

the Egyptians, Babylonians, Greeks, Romans, Chinese, Arabs, and Hindus, and in the fifteenth, sixteenth, seventeenth, eighteenth, and nineteenth centuries, is considered. The history of algebra is traced from the Egyptians and the Greeks to the Arabs. The first period culminates in the complete solution of the quadratic equation of one unknown quantity and in the trial method, chiefly by means of geometry, of solving equations of the third and fourth degrees. The second period of the development of algebra begins with Gerbert and ends with Kepler. The achievements of this period are the purely algebraical solution of equations of the third and fourth degrees by means of radicals, and the introduction of symbols and abbreviated expressions for the development of formulæ. From the section treating of this period the last cut accompanying our notice is taken. The third period begins with Leibnitz and Newton and extends through Euler, Lagrange and Gauss to the present time. It includes the discovery and development of the methods of the higher analysis, as well as that of a variety of new purely formal sciences. Fink's treatment of these two periods is valuable for the large amount of special information which it gives regarding the development of arithmetical and algebraical thought in Germany.

The history of geometry is divided into four periods, the first including the Egyptians and Babylonians; the second, the golden age of Greek geometry; the third, the relatively meager achievements of the Romans, Hindus, Chinese, and Arabs; the fourth, the period from Gerbert to Descartes; and the fifth, the time from Descartes to the present. The section devoted to trigonometry is comparatively brief.

The translators, who have performed their difficult task in a very commendable manner, have not made any considerable alterations in the original work, but they have corrected a considerable number of errors, provided additional references, and greatly improved the biographical notes. The work altogether is a compact, practical, and business-like handbook,—qualities which, conjoined with its inexpensiveness, will doubtless assure it a wide reception. μ.

BOOK REVIEWS.

SOCIAL JUSTICE, A CRITICAL ESSAY. By *Westel Woodbury Willoughby, Ph. D.*
New York: The Macmillan Company. 1900. Pages, ix, 385. Price, \$3.00.

So many books are written nowadays about what others have thought about this, that, or the other, that we take up "a critical essay" with a certain amount of suspicion that it contains a more or less interesting display of intellectual juggling whereby we are shown how far astray preceding thinkers have been, but are left without any definite idea as to where the writer himself stands. The object of a critical work is too often the mere display of critical power. The work before us, however, affords a pleasant surprise. Critical analysis here is subordinate and subservient to constructive thought. The author has ideas of his own systematically arranged. His style is luminous. There is not a dry chapter in the book.

The first part of the book is devoted to an analysis of the idea of justice as an abstract conception, and to a consideration of the various canons of distributive justice, to discover which of them contain elements of truth and rationality. The theory of equality, the labor theory, the effort theory, and the needs theory are all criticised at length. The conclusions reached are that "justice consists in granting, so far as possible, to each individual the opportunity for a realisation of his

highest ethical self" (p. 24), and that no absolutely valid rule of distributive justice can be formulated.

The second part of the book discusses the relation of the individual to the social group, and attempts to harmonise the principles of liberty and law, of freedom and coercion. There are three chapters in this division: *The Right of Coercion*, *The Ethics of the Competitive Process*, and *Primitive Justice*.

It is obvious that in the treatment of questions of social justice some ethical standpoint must be assumed. Professor Willoughby has taken that of T. H. Green and the later writers of his school. It does not seem to us that he has consistently kept it throughout the book. We are unable to distinguish, for instance, his opportunism from the utilitarianism of John Stuart Mill. As a matter of fact, we do not believe he is right in formally discarding the utilitarian theory. "Utilitarians," he tells us, "have made strenuous attempts to bridge the chasm between altruism and egoism, but without success." But what if altruism is only a higher form of egoism, as seems to us the case? Then there is no such chasm. If we are not mistaken, Professor Willoughby unconsciously admits this when, in attempting to explain the subordination of the individual to society as a whole, he says, "this subordination is, in essence, not the subordination of his will to a higher social will, but the identification by the individual of the social will with his own will, so that, in obeying the social or political will, the individual obeys his own will purified from selfishness" (p. 251). By a will purified from selfishness he can only mean a will free from the lower forms of selfishness. He admits (p. 257) that "there does occur what may properly be termed a struggle between our higher and lower natures."

The acceptance of the realisation of self as the supreme end of conduct does not greatly hamper the writer, for the reason that when it becomes inconvenient he lays it aside. Men are to be treated, not as things, but as ends in themselves. This is the Kantian doctrine, and it is apparently accepted by our author. But when he comes to discuss the theory of punishment, it turns out that nothing is meant but that the good of the individual is to be given equal consideration with the good of others in determining the general welfare. This is true, but it does not seem consistent.

There are no startling conclusions in this book. Socialistic theories of economic distribution are discarded. Dangerous and revolutionary schemes are deprived of ethical support. "In each instance where an act is required," we are told, "one must examine it as to all its possible results, proximate and ultimate, objective and subjective, and then ask himself whether the given line of conduct is more calculated than any other possible line of conduct to advance the world toward the realisation of the highest ethical perfection." Of course, but what is the content of that social ethical ideal, and what economic theory of distribution tends most to promote it? May it not be that one of the theories discarded would be most effective now, although ideally it is imperfect? Just as the blood feud is acknowledged to have played an important part in the development of punitive justice, although intolerable in modern civilisation?

We are by no means convinced by the author's reasoning in regard to the beneficence and permanence of competition in industry. We must hold our conclusion in abeyance. That it has resulted in progress, there can be no doubt. Without it the blind forces of nature would have accomplished nothing. But that does not prove that it must be permanent, and that it is the most beneficent method of industrial progress. In the biological world progress is secured by competition,

but competition is not the desideratum. Although employed as a necessary means of eliminating the unfit, it prevents the highest development of the fit, as is shown by the results of artificial selection. Now in human society the one thing essential to progress is action, and the question becomes, Will competition always be necessary to secure it? Perhaps there will always be forms of friendly rivalry and emulation. The author himself, although he believes that the absolutely competitive state is the ideal one, makes haste to say that competition will be "maintained only upon the very highest planes. The régime must be one in which . . . the *criteria* of fitness for success or survival will be the possession of absolutely the highest moral qualities" (p. 305). It is difficult to think of a being so endowed as competitive.

The caution displayed in the conclusion of this essay in regard to competition is characteristic. For instance, we find a justification of political restraint when it is "consciously intended to be for the ultimate best of the person controlled or of mankind at large." (We should say the act is justified, not by the intention of the agent, but by its actual beneficence.) The following conditions, however, must be present: the object aimed at must be desirable, the means employed must be calculated to obtain it, and at not too great an expense (p. 264). So intolerance is justified, but not until all available means are employed to determine the rightfulness of our opinion, and all the effects of coercion, immediate and remote, have been considered. Such a doctrine of intolerance will undoubtedly, as the author maintains, secure a greater degree of tolerance than now obtains in society. Again, Professor Willoughby maintains that, "just as there is a duty on the part of a parent or guardian to educate, even with collateral use of compulsion if necessary, the undeveloped faculties of the child, so it lies within the legitimate province of an enlightened nation to compel—if compulsion be the only and the best means available—the less civilised races to enter into that better social and political life, the advantages of which their own ignorance either prevents them from seeing, or securing if seen." This on its face is a warrant for "benevolent assimilation." But not so when the conditions are attached. These are as follows: The motive must be an absolutely disinterested one; the superior nation must be absolutely sure not simply of its benevolent purpose, or that its own civilisation is intrinsically better than that it wishes to supplant, but "that it will be better as related to the peculiar needs and characteristics of the people in question;" and finally that it "be made manifest that the desired results can better be obtained by compulsion than by any other mode" (p. 266). This is much like Portia's warrant to Shylock. "Take thou thy pound of flesh; but, in the cutting it, if thou dost shed one drop of Christian blood, thy lands and goods" are confiscate. "Shed thou no blood; nor cut thou less nor more but just a pound of flesh." Under such conditions Shylock thought it would be better not to undertake it. And such is the real conclusion in regard to the assumption by a modern nation of the task of civilising an alien people. Hedged by the same conditions, few would find fault with the principle of slavery.

I. W. HOWERTH.

The latest number of the *Temple Primers* is an admirable little manual of international law by F. E. Smith, M. A., B. C. L., of Liverpool. The little volume takes up less than two hundred pages, and is hence eminently adapted to the wants of students, politicians, and men of business who cannot spare time to read the large standard treatises and encyclopædias on this important subject. The frontispiece to the book is a portrait of Lord Stowell (1745-1836), from whose famous

judicial opinions in the High Court of Admiralty numerous extracts have been made in the work. (London: J. M. Dent & Co.; New York: The Macmillan Co. 1900. Pages, 181. Price, 40 cents.)

Ethics of the Great French Rationalists is the title of a neat brochure by Charles T. Gorham, published under the auspices of the Rationalist Press Association, by Watts & Co., London (Pages, 101; Price, 1s.). The compilation consists of short selections from the ethical utterances of Montaigne, Charron, Rousseau, Condorcet, Voltaire, Comte, Michelet, and Renan, preceded by brief but good biographical notices of these authors. The selection is not intended to be exhaustive; as the author says: "A few French writers are treated merely as representatives of the modern tendency in ethics and religion to arrive at truth rather by the ennobling process of individual effort than by an indolent or servile acceptance of authority." Repudiating the imputation that rationalism affords an insecure support for morals, he has compiled this booklet in the hope that it will help "to show that morality is independent of authority, to indicate that it is not a gift, but a development."

The third part of *Nature's Miracles, or Familiar Talks on Science*, by Elisha Gray, Ph. D., LL. D., whose recent death leaves a wide gap in applied science, treats of electricity and magnetism. The author, who is the inventor of the telautograph, by means of which a man's own handwriting may be transmitted to a distance through a wire and reproduced in facsimile at the receiving end, has lived through the period during which the science of electricity has had most of its growth, and it is to be expected that his historical as well as his theoretical and practical treatment of the subject will be of the most interesting character. The little book is made up of twenty-nine brief chapters in which, in addition to the usual exposition of the subject, such topics as multiple transmission, the Way duplex system, submarine telegraphy, the telautograph, wireless telegraphy, the Niagara Falls power, and electrical products, are treated. The volume is intended for popular reading, and technical terms have been avoided as much as possible, though when used clearly explained. (New York: Fords, Howard & Hulbert. Pages, 248. Price, cloth, 60 cents.)

A unique attempt has been recently made to gather into a single volume a consensus of the general opinions of the world's great thinkers and doers upon the leading topics of religious belief. It bears the title *Faiths of Famous Men*, and has been compiled and edited by John Kenyon Kilbourn, D. D. Dr. Kilbourn has arranged his collection of expressions concerning religion under the nine headings of God, Creation, The Bible, Christ, Immortality, The Millennium, The Intermediate State, The Resurrection, and Heaven, and has thus enabled more than five hundred men and women to speak for themselves in a great number of extracts, for their religious beliefs. The Orient, as well as the Occident, is here represented, and the deliverances of the world's greatest men upon the Christian religion are recorded, from St. Augustine and Irenæus, through Wickliff, Luther, Calvin, and Bishop Butler, down to Robert Ingersoll and the last three presidents of the United States. The book gives evidence of great industry in its compilation, and bespeaks a wide range of reading. (*Faiths of Famous Men*, by John Kenyon Kilbourn, D. D. Philadelphia: Henry T. Coates & Co. 1900. Pages, iv, 379. Price, \$2.00.)

The publication is announced of a monthly record of anthropological science entitled *Man*, to be issued under the direction of the Anthropological Institute of Great Britain and Ireland. Its contents will include contributions to Physical Anthropology, Ethnography, and Psychology; the Study of Language, and the earlier stages of Civilisation, Industry, and Art; the History of Social Institutions and of Moral and Religious Ideas,—these various branches of study to be treated more fully in proportion as they are less adequately provided for in existing periodicals. Each number will consist of sixteen imperial octavo pages with occasional illustrations and a full-page plate. Subscriptions, which are ten shillings (10s.) per annum to the general public, may be entered at the offices of the Anthropological Institute, 3, Hanover Square, London, W.

An enlightened consideration of one serious aspect of the Oriental question will be found in Mr. Henry Crossfield's *England and Islam*, a pamphlet of some fifty odd pages just published by Watts & Co., 17, Johnson's Court, Fleet St., London. Mr. Crossfield is concerned to know whether, in view of certain recent grave events, "the mind of England, as it has hitherto been mainly exercised, is "quite equal to the stress of the colossal responsibilities and duties that a convergence of causes has thrust upon her. Is this haphazard method of a 'race "that lives to make mistakes and dies to retrieve them,' aptly remarked of the dis- "astrous Indian Mutiny, a fateful flaw in the intelligence of a people priding "themselves on their practical genius and theoretical indifference? . . . Is it des- "tined, unless properly rectified, to prove the means by which their powerfu as- "cendancy may be ultimately overthrown?" He does not think so. He believes in what Emerson has called the "retrieving power" of the English race, which is chiefly incarnate in the rationalist minority of the nation, whose judgment must be allowed freer sway. We cannot enter into the details of his treatment of the Islamic problem in India, but shall merely quote his sentiments regarding the benefit to be derived from closer relations with the East: "If from the West can be "learned valuable lessons of the control and adaptation of the resources of nature "to the needs and imperious will of man, to the East may we look for an exemplar "of ineffable dignity and calm courage in the stress of circumstance, for an insist- "ence on a regard for the infinite equally with the finite, which may yield needed "poise to our own fevered activity." There seems, thus, to be a moral as well as a material side to our intercourse with the Orient.