SCIENCE

FRIDAY, JULY 27, 1888.

THE WANT OF A COMPLETE REPORT on the mineral resources of Ontario has long been felt, and, in response to the general wish, on the 14th of March last a resolution was carried in the Legislative Assembly authorizing the government to appoint a royal commission to investigate and report on this subject. Acting on this resolution, the Council on the 8th of July appointed the following gentlemen a commission for the above purpose: John Charlton, M.P., Chairman; Robert Bell, Assistant Director of the Dominion Geological Survey, Ottawa; William Hamilton Merritt, mining engineer, Toronto; William Coe, proprietor of iron mines, Medoc; Archibald Blue, Deputy Minister of Agriculture, Secretary of the Commission. The commissioners met the members of the government by appointment in Toronto on Saturday, July 12, when it is understood a programme was agreed upon, the particulars of which, however, have not been made public.

TWO IMPORTANT EXPEDITIONS left Rio de Janeiro in June for exploration and work in two of the least-known parts of the Brazilian territory. The first, sent out by the Ministry of War, under the command of Capt. Bellarmino Mendonça, is to open a road from the town of Guarapuava, on the frontier of the settled portion of the province of Parana, to the confluence of the rivers Parana and Iguassu, and to found a military colony at the latter point. A road is also to be opened along the Parana river from the mouth of the Iguassu to the navigable portion of the river above the Sete Quedas fall, and from this point to Guarapuava, via the valley of the Piquiry. The founding of a colony at the mouth of the Iguassu, where the Argentines are already establishing themselves, will, aside from its military importance, prove of great value in peopling the valley of the upper Parana, which has been deserted since the time of the expulsion of the Jesuits. By means of the lower Parana the colony will have free water communication with Buenos Ayres and other markets of the Argentine Republic, where two of its natural products, lumber and matte, will find a ready sale. This will give at once to the proposed colony a commercial importance, far beyond that of a purely military station, and will doubtless lead to the rapid spread of population along the upper Parana and its tributaries, with their hundreds of miles of navigable waters. The second expedition, consisting of three military engineers, Capt. Lourenço Telles and Lieutenants Miranda and Villeray, is sent out under the auspices of the Sociedade de Geographia de Rio de Janeiro, the expenses being borne by the Ministry of Agriculture. It is to proceed to Cuyaba in the province of Matto Grosso, pass by land to the headwaters of the Paranatinga, and descend that river and the Sao Manoel or Tres Barras to the Tapajos, returning to Rio de Janeiro via Para by the Tapajos and Amazonas. This exploration will thus be a valuable complement to that of the Tapajos by Chandless, as the Sao Manoel and Paranatinga are almost absolutely unknown.

A FULL REPORT of a recent lecture on personal identification, by Mr. Francis Galton, appears in *Nature* for June 21 and June 28. Mr. Galton here presents a practical application of his favorite pursuit, the accurate description of physical and mental peculiarities. He proposes a very ingenious scale of divergencies from the normal for any one feature, and has even invented a mechanical device by which the tedious labor of arranging a large number of such observations can be much abbreviated. The anthropometrical laboratory, at which any one can, under proper restrictions, have a record made of his chief physical measurements, is now open in London, and promises to yield valuable material for this line of study. In connection with this work Mr. Galton has studied the striations of the human fingers, and is able to corroborate the value attributed to them as a means of identification. These markings are easily obtained, and the variety of them is larger than one would *à priori* imagine. The markings of a finger of Sir William Herschell made in 1860 and 1888 respectively are figured, and show a striking similarity. The difference in age of the two prints testifies to the wearing of the epidermis. The study is still in its infancy; but the success of such measurements for identifying criminals, as exhibited in France, promises to draw more general notice to the subject.

A CABLEGRAM RECEIVED in Philadelphia, Penn., announces the death of Henry Carvill Lewis, geologist, at Manchester, England, on Saturday, July 21. Professor Lewis was born in Philadelphia on Nov. 16, 1853. He was graduated at the University of Pennsylvania in 1873, and in 1879 joined the State Geological Survey as a volunteer, and first investigated the surface geology of southern Pennsylvania; after which he studied the glacial phenomena of the northern part of the State, and traced the great terminal moraine from New Jersey to the Ohio frontier. He furnished numerous papers on the geology and mineralogy of Pennsylvania to the Proceedings of the Philadelphia Academy of Natural Sciences. He was elected professor of mineralogy in the Academy of Natural Sciences in 1880, and to the chair of geology in Haverford College in 1883. These positions he held at the time of his death. Since 1885 he had been engaged in geological studies in Europe, working at microscopic petrology in the University of Heidelberg; and had completed a map of the separate ancient glaciers and ice-sheets of England, Wales, and Ireland. Professor Lewis was a member of a number of scientific societies in the United States and Europe, and contributed to their Proceedings and to other scientific periodicals, including the *American Naturalist*, of the mineralogical department of which he was for some time editor. It was at the British Association meeting held at Birmingham in September, 1886, that he read his first paper on 'The Genesis of the Diamond;' and in describing the peridotite of the De Beers mine, and that from Kentucky, he suggested interesting possibilities in regard to the latter locality. Since then he was actively engaged in the fuller preparation of his paper on 'The Genesis of the Diamond,' visiting all the localities in the Southern States where diamonds have been found; and it was undoubtedly his intention to read this paper at the coming meeting of the British Association in September, and then to continue his geological studies in Norway, remaining in Europe for three or four years. Professor Lewis was an indefatigable worker, of keen perception. Genial in his manner, he made many friends; and although he had not reached the prime of life, yet his work is known to the entire scientific world, and he gave promise of having entered upon a long life of usefulness. In him science has lost a valuable worker, and society a useful member, and he leaves a blank which will not be readily filled. He leaves a wife and one child.

IN SPITE OF THE USUAL vexatious delays, which often prevent the opening of new buildings at the appointed time, the new Marine Biological Laboratory at Wood's Holl, Mass., was formally

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, under 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 workingmen, 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