

ists and chemical engineers who live or work within fifty miles of City Hall have been laid off. About 900 have registered with the committee and registration continues at the rate of from five to twenty per week. A considerable number—between 25 and 50 per cent.—have obtained some form of temporary work. Others are occupying their time in researches, either in laboratories in their homes or in the libraries. Since last January the committee has helped to get permanent or temporary jobs for 184 men and women. Ten to twenty people per week have received relief in the form of work or direct contributions.

It is estimated that for the eight months from November 1 to July 1 between \$50,000 and \$60,000 is needed to help about 100 men and women and their families. This is at the rate of about \$15 a week. It is hoped that of this amount \$32,000 can be raised directly from the profession and that the balance of from \$18,000 to \$28,000 may be contributed by the chemical industry.

The committee's object is to furnish work for idle chemists that will not bring them into competition with regularly employed members of the profession, and at the same time to advance research in pure science.

It will not send out unemployed chemists to compete in industry for jobs at reduced salaries. Men who have been placed in competitive positions have been urged by the committee to ask for their regular salaries, and in no case has an appeal been made to any employer to employ a man at a reduced salary because he is in need.

AWARD OF THE EDISON MEDAL TO BANCROFT GHERARDI

THE Edison Medal for 1932 has been awarded by the American Institute of Electrical Engineers to Bancroft Gherardi, "for his contributions to the art of telephone engineering and the development of electrical communication."

The Edison Medal was founded by associates and friends of Thomas A. Edison, and is awarded annually for "meritorious achievement in electrical science, electrical engineering or the electrical arts" by a committee consisting of twenty-four members of the American Institute of Electrical Engineers. The fol-

lowing eminent engineers and scientific men have been recipients of the medal: Elihu Thomson, Frank J. Sprague, George Westinghouse, William Stanley, Charles F. Brush, Alexander Graham Bell, Nikola Tesla, John J. Carty, Benjamin G. Lamme, W. L. R. Emmet, Michael I. Pupin, Cummings C. Chesney, Robert A. Millikan, John W. Lieb, John White Howell, Harris J. Ryan, William D. Coolidge, Frank B. Jewett, Charles F. Scott, Frank Conrad and Edwin W. Rice, Jr.

Bancroft Gherardi was born in San Francisco on April 6, 1873. Upon the completion of his studies at Cornell University, he entered the employ of the New York Telephone Company under Dr. John J. Carty, who was then chief engineer. From 1900-06 he was chief engineer of the New York and New Jersey Telephone Company; from 1906-07 assistant chief engineer of the New York Telephone Company, and from 1907-18 engineer of plant, American Telephone & Telegraph Company. In 1918 he became acting chief engineer and shortly afterward chief engineer of the company. Since 1920 he has been vice-president and chief engineer of the American Telephone & Telegraph Company.

H. H. Henline, acting national secretary of the American Institute of Electrical Engineers, writes:

Mr. Gherardi's entire professional and business career has been devoted to the art of communication. Coming into this field when the telephone art was very young (300,000 telephones in 1895) he has played a most important part in the development and perfection of operating practices and in the development of methods, equipment and apparatus, which have brought telephone communication to the high state of perfection in which we find it to-day.

Mr. Gherardi has directed the development and introduction of many new and improved arrangements which are in use to-day on a large scale, and which have added greatly to the speed and accuracy of local and long distance telephone service.

His broad vision as to the place of communication not only in the affairs of the people of the United States but also in world affairs and his initiative and skill in the development of engineering and operating organizations and in the development of the art generally have contributed enormously to the growth and success of present-day communication.

SCIENTIFIC NOTES AND NEWS

DR. WILLIAM SYDNEY THAYER, professor of medicine emeritus at the Johns Hopkins University, died on December 11, at the age of sixty-eight years.

DR. WILLIAM JACOB HOLLAND, director emeritus of the Carnegie Museum, Pittsburgh, died on December 13, at the age of eighty-four years.

THE Paris Academy of Sciences awarded on December 5 the Grand Prix founded by the late Prince Albert of Monaco to Prince Louis de Broglie, a former winner of the Nobel Prize for physics. The prize is valued at about \$3,900.

THE Gold Medals "for distinction in science" of the

Society of Arts and Sciences of New York City were presented on December 8 at a dinner given by the society to Dr. William Crocker, director of the Boyce Thompson Institute of Plant Research, and to Dr. Harlow Shapley, director of the Harvard College Observatory. Walter Russell, president of the society, presided, and Dr. H. H. Sheldon, of New York University, presented the medals.

DR. HERMANN PRINZ, professor of pharmacology at the Evans Dental Institute of the University of Pennsylvania, received the gold medal awarded by the Callahan Memorial Commission of Cincinnati, at the annual meeting of the Ohio State Dental Association held in Cleveland on December 5.

IN recognition of his contributions in research and the training of young men for careers in chemistry, the Charles University of Prague has awarded a medal of merit to Dr. Merle Randall, professor of chemistry at the University of California.

ACCORDING to the *Journal* of the American Medical Association, the Charles Mickle Fellowship of the University of Toronto has been awarded to Dr. Gaston Leon Ramon, director of the Pasteur Institute farm at Garches, France, in recognition of his work on diphtheria and practical methods for community protection against infectious disease. The fellowship is awarded each year to the member of the medical profession who is considered by the faculty of medicine of the university to have contributed most to the advancement of medical art or science during the preceding ten years. It is the annual income from an endowment of \$25,000 bequeathed to the university by the late Dr. W. J. Mickle.

DR. PEYTON ROUS, member of the Rockefeller Institute for Medical Research, has been elected a corresponding honorary member of the section of comparative medicine of the Royal Society of Medicine, London.

DR. FRIEDRICH RINNÉ, emeritus professor of mineralogy at Leipzig, has been elected an honorary member of the German Mineralogical Society.

DR. LEOPOLD WENGER, professor of Roman and German municipal law at Munich, has been elected president of the Bavarian Academy of Sciences.

MARQUIS GUGLIELMO MARCONI has been elected honorary president of the Comité International Radio-Maritime.

DR. HAROLD BENJAMIN FANTHAM, professor of zoology and comparative anatomy at the University of Witwatersrand, Johannesburg, South Africa, since

1917 and formerly president of the South African Association for the Advancement of Science, has been appointed head of the department of zoology at McGill University, succeeding Dr. Arthur Willey, now professor emeritus.

SIR ALDO CASTELLANI, professor of tropical medicine at the State University of Louisiana and at the Royal University of Rome and lecturer on mycology and mycotic disease at the London School of Hygiene and Tropical Medicine, has been appointed director-in-chief of the Ross Institute for Tropical Diseases, London, to succeed the late Sir Ronald Ross.

DR. E. REEVE HITCHNER has been appointed head of the department of bacteriology at the University of Maine. He succeeds Dr. Fremont L. Russell, who retired last June after forty-three years' service to the university.

DR. LIVINGSTON FARRAND, president of Cornell University, was elected chairman of the board of trustees of the Carnegie Foundation for the Advancement of Teaching at the twenty-seventh annual meeting of the board on November 17. Dr. Farrand succeeds Dr. William Allan Neilson, president of Smith College.

PROFESSOR VICTOR KUHN LA MER, of Columbia University, has been elected chairman of the New York section of the American Chemical Society. He succeeds Dr. Walter S. Landis, vice-president of the American Cyanamid Company. J. M. Weiss, president of Weiss and Downs, Inc., was elected vice-chairman of the section, and Dr. David P. Morgan, Jr., of Scudder, Stevens and Clarke, was named secretary-treasurer. Dr. Landis, Professor D. D. Jackson, of Columbia, Professor Arthur E. Hill, of New York University, and D. H. Killeffer, consulting chemical engineer, were elected to the executive committee.

DR. R. E. ROSE, director of the technical laboratory of E. I. du Pont de Nemours and Company, Inc., was elected president of the American Association of Textile Chemists and Colorists at their annual meeting in Greensboro, North Carolina. The association is actively engaged in the selection of methods for the determination of the fastness of dyed fabrics in conjunction with the Bureau of Standards and the Lowell Textile Institute.

THE directors of the Josiah Macy, Jr., Foundation, of New York City, have made a grant to The Wistar Institute, Philadelphia, in aid of the work on the development of the central nervous system in relation to behavior being done by Dr. George E. Coghill, member of the institute, and Dr. A. W. Angulo, associate.

PROFESSOR PICCARD, who is leaving Brussels on January 4 for the United States, where he will deliver

lectures on the stratosphere, stated to a correspondent of the London *Times* that he had given up all idea of making further ascents. Dr. Cosyns, who accompanied him on the ascent from Zurich, would, he said, make an ascent next summer from a point in Belgium, and would attempt to beat the altitude record. Another ascent, from Hudson Bay, would have the object of studying the deviation of the cosmic rays in the region of the North Magnetic Pole. This ascent would be made in 1934, but Professor Piccard would confine himself to helping in the preparations, and the ascent would have to be made by American physicists accustomed to the Polar climate. The plan was only in the preliminary stage.

DR. DAVIDSON BLACK, of the Peiping Union Medical College, China, gave two lectures on *Sinanthropus* at the University of London on December 9 and 12.

DR. WALDEMAR KAEMPFERT, science editor of *The New York Times*, addressed the students and faculty of the Carnegie Institute of Technology on December 6, on "Social and Cultural Aspects of Engineering and Invention."

DR. WALTER B. CANNON, of the Harvard Medical School, addressed the second year medical students at the University of Michigan on November 14. His subject was "The Emotional Level."

DR. RAY LYMAN WILBUR, Secretary of the Interior, was the Founders' Day speaker at the Medical College of Virginia, Richmond, on December 1. This was also the occasion for formally opening to the public the new library of the college.

DR. BRONISLAW MALINOWSKI, professor of anthropology at the School of Economics of the University of London, will deliver the Messenger Lectures at Cornell University during the month of March. During April, Dr. Malinowski will visit other institutions with departments of anthropology in order to meet his American colleagues.

DR. PETER DEBYE, professor of physics at Leipzig, who has been lecturing at the Ohio State University and the University of California, will give a series of lectures as Scott professor at the Cavendish Laboratory of the University of Cambridge.

DR. HEBER D. CURTIS, director of the observatory at the University of Michigan, delivered a lecture on the recent total eclipse on December 8 at the Carnegie Institute of Technology under the auspices of the Physical Society of Pittsburgh. Dr. Curtis is a former member of the society.

HENRY GRIER BRYANT, of Philadelphia, the geographer and explorer, died on December 7, at the age of seventy-three years.

GENERAL NICOLA VACCHELLI died on November 19, 1932, at the age of sixty-two years. He was a deputy of the national parliament of Italy, director of the Military Geographic Institute, president of the Italian National Committee for Geodesy and Geophysics, president of the Italian Royal Geographic Society, vice-president of the International Geographic Union and member of the executive committee of the International Geodetic Association.

THE deaths are announced of Dr. Friedrich Wilhelm Fröhlich, professor of physiology at Rostock; of Dr. Peter Stark, professor of botany at Frankfurt, and of Dr. Hugo Bücking, professor of mineralogy at Heidelberg.

THE Baltimore City Medical Society and the Osler Historical Society met recently in joint session. The speakers and their subjects were: Dr. Fielding H. Garrison, "Geomedicine: A Science in Gestation"; Dr. Henry E. Sigerist, "Problems and Methods of Historical Pathology"; Dr. John Ruhräh, "Aztec Methods in Child-Training"; Dr. John Rathbone Oliver, "The Promethean Fantasies of Alexander Scriabin"; Dr. Owsei Temkin, "Views of Epilepsy in the Hippocratic Period," and Dr. William H. Welch, "Vaccination in Maryland."

THE International Congress of Microbiology, which was to have taken place in Berlin in 1933 under the presidency of Professor Hahn, is, owing to existing world conditions, now postponed to 1934.

THE trustees of the Rockefeller Foundation have made a further grant of £5,000 towards the research funds of the British National Institute of Industrial Psychology, to be expended during the years 1933-36.

WE learn from *Museum News* that the Rothschild collection of birds, valued at about \$500,000, which the American Museum of Natural History obtained last summer was a gift of the widow and children of the late Harry Payne Whitney. It is the largest single gift the museum has ever added to its collections. The same donors have provided a fund to be used to pay expenses of students of ornithology from abroad.

THE Kellogg Company of Battle Creek, Michigan, recently gave to the board of trustees of the University of Michigan the sum of \$20,000 to be used for researches on the effect of caffeine, under the direct supervision of Professor Charles W. Edmunds, head of the department of materia medica in the Medical School. The work will be done during the coming period of two years.

SIR HILTON YOUNG, M.P., and Professor Frank Debenham in a letter to the Press call attention to the Scott Polar Research Institute at Cambridge. They

write in part: "After work and hope prolonged for years, a building is about to be provided for the Scott Polar Research Institute at Cambridge, with funds arduously collected over many years. Designs have been prepared by Sir Herbert Baker, R.A., which are admirable as to both space and dignity of appearance. Unfortunately the sum available for building is insufficient to carry out these plans in full, and for lack of another £2,000 we shall have to leave it without its top story for the present. This will not only be a serious handicap to its efficiency but will, of course, make completion more expensive in the long run. Our hope is that some of those who realize the scientific and economic importance of Polar work, besides its appeal to the imagination, will help its future scientific home to start unhandicapped. The gap is not wide. Sir Louis Baron has started to bridge it with £100. Will not others complete the bridge?"

At a meeting held at Washington University in St. Louis on November 26 a new sub-committee of the National Research Council was organized for the encouragement and guidance of further research on the origin of the sulfide ores of the Mississippi Valley Region, especially those of lead and zinc which constitute the world's most important sources of these metals. New studies in the paragenesis of the ore minerals are already well under way. Critical correlation studies of the ore-bearing horizons in the various producing districts have been initiated under the guidance of Professor R. C. Moore, and the preparation of a large scale map showing the structural features of the region will be undertaken under the supervision of Professor A. W. Giles. Several other lines of investigation have been mapped out and a field meeting of the committee for the study of critical localities is planned for September of the coming year. The present membership of the committee includes: E. S. Bastin (*chairman*), E. F. Bean, C. H. Behre, Jr., G. C. Branner, H. A. Buehler, C. L. Dake, W. H. Emmons, G. M. Fowler, A. W. Giles, M. M. Leighton, W. E. McCourt, E. T. McKnight, H. S. McQueen, R. C. Moore, W. A. Tarr and S. Weidman.

We learn from *Nature* that a special exhibition dealing with optical phenomena and optical instruments was opened at the Science Museum on November 19. It will remain on view until the middle of February, 1933. A special feature of the exhibition is a number of demonstrations and experiments operable by visitors. These illustrate reflection, refraction, dispersion, interference, diffraction and polarization of light as well as the working of simple optical instruments such as the telescope and microscope. Other demonstrations include a large projection microscope designed for the examination of metals in large pieces, a rangefinder specially adapted

to take short ranges in the museum, a home cinematograph projector using standard size film, a large ophthalmoscope for examination of the human eye and a modern epidiascope. The historical development of various optical instruments is illustrated by examples selected from the museum collections, and current practice in optical instrument manufacture will be further represented by a selection of modern instruments lent by various firms especially for the exhibition.

AN area embracing about twelve townships north of Red Lake, Minnesota, became on November 1 an inviolate sanctuary for caribou and other wild life, in accordance with regulations recently prescribed by William T. Cox, Minnesota Commissioner of Conservation. Reports of a herd of caribou in the Red Lake region were confirmed last June by field naturalists of the Bureau of Biological Survey. Dr. Vernon Bailey, in charge of the bureau's investigation, was of the opinion that under the conditions then prevailing the prospects for perpetuating the herd were poor, but making this area a sanctuary is expected to prevent the threatened extermination.

THE report on the work of the British Museum for 1931, as abstracted in the *London Times*, includes an account of the progress of the British Museum (Natural History) at South Kensington, the fiftieth anniversary of which was celebrated on September 29 and 30. The total number of visitors to the Natural History Museum in 1931 was 537,170, as compared with 506,407 in 1930, the present numbers still being below those of the preceding three years. Visitors attending the tours of the official guide-lecturers decreased by 1,935 to a total of 12,533. The advisory and economic activities of the museum included the answering of numerous inquiries relating to mites, ticks and parasitic worms. Advice was also given on the muskrat question, whaling and sealing matters and the corrosion of submarine pipes by Polyzoa and Mollusca. The department of entomology continued to cooperate with the Imperial Institute of Entomology, and in addition 938 economic inquiries were dealt with by correspondence and 561 by interviews. Pests of grain, cereal products and fruit and insects affecting tobacco received much attention. The timber of Gray's Inn Hall and of the Great Hall of University College received detailed examination. In the department of botany a large number of queries on plant diseases, destruction of stored products, human fungal diseases and water pollution were dealt with.

A STATEMENT issued by the Department of Commerce reports that the arc of first-order triangulation extending along the eastern coast of Lake Michigan,

on which work was started early in June, has been completed. The arc passes through Benton Harbor, South Haven, Holland, Grand Rapids, Muskegon, Hart, Ludington, Manistee and Traverse City. This work constitutes a link in the Federal Government's project of triangulation authorized by Congress. Already more than 30,000 miles of arcs or chains of triangles have been extended over the country to furnish starting points for surveys connected with topographic mapping, location of state and county

boundaries, surveys in cities and even for the location of monuments on private property. Each triangulation station on this Michigan arc was marked in a permanent manner with a block of concrete into which was set an inscribed metal tablet. A second monument was placed at a distance of about 400 yards from each station to serve as an azimuth mark for local engineers, the true bearing, or azimuth, of this mark being determined by observations during the field work.

DISCUSSION

ST. CROIX'S RAINIEST YEAR CAUSES AN EPIDEMIC OF MALARIA

THE year 1931 will stand out prominently in St. Croix's history. During this time a maximum annual rainfall over a period of 80 years occurred, and the island suffered one of the worst outbreaks of malaria it has ever experienced. Curiously enough, these two phenomena were closely related.

St. Croix, like the other United States Virgin Islands, of which it forms a part, lacks sufficient elevation to provide an important barrier across the path of the northeast trades; and without mountains to elevate these winds and produce rain, the precipitation is undependable. The convectional rain, which reaches a maximum at the time of the high sun, is uncertain in occurrence. The hurricane control, a major influence of the rainiest period, is likewise exceedingly variable. Hence, it is small wonder that annual rainfall, which averages 45.54 inches (80 years), has ranged from a low of 29.48 inches in 1873, 16.06 inches below normal, to a high of 69.81 inches in 1931, 24.27 inches above normal.¹

An abundance of moisture, producing ideal breeding grounds for millions of mosquitoes, is one of three most basic factors involved in malarial areas of the tropics. The other two are the presence of the anopheles mosquito and persons suffering from malarial fever.

The first factor is vital, for all anopheles are harmless during the greater period of their lives. For instance, out of each 100 anopheles mosquitoes, only a few will have a chance to bite a human being during the period in which his blood contains malarial parasites in the infective stage. Of those which do bite such a person, only a limited number will live the twelve days necessary for the plasmodium to attain its full development in the insect, and of those

in which the twelve-day cycle is completed, some may die before they have an opportunity to attack a susceptible person.² Thus, it is seen that as regards the epidemic spread of the disease there are interrelated critical points in the amount of rainfall necessary to provide favorable breeding places for the mosquitoes, the number of mosquitoes which are produced, the number of these insects susceptible to infection with the parasite, and the number of human carriers of that parasite. All factors must rise above those critical points if there is to be an epidemic.

From 1918 to 1930 only fifteen cases of malaria were reported in St. Croix, and with one exception, all were confined to persons who had acquired the infection in Puerto Rico. Yet during this thirteen year period it was known by actual tests that anopheles mosquitoes were in the island.³ The rainfall was not sufficient, however, to furnish them breeding places for rapid multiplication.

The year 1931 gave the proper weather conditions. The malaria epidemic started in July in the most swampy part of Christiansted, the district of Gallows Bay. Before it was checked it spread through the island. A final count showed over 900 cases received medical aid and 22 deaths were the result of its ravages.³ Probably many additional fatalities were induced by its weakening influence, the victims being left more susceptible to some other serious disease. Moreover, losses from sickness and death were not the only unfavorable results. There was an economic loss to laborer and employer in the number of days the workers were absent and in the lowering of the efficiency after their return. Again, St. Croix has been attempting to build up a much-needed tourist industry to supplement its declining sugar production. Word of the epidemic reached national dailies in the eastern United States, and passengers from

¹ Rainfall statistics are an average for three major stations, Christiansted, Kings Hill and Fredericksted. Data were furnished by the U. S. Weather Bureau, Washington, D. C., and the Agricultural Experiment Station at Christiansted.

² Weston P. Chamberlain, "Twenty-Five Years of American Medical Activity on the Isthmus of Panama," p. 12, The Panama Canal Press, Mount Hope, C. Z., 1929.

³ This information was obtained from Dr. J. I. Knott, government physician at Christiansted, St. Croix.