of the times, and eminently satisfactory; and, if the book is referred to half as frequently as it should be, our schoolhouses will be healthier and better adapted to serve the purpose for which they are erected.

Azimuth. A Treatise on this Subject. By JOSEPH EDGAR CRAIG. New York, Wiley. 4°.

THE determination of azimuth comes up as an important practical problem on board ship, in ascertaining the variation or deviation of the compass, or on land in fixing a true meridian line, and it is desirable that the necessary astronomical observations should be made under conditions which give, at least theoretically, the most accurate results attainable. Lieutenant-Commander Craig's book is a mathematical study of the spherical triangle with respect to the azimuth problem, supplementing the text-books, and he calls attention to certain statements in the latter on some points referring to the most favorable conditions of observation, which he regards as misleading.

After devoting several pages to the elementary formulæ for the solution of a spherical triangle, and the differential variations of its parts, he considers the conditions of maximum and minimum errors, and the most favorable and least favorable position of a heavenly body for observation in a given latitude. Two-thirds of the text are then taken up with an analysis of the equations to the loci of maximum and minimum errors, and the book concludes with some thirty plates illustrating these loci.

The Ethical Import of Darwinism. By JACOB GOULD SCHURMAN. New York.

THE excitement following the appearance of Darwin's works rendered a fair criticism of their merit and import impossible. The younger generation, who had been trained to some extent to think by the methods of which Darwin forms a model, were ready for the announcement, and were at once transformed into a body of enthusiastic followers. The older thinkers, and especially such as were by their profession devoted to upholding a theory of the universe established by tradition, and in entire opposition to the discoveries of science, met the new theory with violent protestations of inconsistency with established beliefs, and denounced it as fraught with danger to morality and the religious sentiment. It is only within a few years that the smoke has been lifted off the battle-field, and made it possible to calmly contemplate the justness and the outcome of the battle. As has frequently happened before, it is found that the party who asked, not "Is it true?" but "What does it lead to?" has been the loser. The general point of view of which Darwinism is an expression, the ingenious and valuable explanations which that master-hand collected, the healthy ferment penetrating through all departments of knowledge that his writing brought about, — all these have become the inalienable inheritance of mankind. On the other hand, the majority of evolutionists will admit that their doctrines have been regarded as solving certain vexed problems of mankind which really remain as unsolved as ever; and the province and exclusiveness of the mechanism of development which Darwin discovered have been likewise exaggerated. Recent writers, such as Romanes, are acknowledging the former and supplementing the latter. The one has been termed a 'pseudo-Darwinism,' and in addition to natural selection we speak of 'physiological selection,' and so on.

Professor Schurman's book gives every mark of having been written in the latter half of this decade. There is no attempt to dwarf or warp (much less ridicule) the evolutionary position: on the contrary, its strictly scientific character is appreciated, and its main tenets admirably sketched. Contrary to the usual method in such discussions, the author has taken the trouble to find out what Darwinism is. Nor do these negative virtues complete the list of the merits of the book. The author practically illustrates, by a vigorous and intelligible style, his opinion that "there is no theory, or criticism, or system (not even Kant's or Hegel's), that cannot be clearly expressed in a language which in Locke's hands was strong and homely, in Berkeley's rich and subtle, in Hume's easy, graceful, and finished, and in all three alike plain, transparent, and unmistakable." Moreover, each chapter is devoted to the expression of a real point without irrelevant matter or needless repetition. The several chapters form a logical train of argument, and the book is thus worthy of the attention of the scientist. The unfortunate fact that so many works in this field are strikingly deficient in all these qualities makes it necessary to signalize the exceptional character of this work.

Professor Schurman holds that 'evolution' is a strictly scientific hypothesis warranted by facts, and is to be accepted, whether for the sake of argument or as a real belief, by all who seek to determine its ethical import. He denies that the system of utilitarian hedonism which Darwin and Darwinists have attached to the theory is at all a legitimate inference from that theory, and regards it as accidental, and due to the fact that these men were raised in this school of ethics. Darwinism is to him consistent with any theory of ethics, and does not favor one above another. As long as evolution simply explains the method of development, and not the fact that there is something to develop, a further philosophic theory is made necessary. In the second place, the author holds that the attempt of Darwin himself, as of his followers, to account for the existence of a moral sense, is deficient, and does not make unnecessary the assumption of an omnipotent and authoritative 'ought.'

To the reviewer's mind, this argument is open to the following criticism. In the first place, the 'ethical import of Darwinism' that we to-day are interested in is not that here discussed, but consists in very practical and momentous questions: 'How does heredity affect responsibility?' 'What does evolution show to be the best method of treating criminals?' It is in this field of practical ethics, formerly neglected or dogmatically passed upon, that the spirit of evolutionary research has and will radically modify our views and practices. Second, the author fails to recognize that the kind of chance with which evolution deals is synonymous with 'something that needs no explanation.' If I hazard the guess that a die I am about to throw will fall on 'six,' and it really does so, I say it is 'chance,' and thereby mean that it needs no further explanation. The fact that this 'chance' may have momentous consequences does not change its character. That there is a strong temptation to be dissatisfied with this casual answer will be readily admitted, and it is this temptation to which the author has yielded in a portion of his criticism. Finally, the fact that the followers of Darwin tend to take a view of life easily distinguishable from that of those who oppose him, is itself significant of the ethical import of Darwinism. It may be true that it is *a priori* as possible to be a Darwinist and at the same time an adherent of any one of a half-dozen schools of ethics; but, as a matter of fact, ethics takes its character quite as much from the relative order and dignity of the several virtues leading to the *summum bonum* as from the view of the *summum bonum* itself.

It would be unjust to close this notice without calling attention to the plea for a science of historical ethics, and the contribution to it, by way of criticism, of current theories of 'family development,' to which the last chapter is devoted.

NOTES AND NEWS.

A VOLUME of great interest to the meteorologists of the country has recently been issued by the National Academy of Sciences, containing the first chapter of a revision, by Prof. Elias Loomis, of his numerous 'Contributions to Meteorology,' or studies based on the daily weather-maps of the Signal Service during the last thirteen years. These contributions in their original form, as presented to the National Academy and published semi-annually in the *American Journal of Science*, considered one topic after another in sequence, determined by convenience rather than by system, and therefore were greatly in need of orderly revision for use by the many students who must make frequent reference to them. Translations and abstracts of the originals have appeared in France, England, and Italy; and a serviceable review and discussion of the results gained have recently been prepared by Mr. H. H. Clayton for the *American Meteorological Journal;* but a revision by the author of the papers himself has naturally an interest and a value of its own. Professor Loomis has performed a threefold service in this work, — first, in utilizing the weather-maps to an extent not approached by any one else in the country; again, in now systematizing the results gained; and, most of all, in developing his method of simple, inductive in-