

scope, and Voltaic Electricity. No fewer than seventy-five articles in the *North British Review* are from his pen. From the year 1819 he was, along with Jameson, editor of the *Edinburgh Philosophical Journal*, in which so many of his researches saw the light. His "Letters on Natural Magic," his "More Worlds than One," his treatise on "Optics," his "Martyrs of Science," and his "Life of Sir Isaac Newton," all testify to an unremitting activity rarely equalled. He was made Principal of the University of St. Andrews in 1838, a post which he relinquished only in 1859 to succeed to the Principalship of the University of Edinburgh. As one of the founders of the British Association in 1831, no less than as a distinguished representative of science, he received the honour of knighthood.

A man who could unite so many varied qualifications in himself, who, besides adding so richly to the total of exact knowledge, could do so much to diffuse that knowledge to succeeding generations, who could write not only with the calm decision of a philosopher, but with the vivid imagination of a poet and even with the fervour of a preacher, must indeed be acknowledged to be a remarkable figure in the age in which he lived. His position in the physical sciences, standing as he did between the old generation of workers and the new, is not very easy to define. But his memory will doubtless descend to posterity in connection with numerous departments of the science of optics, in which his work remains to testify to his place amongst the men of science of whom Great Britain has just reason to be proud.

NOTES

THE Lord President of the Privy Council has appointed Prof. Archibald Geikie, F.R.S., to be Director-General of the Geological Surveys of the United Kingdom, and Director of the Museum of Economic Geology, Jernyn Street, in succession to Sir Andrew C. Ramsay, F.R.S., who retires from the public service towards the end of the present year.

MONDAY night was an enthusiastic Arctic night at the Geographical Society. The first paper was by Mr. C. R. Markham, on the important discoveries made by the *Rodgers* in and around Wrangel Land, and on the proposal that England should lend a hand to search for the missing *Jeannette*, and that a Government expedition should be sent out to look for Leigh Smith. Lieut. Hovgaard of the *Vega* also read an Arctic paper, detailing his plan for a *Jeannette* search from about Cape Chelyuskin as a basis; while an instructive paper was sent by the Dutch Commodore Janssens, on the ice-conditions in Barents Sea, and the probable position of Mr. Leigh Smith in the *Eira*. Of course Mr. Markham's energetic enthusiasm was infectious, and everybody seemed to agree that it would be disgraceful to England not to send out search expeditions. Sir George Nares and Sir Allan Young spoke, but it cannot be said that they threw much light on the problem; the good-natured Sir Allan took much trouble to say he knew nothing about these seas, and therefore he thought an expedition should be sent out for the *Eira*. Mr. Grant, the well-known Arctic photographer, told his experiences on the ice of the Barents with the Dutch and with Mr. Leigh Smith during the last four years, and he seems to think, what every one else thinks, and what is evident, that Mr. Leigh Smith is locked up in the ice somewhere. But all the speakers on Monday night evaded the main point, which was clearly stated in Mr. Eaton's letter in last week's *NATURE* (p. 123). Mr. Eaton declares that Mr. Smith went out with the deliberate intention of wintering, and that he has now provisions to last two years. Of course, in cases of doubt, it is well to take the worst possible view. But there seems to be a conflict of evidence. Mr. Eaton, than whom no one ought to know better, positively states that the *Eira* is provided as we have indicated; while on the other side there

are vague and inconsistent statements. Were we convinced of the real danger of the *Eira's* situation, we should heartily support a relief expedition; but in this case there seems to be no doubt. The matter may be safely left in the hands of the Admiralty, who will doubtless look at the situation all round, and take care that they do not commit themselves, at the most, to more than a mere search, in conjunction, we should suggest, with relatives and friends. But on consideration of all the evidence, it may not be thought sufficient to warrant Government intervention. We were pleased to learn that the object of the Dutch in sending out expeditions year after year to these seas is to obtain a thorough knowledge of the movements of the ice before they venture to send out a fully-equipped expedition to force its way northwards; this is thoroughly scientific in its method.

A BALLOON accident, which we fear may turn out unfortunate, occurred in the South of England last Saturday. Capt. James Templer, Mr. Walter Powell, M.P., and Mr. Agg Gardner, ascended at Bath on Saturday at 1.55 p.m. for the purpose of taking the temperature of the air, and the amount of snow in the air, for the Meteorological Office. Capt. Templer, in a letter to Mr. R. H. Scott, describes what followed: "I cleared the snow clouds at 4000 feet altitude; the temperature of these clouds was 28°, and the wet-bulb thermometer read 26°. At 4200 feet we passed over Wells, the time being 2h. 50m. At this height I worked over Glastonbury; the temperature now rose to 41°, and the sky was perfectly clear. I passed then between Somerton and Langport, and I here found that I was in a N. $\frac{1}{2}$ W. current. I asked Mr. Powell to send the balloon up to 6000 feet to ascertain the temperature of a small bank of cirrus. I found this temperature to be 31°, and then I asked him to place me at 2000 feet altitude, to regain the N. $\frac{1}{2}$ W. current, and we then came in view of Crewkerne. I now kept at a low altitude until I reached Beaminster. Mr. Powell here observed that we were going at thirty miles an hour, and here we first heard the roar of the sea. The balloon suddenly rose to 4000 feet; at this time I said to Mr. Powell, "Go down to within 100 feet of the earth, and ascertain our exact position." We coasted along close to the ground until we reached Symondsburry. I here called to a man and asked him how far the distance was to Bridport, and he said about a mile. I asked Mr. Powell to prepare to 'take in,' our pace now increasing to thirty-five miles an hour. To avoid the little village of Neape Mr. Powell threw out some ballast. This took us to 1500 feet elevation, and we had still two miles to get in. I opened the valve and descended, about 150 yards short of the cliff. The balloon on touching the ground dragged a few feet, and I rolled out of the car with the valve line in my hand. This caused the balloon to ascend about 8 feet, when Mr. Gardner dropped off, and unfortunately broke his leg. I found that the rope was being pulled through my hands, and I called to Mr. Powell, who was standing in the car, to come down the line. He took hold of the line, and in a few more seconds the line was torn through my hands. The balloon rose rapidly. Mr. Powell waved his hands to me, and I took his compass bearings, and found that he was going in a S. $\frac{1}{2}$ E. direction." Capt. Templer lost no time in getting into a steamer at Weymouth and searching the Channel in the most likely direction, but without result. Up to the present nothing has been heard of Mr. Powell, and the worst is to be feared. This accident is certainly to be regretted, more especially as the expedition was in the interests of science. Still in spite of the accident the Meteorological Council are to be congratulated upon the endeavour to get at the correct facts of the air.

IN the *Comptes Rendus* for December 5, 1881, p. 936, there appears a paper animadverting on the meteorological stations it has been proposed to establish in the neighbourhood of the

North Pole, which paper, according as it is looked at, is provocative either of amusement or amazement. It is amusing to read that it is all the way from the equator that these cirrus clouds travel, giving us Europeans, by systems of vorticose movements let down from their lofty heights, our cyclones, our rains, our thunderstorms, our hail, and even our snow; that, towards the elucidation of the great problems of the movements of the atmosphere in their bearings on climate and weather, the observations made forty years ago by Lottin, Martius, Bravais, &c., in the Arctic regions, are quite sufficient for the purpose. The additional data to be expected from the Arctic network of stations now proposed to be established at Bossekop, Jan Mayen, Navaja Zemlia, Spitzbergen, &c., being quite insignificant; and that the French meteorologists in agreeing to establish, as their contribution to this extensive research into the movements of the atmosphere, a station near Cape Horn, supposed, as assumed by M. Faye, that this station near the antarctic circle, would assist them in framing weather forecasts for France. It is amazing to see it quietly assumed that the fishermen and sailors on the French coasts have no practical, or at least personal interest in the storms which sweep across the British Islands and Scandinavia; and to read the explicit statement that in the interests of the seaports of France, and of science itself, what is above all things needed is the organising of a first-class meteorological station (*une grande station météorologique*) in the Azores. With regard to this, French sailors and fishermen may be thankful that other counsels rule the action of those who are entrusted with the preparation of weather forecasts for their country and with the investigation of those laws, a knowledge of which will enhance the value of this branch of practical meteorology.

In his inaugural address at the opening of the Session of the Sanitary Institute, Dr. Alfred Carpenter dwelt upon the necessity of such an organisation, as proved by the lamentable ignorance of the mere elements of sanitary science shown by many of the candidates for the diploma of the Institute, most of them already official guides of health and other bodies. It seems strange to be told by Dr. Carpenter that there is a feeling of antagonism to the Institute in the Social Science Association. The former is the practical outcome of the latter, and the Association ought therefore to rejoice that its teachings have borne such desirable fruit. The Institute is certainly doing much good, and there seems to be no doubt that by its action and by other means, a beginning has been made in this country of a thorough sanitary reform.

An instructive case of injury from lightning, on a gentleman's estate near Geneva, is recorded by M. Colladon (*Arch. des Sciences*, September 15). The lightning first struck a tall poplar standing near an iron-wire fence; thence the fluid passed to an elm standing close to the fence on the other side, damaged three main branches of this, and wounded the trunk on the fence side, down to a point opposite the top wire of the fence. The course was then along this wire, but only, it appears, in one direction, viz. towards an iron gate a little way off, under which passed the pipe which supplied gas to the house. The wire, a double one, was fused in some parts. After damaging the gate the current found its way to the gaspipe (making a hole in the ground), and passed along this to the house, injuring no part of the pipe-system of that, but only a piece of ornamental rose-work containing iron wire in the ceiling of the drawing-room over the lustre. Thence it passed to earth by the iron pipes and wires on a balcony outside the room. Several bushes near the poplar and fence were affected (coloured brown), and the plate on the collar of a dog which was attached to a wire between two shrubs, and had been heard to howl at the time, had disappeared. The extended character of the discharge and the influence of wires seem to be salient points in this case. M. Colladon

advises making the parts of telegraphic or telephonic wires that pass near a house double or triple the mean thickness, so as to diminish the chances of lateral discharge.

M. PLATEAU has studied the phenomena of the bursting of bubbles. When a bubble bursts it disappears almost instantaneously, leaving behind it a multitude of small liquid drops. The order of the phenomena is really as follows:—The bubble begins to burst at one point, the film rolling away in a circle around the opening, and its edge becoming a rapidly-enlarging liquid ring. This ring draws itself together into segmental portions, which ultimately become small spherules. At the same time the contraction of the rest of the bubble causes a rush of air through the aperture, and blows off the spherules into the air with a kind of small explosion. The phenomena are best observed by blowing a bubble of glyceric solution upon an iron wire ring, and then bursting it at the top by touching it with a needle whose point has been dipped in oil.

THE conduct of competitive examinations in China seems to be farther from perfection than might be expected in the case of such an ancient institution. The *Peking Gazette* contains a memorial from one of the censors complaining that the matsheds which are erected at the entrance to the examination hall in the capital to issue tickets of admission to competitors are frequently overturned by the rush of applicants, that an unseemly crowding and snatching of tickets from the officials take place, and that candidates break the rule prohibiting them from leaving the compartments in which they are isolated during the examination. They are allowed, he says, to fetch their food themselves (examinations in China last from thirty-six hours to three days at a stretch) from the kitchens, and they meet and converse freely. Prepared essays, the memorialist fears, are passed in from outside during these hours by the student's friends. Again, when the lists of successful candidates are posted up, a tumultuous crowd assembles outside the gates; bands of the unsuccessful ones obstruct the progress of the chief examiner, employing threats and entreaties to prevail on him to alter the lists. The censor also protests against the length of time frequently taken before the results of an examination are known. The Chinese examiners, however, have an excuse for this which our own Civil Service Commissioners have not, viz., the number of students examined; at the triennial provincial examination held in Canton in 1879 there were 10,160 candidates for 82 degrees!

THE death is announced of Mr. William Bramsen, a Danish gentleman whose acquirements in Japanese scholarship were extensive. During a residence of more than twelve years in Japan Mr. Bramsen devoted his leisure to a study of the language, chronology, and numismatics of the country. His principal work is "Japanese Chronology," published in 1880, the only complete treatise on the subject which has ever been written. In this laborious work Mr. Bramsen has given the exact day of the month and year corresponding to the Japanese dates for the past thousand years. He has further explained the complicated systems by which the Japanese and Chinese reckoned time, and has thrown out the suggestion that in the early periods of Japanese and Chinese history the year included the time between the equinoxes, and did not correspond to our year. This idea he has supported with much learning, and should it on further examination turn out to be correct, it will revolutionise our notions of the antiquity of the Chinese and Japanese peoples. During the past year Mr. Bramsen was engaged in producing in parts a beautiful work on Japanese numismatics. Only the first part, dealing with recent copper coins, had been published. A few weeks ago he read a paper on the subject before the Numismatic Society of London. His collection of Japanese coins was the most complete private collection in existence, and was, we believe, valued by himself at about 2000*l*. He

was not much past thirty at the time of his death. It was his intention to return to Japan so soon as he was called to the English bar. The main characteristics of his work—which was but an earnest of what might have been expected from him had he been spared—were thoroughness and care. It will be difficult to fill the important, and in some sense peculiar, position which he occupied in the field of Japanese scholarship. He was a member of the Royal Asiatic Society, and of numerous native and foreign societies in Japan.

THE Brighton Health Congress and Domestic and Scientific Exhibition are being held this week. The Exhibition, over which Lord Chichester presided, was opened on Monday. The Congress, over which Dr. Richardson, F.R.S., presided, was opened on Tuesday evening by the delivery of his inaugural address. Dr. Richardson spoke on the "Seed-time of Health," pointing out the perils that beset youth in the present condition of hygienic education, and empirical and unscientific practice. The sittings of the Congress will be continued until to-morrow. The Congress is composed of three sections. The first, presided over by Mr. Edwin Chadwick, C.B., relates to the Health of Towns; the second, presided over by Mr. J. R. Hollond, M.A., M.P., relates to Food; and the third, presided over by Dr. Alfred Carpenter, C.S.S., relates to Domestic Health. A large number of important papers are down for reading and discussion, including, amongst others, essays on slaughter-house reform, by Mr. H. T. Lester, B.A.; food-plant improvement, by Major Hallett; sanitation in decoration, by Mr. Robert Edis, F.S.A.; food preservation by cold, by Mr. T. B. Lightfoot; recreation spaces in large towns, by Dr. Fussell; bread reform, by Miss Yates; cheap food and longevity, by Dr. Drysdale; rational feeding, by Mr. Wynter Blyth; diet in public institutions, by Dr. Whittle; home sanitation, by Mr. H. H. Collins; a comparison of English and foreign watering places, by Mr. H. S. Mitchell, M.A.; health lessons in schools, by Mr. Charles Cassal, B.A.; clothing and health, by Mrs. E. M. King; and papers by Sir Antonio Brady, Dr. Browning, Edward Easton, C.E., Ellice Clarke, C.E., Messrs. Stephens, E. Bailey Denton, and others. Yesterday the Mayor and Mayoress held a reception in the Pavilion. To-day, Dr. Taaffe, Medical Officer of Health for Brighton, delivers a public lecture. On Saturday, excursions will be made to various places of interest in and about Brighton, and in the evening of Saturday, the proceedings of the Congress will be brought to a close by a lecture to the working classes from Mr. Brudenell Carter, F.R.C.S., on the subject of Eyesight. The Exhibition is on a most extensive scale, including objects relating to food; domestic, labour-saving, and educational appliances; house sanitation; industrial dwellings; lighting, electrical and kindred inventions; decorative art, such as photography, painting on china; horology; and a very extensive loan collection of great value from the South Kensington Department.

AT the meeting of the Sanitary Institute on December 7, Dr. Alfred Carpenter in the chair, the adjudicator, Dr. W. Farr, F.R.S., and Dr. Richardson, F.R.S., reported that the Wyatt-Edgell prize of 200*l.* for an essay on the Range of Hereditary Tendencies in Health and Disease was awarded by them to the essay bearing the motto "The subtlety of nature far exceeds the subtlety of reason." On the sealed envelope accompanying the essay being opened the chairman announced the author to be George Gaskoin, of 7, Westbourne Park. The prize will be presented by the Rev. E. Wyatt Edgell at the next ordinary meeting, February 8. The inaugural address was delivered by Dr. A. Carpenter, vice chairman of the Council.

ALL the members of the Royal Commission on Technical Instruction have returned to England. The chairman, Mr. Samuelson, M.P., remained at Paris for some days in order to

obtain additional information on the general policy of the Department of Public Instruction. The selection of the members of the Commission, on account of their acquaintance with different branches of the inquiry, has proved very useful, Dr. Roscoe having been able to devote his attention more particularly to chemical technology, Mr. Philip Magnus to school organisation, and Mr. Slagg, M.P., Mr. Woodall, M.P., and Mr. Swire Smith to the bearing of technical instruction on the branches of industry with which they are familiar. It is proposed to take the evidence of experts in this country in February, and to visit Germany, Switzerland, and Belgium in the spring.

M. PASTEUR has been elected to one of the vacant seats in the French Academy.

PROF. FLOWER has just been appointed by the President and Council of the Royal Society a trustee of Sir John Soane's Museum in the vacancy occasioned by the death of Sir Philip de Malpas Grey Egerton, M.P.

WE have received from Messrs. De la Rue and Co. their pocket and desk diaries for 1882, together with beautiful cards and almost microscopic registers for use during the coming year. If possible all these are more beautiful examples of the printer's art than those produced in past years, and especially interesting from NATURE's point of view, at all events in the fact that the amount of scientific facts packed into the closely-printed page is greater than ever. The mechanical equivalent of heat, the present magnetic elements, the mean distance of the sun, and such like data, are all to be found in their proper place, while the astronomical portion is so full that the amateur astronomer will be spared many references to his *Nautical Almanac*.

ON Friday last took place the first distribution of prizes and certificates to the successful students in the various schools connected with the City and Guilds of London Institute. The Report showed the rapid increase of candidates at the examinations of the Institute, and Sir F. Bramwell gave an address, explaining what was meant by technical education, and the great benefit which must accrue to the various industries by the application to them of the scientific principles on which they were based.

SOME severe shocks of earthquake, accompanied by loud detonations, are reported by the *Valais Gazette* to have occurred at Sion and Sierre on Sunday the 4th inst.

WE learn on good authority that M. Cochéry is preparing a project for the protection of cables and the general regulation of telegraphy. It will be laid before the French Chamber of Deputies after the end of the recess, which will begin in a very few days.

A "SOLAR" locomotive has been placed on the French Northern Railway. It is so called owing to an electric light which is placed in front and fed by the engine itself, and intended to illuminate the way for a long distance in front.

A GEOGRAPHICAL and Natural History Exhibition has recently been opened at Gotha. It will close on the 20th inst.

THE additions to the Zoological Society's Gardens during the past week include a Pomatorhine Skua (*Stercorarius pomatorhinus*), British, presented by Mr. George H. Baxter; two Kestrels (*Tinnunculus alaudarius*), British, presented by Mr. F. Usher; a Horrid Rattlesnake (*Crotalus horridus*) from Brazil presented by Dr. A. Stradling, C.M.Z.S.; a Dwarf Chameleon (*Chamaeleo pumilus*) from South Africa, presented by Major Hunt; a Common Jay (*Garrulus glandarius*), British, presented by Mr. J. Young; two Cape Crowned Cranes (*Balearica chrysolargus*) from South Africa, a Giant Toad (*Bufo agua*) from Brazil deposited; a Red Kangaroo (*Macropus rufus*), two Mocassin Snakes (*Tropidonotus fasciatus*), born in the Gardens.