invertebrates, the general rule seems to hold that light and low temperature induce a distal migration, and the absence of light and high temperature a proximal migration of the contained pigments. 'Some Reactions of Caterpillars and Moths,' by Alfred G. Mayer and Caroline G. Soule. Larvæ of *Danais plexippus* are negatively geotropic, and also positively heliotropic to ultra-violet rays. These reactions serve to maintain them high up upon their food plant, and to prevent their wandering away. Caterpillars have no associative memory lasting more than one and a half minute, and they do not learn a labyrinth. Normal gipsy moth females select against males if the latter be deprived of wings, but if the females be deprived of sight they do not select against such males. In moths there is no sexual selection in respect to color. 'Modifiability in Behavior. II. Factors Determining Direction and Character of Movement in the Earthworm,' by H. S. Jennings. This is an analytical study of the various factors, internal and external, which decide how the earthworm shall move at a given moment. The matter is found to be extremely complicated.

SOCIETIES AND ACADEMIES.

THE AMERICAN MATHEMATICAL SOCIETY.

THE one hundred and thirtieth regular meeting of the American Mathematical Society was held in New York City, on Saturday, October 27, 1906, thirty-three members being in attendance. President W. F. Osgood presided at the morning session, Ex-President T. S. Fiske at the afternoon session. The council announced the election of the following persons to membership in the society: Professor A. F. Carpenter, Hastings College; Dr. H. M. Dadourian, Yale University; Mr. T. E. Gravatt, Pennsylvania State College; Rev. A. S. Hawkesworth, Allegheny, Pa.; Mr. H. R. Higley, Pennsylvania State College; Dr. Mario Kiseljak, Fiume, Hungary; Dr. Emanuel Lasker, New York, N. Y.; Professor Ernst Lebon, Lycée Charlemagne, Paris; Dr. R. L. Moore, Princeton University; Mr. W. P. Russell, Pomona College; Professor J. H. Scarborough, State Normal School, Warrensburg, Mo.; Mr. L. P. Siceloff, Columbia University; Professor Cyparissos Stephanos, University of Athens. One application for membership was received. The total membership of the society is now five hundred and fifty-eight.

A list of nominations of officers and other members of the council was adopted and ordered placed on the official ballot for the annual election at the December meeting. A committee was appointed to audit the treasurer's accounts for the current year.

Professor W. F. Osgood tendered his resignation from the editorial committee of the *Transactions*, finding it impossible to assume the burdens of the office. The vacancy was filled by the appointment of Professor H. S. White.

The following papers were read at the meeting:

S. F. RICHARDSON: 'Note on poristic systems of polygons.'

R. D. CARMICHAEL: 'Multiply perfect numbers of four different primes.'

ARTHUR RANUM: 'On Jordan's linear congruence groups.'

BEPPO LEVI: 'Geometrie projettive di congruenza e geometrie projettive finite.'

CHARLOTTE A. SCOTT: 'Note on regular polygons.'

MAX MASON and G. A. BLISS: 'Some problems in the calculus of variations in space with variable end points.'

EDWARD KASNER: 'Note on the transformations of dynamics.'

G. A. MILLER: 'Groups of order p_m containing exactly $p + 1$ abelian subgroups of order p^{m-1}.

G. A. MILLER: 'The groups in which every subgroup is either abelian or hamiltonian.'

The San Francisco section of the society met at the University of California, on Saturday, September 29, 1906.

The next meeting of the society will be the annual meeting for the election of officers on Friday and Saturday, December 28–29, 1906. The Chicago section will also meet during the Christmas holidays.

W. H. BUSSEY,
Assistant Secretary.

THE AMERICAN PHILOSOPHICAL SOCIETY.

A STATED meeting was held on November 16, 1906, at 8 o'clock. Professor Harry F.

Keller read a paper on 'Alcoholic Fermentation in the light of Chemical Investigation.'

DISCUSSION AND CORRESPONDENCE.

CORRESPONDENCE RELATING TO A STUDY OF AN AREA OF CRYSTALLINE ROCKS IN SOUTHWESTERN NEW ENGLAND.

TO THE EDITOR OF SCIENCE: I have recently resigned my position upon the staff of the United States Geological Survey for reasons which are, I believe, of some interest to geologists throughout the country. I am, therefore, led to request the publication in SCIENCE of the letter in which my resignation was tendered.

American geology has furnished many knotty problems for solution, and workers within the same or neighboring fields have not infrequently and quite naturally come to hold different interpretations of the same facts. In more than a single instance during the present administration of the survey, the geologists of the country have known that such alternate views were held and shortly thereafter have learned that a 'conference' had been held and the problem quite expeditiously 'settled.' The methods by which such forward strides have been taken can hardly fail to interest those who have the advance of science really at heart.

WM. H. HOBBS.

UNIVERSITY OF MICHIGAN,
ANN ARBOR, MICH., Nov. 2, 1906.

DR. C. D. WALCOTT, Director,
U. S. Geological Survey,
Washington, D. C.

Sir: I have the honor to resign my commission as assistant geologist of the United States Geological Survey.

My connection with the geological staff of the survey has now extended over more than a score of years, and this action is taken after much deliberation and as a protest against the arbitrary and overbearing administration of your chief executive, the geologist in charge of geology. Permit me, therefore, to briefly review for your consideration the later developments of my official work in their relation to survey administration.

As you are doubtless fully aware, during almost the entire period of my connection with the survey my investigations have consisted of a virtually independent study of the structural geological problems offered by an area of crystalline rocks in southwestern New England. The history of American geology shows that this region is, perhaps, the most complex and obscure of any that has been studied, and the divergence of views reached by different workers and the obstinacy which in the past has characterized the defense of each, have caused it to be generally known as the 'Battlefield of American Geology.'

My earlier studies within the district followed conventional lines, and I found after repeated trials that the body of data collected could not be brought within a system so as to fit the accepted theories. Urgent requests from the office of the director to prepare my results for publication, I was obliged to meet with the statement that I was not yet ready to publish.

In the continuation of the areal mapping southward I encountered during the season of 1899 the small area of Newark rocks lying within the valley of the Pomeraug River of Connecticut and outlining a basin which was found to be intersected by an intricate network of nearly vertical faults. Believing that in this basin lay the hitherto unsuspected key to the structure of the larger district, much attention was given to a study of the faults in their relation to each other and to topography and hydrography, not alone within the Newark basin itself but in the surrounding crystalline area as well. The results of this study, which are published in the Twenty-first Annual Report of the Director (part 3, pp. 1–162), have, as suspected, afforded a clue for working out the structure of the entire district by showing that the faults so clearly revealed within the Newark basin are also present (though naturally less clearly revealed) within the crystalline uplands.

My colleague, Professor H. E. Gregory, of Yale University, who has studied the area to the east of my district, soon reached the same conclusion and has expressed it in an official report to the survey upon the Farmington