

tance, and then attempting to repeat the motion. The general result was, that the reproduced motion was larger than the original, when the motion was made on the hand's own side,—for the right hand on the right side, and for the left hand on the left.

In conclusion, Dr. Loeb asks the question, "On what basis does the mind conclude that the motions of the two hands are equal?" He answers that it is due to the time element. There is an unconscious attempt to translate space into time, because we can judge the latter more accurately; and, in several series of experiments in which the time was recorded, it was found, that, even when the two hands moved quite different distances, the times of the two motions were approximately the same. The mind, then, judges two motions to be the same when they are innervated by equally intense impulses, and consume equal times; and the asymmetry is referred to the fact (due to increased practice, or what not) that an equal impulse will impart a larger motion to the one (the preferred) hand. That other factors enter into the problem is not to be doubted: for example, if one thread is rough and the other smooth, the same distance on each will seem longer on the rough thread, by more frequently stimulating the skin. Dr. Loeb promises a continuation of the observations.

**FALSE TESTIMONY OF CHILDREN.**—The trial at Tisza-Eszlar is probably sufficiently well in mind to serve as a type of the false evidence given by children. Dr. A. Motet has collected a number of similar cases, and shows very distinctly that the children in question are quite generally the subjects of morbid tendencies. Frequently they are the offspring of a degenerate stock, and are characterized by weakness of will, and a love for excitement. The analogy between these suggestions accepted and elaborated by these children in a waking condition, and precisely the same phenomena in hypnotic states, is evident. Dr. Motet suggests several hints by which such testimony can be prevented from imposing upon the courts, and urges that a careful physician be summoned when any such suspicious testimony by a child is deposed. It illustrates anew the close connection between responsibility and nervous affections as well as between the doctor's study and the court's dictum.

**SMELL AND TOUCH VERSUS SIGHT.**—Dr. Fauvelle calls attention to the inverse relation between the development of the visual and the olfactory apparatus, and holds that smell, when supported by touch, can in some forms of life outweigh sight. The snout, when it occurs, is always at the most anterior portion of the body in progression, and through this heralding position becomes endowed with a most delicate sensibility, often of mobility too, and at the same time brings into prominence the olfactory mechanism. The changes in the form of this naso-labial organ of touch follow all the changes in the prominence of the organ of smell, and prevent a special development of the organ of vision. In man and the primates this loses its importance and yields to sight, which superiority is assigned to the parallelism of the visual axes, and establishing of the biped position, where the organ of smell is no longer at a prominently anterior position of the body.

#### BOOK-REVIEWS.

*Industrial Education, a Guide to Manual Training.* By SAMUEL G. LOVE. New York and Chicago, E. L. Kellogg & Co. 8°.

It is inevitable that there should spring up in the earlier stages of a movement for educational reform a large literature. Some of this will naturally be good; but much of it, owing to superficial knowledge or misconception, will be bad. Public opinion on the reform in question is in large measure formed by these early books, and for that reason, if for none other, the critic should scan them with great care.

Mr. Love's book is one of the first in this country that undertakes to explain in detail what manual training really means; and, as a great many people are just now asking the very question which it professes to answer, it will naturally have a large number of readers. But it is extremely important that only correct information should be given concerning manual training, and that one or two sources of general confusion as to its purpose and aim should be removed.

We have read Mr. Love's book carefully with these points in view. The book is divided into five parts and an introduction. The first part discusses the claims of manual training, and the second describes what has been done in Jamestown, N.Y.,—in which town Mr. Love is superintendent of schools,—in development of this training, and gives the course of study pursued therein. The third, fourth, and fifth parts discuss the organization and carrying-out of manual training in the various grades of the primary, grammar, and high schools, respectively. Mr. Love has worked conscientiously, and has beyond question accomplished a great deal of good. His fellow-citizens seem (pp. 27-29) to approve his work, and to be in harmony with his ideas. But, we regret to say, taking Mr. Love's own language as the expression of his ideas, he himself is still very much in the dark as to what the movement in favor of manual training really signifies.

Those persons who have an insight into the real aim of manual training know how difficult it is to make others understand that the manual training urged is mental training: for no one who understands our public-school education would for a moment urge that any thing which is not purely and simply educational should find a place in it. Manual training would not train the hand *per se*, but the hand as the servant of the mind, and as one of the mind's agents of expression. Manual training, which is technical and not mental, must be provided for, but apart from and not in the public schools. This has been insisted upon so often lately, that we had hoped the point was clear to all, and it is extremely discouraging to find Superintendent Love marking off his manual training as something foreign to mental training, as he explicitly does in several passages of his introduction, and impliedly does throughout the book. In fact, the author's idea is that manual training should be added on to the school course, as a matter of privilege. The correct idea is that manual training should be incorporated in the common-school course as a matter of right. The two conceptions differ widely in theory, and still more in practice. For example: the clear-sighted advocate of manual training would never urge, as does the author (p. 7), that it should be introduced because "very many children dislike books." This argument, if pursued logically, would create havoc in any system of education.

Every once in a while the author seems to approximate the proper point of view, as when (p. 33 *et passim*) he classifies writing, drawing, gymnastics, and card-board work together under the head of manual training. But when we turn to his carpentry course, and see how wholly blind he is to the proper relation of drawing to constructive work, we despair again.

Minor criticisms might be passed on various portions of the book, but this fatal misconception of manual training in general renders them unnecessary.

Superintendent Love has proved to the satisfaction of himself and his townsmen that the old-fashioned curriculum does not satisfy the educational demands of to-day, and in adopting manual training he did a wise thing; but his book proves that he adopted it for the wrong reasons and in the wrong way.

*Philosophy of Theism.* By BORDEN P. BOWNE. New York, Harper. 8°.

PROFESSOR BOWNE'S reputation as a thinker rests on a secure foundation, and that alone would entitle this his latest volume to careful consideration. But the 'Philosophy of Theism' will command attention and respect on its own account, for it is in many ways a remarkable book.

In the first place, it is a new evidence of the interest now being taken in the philosophy of religion, and may well take a place beside the volumes of Flint, Diman, Fisher, and others as a masterly exposition of the theistic argument. It is superior in profundity to the recent philosophico-religious books of Royce and Abbott, although we miss in it some of the flashes of brilliancy which make the latter books such interesting reading and constitute so much of their charm.

But Professor Bowne's aim in the work before us is not, as it seems to us, wholly religious. He aims to show that both theism and modern science stand upon a common substructure; namely, the philosophy of belief or faith. Indeed, the author goes even

further than this. He claims that a common postulate underlies not only theism and natural science, but our whole mental life. His position may best be elucidated by this passage from the preface: "Kant pointed out that the ontological argument properly proves nothing, and that the cosmological and design arguments depend on the ontological. The argument, then, is not demonstrative, and rests finally on the assumed existence of a perfect being. In a different form I have maintained the same position; but, so far from concluding that theistic faith is baseless, I have sought to show that essentially the same postulate underlies our entire mental life. There is an element of faith and volition latent in all our theorizing. Where we cannot prove, we believe. Where we cannot demonstrate we choose sides. This element of faith cannot be escaped in any field of thought, and without it the truth is helpless and dumb."

Professor Bowne starts with the very evident fact that man is religious. He points out that we may properly inquire as to the source of religion, as to its history, and as to its foundation. Merely pausing to aim a shaft at that sensationalistic philosophy which would trace religion to some non-religious sources, the author sets aside the first two questions as beyond his province, and addresses himself to the third. In an analysis of the data of the religious consciousness, it is conceivable that one of these results might be reached. Either the theistic idea might be found to be (1) contradictory or absurd; (2) an implication of the religious sentiment only, and without any significance for pure intellect; or (3) a demand of our entire nature, intellectual, moral, æsthetic, and religious. To establish the last alternative is Professor Bowne's aim in this volume. He paves the way for his constructive argument by pointing out the unnaturalness of subjective idealism and the irrationality of chronic scepticism. It is not possible for us to follow the author's elaborate argument. He aims to establish on the principle noted above, the unity of the world-ground and then its intelligence and personality. Its metaphysical attributes, its ethical nature, and its relation to the world, form the subjects of subsequent chapters. The influence of Lotze, so strongly marked in the author's work on metaphysics, is still seen here, and particularly in his treatment of interaction. A brief concluding chapter passes from the intellectual to the practical applications of the theistic implication. The steps in the closely reasoned argument can hardly be indicated without doing them an injustice. We therefore refrain from making the attempt, and earnestly commend Professor Bowne's book to all philosophical students. Even where it fails to convince, it will stimulate and enlighten.

#### NOTES AND NEWS.

THE death has been announced of Gustav Robert Kirchhoff, the famous physicist. He was born March 24, 1824, and became lecturer of physics at the University of Berlin in 1847. In 1850 he was appointed professor in Breslau, and in 1854 in Heidelberg. It was here that he and Bunsen made their famous optical researches which led to the discovery of spectral analysis. The results of these investigations were published in Berlin in 1861, under the title 'Untersuchungen über das Sonnenspectrum und die Spectren der chemischen Elemente.' It is well known that these discoveries were the foundation of astrophysics, and that they led to numerous unexpected discoveries in chemistry. But this is only one of Kirchhoff's important works, which covered all parts of mathematical physics, particularly the theories of electricity, galvanism, and elasticity. In 1875 he accepted the professorship of physics at the University of Berlin.

#### LETTERS TO THE EDITOR.

##### Romantic Love and Personal Beauty.

YOUR correspondent of Oct. 14 might have observed a feature in this book which would have explained and justified the repulsion she felt in reading it. The author cannot resist the temptation to be funny. He may be coarse, or refined; but he must be witty. He cannot carry us along in an uninterrupted narrative of sober and well-digested facts. He must stop to make us laugh, or suffuse his pages with ill-disguised humor that constantly divides our interest between fact and fancy. This is hardly tolerable in what aims to be in many respects a scientific discussion. It spoils both

its science and its wit. The instance quoted, "Did Herbert Spencer ever kiss a girl?" is not a solitary one. French and German girls simulating horror of some men whom "they secretly consider a darling creature," he says, have a "spring-chicken coyness." Of a certain class he says, "It would be absurd to include in this statement people of refinement, who through misfortune have been plunged into abject poverty. They do not belong to the '*Great Unwashed*' (οἱ πολλοί)." Again: "The modern ideal of woman is exclusively feminine, i.e., devoid of hackles, spurs, cock-a-doodle-doo, and pugnacity." "As for those old maids who are neither ugly nor masculine, some of them are quondam coquettes, who practised their arts just one season too long, and '*got left*' in consequence." "There is one difference between undervalued men of genius and old maids: the men of genius admit that they are in advance of their age, and are proud of it; the old maids never, at least *hardly ever*." Then, in the passage about woman's universal tendency to fall in love with officers, he says it is not because of their valor: "for they have perhaps never yet been opposite the '*business end*' of a rifle." If you want to win a woman's love, "put brass buttons on your coat, have it dyed blue, and wear epaulettes and a waxed mustache. This love charm *has never been known to fail*." "What is fat? It is an accumulation of unburnt *body-fuse*." Then this generalization of woman's love: "O Arthur! how happy I would be alone with you on a quiet island in the distant ocean!" — "Have you any other desire, dearest Ella?" — "Oh, yes! do get me a season-ticket for the opera." "As a rule, the preliminaries to animal marriages are doubtless brief. If a healthy, vigorous male comes across a mature, healthy female, it is usually a case of mutual *veni, vidi, vici*." We might go on with pp. 5, 6, 9, 11, 22, 38, 103, 114, 122, 123, 164, 196, and no doubt to the end of the book, with numerous instances of just such coarse humor in a scientific work. We have referred only to the most striking, and his pages everywhere abound in the use of some word or phrase that takes all the color of seriousness out of the narrative. Nor is the trait of which we complain confined to this book. In a letter to the *Nation* of Oct. 20, the same author, speaking of Oregon, which he says is called "Boomland," could not resist adding, "As I write, I hear a mother scolding her baby for putting a handful of dirt in her mouth. Real estate is too valuable hereabouts to be thus squandered in luxurious living."

Such a man cannot write science. He cannot state rightly a plain fact: he can only see fun, and that of the coarsest kind too frequently. It is provokingly offensive in such a mass of facts as this book collects, because there is such a mixture of things which we have to consider seriously, along with the absurd. But at the same time you cannot take it so seriously as to condemn his theories: for you may be criticising an exhibition of wit or a joke. On the other hand, too many of his facts are collected from poetry, newspapers, and the by-paths of literature, to possess either psychological value or scientific interest. It is only his pedantic references to evolution, sexual selection, etc., which every one must take seriously to-day, and some pertinent moral reflections on customs and manners, that can give any flavor of scientific earnestness at all to the book. The encyclopedic collection of facts and quotations makes it seem pretentiously scientific, and no doubt much of it is intended to be; but the flippant tone everywhere visible, and its humorous levity so frequent, ought to disarm all serious censure except for bad taste. His use of evolution is not dangerous, because he has only a dilettante's knowledge of it. The book needs 'editing.'

J. H. H.

#### Answers.

15. IS THE TRUMPET-CREEPER POISONOUS?—While I was in south-west Missouri during 1879, I found a general belief that the trumpet-vine (*Tecoma radicans*) was poison to the touch, like *Rhus toxicodendron*. Upon investigation, however, I found that most people were in the habit of confounding the two, *Rhus toxicodendron* there climbing to the tops of tall trees, often having stems three or four inches in diameter, the external characteristics of the two vines being somewhat alike. I could not learn that the idea had any other foundation than this failure to distinguish between the two species, and am satisfied that *Tecoma* is never poisonous in any case.

WILLIAM F. FLINT.

Winchester, N.H., Oct. 24.