insect-proof rooms where foreign parasitic insects, as well as others, may be studied without the hazard that undesirable parasites may escape and become established. The organization of work in entomology in the University of California was explained by H. J. Quayle, and an announcement made of the inauguration of the teaching of entomology in the University of California at Los Angeles.

Because of the diversity of crops in California and the consequent wide range of insect problems, as well as the size of the state, the entomological work in the university has, since 1914, been conducted from two centers, Berkeley and Riverside. W. B. Herms, head of the Division of Entomology and Parasitology at Berkeley and Davis, is in charge of the work in agricultural entomology in northern and central California and in charge of medical and veterinary entomology throughout the state. H. J. Quayle, head of the Division of Entomology at Riverside and Los Angeles, has general charge of the work in agricultural entomology in southern California and in so far as the work pertains to citrus and walnuts throughout the state. H. S. Smith, head of the Division of Beneficial Insect Investigations at Riverside, has general charge of this work for the entire state.

The research work in southern California is further subdivided into: spraying investigations, which is in charge of R. H. Smith; walnut and deciduous fruit insect investigations, which is in charge of A. M. Boyce, and the taxonomic work and collection which is in charge of P. H. Timberlake.

The teaching of entomology will be inaugurated at the University of California at Los Angeles beginning in the second semester of the present year. At that time a course in general entomology will be given, which will correspond to Course I as given at Berkeley. Beginning the second semester of the following year an advanced course in subtropical fruit insects will also be offered. The undergraduate teaching work at Los Angeles will be directly in charge of A. M. Boyce. Three rooms, consisting of a large laboratory, a research laboratory and an office in one of the new buildings at Los Angeles, will be utilized for this work. Graduate work in subtropical fruit insects and beneficial insect investigations will be given at Riverside as heretofore.

SCIENTIFIC NOTES AND NEWS

THE Nobel prize in medicine for 1932 has been awarded in equal parts to Sir Charles Scott Sherrington, Waynflete professor of physiology at the University of Oxford, and to professor Edgar Douglas Adrian, Foulerton professor of the Royal Society and fellow of Trinity College, Cambridge.

THE title of Knight Commander of the Crown of Italy has been conferred on Dr. William J. Mayo and on Dr. Charles H. Mayo by the King of Italy, in recognition of their services to science and to humanity, and more especially in recognition of their kindness to Italian graduate students, studying at the Mayo clinic, and to patients of Italian origin who are cared for there. The king was represented by Consul Cavaliere A. Castigliano at a ceremony held on October 22. The professional and non-professional members of the staff and other citizens attended.

DR. CHARLES RUSS RICHARDS, president of Lehigh University, and Bruce Rogers, type and book designer, of London, graduates in the class of 1890, were given honorary degrees at Purdue University on October 15, at a special convocation arranged for this purpose at the annual homecoming of Purdue graduates. Dr. Richards was granted the degree of doctor of engineering and Dr. Rogers the degree of doctor of humane letters.

THE John Fritz Gold Medal, highest of American engineering honors, has been awarded for 1933 to Daniel Cowan Jackling, of San Francisco, for "notable industrial achievement in initiating mass production of copper from low-grade ores, through the application of engineering principles." The award was made by a board of sixteen representatives of the four national societies of Civil, Mining and Metallurgical, Mechanical and Electrical engineers.

DR. ROBERT A. MILLIKAN was presented with the distinguished service medal of the Roosevelt Memorial Association at a dinner given at Roosevelt House, New York City, on October 27. James R. Garfield, Secretary of the Interior in the cabinet of President Roosevelt and president of the association, made the presentation. The citation read: "The Roosevelt medal for distinguished service has been awarded this year in only one domain, the field of science. For this medal, I have the honor to present the name of a scholar, a teacher, a mentor of scholars, a master of research, a scientist, imaginative and pertinacious, who has explored both the infinitely vast and the infinitesimally minute, returning from sidereal space with the secret of the cosmic ray, from the crashing of worlds within the molecule with the secret of the electron's speed, a prophet of the new time, bearing to bewildered man, alike from atom and from star, news of the presence and the goodness of God."

THE Perkin Medal for 1933 has been awarded to George Oenslager for his contributions to rubber technology. *Industrial and Engineering Chemistry,* in announcing the award, says: "Mr. Oenslager has been connected for many years with the B. F. Goodrich Company and its immediate predecessors and, but for the earlier policies opposed to publicity, his work would long ago have been recognized more generally as of vast importance and directly responsible for two of the five major achievements which mark the changes that have taken place in rubber technology during the past thirty years. These five achievements may be named as reclaimed rubber, the cord tire, the carbon black tread, the nitrogenous organic accelerator and antioxidants. That one man should have played such an important part in the discovery and introduction of two of these advances is worthy of note."

J. A. FLEMING, acting director of the Department of Terrestrial Magnetism of the Carnegie Institution of Washington and general secretary of the American Geophysical Union, has been elected an honorary and corresponding member of the State Russian Geographical Society in appreciation of his services in developing the geophysical sciences.

DR. E. O. ESSIG, professor of entomology in the College of Agriculture of the University of California, has been decorated by the French government with the title of Chevalier du Mérite agricole.

ON October 7 Sir Philip Magnus, Bt., celebrated the ninetieth anniversary of his birth. He was member of Parliament for the University of London from 1906 to 1922, and in 1920, in recognition of his services to medicine in Parliament, he was made an honorary member of the British Medical Association.

FOREIGN surgeons who attended the annual clinical congress of the American College of Surgeons, which opened at St. Louis on October 17, included Sir William I. de Courcy Wheeler, of Dublin; Sir Wilfred Thomason Grenfell, of London and Labrador; Sir George Lenthal Cheatle, of London, and Dr. Jose Goyanes, of Madrid.

PROFESSOR ALFRED FOWLER and Sir Clement D. M. Hindley have been appointed members of the Advisory Council to the Committee of the Privy Council for Scientific and Industrial Research in place of Sir J. Alfred Ewing and Sir David Milne-Watson, who have retired on completion of their terms of office. Brigadier-General Sir Harold B. Hartley has been appointed chairman of the Fuel Research Board and N. V. Sidgwick chairman of the Chemistry Research Board, in place of the late Sir Richard Threlfall.

DR. AUGUSTUS TROWBRIDGE, dean of the Graduate School of Princeton University, has been granted leave of absence for the first term of the academic year. In his absence the graduate school will be managed by a faculty committee of which Dr. Robert Kilburn Root, professor of English, is chairman.

DR. OSWALD VEBLEN, Henry Burchard Fine professor of mathematics at Princeton University, who, as previously announced, will join the staff of the Institute of Advanced Study at Princeton, has presented his resignation to the trustees. Dr. Veblen has been connected with Princeton University for twenty-seven years.

DR. LYMAN L. DAINES, professor of pathology and bacteriology at the University of Utah School of Medicine, has been appointed dean of the school, to succeed Dr. Beryl I. Burns, who resigned to become head of the department of anatomy at the newly organized Louisiana State University Medical Center, New Orleans.

DR. H. A. SWENSON has been promoted to an assistant professorship in the department of psychology in the Division of Biological Sciences of the University of Chicago.

DR. OLIVER L. FASSIG and Dr. Herbert H. Kimball, both long associated with the U. S. Weather Bureau at Washington, have been appointed research associates of the Blue Hill Observatory of Harvard University.

DR. C. S. MUDGE, of the dairy industry division of the University of California, has been granted six months' leave of absence, beginning at the end of December. He plans to study in the laboratories of the Western Pennsylvania Hospital of the Institute of Pathology at Pittsburgh.

DR. R. R. STEWART, for twenty years professor of biology in Gordon College, Rawalpindi, India, has brought to the New York Botanical Garden a large general collection of plants from the northwest Himalaya and the Punjab and expects to spend the year in naming them. During May and June, he was at the Royal Botanic Gardens at Kew, engaged in the study of ferns and grasses. Professor Stewart has spent most of his summer vacations collecting in Kashmir.

DR. R. E. ROSE, director of the Technical Laboratory of the E. I. du Pont de Nemours and Company, Incorporated, was one of the guest speakers at the meeting of the Laundryowners National Association of the United States and Canada, which met in Toronto from October 17 to 20.

THE first meeting of the De Paul Chemistry and Physics Journal Society for this year was held on October 16, at the Medinah Athletic Club, Chicago.

Professor Philip Fox, director of the Adler Planetarium, was guest of honor and speaker of the evening, choosing for his discussion the recent solar eclipse.

THE first Sigma Xi lecture of the year at the University of Missouri was presented on October 25 by Dr. Bradley M. Patten, associate professor of embryology and histology, Western Reserve University School of Medicine. His subject was "First Heart Beats and Beginning Circulation in Living Embryos." The lecture was illustrated with micro-moving pictures of living chick and wren embryos.

PROFESSOR JULIAN HUXLEY, formerly professor of zoology and now honorary lecturer at Kings College, London, lectured at the University of California at Los Angeles on October 25. The title of his lecture was "The Uniqueness of Man."

THE Thomas Hawksley Lecture of the Institution of Mechanical Engineers was delivered by Lord Rutherford on November 4 on "Atomic Projectiles and their Applications."

AN Institute of Ornithology has been established at the University of Oxford. Its object is to carry out on a larger scale the work in ornithology which was started some years ago. The institute will be financed by the Ministry of Agriculture and the Empire Marketing Board. The University of Oxford will have control of this institute, for which the necessary funds are being obtained from the British Trust for Ornithology. The institute is established in the first instance for a period of five years under the direction of Mr. W. B. Alexander, working in the department of zoology and comparative anatomy.

Nature reports that H. J. Page has been appointed controller of the Agricultural Research Station of Imperial Chemical Industries, Ltd., at Jealott's Hill, Bracknell, Berks, following the release of Sir Frederick Keeble from his executive and routine duties at that station. Mr. Page was until 1927 head of the chemical department and chief chemist at the Rothamsted Experimental Station, and since that time has held the position of head of the research laboratories and chief chemist at the station of which he has now taken charge.

EIGHT engineers have been appointed to advisory membership in the Council Committee of the College of Engineering of New York University, with the idea of closely integrating professional experience and engineering training. Arthur S. Tuttle is chairman of the committee. Those appointed to the advisory committee are: Leon P. Alford, vice-president of the Ronald Press, New York; William L. Batt, president S. K. F. Industries, Inc.; Robert W. Boyd, engineer for the Turner Construction Company; John V. N. Dorr, president of the Dorr Company; George W. Fuller, specialist in water supply and sewage treatment; Frank B. Jewett, vice-president of the American Telephone and Telegraph Company and president of the Bell Laboratories; Grover Loening, president of the Loening Aircraft Corporation, and Robert Ridgway, chief engineer of the Board of Transportation, New York City.

THE Weather Bureau, which has been cooperating with Dr. R. A. Millikan in his investigations of cosmic rays as a part of the program of the International Polar Year, reports, according to the *U. S. Official Record,* that in spite of difficulties due to high winds, a large sounding balloon carrying an electroscope and other instruments was successfully launched at Ellendale, North Dakota, on September 17. The instruments have not yet been found. Dr. Millikan's colleague, Dr. I. S. Bowen, released two similar balloons at Dallas, Texas, on September 28 and 29, in cooperation with the bureau's airport station at Dallas. The instruments sent up on September 28 were found 25 miles northeast of Dallas, and preliminary calculations showed that they reached a height of about ten miles. A third balloon was released at Dallas on October 5. This work completes Dr. Millikan's balloon observations as arranged for in cooperation with the bureau. The bureau is forwarding to Dr. Millikan the data yielded by the instruments as they are found.

SIR CHARLES MCLEOD, chairman, and Lord Queenborough, honorable treasurer, have made the following appeal on behalf of the Ross Institute, London. "In 1923 a movement was started to found an institute to perpetuate for all time the name of Sir Ronald Ross, to carry on research work, and to stimulate malaria control measures in the empire. The Ross Institute was officially opened in 1926 by H.R.H. the Prince of Wales, and Sir Ronald Ross was the director-in-chief until his death. What the institute has already achieved is well known the world over, but if its work is to be continued more financial support must be forthcoming immediately. There is no endowment fund, and for two years contributions have been 25 per cent. below expenditure. This state of things can not go on much longer. Surely an effort can be made to save the institute and place it on a sound financial basis."

THE committee on scientific research of the American Medical Association invites applications for grants of money to aid in research on problems bearing more or less directly on clinical medicine. Preference is given to requests for moderate amounts to meet specific needs. Application forms may be obtained from the committee at 535 North Dearborn Street, Chicago, Illinois.

AN award of the Harrison Prize will be made, according to *Nature,* in December by a committee consisting of the presidents of the British Chemical Society, the Institute of Chemistry, the Society of Chemical Industry and the Pharmaceutical Society. The prize is of the value of about £150 and is awarded to the chemist who, in the opinion of the selection committee, during the last five years has conducted the most meritorious original investigations in any branch of pure and applied chemistry and has published his results. Further information can be obtained from the President, The Chemical Society, Burlington House, Piccadilly, London, W.1.

A CANCER research institute has been established in Tokyo, in the Imperial University Medical Department. The institute is to have a research department and a hospital, and Professor Nagayo of the university is to be the director. After 1933, the government will bear a part of the expense.

THE Forest Products Laboratory of the Forest Service, which has been maintained since 1910 in cooperation with the University of Wisconsin, has moved into its new building located west of the university campus. The laboratory for 20 years has been operating in four buildings and has several minor structures. The new building is U-shaped in plan, with five stories, a ground floor, and a penthouse over the central span between the wings. The first floor is stepped back from the ground floor, and the second, third and fourth floors are stepped back as a unit from the first. A variety of woods, including Douglas fir, ponderosa and southern yellow pine, walnut, oak, chestnut, birch and red gum, have been used in the scheme of interior finish. Facilities of the new laboratory building include a log storage yard, a sawmill, dry kilns, woodworking plant, gluing and paint shops, a mechanical testing laboratory, a creosoting plant, a wood distillation plant, a complete experimental pulp and paper mill, and several chemical laboratories.

ACCORDING to the report of the Forest Service the total receipts of the national forests for the fiscal year which ended last June 30 were less than half the total for the preceding fiscal year. These receipts —derived from timber sales, grazing fees, forest-products sales, rentals for water power, permits for hotels, summer homes and resorts and penalties for trespass —amounted to $2,294,247, as compared with $4,993,-320 for 1931 and $6,751,553 for 1930. Water-power rentals were the only large source of receipts which were greater in 1932 than in 1931. Twenty-five per cent. of the national-forest receipts annually goes to the states in which the forests are located, for *pro rata* payments to their counties for the county road and school funds, and the decline in receipts will be reflected in smaller payments to the states.

DISCUSSION

FURTHER NOTES ON TWISTED TREES

I HAVE followed with much interest the discussions in SCIENCE[1] on twisted trees. These brief reports led me to make rather extensive observations in the forests of Louisiana, which afford excellent opportunity for the studies.

The observations I am reporting were made at several points in an area of pine forest about thirty miles across, most of which was in the recently named Kisatchie Wold section. The terrain was rather sharply rolling, but at no point were the trees particularly exposed to hard winds, and on every side the same type of growth extended for miles. The trees in this area were largely the long-leaf pine (*Pinus palustris*).

My first interest was to see how the relative numbers of straight-grained trees and right- or left-hand twists of this region compared with the counts reported from other sections of the country. In the above-mentioned area 1,527 trees were counted. Of this number 364 (23 per cent.) were straight-grained, 811 (53 per cent.) showed a right-hand twist and 352 (24 per cent.) showed left-hand twisting. The proportion of straight-grained trees compares very favorably with the figures presented by Wentworth[2] and Cahn,[3] but the number of trees showing left-hand twists in the area I studied is from more than

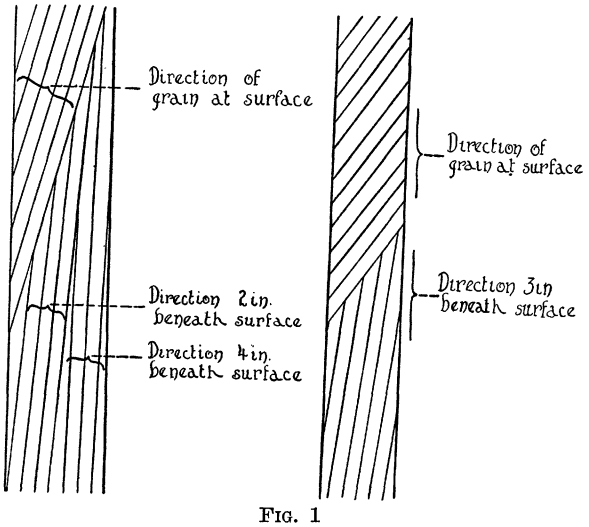

FIG. 1

[1] February 13, 1931; March 27, 1931; May 22, 1931; January 29, 1932.

[2] SCIENCE, February 13, 1931.

[3] SCIENCE, May 22, 1931.