Sheridan, Byron, Fox, Pitt, Gustavus Adolphus, Wellington, and George Canning. At twenty-six our future Lord Stratford helped to found the *Quarterly Review*, and introduced Gifford to Murray. —— Messrs. Fords, Howard, & Hulbert (New York) announce for publication 'The Democratic Party: its History and Influence' (new third edition, revised to date); and 'Tenants of an Old Farm,' an illustrated work on insect-life, by Dr. Henry C. McCook, hitherto sold at $2.50, sold this season at $1.50. —— William R. Jenkins (New York) announces 'Paul Bercy's Works,' for the study of French by the natural method; 'La Langue Française;' 'La Langue Française' (seconde partie); 'Livre des Enfants,' *pour l'étude du Français*, a primer full of illustrations, which serve as object-lessons for the youngest children; 'Le Second Livre des Enfants' (just published), intended for children also. It is full of illustrations, and, like the first book, these form the basis upon which the text is arranged, rendering it attractive in every way to children who have mastered the first book. —— The Burrows Brothers Company (Cleveland, O.) announces 'Christian Science, its Truths and Errors,' by the Rev. H. Melville Tenney; and 'The Pocket Gem Pronouncing Dictionary,' by Lilla M. Tenney, on a new plan. —— The Century Company announces 'Ranch Life and the Hunting-Trail,' by Theodore Roosevelt. —— 'Principles of the Economic Philosophy of Society, Government and Industry,' by Van Buren Denslow, LL.D., has just been published by Cassell & Co. This firm continues its 'National Library,' edited by Prof. Henry Morley, LL.D., a series of weekly volumes of reprints of standard works.

NOTES AND NEWS.

THE New York Academy of Science held its opening meeting Oct. 1. By the election of Professor Fairchild to the chair of natural history at the University of Rochester, the academy has lost one of its most active members, — a loss which will be felt for a long time to come. The publications of the academy have been pushed forward most energetically, and the active editor, Professor Martin, has succeeded in bringing them up to date, their value being thus greatly enhanced. Mr. George F. Kunz sent in an interesting paper on recent mineralogical discoveries, and several members reported on the results of journeys undertaken during last summer's vacation. Dr. H. Carrington Bolton made some interesting remarks on German and Austrian libraries which he had visited in pursuance of bibliographical studies, and dwelt on the defects of the systems of several of these libraries. On the other hand, he described the management of the library of Strassburg as worthy of the highest commendation. The arrangement is thoroughly systematical. Visitors are allowed the greatest possible facilities, and any citizen of Alsace Lorraine applying for books is entitled to have them sent to his house, whether he lives in Strassburg or in some other part of the province. Dr. Brinton gave a brief description of his studies in English collections and libraries, and noted a large collection from Bolivia which is said to contain an unexpectedly large number of species and genera unknown to science. After a brief discussion of the trap rocks of Pennsylvania and New York, Dr. F. Boas gave a sketch of the ethnological results of his journey to British Columbia, during which he visited most of the peoples of that province.

—The committee on publications and lectures, of the Massachusetts Society for promoting Good Citizenship, have issued a circular requesting the clergymen of Massachusetts to prepare and preach, and as far as possible publish, between now and the general election in November, at least one sermon on the duties and responsibilities of American citizenship.

—A study undertaken by W. von Bezold a number of years ago made it probable that thunder-storms have a period corresponding to that of the rotation of the sun. In his inquiry he had used the material collected at the meteorological stations of Bavaria. As, however, an influence of this kind seemed very improbable, he did not publish the results of his researches. Recently Hertz, Wiedemann, Arrhenius, and others have shown that by the influence of radiation the conductivity of the air is changed, and thus a period of the frequency of thunder-storms corresponding to that of the rotation of the sun does not appear improbable. For this reason Von Bezold has taken up his earlier researches, and carefully scrutinized the observations of thunder-storms in Bavaria and Wurtemberg from 1880 to 1887. The *Naturwissenschaftliche Rundschau* reports on a paper on this subject read by Von Bezold before the Berlin Academy of Science. He finds that a period exists; and the proofs he gives are so convincing, that he feels encouraged to pursue this subject more fully.

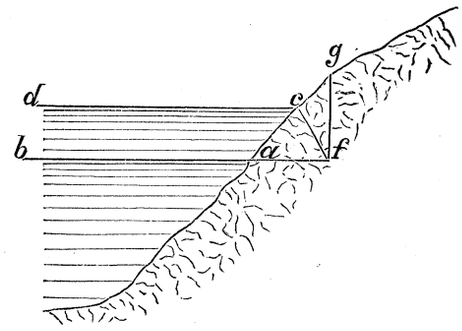
LETTERS TO THE EDITOR.

Floods in the Lower Mississippi.

MAJOR POWELL, in his letter to the New Orleans Chamber of Commerce, suggests as a means of regulating the lower Mississippi the erection of large basins at the head waters of its tributaries in the Rocky Mountains. "The cutting-power of a stream," he says, "increases rapidly with an increase of sedimentary load."

If this be correct, then there must be an increase in either quantity or in velocity by the increasing sedimentary load, those two constituting the working energy of the water, which is: quantity times half the square of the velocity. As to the quantity, there is, in fact, an increase. Draw a cubic foot of water from the river and let it rest. The sediment will settle to the bottom, and is therefore heavier than the amount of water it displaces, as otherwise it would remain in suspension. For this reason a cubic foot of water mixed with sediment is heavier than a cubic foot of clear water.

But how is it that this same sediment was in suspension in the same water when it was in the river? Because the water there had velocity. Velocity has an equivalent in 'head' or water weight



and just as much of this head will be used to carry along the surplus weight of the sediment as is equivalent to this surplus. Diminished head is diminished velocity. Clear water, therefore, will flow quicker (that is, have more working energy) than water mixed with sediment, which will readily be seen when we imagine such an amount of sediment to be added to the water that it would attain the consistency of sirup.

If, now, as Major Powell claims, the product of the two is increased by the increase of sediment, then the gain in weight of the quantity ought to be greater than the loss in velocity. This is not likely, for the reason that the velocity in that product is squared, and every loss in it, therefore, is squared too. It is furthermore not likely, because every gain in weight creates an additional loss in head, part of the latter being used to crush and pulverize the increase of sediment from heavy bowlders in the mountains into fine sand at the mouth of the river. There is only one grand total of power corresponding to a certain head, and every deduction from it is a loss which cannot be made up for again.

The indisputable fact that rivers choked by sediment do more lateral cutting than cleaned rivers, therefore, does not seem to be exactly expressed by attributing this fact to an increase in cutting-power of the water through sediment. If it is, Major Powell should prove it.

Again the letter reads, "The waters of the Missouri come loaded with materials which go on cutting and grinding with constantly increasing energy in their journey to the sea, choking the channel and cutting away the land." I should like to see this sentence more fully explained, as I fail to understand its full meaning.

As a matter of fact, there are other causes besides the action of sediment which increase the amount of river-sediment by bank-