

tian sentiments." Beginning with classic Greece and Rome, Mr. Taylor's argument reaches forward to the Middle Ages, but centres mainly in the period extending from the fourth to the seventh century. One reads here of how the antique man became a mediæval Christian; of how ancient law, letters, and language, ancient ideals, ethics, religion, art, and architecture, were transformed into mediæval; of the origin of Monasticism, etc., etc. The whole is interesting and full of light; it has been written with insight and with love, and constitutes a welcome addition to the general literature of history.

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DIE MECHANIK IN IHRER ENTWICKELUNG, HISTORISCH-KRITISCH DARGESTELLT. Von Dr. Ernst Mach, Professor in the University of Vienna. Vierte Auflage. Leipzig: F. A. Brockhaus. 1901. Pages, xiv, 550. Price, 9 marks.

Simultaneously with the receipt of a review copy of the present fourth edition of Dr. Ernst Mach's now celebrated book on *Mechanics* comes the announcement of a French translation of the same work, of the preparation of a second edition of the English translation, and of a Russian translation of his epistemological essays, many of which have already appeared in *The Monist* and *The Open Court*, and were subsequently incorporated in Dr. Mach's *Popular Scientific Lectures*. It would seem from these indications that the views which Dr. Mach has enunciated on the theory of science are fast gaining ground and everywhere giving evidence of their soundness and acceptability. Recent investigations in the history of logic and mechanics have led him to add considerably to the later editions of his work, but these additions have been rather in the nature of detailed matter corroborating his former position than alterations of his views. Dr. Mach again expresses, in the preface to the present fourth edition of his work, his belief that in the main he has correctly sketched the transformations which the principles of mechanics have undergone, and in a measure adumbrated the probable course which this development is to take in the immediate future.

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NEUE THEORIE DES RAUMES UND DER ZEIT. Die Grundbegriffe einer Metageometrie. Von Dr. Melchior Palágyi. Leipzig: Verlag von Wilhelm Engelmann. 1901. Pages, xi, 48. Price, 0.80 mark.

Dr. Melchior Palágyi is an Hungarian philosopher, and author of an epistemological treatise entitled *Az ése törvénye*, Anglice, *The Law of the Intellect*. He has written the present brochure in order to communicate to the German reading world his views of the theory of knowledge, which he believes offer a definitive solution of some of the most perplexing problems of philosophy.

The countless contradictions in which the human reason becomes involved in its operations are due, in Dr. Palágyi's opinion, to the circumstance that all facts when represented in human judgments, although single in reality, assume a dual form. A judgment involves a subject and a predicate; *two* concepts are needed to express *one* fact. Just as we perceive objects visually by means of two retinal images, so by the union of two ideas are judgments concerning single facts formed.

But whereas the duality of our retinal images leads only in exceptional and abnormal cases to a doubling of sight, the duality of our concepts frequently leads to a "swimming" of our intellectual eye. The source of error here is the substitution of a verbal symbol for a fact, and consequently the apparent doubling of the fact. Now, the current doctrines of space and time have especially suffered from this new species of intellectual squint, both realities being considered as two independent forms of intuition whereas in nature time and space exist together. In reality space and time are one, only in conception are they two.

The geometrical principles of duality and reciprocity used in projective geometry form the starting-point of Dr. Palágyi's speculations. His theory of space and time establishes a principle of reciprocity between space and time, of which the doctrine of reciprocity in modern geometry is to be considered a special case. Dr. Palágyi's reasoning is easy to follow, but the functional dependence of time on space and consequently the doctrine that time and space form an essential unity, can hardly be said to be original with him. It has been held by others.  $\mu$ .

GRAZIE UND GRAZIEN IN DER DEUTSCHEN LITTERATUR DES 18. JAHRHUNDERTS. VON *Dr. Frank Pomezny*. Herausgegeben von *Dr. Bernhard Seuffert*, Professor in the University of Graz. Hamburg and Leipsic: Verlag von Leopold Voss. 1900. Pages, vi, 247. Price, 7 Marks.

The present work has some interest from a literary and scientific point of view, following, as it does, the history of the notion of grace from its inception in antiquity to its formal development in the German literature of the eighteenth century. It is a specimen of what can be done in the way of a technical treatment of a minor notion as it finds its incarnation in minor minds. To the scientific public at large it will hardly be of interest to learn the part which the notion of grace played in the writings of Hagedorn, Pyra, Gleim, Uz, and Götz; and the editor of Dr. Pomezny's essay has done well to emphasise the psychological side of the investigation rather than the literary. The author of the treatise, which was presented as a doctor's dissertation at the University of Graz, was a promising young man who shuffled off this mortal coil at the untimely age of twenty-six years. His teacher, Professor Seuffert, edited the work after the author's death.  $\mu$ .

DER GESANG DER VÖGEL, SEINE ANATOMISCHEN UND BIOLOGISCHEN GRUNDLAGEN. VON *Dr. Valentin Häcker*, a. o. Professor in Freiburg i. Br. Jena: Verlag von Gustav Fischer. 1900. Pages, vi, 102. Price, 3 Marks.

The instincts of animals have received a large share of attention from biologists in late years, and by such works as Groos's *Play of Animals*, which we now have in an English translation, the subject has been brought even to the notice of the educated public at large. Recent discussions have, however, in Dr. Häcker's opinion, sufficiently proved the value of the results of direct observation as compared with experiment and theory; and he accordingly deems himself justified in approaching the subject empirically, by submitting to systematic, comparative, and