

drawings of this hollow in the belt will be almost as important, therefore, as delineations of the ellipse itself.

Additional records of this character will serve to exhibit the precise epochs when decided changes occurred in the rate of motion of the spot or its surroundings. The mean rotation period, as mentioned above, seems very well assured from the materials already collected; but it is most desirable to gain more exact information as to the variations, so that the length of the cycle suggested by the observations may be definitely found.

102 City Road, Bristol,
November 25.

W. F. DENNING.

Galvanometers and Magnetic Dip.

WHILE the variation of magnetic dip in Europe (from about 71° in Aberdeen to 58° in Rome) probably gives little, if any, trouble to users of compasses and portable horizontal galvanometers with pivoted needles, the dip of about 58° to the south at the Cape is sufficient to disturb seriously such instruments.

I have seen several galvanometers which were useless until readjusted; these, having been sent out by makers of high reputation, were thought to have received damage on the voyage. I learn that it is a matter of routine in the Post Office to correct all new instruments for dip.

Small pocket compasses are not appreciably affected, because the centre of gravity of the needle is generally well below the point of support, and prismatic compasses escape, probably, on account of the weight of the card.

Instrument makers could easily arrange a small magnetic field in their testing rooms, with a dip to the south of about 60° , in which to adjust instruments intended for the Cape or Australia.

A. P. TROTTER.

Cape Town, November 9.

Atropa Belladonna and Birds.

FOR eight years I have had a large plant of *Atropa* growing here in my garden amongst currants and gooseberries; close by it is a mountain-ash, and at a short distance a large cherry-tree.

Birds, including the blackbird, build in the garden; but although the cherries, currants, gooseberries and raspberries are annually stripped, the *Belladonna* berries are never touched. The birds are encouraged, and the fruit can be spared.

The *Belladonna* berries are conspicuous objects from July to November; there are hundreds on my plant every year, long after other fruits have vanished—black, lustrous, luscious-looking—but no bird ever touches them.

W. G. S.

Dunstable.

THE ADVANCEMENT OF SCIENCE IN THE ANTARCTIC.

THE President of the Royal Geographical Society has issued an urgent appeal to the Fellows for funds to carry out a National Scientific Expedition to the Antarctic regions on a scale worthy of the traditions of the British nation. He states that a joint committee of the Royal Society and of the Royal Geographical Society has been formed for the purpose of obtaining funds for this purpose, but that "the responsibility of maintaining the credit of the nation in this respect devolves upon the Royal Geographical Society more than on any other body." The Council has accordingly set aside 5000*l.* out of the funds of the Society as a nucleus, to which Mr. Harnsworth, one of the Fellows, has generously added a like sum, and we understand that smaller contributions are rapidly coming in. The cost of a completely equipped expedition will be great, too great we fear for a single Society, even so large and so rapidly growing as the Geographical, to provide, for it is estimated at 100,000*l.* Yet from the point of view of the scientific results sure to be obtained, and the number of the scientific public, the sum is by no means unduly large. Doubtless there will be other Fellows of the Society who can afford and who will not shrink from sharing the position of pre-eminent generosity now occupied by one of their number; but the majority of those interested in the scientific aspects of geography

are not wealthy, and they will require assistance from other friends of science. While the vastness of the blank space on the map within the Antarctic circle is sufficient to account for the almost personal feeling of responsibility which Sir Clements Markham and his colleagues acknowledge, there are great gaps in all the natural sciences which only Antarctic research can fill. The physicist, as Prof. Rücker has recently stated, is in the anomalous position of having a theory of terrestrial magnetism far in advance of the facts on which it is based. The meteorologist has two views of atmospheric circulation to consider which can only be reconciled or resolved by observations in the far south. There are geological questions of an interesting kind awaiting solution, including the immensely interesting problem of the former attachment of the southern continents to the land that lies under the south-polar ice-cap. In chemistry uncertainties exist as to the interactions between sea-water and atmospheric gases on the one hand, and marine deposits on the other, which can be studied more fully in the Antarctic than elsewhere. Biology, apart from the certain accumulation of many new species of marine organisms, which might prove a burdensome boon, will find some fascinating problems of environment. The question of the bipolar occurrence of identical species is not as yet overburdened with data for its discussion; but greater interest centres in the life conditions of the vast icy continent—certainly 4,000,000 square miles in area—and absolutely isolated from all the rest of the land of the globe. The climate of most of this land cannot be more rigorous than that of parts of the north polar regions where land-mammals exist; and the biologist, with the exceptional fauna of Australia in view, may reasonably desire to know if there is animal life on Antarctica, and if so what forms it assumes in the unique environment of isolation and low temperature. Even the astronomer may look forward to some return for his contributions to an Antarctic expedition, for where on the land-surface of the globe is there so fine and large a field for the reception and preservation of meteorites? The anthropologist alone can afford, it would appear, to receive the appeal impassively.

All the great scientific societies have long ago expressed their opinion that the time is ripe for a renewal of Antarctic research. The whole newspaper press of the country has applauded the proposal to give effect to this opinion: almost the whole, we ought to say, for a cynically selfish opposition has been offered by one or two of the less influential papers representing the "little Englanders" in science. We hope that all scientific men who have given their approval to the proposed expedition—and who has not?—will ratify that approval, and assist in enabling this country to co-operate with Germany in 1900, and make the last year of the greatest century of scientific advance the world has known the most memorable of all in a field of science whence a great harvest of new facts, but no material return, is to be expected.

Promises and subscriptions are invited to be sent to the credit of the National Antarctic Expedition, to Messrs. Cocks, Biddulph, and Co., Charing Cross, S.W., or to the Royal Geographical Society, 1 Savile Row, W.

THE IMPERIAL UNIVERSITY OF LONDON.

IT is a matter little creditable to English culture that it has required some twenty years of agitation to bring a University for the most important city of the world into the region of practical politics. Within the last fortnight, however, we are glad to know that the machinery of the new Commission has been put in motion, and that inquiries are being made and questions being inquired into of the highest order of importance.

One of these questions has been brought into prominence in a leading article in the *Times* on Saturday last, which shows very clearly that in the opinion of many important persons the University must be launched on no mean scale.

Some of those interested in educational matters suggested some time ago that many of the unused halls of the Imperial Institute could be put to no better service, or one more in harmony with the real intentions of its founders, than their utilisation for some of the purposes of the new University. The Examining Board, hitherto misleadingly called the London University, has always been imperial in its objects, and there is little doubt that when teaching is added to examination the imperial uses will be strengthened.

We shall content ourselves this week in reprinting the *Times* article, which not only indicates very clearly the manner in which Government endowment in the matter of the site may be most economically made, but suggests a somewhat new side of University activity which should not be neglected in these times of commercial competition.

On a future occasion we shall take an opportunity of referring to these and other matters which seem to be among those the consideration of which is necessary to clear the ground for the future labours of the Commission.

The Statutory Commission, appointed under the Act of last Session for the reconstitution of the University of London as a body organised with a strongly developed teaching side, has made a practical beginning with its work during the present week. When that work is accomplished, within the limits imposed by Parliament, it will, no doubt, fail, as every compromise must fail, to realise the ideals of extreme partisans on both sides. Neither those who regarded the old examination system as perfect and almost sacrosanct, nor those who could see nothing good that did not come out of a teaching institution with a fully-equipped professorial staff, will be altogether satisfied with the change. For ourselves, we cannot doubt that, after unreasonable hesitation and in a somewhat halting and tentative way, a considerable step in advance has been taken for the improvement and expansion of the higher education in the greatest city in the world. But we must not lose sight of the fact that when the Statutory Commission has brought its labours to a close and the results have been laid, in due course, before Parliament, a good deal will remain to be done, partly by legislative action and partly by private effort, before the new system gets a fair start. It is not altogether clear from the Act that the Commissioners have power to decide upon the name of the reconstituted University, though it may be argued as an inference that they can suggest it, and the titles proposed, from time to time, such as the Gresham University and the Albert University, have not met with public acceptance. A point of, perhaps, greater practical importance is that there is no authority to determine where the University is to have its local habitation, and to what extent or in what way teachers "directly appointed by the University," a class expressly mentioned in the schedule to the Act, are to be nominated and provided for. It has been generally assumed that the new University could, for a time at least, be accommodated for the purposes of examination and public meetings in the existing buildings in Burlington Gardens, with the occasional use of rooms lent by some of the chief affiliated colleges. There is reason to believe, however, that this is a misapprehension. We understand that the Government will shortly be under the necessity of resuming the Burlington Gardens site and buildings for the extension of public offices. In that case it would be necessary to furnish the University with new buildings, which at a time when the Treasury will be called upon for an additional grant to the same body for educational objects might not be altogether convenient. The Burlington Gardens property is valued at upwards of 100,000*l.*, but in the hands of the University the rates, taxes, and outgoings are a heavy charge.

There is a magnificent edifice in the best part of London, in which the new University might be housed under conditions worthy of its dignity and aspirations. The stately structure of the Imperial Institute is one of the best examples of modern British architecture. But, though the Institute represents a

great conception and has borne excellent fruit, the buildings are far larger than its special work at present requires. It has been suggested that the Imperial Institute, without abandoning any part of its chosen task, might ally itself closely with a kindred institution and, instead of lending its superfluous space for the purposes of casual and miscellaneous exhibitions, might give the enlarged and reformed University a suitable and splendid residence. The privileges and the position of the founders and Fellows and the special interests which the Institute was established to preserve and foster for the advantage of India and the Colonies must, of course, be carefully safeguarded. But the control of the land and buildings by a joint committee, representing the Institute on the one hand and the University on the other, would be full security on this score. It cannot be denied that the Imperial Institute would be an appropriate scene for the ceremonial functions of what might well be called the Imperial University of London. Even at present, the University examines candidates for degrees from the Colonies and India, and, while this duty will be preserved along with the rest of the "external" side of its activity, it will, in all probability, be developed much further when the scheme of which the Statutory Commission is settling the framework has come into full operation. The University, as we have said, is empowered not only to "recognise" competent professors and lecturers in the teaching colleges within the metropolitan area, but also to "appoint" teachers of its own. At the same time it is quite clear that the University is bound not to enter in any way into competition with the colleges recognised as supplying academical teaching for the people of London. To do so would be to depart from the spirit if not the letter of the compromise, on the faith of which the teaching bodies became parties to the scheme of reform. But there is a large sphere of work upon which the existing colleges have not entered and can hardly hope to enter. The establishment of a "Faculty of Commerce"—following the example of Germany—is a development of University work which cannot be neglected in our great centres of trade and industry. In this movement London ought not to be behind-hand. Without looking to Government for much more than approval, there are ample resources available, if an appeal is made to the public spirit and liberality of wealthy individuals and of great industrial organisations, for the establishment of professorships of advanced technical study, of applied science in its industrial and commercial aspects, of engineering and electricity, and of many practical branches of economics. These chairs would not compete with the ordinary teaching of the colleges in the abstract and elementary work connected with the sciences in question; but when the student had shown his knowledge of the groundwork he would be able to place himself under the guidance of a selected body of experts and to specialise his studies in preparation for a high degree. The class-rooms and laboratories connected with this part of the work of the University would be for the most part appropriately grouped around the buildings of the Imperial Institute. There is no reason why degrees given by a Faculty of Commerce and Industry in what might well be called the Imperial University of London should not be eagerly sought for by young men trained in the colleges of Calcutta, Bombay, and Lahore, of Melbourne, Sydney, and Adelaide, of Quebec, Toronto, and Cape Town, as well as by students in the recognised schools of London. At all events, this aspect of the question ought not to be lost sight of either by the Statutory Commission or by the Government.

If, however, the reconstituted University is to take this task in hand, it will be necessary not only to secure the endowment of a number of professorships and lectureships, but to find a fitting place for carrying on the work. The buildings of the Imperial Institute would supply a great part of the accommodation that is needed, but the property includes also some three acres of vacant land which could be turned to account for the erection of laboratories or special class-rooms. It is hardly necessary to mention that the expenditure on the existing buildings has been very large. If the authorities of the Imperial Institute are willing to place the estate at the disposal of the Government, for the purpose of housing the University of London, what seems a very satisfactory arrangement from the point of view of the public might be made. The Prince of Wales and his colleagues are understood to be favourable to such an arrangement, provided, of course, that the special interests with which the Institute is identified are safeguarded.

It may be assumed also that the leading members of the Government look with favour upon the plan, though nothing can be done without the consent of Parliament. The financial details will require to be closely examined. We believe, however, it can be shown that the bargain would be a good one for the State, if the Government were to take over the existing charges on the property of the Imperial Institute, amounting in all to about 5000*l.* a year for rent, taxes, and interest on mortgage. To replace the University of London in a position equal to that in which it stands at present, if it is dispossessed of the Burlington Gardens estate, would probably cost a good deal more, and it would leave no margin, either in space or in money, for the new work which ought to be undertaken if our educational system is to stimulate and nourish our industries and our commerce. It is, in our judgment, most probable that the conspicuous place in the public eye given to the reconstituted University by its installation in the magnificent buildings of the Imperial Institute, especially if it were to be given the designation of the Imperial University of London, would attract substantial support, on a scale not unworthy of the Empire, both in the shape of liberal benefactions and of the enthusiastic and enlightened co-operation of able men. This policy will in no respect interfere with the development of systematic and organised teaching, for which an opportunity will henceforward be afforded, and for the bestowal of degrees founded on such teaching, but will rather complete and strengthen it. At the same time, a higher value and a wider extension will be secured for the external examinations of the University, which opens its doors to competitors from every part of the Empire. It will not be creditable to the British people or to the inhabitants of London, if there is not an energetic attempt to bring what ought to be the centre of the most advanced methods of education up to the level of the work that has been done not only in Berlin and Leipzig, but in many smaller German towns.

NOTES.

THE anniversary meeting of the Royal Society took place yesterday as we went to press. An account of the meeting and the annual dinner will be given next week.

M. DEPÉRET has been elected a member of the Paris Academy of Sciences, in the Section of Mineralogy, in succession to the late M. Pomel.

PROF. D'ARCY THOMPSON, of University College, Dundee, has been appointed to the office of Scientific Member of the Fishery Board for Scotland, vacant by the resignation of Sir John Murray.

MR. R. T. BAKER has been promoted from assistant curator to curator of the Technological Museum, Sydney.

WE notice with much regret the announcement of the death of Dr. G. G. Allman, F.R.S., formerly Regius Professor of Natural History in the University of Edinburgh. We regret also to have to announce the death of Mr. Edwin Dunkin, F.R.S., the distinguished astronomer.

THE *Southern Cross*, with Mr. Borchgrevink and the other members of the Antarctic expedition under his direction, arrived at Hobart (Tasmania) on Monday. It is expected that the voyage will be continued in a fortnight's time.

IT is with great pleasure that we announce the fact that the prize problem of the Naturwissenschaftlich-Mathematischen Facultät of Heidelberg, for a determination of the velocities of various gases and vapours at different temperatures, has been successfully won by Mr. Ernest Stevens, of Brighton, for which he has been awarded the gold medal.

AT the last meeting of the Council of the Royal Geographical Society, 112 candidates were elected. This is the largest number elected at any one meeting, and it makes the membership of the Society considerably exceed four thousand.

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A VIOLENT storm was experienced along the New England coast of the United States on Sunday, and did an immense amount of damage. It is reported that the wind reached a velocity of ninety miles an hour at Block Island.

WE learn from the *British Medical Journal* that the monument to Prof. Charcot, which is to stand in front of the Salpêtrière, will be unveiled on Sunday next, December 4, at ten a.m. M. Leygues, Minister of Public Instruction, will preside at the ceremony.

THE gypsum boulder, found in the boulder clay of Great Crosby, and described in previous numbers of NATURE, has now been finally set up in Islington, Great Crosby. The District Council, advised by Mr. T. Mellard Reade, have had it erected upon a pedestal in the attitude in which it lay embedded in the clay. This was found a difficult thing to do, but the result is most successful, and makes the boulder not only of greater scientific value, but artistically more effective and picturesque.

IT is announced in *Science* that the U.S. Board of Ordnance and Fortification has decided to institute an investigation of the possibilities of flying machines for reconnoitring purposes and as engines of destruction in time of war, and 25,000 dollars of the fund at the disposal of the Board was appropriated for the purpose. The experiments will be carried out under the direction of General A. W. Greely, of the Signal Service, who will have the advantage of the advice of Prof. Langley.

AT the meeting of the Society of Public Analysts to be held next Wednesday evening, December 7, an illustrated lecture will be delivered by Mr. A. H. Allen, of Sheffield, on "The use of the micro-spectroscope, and the methods of detecting blood in chemical-legal investigations." Any persons who may be interested in the subject are invited by the Council to attend. Intending visitors, who will not be introduced by members of the Society, are requested to apply for tickets to Mr. E. J. Bevan, Hon. Secretary, 4 New Court, Lincoln's Inn, London, W.C.

THE College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about 180 dollars (36*l.*), will be made on July 14, 1899. Essays presented for competition may be upon any subject in medicine, but must not have been published. They should be received by the Secretary of the College on or before May 1, 1899.

BY the death of Prof. Michele Stefano di Rossi, which recently took place at his home at Rocca di Papa, seismologists have lost from their ranks an enthusiastic worker whose name will long be remembered. By his voluminous writings in the *Bolletini del Vulcanismo Italiano*, of which he was editor, and his "Meteorologica Endogena," di Rossi drew the attention of the people of Italy and the world to the importance of studying the ubiquitous movements of the earth's crust; and there is no doubt that it was in great measure the result of this incentive that we now find in the Italian peninsula the elaborate system which exists for seismological investigations. During his later years failing health prevented his taking any active part in the modern developments of seismology; but it was always a pleasure for him to visit the observatory a few steps from his own door, where with Dr. Cancani he could watch and discuss the work of others. The subject to which he devoted the greatest attention was perhaps tromometry, in connection with which he devised many instruments, and made very many thousands of observations. Di Rossi's tremor-recorders are to be seen in nearly all the Italian observatories; whilst the Rossi-Forel scale, as indicating the intensity of an earthquake disturbance, has found acceptance throughout the world.