

PLANT TAXONOMY

Chairman: ROBERT PETTY, Wabash College

GAYTON C. MARKS, Valparaiso University, was elected chairman for 1965

ABSTRACTS

Graphical analysis of the size-class structure of old-growth forests in Indiana. D. V. SCHMELZ and A. A. LINDSEY, Purdue University—Density data for 23 stands were plotted on semi-logarithmic paper according to size-class distribution. No perfectly straight line, characteristic of a balanced distribution, was obtained. Four patterns of configuration were recognized and interpreted as indicating differences in amount of past disturbance and relative degrees of recovery. A straight line, fitted to the data by the method of least squares, was interpreted as representing the over-all condition of the stand at the time of study. The coefficient of determination was taken as an index of disturbance at the present. Estimates of the undisturbed condition were made by comparing various portions of the line connecting the plotted points with the regression line. Confirmation of these conclusions was obtained by the 1954-1964 tree-by-tree comparison of one of the stands.

Preliminary Studies on the Genus *Polygonum*, sect. *Polygonum* (*Avicularia*) in North America. THOMAS R. MERTENS, Ball State Teachers College.—Although the limits of *Polygonum* sect. *Polygonum* have been sharply defined on the basis of pollen morphology, there has been little agreement as to specific limits in North America. An attempt to resolve the complex referred to *P. aviculare* in North America necessitated an evaluation of the entire section of the genus. Using primarily fruit characteristics, *P. fowleri* could not be consistently distinguished from *P. allocarpum*; likewise, *P. raii* and *P. oxyspermum* were not separated by constant characteristics. Specimens identified as *P. exsertum* were referred to *P. ramosissimum* since the identity of the former entity appears to have been based on abnormal late-season fruits. Specimens referred to *P. fowleri* and collected in Marin Co., California, are unlike *P. fowleri* and will be described as a new species, *P. marinense* Mertens and Raven. The immediate *P. aviculare* complex seems to be represented in North America by two species: *P. aviculare, sensu stricto* ($2n=60$) and *P. arenastrum* ($2n=40$). Although the distinction between these two is rather sharp in Britain, many North American collections referred to *P. arenastrum* on the basis of fruit size lacked the fruit shape characteristic of that species. Collections of *P. arenastrum* made in California and Indiana were confirmed by chromosome counts. *P. aviculare* collections from California were verified in the same manner.