

## TOBACCO

## Report on Tobacco\*

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One study was completed during the year while two others were started and are still in progress. The preliminary study on methods for determining petroleum ether extractables in tobacco was completed. The results showed that the interlaboratory precision for one method was superior to that of the other method tested. The need for a more detailed study and re-evaluation of the better method also was indicated and this work is now underway.

The second study in progress is concerned with the analysis of cigarette smoke and is designed to compare two types of smoke traps using four types of cigarettes. Constituents being determined are nicotine, water,

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and total particulate matter. Unavoidable delays have prevented this work from being concluded in time for a full report; however, the preliminary study should be completed in 1960 with a followup study, if needed, during the coming year.

It is recommended<sup>1</sup>—

(1) That the study on petroleum ether extractives be continued.

(2) That studies on the determination of nicotine, total particulate matter, and moisture in cigarette smoke be continued.

(3) That studies on the Cundiff-Markunas method for alkaloids in tobacco be continued.

(4) That other studies be conducted in cooperation with the Analytical Methods Committee of the Tobacco Chemists Conference.

<sup>1</sup> These recommendations were approved by Subcommittee A and accepted by the Association. See *This Journal*, 44, 63 (1961).

## A Rapid Determination of True Tobacco Density\*

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The "true" density of materials having irregular particulate shapes and irregular interparticle void spaces has long been of concern to many industries, and especially to the tobacco industry.

Work was undertaken to design and evaluate an instrument for the rapid determination of "true" particle density. Previous investigation of the "apparent" density of tobacco by Darkis, *et al.* (1) employed a

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modification of the pycnometer method of Tschapek (5) that involved various organic liquids for measuring the "apparent" volume of tobacco, thereby allowing the calculation of "apparent" density. "Apparent" density may be defined as the density of a material under conditions of measurement whereby interparticle void space is, at least in part, measured as particle volume. It was thought, however, that the effect of interparticle void space upon the density of tobacco had not been adequately determined Smith (3), Waterman and Wolfs (6), and