

built at the head of the first cataract, and drown the temple of Philæ.

"Admitting this fact to the full, I still consider the Assuân site to be so superior to any other, that if any means could be found for obviating the difficulty which attaches to this temple, I think the subject well worth the consideration of the Egyptian Government, even although it involved additional cost to the project. On p. 36 of his report, Mr. Willcocks suggests the possibility of removing the temple of Philæ from its present site, taking it up stone by stone, and rebuilding it on the adjacent island of Bighè, where it would be well above the highest water level of the reservoir. I cannot say whether it would be possible to do this without injury to the temple. If so doing would cause any injury, or alteration of any kind to it, I should recommend the abandonment of the Assuân dam altogether. Any work which caused either partial damage to, or the flooding of this beautiful temple, would be rightly considered by the whole civilised world as an act of barbarism. Moreover, it would be an act not absolutely necessitated by the circumstances, for I repeat that we have other possible, though somewhat inferior, sites upon which to construct dams.

"If the removal of Philæ temple is, however, only a question of expenditure, the subject at once commands attention. In this matter I turn naturally to Mr. T. de Morgan, the able Director of the Department of Antiquities in Egypt. If it is possible to remove the temple, and rebuild it upon the adjacent island exactly as it stands at present, we may rely on his ability to do so; and I ask that his opinion as to the removal and reconstruction of Philæ temple be obtained before the project for the Assuân dam be altogether rejected.

"Were the removal of the temple to be successfully carried out, I cannot myself see that it would be an act of vandalism, which, as I read it, is a term meaning the wanton destruction of interesting relics. In this case there would be no question of wanton destruction. The Government of Egypt would duly weigh on one side, the advantages to the country of the safest and most economical dam which could be constructed north of Wady Halfa, and, on the other, the sentiment which clusters round the site of the present temple, and objects to its removal even if it could be done without injury. Finding the advantages to the country to outweigh the sentiment, it would proceed to carry out the work with a religious regard for every detail, and through the agency of the competent staff of the Department of Antiquities.

"Removals somewhat similar to that now proposed have been successfully carried out. Mr. Willcocks mentions in his report having himself, when at Rome, been a witness to the dismantling and rebuilding of the most ancient existing bridge over the Tiber by Italian engineers. Civilised nations in recent times have removed from their original sites, and set up in other countries, interesting and valuable monuments. The Elgin marbles taken from the Acropolis and deposited in the British Museum, afford an example, and so also do the Luxor obelisk in the Place de la Concorde, and Cleopatra's needle on the Thames Embankment. These records of the past have been removed from their historical surroundings, and set up amongst others with which they are not in keeping. We, on the contrary, prompted by a desire to benefit the country, suggest the removal of an ancient building from one site on the Nile to another which is but a few hundred yards distant. We propose re-erecting it exactly as it stands to-day, and on an island in the middle of the great lake which we hope to create, where it would form a beautiful and appropriate object in the landscape."

To us it seems clear that with such a case as the Egyptian engineers have made out for the increased water supply, it is certain that a dam will be built somewhere, and, to be more precise, unless the frontiers of Egypt are enlarged, between Wady Halfa and Assuân. Assuân, Philæ, and Kalabsheh have each been suggested, and in either case the memorials of antiquity along a long reach of the river will be necessarily destroyed. This being so, there is room for an attempt to carry to a completion the work begun by the French Expedition of 1798, and continued by Lepsius in 1844, by making an English survey of the Nile between Philæ and Wady Halfa. Archæologists associated with engineers in such a work as this would certainly be a more pleasant sight to gods and men than when indulging in charges of

"vandalism" and the like; and be it remembered no amount of money voted by Parliament, or by the Egyptian Government, no munificence of archæologists and others, with a view of dealing with the case of Philæ alone, will be of avail in final mitigation if a dam is to be built *anywhere*. To consider Philæ alone would convict us of a philistinism by the side of which the "vandalism" of the engineers were small indeed! On the other hand, when such a survey as that suggested has been completed; when what Maspero has called *l'histoire matérielle* of every temple has been investigated; every inscription copied, and every detail photographed, dam or no dam we shall be infinitely better off from the scientific point of view than we are now or should have been for the next century, if the question of the dam had not been raised.

J. NORMAN LOCKYER.

THE CENTENARY OF THE PARIS POLYTECHNIC SCHOOL.

THE hundredth anniversary of the foundation of the Polytechnic School of Paris was celebrated on the 17th, 18th, and 19th of May.

The 17th, consecrated to the memory of our comrades, comprised, in the morning at 10.30, a visit to the tomb of Monge M. Mercadier, Director of studies at the Polytechnic School, pronounced Monge's eulogy, and deputations from the Institute, &c., assisted him. At 2.30 the President of the Republic visited the school and examined the pupils. M. Faye made a speech recalling different events of the school. Then a tablet was put up to the memory of the comrades killed by the enemy a century ago. The 18th was the "cérémonie des ombres." Lastly the *fête*, which took place on the 19th at the Palais de Trocadéro, constituted, independently of its programme, a special attraction, as *fêtes* had never previously been given at night in the immense and magnificent hall. From 10 o'clock to midnight more than 5000 people took part in the gala entertainment, which was followed by a ball.

The palace and Trocadéro Park were brilliantly illuminated. The entertainment consisted almost entirely of compositions by old pupils of the school. It ended with an apotheosis by M. A. Silvestre, during which a remarkable picture, consecrated by M. Dupain to the glory of the school, was uncovered.

The eulogy on Monge, pronounced by M. Mercadier, was of great eloquence. Monge was, as a child, very remarkable. When sixteen he made a plan of his native town, having invented an instrument for determining angles. At the age of twenty-two he had already invented many things. With the aid of an engineering officer he got into the Engineering School at Mézières, where in 1768 he succeeded Bossut as professor of mathematics, and two years later, Nollet in a course of physics.

He published his great works on "Les Surfaces considérées d'après leur mode de génération" in the *Mémoires de l'Académie de Turin*. The illustrious Lagrange, after reading them, exclaimed "Avec son application de l'analyse à la représentation des surfaces, ce diable d'homme sera immortel!" "Ce diable d'homme" was but twenty-five, but—true to prophecy—made himself immortal.

In 1780 Monge was made professor of hydraulics; at the same time he entered the Academy of Sciences in the mechanical section. He lived six months in Paris, then six months at Mézières, but in 1783, on being made naval examiner, he returned to Paris for good.

He was an ardent revolutionist, and was made Minister of that department in 1793, during which time he unconsciously made a true friend of Buonaparte. In 1794 he helped to found the school in which he was a devoted professor.

In 1796 he and Berthollet and a few artists were ordered to Italy, to collect the numerous objects of art handed over to France by various Italian towns. It was at this time he became great friends with Buonaparte and Berthollet. Afterwards he took part in the Egyptian Expedition. He went with Berthollet, and Berthier in his report says of them: "ils s'occupent de tout et sont partout."

On his return to France, Monge again devoted himself to the Polytechnic School, his affection for the pupils and influence with them being unchanged and quite remarkable. After having worked steadily for forty-five years, he was obliged, on account of bad health, to retire.

The political disturbances, in which he was much engrossed, all tended to affect his health, but the disbanding of the school in 1816 was the final blow. He was never the same again, and died July 18, 1818.

M. Mercadier's address ended with a touching appeal to his auditors to imitate the patriotism and emulate the science of the great man whose useful life and work they had met to celebrate.

We may have to say something of the final *fête* next week.

NOTES.

WE learn with profound regret that Dr. Romanes died at Oxford at twelve o'clock yesterday.

THE first meeting of the International Meteorological Committee, as reconstituted at the Munich Conference of 1891, will be held at Upsala, and will commence on August 20. The programme, as will be seen, consists mainly of the various questions referred to the committee by the Conference. (1) Reports of the President and Secretary; (2) the question of the establishment of an International Meteorological Bureau; (3) Agricultural Meteorology; (4) the establishment of stations for the observation of the direction and velocity of movements of clouds; (5) the construction of a Cloud Atlas (reports from Dr. Hann, Dr. Hildebrandsson, Mr. Rotch, and M. L. Teisserenc de Bort); (6) the possible acceleration of weather telegrams; (7) the observation of the scintillation of stars (a proposal by M. Charles Dufour); (8) the organisation of the next Conference.

PROF. ROBERTS-AUSTEN is to be congratulated on having completed his responsibility for no less than one hundred millions sterling of gold coin. The twenty-fourth annual report of the Royal Mint, which has just been issued, shows that of the long series of holders of his office none could have claimed anything like such a record, as the largest amount of gold coin for which any individual King's Assay Master had previously been responsible was the fifty-nine millions coined during the tenure of office of Mr. Robert Bingley, King's Assay Master from 1798 to 1835. As showing the remarkable accuracy of the standard fineness of coins, the Mint Report states that of the hundred millions sterling of gold coin, seventy-one millions were sovereigns, and that their average fineness as indicated by successive trials of the Pyx proved to be 916.668. The exact legal standard is 916.666, and it must be remembered that the gold coins would be within the "remedy" allowed by law if the amount of precious metal they contained varied between 914.6 and 918.6 parts in one thousand.

THE preliminary programme of the fourteenth Congress of the Sanitary Institute, to be held in Liverpool in September, has now been issued. The meetings of the Congress will consist of three general addresses and lectures. The three sectional meetings, dealing with (1) Sanitary Science and Preventive Medicine, (2) Engineering and Architecture, (3) Chemistry, Meteorology, and Geology, will be presided over by Dr. E. Klein, F.R.S., Mr. G. F. Deacon, and Dr. Thomas Stevenson.

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Five special conferences will take place: the Sanitation of the Passenger and Mercantile Marine Service, presided over by Sir W. Bower Forwood; Medical Officers of Health, presided over by Mr. Charles E. Paget; Municipal and County Engineers, presided over by Mr. A. M. Fowler; Sanitary Inspectors, presided over by Mr. Francis Vacher; Domestic Hygiene, presided over by the Lady Mayoress of Liverpool. An exhibition of sanitary apparatus and appliances and articles of domestic use and economy will be held, and excursions to places of interest from the point of view of sanitation will be arranged for those attending the Congress. The local arrangements are in the hands of an influential local committee, presided over by the Lord Mayor of Liverpool, with the City Engineer (Mr. H. Percy Boulnois) and the Medical Officer of Health (Dr. E. W. Hope) as honorary secretaries. It appears from the programme that over 100 sanitary authorities, including several County Councils, have already appointed delegates to the Congress, and as there are 1500 members and associates in the Institute, a large attendance may be expected.

A COMMITTEE has been formed at Boulogne for the purpose of making arrangements for an international exhibition of hygiene and hydropathy, which it is proposed to hold there from July 15 to September 15.

A KNIGHTHOOD has been offered to Dr. J. C. Bucknill, F.R.S., not for his scientific work, but in recognition of his services to the volunteer movement, of which he was the originator. Dr. Bucknill was elected into the Royal Society in 1866, and is now in his seventy-eighth year.

THE thirty-ninth annual exhibition of the Photographic Society of Great Britain will be inaugurated by a *conversazione* on September 22, and will remain open from Monday, September 24, to November 14. Medals will be awarded for the artistic, scientific, and technical excellence of photographs, lantern slides, and transparencies, and also for apparatus. Foreign exhibitors are invited to contribute. The Society will pay the carriage of photographs on the return journey, and provide frames or portfolios during the exhibition for approved photographs. There will be no charge for space. Communications on all matters connected with the exhibition should be sent to the Secretary of the Society, 50 Great Russell Street, Bloomsbury, W.C.

ALL students of science know that a knowledge of German is essential in their work, and no better way of obtaining it can be found than by joining German students in study. Facilities for obtaining this desirable end are now offered in the shape of holiday courses at Jena, from August 1 to 23. The courses have been arranged by a committee representing some of our University Colleges and High Schools, Mr. J. J. Findlay (Rugby) being the secretary. There will be an elementary course for those who have little or no acquaintance with the spoken language. The subjects dealt with in this course include physiological psychology, the hygiene of schools, and pedagogy. Each will be conducted by an experienced teacher, who will speak very slowly and clearly, but will only employ the German language as the medium of instruction. A more advanced course, for those who can follow lectures delivered in German, will be held from August 1 to 16. During this period Dr. Straubel will lecture every day on the microscope, Prof. Detmer on the fertilisation of plants and microscopic botany, Prof. Schäffer on experimental physics, and Prof. Auerbach on modern physical demonstrations. Dr. Knopf will discourse on time and its determination, illustrating his lecture with practical work at the Observatory; Dr. Straubel will give demonstrations on electrical and magnetic measurements; Prof. Wolff will lecture on theoretical and practical chemistry; Prof. Ziehen on phy-