and the practicability of the international auxiliary language.

Although the first Esperanto Congress here, it is the sixth international congress of Esperanto—five having been held previously, the first at Boulogne in 1905 and the others annually thereafter at Geneva, Cambridge, Dresden and Barcelona, in the order named. The congress of 1911 will sit in Antwerp. The same results as to easy intercommunication between peoples of different tongues, described above in connection with the Washington Congress, are reported as having been attained at all the former congresses, and it seems fair to assume that this outcome of continued experiment upon a large scale raises the presumption, that Esperanto is in position to make good its claims as an international means of communication. Even if we take no account of the rapidly spreading Esperanto movement, nor of the testimony which is almost daily to hand regarding its ability to smooth the way of the scientist, the philosopher or the merchant, whose interest reaches out beyond the narrow borders of his own land, still the success of these annual Esperanto congresses, which can not be gainsaid, at least provides sufficient *prima facie* evidence touching the worth of the language, as to demand thoughtful and thorough investigation upon the part of those interested in international conferences of any kind, or in furthering international intercommunication of any description.

J. D. HAILMAN

PITTSBURGH

SCIENTIFIC NOTES AND NEWS

AT a special Degree Congregation held at Sheffield University in connection with a visit of the British Association, honorary degrees were conferred as follows: Doctor of Science —Mr. W. Bateson, F.R.S., the Rev. Professor T. G. Bonney, F.R.S., Sir William Crookes, F.R.S., Mr. Francis Darwin, F.R.S., Professor T. W. Rhys Davids, Sir Archibald Geikie, F.R.S., Professor E. W. Hobson, F.R.S., Sir Oliver Lodge, F.R.S., Sir Norman Lockyer, F.R.S., Dr. H. A. Miers, F.R.S., Sir William Ramsay, Professor C. S. Sherrington, F.R.S., Sir J. J. Thomson, F.R.S. Doctor of Engineering—Sir Joseph Jonas, Sir W. H. White, F.R.S. Doctor of Metallurgy—Mr. J. E. Stead, F.R.S.

DR. E. SCHULTZE, professor of agricultural chemistry at the Zurich School of Technology, has been given an honorary doctorate by the University of Heidelberg.

M. URBAIN, professor of chemistry at Paris, has been elected a corresponding member of the Madrid Academy of Sciences.

AMONG the representatives appointed to attend the opening of the Mexican National University on September 22 are Professor F. W. Putnam and Roland B. Dixon, from Harvard University, and Professor Franz Boas, from Columbia University.

PROFESSOR JUNIUS HENDERSON and Instructor Wilfred W. Robbins, of the University of Colorado, have been engaged in investigation in New Mexico, being connected with an exploring party of the Archeological Institute of America. Professor Henderson has been studying the geology and Mr. Robbins the botany of the Cliff Dweller region.

A COLLECTION of minerals, containing 200 specimens, for every high school in the state of Colorado, will be one of the results of the work done this summer by the State Geological Survey under the direction of Professor Russell D. George, state geologist. He is supervising five parties which are studying and reporting on the clays and minerals in various parts of the state. A volume containing reports from two of the districts has already been issued.

Nature states that Mr. J. Hewitt, assistant for lower vertebrates in the Transvaal Museum, and formerly curator of the Sarawak Museum, has been appointed director of the Albany Museum, Grahamstown, South Africa, in succession to Dr. S. Schonland, who has resigned owing to pressure of other work. The herbarium is still under the care of Dr. Schonland.

M. EUGÈNE ROUCHÉ, member of the Paris Academy of Sciences, in the section of mathe-

matics, died on August 19, at the age of seventy years.

M. Wilm, honorary professor of chemistry at Lille, has died at the age of seventy-seven years.

The death has occurred at Helsingfors, at the age of seventy-six years, of Karl Gustav Estlander, professor of esthetics in the university of that city.

It is announced from Paris that Madame Curie has isolated pure radium. Up to this time radium has been known only in the form of salts.

The copyright of the Encyclopedia Britannica has been acquired by the University of Cambridge Press from the London *Times*, which began the preparation of the eleventh edition some seven years ago. It is expected that the complete work in twenty-eight volumes will be issued simultaneously within six months.

The next meeting of the International Commission for Scientific Aeronautics will be held in 1912 in Vienna.

An International Conference on Town Planning will be held in London from October 10 to 16, under the patronage of the king, and under the auspices of the Royal Institute of British Architects. The council of the Royal Academy of Arts has promised to lend its galleries "for the display of the notable designs and illustrations of town planning and remodelling which have been collected from all parts of the world."

At the meeting of the British Iron and Steel Institute, to be held at Buxton, from September 26 to 30, the following papers will be read: "On Electric Steel Refining," by D. F. Campbell (London); "On the Hanyang Iron and Steel Works," by G. Chamier (Hankow, China); "On Manganese in Cast Iron and the Volume Changes during Cooling," by H. I. Coe, B.Sc. (Birmingham); "On Sulphurous Acid as a Metallographic Etching Medium," by E. Colver-Glauert (Berlin) and S. Hilpert (Charlottenburg); "On the Theory of Hardening Carbon Steels," by C. A. Edwards (Manchester); "On the Influence of Silicon on Pure Cast Iron," by A. Hague, B.Sc. (Birmingham) and T. Turner, M.Sc. (Birmingham); "On the Preparation of Magnetic Oxides of Iron from Aqueous Solutions," by S. Hilpert (Charlottenburg); "On the Manufacture of Rolled 'H' Beams," by G. E. Moore (Loughborough); "On the Utilization of Electric Power in the Iron and Steel Industry," by J. Elink Schuurman (Baden, Switzerland); "On the Briquetting of Iron Ores," by C. de Schwarz (Liège); "On some Experiments on Fatigue of Metals," by J. H. Smith (Belfast).

Lectures will be delivered in the lecture hall of the Museum Building of the New York Botanical Garden, Bronx Park, on Saturday afternoons, at four o'clock, as follows:

September 17—"Orchids, Wild and Cultivated," by Mr. G. V. Nash.

September 24—"The Botanical Gardens of Europe," by Dr. W. A. Murrill.

October 1—"Some Floral and Scenic Features of Jamaica," by Dr. M. A. Howe.

October 8—"Carnivorous Plants," by Dr. H. M. Richards.

October 15—"Autumn Flowers," by Dr. N. L. Britton.

October 22—"Plant Diseases and their Control," by Mr. F. J. Seaver.

October 29—"Explorations in Santo Domingo," by Mr. Norman Taylor.

November 5—"The Flora of Switzerland," by Professor E. S. Burgess.

November 12—"Some Economic Plants of Mexico," by Dr. H. H. Rusby.

November 19—"Cuba: Its Flora and Plant Products," by Dr. N. L. Britton.

The last issue of the University of Colorado Studies, now in its seventh volume, contains the following articles: "Pre-Thalesian Philosophy," by Professor Melanchthon F. Libby; "Sex Differences and Variability in Color Perception," by Professor Vivian A. C. Henmon; "Ants of Northern Colorado," by Instructor Wilfred W. Robbins; "Northern Colorado Plant Communities," by Professor Francis Ramaley; "Flow of Water in Irrigation Ditches," by Professor Clement C. Williams.

THE Oregon Academy of Sciences was incorporated last month and placed on a permanent basis. While it has been doing active work for about five years it has never taken steps for a permanent organization until this year. According to its constitution the objects of the academy are "to encourage scientific research and learning, to promote the diffusion of scientific knowledge among its members and throughout the state of Oregon and to aid in the discovery and development of the natural resources of the state." The officers are: J. D. Lee, president, Portland; W. N. Ferrin, first vice-president, Forest Grove; John F. Bovard, second vice-president, Eugene; H. S. Jackson, third vice-president, Corvallis; A. E. Yoder, treasurer, Portland; A. W. Miller, curator and librarian, Portland; Frank W. Power, secretary, Portland.

IT is stated in *Nature* that during the past month sixteen research students have been at work at the Port Erin Biological Station. The oceanography course conducted by Professor Herdman, with Dr. Dakin and Dr. Roaf, during the first half of August was attended by eight, and consisted partly of lectures and laboratory work in the biological station and partly of work at sea. One day was spent in fish-trawling on board the Lancashire sea-fisheries steamer, and other occasions in plankton work and dredging from the *Ladybird*. The contemplated addition of a new research wing at the back of the present building has now been decided on, and the work will be commenced in a few days. This new building will provide an addition to the library and a large experimental-tank room and two smaller research rooms with large tanks for physiological and other experimental work on the ground floor, and a series of eight separate research rooms, each with two windows, on the upper floor. The whole will be completed in time for use during Easter vacation. The addition is made necessary by the increase in the number of students and research workers at the Port Erin Biological Station. A circular letter stating that £350 would be required to build the new wing was issued by Professor Herdman in May last, and since then the sum of about £250 has been raised.

MORE cement was made and used in the United States in 1909 than in any preceding year and the price per barrel was lower than ever before. The production in 1908 was 52,910,925 barrels valued at $44,477,653; the production in 1909 was 64,196,386 barrels, valued at $51,232,979. The increase was mainly in the output of Portland cement—62,508,461 barrels, valued at $50,510,385, as against 51,072,612 barrels in 1908, valued at $43,547,679. The output of natural and puzzolan cement formed only a small percentage of the total cement production. The average price of Portland cement per barrel in 1909 was less than 81 cents; the average price per barrel in 1908 was 85 cents. Portland cement cost $3 a barrel in 1880, but by reason of improvements in method of manufacture it can now be profitably sold for 80 cents a barrel. In 1909 there were 103 Portland cement plants in operation, an increase of 5 over the number working in 1908. Of these plants 21 were in Pennsylvania, 12 in Michigan, 10 in Kansas, 8 in Ohio, 7 in New York, 6 in Indiana, 5 in Illinois, and 5 in California. Most of this cement was used at home, for the United States has only a small export trade in cement, consuming from 1 to 3 per cent. of the production. This country's immense natural resources of cement-making materials and its many well-equipped cement plants, however, should make it a strong competitor for the outside world's cement trade.

THE *Journal* of the Royal Society of Arts notes that the wide reaches of waste land in Singapore, which have been of no use since the culture of gambier, coffee and pepper was given up, are now the scenes of great activity. Rubber plants are being set up over these deserted wastes and seem to do well. In the suburbs of Singapore city a considerable area of swamp land has been drained and converted into a nursery for Para rubber plants, which are sold at a good profit to the planters on the island. In Malacca there were formerly many square miles of land, the hiding

place of the tiger and other big game, which have been transformed into fine rubber plantations, and now Malacca, which has for years been largely neglected, is in a flourishing condition. A short time ago there was no banking institution in the town of Malacca; to-day three banks are doing a good business, and the place is rapidly becoming an important center.

UNIVERSITY AND EDUCATIONAL NEWS

Jesse T. Bonney, of Norfolk, Va., leaves an estate of about $400,000, subject to the dower rights of his wife, to educational institutions for girls which he established. The widow's dower, which is one third of the whole estate for life, goes to the institutions after her death.

In May the Denver and Gross College of Medicine signed a contract by which it unites with the School of Medicine of the University of Colorado. The Denver and Gross College has discontinued the teaching of the first two years of the medical curriculum and on or before the first of January, 1911, will discontinue the teaching of the remaining years as well. A constitutional amendment permitting the university to conduct the last two years of the medical course in Denver will be submitted to the people of the state.

The following appointments have been made in the University of North Carolina for the coming session: Dr. Robert A. Hall, formerly assistant professor in Clemson College, associate professor of organic chemistry; Dr. James M. Bell, U. S. Bureau of Soils, associate professor of physical chemistry; Hampden Hill, instructor in analytical chemistry; Parker H. Daggett, of Harvard University, professor of electrical engineering; V. L. Chrisler, M.S. (Nebraska), assistant in physics in the University of Nebraska, instructor in physics; Guy R. Clements, instructor in Williams College, professor of mathematics; T. R. Eagles, professor of mathematics in Bethany College, West Virginia, instructor in mathematics. M. H. Stacy, formerly associate professor of civil engineering, has been promoted to professor of civil engineering and T. F. Hickerson has been advanced to associate professor of civil engineering.

Lawrence W. Cole, A.B. (Oklahoma), Ph.D. (Harvard), recently professor at the University of Oklahoma and instructor at Wellesley College and in the Harvard Summer School, has been appointed professor of psychology in the University of Colorado, to succeed Vivian A. C. Henmon, A.B. (Bethany), Ph.D. (Columbia), who has been called to the University of Wisconsin.

The Vienna correspondent of the *Journal* of the American Medical Association writes that there are at present vacant three important chairs for medical instruction, those of the deceased Schnabel and Zuckerkandl (ophthalmology and anatomy, respectively), and of von Strümpell (medicine), whose sudden resignation caused so much comment in all circles. The successors have been nominated already by the recommendations of the medical faculty of the university; and Professor Demmer, of Graz, will take over the eye clinic in October; it will be remembered that this place was refused by Hess on account of the insufficient endowment and little space in the old clinic whence so much original investigation had come. The chair of anatomy has been offered to Tandler, of Vienna, who will probably be appointed. The successor of Strümpell will be either Chvostek or Ortner, both Austrians and both in very good standing in medical circles.

DISCUSSION AND CORRESPONDENCE

THE TEACHING OF ELEMENTARY PHYSICS

To the Editor of Science: Physics teachers will, no doubt, read with considerable interest the discussions on the teaching of elementary physics which have been going on in Science. While I was not present at the Boston meeting nor on Professor Hall's mailing list, I should like to venture to comment upon his paper.

It seems to me that propositions 1, 2, 3 and 4 might very well be accepted, as well as first