

through the agency of the masters of art schools, amounts to 18,988; but this is not sufficient to meet the wants of the public, and new measures are being devised to give increased development to elementary art instruction. Instruction in art has been given to 2,181 teachers, and the results of their examinations have been more satisfactory than in preceding years. The schools of science, the working men's lectures in London, and the provincial lectures in Ireland have been attended by 10,000 persons. The valuable institution, the Metropolitan School of science, applied to mining and the arts, continues to flourish. The systematic courses during the year included 100 lectures on chemistry, by Professor Hofmann; 48 on physics, by Professor Stokes; 50 on metallurgy, by Dr. Percy; 40 on mineralogy, and 60 on mining, by Professor Smyth; 30 on geology, by Professor Ramsay; 50 on Natural history, &c., by Professor Huxley; and 36 on applied mechanics, by Professor Willis. Thirty matriculated and 56 general students attended the course of 1855-56. The increase of the latter is very gratifying. An evening course of lectures for schoolmasters has been given during the past year by Mr. Huxley, the Professor of Natural History, &c., and a course of chemistry by Dr. Hofmann. Lectures to working men have been given in Natural philosophy, chemistry, metals, and mining, the attendance on which has been only limited by the size of the lecture-room. The chemical and metallurgical laboratories, under the superintendence of Doctors Hofmann and Percy, have been in full operation, and respectively attended by 100 and 27 pupils. Dr. Percy has now in the press an elaborate inquiry on the composition of the iron ores of England; and he has made an elaborate campanalogical inquiry, with a view to ascertain the best composition for the great bell of the New Palace at Westminster. Dr. Hofmann has made several valuable reports. The Museum of Practical Geology has been usefully employed in aiding the authorities on questions of importance both at home and in the colonies. Tribute is borne to the increasing usefulness of other collateral institutions.

EGYPTIAN EXPEDITION TO DISCOVER THE SOURCES OF THE NILE.

The expedition to discover the sources of the Nile which the Viceroy of Egypt has initiated, and which has occupied for the past six months the attention of the learned of Europe, after delays inevitable to the development of such matters, has started. The Count d'Escayrac de l'Auture, to whom the command has been entrusted, after having obtained on the 20th of last July the Viceroy's approbation of the plan, came to Europe to procure the necessary adjuncts for the execution of his enterprise. Authorised to select twelve assistants, he sought in Austria officers of topographical celebrity, in Prussia a well-informed engineer, in France, naturalists, in England, nautical assistance, and America has furnished him with an excellent photographer so necessary on such an exploration. He has selected in London, Paris, Berlin, and Vienna the necessary instruments for observations of the greatest variety, and nothing has been neglected that could by any possibility interest the scientific world. Magnetic observations will not be neglected. The infusoria invisible to the eye will be studied according to the custom of the most perfect naturalists; geography will rest on astronomical observations; ethnography, so full of interest in that part of the world, will be the object of the constant attention and particular efforts of men whose knowledge has been already proved. Photography will lend to science the most valuable assistance; it will thus bring before the eyes of learned men a new world, and the people of Europe will see all that the expedition has encountered of the interesting and remarkable. This expedition, which has for its aim the discovery of portions of Africa where the foot of the white man has never trod, promises to make us better acquainted with these unknown countries than we are even with some parts of Europe. The expenses of the expedition will be considerable, as the Viceroy has provided it with everything that can forward its success; and a sufficient escort will protect these missionaries of civilisation during their perilous expedition.

DR. KANE—IS THERE AN OPEN POLAR SEA?

The appearance of Dr. Kane's long-expected narrative of Arctic Expeditions will again awaken an interest in the question of an open sea near the North Pole; for his discovery of that sea, with the varied details of every circumstance connected with it, can now be investigated, and the evidence of its continuance to the Pole of the earth be duly weighed.

The idea of a warmer region near the North Pole, which must be accompanied by open water, and, as a natural consequence, with animal life in a greater abundance than in the permanent ice beited district further south, is not a new one. More than two centuries ago, the appearance of open water in the highest latitudes first suggested it; and, although certain theorists contended against it, the opinion continued to prevail even to our day; and now, although there has been nothing certain of its existence, there have been such accumulative facts, that it only awaited the indubitable evidence, such as Dr. Kane has presented, to establish the theory.

The Dutch whalers above and around the Island of Spitzbergen have often pushed through the drift ice into open spaces of sea toward the Pole, and Baron Von Wrangel, when forty miles from the coast of Arctic Asia,

saw, as he thought, a "vast, illimitable ocean" beyond, and we doubt not many navigators, without being aware of the fact, have really been in this sea, but who did not dare to venture further toward the mysterious Pole. Dr. Scoresby, among others, may be mentioned as one who has been within its area. This veteran Arctic navigator was engaged for more than thirty years in the Greenland fishery, and discovered the coast, and served on the eastern side which bears his name. On this occasion he passed the pack of floating ice, by keeping near the Greenland coast, and found himself in open water beyond. Had he been prepared to pursue his voyage, he might have pushed on nearer the pole than any navigator before or since, but he did not dare venture beyond a point from which he was uncertain of escaping before the season had passed, and therefore retreated through the pack. Captain Parry, in his well-known boat voyage, attempted to cross this floating ice, and was well provided for the purpose; but it was unfortunately harder and rougher than he anticipated, and, although making progress northward over the drift, he found that it was actually bearing him southward. The projectors of that expedition thought the plan the most feasible one to reach the Pole, entertaining the belief that if they could pass this floating ice, they would find an open sea beyond.

It must here be remarked, that in the Summer north winds prevail in these seas; and aided by a strong current setting to the south, the whole mass of ice accumulated and forced in during the Winter, breaks up and is carried toward the south. This belt of broken ice, or the "pack," as it is called forms the only impediment to an approach to the Pole by the North Atlantic Ocean. In the Fall when strong southerly winds prevail, such of this pack as remains is again forced back towards the Pole, in a measure filling up the open sea from which it had come; but whether there are lands, or resisting currents near the Pole to prevent its accumulation there, or whether a warmer temperature exists to dissolve it, remains to be seen.

Dr. Kane wintered in Smith's Strait near the 79th parallel. From this point the following Spring he sent parties over the ice northward about 125 miles in a direct line, when they came to an open sea the shores of which they traced on the east nearly to 81 degrees 30 minutes, and on the western side to 82 degrees 30 minutes, approximately. At this far remote point, and from a height of four hundred and eighty feet, which commanded an horizon of nearly forty miles, the ears of the party "were gladdened with the novel music of the dashing waves and a surf, breaking in among rocks at their feet, which stayed their further progress." As they travelled north, the channel expanded into an iceless area, and taking thirty-six miles as the mean radius open to reliable survey, this sea had a justly estimated extent of more than 4000 square miles.

This was in the month of June, yet there was every indication that this water had been open during a most severe Arctic winter; for the shores did not have the "ice belt" which elsewhere in Smith's Strait indicates alike, both permanent and annual freezing. Animal life, too, to which Dr. Kane had been a stranger in the south, now burst upon the party. Geese and ducks were abundant, particularly the Brent goose, a migratory bird, which the doctor had seen on his previous voyage in Wellington Channel, when they were flying toward the south. The rocks and the shore were crowded with sea-swallows, whose habits require open water, and which were then breeding; in fact, to use the Doctor's words, "it was a picture of life all around." Of plants there is less said, as the season was too early for their development. This increase of animal and vegetable life, with the rise of the thermometer in the water, and the melted snow upon the rocks were indicative of a milder climate toward the Pole.

Another fact worth dwelling on is, that after a severe gale of several days from the north, there was no accumulation of floating ice, which is strong evidence that there was warmer water from whence the wind came, without ice, and that from an elevation of 580 feet, the open sea "was still without a limit and moved by a heavy swell, free of ice."

In view of these highly interesting facts, the intrepid navigator does not venture to discuss the phenomena which give rise to them.

"How far," says the Doctor, "this sea may extend—whether it exists simply as a feature of the immediate region, or as a part of the great and unexplored area communicating with the Polar basin—and what may be the argument in favor of one or the other hypothesis, or the explanation which reconciles it with established laws, may be questions for men skilled in scientific deductions. Coming as it did, a mysterious fluidity in the midst of vast plains of solid ice, it was well calculated to arouse emotions of the highest order, and I do not believe there was a man among us who did not long for the means of embarking upon its bright and lonely waters."

We have little doubt that the interesting facts made known by Dr. Kane will lead to another Arctic expedition. At some future day we may recur to the subject again, and venture to suggest some ideas towards a plan for reaching the mysterious Pole.

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