women"; the process is continued from four to five months.

Besides this direct information there is an artificially deformed skull of an "Alifuru," from Celebes in the Hildesheim Museum; and of a Bugis from South Celebes, in the Vrolik Collection of Amsterdam, the descriptive catalogue saying: "Plus que tout autre ce crâne fait l'effet d'avoir été comprimé à son jeune âge par une grande force agissant d'arrière en avant." Dr. Barnard Davis remarks on a skull from Makassar, in South Celebes: "Has an extensive parieto-occipital flattening; the result is a brachycephalism which scarcely seems compatible with undesignedness." No doubt this is proof enough to justify the opinion that the custom is spread over the whole island of Celebes.

As to Sumatra Marsden has often been quoted, "that the women have the custom of compressing the heads of children newly born, whilst the skull is cartilaginous, which increases their natural tendency to that shape."

From Java it has been made known by Professors van der Hoeven, Swaving, Halbertsma, and Zuckerkandl, that a considerable proportion of the skulls from that island are asymmetrical, viz. 60 per cent., and that of three awry skulls two are flattened on the left side. Prof. Halbertsma supposes that this asymmetry comes from the child's position on its left side while sleeping; Prof. Zuckerkandl is of opinion that it comes from pressure during birth; whereas Prof. Rolleston, whose premature death we deeply deplore, expressed the following view:—"The wish to keep the right arm free causes the left arm to be usually employed for carrying a child; the pressure of a sling used in aid of the left arm would come to bear mainly on the left side of the child's head, and the observed flattening would thus be accounted for." However this may be, the asymmetry does not appear to occur as a result of designed deformation; but Dr. Swaving concedes that the midwives try to change the form of the head in the newly-born child by pressure; Dr. Gosse saw a Javanese skull with occipito-nasal deformation, and perhaps this question must be more thoroughly studied on the spot to get a better insight.

Dr. Davis says of a skull from the island of Bali:—"Approaches closely to the American crania deformed by occipito-frontal pressure; it is so great as to render it very difficult to look upon the distortion as unintentional."

The Dresden Museum possesses a skull from the island of Ceram, and another one from Boano, near Ceram, which appear to be artificially deformed; further, two skulls of the same kind from the island of Flores among ten specimens. Of a skull from the island of Timor, Dr. Davis says: "Of extraordinary form and proportions, being extremely brachycephalic, and exhibiting a large parieto-occipital flattening." Finally, the Dresden Museum recently got from the Timorlaut Island group two skulls which undoubtedly are artificially deformed.

I will not proceed further on to New Guinea, because this would lead me into the Papuan or Melanesian region, where, as well as on many islands of the South Sea, the custom prevails; but I only proposed to show its being far spread through the Malay Archipelago. I do not doubt that more information will come from this region, if only the attention of residents and explorers in future is directed to the question, and if more skulls are forwarded to scientific men and institutions.

A. B. MEYER

NOTES

EVERYTHING in connection with the Crystal Palace Electrical Exhibition appears to be progressing most satisfactorily. All the available space has been allotted to exhibitors, and many applications for room have had to be refused. The best positions have been given to the first applicants, and from appearances there is little doubt but that this exhibition will be a success. As an Electric Light Exhibition it will surpass that in Paris, because the peculiarities of the building permit direct comparisons being made, and allow of each different system having a portion of the building allotted to itself. Thus the whole of the nave will be divided off, each part to a different system, while all the different courts, the Alhambra Court, the Pompeian Court, and others, will have a separate and distinct system applied to its illumination. There does not appear to be in the world a building more suited for the display of the electric light than the Crystal Palace with the far-famed courts referred to. There is little hope of any show being made before the commencement of the ensuing year, but there is strong reason to believe that some portion of the building will be illuminated by the electric light at Christmas time. Not only has the Postmaster-General consented to make an extensive show, but the War Department have now agreed to exhibit, and there is every probability that this display will be most interesting. Had our War Department made an exhibition in Paris it would have undoubtedly outshone the displays of other governments in this section. A great feature of the exhibition will be the external exhibits. A tramway is about to be constructed along the whole terrace, on which a coach will run by the aid of Faure batteries. An electric railway, which was such an attraction at Paris, will continue to whirl passengers about by the energy produced by Siemens' currents. Although the exhibition will contain a great display of apparatus relating to all the applications of electricity, it will be an Electric Ligh Exhibition, and the numerous lamps and machines for the production of the light will be the great attraction to the public.

MR. LIVINGSTONE, Master of the Public Schools, Fort William, having kindly offered to the Scottish Meteorological Society to climb Ben Nevis once a month, whenever practicable, to read the thermometers left on the top of the Ben, made his first ascent on Saturday last. He left Fort William at 8.15 a.m., and returned at 4.5 p.m. The ascent to 2200 feet was easily accomplished, the real difficulties being encountered above this height, owing to the snow which covered the higher parts of the Ben. A shower of rain fell at the lake on the way up. At this point, as had been done by Mr. Wragge, observations were taken, and the temperature of the air found to be 37°·0, and that of the water 38°·3. On reaching the spring, which is 3363 feet high, the temperature of the air was 30°·0, and that of the spring 35°·6, or a degree higher than in the middle of June. The summit was reached at 1 p.m., the wind being north-west the temperature of the air 26°·5, and the plateau covered with snow to a depth of 2 feet. The protecting cage for the thermometers and other instruments was found all right. The maximum thermometer read 44°·0, and the minimum 14°·1—these being the extremes of temperature since Mr. Wragge made his last observation in the end of October.

IN a few days the Russian expedition to the mouth of the Lena to establish a magnetical and meteorological observatory on Weyprecht's plan is to start from St. Petersburg. The route is by rail to Nishni-Novgorod, thence by sleigh to Perm, by rail to Yekaterineburg, by sleigh to Irkutsk, where they are expected to arrive in January, and stay till May to complete their outfit, secure the services of five soldiers, and train them to meteorological observation. Meanwhile a barge is to be built or bought at Katschug, on the Lena, where the navigation of this river begins. The party, on descending the river, will stop for some time at Irkutsk, to make further preparations. The length of the route, and especially the difficulty of transportation by land without railways, make the Russian expedition the most difficult of the Arctic expeditions on Weyprecht's plan. Petroleum is wanted to give a good, clear light, and 2½ tons of it will

have to be bought at Nishni-Novgorod, as this light is yet little used in Siberia. Besides the building of the houses, the food of the expedition, &c., all will be more difficult to obtain than the same articles wanted by an expedition sailing in ships. The sum of 42,000 roubles has been granted by the Russian Government. The idea of establishing a second station had to be abandoned, the money being barely sufficient for one station. If the Russian Government should give another sum for observations in high latitudes, a station will probably be established at Möller Bay, on the west coast of Novaya Zemlya. This station would be less expensive, there being always a possibility of reaching the place by ship. The expedition starting now takes two sets of meteorological instruments for establishing additional stations at Irkutsk and some point north of it. The chief of the expedition is Lieut. Jurgens, I.R.N.; he is well qualified to fulfil the arduous duties assigned to him. He will be accompanied by Dr. Bruge, medical assistant, and a meteorological assistant.

WE direct the attention of our readers to the letter of the Rev. A. E. Eaton in to-day's NATURE, which has so important a bearing on the probable condition of Mr. Leigh Smith's expedition in the *Eira*. From Mr. Eaton's letter it is evident that Mr. Smith deliberately intended to winter at Franz-Josef Land; and to those who know him it is not surprising that he said little about it to his friends. This is also essentially the drift of a short notice on the subject in yesterday's *Times*, where, however, the very inconsequent conclusion is drawn "that a relief vessel should be sent out in the course of next summer by either Mr. Leigh Smith's relatives or the Government." There can be no objection to the relatives sending out an expedition, but so far as present evidence goes, a Government expedition does not seem to be called for.

THE news lately received from the Behring Strait whalers discloses a very remarkable condition of things in the Arctic Sea this season. Capt. Williams, of the *Frances Palmer*, reports clear water in N. lat. 73° 30′ to the east of Herald Shoal, and the U.S. Relief-ship *Rodgers* got as far north as 73° 44′ on the west side of Wrangel Land. Other whaling captains assert that this year they went fully two degrees further north than their charts extended, and every one agrees that both the early and latter parts of the season have been open to a degree unparalleled in Arctic records. The Arctic basin has been found to be comparatively shallow, the depth being about twenty-three fathoms. The gales which prevailed when the *Thomas Corwin* left the Arctic Sea in the early part of September broke up the ice further north, and the prevalence of northern winds no doubt accumulated it about the north coast of Wrangel Land, and prevented the boats of the *Rodgers* from actually circumnavigating the island. This year's exploring cruise of the U.S. steamer *Thomas Corwin* has been a very remarkable one. The most important event was the landing on, and partial exploration of, Wrangel Land, which Capt. Hooper renamed New Columbia. He discovered there a tolerably large river, which he named the Clarke River, and the course of which a party who landed at its mouth assert that they were able to trace for some forty miles into the interior. The *Thomas Corwin* appears to have had no difficulty in moving to and fro in the Arctic Sea, except early in September, when a second attempt was made to reach Wrangel Land, but failed through fogs and strong gales. Capt. Hooper visited Point Barrow, on the northern coast of Alaska, and found the ice some twenty miles off the shore.

MR. W. H. DALL, of the U.S. Coast Survey, contributes to the *American Naturalist* for November a paper on the Chukchi and Namollo people of Eastern Siberia, which seems to have been called forth by some criticisms on the part of Lieut. Nordquist in a communication to the St. Petersburg Geographical Society, afterwards reproduced in our Geographical Society's *Proceedings*. If Mr. Dall replies to all his critics, he will next have to take up the subject of the currents of Behring Strait, for the American whaling captains assert that what he has written on this point is incorrect. Capt. Fisher, of the *Legal Tender*, indeed, says that Mr. Dall's observations extended only over a few days, and were made in an eddy current under the lee of the Diomede Islands.

NEWS has been received by the Bremen Geographical Society that two walrus hunters have returned to Tromsö from Spitzbergen, who report that early in September they were fifteen miles north of the Seven Islands (north of Spitzbergen), and that they found the sea quite free from ice in a northerly direction.

ON Monday next Mr. Clements R. Markham, C.B., will read a paper before the Geographical Society on the Arctic work of the present year.

ZOOLOGISTS are indebted to Dr. R. W. Shufeldt, First Lieutenant, Medical Department, U.S. Army, for a highly valuable contribution to the study of the osteology of birds. He has written two essays in the United States Geological and Geographical Survey *Bulletin* of September, 1881—one on the "Osteology of the North American *Tetraonidæ*" (pp. 309-350), and the other entitled "Osteology of *Lanius ludovicianus excubitorides* (pp. 351-359), both illustrated by several plates; and we can only wish that every monographic essay which treats of the anatomical structure of a limited group of birds were written in such a careful and exhaustive manner. There is scarcely a bone which is not correctly figured, most of them life-size, although some might be a trifle more plastic. All of them are treated of separately, and an exact description is given of the general *Tetraonine* feature of the bones, and in instances where the representatives of the genera under notice are aberrant due attention is drawn to the fact. The author frequently refers to allied families, such as the Partridges and others, and throughout the whole paper we see that the work of previous anatomical writers is carefully taken into consideration; and as Dr. Shufeldt had a large series of specimens before him he was enabled to exclude any peculiarities which might have been attributable to malformation of the bones. So far so good; but descriptive anatomy is one thing, and comparative anatomy another. Whenever the author discusses some of the difficult questions of comparative anatomy, as he does more than once, being well aware of the points where there is still a problem to be solved, we are afraid we cannot follow his deductions. One of the figures in the first plate in the paper on the *Tetraonidæ*, and part of the letterpress, is devoted to a demonstration of the "four cranial vertebræ" with all their appendages and derivatives; but although the disarticulated segments are nicely grouped together on the plate, the conclusions he arrives at certainly contain some obvious mistakes. At p. 328, to the ribs generally known as "sterno-costal" the term "hæmal" ribs is applied. Again we are glad to find that the author admits the theory which considers the limbs with their girdles to be transformed and translocated gill-branch elements, but he goes too far. He seems to believe that the scapular arch originally belonged to and constituted the hæmal arches of the occipital vertebræ. Further on we are informed that we may consider the bones of the pelvic girdle to be the pleur- and hæmapophyses of some of the sacral vertebræ—*verbum sat.* We therefore regret that this essay on the *Tetraonidæ*, valuable as it is as a contribution to ornithotomy, should be handicapped by speculations so wild and so dangerous to the credit of comparative anatomy.

IN his "Zur Aetiologie der Infectionskrankheiten," A. Weil states the cause of the decay of teeth, whether external or

internal, to be the Schizomycete *Leptothrix buccalis*, the mode of entry and propagation and the life-history of which he follows out in detail. The acids which occur in the mouth, especially lactic acid, while they may greatly promote the decay, cannot give rise to it. The Leptothrix can be readily recognised by its iodine reaction. The author considers further that in many cases diseases of various parts of the body can be distinctly traced to excretions from the mouth and teeth. Other observers had already traced a connection between decayed teeth and septic abscesses, in which was found a fungus similar to that which occurs in decayed teeth.

THE balance has been applied by Herr v. Jolly, at Munich, to the problem of gravitation thus (*Wied. Ann.* No. 10): The instrument was placed in the upper part of a tower, and from each of the scales depended a wire (through a zinc tube) having a second scale at the lower end, 21·005 m. below. These lower scales were 1·02 m. from the ground, so that a lead ball one metre in diameter might be brought under one of them. A body brought from an upper scale into a lower one has an increase of weight corresponding to its degree of approach to the earth's centre and to the increase of acceleration. When the lead ball is brought under the same lower scale its pull is added. The difference of the increments of weight, with and without the lead ball, indicates the amount of pull of the latter, and the quotient of this pull and that of the earth alone furnishes a means (with the law of gravitation) of comparing the density of the earth with that of the lead, and, the latter being known, of determining the mean density of the earth. Referring to the original for details, we merely state that the author finds the mean density 5·692 (probable error not more than ± 0·068). This agrees more or less with other determinations; from the mean of those with the torsion balance it diverges about 2 per cent.

THE death is announced, at the age of eighty-nine years, of Jean Alfred Gautier, the *doyen* of science in Geneva, and one of the most active citizens of that city. M. Gautier belonged to a very old Genevese family, and displayed an early taste for science. In Paris he counted among his teachers such men as Laplace, Lagrange, Legendre, and Poisson, and in England he formed a life-long friendship with Sir John Herschel. When he settled down in Geneva from his travels, he carried on the work of the little observatory then existing at Geneva, and it was through his exertions that a much better one was built, though defective vision did not enable him personally to superintend it. M. Gautier was one of the earliest to discover a relation between sun-spots and terrestrial magnetism, and in many ways he laboured successfully to advance science in his native city.

WE learn also of the death of Dr. Chr. G. A. Giebel, Professor in the Philosophical Faculty at Halle University, an eminent zoologist and geologist. He died at Halle on November 14. The death is also announced, on November 11, of Prof. Engelhardt, a well-known Danish antiquarian, and secretary of the Society of Antiquaries at Copenhagen; and of Prof. Paul Günther Lorentz, a well-known German authority on mosses; he died at Concepcion del Uruguay at the early age of forty-six years.

THE earthquake of November 18 was noticed in Switzerland, shocks being reported from Ragatz and St. Gall. A great area, comprising Westphalia, Hessen-Nassau, and Belgium, was also visited by this phenomenon; it was noticed at Münster, Marburg, Brussels, Tournai, and Liège and Metz. On November 24 at 11 p.m. a shock was observed at Dedenborn, near Montjoie (Rhenish Prussia), and two shocks at Pergine (Southern Tyrol) early on November 20.

IN February next a private scientific exploring tour to Persia will be undertaken by a Viennese medical man, Dr. Polak. He will lead the expedition himself, and will be accompanied by a geologist and a botanist. All expenses will be defrayed by Dr. Polak.

MOST of the members of the Royal Commission on Technical Instruction have returned to England; they have, we understand, accumulated a mass of valuable information in the course of their preliminary tour, which has included the principal centres of industry in France.

THE dinner in commemoration of the Brewster Centenary will take place in Edinburgh to-morrow.

PROF. J. G. MCKENDRICK has been appointed Fullerian Professor of Physiology for three years at the Royal Institution.

THE Vienna Geographical Society will celebrate the twenty-fifth anniversary of its foundation on December 12 and 13 next.

WE have received from the Parkes Museum a copy of the artistic certificate of awards in connection with the International Medical and Sanitary Exhibition, lithographed from the original design by Mr. Cave Thomas. The certificates are now being distributed. The following facts are of interest:—Exhibitors from different parts of the United Kingdom, 414; exhibitors from abroad, 88; making a total of 502 exhibitors, of whom 258 received either awards of the first class, or awards of merit.

A SURVEY party, under Col. Branfil, has left Calcutta for the purpose of verifying and completing the survey of the Megin Archipelago. The work, including the measurement of the base line, is expected to occupy about six months. Dr. Anderson, Superintendent of the Indian Museum, has accompanied the party and will take the opportunity of instituting a thorough investigation of the local fauna.

THE German Government contemplates sending out two expeditions for observing the transit of Venus in 1882: one to the mouth of the La Plata River, the other to Magelhaen's Straits or the Falkland Isles. The expedition of 1874 cost the Government 600,000 marks (30,000*l.*), the one of next year is estimated to cost only 195,000 marks (9750*l.*).

M. MOUCHEZ, director of the Paris Observatory, is making arrangements for taking meteorological observations at an elevation of 2300 metres by means of a captive balloon. The balloon will be charged with ordinary coal-gas. These observations are intended to facilitate the calculation of atmospheric refractions.

DURING November, twenty-two earthquake shocks have been observed in various parts of Switzerland. They seem to have been most numerous in the neighbourhood of Schaffhausen.

A FINE monument has been erected at Bonn on the tomb of the eminent geologist, Prof. Jakob Nöggerath, who died on September 13, 1877. The sculptor is Herr Albert Küpper.

THE preliminary earthworks for the erection of the monument in memory of Justus von Liebig have been begun on the Maximiliansplatz at Munich.

M. TISSANDIER has organised a private company to prosecute his experiments with an electric directing balloon.

SOME of our readers may be glad to know that King's College, London, has a Science Society which meets on Wednesdays at 8 p.m. during term, for the purpose of reading papers on, and for the discussion of, scientific subjects. The papers, we are glad to learn, are generally experimentally illustrated.

DR. TAYLOR, curator of the Ipswich Museum, was on Saturday afternoon presented with a purse of 66*l.*, accompanied with a handsome clock and gold watch for Mrs. Taylor, in recognition of his labours in connection with the museum, and of his annual course of scientific lectures, which for a number of years he has delivered in Ipswich without any emolument. Sir Richard

Wallace presided on the occasion, accompanied by Lady Wallace, and there was a large company present.

A TRAIN of Pullman carriages lighted by electricity has begun to run between London and Brighton.

THE Risikopf, on which the landslip occurred that recently overwhelmed the village of Elm in Switzerland, is being bombarded by heavy artillery in order that all the loose portions may be detached and thus prevent any future catastrophe.

EISENACH is to have an electric railway from the station to the Wartburg Castle, if the Royal permission can be obtained.

THE *British Almanac and Companion* for 1882 contains a summary of Science for 1881 by Mr. J. F. Iselin. It is necessarily meagre, but Mr. Iselin has selected some of the leading points; the geography is pretty full.

THE additions to the Zoological Society's Gardens during the past week include a Black-eared Marmoset (*Hapale penicillata*) from South-East Brazil, presented by Mrs. George Willins; a Tawny Eagle (*Aquila nævioides*) from South Africa, presented by the Hon. — Southey; a Grey-breasted Parrakeet (*Bolborhynchus monachus*) from the Argentine Republic, a Black-headed Conure (*Conurus nanday*) from Paraguay, presented by Mr. J. Lloyd; two Talpacoti Ground Doves (*Chamæpelia talpacoti*) from Para, a Plumbeous Snake (*Oxyrrhopus plumbeus*), two Taraguira Lizards (*Taraguira smithi*), a —— Tree Frog (*Hyla*, sp. inc.) from Brazil, presented by Dr. A. Stradling, C.M.Z.S.; a Red-faced Spider Monkey (*Ateles paniscus*) from Guiana, three Red-billed Tree Ducks (*Dendrocygna autumnalis*) from South America, a Vinaceous Amazon (*Chrysotis vinacea*) from Brazil, a Redshank (*Totanus calidris*), two Dunlins (*Tringa cinclus*), two Razorbills (*Alca torda*), a Grey Plover (*Squatarola helvetica*), a Curlew (*Numenius arquatus*), British, purchased; a Geoffroy's Dove (*Peristera geoffroii*), bred in the Gardens.

THE ROYAL SOCIETY—ADDRESS OF THE PRESIDENT

II.

AFTER the Congress one of the most remarkable events during the present year has undoubtedly been the Electrical Exhibition in Paris. I do not of course purpose to describe it, as many of our Fellows visited it; and full descriptions have reached us through various channels. One point, however, must have struck those who examined any considerable number of the objects; and this I mention, not as in any way disparaging them, but rather as illustrating the stage to which electrical science has attained; namely, that while the assemblage of instruments and appliances was in every way remarkable, and while very great ingenuity and skill had been expended on their contrivance and construction, yet the amount of novelty in the principles involved was comparatively small. Of new combinations, improved methods, and adaptations in detail there was abundance. Some of them even removed former inventions from the category of curiosities to that of instruments for practical employment; or enlarged their sphere of utility from that of the laboratory to that of every-day use. But such is the mass of fruitful matter which science has furnished to the mechanician and constructor, that we might almost wish, from the point of view of the latter, that they may have time to work out more fully than has yet been done, the results of science, before they are called upon to elaborate any fresh materials.

It is now proposed to repeat as far as may be this Exhibition at the Crystal Palace; and the energy with which the proposal has been taken up, and the response with which it has met in many quarters, appear to justify sanguine expectations of its success, at all events from a practical and popular point of view. From the side of science it would doubtless have been far more interesting to look forward to a fresh exhibition, either here or elsewhere, of the progress of electricity after an interval of two or three years. But there is nothing in the present undertaking to interfere with the more advanced project, if, after some such period as that indicated, circumstances should prove favourable. In the mean time it must be remembered that there are very many persons to whom the Paris Exhibition would have proved both interesting and instructive, but who, from one cause or another, were prevented visiting it. Besides this, there are not a few commercial, and even municipal, bodies desirous of adopting some of the modern applications of electricity, but who would be more ready to avail themselves of them after a personal inspection of the instruments and of their mode of action. From this point of view the exhibition may fairly be expected to give considerable impulse to the adoption of electrical appliances in fresh quarters.

But even over and above this practical aspect of the undertaking there may still have been, at the epoch of the Paris Exhibition, some results on the eve of achievement, some remedies for defects, sufficient to transform a doubtful into a certain issue, or even a failure into a success; some steps which may open out new questions, or serve as a departure for new investigations in the subject of electricity. If such should be the case, even science may derive substantial benefit from the proposed undertaking.

But the present year has been rendered generally remarkable, amongst other things, by the multiplicity of its congresses. Apart from those which are concerned with subjects not coming under the head of "Natural Knowledge," there have been held the annual meetings of the British Association, and of the Iron and Steel Institute; the International Medical Congress, in London; the special Congresses on Electricity and on the Transit of Venus, in Paris (mentioned above); that on Geography in Venice; that on Geology in Bologna, and others.

Among all these the International Medical Congress, which this year met in London, stands conspicuous. The work of that meeting showed that the study of medicine by the real workers is, in every part, even the most practical, pursued in a thoroughly scientific spirit; that facts are industriously collected, and patiently grouped and compared; and that conclusions are, if sometimes hastily drawn, yet very cautiously accepted. And there was ample evidence that help, whether in apparatus or in knowledge, is eagerly accepted from all the other sciences, whether their range be far from, or near to, the biological. In short, in the opinion of those best qualified to form a judgment, it is not too much to say that the whole tone of the proceedings of the Congress, though chiefly concerned with practical questions, was, in the best sense, even in the sense which the Royal Society would give to the term, scientific.

Several of the societies meeting annually, or at longer periods, have organisations which, during the intervals between two successive meetings, do useful work. But in all cases the meetings form the most prominent, if not the most important, feature of their life; and, speaking particularly of the meetings themselves, the question has more than once been raised whether they continue to justify the efforts necessary to bring them about. It has been argued that, so many are the scientific periodicals in every civilised country, that all the papers of importance communicated to the meetings would under any circumstances be published in some place or other. Again, it has been urged that, so numerous are the centres of science, so many the means of communication both between places and between persons, that the necessity for these gatherings has, in the natural course of events, become superseded. The time which such meetings and the preparation for them involve, and the trouble which they entail on men already burdened with much work, have also been pleaded on the same side, and objections have been taken on the ground of the useless and irrelevant matter which is too apt to crop up on these occasions. These arguments are certainly not without weight; but there is still another side to the question. It is indeed quite probable that all the more important papers would be published even if the meetings never took place at all. But at these meetings there are usually a number of communications, many, but not all, of local origin, the production of which has been stimulated by the meeting itself; and a fair number of these may be reckoned on the side of gain. Again, it is true that the original idea of a parade or march-past of science, valuable enough when the provinces heard or saw little of science, has become less important now that provincial centres are to be found in almost every large town in the country. Nevertheless, the mere presence of some of the leading men stimulates dormant powers and encourages rising aspirations; and this perhaps all the more the

[1] Address of William Spottiswoode, D.C.L., LL.D., the president, delivered at the anniversary meeting of the Royal Society on Wednesday, November 30, 1881. Continued from p. 119.