— Houghton, Mifflin, & Co. have just issued a new life-size portrait of Dr. Holmes, which is even better than the earlier one.

— Charles Scribner's Sons have in preparation a handsome popular library edition, in four 12mo volumes, of Bourrienne's well-known "Memoirs of Napoleon," a standard work of which many hundreds of imported sets have been sold every year. This new edition will be an exact reprint of the latest English edition, and will contain the thirty-eight portraits of the original, together with all the other features that give distinction to the work. The price will be sufficiently low to bring these volumes within reach of all would-be readers.

— G. P. Putnam's Sons have in press, as their own commemoration of the centennial anniversary of the inauguration of Washington, a unique limited edition of Irving's "Life of Washington," — a work for which Bryant predicted "a deathless renown." The set will be issued in five volumes, handsomely printed in large quarto form, and will contain 200 illustrations, comprising 130 steel plates and 70 woodcuts printed on India paper and inlaid in the text. The plates include portraits of all the noteworthy generals and statesmen of the American Revolution. But 300 sets will be issued, and the type will be distributed as printed from. The price to subscribers has been fixed at $50.

— Mrs. Stowe has been able to revise the biography of herself, written by the Rev. Charles Stowe and Mr. Kirk Munroe. It will be published at an early day by Houghton, Mifflin, & Co.

— Baron Grancy will shortly issue, in Paris, a volume on American customs. It is to be in the shape of a novel, to be entitled "A French Ranch in Dakota," and will treat wholly of Dakotan affairs. The author, according to a despatch to the New York *World*, is the original founder of the Fleur de Lys settlement of French horse-breeders, whose life in Dakota this book is meant to describe.

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.

Twenty copies of the number containing his communication will be furnished free to any correspodent on request.

An Acoustic Mill.

WHEN a vibrating tuning-fork is brought near to a light body, like a pith-ball or a small piece of paper, the latter moves towards the fork as if attracted by it. This phenomenon was observed by Guyot in 1832, and was rediscovered by Guthrie in 1870. It has been supposed by some that gravitation could be explained by the vibratory motions, such as atoms and molecules are known to have; but it does not appear that gravitation sustains any quantitative relation whatever to the temperature of a body, such as would be the case if molecular vibration was the cause of it. The observed phenomenon may be accounted for thus. When the prong of the tuning-fork beats outwards, the air is driven before it and is condensed, while behind it there is a partial vacuum. If the velocity of the prong was greater than that of a particle of air in its free path movement, then there would be a complete vacuum behind the prong. As the latter beats to and fro, it is obvious that the density of the air adjacent to the prong must be less than if the latter was at rest, the difference depending upon the relative velocity of the prong to that of the molecules of air in their free path movements. As the pressure of the air varies as its density, it follows that the air-pressure is less in the neighborhood of the vibrating fork than at a distance from it. Hence, if an object is near to the vibrating fork, the air-pressure will be greater on the remote side, and will push the object towards the source of vibrations.

Numerous devices have been invented by Doornak and Strop to illustrate this principle. Most of them are too complicated and costly to be had by more than a few. The following is simple enough, and can be available for any one having a Chladni plate.

Cut a disk three or four inches in diameter out of letter-paper, and then cut eight or ten radial slits from the circumference halfway to the centre, and turn up one edge of each sector so as to form a kind of paper windmill. Suspend this by a thread from its centre, and see that it hangs horizontally, which may be done by fixing a bit of beeswax to the middle of the disk, and have the thread go through it. Adjustment will be easy and quick by slight pressure upon the wax, changing the relative position of the thread.

This disk may now be brought over a properly mounted Chladni plate near the edge, and as close to it as possible, while allowing it free space for rotation without touching the plate. If the plate be made to vibrate vigorously, the disk will begin to spin, turning in the same direction as if a current of air were blowing upon it from above. The lower components of the sound of the plate will be necessary to make so large a disk as the above to spin, as the higher ones have too many nodes. The fundamental is the best; and, if it can be produced with an amplitude of an eighth of an inch or more, the disk will go round two or three times a second. Of course, the bow should be drawn across the edge opposite to the disk, in order to prevent a node being formed underneath it, and also to avoid the disturbance from movements of the air. I have found that the fundamental vibration of the Chladni plate can more easily be produced by bowing it with a round wooden rod well rosined, than with the ordinary violin-bow. In this experiment the pressure of the air is lessened between the nodes at the surface of the disk, and the space thus affected extends to the height of an inch or two. It is also evident that the light dust that moves to the place of greatest disturbance is moved there by the difference in air-pressure instead of by little whirlwinds caused by the vibrations, as it was explained by Faraday.

A. E. DOLBEAR.

College Hill, Mass., March 5.

Note on the Robinson Anemometer Constant.

THIS is the factor by which the velocity of the central point of the cups is reduced to the actual velocity of wind. When Dr. Robinson first invented his anemometer in 1860, he determined the value of this factor, for all patterns of the instrument, to be exactly 3, and this has been in use for all patterns ever since. But by the experiments of Dr. Dohrandt at St. Petersburg in 1878, this constant, for the Kew pattern at least, was found to be much less, which led Dr. Robinson to repeat his experiments; and the result was a confirmation of Dr. Dohrandt's result, and showed that his own factor is erroneous. Experiments at the Deutsche Seewarte in Hamburg have also given a factor much smaller.

The labor of the wind-force committee of the Royal Meteorological Society, referred to in my previous note (*Science*, xiii. p. 171), has been directed mostly toward determining this factor for several anemometers of different patterns, which are as follows: —

	Arms.	Diam. of Cups.
	Inches.	*Inches.*
Kew Standard	24.00	9.0
A 19	5.80	4.0
A 21	6.75	2.5

These were placed near the end of a long arm of a whirling apparatus, moved by a small steam-engine with varying velocities. The number of turns of the anemometer compared with that of the whirling apparatus during any given time of uniform velocity, the relations between the length of the arm of the anemometer and the distance on the arm from the centre of whirling being known, gave the ratio between the velocities, and so the value of the constant, which is found to be about the same for all, except very small, velocities.

The average of 58 experiments with the Kew Standard gives 2.15 instead of 3 for the value of this constant. From 51 experiments made with A 19, the value 2.51 was obtained, while the average of 49 experiments with A 21 gave 2.96, which is very nearly that determined by Dr. Robinson, and now in use. It is seen, therefore, that while the Robinson factor is very erroneous for the Kew pattern, and also for A 19, but especially the former, it is very nearly