

endeavours to describe its past and predict its future experience in the briefest possible terms. It is this creation of *Naturgesetze* by the mind, this invention of brief formulæ, which is at once the glory and limitation of science. The mind does not explain for us what the world of *Dinge an sich*, which we term nature, may be in and for itself; it seeks with all its ingenuity to describe *bildlich symbolisch*, what falls within the limits of its experience. The progress of science lies in the increasing comprehensiveness and brevity of its descriptions.

Prof. Volkmann tells us that :

“So lange die Naturwissenschaften mit einem inneren Verhältnis zwischen Geist und Natur arbeiteten, war ihr Fortschritt gehemmt” (p. 123).

If this were true, then must natural science and the discovery, or rather *invention* of natural law be for ever retarded, for science must always work at this very relation between mind and nature. It is, however, not the right but the wrong appreciation of the relation of mind to nature which checks scientific progress. The completion of the revolution we have hinted at in this review, so far from being detrimental to natural science, will go a long way towards freeing its workers from the attacks which have been made upon science from more than one quarter, and which have largely arisen from a confusion of the idea of mechanism with some form of materialistic theory. Released from the need of replying to external criticism and attack, science will have the more energy and leisure to progress quietly in its own proper field.

KARL PEARSON.

OUR BOOK SHELF.

Text-Book of Comparative Anatomy. By Dr. Arnold Lang. Translated into English by Henry M. and Matilda Bernard. Part ii. (London: Macmillan and Co., Ltd., 1896.)

THIS volume of Dr. Lang's text-book treats of the Mollusca, Echinodermata, and Enteropneusta. To the first group of animals 283 pages are devoted, and to the latter two 319. The complete and systematic manner in which the structure and relations of the different families and orders described in this work are dealt with, renders each of the three chapters, into which the book is divided, a valuable monograph. Regarding the phylogeny of the Enteropneusta, Dr. Lang states that they “are not closely related to any single large division of the animal kingdom”; his treatment of them in this volume is sufficient evidence that he is not inclined to attach much weight to their supposed affinities with the Chordata. In a short notice it is quite impossible to give any idea of the interesting way in which the book is written. The English translation is all that could be desired; the illustrations are excellent. The arrangement of the subject-matter has been carefully thought out, and reference to any subject is assisted by the use of different kinds of type in the text. A long classified list of the important literature is given at the end of each chapter.

Experience: a Chapter of Prolegomena. By the Rev. Wilfrid Richmond. Pp. iv + 64. (London: Swan Sonnenschein and Co., Ltd., 1896.)

ACCORDING to the author, the initial obstacle to the progress of philosophy is the doctrine that experience cannot give the knowledge of reality—that nothing can be definitely known. This view he demolishes by showing that reality is actually to be found within the field of experience, whence the sensible conclusion is arrived at that “experience is the beginning and end of philosophy.”

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LETTERS TO THE EDITOR.

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Icelandic Earthquake Recorded at Paris.

LE No. de NATURE du 15 octobre contient une note très intéressante de Dr. J. Stefansson, sur le tremblement de terre survenu en Islande le 26 août dernier.

J'ai l'honneur de vous informer que les courbes relevées, à cette date, au magnétographe de l'Observatoire du Parc Saint-Maur, portent nettement la trace de trois troubles particuliers, paraissant se rattacher à ce phénomène. Le premier s'est produit à 11h. 36m., et les deux autres, qui sont plus accentués, respectivement à 11h. 42m. et 11h. 46m. du soir, temps moyen de Paris.

TH. MOUREAUX.

Observatoire du Parc Saint-Maur, le 29 octobre.

Earth Tremors at Edinburgh between August 25 and September 6.

IN connection with Dr. J. Stefansson's article in NATURE of October 15, on the “Recent Earthquakes in Iceland,” it may be of some interest to note that the photo-recording bifilar pendulum, presented to this Observatory by M. d'Abbadie, and placed under my care by Prof. Copeland, exhibits on the dates given by Dr. Stefansson several strongly marked irregularities in the curve, which may possibly have had their origin in the Icelandic disturbances. The following table contains a list of all the pendulum oscillations recorded on the photographs between August 25 and September 6, with the Greenwich Mean Times of their occurrence.

	Earth- quakes in Iceland.	Edinburgh pendulum oscillations.		Tilt of pendulum frame.	
		Begin.	End.		
Aug. 25		9.25 a.m.	?	0.4	Slight.
„		4.45 p.m.	5.50 p.m.	0.6	Slight.
„		9.10 a.m.	11.5 a.m.	0.4	Very slight.
„		0.55 p.m.	2.10 p.m.	1.0	Slight, but well- marked.
„	10.30 p.m.	11.10 p.m.	11.30 p.m.	About 2	Gap.
„		6.35 a.m.	?	1.25	Well-marked.
„	9 15 a.m.	10.50 a.m.	11.5 a.m.	About 2	Gap.
„		4.10 p.m.	5.40 p.m.	0.5	Very slight.
„		11.20 a.m.			Several almost im- perceptible tremors at irregular inter- vals.
„			4.30 p.m.		No trace of disturb- ance, but record not complete.
„		4.30 p.m.			Photographic trace a perfectly straight line.
Sept. 4		4.50 p.m.			Gap.
„		4.50 p.m.	0.5 a.m.		
„	5-6	11.30 p.m.	0.5 a.m.	0.20 a.m.	2 to 3
„	6	2 a.m.	No dis- turbance	here.	
„		9.5 a.m.	?	1.0	Well-marked oscilla- tion.

The points of special interest in this table are the three violent oscillations which have been designated gaps. These are complete interruptions in the curve, caused apparently by successive waves of sufficient amplitude to produce so rapid an oscillatory motion of the pendulum, that the reflected ray traverses the exposing slit too quickly to leave any photographic trace. The result as seen on the photograph is an abrupt termination to the curve line; then for a period of from five to ten minutes no photographic effect whatever is produced, and for about a similar period, a widened and badly defined trace shows that the ray has oscillated to each side of its normal position, with an amplitude of disturbance at the time when the trace begins to reappear of fully 2", but which must have been considerably greater at the beginning of the gap, where the record is altogether wanting. After this the mirror comes to rest, and the ordinary trace reappears.

In the case of all the smaller irregularities of the curve, the ray seems to have moved more or less abruptly to a distance from its normal position, after which the mirror gradually settles to rest. Careful measurements give, for the arc through