

Hopkins University on "Immunity to Trichina Infection."

THE two hundred and fifty-fifth meeting of the Washington Academy of Sciences was held at the National Museum, Washington, on November 16, when the Rev. Dr. G. Lemaître, professor of physics in the University of Louvain and lecturer at the Catholic University of America, delivered an address on "The Expanding Universe."

PROFESSOR DR. OTHENIO ABEL, of the University of Vienna, will give a course of three lectures on "Paleobiology and Evolution" at University College, London, on November 24, 27 and 29.

THE Sigma Xi Club of the University of Denver held its first meeting for the year on October 20, under the leadership of Dr. Thomas Garth, *president*, and Dr. Earl Engle, *secretary-treasurer*. The 1933-34 program contains three lectures by outside speakers—Dr. Edward Jackson on "The Evolution of the Eye," Dr. E. R. Mudge on "Human Blood Groups" and Dr. Maurice Rees, dean of the University of Colorado Medical School, on "Developments in Medical Education." Dr. E. B. Renaud, professor of anthropology at the university, will give an illustrated talk on "Old and New World Cultures," and Dr. Ira Cutler, of the department of zoology, will speak on "Birds of Colorado." The other meetings will be given over to reports on the research of graduate students and instructors in the science departments.

THE eleventh annual series of the Aldred Lectures of the Massachusetts Institute of Technology have been announced. In the first lecture of the series, on November 17, C. M. Ripley, of the General Electric Company, described "The Next Great Boom." Dr. A. E. Kennelly, professor emeritus of the Massachusetts Institute of Technology and Harvard University, on December 8, will speak on "The Relations of Engineering to Our Modern World." "The Cultivation of Judgment" will be analyzed by E. C. Mayo, president of the Gorham Manufacturing Company of Providence, in the third lecture on January 19. Dr. Harlow Shapley, director of the Harvard Observatory and member of the corporation of the institute, on February 16 will give an illustrated address on "Engineering Problems and Practices in the Construction of Galaxies." Concluding the series on March 16 will be a lecture by R. E. Flanders, president of the Jones

and Lamson Machine Company, on "The Future of Business Enterprise."

THE Cameron Prize Lecture at the University of Edinburgh was delivered on October 6 by Dr. George F. Dick, professor of medicine at the University of Chicago. The Cameron Prize, founded in 1878 by the late Dr. Andrew Robertson Cameron, is awarded each year for an important contribution to practical therapeutics made during the preceding five years. This year it has been divided equally between Dr. George F. Dick and his wife, Dr. Gladys H. Dick, for their joint work on the cause, prevention and cure of scarlet fever.

FRIENDS of the late Professor U. S. Grant have created a fund to commemorate his distinguished services as a geologist and teacher by a series of lectures on some phase of geology, to be given at Northwestern University. The first series was given by Dr. W. H. Collins, director of the Geological Survey of Canada, on November 21, 22 and 23. The subjects of the lectures are "The Economic Future of Northern Canada," "Major Correlational Problems of the Great Lakes Region" and "The Sudbury Mining Field."

THE Sixth International Congress of Botany will meet at Amsterdam from September 2 to 7, 1935. It was originally planned to hold the congress in September of the present year.

THE Tokyo correspondent of the London *Times* announces a gift of 30,000,000 yen (£3,000,000 at par) to establish a foundation for public purposes from the Mitsui family, through which cultural and welfare institutions in town and country are to be supported, but the first place is to be given to scientific research and technical experiment. The Mitsui family, the wealthiest in Japan, are the owners, after three centuries of trade, of one of the largest business aggregations in the world, including trading, banking, mining and insurance corporations. The object, according to Seishin Ikeda, the present managing director, is to develop essential industries, such as aeronautics, where private enterprise is insufficient. During the recent terrorist outbreaks, according to the *Times*, the Mitsuis with other capitalists were denounced by patriotic agitators and Baron Dan, the managing director, was assassinated.

## DISCUSSION

### PALESTINE, GREAT NATURAL LABORATORY OF THE EAST

FOR the biologist, Palestine offers a singularly favorable field of research. The flora and fauna of

the Mediterranean region meet in this land with those of the great desert belt that stretches from Morocco to Turkestan. In the Jordan Valley, tropical influences are to be found. Only a few hundred

kilometers separate the snow-covered slopes of Mount Hermon, in the Lebanon, from the burning tropical sands of the deserts. It is obvious that with such sudden transitions, the influence of external factors on the distribution of living organisms can be investigated much better than at many other places.

So far as concerns botany, the first task has in the main already been fulfilled. Based upon the comprehensive herbarium of the Hebrew University at Jerusalem, a handbook of Palestinian flora was recently issued in the Hebrew language (an English translation is in preparation). This book treats extensively of the flower plants of Palestine and their distribution. Their scope is remarkable. On a short excursion from Jerusalem to the Dead Sea, one passes through six different biological zones, and very frequently the northern slope of a hill shows quite a different flora and fauna than the southern slope. The ridge of the Mount of Olives, where the university is situated, is in itself the borderline between Mediterranean and desert regions.

The recently opened botanical garden at the university has been set the task of reproducing the ancient wood growths of the Palestinian hillsides in their virgin and pristine form. Its various sections will show the gradual deterioration of the once mighty cedars of Lebanon and other luxuriant growths mentioned in the Bible to the barren wilderness that is practically all that remains for the modern visitor to see.

In the dry regions of Palestine, the water metabolism of the plants is the center of interest in studies of plant physiology. But scientists are still at the beginning of their researches in Palestine, and may yet encounter surprises, as was the case last winter when it suddenly became evident that the first winter storms had a far larger influence on the evaporation of plants than even the hot and dry desert winds in springtime.

A special attraction for visitors to Jerusalem is the Museum of Biblical Botany and Palestinian Plant-Lore at the Hebrew University. The floral prototype of the menorah (seven-branched candelabrum used in synagogues since the days of the first Temple) is to be found there, together with the rose of Sharon and the lily of the field, in all their different stages of botanical development, as well as many other plants mentioned in the Scriptures.

In the field of zoology, the complete survey of Palestinian fauna is still remote. Present knowledge is confined to vertebrates, mollusks and several insect groups, but their conditions of life and habits are almost unknown. Careful observations during the year over small selected areas, from the dunes around the seashore at Tel-Aviv to the Jordan River near

Jericho, yielded for the first time valuable data on the animal associations of those areas and their distribution during the year and the day. Some years ago a monograph was devoted to the Solomonic ant. A monograph on the Palestinian locust was also recently completed. Special attention was devoted to the migratory locust (*Schistocera gregaria*), whose invasions of the Holy Land were mentioned in the Bible. To a large extent, the department of zoology of the Hebrew University has been successful in solving the riddle of the mass propagation of this insect.

Much attention was also paid to other insects injurious to agriculture in this country. Elaborate investigation in the field was carried on in the biology and methods of combatting some of the citrus insects—most important in the development of the chief crops of Palestine. With the assistance of a financial grant by the British Empire Marketing Board, a branch of the British Department of Overseas Trade, research was conducted into the influence of plant nutrition on certain injurious insects preying on oranges. The investigations may eventually lead to new developments in methods of combatting injurious insects.

The scientific problem upon which the work of the zoological laboratory in Palestine centers is that of laying the foundation for a general theory of animal population. Hydrobiological studies have also been started; their general importance is illustrated by the fact that practically nothing is known about life in subtropical waters. There is a museum at the Hebrew University which now is furnishing the beginnings of a scientific and demonstrational collection of Palestinian animals.

Geology, too, contributes its share to the solution of these biological problems. It makes possible an analysis of the climate of Palestine from the days since it first emerged from the sea. It is only on such a basis that the history of the population of this country by plants, animals and mankind, can be fully understood. In addition to the geological exploration of the country, the problems of water supply and other practical problems (phosphate resources and oil-wells), as for instance in the Jordan River basin, afford a unique opportunity for the study of general tectonic problems.

There are other innumerable scientific tasks attracting the attention of scientists, both in the Near East and, indeed, throughout the whole civilized world. Numerous problems linked with the development of Palestine are attracting scientists interested in working in the country, keeping in view the aim of re-establishing and reawakening a land, backward for centuries, almost devastated of its one-time glory. There are untold opportunities, too, for the scientist

working for the advancement of knowledge in a country whose opportunities for research are as varied as its climate and its contours.

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### OCCURRENCE OF FRESH-WATER MEDUSAE IN MICHIGAN<sup>1</sup>

ON September 9, 1933, medusae were found for the first time in the vicinity of Ann Arbor. This is apparently the first record of their occurrence in Michigan. They were first found by a fisherman in Barton Pond, a part of the Huron River, in an area where the current had evidently thrown them into a backwater where they had assembled in considerable numbers. On September 17, the upper limit of distribution was located about one mile further upstream. In this area the water was stagnant and the medusae were swimming in enormous numbers. All stages of development from early gonad to fully matured individuals were present. As far as we have been able to determine, all individuals were females. Size ranged from one quarter to one inch in expanded phase. On September 18, a bright sunny day, large numbers were collected. On September 19 and 20, both being dark stormy days, not a single specimen could be located.

A diligent search of the vegetation, bogs and rocks has so far failed to locate the hydranth stage.

This medusa is apparently *Craspidacusta sowerbyi*, which has been reported many times in the states to the south of Michigan.

Slide traps have been sunk to the bottom in water 6 to 15 feet in depth in the hopes that by next spring the hydranths may have attached themselves and can be brought to the laboratory for study. As no field work was carried on in Barton Pond during the past summer, we have no indication of the first appearance of the medusae for this season. Many specimens have been preserved in 5 per cent. formalin, and samples are available to zoologists especially interested.

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### RATTLESNAKE POISONING BY SELF-INFLICTED BITES

IN the issue of SCIENCE for July 7, 1933, page 13, H. K. Gloyd, of the University of Michigan, writes of the effect of water moccasin venom upon a rattlesnake. In the course of the article Mr. Gloyd says: "Almost every one who has kept living venomous snakes for study has observed that on occasion they

fortuitously bite themselves or others of their own or closely related species without the occurrence of noticeable reactions."

In this connection it may be of interest to report a case which occurred in our zoological laboratory two years ago. On June 16, 1931, I captured an eight-rattled rattlesnake, *Crotalus confluentus confluentus* (Say), on the prairie and kept it in captivity through the summer. On August 24, or possibly a day or so earlier, this snake gave birth to ten young.

On August 31 two observers were disturbing the snakes by shaking the cage. Soon the snakes were striking promiscuously, the old one as well as the young. During this mêlée one little snake was seen to strike itself in about the middle of its length and to have difficulty for a moment in releasing the fangs from itself. It soon began to show signs of serious effects of the poison, and I was called in to observe it. The snake was writhing and twisting in apparent agony. Within five minutes after my observation began, it had ceased its contortions and appeared nearly lifeless. It was swollen for an inch or so in the region of the bite.

The incident occurred at about 10 A. M. When I returned to the laboratory in the afternoon, the snake was entirely lifeless.

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### PRELIMINARY NOTE ON THE OCCURRENCE OF VITAMIN A IN THE OIL OF WEST INDIAN SHARKS

SAMPLES of the oil from the livers of two West Indian sharks, *Carcharhinus* sp., caught in the waters along the northern shore of Puerto Rico, were assayed by the bio-method of Sherman.<sup>1</sup>

Four levels of the oil (7.5 mg, 5.0 mg, 2.5 mg and 1 mg per day) were fed to four different groups of white rats, laboratory stock, containing respectively 6, 8, 7 and 11 rats. Two or more negative controls were run with each group.

All levels gave excellent results and even the lowest level, 1 mg, per day, gave an average growth of more than 24 grams in a period of eight weeks after depletion, and the early symptoms of xerophthalmia disappeared in a few days. All negative controls died in about four weeks after depletion.

The casein for the depletion diet was purified by the method recommended by M. T. Potter,<sup>2</sup> which method proved to be very reliable and economical.

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<sup>1</sup> Contribution from the Zoological Laboratory of the University of Michigan.

<sup>1</sup> H. C. Sherman and S. L. Smith, "The Vitamines," Chemical Catalog Company, 1931.

<sup>2</sup> M. T. Potter, SCIENCE, August, 1932.