B. Oberlin, Nestle-Company, Marysville, Ohio

Katherine G. Sloman and James A. Yeransian, General Foods Research Center, Tarrytown, N.Y.

John B. Wilson, Food and Drug Administration, Washington 25, D.C.

REFERENCES

- (1) Bradstreet, R. B., *Chem. Rev.*, 27, 331 (1940).
- (2) Belcher, R., and Godbert, A. L., *J. Soc. Chem. Ind.*, 60, 196 (1941).
- (3) Borker, E., and Yeransian, J. A., *This Journal*, 40, 346 (1957).
- (4) Davis, H. A., and Miles, S. R., *ibid.*, 39, 550 (1956).
- (5) Ishler, N. H., Finucane, T. P., and Borker, E., *Anal. Chem.*, 20, 1162 (1948).
- (6) Ogg, C. L., Brand, R. W., and Willits, C. O., *This Journal*, 31, 663 (1948).
- (7) Quackenbush, F. W., *et al.*, *ibid.*, 38, 56 (1955).
- (8) Shirley, R. L., and Becker, W. W., *Ind. Eng. Chem., Anal. Ed.*, 17, 437 (1945).
- (9) Willits, C. O., Coe, M. R., and Ogg, C. L., *This Journal*, 32, 118 (1949).

* For report of Subcommittee C and action of the Association, see *This Journal*, 42, 20 (1959).

Report on Tobacco

By C. L. OGG, *Referee* (Eastern Regional Research Laboratory,* Philadelphia 18, Pa.)

During the year two studies were conducted on methods for analysis of tobacco. In the first study, the A.O.A.C. Kjeldahl method for total nitrogen (2.21-2.24) with appropriate directions as to sample weight, amount of acid, and digestion time was compared in each collaborator's laboratory with the method he had been using. In the second study, three methods for determining total alkaloids as nicotine were compared. These were the Cundiff-Markunas non-aqueous titration procedure, a distillation-spectrophotometric method devised by Griffith in which a specially designed, unitized apparatus is used, and a modification of the A.O.A.C. procedure based on a previous collaborative study made by Willits, *et al.*, for the Tobacco Chemists Conference. The

collaborators who wished also used the method normally employed in their laboratory. An evaluation was made of the Cundiff-Markunas procedure for determining nicotine and nornicotine in tobacco.

From these studies the following recommendations† are made:

- (1) That the Kjeldahl procedure for nitrogen tested this year be adopted as first action.
- (2) That further studies be made on the determination of total alkaloids, nicotine, and nornicotine by the Cundiff-Markunas procedure.
- (3) That other studies on methods of analysis of tobacco be initiated in cooperation with the Analytical Methods Committee of the Tobacco Chemists Conference.

* Eastern Utilization Research and Development Division, Agricultural Research Service, U. S. Department of Agriculture.

† For report of Subcommittee A and action of the Association, see *This Journal*, 42, 18 (1959).