

was thought that it would be advantageous to have a mining college. Several professorships were accordingly established, and lectures upon various subjects connected with geology are regularly delivered. From this school those are taken who have attained the best certificates, who are appointed assistants upon the Geological Survey. Mr. Ramsay, as Director of the Survey for Great Britain, has thirteen assistants, of whom three are experienced geologists, eight assistant geologists, and two are employed in the collection of fossils. When a new man comes upon the field he is first assigned work upon the secondary strata, as being most easy to trace. He next investigates the tertiary, which are more obscure; and finally is transferred to the palæozoic, where his training is finished. In Ireland the same system is pursued; but as this country embraces fewer formations, only eight assistants are employed. In addition to the staff before mentioned, there are two palæontologists, who receive, arrange, and label fossils, and who will also come into the field to give assistance when any difficulty arises, for it is not to be expected that every man will be proficient in each department. The maps with which the surveyors work are those of the Ordnance department. These are constructed on the scale of one inch to a mile. Every surveyor takes a map of the district on which he is employed and traces upon it the lines of the strata. To show the multiplicity of the lines M. Ramsay pointed out a quarter sheet upon which eighty lines were traced, every one of which was walked over so far as practicable. In delineating the several formations 125 colors and shades of colors are employed, each denoting a different stratum. A map having been constructed and approved, horizontal sections are constructed on the scale of six inches to a mile. Levels are taken and the exact contour of the country is accurately delineated. In the coal measures no lines are drawn except those indicating the several beds, lest proprietors should be misled by them. In the north of England, in Ireland and Scotland, a new topographical survey has been commenced upon the scale of six inches to a mile. These afford increased facilities for the accurate exhibition of the geological structure. These maps show the contour of the country, having one line on the sea level, another twenty five feet higher, and so on to the level of the hill tops. The Geological Survey of Great Britain has served as a school from which geologists have gone to conduct the surveys of other countries. The Superintendent of the geological survey of India, together with his assistants, came from the Government schools. There is also an off-shoot at the Cape of Good Hope, and the Island of Trinidad. The minute style of the survey practised in England cannot be followed in other countries, as the United States, where accurate topographical surveys have not been made. The Government and people of England are now so well aware of the importance and value of the geological survey, that it would be impossible to stop it. Should any party, or faction attempt to do so, there would be a general outcry against it, and its continuance would be insisted upon. Engineers and miners take such an interest in the investigations, that five thousand sheets of the maps are annually sold, although they are quite expensive. Not only are those relating to the coal measures sought, but others also of a purely scientific character. The people are now becoming aware that the position of England in the scale of nations, depends, in a great degree, upon her wealth. Accordingly, all the means necessary to its development are willingly granted, and double the allowance would be afforded if it were asked for. There is some difficulty in obtaining a sufficient number of suitable men. At the present rate of progress, thirty years would be required to complete the work.

#### METRICAL SYSTEM OF FRANCE.

Mr. GIBBON of the U. S. Mint read a paper on the Metrical system of France. In France each province had, formerly, its own system of weights and measures. Within the last century and a half, three conventions were held in Germany to regulate the standard of weights and coinage; for there each petty principality determined and coined its own monies and weights. And owing to the great diversities thus called into existence, the greatest confusion prevailed. A similar diversity, he might also remark, prevailed in England, France and elsewhere, in relation to measurement, several distinct standards being made use of in the different countries. The metrical system, as now adopted in France was generally acknowledged to be a good one because it was thoroughly decimal. It was introduced into several of the European countries, and always found to operate beneficially. It had, too, received a partial introduction into the United States. Persons of all professions were eager, in England, and elsewhere—where the system was not yet adopted—to have this system generally adopted, as calculated to promote the arts and manufactures, facilitate the education of youth, and promote the common language of arithmetical uniformity throughout the world. To effect an intelligible adjustment of gold and silver coinage among nations would much reduce the expenses of the coinage and vastly increase its utility. Wherever it has been tried hitherto—as in

Bavaria for instance, interest and convenience succeeded in overthrowing all prejudice in the matter.

#### DR. RAE'S ARCTIC TRAVELS.

Dr. RAE, the celebrated Arctic explorer, being present, was requested by some of his friends to address the members of the Association respecting his travels. In complying, the Doctor then exhibited some relics of Sir John Franklin's party. He had been he stated, employed by the British Government for four years in searching for traces of Sir John Franklin and his party. And on his expedition last year he had found these relics of the party, when least he expected, to find anything. They were sufficient to induce him to believe the party had been lost. But he did not believe they had been, as was supposed, murdered by the Esquimaux. The Esquimaux informed him that a party of white men had died, when he obtained relics, and others which he had transmitted to the British Government. Franklin's party could not, he believed, have been murdered west of the McKenzie's River; and he was induced to believe so from the statements of the Esquimaux on the East of that river. The party might probably have perished owing to their preserved meats becoming putrid—as some similarly prepared had been found to become—and their provisions failing them. Among other relics, Dr. Rae obtained from an Esquimaux, two leaves of a Bible. He had also obtained a piece of wood on which the name W. Stanley had been cut, and which he had traced to the maker in London. That none of the bodies have been found might be accounted for by their being carried away by the melting of the ice—or, perhaps, they had been drowned. From what he had seen he believed that Franklin and his party having wintered the first year at Beechy Island; had attempted to carry out his plan by coming down Peel's Sound to near King William's land, and endeavored to cross Behring's straits and abandoned his ships after the fifth year. Captain Mc Clintock who went out under the auspices of Lady Franklin, lately discovered, among other things, that Sir John must have left his ships. The Esquimaux said they had books given them by the party, but thinking them of no use had given them to their children by whom they had been destroyed. (After some further details Dr. Rae concluded amidst much applause.)

#### CONCLUSION—GENERAL MEETING.

A general meeting of the members of the Association took place in the Court House at five p.m. Some preliminary business having been disposed of, Professor Henry, of the Smithsonian Institute, then rose and proposed the resolution—That this Association highly appreciate and warmly reciprocate the friendly sentiments expressed at the opening of the session by His Excellency, General Sir William Eyre, Administrator of the Government. (Loud applause.) This resolution, he had no doubt, would be unanimously adopted. It was highly proper and complimentary to the Association to give to a gentleman of the character and position of Sir William Eyre the duty of welcoming this Association. He said it was proper, first on account of the profession of the gentleman selected. The military profession was intimately connected with science, as the perfection of the one depended mainly on the advancement of the other. Secondly, it was, he considered, proper, because of the objects of the Association and its character. It might not be permitted in an individual to sound his own praise, but it is permitted in a member of an association to speak of the character of the institution to which he belongs, and to exalt its importance. The object of this Association was the advancement of science—the discovery of the mode in which Divine Wisdom operates in producing the phenomena of Nature. And therefore the gentleman selected should have been a fit and proper person to welcome the Association. He was most happy to say that such a gentleman had been selected. (Cheers.) He would, in conclusion, vote the thanks of the Association to that gentleman. (Loud applause.)

The resolution being put was unanimously adopted.

Ex-President FILLMORE next rose, amid loud applause, and said: The pleasing duty has been assigned to me, and I would it had been assigned to one more capable, of presenting a resolution to the citizens of Montreal for the hospitalities which they have been pleased to extend to the Members of this Association. Next to the gratification we receive in the enjoyment of these hospitalities, is the pleasure we must feel in making a proper acknowledgment. I cannot doubt, therefore, but that this resolution would receive an unanimous and enthusiastic aye. (Cheers.) I apprehend that few of us coming from the United States, perhaps for the first time, and seeing this beautiful city, will not go away oppressed with feelings they never could have had without this visit. (Cheers.) For myself, I was here some ten years since, and must bear testimony to the change exhibited in that short space of time. Our Canadian brethren have, I perceive, caught a little of the spirit of enterprise which, perhaps, goes a little too far occasionally on the other side of the line. (Laughter.) But we will never envy them. We heartily bid them God speed. (Cheers.) In