

Reprinted from
Journal of the Association of Official Agricultural Chemists 37, 304
May, 1954

REPORT ON ANALYSIS OF HONEY

By JONATHAN W. WHITE, JR. (Eastern Utilization Research Branch,*
Philadelphia 18, Pa.), *Associate Referee*

No collaborative work on honey has been carried out within the past year. However, the following work of the Associate Referee has application to honey analysis and is therefore briefly mentioned.

A recent paper from this laboratory (1) described a comparison of five methods for the determination of levulose and dextrose in honey, including two described in *Official Methods of Analysis* of the A.O.A.C. These were applied to fourteen floral types of honey. It was concluded that "variance due to methods was as great as that due to differences in dextrose and levulose content of the samples from fourteen different floral sources." Among the possible reasons for this situation is that an oversimplified view of the carbohydrate composition of honey is generally taken.

A method, which will be described later, has been developed for carbohydrate analysis of honey which gives a somewhat more realistic idea of its composition. With the use of carbon column adsorption (2, 3) as a pretreatment, three solutions are obtained for analysis, containing monosaccharides, disaccharides, and higher sugars, respectively. These solutions are analyzed by modifications of existing methods. Interference by disaccharides and other sugars in the determination of dextrose and levulose has been eliminated, with resulting increase in accuracy. Analysis of the disaccharide fraction shows that reducing disaccharides are a general component of honey, as suggested by Hurd, *et al.* (4). The procedure has been applied to 22 floral types of honey, some of which have also been analyzed by other methods.

It is recommended† that the analytical method referred to above, using carbon column pretreatment, be tested collaboratively.

REFERENCES

- (1) WHITE, J. W., JR., RICCIUTI, C., and MAHER, J., *This Journal*, **35**, 859 (1952).
- (2) WHISTLER, R. L., and DURSO, D. F., *J. Am. Chem. Soc.*, **72**, 677 (1950).
- (3) McDONALD, E. J., and PERRY, R. E., JR., *J. Research Nat. Bur. Standards*, **47**, 363 (1951) (R. P. 2263).
- (4) HURD, C. D., ENGLIS, D. T., BONNER, W. A., and ROGERS, M. A., *J. Am. Chem. Soc.*, **66**, 2015 (1944).

* One of the laboratories of the Bureau of Agricultural and Industrial Chemistry, Agricultural Research Administration, United States Department of Agriculture.

† For report of Subcommittee D and action of the Association, see *This Journal*, **37**, 80 (1954).