These symposia were held during the annual meetings of the Soil Science Society of America, Crop Science Society of America, and American Society of Agronomy at Kansas City, Mo., Nov. 15-19, 1964, and at Columbus, Ohio, Oct. 31-Nov. 5, 1965.

PROGRAM AND EDITORIAL COMMITTEE

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FOREWORD

This special publication is our Society's first venture into the immensely useful field of plant analysis as a diagnostic tool and as a guide to fertilizer practice. The classic soil scientist may say that the devotees to this art and science are men who ignore the soil -- men who choose a shortcut to practice and understanding. Partially true -- partially false.

Plant analysis does offer a reliable guide to the nutrition and feeding of some kinds of plants such as trees that seem to ignore many of the chemical characteristics of the soil. Many soil scientists, on the other hand, have used plant analysis as a supplement -- or a complement -- to their soil tests using both kinds of information to improve their fertilizer recommendations and to achieve near maximum yields for the climatic conditions.

Finally, the soil scientist needs to know how much of an element from either the soil or from fertilizers actually gets into the plant. Plant uptake is our best criterion of nutrient availability. Compared with earlier soil scientists, modern ones have frequently failed to get valuable information on long-term nutrient recovery in soil management and fertilization systems simply because total analysis of the crop removed has lost favor.

Thus, the soil scientist is or should be vitally interested in the many aspects of plant analysis. May the reading of these papers be both enjoyable and informative.

May 1967

FRANK G. VIETS, President SSSA
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May 1967

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The papers in this publication except for two, were originally presented at an invitational symposium on Plant Analysis during the meeting of the Soil Science Society of America in November 1965 at Columbus, Ohio. The paper by Ulrich and Hills and the one by MacKenzie were presented at a similar symposium in Kansas City in November 1964.

The objective of the 1965 symposium was to indicate the present degree of development of plant analysis and tissue testing. The speakers responded by discussing procedures, techniques, utility of analyses, limitation methods of interpretation, research needs, and service programs that are underway. Valuable data were made available in several of the papers.

The authors have varied interests with respect to instrumentation and emphasis on particular crops. Approaches to interpretation and methods of obtaining data for validating interpretations also differ to some extent, depending upon the particular worker. Through all these papers, however, there are many common threads and much agreement in principle.

Rapid development of instrumentation, statistical techniques and availability of computers is making accelerated progress possible in both the research and service areas. Dr. Kenworthy pointed out in his paper that there were at least nine direct reading spectograph installations for agricultural analysis and more are being planned. Some states such as Indiana and Ohio have cooperative programs. The interest in both service and research in plant analysis is at an all time high. Those who are new to the field should find this publication of great value in understanding "where we are in plant analysis."

The 1965 Soil Testing and Plant Analysis Committee was charged with the responsibility of organizing the 1965 Symposium and compiling this publication. The Committee wishes to express appreciation to Dr. Robert W. Pearson, past President of SSSA, who appointed this Committee and provided much early encouragement. Dr. W. P. Martin, immediate past President, and Dr. Frank G. Viets, currently President of SSSA, have also given valuable assistance to this Committee. Dr. F. J. Hills, extension agronomist, University of California, Davis, was most helpful in
our quest for papers from the 1964 symposium and in editing these papers. As always, members of the Headquarters Staff have been most cooperative, patient and helpful.

March 1967

The 1965 Soil and Plant Analysis Committee of the Soil Science Society of America

G.W. HARDY, Chairman
A.R. HALVORSON
J.B. JONES
R.D. MUNSON
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