

containing about two hundred octavo pages, will be issued each year. The contributors will be, for the most part, instructors in the university, or graduates of the same, but contributions of other scholars will not be absolutely excluded. Any correspondence respecting contributions should be addressed to Professor James B. Greenough, Professor John Williams White, or Professor F. D. Allen, Cambridge, Mass. Subscriptions (one dollar, four marks, or five francs a volume) may be sent to Otto Harrassowitz Leipzig, Germany; Ginn & Co., 57 & 59 Ludgate Hill, London E.C., England; or the latter firm at Boston, New York, or Chicago.

— With the December number the *Magazine of American History* completes its twenty-second volume. The frontispiece to the current issue is a portrait of Lord Brougham; and the opening paper by the editor is a sketch of his early career during the infancy of our Republic, with pen-pictures of his contemporaries and surroundings, the establishment of the *Edinburgh Review*, and the marriage of its editor in New York City. The second illustrated paper is a "Tribute to Hooper C. Van Voorst," the late president of the Holland Society, by George W. Van Siclen. The third contribution is "The Story of Brave, Beautiful Margaret Schuyler," an historic ballad from the pen of Judge Charles C. Nott of Washington. Curiously interesting is the article following, of R. W. Shufeldt, "The Drawings of a Navajo Artist," illustrated with the Indian pencil; as is also the "Acrostic by John Quincy Adams," in facsimile, from Ella M. M. Nave. "The Sciota Purchase in 1787," by Col. E. C. Dawes of Cincinnati, and the "Private Contract Provision in Ordinance of 1787," by Hon. W. P. Cutler, are important contributions to the number. These are ably written, and will doubtless serve to correct many errors in recent histories of Ohio. "Joseph Hawley, the Northampton Statesman," is the theme of a paper by Charles Lyman Shaw; "Fort Perrot, Wisconsin," is from T. H. Kirk; "First Editions of the Bible printed in America," from Clement Furgeson; and "Gen. Grant and the French," from Theodore Stanton of Paris. This magazine is steadily exerting an educational and healthful influence in all departments of literature and study.

LETTERS TO THE EDITOR.

*.*Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.

The editor will be glad to publish any queries consonant with the character of the journal.

On request, twenty copies of the number containing his communication will be furnished free to any correspondent.

Intelligence of Ants.

I SEND you the following regarding ants, by Mr. W. E. Bosworth of this city, written out at my request, which seems to me an interesting and at the same time somewhat rare observation. It is almost exactly similar to the account by McCook of the sleeping of harvesting ants, of Texas, as quoted in G. J. Romanes' "Animal Intelligence," p. 84. I do not recall any other instance given of the sleeping of ants. "At different times, and for more than one season, I was favorably situated to see the movements of quite a large colony of small black ants, as they passed to and fro in their busy haste over a board floor, going, as I supposed, for their supply of water, which was in the direction of a small stream close by. While watching their quick, eager movements, there were several along the line that attracted my attention, as they remained in one place so long that I concluded they must be dead; and although they were directly on the line of march, and in the way of the others, these passed on, paying no attention to them whatever. At another time I noticed that one of the ants supposed to be dead got up, and walked off as lively as the rest; and, while watching this one, another one close by began to slow up, seemed to totter in his gait, and finally came to a dead halt. After seeing this, it occurred to me that the one had just waked up, and the other had just gone to sleep. In order to test the matter, and gratify my curiosity, I concluded to experiment on some of them. With a fine straw they were gently rubbed on the back. This mild treatment did not make the slightest impression on them; but a sharp push seemed to take them completely by surprise, and to fully arouse them. For an instant they seemed lost, circulating around, running up and down, but finally starting off with the rest. This

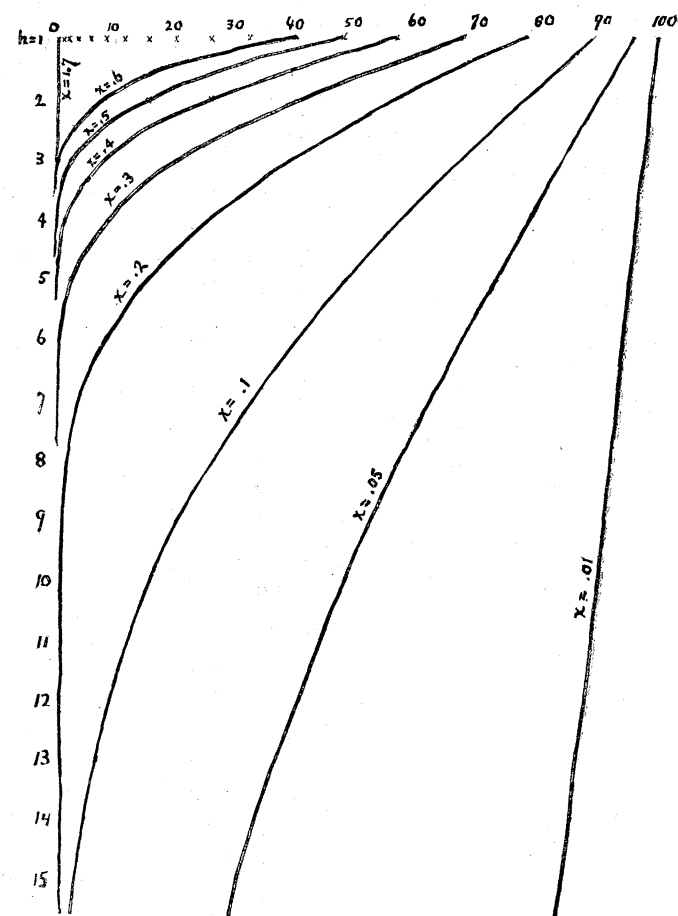
was repeatedly tried with the same result. Their movements on being disturbed very forcibly reminded me of a child when suddenly waked out of sound sleep."

JAS. LEWIS HOWE.

Louisville, Ky., Nov. 21.

Galton's Bodily Efficiency Diagram and the Marking System.

FRANCIS GALTON'S bodily efficiency diagrams (*Nature*, Oct. 31, 1889) can evidently be applied to the rating, on an arbitrary scale, of all sorts of things besides physical measurements and tests. For instance: the annexed diagram represents, by Galton's method, the rating of errors as the measure of precision gradually rises. The data were taken from the table on p. 12 of Merriman's "Least Squares" (first edition). The curves are drawn in general for values of x differing by .1; the ordinates in all cases being values of h , and the abscissas the rating on a scale of 100. The diagram shows at a glance how in all cases the rating of the same



error decreases as the measure of precision increases, but how, for very large and very small errors (see the curves $x = .01$ and $x = 1.7$), the measure of precision affects the rating little.

The rating of any errors which are distributed roughly according to the probability curve, as they are, for instance, in every school examination, ought to conform in general to these curves, and I think teachers usually strive to have it do so, either consciously or instinctively. If the error is flagrant, the question containing it is marked zero, or nearly so. The discrepancies in the marks of different teachers, or in the marks of the same teacher at different times, seem due to the different measures of precision mentally adopted. The curves show that these variations of the measure of precision affect most the rating of mediocre work, and this also accords with the experience of teachers. Now, of course the errors of each scholar have their own probability curve and their own value of h , which perhaps might be calculated from a long series of examination-papers. It would probably differ for different subjects. The custom, then, of marking good and poor scholars on different scales has a reason. The only question is, whether these scales can be so systematized as to be quite just, and whether it