department of physics at the University of Padua, has been appointed associate professor of physics at Cornell University. Dr. Rossi lost his position at Padua in 1938 when the racial laws went into effect. After spending some time at the Bohr laboratory in Copenhagen, he received a fellowship at the University of Manchester, working with P. M. S. Blackett, Langworthy professor of physics in the university. A correspondent writes:

Dr. Rossi is recognized as one of the five leading investigators in the field of cosmic radiation. In recent years he has published more than thirty papers on the subject and has conducted an incredible number of investigations, some of which are yet unpublished. Dr. Hans Bethe, of Cornell University, with whom Dr. Rossi will be associated, states, "There is hardly any paper on the subject of cosmic radiation in which Rossi's name is not quoted repeatedly." As a result of his research the original, as well as the most exact and recent work on the production of "showers" in cosmic radiation was produced. This led to a confirmation of the quantum theory of radiation up to tremendous energies of electron volts.

Dr. Rossi has been associated with many of the greatest physicists. Together with Fermi, Nobel-Prize laureate, now of Columbia University, in 1930 he calculated the effect of the magnetic field of the earth on cosmic ray particles, long before work on this problem was undertaken in America. Professor Arthur H. Compton, who called him to the University of Chicago, entrusted to him the planning of a large part of the extensive ray work done at that institution.

At Cornell, Dr. Rossi will develop cosmic ray research, and will work closely with Dr. Bethe and Dr. Robert F. Bacher in nuclear physics and with Dr. Lyman G. Parratt in x-rays. He will also collaborate with Professor Peter J. W. Debye, who joined the faculty as head of the department of chemistry on July 1.

In 1938 Dr. Rossi married Miss Nora Lombroso, granddaughter of Lombroso, the well-known Italian criminologist. They will establish their residence in Ithaca in time for the fall opening of the university.

SCIENTIFIC NOTES AND NEWS

THE honorary degree of doctor of science was conferred on Dr. L. O. Grondahl, director of research and engineering of the Union Switch and Signal Company, Pittsburgh, Pa., at the commencement exercises of St. Olaf College, Northfield, Minn. Dr. Grondahl is an alumnus of the college.

DR. GUSTAV EGLOFF, director of research for the Universal Oil Products Company, was awarded the degree of doctor of science at the commencement exercises at the Armour Institute of Technology in recognition of "his outstanding contributions in the field of petroleum refining."

ACCORDING to *Nature* the Franqui Prize of half a million francs has been awarded by the Franqui Foundation Committee to Dr. Pierre Nolf, professor of pathology and therapeutics at Liège, for his contributions to science.

DR. H. VINCENT, professor at the Collège de France, formerly inspector-general of the Health Service of the French Army, has been elected vice-president of the Paris Academy of Sciences.

AT the recent meeting in New York City of the American Society of Clinical Pathology, Dr. A. V. St. George, of New York, was inducted into the office of president for the coming year. The following officers were elected: *President-elect,* Dr. J. L. Lattimore, Topeka, Kans.; *Vice-president,* Dr. Ralph G. Stillman, New York City; *Executive Committee,* Dr. L. W. Larson, Bismarck, N. D.; Dr. C. H. Manlove, Portland, Ore.; *Board of Censors,* Dr. R. F. Peterson, Butte, Mont.; Dr. L. C. Todd, Charlotte, N. C.; *Board of Registry,* Dr. L. G. Montgomery, Muncie, Ind.; Dr. I. Davidsohn, Chicago. The Gold Medal for excellence in the scientific exhibit was awarded to Dr. John Eiman and Dr. Charles G. Grosscup for their exhibit on "Fundamental Factors Governing the State of Hydration of the Body in Health and Disease."

AT the forty-third annual meeting of the American Society for Testing Materials on June 25, Dr. William M. Barr, chief chemical and metallurgical engineer of the Union Pacific Railroad Company, was elected president; Herbert J. Ball, vice-president, and Roger C. Griffin, Dr. Paul D. Merica, Jerome Strauss, Stanton Walker and C. H. Fellows, members of the executive committee.

DR. ARTHUR S. GALE, of the University of Rochester, has been made dean emeritus of the physical sciences.

DR. ALBERT P. MATHEWS, since 1918 Andrew Carnegie professor of biochemistry in the College of Medicine of the University of Cincinnati, retired on July 1. He has been succeeded by Dr. Milan A. Logan, assistant professor of biochemistry at Harvard University.

DR. C. W. METZ, member of the staff of the Carnegie Institution of Washington, has been appointed professor and head of the department of zoology at the University of Pennsylvania. He succeeds Dr. C. E. McClung, who retired at the close of the academic year.

DR. PAUL C. MANGELSDORF, vice-director of the

Texas Agricultural Experiment Station, has been appointed professor of botany at Harvard University and assistant director of the Botanical Museum. Dr. Sheldon C. Reed, lecturer in genetics at McGill University, has been appointed instructor in biology.

DR. THOMAS P. COOPER, dean of the College of Agriculture of the University of Kentucky and director of the Experiment Station, has been made acting president of the university. Dr. Cooper will divide the time between his office in the experiment station and the president's office.

DR. DUGALD E. S. BROWN, assistant professor of physiology at the New York University College of Medicine, has been appointed professor and head of the department of physiology of the College of Dentistry.

DR. WILLIAM CRAMER, British delegate to the International Cancer Congress at Atlantic City last September and for over twenty-five years a member of the Imperial Cancer Research Fund, London, has joined the staff of the Barnard Free Skin and Cancer Hospital in St. Louis.

DR. H. MARK, formerly of the University of Vienna, has been appointed professor of organic chemistry at the Polytechnic Institute of Brooklyn. He will direct research in the field of high molecular weight compounds. During the year 1940–41, he will lecture on the physical aspects of organic chemistry and on the chemistry of rubber.

DR. PAUL V. MCKINNEY, senior fellow in the work of the Texas Gulf Sulphur Company at the Mellon Institute of Industrial Research, has been appointed director of research of the Neville Company, Pittsburgh, Pa. He will be engaged in a study of the production of synthetic resins and organic chemicals. The Neville Company is doubling the space devoted to research.

DR. A. E. ALEXANDER, industrial fellow at the Mellon Institute, Pittsburgh, has left to take charge of the Bureau of Natural Pearl Information, New York City. This gem and pearl testing laboratory is supported by a group of New York retail and wholesale jewelers.

DR. GRIFFITH C. EVANS, professor of mathematics at the University of California, has been appointed a member of the National Research Council in the division of the physical sciences, as a representative of the American Mathematical Society. The appointment was effective on July 1 and is for a three-year term.

THE Rockefeller Foundation has renewed a grant of $3,000 a year for three years to Duke University in support of the study of the physical chemistry of proteins by Dr. Hans Neurath, of the department of biochemistry of the School of Medicine.

THE Committee on Scientific Research of the American Medical Association has awarded grants to Dr. Herman Kabat and to Dr. Charles F. Code, both of the department of physiology of the University of Minnesota, the former for an investigation of the nervous component in traumatic shock, and the latter in aid of studies on the possible slow absorption of injected desoxycorticosterone from a mixture with beeswax. A final grant has been made to supplement an assignment made a year ago to Dr. Owen H. Wangensteen, professor and head of the department of surgery of the hospitals of the University of Minnesota, to continue research relating to the physiologic rationale of operations performed for the relief of duodenal and gastric ulcer. Dr. Howard Curl, assistant professor of anatomy at the University of Tennessee, has received a grant for a roentgenological study of the normal gall bladder.

JAMES F. WILSON, professor of animal husbandry at the University of California, sailed on July 20 for Australia, where he will spend a six months' leave of absence in studying wool production. Before leaving he was presented by the California Wool Growers Association with a set of luggage, "in appreciation of twenty years of service" to the industry.

DR. THOMAS J. LEBLANC, of the College of Medicine of the University of Cincinnati, and Dr. Elliston Farrell, of Long Island Medical College, with a number of their students are attending the six weeks summer school of the Puerto Rico School of Tropical Medicine.

AT the Conference on Nuclear Physics to be held at Indiana University to celebrate the opening of the new Physics Building, Swain Hall, on Friday and Saturday, October 25 and 26, special lectures will be given by Professors H. A. Bethe, Cornell University; Gregory Breit, University of Wisconsin; Lee A. DuBridge, University of Rochester, and I. I. Rabi, Columbia University.

DR. OSCAR RIDDLE, of the Carnegie Institution Station for Experimental Evolution at Cold Spring Harbor, N. Y., gave an address on "Hormones" before the Summer Science Conference at Syracuse University on July 18.

THE Genetics Society of America will hold a meeting at Woods Hole, Mass., on August 29 and 30. Summer meetings have been held annually at the Marine Biological Laboratory since 1934, with the exception of last year, when many of the members were attending the seventh International Congress of Genetics at Edinburgh. A clam-bake will be held on the evening

of the twenty-ninth. Dr. Leon J. Cole is president of the society and Dr. E. W. Lindstrom is secretary-treasurer.

A MEETING of the Eastern Division of the American Philosophical Association will be held at the University of Pennsylvania on December 26, 27 and 28. Following the meeting there will be a symposium on "Science and Values" held in conjunction with the meeting of the American Association for the Advancement of Science.

THE regular summer meeting of the Pennsylvania Academy of Science is to be held at Gettysburg on August 9 and 10. Field trips to points of scientific interest in the vicinity are planned. Information can be obtained from the secretary of the society, Dr. V. Earl Light, Lebanon Valley College, Annville.

IN connection with the national defense program the U. S. Civil Service Commission is endeavoring to secure well-qualified metallurgists and metallurgical engineers for employment in the Federal Government. Examinations have been announced to fill these positions, covering six grades, with salaries ranging from $2,000 for the junior grades to $5,600 for the principal grades. Applications must be filed not later than August 22. Competitive examinations to fill the position of civil engineer cover four grades, with salaries ranging from $2,600 a year for the assistant grade to $4,600 a year for the senior grade. Applications should be on file at the Washington office of the commission not later than August 29. Further information as to the requirements for the various grades and application forms may be obtained from the Secretary of the Board of U. S. Civil Service Examiners at any first- or second-class post office, or from the U. S. Civil Service Commission, Washington, D. C.

THE Armour Institute of Technology and the Lewis Institute of Chicago were consolidated on July 24 under the name of the Illinois Institute of Technology. Henry T. Heald, who has been for two years head of the Armour Institute, was elected president. James D. Cunningham, chairman of the board of the Armour Institute, was named chairman of the board; Alexander D. Bailey, chairman of the trustees of the Lewis Institute, was elected vice-chairman.

THE National Cancer Institute, of the National Institute of Health of the U. S. Public Health Service, announces the establishment of *The Journal of the National Cancer Institute* as the official organ of the institute. The new journal, which will be issued bimonthly, will contain articles by the members of the staff on the various lines of cancer research work carried on by the institute. The first issue will include papers on the federal cancer control program, approaches to cancer research, the effect of various hydrocarbons in producing tumors in mice and studies on normal and cancerous tissues. The journal will be sold by the Superintendent of Documents, Government Printing Office, Washington, D. C. It will be distributed free to a limited number of medical schools, to workers in the field of cancer research, to research institutes interested in cancer, to a limited number of surgeons, as well as to certain government depositories and to journals making suitable exchanges.

IN connection with the celebration of the fiftieth anniversary of the University of Chicago, which begins on October 1, culminating in an academic festival in September, 1941, thirty-one learned societies, having together more than 15,000 members, will meet at the university. Dr. Frederic Woodward, vice-president emeritus, is director of the celebration. Among the first of the societies to meet in Chicago are the Clinical College of the American College of Surgeons and the International Anesthesia Research Society, from October 21 to 25. The American Association of Anatomists will meet from April 9 to 11, 1941.

BARLEY FIELD DAY, sponsored by the College of Agriculture of the University of Wisconsin, was held on July 15. Over two hundred visitors representing all phases of the barley handling, selling, malting, brewing, distilling and food industries were in attendance. The morning was spent in inspecting the barley breeding and experimental work on the University Farms. A picnic luncheon furnished by the Malt Research Institute and the United States Maltsters Association was served at noon, followed by a discussion of the responsibility of the Agricultural Experiment Station in coordinating agricultural research with the industrial use of farm products by Dr. Chris. L. Christensen, dean and director of the Wisconsin College of Agriculture and the Wisconsin Agricultural Experiment Station. This was followed by a discussion of the barley breeding program by Professor H. L. Shands and the history of barley improvement in the state by Professor B. D. Leith, both of the University of Wisconsin. The afternoon was spent in inspecting barley test plots and other experimental work. Those interested were given an opportunity to visit the experimental malting laboratory in the Agronomy Building.

THE first instalment of Central American collections of mammals, reptiles and invertebrate animals obtained on an expedition for the British Museum conducted by Ivan T. Sanderson, of Belize, British Honduras, has been received for deposit at the Field Museum of Natural History, Chicago, for the duration of the war. Mr. Sanderson, formerly of Cambridge, England, has conducted expeditions in many parts of Africa and the West Indies. At his request, identi-

fication of some of his material will be undertaken at the museum and some division of the collections will ultimately be made between the Field Museum and the British Museum.

DISCUSSION

NATIVE AND INTRODUCED LAND PLANARIANS IN THE UNITED STATES

THE land planarians characteristically inhabit humid forests in the tropical and subtropical zones of the earth where hundreds of species exist. In his classical monograph[1] von Graff listed 348 species (some, however, probably synonyms) and probably two hundred additional species have been described since that time. As great areas of the tropics remain unexplored with regard to this group of flatworms, it seems reasonable to suppose that the undescribed species at least equal the described ones in number.

The introduction of tropical land planarians into the north temperate zone with tropical plants appears inevitable, yet until recently only one species was known to have succeeded in establishing itself. This is the familiar *Bipalium kewense* Moseley, discovered in 1878 in the greenhouses of the Kew Gardens, near London. This animal is common in greenhouses and conservatories throughout Europe and the United States and also occurs in nature in a variety of tropical habitats, as Brazil, New Zealand, Australia, Samoa, Fiji, Madeira, Hawaii, China and Japan. Its original home is unknown, but may be inferred to have been somewhere in the Indo-Malay region, since the family Bipaliidae centers there. Specimens received for identification from the U. S. National Museum show that *Bipalium kewense* has become established out-of-doors in the West Indies and southern Florida.

Occasionally other exotic land planarians appear in greenhouses, but none is known to have persisted for any length of time. Thus several specimens of a species of *Desmorhynchus* (possibly from Madagascar) were taken in 1914–1916 in greenhouses of the U. S. Department of Agriculture in Washington, D. C.

In view of the general failure of exotic land planarians to maintain themselves in the north temperate zone, even in greenhouses, it is rather surprising to find that these animals have in recent years established themselves in Californian gardens and appear to be flourishing. Specimens of three different species have been received to date.[2] These comprise two species of *Geoplana* and one *Bipalium*. One of the *Geoplanas*, a small black species, turns out to be *G. mexicana* Hyman, 1939,[3] twice found at the Texas border on shipments of flowers from Mexico. Hence this species has been introduced into California from Mexico. The other *Geoplana*, a larger bluish-black form, and the *Bipalium*, light brown with a dark brown mid-dorsal stripe, do not appear to coincide with any described species. All three species are fully mature and are undoubtedly reproducing sexually in their adopted home. This point is of especial interest, since in general tropical land planarians when introduced into cooler climates fail to mature sexually and hence can not persist unless they are capable of some mode of asexual reproduction. The latter appears to explain the persistence of *Bipalium kewense*, since this species also has never been found with sex organs in temperate regions. The fact that the California forms are able to mature leads one to suspect that they are native to some adjacent, not fully tropical region, as Mexico or Central America.

Genuinely endemic land planarians do, however, occur in the north temperate zone; curiously enough, all these belong to the family Rhynchodemidae, and nearly all to the genus *Rhynchodemus*.[4] About 15 species have been described in Europe,[5] but the endemicity of some of these may be questioned, especially those known only from the Riviera, where there are many introduced plants. In the United States, two endemic rhynchodemids have been reported to the present time. These are *Rhynchodemus sylvaticus* (Leidy), 1851[6] and *R. atrocyaneus* Walton, 1912.[7] The former, small, slender, grayish with two dark stripes and with pointed head bearing a pair of large eyes, has been reported from Rhode Island, Pennsylvania, and Ohio, under pots and boards in gardens and meadows, and under logs and bark in woods. Apparently not uncommon in former years, this species seems not to have been collected in the last twenty years, and attempts to obtain specimens from Philadelphia, the type locality, have so far proved futile.[8] Of *R. atrocyaneus* nothing was known but the original description, which states that two specimens were found at Gambier, Ohio, 20 cm long and of a uni-

[1] "Monographie der Turbellarien. II. Tricladida Terricola." 1899.

[2] Kindly sent by Dr. M. W. de Laubenfels, Pasadena, and John L. Mohr, Berkeley.

[3] *Proc. U. S. Nat. Mus.*, 86: 425.

[4] *Microplana* has recently been shown to be a synonym of *Rhynchodemus* (Schneider, *Zool. Jahrb. Abt. System.*, 67: 179).

[5] Recently listed by Arndt, *Zoogeographica*, 2: 375.

[6] *Proc. Acad. Nat. Sci. Phila.*, 5: 239, 289; 10: 171.

[7] SCIENCE, 25: 732.

[8] Dr. J. Percy Moore kindly tried to find some specimens for me.