those with Germany, and none are now under active consideration.

A prominent official of the Post Office Department had this to say, just after the new convention was signed: "One may safely predict that both the United States and Germany will profit alike under the new arrangement. Already with the West Indies and a few countries to the south of us the United States has a creditable parcels-post arrangement which compares favorably with that of England. When it comes, however, to dealing with Europe, the situation is reversed. We have a sample-post, but that is more tantalizing than useful in most cases. Articles can have no salable value, they must not exceed 8½ or, in some cases, 12 ounces in weight, or be more than 12 inches in length, 8 inches in breadth, and 4 inches in diameter; or, if rolled, be over 6 inches in diameter. Only one article of a kind may be sent, and articles for sale are transmitted only when fully prepaid at letter rates, a regulation practically prohibitive. In view of the wonderful growth of the foreign trade of the United States, the conclusion of the convention is to be welcomed as the first step of a system by which parcels can be transported between the United States and Europe, Asia, Africa, and Australia, at rates not outrageously disproportionate to the cost of heavy freightage, thereby opening an avenue for innumerable transactions and creating an intercommunication more important, as binding people together, than the mere extent of the parcels-traffic itself would indicate."

The new convention will go into effect on October 1 next, and by it any mailable package not exceeding eleven pounds in weight may be transmitted from one to the other country at the present merchandise rate. This rate is 12 cents per pound, or fraction thereof, on parcels going from this land to Germany, and at present 2 marks and 40 pfennig (57 cents), whatever its weight, in the other direction. It is expected that a rate of 1 mark and 60 pfennig (38 cents) will be adopted by Germany for all parcels under 1 kilogramme (2 pounds 3 ounces) in weight.

This postal departure, taken in connection with the forthcoming house-registry of letters by carriers, and the new and more complete money-order blanks, just adopted, whereby the sender is enabled to retain a numbered and signed receipt for his sending, gives to the country an earnest of the wide-awake management now at the head of that department. No branch of governmental service comes more closely in touch with our every-day life, and none has it in its power to do more to satisfy the people of the efficiency of an administration. No doubt, the convention just signed with Germany will be promptly followed by like agreements with all of the great powers.

SCIENTIFIC CONGRESS AT COLUMBUS.

BY DR. HORACE C. HOVEY.

An analysis of the registration list of the American Association for the Advancement of Science which recently met for a week at Columbus, O., shows that the 353 fellows and members enrolled came from thirty-three different States, besides delegates from Quebec and Montreal. Ohio furnished 113 names, New York 49, the District of Columbia 22, Massachusetts 15, Pennsylvania 21, Michigan 11, and other States from one to five each. The entire list was only one-third as large as that at the Boston meeting last year. But on the other hand more actual work was done, and less time given to social festivities. The attendance exceeded 33 of the 48 meetings held during the history of the association, and the results achieved were highly gratifying.

The entire number of lectures, addresses and scientific papers read and discussed more or less was 273. Chemistry led the van with 55 papers, next came Physics with 40, then Geology and Botany with 33 each, Anthropology with 27, Social and Economic Science with 20, Zoology with 19, Mathematics and Astronomy with 14, Mechanical Science and Engineering with 15, while the remainder were in general session, or shared with the affiliated societies. It should be stated, however, that these nine affiliated societies, meeting before and after the parent association, did a great amount of work by themselves of which no mention is now made in this communication. When it is taken into consideration that the above labor for science was done during what is regarded as "vacation," and at a season when the mercury daily stood above 90° in the shade, it must be acknowledged that scientists are men of zeal and industry.

Among addresses drawing the largest audiences were those bearing on military and naval science. Prof. William S. Aldrich, of the University of Illinois, and who temporarily resigned his place to enlist as an engineer during the war with Spain, described, by the aid of the lantern, "Some Engineering Experiences with Spanish Wrecks." He was an officer on board the repair ship "Vulcan," attached to the fleet of Admiral Sampson, off Santiago de Cuba. The work done was due to the far-sighted sagacity of the Engineer-in-Chief of the Navy, Rear-Admiral G. W. Melville, who fitted out the "Vulcan" with an equipment of tools, raw materials and appliances to do what ordinarily would have had to be done at a navy-yard. She carried lathes, planers, scrapers, bending-rolls, three brass furnaces, a five-ton foundry-cupola for smelting iron, and was able to make castings and do other foundry work in mid-ocean. Besides maintaining the efficiency of Admiral Sampson's fleet, the "Vulcan" fitted out and repaired the vessels of the Eastern squadron; repaired and fitted out the former Spanish gun-boat "Sandoval," which had been sunk by her captain and raised again by the United States steamer "Potomac." Still later the "Vulcan" overhauled in a similar manner the armored cruiser "Infanta Maria Teresa," that was floated by Hobson. This took five weeks. Then a crew of 44 men from the "Vulcan," with 77 Cuban helpers, volunteered to take the cruiser north under her own steam, convoyed by the "Vulcan" and wrecking tug "Merritt." A hurricane arising, the "Vulcan" spread 40 barrels of lard-oil on the waves, rescued the men, and then had to cut the "Teresa's" towline and let her drive on the coral shoals of Cat Island, at what was thought to be the spot where Columbus first set foot on this western hemisphere.

Prof. C. E. Munroe gave a stereopticon lecture, complimentary to the citizens of Columbus, on the "Application of Modern Explosives." After describing the manufacture of gun-cotton and fulminate of mercury, as carried on at the United States torpedo station, he said that the so-called smokeless powders were mixtures, but he had made a powder of a single substance that could be formed into suitable grains, namely, cellulose nitrite of the highest degree, pure as ivory, which would burn freely, but could not be detonated. This principle was adopted by the Russian government and our own navy and a factory established in 1892. Italy, Germany, France and England adopted smokeless powders, and it seems unpardonable that they should not have been made available for our own service when we were drawn into war with Spain. Among recently invented high explosives is "joveite," extensively tested at Indian Head. A shell loaded with joveite weighing 523 pounds was fired against a Harveyized-steel plate 14·5 inches thick of the United States steamer "Kentucky," and completely perforated the plate. Another penetrated 12 inches and burst, breaking the armor plate. No explosive effect has equaled this in intensity. Yet the government has not through responsible officials adopted a high explosive charge for its armor-piercing shells. For ten years Dr. Munroe has been urging the step. He also demonstrated that high explosives might be used in saving as well as in destroying life and property. He gave in closing a detailed description of the destruction of Flood Rock in the New York Harbor.

The section of Botany set aside an entire day to commemorate the life and services of the Columbus botanist, William Sullivant, whose portraits, sketches, and specimens were exhibited, and the results of whose labors were set forth in a series of interesting addresses. Members of his family, and also of the family of his brother, Mr. Joseph Sullivant, and of Leo Lesquereux, who were associated with him, were present. Among the speakers were Profs. Earle, Underwood, Barnes, Hallick, Best, Kellerman, and Mrs. Britton. The field in which Mr. Sullivant won special fame was with the mosses, twelve of which bear his name. Here he was undoubtedly the highest authority, and recognized as such at home and abroad. The exercises were in the Botanical Hall.

Useful and highly appropriate was Dr. Orton's address on the Geology of Columbus and Vicinity. He spoke of the glacial drifts and the source of their material. He showed that bowlder clay is largely derived from the comminution of black slate, the remnants of which appear in North Columbus. This unique theory was originated by Hon. J. H. Klippart. The bowlders that abound here have been traced to the rocks in place along the Northern lakes. Some of them are known to have come from Lake Ontario. Most surprising is the presence of masses of native copper, some of which are in the University Museum. He directed attention to beds of slate that had been pushed by the ice into folds and wrinkles like those found in the Allegheny Mountains. He described the limestones of the region, and the bone-beds whose contents have attracted so much attention. In connection with the several geological excursions Prof. Orton also gave useful charts and diagrams. Nearly every visitor inspected with delight and profit the objects displayed in the Orton Museum, particularly the Mastodon, Megalonyx and other gigantic creatures, which are not cast, but originals. There are huge logs from petrified forests, besides numerous small and beautiful specimens of fossil corals, trilobites, crinoids and shells.

We listened in vain for any discussion of "liquid air," a matter exciting such interest at the present time, and that certainly should have received a degree of attention, especially as notable progress has been claimed for its manufacture and use during the past year.

But the "kissing bug" was not forgotten, being ably treated by Dr. L. O. Howard, United States Entomologist, in a learned paper entitled "On Some Heteropterous Insects Formerly Responsible for Spider-bite Stories." He said that while, after several years of investigation, he had failed to verify by proof even a single case of serious or fatal spider-bite, he found that several bugs belonging to the Reduviidæ do inflict painful wounds. He described particularly the Reduvius personatus, an imported European species, the Melanolestes picipes and M. abdominalis, allied native species, and two varieties of Rahasus, and several kinds of Conorhinus, all of which occur in this country, and whose bites have often been attributed to spiders. He regarded the "kissing bug" craze as phenomenal, and largely due to stories told by the newspapers, based on a comparatively small number of actual cases. It reminded him of the tarantula frenzy that was once epidemic in Europe, with remarkable psychological manifestations, which had thus been reproduced this year in a mild form. Curious instances were told of nervous and even hysterical symptoms that had been produced by simple mosquito bites. The paper was accompanied by an exhibition of specimens and drawings.

SCIENCE NOTES.

Sir Edward Frankland, the distinguished English chemist, died in Norway on August 9.

According to The Chemical News, Prof. Dewar has succeeded in solidifying hydrogen into a glassy, transparent mass.

Among the great advantages which are claimed for American teas is their absence from sophistication and coloring matter. In the article which we published on the subject a few weeks ago, "dyeing tea" should have been "drying tea." There is no coloring material used at the Pinehurst establishment.

The results of a series of experiments made by German dairy experts show that milk that has been heated for fifteen minutes at 75° C. scarcely loses any of its capacity of being converted into cheese. An addition of calcium chloride shortens the time required by the rennet to coagulate the milk, the action of the salt being in proportion to the amount added.

The work upon the site of the so-called "Palace of Theodoric," at Ravenna, a most interesting building, has now been completed. It seems that the palace dates from an earlier period than that of the great Goth, and it was probably erected by the Exarchs during their residence at Ravenna, and there are signs of its having been used as a barracks for soldiers.

Prof. Cleveland Abbe, in his interesting address on "The Relations of Physics and Astronomy to the Mechanic Arts," and published in the current SUPPLEMENT, says that the demand for measurements of the highest attainable accuracy is characteristic of the study of astronomy and physics, and always keeps in excess of the art of construction. This is only one of the cases where science stimulates the mechanical arts.

The French have the exclusive right to carry on researches in Persia, but half of the finds are to belong to that country. Explorations are now being carried on at Susa, the old capital of the Chaldean kingdom. As the relics are dug up they are sent to Teheran, where they are divided. The Persian government does not care for such finds and sells its share to dealers. This results in the scattering of much valuable material.

According to the Papier Zeitung, where it is desired to avoid black specks in paper made in the smoke-laden atmosphere of a manufacturing district, the only effective remedy is the filtration of the air through a woven fabric of fine texture. At Schering's works, in Berlin, where photographic sensitized paper and plates are made, a circulation of air is maintained by drawing in air through cloth filters and expelling the same through powerful ventilators in the roof.

At the present time Portugal with its few colonies and with its great load of debt is not a very important figure on the international stage, yet there was a time when it outranked all others as a commercial and colonizing power, and to that age belonged Vasco da Gama, and his quadracentenary was celebrated a few days ago. On August 29, 1499, he entered the harbor of Lisbon after having doubled the Cape of Good Hope and reaching Calicut on the Malabar coast of India. He was made Viceroy of India in 1524. His discoveries opened the way for the Portuguese empire in India and for other colonizers in the far East.

The International Physical Congress will be held at Paris, from the 6th to the 12th of August, 1900, under the patronage of the French government. It immediately precedes the International Electrical Congress. The subject of the papers, reports and discussions have not been definitely settled as yet. They will involve: 1. The definition and fixing of certain units (pressure, scale of hardness, quantity of heat, photometric magnitudes, constants of saccharimetry, scale of the spectrum, electric units not yet defined, etc.) 2. The bibliography of physics. 3. National laboratories. Visits to the Exposition, to laboratories and workshops and lectures on certain new subjects will also form a part of the programme of the Congress.