

He then continues:—

The propagation of Light occurs, as we have already seen, by dynamical undulations, for so we call the uninterrupted alternation of the opposing forces. This view stands between the Undulatory theory which Huygens and Euler taught and the Emanation theory of the Newtonian school, almost in the same way as the dynamical theory of Heat between the mechanical and electrical theories. Schelling, in his *Weltseele*, has recognised the possibility of such a view.

Besides these extracts from the "Ansicht der chemischen Naturgesetze," Oersted expounded his theory of light in a particular communication which he made to the Royal Danish Society of Science, and of which an abstract is printed in its Proceedings for the year 1815-16, pp. 12-15. One sentence will suffice as a summary of this abstract:—

According to the theory which has been set forth here, one may fairly well consider a ray of Light as a succession of immensely small electric sparks which might be called the elements of Light.

It is evident that, with all his ingenious insight, Oersted was far from having formulated an electric theory of light in terms which would admit of verification. His perception that electric forces were called into play in the displacements of the luminiferous waves was obscured by the view which he held of conduction; for, surely, the condition of the quasi-elastic actions called forth in the propagation of light should have been that the forces or agencies at work must not attain so great a value as to produce a discharge, as we now understand it. Indeed, in the existing state of knowledge, when as yet the quasi-elasticity of dielectrics was unknown, the foundation facts for an electric theory were not available. The remarkable fact is that in the paucity of available facts his speculations took him so far as they did along the road of progress.

SILVANUS P. THOMPSON.

SCIENCE AND RESERVATIONS.¹

WHEN a district interesting to geologist and naturalist alike is handed over to a body of scientific investigators, the result in these days of intensive research is likely to be important. Dr. Conwentz, the indefatigable pioneer of nature-protection, has edited a volume of 700 pages, which gives the results of such a study in the case of the *Plagefenn* at Chorin, in Prussia, a district of marshes, lakes, islands, and wooded country. Of course, there are gaps in the mass of knowledge accumulated during several years, in the fauna and lower flora, for instance. But the whole work is a remarkable study in classification and generalisation.

The relations of water and earth, for which the historical records of the district are very useful, have seldom been studied so minutely, especially in

¹ "Beiträge zur Naturdenkmalpflege." Herausgegeben von H. Conwentz. Dritter Band—"Das Plagefenn bei Chorin." Ergebnisse der Durchforschung eines Naturschutzgebietes der preussischen Forstverwaltung, By H. Conwentz, F. Dahl, R. Kolkwitz, H. Schroeder, J. Stoller and E. Ulrich. Pp. xvi+688. (Berlin: Gebrüder Borntraeger, 1912). Price 18.75 marks

reference to the lower vegetation. Dr. H. Schroeder describes the diluvial, and Dr. J. Stoller the alluvial, structure. On their foundations, Dr. E. Ulrich bases his botanical study. This, and the monograph on the fauna, are fine studies. As contributions to ecology they are of great value. Many readers should be able to obtain a better idea of the intricacies of plant communities from such a monograph as Dr. Ulrich's than from a general work on the subject. The sociology of plants and animals, as conditioned and initiated by geological and meteorological forces, has still all the fascination of a young science. Excellent diagrams and maps illustrate the social processes, so well marked in this district, which Dr. Ulrich praises as a model of biological complexity and natural beauty. Professor Kolkwitz's essay on the plankton is placed at the end of the volume, but should be read with Dr. Ulrich's contribution.

The account of the fauna could not have been in better hands than in those of Prof. F. Dahl. His general introduction on methods of research and his conclusions on the relations between animal and plant communities are fresh and important.

The analytical lists are carefully executed; that of the fauna extends to more than 200 pages. The index is a good one.

The keynote of the whole study, and the point of departure and of arrival alike, is the coast-line of a fresh-water lake; and there are few more interesting sites for the study of organic life. Our own country, it may be observed, has an abundance of similar districts, more or less useless to the agriculturist, but of enormous value for scientific research.

A. E. CRAWLEY.

NOTES.

ARRANGEMENTS have been made for the inclusion of two organised discussions in the proceedings of Section H (Anthropology) during the forthcoming meeting of the British Association at Dundee. On Friday, September 6, a discussion on the ethnological aspects of Scottish folklore will be opened by Mr. W. Crooke, president of the Folklore Society, and papers will be contributed by Mr. E. S. Hartland, Mr. W. J. Brodie-Innes, and Canon J. A. McCulloch. On Monday, September 9, the president of the section, Prof. G. Elliot Smith, F.R.S., will read a paper on the distribution of megalithic monuments, in which he will develop the theories as to the racial affinities of their builders which he has recently put forward. In the discussion which will follow, Prof. Ridgeway, Prof. J. L. Myres, Prof. W. Boyd Dawkins, Dr. T. Ashby, and others have promised to speak.

THE summary of the weather issued by the Meteorological Office for the week ending August 24 shows that the general conditions were again extremely unsettled over the United Kingdom as a whole, but in some localities in Scotland, Ireland, and the north-east of England rain is said to have been less common than elsewhere. The deficiency of temperature exceeded 3° in most districts, and the south-west of England was the only district where the highest day