in the axes of folds, in the mountain groups of the plains of Montana, and one of the front ranges of the Rocky Mountains. In applying the term laccolith to such masses there is a wide departure from the original use of the word. It is therefore used provisionally, the right being reserved to designate such concavo-convex lenticular masses by an appropriate name at a future time.

The presence of such intrusions is believed to be due to causes in marked contrast to those of laccoliths. On the normal laccolith the intrusion causes the arching of previously horizontal strata. In the masses described the intrusion follows or accompanies the folding and is dependent upon it; that folding is the cause and not the result of igneous intrusion. The author offers a theory to explain the intrusion of such masses, utilizing the discussion of folds by Willis and by Van Hise to show that intrusion from below would be most easy at the hinge of such uplifts or the arch of synclines, and that such intrusion could not penetrate far, owing to compression near the concave surface of arches, so that further intrusion would be along a strata or other bed of easy parting toward the center of the fold when the presence of an arch due to a competent strata of limestone would leave a space beneath of little compression and consequent easy filling by the liquid magma.

W. F. Morsell.

U. S. Geological Survey.

SCIENCE CLUB OF NORTHWESTERN UNIVERSITY.

At a meeting of the Science Club of Northwestern University, held on Friday evening, May 7th, inst., a paper was read by Miss Mary E. Gloss on the 'Mesophyll of Ferns.' The theory of the formation of the palisade tissue in intense sunlight does not seem to apply in the case of ferns. All the species examined were grown in diffused light, with one exception; some have palisade parenchyma and some have not; the presence or absence of the palisade parenchyma was nearly constant throughout each of the genera examined, which may prove to be a generic characteristic. The presence or absence of chlorophyll in the epidermis, the form and arrangement of the cells of the mesophyll, the size of the air spaces and the thickness of the mesophyll appear to be nearly constant in each of the genera examined. The genera most carefully examined were *Adiantum*, *Aspidium*, *Nephrolepis* and *Polypodium*. The investigation will be continued until a large number of genera has been covered.

Thomas F. Holgate,
Secretary.

THE TEXAS ACADEMY OF SCIENCE.

At the May meeting of the Texas Academy of Science, held on the evening of the 7th inst., the following papers were presented:

'The Properties of the Living Substance,' by Dr. Edmund Montgomery, of Hemstead, Texas.

'An Account of some Applications of the Bessel Functions to Astronomy,' by Harry Y. Benedict, of Cambridge, Mass.

'A Note on a Generalization of the Numbers of Couchy,' also by Mr. Benedict.

'Triazines and Triazoles,' by James R. Bailey and S. F. Acree.

'On the Constitution of a By-product obtained in the Preparation of Hydrazopropionic Acid,' by James R. Bailey and Henry B. Dechard.

The last named papers embody the results of some original work performed in the chemical laboratory of the State University, under the direction of Mr. Bailey, the senior author.

Major Dutton's address on the 'The Economics of Concentrated Capital,' and Professor Nagle's paper on 'Vertical Curves for Railways,' now in press, will be ready for distribution in a few days.

Frederic W. Simonds.

University of Texas.

NEW BOOKS.

Grundriss der Entwicklungsgeschichte der Menschen und der Säugetheere. Oscar Schultze. Zweite Hälfte. Leipzig, Engelmann. 1897. Pp. vii+468. M. 6.

Dynamic Sociology. Lester F. Ward. New York, D. Appleton & Co. 2d Ed. 1897. Vol. I., pp. xl+706. Vol. II., pp. vii+690.

Bird Life. Frank M. Chapman. New York, D. Appleton & Co. 1897. Pp. xii+269. $1.75.

Antiquities of Tennessee. Gates P. Thruston. Cincinnati, The Robert Clarke Co. 1897. Pp. xv+369.