

opened on the day appointed, Tuesday, July 17. The exercises were of the simplest and most informal character, as no programme had been arranged and no ceremonies were expected or desired. Nevertheless, several members of the Board of Trustees, a few students, and a half dozen or more of guests were present, and spent the morning in examining the new building and its equipment, and in visiting the laboratories and aquaria of the United States Fish Commission. At two o'clock the whole party dined at Gardiner Cottage, — the domestic headquarters of the new enterprise, — which a generous citizen of Wood's Holl, Mr. J. S. Fay, has kindly put at the disposal of the trustees. Shortly after three o'clock the Director, Dr. C. O. Whitman, delivered in the laboratory an opening address upon the history and functions of marine biological laboratories, referring especially to the Penikese School and to Professor Baird's labors in this direction. It is earnestly to be hoped that this address, which seemed to those who heard it unusually thoughtful and adequate, may be printed. Professor C. S. Minot then said a few words on behalf of the trustees, and the exercises were over. The trustees appear to have done wisely in deciding to make a beginning this year, for, notwithstanding the fact that the announcements were not made until most students and investigators had formed their plans for the summer, some eight or ten students are already at work in the laboratory. The responses from colleges and from students make it certain that another year will witness here a large and enthusiastic gathering of investigators and students in biology. The building appears to be admirably adapted to its purposes. It is plainly but strongly built, of wood, two stories high, and with a pitched roof. The roof and sides are covered with shingles, unpainted. There is a commodious and convenient basement under the western half of the building, intended for storage, for the safe keeping of alcohol, boats, oars, and the like. The lower floor of the laboratory is intended for beginners, and for teachers and students who are learners but not investigators. The upper story is for investigators only. The equipment includes work-tables, specially designed, and placed before the large and numerous windows. Each student is provided with a Leitz microscope, a set of re-agents, watch-glasses, dissecting pans, and the dishes and other things indispensable to good work. The laboratory owns boats, dredges, nets, and other tools for collecting. A small library has been provided, and, under the progressive and efficient management of Dr. C. O. Whitman and Mr. B. H. Van Vleck, a season that promises to be highly successful, and most important in the history of American biology, has been auspiciously begun.

#### THE NEW DEPARTMENT OF LABOR.

THE President's signature, July 11, of the legislative bill containing the appropriations for the new Department of Labor has completed the establishment of Col. Carroll D. Wright's bureau on a permanent and firm footing. The re-organization has, it is true, been more nominal than real. The force of men has not been increased, but a large number of clerks and experts who were formerly on the temporary roll have been transferred to the permanent one. The effect of this upon the character of the work they will do in the future is expected to be very beneficial. They have been trained for their work, but the uncertainty of their tenure of office — the danger that they might at any time have been dismissed by a failure of Congress to appropriate money for their salaries — has not encouraged them to work with that zeal that it is expected that they will manifest now that their permanent employment is provided for by the organic law of the Department of Labor. These remarks should not be construed as a criticism of the work of the temporary employees of the Bureau of Labor, for it is not open to such criticism, but to show the inevitable tendency and influence of uncertainty of tenure of office upon the work of any class of men, and the expected effect of permanency.

The scope of the work of the new Department of Labor is not much greater than that of the Bureau which it succeeds, but, un-

der the new law, the Commissioner is directed to pursue certain lines of investigation which he pursued before only by authority of appropriations made from time to time, and which there was danger that some economically disposed Congress might now and then omit.

The Department of Labor is now engaged in making inquiries in three directions. The investigation to ascertain the economic, social, and moral condition of the working women of the leading cities of the country, which has been in progress for several months, is substantially completed, and its results will be set forth in the next annual report of the department to be presented to the President next December. The inquiry in regard to marriages and divorces is also substantially finished. This will be the subject of a special report, which will also be published about the time Congress meets next winter. A great amount of material bearing upon the condition of the railway employees of the country has already been accumulated in the department, and the work in this line of inquiry is progressing very rapidly, so that the report will be ready for the printer about next December.

This railroad inquiry has been pursued along two lines. The agents of the Department of Labor are gathering all the data to show the material and social condition of the railroad men of the country, their hours of labor, tours of duty, styles of living, beneficial organizations, etc. But Colonel Wright desires to embody in this report not only the rates of wages which are paid to these men, but also how much they actually earn in a year after all lost time has been deducted, and why the time is lost. The only way in which this information could be obtained was by an examination of the pay-rolls of the different railroads of the country. In most instances the railway officials have promptly and cheerfully responded to Colonel Wright's request by sending to Washington their pay-rolls for a year. Not one railroad company has refused to allow its pay-rolls to be examined, although some have preferred that the tabulations be made in their own offices. This report will be of especial interest in view of the frequent controversies between railroad managements and employees. It will show whether, as a whole, the railroad men of the country are required to work more or fewer hours than other workmen, what their annual earnings are, and what is their social condition.

The inquiry provided for in the organic law of the Department of Labor in regard to "the cost of producing articles that are dutiable in the United States, in leading countries where such articles are produced, by fully specified units of production, and under a classification showing the different elements of cost, or approximate cost, of such articles of production, including the wages paid in such industries per day, week, month, or year, or by the piece; and hours employed per day; and the profits of the manufacturers and producers of such articles; and the comparative cost of living, and the kind of living," will be begun next fall, and the report will be ready for submission to the Fifty-first Congress at the opening of its first session. Statistics of this kind, in the honesty and impartiality of which representatives of both political parties had confidence, as they have in all statistics to which Colonel Wright puts his name, would have been of incalculable value in the tariff debate that is now in progress. Scores of members of Congress have applied at the Labor Bureau for just such figures as this inquiry will furnish.

Colonel Wright thinks that one of the most important provisions of the organic act of the Department of Labor is that in which he is "specially charged to investigate the causes of, and facts relating to, all controversies and disputes between employers and employees as they may occur, and which may tend to interfere with the welfare of the people of the different States." Experience has shown that it has been almost impossible, even for the sharpest newspaper reporters, to ascertain, when a great strike occurs, which side is in the right and which is in the wrong, or how far each is right and each wrong. The employers state their side of the dispute, concealing any thing that may be unfavorable to them, and the employees do the same. If the exact facts could be known to the public, popular sentiment would very soon decide which was right and which was wrong, and the latter would have to yield to this sentiment without much delay.

The Department of Labor has the machinery for gathering the

facts in regard to a great strike impartially, and publishing them within a few days, while the strike is still in progress. In very striking contrast with this are the ridiculous attempts of committees of Congress to investigate strikes. These inquiries, even if they begin when the strike is in progress, are never completed until long after it is over; and by the time reports are made, popular interest in the matter has entirely died out. Besides this, the testimony which a committee of Congress makes is jumbled together without any regard to order, and from this incongruous mass it is impossible for any one to get an intelligent idea of the facts.

Twenty-one of the States now have bureaus of labor statistics, and an effort is now making to bring about among them a uniformity of organization and methods of work, which shall also be in harmony with those of the national Department of Labor. When this is accomplished all of these bureaus will be able to co-operate with and supplement the work of each other, to the mutual benefit of all.

It is worthy of remark in closing that no European country, until recently, has had any system of gathering social statistics such as the Department of Labor is publishing from time to time. In most countries the authorities would hardly dare to institute such a system of inquiries, or, if they did, they would not dare to publish them. Belgium has lately established a bureau of statistics modelled after our Department of Labor, and a beginning has been made in England. That the scientific value of the work of the Department of Labor is also recognized in almost every foreign country is evidenced by the numerous letters that have been received from distinguished scientific men abroad, and by notices of its publications that have appeared in most of the scientific periodical publications of Europe.

#### THE BENDEGO METEORITE.

THE famous Bahia or Bendego meteorite described by Mornay and Wollaston in the *Philosophical Transactions* for 1816, and by Spix and Martius in their 'Travels in Brazil,' was landed in Rio de Janeiro on June 15, and is now in the collection of the Brazilian National Museum. The transportation of this great mass of iron, whose weight was variously estimated from six to nine tons, and which has been found to weigh 5,361 kilograms, was rendered possible by the recent completion of a line of railroad passing within one hundred and fifteen kilometres of the Bendego Creek, where it has lain since the unsuccessful attempt to remove it to Bahia in 1785.

As there was little prospect of a nearer approach by rail in the immediate future, the authorities of the National Museum attempted last year to stir up an interest in government and private circles for the removal of the meteorite to Rio de Janeiro. Almost immediately after the subject was broached, Chevalier José Carlos de Carvalho, an ex-naval officer who had some experience in the transportation of heavy masses of ordnance in the Paraguayan war, took up the idea with great enthusiasm, and proposed to the Sociedade de Geographia de Rio de Janeiro that the society should undertake the removal, offering at the same time to take charge gratuitously of the technical part of the operation. This proposition, which was heartily supported by the president of the society, Marquis Paranagua, was at once adopted, and a committee, with Mr. Carvalho at the head, was appointed to raise the necessary means by a popular subscription. This work proved unexpectedly easy, as a prominent and wealthy member of the society, Baron Guahy, offered, as soon as the matter was mentioned to him, to defray all the expenses. The project was also warmly espoused by the Princess Regent, and by the Minister of Agriculture, Counsellor Rodrigo Silva; and everything depending on the government, such as transportation, material from the arsenal and railroad shops at Bahia, etc., was placed at the disposition of Mr. Carvalho, and two government engineers, Drs. Vicente de Carvalho and Humberto Anuores, were detailed to aid in the undertaking.

After about three months spent in preparing material and in studying the route to be traversed, the march commenced on the 25th of November, 1887, and the meteorite was placed on the railroad on the 14th of May of the present year. A road had to be opened for this special purpose, as those existing in the region are

only mule paths: over one hundred streams, one with a width of eighty metres, had to be crossed by temporary bridges. The route lay over several chains of hills and one mountain range, in which an ascent of 265 metres had to be overcome with a grade of 32 per cent. In overcoming these many and serious obstacles Mr. Carvalho and his companions gave a brilliant and practical rebuttal to the somewhat widespread, but unjust, notion among foreigners that the Brazilian character is deficient in the qualities of ingenuity, energy, and perseverance; while on the other hand the generous donation of Baron Guahy, amounting to about ten thousand dollars, proves that wealthy and public-spirited Brazilians can be counted on for pecuniary aid for scientific purposes when once the matter is properly brought to their attention.

Important aid was also rendered to the enterprise by Drs. Luiz da Rocha Dias and José Ayrosa Galvao, chief engineer and first assistant of the government railroad line in Bahia; by Richard Tiplady, Esq., superintendent of the Bahia and San Francisco Railroad; and by the firm of Claudio de Vicenzi & Co., owners of the steamship Arlindo, on which the meteorite was given free transportation from Bahia to Rio de Janeiro.

#### THE HEMENWAY-CUSHING EXPEDITION.

MR. FRANK H. CUSHING, whose wonderful discoveries in regard to the customs and religion of the Zuñi Indians, made during his residence among this remarkable people, are recognized as the most valuable of recent additions to American ethnologic knowledge, has spent the past winter and spring, as may be known to many readers of *Science*, in Arizona, making explorations of extensive ancient ruins there. The expenses of this expedition, which is well equipped, are paid by Mrs. Hemenway of Boston, the lady who has lately shown such substantial interest in Mr. Cushing's work. That gentleman had reached a point in his studies of the Zuñis that, in order to pursue them further, it seemed necessary to attempt to trace their history back to the beginning by an examination of the ruined cities and temples in which their ancestors lived and worshipped. This is the object of Mr. Cushing's recent work. Attached to this expedition, during the past winter and spring, was Dr. James L. Wortman, of the Army Medical Museum, who has recently returned to Washington. His mission was chiefly that of an anatomist engaged in anthropological work. The Medical Museum has been engaged for several years in the collection of human skeletons for the purposes of comparison, and the net result of Dr. Wortman's labors during the past winter and spring has been the securing of about one hundred complete skeletons, the skulls of which are in a good state of preservation, although the rest of the bones are more or less imperfect.

In an interview since his return Dr. Wortman has given the first account of Mr. Cushing's latest work that has been published, and from a report of this interview the following brief description of the explorations of the expedition and their results has been made up.

The scene of Mr. Cushing's explorations is the wide valley or plain at the confluence of the Salt and Gila Rivers in south-western Arizona. To-day railroads cross this valley, and much of it has been reclaimed by irrigation from the desert condition into which it relapsed when the ancient inhabitants disappeared. Still a wide expanse of the plain, which is forty-five miles across, remains a desert covered with sage-brush, cactus, and mesquite. It slopes from the Salt to the Gila River, and advantage was taken of this feature of its topography by the ancient people in constructing canals to irrigate the whole plain. In some places these old canals have been re-opened by the modern farmers, and restored to their original use. On this wide plain are many groups of mounds, in excavating which Mr. Cushing has discovered many ancient cities, to some of which he has given the names of Los Muertos, Los Hornos, Los Guanacas, Los Pueblitas, Los Acequias, etc. Los Muertos, the city of the dead, has been traced for three or four miles, and forty or fifty huge structures or communal houses in it have been examined.

The surface indications of these cities are a series of truncated mounds twenty or twenty-five feet high, surrounded by a great number of fragments of ancient pottery. The cities consist of irregular groups of houses built along the banks of the canals.