PSYCHOLOGY

No meeting reported.

SOIL SCIENCE

Chairman: STANLEY A. BARBER, Purdue University

RONALD TUKEY, Purdue University, was elected chairman for 1961

ABSTRACTS

Evaporation and Solar Radiation in Indiana. LAWRENCE A. SCHAAL, Purdue University.—Solar radiation and evaporation measurements are relatively new in Indiana. Their use and likely applications in agricultural science are discussed. Statistical summaries are presented which estimate the variations of these measurements.

Predicting the Response of Corn to Subsoiling and Subsoil Fertilization. ANSON R. BERTRAND and RUSSELL FRAZIER, Purdue University.— Data from eight years of Subsoil Fertilization Experiments with corn in Indiana were analyzed by multiple factor analysis. The following four factors were found to account for 38.6% of the variation in yields: (1) Rainfall between November and May preceding the crops, (2) Drainage characteristics of the soil, (3) Potassium content of the subsoil, and (4) Phosphate content of the subsoil.

Correlation of Total Phosphorus Uptake with Different Phosphorus Soil Tests. M. F. BAUMGARDNER and A. F. GOLKE, Purdue University.— German millet was grown in the greenhouse as the indicator crop on 500 soils from many different areas in Indiana. One hundred millet plants were grown for 25 days in 100 grams of soil and 100 grams of washed quartz sand. The plants were harvested, dried, weighed, and analyzed for total phosphorus taken up from the soil. Five different extractants were used in testing the soils for available phosphorus:

Method	Extractant
a. Bray 1	0.025 N HCl and 0.03 N NH$_4$F
b. Bray 2	0.1 N HCl and 0.03 N NH$_4$F
c. Purdue	0.75 N HCl
d. Olsen	0.5 M NaHCO$_3$
e. Water	distilled water

The soil test data and the total plant phosphorus were then statistically analyzed to determine which phosphorus extractant gave the most satisfactory correlation with total plant phosphorus.