

meteorology still impressed with the idea that, with a correct knowledge of what has been, we may be able to form an opinion of what is to be. It seems to us by no means improbable that with more accurate information, such as this now being stored for future use, we may before long arrive at the power of foretelling the general character of seasons, in regard to their being wet or dry, hot or cold, stormy or gentle; but we see no reason to believe that any amount of study of the past will ever enable us to predict in detail for any length of time in advance, though it may and must lead us to a better capability of rightly interpreting the atmospheric changes going on, of detecting them at their earliest beginning, of judging their probable effects, and thus of extending the period for which "storm warnings" may be made available. With increased experience new power will be gained, new methods will be learned and proved. Even now, the spectroscopic observations by Commander Maclear, to which he called our attention in these columns only a few weeks ago, seem to point hopefully towards a new path in meteorological research; for it is not only in the widely different climate of the Bay of Biscay, the Red Sea, and the Indian Ocean, that he observes the differences in the spectrum which he has spoken of in the article just referred to; he informs us that his later observations lead him to believe that the changes in the atmospheric humidity distinctly correspond to changes in the solar spectrum; that, for instance, an increasing humidity manifests itself by a shortening in of the blue, and by a well marked development of aqueous bands in the red and yellow. Whether further examination will confirm this belief or not it is at present impossible to say, but the spectroscope has done so much towards teaching us the constitution of other atmospheres, that we may fairly entertain a hope that the time has come for it to teach us something about the distant and outlying parts of our own.

J. K. L.

Index of Spectra. By W. M. Watts, D. Sc. (London: Henry Gillman.)

ALL workers with the spectroscope must have felt the great inconvenience arising from the employment of numberless different scales in the mapping of spectra. It is to be hoped that at some future time there will be more uniformity, and that authors, when publishing original memoirs, will reduce their measurements to a definite and recognised system. It is clear that such a method must be perfectly independent of the spectroscope and its concomitant parts; the position of each line can therefore only be expressed by its colour, or, in other words, by the length of the wave of light which produces this colour. Dispersion spectra, obtained by the use of prisms of different materials, vary greatly in the relative breadth of the respective colours; thus in the spectrum from crown-glass the red end is larger and the blue end shorter than in the spectra obtained from flint-glass, carbonic disulphide, and by diffraction. It is therefore necessary in spectroscopic researches to record the positions of numerous well-known lines as observed in the instrument that is used. In a diffraction spectrum, however, the position of the lines is dependent solely on their colour, and is precisely the same by whatever method the spectrum is obtained. For the results of different observers to be accurately comparable, the readings obtained by dispersion must either be expressed in wave-lengths, or the spectra must be obtained by diffraction. The wave-lengths of the Fraunhofer lines of the sun have been accurately determined by several observers. The author has adopted as the basis of his work the measurements made by Angström, as these appear to exceed in accuracy all similar measurements at our disposal. When the wave-lengths of a number of lines are known, it is easy to calculate the wave-lengths of the lines of any new spectrum, either by the interpolation formula given by W. Gibbs *Phil. Mag.* [4] xl.157) or by the method of graphical inter-

polation, both of which methods are explained in the volume before us; all that is required is to have the wave-lengths of two known lines, between which the line to be measured falls. By the aid of Angström's measurements the author has reduced the measurements of the bright lines of all the elements whose spectra have been carefully investigated, and also of air lines as mapped by Thaler, Huggins, and Plucker. These tables will therefore assist materially in the work of reduction, by serving as landmarks from which to calculate the wave-lengths of new lines. The attention that the author has bestowed on this work is the best guarantee of the accuracy of the numbers given. In the lithographic plates at the end of the tables, a drawing of the spectrum of each element is given on the plan proposed by Bunsen, in which the intensity of a bright line is indicated by the height of the line representing it; a chromo-lithograph is given of the double spectra of nitrogen, sulphur, and carbon, and another plate, showing two spectra obtained by Wülner from aluminium, and three from hydrogen at different powers. Dr. Watts is deserving of the best thanks of all those interested in spectroscopic work, for it is to be hoped that his "Index of Spectra" may contribute to the adoption of a uniform scale of measurement, and thus facilitate the advance of the science.

A. P.

LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his correspondents. No notice is taken of anonymous communications.]

The Adamites

PHILOLOGISTS will notice with regret a paper bearing the above title in the late number of the *Journal of the Anthropological Institute*. The author appears to have taken up, without proper study, that difficult and dangerous line of argument, the comparison of historical names, and has naturally fallen into the network of delusive fancy which in past generations entangled Jacob Bryant and Godfrey Higgins. Modern philology has abundantly proved that slight, loose, and occasional correspondences in proper names are deceptive as evidence, even among languages of the same family, much more among languages of different families. It is a fair sample of the present paper, that it argues an affinity between the peoples of the Old and New Worlds on the basis of a connection between various names of the Deity, among which are the Russian *Bog*, the Mantchoo *Ab-ka*, and the Hottentot *Tegoa*. The special purpose is to prove that nations are shown by their names to trace descent from an ancestor called *Ad*—"*Adam*, or *Father Ad*." Thus "the great Hamitic race of *Abkad*" is interpreted by the aid of Welsh *ach*—root, lineage," so as to mean "sons or lineage of *Ad*;" and the name of *Ta-ata*, the Polynesian First Man, is "that of the mythical ancestor of the Adamites, reversed, however, and with the addition of *ata* (*aka*), spirit"! It is obvious, though unaccountably overlooked in the paper, that two of the clearest cases of the theory may be found near home. The descent of two nations from *Father Ad* is perfectly recorded by ourselves, when we call the representative of one a *Paddy*, clearly *Ap-Ad* (from *Ap*, "used in the sense of son"), while the other's Adamite ancestor is commemorated by calling his descendant a *Ta-ffy*.

It is not necessary to give the name of the author of this unlucky paper. Everybody is liable to slips, great or small; and a man may have done work worth doing in one line, but turning suddenly to another, may come to grief utterly. But the Council of the Anthropological Institute should have consulted their own interest and that of their contributor by declining to print the present essay. It is the duty of a learned society to examine even a hasty and ill-considered idea brought forward by one of its members, but not to put it on public record against themselves and him.

M. A. I.

The Segmentation of Annulosa

In the extract from his Address to the Entomological Society, given in *NATURE*, February 29, Mr. Wallace remarks that Mr. Spencer's views have not been so much as once alluded to in the