tional characters. The wide variety of the subjects discussed is shown by the following abbreviated list: blood groups, serum precipitin reactions, purine metabolism, sexual skin, breeding season, menstrual cycle, nursing position, finger grooming, drinking by suction, behavior and intelligence in general, cortical physiology, different aspects of vision, facial movements and expression, diseases and parasites, and hybridization. Under the last-named heading are to be found specially noteworthy lists of inter-generic and inter-specific crosses in primates.

The chief value of most of the chapters consists in the convenient collection and condensation of previously scattered reports by specialists in many widely differing fields, rather than in the more or less tentative taxonomic and evolutionary conclusions. Even though it is quite evident that no systematic attempt was made to consider all the available information, this book is nevertheless sufficient proof that our knowledge of the functional characters of primates is still far too fragmentary to permit many deductions bearing upon the more specific questions of primate relationships beyond those already gained from far more extensively grounded morphological studies. It is very gratifying, however, that the phylogenetic conclusions from the data collected in this volume do in no way clash with the generally accepted classification of at least the various primate families. Such additional support of a provisionally established classification is of great significance, since any classification, to become reliable, must be based upon as many different characters as possible, ultimately representing the carefully weighed compromise between often apparently conflicting results.

Since a reviewer can rarely agree with all the minor assertions of another author, a few such differences of opinion or experience may be indicated here: There still exists a good deal of justification for doubting the author's flat denial of a breeding season in Old and New World monkeys (*e.g.,* in the reviewer's field experience *Oedipomidas* and *Saimiri* do not breed during the summer months). The chapter on facial expression would have greatly benefited by a consideration of the corresponding work by the late E. Huber. The table on brain- and body-weights of *adult* primates includes a considerable number of misleading records on extremely immature or else abnormal specimens. To mention but one instance: The mean body-weight of four "adult" male *Ateles geoffroyi* is given as 2.0 kgms, whereas the reviewer obtained an average of 7.4 kgms for a large series of really adult males of this species.

Dr. Zuckerman's excellently written book will be a great challenge for and help in future work on the comparative physiology and psychology of primates. The volume is illustrated by beautiful photographs of different types of primates and contains an extensive bibliography and a useful subject index.

ADOLPH H. SCHULTZ

SOCIETIES AND MEETINGS

THE INDIANA ACADEMY OF SCIENCE

THE forty-ninth annual meeting of the Indiana Academy of Science was held at Bloomington, Indiana, on Thursday, Friday and Saturday, October 12, 13 and 14, 1933, with Indiana University as host. The executive committee meeting was held on Thursday evening. At the general meeting on Friday morning, after an address of welcome by President W. L. Bryan, of Indiana University, the following three general papers were presented: "Indirect Contributions to the Promotion of Science," by Dean William M. Blanchard, DePauw University; "Some Botanical Aspects of the Hawaiian Islands" (illustrated), by Dr. T. G. Yuncker, DePauw University; "Moving Pictures of Leaf-Cutting and Army Ants," by Dean Howard E. Enders, Purdue University. In the sectional meetings a total of 101 papers on botany, bacteriology, chemistry, geology, physics, astronomy and zoology were presented.

The annual dinner was held on Friday evening in the Union Building, Indiana University, with about two hundred members and guests present. Following the dinner, the academy president's address, an illustrated lecture on "Origins of Indiana Mammals Living and Extinct," was given by Dr. Marcus W. Lyon, Jr., of South Bend. The Junior Academy held its meeting and exhibit on Saturday morning. Dean Howard E. Enders reported nine affiliated Junior Academy of Science organizations.

The following officers were chosen for 1934: *President,* J. A. Nieuwland, University of Notre Dame; *vice-president,* M. L. Fisher, Purdue University; *secretary,* R. C. Friesner, Butler University; *assistant secretary,* W. P. Morgan, Indiana Central College; *treasurer,* Paul Weatherwax, Indiana University; *editor of the Proceedings,* S. A. Cain, Indiana University; *press secretary,* Will E. Edington, DePauw University.

The semi-centennial meeting will be held next November in Indianapolis, with Butler University as the host. Special efforts are being made to have all living charter members, other prominent members and former members living outside Indiana present and participating in the program, which, it is hoped, will include scientific papers of unusual merit as well as several special papers of historical nature pertaining to the founding and early development of the Indiana Academy of Science.

This meeting will bring to a close a half century of scientific progress in Indiana. Many noted men, such as David Starr Jordan, Barton W. Evermann, John M. Coulter, John C. Branner, T. O. Mendenhall, O. P. Hay, J. C. Arthur, W. A. Noyes, Harvey W. Wiley, W. S. Blatchley and others have been active in the development of the academy, and it is the intention to honor these men at this semi-centennial meeting.

WILL E. EDINGTON,
Press secretary

THE COLORADO-WYOMING ACADEMY OF SCIENCE

THE seventh annual meeting of the Colorado-Wyoming Academy of Science was held on December 1 and 2, 1933, at the University of Wyoming, Laramie, Wyoming.

Friday afternoon and Saturday morning were given over to the reading of papers in section meetings. A total of 118 papers were presented—in chemistry 15; education 11; geology-geography 11; physics 16; plant science 25; psychology 9; social science 6; zoology 25. About 200 members and students attended the sessions.

At the annual dinner Dr. Aven Nelson, of the University of Wyoming, reported on "The Fifth Pacific Science Congress." Robert Niedrach, of the Colorado Museum of Natural History, showed moving pictures of Colorado wild life.

The officers for 1933–4 are: *President,* R. J. Gilmore, Colorado College; *vice-president,* H. M. Barrett, University of Colorado; *secretary,* W. C. Service, Colorado College; *treasurer,* C. T. Hurst, Western State College; *chairman of publications,* C. A. Hutchinson, University of Colorado; *representative to the conference of state academies,* J. C. Stearns, University of Denver. Members of the executive committee are: F. F. Ramaley, University of Colorado; A. S. Adams, the Colorado School of Mines; T. R. Garth, University of Denver; F. P. Goeder, Colorado Agricultural College; Laura A. White, University of Wyoming; P. E. Boucher, Colorado College; F. C. Jean, Colorado State Teachers College, *retiring president.*

The 1934 meeting will be held on November 30 and December 1, 1934, at the Colorado School of Mines, Golden, Colorado.

RALPH J. GILMORE,
Secretary

SCIENTIFIC APPARATUS AND LABORATORY METHODS

A METHOD FOR STUDYING SOIL–PLANT NUTRIENT RELATIONSHIPS

SOIL investigators have given considerable attention to methods for displacing the soil solution, that may be comparable to the effect of plants in drawing nutrients from soils. The use of air pressure applied to soils in order to force nutrients in solution from the soil into plant roots and thence up through the stem of the plant to be collected and analyzed, is thought to be a new method of studying the relation between soil conditions and the intake of various soil solubles.

Briefly, the procedure consists of placing a suitable receptacle containing the root systems of plants grown in a nutrient medium, after the tops have been removed, into a pressure chamber and connecting the plant stubs to receiving flasks outside of the pressure chamber by means of glass and rubber tubing, then applying air pressure to the closed chamber. Field bean plants grown in soils were used in an investigation by this method and a relatively large volume of solution was obtained by the application of thirty pounds per square inch of air pressure to the soil at optimum moisture content in from twelve to twenty-four hours. Interesting data relative to soil and plant treatments and the growth of plants were obtained by analyzing the solutions collected.

This method offers a profitable means of attack in the investigation of problems in soil fertility and plant nutrition. Some special problems to which it may be applied are as follows: (a) The relation of the concentration of substances entering plant roots to their concentration in the nutrient medium; (b) the effects of the presence and concentration of an essential or non-essential element in the nutrient medium on the intake of other elements; (c) the specific nature of the ions that enter plant roots and the physical or chemical processes involved; (d) the effect of various soil conditions on the intake of soil solubles by plant roots.

The results of the investigation with bean plants, using the air pressure method for obtaining the solutions, will be published at an early date.

C. W. LAURITZEN
MICHIGAN STATE COLLEGE

A SIMPLE STAIN FOR NUCLEAR STRUCTURES IN LIVING AMOEBAE AND CYSTS

AMONG the practical methods for the identification of intestinal amoebae, iodine solutions have been much used. They are simple, act immediately and show the nuclear chromatin distribution well enough for purposes of differentiation between species. Eosin or