

ble realization of our hopes. . . . There is a strength derived from a liberal culture of the mind that can be obtained from no other source. It makes men and women stronger, no matter what positions they may afterwards fill. It is not by the physical, but by the mental powers of man, that the world is being subdued. It is through the intellect that the subtle forces of nature are made to do our bidding. . . . But, however priceless strength of mind may be, we have not attained the full zenith of our power until this be supplemented by sound moral principles and the courage to maintain them. It is just here that multitudes fail to achieve noble ends. There are too few possessed of this moral energy, needed to meet the sneering laugh or the studied coldness of their associates; too few who, knowing that they are in the right class, maintain it, and leave the issue with Him who smiles only upon the brave and true-hearted.—*The Minnesota Teacher*.

MAGAZINES.

THE most notable feature of American literature is the attractiveness and delightful variety of the periodical publications. A monthly or weekly journal has become almost a necessity to every publisher. The best essays upon all matters that interest society; the best work of fiction: the sublimest truths of religion; the principles and facts of science: the last conclusions in art; rare incidents of travel: the newest inventions and discoveries that move the world—all find the light in the pages of the magazine. Or if it happen that a book is given to us, philosophic and profound, and, it may be, beyond our comprehension, some rare toiler distills its sweet things into a palatable cup that refreshes while it appetizes. The heavy British Review lumbars along like the old stage-coach of forty years ago, but the American magazine, full of strength and comely vigor, dashes away like the young giant of steam with a train freighted with all that is needed to make an intellectual feast. As varied in style as is human character, and as diverse in method as is human judgment, are the many journals of literature, art, and science that come to our table.

We often think we can measure the business-methods of the men that control the great enterprise of the country by the expression they give to their representative journals. While the daily newspaper is the true exponent of the restless, ceaseless, spasmodic energy of our political and social life, the magazine seems in its own way to appeal to our æsthetic life. The established newspaper therefore is the pilot of public sentiment: the magazine is the richly-laden argosy that bears the best products of the time. As the merchant, if he be a political economist, knowing the laws of supply and demand in commerce, will cater to the most dominant public taste, so the publisher will offer his wares—books in a certain sense are but marketable commodities—to satisfy the requirements of a society the conditions of which he has in great measure helped to form. Of course we speak only of the live publications of representative houses, not of the thousand and one miserable, sickly existences which should have been strangled at birth and thrown into the garbage-cart.—(From April, "*Home and School*," Louisville, Ky.)

THE MORAL EFFECT OF MUSIC.

IT has been doubted whether music possesses any moral element. Let us for a few moments consider the question. If it is really the language of emotion, and our emotions do give birth to motives, there can be no question that music has a bearing upon our spiritual well-being. The doubt which has been cast upon the subject is probably due to the belief that the same music arouses such diverse emotions in different minds. It is not, however, that the emotions are really so diverse, but rather that the ideas which these emotions suggest differ so widely. It is matter of common experience that even in the world of sense and thought, where all is defined and clear-cut, the same thing may be pure to the pure and evil to the evil: that as the nature is high or low it will assimilate the good or the evil around it. In the world of the emotions, where every thing is vague and undefined, this is more emphatically true than elsewhere.

Elevated and pure as music is as a ministrant to man, we would deprive it of its chief dignity if we failed to acknowledge its moral effect. We must admit that there is a region which lies beyond the reach of ideas—not only beyond, but above it—which can be penetrated by melody. Every soul that has ever felt a true adoration for the goodness and glory and majesty of the Infinite must have known some time in its career what it is to lose all cognizance of time and place, even of "things present and things to come," in a rapt contemplation of that which is beyond the reach of thought. Then every faculty and every sense stands aside reverently, while the soul, thrilled through and through with trembling and adoring love, bows in the presence of its God. Nay, the soul that has ever felt an all-absorbing, self-forgetful love for a human being which it has placed, however unworthily, above itself can recall some supreme moment when it rose higher and still higher till thought had reached the limits of its domain, and there left it filled with emotions which no human language has been invented to express. There is a silent, rapt communion higher than prayer; and a still, speechless sympathy deeper than words. As there is in the realm of emotion a region which lies somewhere nearer heaven than thought will ever be, so whatever exalts in any measure above itself can not be wanting in an element of moral power and influence. (From April "*Home and School*," Louisville, Ky.)

HARMONY AND DISCORD.

WE have said that harmony is the result of a simplicity of ratio existing between two notes sounded together. But why should this give pleasure? The attempts to answer this question were of course in the first instance metaphysical. "The Pythagoreans found intellectual repose in the answer, 'all is number and harmony.'" A supposed analogy was traced between the seven notes of the scale and the then known seven planets, which gave rise to the vague but poetical myth regarding "the music of the spheres and the choral dance of the world"—Pythagoras himself being the only mortal, according to his followers, who has privileged to hear the heavenly melody. The ancient world delighted to rest in these baseless dreams, and two thousand years elapsed before any real attempt was made to analyze the cause of this pleasure. Euler, the great mathematician, undertook to make it clear. "We take delight in order," says he. "It is pleasant to observe means co-operant to an end; but then effort to discover must not be so great as to weary us. If the relations to be disentangled are too complicated, though we may see the order, we can not enjoy it. The simpler the terms in which the order expresses itself the greater is our delight. Hence the superiority of the simpler ratios over the more complex ones." Consonance according to Euler, was the spiritual pleasure derived from the perception of order without weariness to the mind. This theory was accepted, and held its ground for a long time for want of a better. The true explanation, however, is purely physical in its nature, and would probably have been reached long ago if scientific investigators had not been thrown off the track by Young's theory of resultant tones. Discord is really due to the disagreeable rattle caused by beats following each other closely, though not closely enough to link themselves into one continuous sound. When the resultant tone is ascertained by the sirene to be due to thirty-three vibrations per second, it is smooth and musical: but when beats succeed each other at this rate the dissonance is intolerable. When, however, they succeed each other at the rate of one hundred and thirty-two per second the roughness entirely disappears. Any notes then whose relative rates of vibration cause beats to occur very much within this limit are discordant.—(From April "*Home and School*," Louisville, Ky.)

I.—EVENINGS WITH THE MICROSCOPE.

"To him who in the love of Nature holds,
Communion with her visible forms, she speaks
A various language."

IF this be true when the observer goes forth with his natural vision unaided, how much more is it true when science and art combine to extend the field of observation and speculation toward infinity, an infinity reaching not only to the infinitely large but to the infinitely small. In this regard we occupy only