more than one boat refused to stop at the island for fear of incurring infection.

St. Croix's uncertain rainfall régime will bring heavy precipitation years again. This in turn will increase the malaria hazard. Yet by exercising extreme care through draining her low-lying areas and by inaugurating other preventive measures so successful in the Canal Zone, the island can minimize possibilities of another serious outbreak.

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LIMESTONE CAVERNS

AN interesting confirmation of some of the points set forth by W. M. Davis in his paper on "The Origin of Limestone Caverns" was found in the course of field work in southern Kentucky. Davis elaborates the principle that caverns are opened by solution below the ground water table and later are exposed and subjected to corrasion by the lowering of the ground water. The discovery of a cavern opening below the lowest level of the Cumberland River seems to give evidence at least of the possibility of active solution below the water table.

The cavern in question is located on the recently published Burnside Quadrangle of the U. S. Geological Survey. It lies about a mile southeast of Sloans Valley station in the northeast part of the map. This is a part of the Cumberland Plateau, near the western margin. Sandstone and conglomerate strata overlie a series of limestone formations of various degrees of solubility. In this part of the plateau the streams have uncovered the top of the limestone strata in the valley bottoms, and typical karst forms have been developed—dolines and ponors leading to caverns, underground drainage, etc. The Cumberland River flows through marked intrenched meanders, still youthful, and incised below an erosion level probably continuous with the level of the Highland Rim country immediately to the west. Low water in the present river, therefore, represents the lowest level to which the ground water table in this area has fallen, at least in the later chapters of the local physiographic history. Cavern openings below the lowest water level, such as may be observed on the southwest bank of the Cumberland River on Haynes Bend, confirm the principle that these openings may have been produced below the water table.

PRESTON E. JAMES

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EFFECT OF AN IODIDE FERTILIZER ON IODINE CONTENT OF A FOOD PLANT

OWING to the possible therapeutic value of iodine-containing foods, some interest attaches to a preliminary experiment on the effect of an iodide applied to the soil on the iodine content of turnips. White egg turnips were grown under uniform conditions, except that one half the plots received potassium iodide at the rate of two kilograms per hectare, while the other plots received a chemically equivalent amount of potassium chloride. The potassium salts were applied in the row. The yield of roots and tops was slightly, but not significantly higher with the chloride than with the iodide. However, the small amount of iodide added produced significant differences in the iodine content of the turnips. The iodide-treated plants contained 441 and 950 parts per billion of iodine in the roots and tops, respectively, against 165 and 441 parts in the chloride-treated plots. Whether these quantities of iodine in food have therapeutic value is not known to the writers, but the experiment indicates the possibility of large relative increases in iodine content of root crops by the application of iodides.

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GEO M. KARNS

MELLON INSTITUTE OF INDUSTRIAL
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THE THOMAS SAY FOUNDATION GETS UNDER WAY

THE idea behind this unique and penniless foundation is that by the sale of technical monographs on insects to members of the Entomological Society of America (and to others) money will be obtained for publishing additional books, and the list will grow and be cumulative. It has begun to grow. The first volume issued was a monograph of the Dipterous genus Sacrophaga, by J. M. Aldrich; the second, a monograph of the Stoneflies (order Plecoptera) of North America, by Needham and Claassen; and third, recently issued, a monograph of Stonefly Nymphs, by P. W. Claassen (C. C. Thomas, publisher). With the issuance of this volume the series is well under way.

Stoneflies have no great beauty that collectors should desire them, and they have little economic importance. Hence their study has been greatly neglected. Volume two of this series, treating of adults, and this third volume treating of the immature stages, together constitute the first gathering up of knowledge of our fauna in this most primitive order of winged insects. Both are pioneer descriptive treatises, indispensable for further work upon our Plecopterous fauna. Five families are now recognized in our fauna, one of them, Peltoperlidae, being new.

Contrary to the statements current in some repu-

table entomological text-books, the nymphs of four of these five families are shown to be herbivorous in their feeding habits, and those of only one (Perlidae) are carnivorous. All are lotic, living in moving water, either in streams or on wave-washed shores.

The illustrations in this third volume are particularly fine. These represent all the families and all but three of the genera of our fauna. It satisfactorily fills a big gap in the knowledge of our North American insects.

J. G. NEEDHAM

CORNELL UNIVERSITY

THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

BIOLOGICAL SCIENCES AT ATLANTIC CITY

THE American Society of Zoologists, in cooperation with Section F of the association, will present a program similar in general plan to the programs of previous years. On Wednesday morning two sessions will be held simultaneously, one on physiology and the other on embryology. The physiology program will include papers on growth in relation to temperature and other factors, on the swimming activity of spermatozoa, on germ cell development as affected by aspirin and on the newly discovered third hormone of the anterior pituitary. This hormone has been named "prolactin" by Dr. Oscar Riddle, of the Carnegie Institution at Cold Spring Harbor, and has been identified with milk secretion. On the embryology program are papers on the tissue culture of rabbit embryos, on the rôle of cytoplasm and chromosomes in the early development of salamanders and on the growth of nerve cells from the rat transplanted to the allantois of the chick. A method for studying developmental factors by x-ray radiation will be described.

Wednesday afternoon will be devoted to sixteen demonstrations in various fields of zoology. Especially interesting to scientific men in general will be moving pictures of a developing sea-urchin egg by Robert Chambers, of New York University; a new glass electrode for measuring pH of minute amounts of body fluids by I. R. Taylor, of Brown University, and newly designed apparatus for determining the temperature, salinity, biological population and rate of flow simultaneously of sea water at different depths, by T. C. Nelson, of Rutgers University. At 4:30 P. M. on Wednesday, Carl C. Speidel, who was awarded the general A. A. A. S. prize in 1931, will give a lecture on the growth of living nerves, illustrated by thirty minutes of motion pictures.

Thursday morning three simultaneous sessions will be held dealing with physiology, cytology and ecology. Papers on the sexual hormones, on regeneration and transplantation of various kinds of tissues and on the depression of bioluminescence by narcotics are important on the physiology program. Among the cytological papers four are on the chromosomes of as many different animals, one on the reactions of marine blood corpuscles to vital dyes, and another on the remarkable mathematical precision with which epithelial cells arrange themselves into definite patterns. Four papers on ecology will be presented at the joint session with the Ecological Society of America. On Thursday afternoon the final sessions for reading of papers will be held. In the physiological section there will be a group of papers dealing with such varied subjects, as the use of the precipitin reaction in studying evolution, the rôle of neurohumoral secretions and other endocrines in controlling color changes, the responses of caterpillars to sounds illustrated by motion pictures, the sensitivity of animal eyes to different regions in the spectrum, the functioning of kidney tubules in tissue culture and the effects of x-rays and ultra-violet light on an insect and a protozoan. In the other session a few papers each in the fields of protozoology, parasitology and anatomy will be presented covering histological studies on protozoa, on the human mouth mucous membrane and on the blood of the duck, as well as on germ cell cycles in a salamander, reproduction of a Mexican killifish, a new mutation in Drosophila and life histories of two kinds of female rotifers. In the evening at the Zoologists' dinner Charles Zeleny, of the University of Illinois, will give the vice-presidential address of Section F on "Genetics and Embryology."

Friday morning will be given over to a symposium on "Embryonic Determination," at which papers by E. G. Conklin, Princeton University; D. H. Tennent, Bryn Mawr College; R. G. Harrison, Yale University; B. H. Willier, Chicago University, and Paul Weiss, of Germany, will be presented. A discussion is planned at the end of each paper. In the afternoon there will be held the usual joint symposium with the American Society of Naturalists, the Botanical Society of America and the Genetics Society of America.

On Saturday a field trip to visit the oyster industry of New Jersey will be led by T. C. Nelson, of Rutgers University, who is in charge of oyster investigation for the state of New Jersey.

The Entomological Society of America will hold sessions on Wednesday and Thursday. One session will be devoted to a symposium on "The Influence of Civilization on the Insect Fauna of North America."