and wishes. May the spirit that inspired you abide with us everywhere and always: may it preserve our understanding from the bonds of error, and by its presence strengthen and confirm us in the pursuit of the truths of nature.

The ceremony at the museum concluded with the presentation of addresses from the University of Cambridge and from the Franciscan Order of Friars Minor, the former by Prof. James Ward, the latter by Fr. David Fleming.

At a luncheon which was given by Merton College, the Warden presiding, the memory of Roger Bacon was proposed by the Bodleian Librarian (Mr. F. Madan), who took occasion to mention the west-country origin of the subject of the toast, and the encouragement which he received from Pope Clement IV. This was supported in an eloquent speech by M. F. Picavet, representing the University of Paris. The other delegates were welcomed by the Chancellor, and replied to the toast of their health in speeches of great interest. The delegate of the Vatican Library, Monsignor Ratti, speaking in Latin, announced the recent discovery of a new Baconian manuscript. The Comte d'Haussonville and M. Henneguy, both members of the French Academy, answered respectively on behalf of the Institut and of the Collège de France. Fr. David Fleming spoke for the Franciscan Order, and Prof. James Ward for the University of Cambridge. Sir W. Osler conveyed the thanks of the company to the Warden and Fellows of Merton College.

Many of the visitors attended the Romanes lecture on "The Atomic Theory," given by Sir J. J. Thomson. Others proceeded to the Bodleian, where the librarian had arranged an exhibition of Baconian books, prints, and manuscripts. This comprised MSS. of the *Opus Majus*, the *Opus Tertium*, and fragments of the *Opus Minus*, together with many other MSS. of interest, including the curious treatise "*de retardandis senectutis accidentibus*." The volume of memorial essays lately published under the editorship of Mr. A. G. Little was also on view.

The events of the commemoration ended with a party in the garden of the Warden of Wadham College.

F. A. D.

ADDRESS TO THE UNIVERSITY OF OXFORD.

The following is the address written by the Public Orator of the University of Cambridge, and presented by Dr. James Ward at the celebration:—

Gratulamur Universitati vestrae, viri litterarum et scientiarum omnium amore nobis coniunctissimi, quod annum septingentesimum ex quo natum est scientiarum et litterarum lumen illud vestrum, Rogerus Bacon, mense proximo vosmet ipsi, cum aliis quibus alumni vestri memoria cara est, celebrare constitutis.

Viri tanti fama ad posteros quam tarde pervenerit, non ignotum. Scilicet anni intercesserant trecenti, cum libellus de mirabili potestate artis et naturae ab eo conscriptus, typis expressus est; quadringenti sexaginta sex, cum eiusdem *Opus Maius* publici iuris factum est; prope sescenti denique, cum *Opus Minus* et *Opus Tertium* diei lucem primum viderunt. Opera autem eius tam multa tamque late dispersa fuisse

perhibentur, "ut facilius sit Sibyllae folia colligere," e quibus nonnulla, vixdum nota, vosmet ipsi, cum aliis coniuncti, in lucem mittere decrevistis. Atqui, etiam in libris eius, quos iamdudum habemus, luce clarius est, quanto litterarum Graecarum, Hebraicarum, Arabicarum, quanto scientiarum omnium amore flagraverit, qui, quanquam scientiae uni potissimum investigandae annos decem dedicavit, ceteras nequaquam neglexit, scientias omnes inter se connexas esse, et mutuis sese fovere auxiliis, non immerito arbitratus.

Idem quam multa, quae nostra demum invenit aetas, mente sagaci prospexit, Senecae sui verbis illis praeclaris usus:—"veniet tempus quo ista quae nunc latent, in lucem dies extrahat et longioris aevi diligentia." Vaticinium etiam alterum nunc demum auspiciis vestris verum redditum est. Etenim, abhinc annos plus quam trecentos, poeta quidam Cantabrigiensis praedixit, fore aliquando, ut Anglia et Europa Baconis vestri famam admirarentur, atque ut Oxonia praesertim alumnus suum statuarum honore in perpetuum celebraret. Ergo etiam posteros iuvabit Historiae Naturalis in Museo vestro iuxta Baconis nostri imaginem etiam Baconis vestri statuam non sine reverentia contemplari.

Has litteras benevolentiam et observantiam nostram testantes legato maxime idoneo, philosophiae e Professoribus nostris altero, ad vos preferendas tradimus. Valete.

THE COMMITTEE ON WIRELESS TELEGRAPHY RESEARCH.

THE appointment of the committee on wireless telegraphy research, and its report, referred to in last week's issue of *NATURE* (p. 385), are indications that the somewhat fierce light that the Marconi inquiry brought to bear upon the unscientific methods of the Post Office is at length having some effect. No longer is it possible that a high Post Office official should annotate a memorandum, prepared by a very responsible technical officer, recommending the appointment of some engineers destined to form a skilled wireless staff, with a paragraph to the effect that "common-or-garden" engineers are good enough for wireless telegraphy. To the Marconi committee, however, Sir Alexander King, secretary of the Post Office, admitted that the office could not undertake the design and erection of the imperial wireless stations for the reason that they had in their employment no one with the necessary knowledge and experience, surely a very humiliating position for the State department which controls the whole of the national telegraphs, with a large technical staff, and spends thereon huge sums of public money.

Since then it is satisfactory to note some change in the official mind, first in the appointment, some months ago, of Mr. Duddell to assist the telegraph department with technical advice, and secondly in the appointment of the very representative committee of which the report is now under review.

The report now published is in favour of establishing, near to the National Physical Laboratory at Bushey, a special national research laboratory where work on wireless telegraph problems will be carried on, while investigations in connection with ordinary telegraphy and telephony will not be excluded. The laboratory is to be controlled

by a national research committee consisting partly of representatives of the Post Office, Admiralty, War Office, and Treasury, and partly of paid members nominated for short terms of years by the Royal Society and the Institution of Electrical Engineers, together with the director of the National Physical Laboratory.

As the capital cost of the laboratory is estimated at only 7,300*l.*, and the total annual expense, both of laboratory and committee, at only 4,800*l.*, sums which are very small in comparison with the possible savings that such a research laboratory ought to be able to assist in effecting in the vast annual expenditure on the national telegraph service, the proposals cannot be considered in any way extravagant. Indeed, if anything, they appear to err on the side of insufficiency. For instance, the secretary of the proposed research committee, who, in addition to possessing the usual qualifications for such a post, including a knowledge of French and German, is to be a man of technical training and experience, is only to divide 300*l.* per annum between himself and a clerk. Again, the principal assistant, who must obviously be a first-class technician, as he is to have complete charge of the laboratory under the director of the National Physical Laboratory, is only to get a salary of 400*l.*

Further, it is suggested that the honorarium given to each of the paid members of the proposed committee for their attendance at meetings is to be fixed at ten guineas a meeting, it being proposed that during the first two years there will probably be fifteen meetings per annum, and after the first two years ten meetings. No doubt eminent men of science will be found ready to give their time to the State at this rate of remuneration, as equally would they no doubt be found to do so for nothing; but it may be pointed out that this amount of pay suggested for the committee, presumably for men of the highest scientific capacity and experience, is only about one-half what the average company director, who may have no special experience or training, commonly obtains for attending the board meetings of medium-sized companies in the City of London. The fact that Sir Alexander King, the secretary of the Post Office, and Mr. R. Wilkins, of the Treasury, are of opinion that the payments suggested are on too liberal a scale, is significant evidence of the low value that non-technical Government officials attach to scientific attainments.

However, the recommendations contained in the report, if adopted by the Government, will be a beginning in the right direction, and it is satisfactory to know that similar arrangements in connection with the advisory committee for aeronautics, established in 1909, of which the research work is carried out in the National Physical Laboratory, are working well. It will always be open to the research committee, when once it is established and has had time to prove the value of its work, to point out that with ampler resources it could do more.

A. A. CAMPBELL SWINTON.

THE URGENT NEED FOR ANTHROPOLOGICAL INVESTIGATION.¹

THE Carnegie Institution of Washington has taken the wise step of inviting certain experts to report on the special needs of anthropological investigation, and have printed the reports of Dr. W. H. R. Rivers, F.R.S., Prof. A. E. Jenks, and Mr. S. G. Morley in a sumptuous *brochure*.

Dr. Rivers lays particular stress on the special urgency of the needs of anthropology, due to the character of its material, this factor of urgency being wholly or almost without importance in other branches of science. Only exceptionally can the investigation of archæological problems be regarded as urgent, and he believes that science will gain in the long run by delaying archæological exploration. He contrasts with this the case for ethnology, and adds, "In many parts of the world the death of every old man brings with it the loss of knowledge never to be replaced." He contrasts "survey work" with "intensive work," and proves the importance of the latter. The most favourable moment for ethnographical work among any given people is discussed, and the different kinds of agencies by which ethnographical work is now being carried out, his remarks on investigations by officials and missionaries being both just and sympathetic.

Preliminary training in scientific methods is essential, and Dr. Rivers agrees with Friederici that investigators working alone seem to obtain more valuable results than expeditions comprising a whole staff of experts. "The work of an expedition will attain its highest efficiency if it seeks to combine the advantages of individual enterprise with the work of specialists where this seems indispensable." Collecting expeditions for the enriching of museums rarely accumulate any intimate knowledge of the natives that is of much value; indeed their tendency is unconsciously in the opposite direction. Everything which the intensive worker obtains will have an infinitely wider and deeper meaning than anything which can be obtained by the cursory visitor, and the processes of manufacture can be collected, which are even more important than the finished article.

Physical anthropology can be postponed till a later stage of the inquiry. It follows that the prime need of anthropology is for the intensive investigation of those living examples of human culture which are most likely to disappear or suffer serious decay. Dr. Rivers then makes a brief survey of different regions of the globe outside America, with the object of ascertaining the urgency of the needs, and how far these needs are being met by existing agencies. "Perhaps the most urgent needs for Europe are for the study of the existing cultures of Lapland in the north, and of the countries of its south-eastern corner, and especially of Albania." The pressing need for research in South Africa "stands beyond all question." The ethnological problems of Asia, except

¹ Reports upon the Present Condition and Future Needs of the Science of Anthropology. Presented by W. H. R. Rivers, A. E. Jenks, and S. G. Morley. Pp. 91+14 plates. (Washington, D.C.: Carnegie Institution of Washington, 1914.)