years in the Meteorological Office. Indeed, a careful inspection of the lines of wind velocity published in the Committee's Quarterly Reports renders this supposition extremely probable.

During high winds it is well known that the wind does not blow with a uniformly high velocity, but that there occur frequent gusts of comparatively brief duration, many of the heaviest being, indeed, all but instantaneous. Thus the anemometer may indicate a velocity at the rate of no more than 60 or 70 miles an hour, but during the time there may have occurred 20 or 30 sudden gusts quite equal to the Force 12 of Beaufort's scale. Now, it is these repeated heavy gusts which cup-anemometers do not record that sailors have to provide against in the management of their ships. Hence it happens that while at observatories on land, provided only with cup-, anemometers, no greater velocities than 60 or 70 miles an hour can be noted, in ships at sea, what the seaman has actually to deal with are velocities of 80 or 100 miles an hour. He accordingly enters these high pressures in his log.

It is evident that the Board of Trade are not in a position to give the assistance to sailors which they are seeking to give, till pressure-anemometers have been established at their observatories.

The Circular contains this very judicious remark:—"The Board desire to impress upon Receivers and Officers employed in reporting casualties, that the direction and force of the wind at the time of a casualty should be ascertained as accurately as possible, and that therefore these particulars should not be inserted without every precaution being taken to insure that they are in accordance with fact." It only remains that the Board of Trade furnish each Receiver and Officer with a simple pressure-anemometer, having a scale, 0 to 12, agreeing as nearly as possible with Beaufort's scale, and so constructed as to show the pressure at the time of observation, and to register maximum pressures, so that the officials may be put in a position to carry out the instructions of the Board.

SCIENCE AT OXFORD AND CAMBRIDGE

THE following courses of lectures are arranged for the ensuing term at the University of Oxford:—

Mr. R. B. Clifton, Professor of Experimental Philosophy, on "Optical Instruments and Physical Optics;" beginning Saturday, the 19th of October. The Physical Laboratory of the University will be open daily for instruction in practical physics from 10 to 4 o'clock on and after Thursday, the 17th of October.

Mr. J. O. Westwood, Hope Professor of Zoology, proposes to form a class for the study of the structure and classification of articulated animals.

Mr. W. Odling, Professor of Chemistry, on "The Succession of Chemical Ideas;" beginning Thursday, October 17. There will also be an explanatory and catechetical lecture on Tuesdays at 11 o'clock, to commence on Tuesday, October 22. The laboratory of the University will be open daily for instruction in practical chemistry from 9 A.M. to 3 P.M. on and after Monday, October 14. In addition to this two courses of instruction will be given in the laboratory—a course on the methods of quantitative analysis, and a course of elementary practical instruction in chemical manipulation, intended for those commencing the study of chemistry.

Mr. G. Rolleston, Linacre Professor of Anatomy and Physiology, on "Human Anatomy and Physiology, with special reference to Ethnology;" beginning Friday, the 18th of October. The work-rooms in the Anatomical Department are open daily from 9 A.M. to 5 P.M. for practical instruction, under the superintendence of Mr. Charles Robertson, the Demonstrator of Anatomy, and Mr. S. J. Sharkey, of Jesus College. A special class will be formed for instruction in Practical Microscopy. Mr. E. Ray Lankester, of Exeter College, will, as Deputy of the Linacre Professor, give a course of lectures on "The General Classification of the Animal Kingdom," beginning on the 19th of October.

Mr. J. Phillips, Professor of Geology, on "The Successive Conditions of Land and Sea, taken in the order of Geological Time;" beginning Monday, October 28.

The following are also announced in connection with Trinity, St. John's, and Sidney Sussex Colleges, Cambridge:—

On "Electricity and Magnetism (for the Natural Sciences Tripos), by Mr. Trotter, Trinity, commencing Wednesday, Oct. 16. On Chemistry, by Mr. Main, St. John's, in St. John's College Laboratory, commencing Thursday, Oct. 17. Attendance on these lectures is recognised by the University for the Certificate required by Medical Students previous to admission for the first examination for the degree of M.B. Instruction in Practical Chemistry will also be given. On Palæontology (the Protozoa and Cœlenterata), by Mr. Bonney, St. John's, commencing Thursday, Oct. 17. On Geology, (for the Natural Sciences Tripos. Preliminary matter and Petrology), by Mr. Bonney, St. John's, commencing Wednesday, Oct 16. A course on Physical Geology will be given in the Lent Term, and on Stratigraphical Geology in the Easter Term. On Botany (for the Natural Sciences Tripos), by Mr. Hicks, Sidney, beginning on Thursday, Oct. 17. The Lectures during this term will be on the Morphology of Phanerogamia. Mr. Hicks will also give examination papers in Botany to candidates for the next Natural Sciences Tripos, beginning Oct. 21. On the Physiology of the Organs of Sense, by Dr. M. Foster, F.R.S.; and a Course of Practical Physiology. The days, hours, and dates of commencement of these two courses will be announced shortly.

AMERICAN PREPARATIONS FOR THE FORTHCOMING TRANSIT OF VENUS

AMID the violent political agitation and the inevitable social commotion of the United States, one would imagine, judging from our own case, that neither the American Government nor the American people had any time or funds to devote to scientific objects of apparently remote utilitarian interest. That this is not the case every regular reader of this periodical must be aware, for seldom does a week pass but we have occasion to notice some scientific expedition fitted out by Government funds, or the meeting of some well-organised and efficient scientific association, or the report of work done at one of the numerous scientific schools with which the country abounds, or the results of an expensive scientific inquiry or scientific experiment; in short, the Americans seem to think it their interest and duty, as it is their inclination, to give substantial encouragement to scientific research and the spread of scientific culture and knowledge. Verily they know how to do these things better in America than in England; but, indeed, of what foreign country can this not be said? This cannot be better seen than in the action taken by the U.S. Government in reference to the forthcoming Transit of Venus.

In March 1871 Congress, instead of appointing one irresponsible official to organise all the preparations necessary for the observation of one of the rarest and most important astronomical phenomena, authorised the appointment of a Commission "to expend such appropriations as might be made by Congress for the observations of the coming Transit of Venus." This Commission is composed of Rear-Admiral B. F. Sands, Superintendent U.S. Naval Observatory; Prof. Joseph Henry, LL.D., President National Academy of Sciences; Prof. Benjamin Peirce, LL.D., Superintendent U.S. Coast Survey; and two Professors of Mathematics of the Naval Observatory,