SCIENTIFIC NOTES AND NEWS.

Rear Admiral George W. Melville, chief of the Bureau of Steam-engineering of the navy, retired from active service on August 8.

Professor E. C. Pickering, of Harvard College Observatory, has been given the degree of Doctor of Science and Mathematics by the University of Heidelberg on the occasion of the celebration of the centenary of its reopening.

Professor Carl Pearson, of University College, London, will give this year the Huxley memorial lecture, his subject being 'On the Inheritance in Man of Moral and Mental Characters and its Relation to the Inheritance of Physical Characters.'

Dr. A. G. Leonard, assistant state geologist of Iowa, has been elected state geologist of North Dakota.

Dr. Charles B. Hare, of the University of Michigan, has been appointed government bacteriologist in the Philippines.

The University of Edinburgh has conferred its honorary LL.D. on Professor S. S. Laurie, lately professor of education in the university, and on Sir Henry MacLaurin, chancellor of the University of Sydney, who has made various contributions to medical literature.

General A. W. Greely, chief of the Signal Service, represented the United States at the conference on Wireless Telegraphy, which met at Berlin on August 4, on the call of the emperor of Germany.

Professor Victor Goldschmidt, of the University of Heidelberg, the distinguished mineralogist and crystallographer, arrived in New York on the *Kurfürst,* on August 5, and will remain in this country until November. He will visit the Pacific coast and the Yellowstone Park, and be the guest of American mineralogists at Harvard University, Yale University, Columbia University, the Kingston (Can.) and Houghton (Mich.) Mining Schools, the University of Wisconsin and the Case School of Applied Science.

Dr. E. O. Hovey sailed for Europe on the *Moltke,* on August 6. He will represent the American Museum of Natural History at the International Geological Congress at Vienna, and afterwards will spend some time in the Puy de Dôme region of southern France.

Mr. Harlan I. Smith, assistant curator of archeology, is making investigations in the state of Washington for the American Museum of Natural History.

Mr. Adolph Hempel, an American engaged in scientific work in Brazil, recently shipped to the zoological laboratory of Harvard University several living specimens of *Cavia aperea,* the wild guinea-pig of Brazil. Three of the animals have reached Cambridge in safety and will be used in experimental studies in heredity.

The expedition of investigation sent to the Bahama Islands by the Baltimore Geographical Society returned on July 30.

The Antarctic relief ship *Terra Nova* is expected to proceed to Hobart, Tasmania, at the end of the present month by way of the Suez canal. She will there be joined by the *Morning.*

Professor J. A. Ewing, F.R.S., has been appointed a member of the Explosives Committee of the British government in the place of the late Sir W. C. Roberts Austen.

The Royal Society has awarded its Mackinnon research studentships to Mr. F. Horton in physics and to Mr. A. L. Embleton in biology.

Mr. W. E. Hartley, B.A., of Trinity College, has been appointed assistant observer in the Cambridge Observatory.

Dr. George R. Parkin, who recently visited the United States to make arrangements in regard to the Rhodes scholarships, is at present in South Africa on the same mission.

The plan of changing the name of the Jenner Institute of Preventive Medicine to the Lister Institute of Medicine, referred to elsewhere in this issue of Science, has been carried into effect by a unanimous vote of the members of the institution.

The centenary of the birth of C. C. J. Jacoby, the mathematician, occurs next year

and will be celebrated by the preparation of a memorial volume under the auspices of the third International Mathematical Congress and edited by Professor Königsberger.

Nature states that the monument which was unveiled last month at Bonn, in honor of Professor Kekulé, stands away from the city and just in front of the building of the chemical laboratories of the University of Bonn, the place in which Kekulé labored and taught for so many years and with such pronounced and conspicuous success. The statue stands on a granite pedestal, and is life-size and of bronze. On each side of the sculptured figure of Kekulé is a sphynx. The character of the man, simple and unpretentious yet convincing, is well brought out, and some of his greatest scientific achievements are clearly represented in relief on the pedestal. At the unveiling ceremony many universities and scientific bodies, foreign as well as German, were represented, and so also were numerous firms engaged in the chemical industry.

A BUST of the late Sir William Henry Flower, F.R.S., director of the Natural History Department of the British Museum, the work of Mr. Brock, R.A., was formally presented to the trustees of the British Museum by the Flower Memorial Committee, of which Lord Avebury is chairman, at the Natural History Museum, South Kensington, on July 25. Speeches were made by Professor Ray Lankester, Lord Avebury, Dr. Sclater and the Archbishop of Canterbury.

WE regret to record the death of Dr. W. C. Knight, professor of geology and mining engineering in the University of Wyoming, who died on July 8 from peritonitis after a brief illness.

DR. HAMILTON LANPHERE SMITH, professor of physics and astronomy in Hobart College, Geneva, N. Y. until 1890, died in New London on August 1, at the age of eighty-one years.

WE note with regret the death of Mr. William Earl Dodge which occurred at Bar Harbor on August 9. Mr. Dodge was one of the most public spirited citizens of New York City, who gave not only of his means, but also of his time to educational and scientific institutions. He was the first vice-president of the American Museum of Natural History and of the Metropolitan Museum of Arts; one of the trustees of the Carnegie Institution and of the New York Botanical Garden, and a member of the New York Academy of Sciences and of the American Geographical Society.

M. EDMOND NOCARD, the well-known student of comparative pathology, died at Paris on August 2.

M. RENARD, professor of mineralogy at the University of Genth, has died at the age of sixty years.

DR. FRANZ BAUER, docent for geology in the Technical Institute at Munich, died on June 21 as the result of an accident while on a geological expedition.

THE third International Mathematical Congress will be held at Heidelberg in August of next year. Professor A. Krazer, of Karlsruhe, is the secretary.

THE second International Seismological Conference was held at Strasburg at the end of last month with representatives in attendance from about twenty countries.

THERE will be a civil service examination on September 2 to fill a vacancy in the position of testing engineer (male) in the Bureau of Forestry, Department of Agriculture, at $1,200 to $1,500 per annum. On September 2 and 3 there will be an examination to fill the position of miscellaneous computer at the Naval Observatory, and on September 16 for the position of nautical expert in the hydrographic office, U. S. Navy, at a salary of $1,000.

MR. MARSHALL FIELD has written to the South Park Board of Chicago to say that he is willing to go forward with the building of the permanent Field Columbian Museum on the lake front as soon as the ground is ready for building. It is said that the cost of the building will be $6,000,000.

THE daily papers report that Mr. Andrew Carnegie has given U. S. Steel Corporation

Bonds of the par value of $2,500,000 to Dunfermline, Scotland, where he was born in 1837. The income is to be used for parks, a theater, the encouragement of technical education, etc.

There was a meeting of the British Cancer Research Fund on July 30, at which the prime minister presided and made an address. It was reported to the meeting that the fund now amounts to somewhat over £50,000, and that about £1,000 had been spent during the present year, some three thousand cases of cancer having been studied.

A forest reserve of 10,000 acres in Mifflin, Juniata and Huntingdon Counties in Pennsylvania has been recently created and named the Rothrock Forest Reserve, in honor of Dr. J. T. Rothrock, the present forest commissioner.

The commission sent by the Marine Hospital Service to Vera Cruz, consisting of Dr. Herman B. Parker, of the Marine Hospital, and Drs. George E. Beyer and O. L. Pothier, of New Orleans, report three propositions as having been demonstrated beyond doubt, namely: 1. That the cause of yellow fever is an animal parasite, and not a vegetable germ or bacterium. 2. That the disease is communicated only by the bite of mosquitoes. 3. That only one genus of mosquitoes, *Stegomyia Fasciata,* is the host of the yellow fever parasite.

The opening of the Simplon Tunnel in 1905 will be celebrated by an exposition at Milan, partly of international character. Special attention will be paid to exhibits of transportation by land and water and aerial navigation.

A report has been widely circulated that a variety of basil (*ocinum viride*) possesses the property of driving away mosquitoes. Captain Larymore originally made the statement that several growing pots of this plant would keep a room free from mosquitoes, and that the leaves would stupefy them. Sir George Birdwood further reported that allied basils had long been used in India as a defense against mosquitoes and as a prophylactic in malarious districts. Experiments have now been made by Dr. W. T. Prout, principal medical officer in Sierra Leone, showing that mosquitoes flourish quite as well in the presence of basil plants as elsewhere. The efficacy of other plants reputed to drive away mosquitoes is no greater, and this should be generally known, in order that dependence may not be placed on empirical methods in place of proper means for the extermination of mosquitoes.

The Board of Aldermen of New York City have authorized an additional bond sale to the amount of $188,000 for constructing approaches to a new wing of the American Museum of Natural History, for building a foyer to take the place of the old lecture hall and for other additions and improvements about the building. Among these additions will be two assembly-rooms for the use of the New York Academy of Sciences and for other scientific meetings. Ground is being broken on Manhattan Square, west of the new lecture hall, for the construction of an addition to the museum building to contain a thoroughly modern heating, lighting and power plant. It is planned to have the apparatus for the conversion and transmission of heat, light and power open to the public, and instructively labeled and described.

The illustrated report to the U. S. Geological Survey on Precious Stones for 1902, by Mr. George F. Kunz, is now in press. The production of precious stone in this country in 1902 aggregated $318,300 in value, as compared with $289,050 in 1901, and with $333,170 in 1900. The total value of the precious stones imported into the United States during 1902 was $25,412,776, which sum was $550,209 more than that for the previous year, and twelve times the value of the importations in 1866.

The Carnegie Trust for the Universities of Scotland has made the following awards under its research scheme: Research Fellowships, Chemical, (1) Charles E. Fawcitt, B.Sc. Edinburgh and London, Ph.D. Leipzig; (2) James C. Irvine, B.Sc., D.Sc. St. Andrews, Ph.D. Leipzig; (3) William Maitland, B.Sc. Aberdeen. Biological, (4) John Cameron, M.B., Ch.B. Edinburgh. Historical, (5) Duncan Mackenzie, M.A. Edinburgh, Ph.D. Vienna.

Research Scholarships, Physical, (1) J. H. Macyagan Wedderburn, M.A. Edinburgh; (2) Henry W. Malcolm, M.A. Aberdeen; (3) James R. Milne, B.Sc. Edinburgh; (4) Thomas B. Morley, B.Sc. (Engin.) Glasgow. Chemical, (5) Joseph Knox, B.Sc. Aberdeen; (6) John Johnston, B.Sc. St. Andrews; (7) Forsyth James Wilson, B.Sc. Edinburgh. Biological, (8) Sydney F. Ashby, B.Sc. (Agric.) Edinburgh; (9) Robert Thomson Leiper, M.B., Ch.B. Glasgow; (10) Henry J. Watt, M.A. Aberdeen. Pathological, Charles Todd Andrew, B.Sc., M.B., Ch.B., Aberdeen; Alexander Matheson, M.A., B.Sc., M.B., Ch.B., Glasgow; M. Logan Taylor, M.B., Ch.B., Glasgow; S. A. K. Wilson, M.A., M.B., Ch.B., B.Sc., Edinburgh. Historical, Alan O. Anderson, M.A., Edinburgh. Economical, John Young, M.A., St. Andrews. Linguistic, John Purves, M.A., Edinburgh. Research grants were also awarded to fifty applicants.

ACCORDING to the report to the United States Geological Survey for 1902 by Dr. Joseph Hyde Pratt, the production of crude tungsten ores during 1902 amounted to 183.5 tons, of which not more than a few tons were sold. The production of 1901 was 179 tons of concentrated ore, valued at $27,720. The larger part of the production of 1902 was from Colorado, with a smaller amount from Connecticut. No new localities were developed during 1902. Almost the entire production of commercial molybdenite was by the Crown Point Mining Company, of Seattle, Washington, from their property in the western part of Chelan County. The production amounted to about twelve tons. The value of the ores is very erratic, the prices quoted varying from $1,500 to $100 per ton. There was a marked increase in the production of uranium and vanadium minerals in 1902, which, as reported to the Survey, amounted to 3,810 tons, valued at $48,125, or $12.63 per ton. This, of course, represented the crude ore. In 1901 the production was 375 tons of crude ore. A portion of the uranium ore was treated, giving a concentrated product of 25 tons, which was valued at $8,000, or $320 per ton. Although it has been determined that these metals have beneficial effects when used in the manufacture of steel, considerable study of them is necessary before their commercial positions with respect to one another or to nickel and chromium can be definitely determined. Questions came up as to which of the various irons hardened by them are best adapted for steel drills, for dies and shoes in stamp mills, for car axles, carpenters' tools, etc., as to which will retain the best cutting edge, which will heat the least when in use and which will make the toughest iron. Mr. A. B. Frenzel, of Denver, Colorado, has offered prizes at a number of the schools of mines in the United States for investigations of these ferro-alloys in relation to the matters mentioned above.

A NEW division has been established in the Geological Survey, entitled the 'Division of Alaskan Mineral Resources,' which will embrace all of the investigations and surveys being carried on in Alaska. This division is coordinate with the others of the geologic branch of the survey and its chief will report to the director. For some years past extensive surveys and investigations have been systematically carried on in Alaska, the results of which have appeared in more than twenty publications of the Geological Survey, accompanied by extensive maps. These reports have been for the most part devoted to the discussion of the mineral resources of Alaska, and have proved of great practical benefit to prospectors and miners. This work is being pushed as rapidly as the appropriation will allow. The Alaskan division has now seven parties in the field, of which two are mapping and investigating the placers of the Nome region, two the gold deposits of the Yukon, another the coal-bearing rocks of the Yukon, the sixth is making a reconnaissance of the petroleum fields of Controller Bay and Cook Inlet, and the seventh is making a reconnaissance of the vein deposits of the Juneau and adjacent districts. Mr. Alfred H. Brooks has been made chief of the new division, with the official designation of geologist-in-charge, Division of Alaskan Mineral Resources. Mr. Brooks has been en-

gaged in Alaskan investigations for the last six years, during which time he has made many extensive journeys in the territory. He has had administrative control of the geologic work in Alaska for the last two years, and will now combine with this the charge of the topographic work. He leaves Washington about July 20, for an extended tour in Alaska, and will visit a number of the important mining districts in which investigations are being carried on.

The *Deutsche Industrie Zeitung,* as abstracted in the Consular Reports, says that of all the countries producing steel in 1902 the United States led, with an output of 15,000,000 tons. These figures grow in importance when it is remembered that the world's production in 1894 was only 12,851,000 tons. Germany's production in 1902 was 7,780,000 tons, one-half that of the United States; while England's was only 5,000,000 tons, or one-third the production of the United States. The world's total steel output for 1902 was estimated at 35,000,000 tons. This would indicate a growth of 700 per cent. in twenty-two years, or an increase from a little more than 4,000,000 tons in 1880 to 35,000,000 tons in 1902. The great increase is due to the introduction and improvement of the processes, notably the flame furnace. Pennsylvania leads all parts of the world in the use of this furnace, followed by Illinois, New England, Ohio, etc. The steel produced by the Bessemer process during the last fifteen years was used mostly for rails. In England more than half of the steel produced by the Bessemer process went into rails. In Germany and the United States the proportion is not so large. While the United States produced 9,306,471 tons of steel ingots in 1902, it turned out only 2,876,293 tons of steel rails, or about 30 per cent. of the steel-ingot production. In Germany the amount of Bessemer steel put into rails is proportionately smaller. Because of the resisting power of the steel, the wear and tear on the rails is far less; but the manifold uses to which the steel can be put has taken away somewhat from the importance of steel-rail manufacture. The last twenty years has resulted in an age of steel. Three times as much steel is now produced as in 1894. The universal opinion seems to be that the production of steel is to go on increasing. If, during the next twenty years, the same rate of increase is maintained as marked the past, 1923 will see an advance of from 20,000,000 to 25,000,000 tons in the world's total production. In this enormous increase the United States, according to experts, is to play the important part. At the very least, this opinion seems reasonable. The United States now uses in a year 30,000,000 tons of the very best iron ore. In twenty years this would mean a total of 600,000,000 tons—possibly the exhaustion of the sources of supply.

UNIVERSITY AND EDUCATIONAL NEWS.

The grounds of Clark University, Worcester, are to be surrounded by an ornamental wrought iron fence, estimated to cost at least $30,000, to be given by Mrs. Susan W. Clark, widow of the founder of the university.

The London County Council has resolved, subject to certain conditions, to contribute £20,000 a year for the maintenance of the new Institute of Technology which it is proposed to establish in connection with the University of London.

The University of St. Andrews has established a lectureship in geology with a salary of £300, the appointment to which will be made in September.

Dr. Charles S. Howe, professor of mathematics and astronomy in Case School of Applied Science, has been elected president.

Professor Kendrick C. Babcock, assistant professor of history at the University of California, has been offered the presidency of the University of Arizona.

Professor J. A. Ewing has resigned his chair of applied mechanics at Cambridge University which he has held since 1890.

Dr. Sievers has been promoted to a newly-established chair of geography at the University of Giessen.