

NEW BOOKS AND PUBLICATIONS. THE SENILE HEART. Its Symptoms, Sequels, and Treatment. By George William Balfour. New York and London: Macmillan & Co. 1894. Pp. 300. Price \$1.50.

Much of this work is sad reading. It describes the heart troubles, one of the great terrors of humanity. It is, of course, especially designed for physicians, but to those who are willing to investigate these ailments, and are able to do so without being frightened by possibilities of disease, it will, no doubt, be found very interesting. A full index is appended.

A TEXT BOOK ON ROADS AND PAVEMENTS. By Fred P. Spalding. New York: John Wiley & Sons, 1894. Pp. viii, 213. No index. Price \$2.

Good roads is to-day one of the subjects attracting the most widespread interest of the public. The fact is coming to be recognized that a civilized country should have the best possible roads and highways, and that the modern streets should not be disgraced by cobblestone pavements, and that the use of these inferior traction surfaces involves a great loss of energy in the conduct of everyday business. The different classes of pavements, such as macadam, asphalt, wood and stone block pavements, are all treated here in detail with numerous illustrations, and the work is in every way to be strongly recommended, except in the omission of an index.

GEOMETRY FOR GRAMMAR SCHOOLS. By E. Hunt. Boston, U. S. A.: D. C. Heath & Co. 1894. Pp. iv, 99. Price 25 cents.

SCIENTIFIC AMERICAN BUILDING EDITION.

OCTOBER, 1894.—(No. 108.)

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1. Elegant plate in colors showing a Colonial residence at Plainfield, N. J., recently erected for B. A. Hegeman, Jr. Two perspective elevations and floor plans, also an interior view. Cost \$6,000. A picturesque design. Mr. Frank W. Beall, architect, New York City.

Business and Personal.

The charge for insertion under this head is One Dollar a line for each insertion; about eight words to a line. Advertisements must be received at publication office as early as Thursday morning to appear in the following week's issue.

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Notes & Queries

HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters, or no attention will be paid thereto. This is for our information and not for publication. References to former articles or answers should give date of paper and page or number of question. Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and though we endeavor to reply to all either by letter or in this department, each must take his turn. Buyers wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same. Special Written Information on matters of personal rather than general interest cannot be expected without remuneration. Scientific American Supplements referred to may be had at the office. Price 10 cents each. Books referred to promptly supplied on receipt of price. Minerals sent for examination should be distinctly marked or labeled.

(6282) G. C. asks: 1. What is the best constant current medical battery for burning out hairs, lighting a small lamp, etc.? A. Probably a storage battery is the best. For constant current a Daniell combination is good, but it is of high resistance and is not adapted to open circuit work. A Grenet or plunger battery is about the best primary battery for your work. Keep the zinc thoroughly amalgamated. 2. We have a battery of 12 cells made with a stick of carbon, a strip of zinc wrapped with cloth (to act as porous pot) and surrounded with broken gas coke. Would nitrate of silver in distilled water form a good working solution that would last and not polarize? A. No. It would be very expensive and would quickly polarize. 3. Can you mention a good work giving lots of information on primary batteries? A. We can supply you with the following books relating to the subject you refer to: Carhart's "Primary Batteries," price \$1.50; Niblett's "Elementary Treatise on Electric Batteries," price \$2.50. 4. Can you suggest a good solution for our battery, as sal-ammoniac does not answer? A. Try a mixture of 1 part nitrate of mercury and 2 parts sal-ammoniac with water.

(6283) H. E. writes: Why is it necessary to use such powerful engines to run dynamos? I cannot see why they should offer any great resistance, other than that caused by their great weight. A. A dynamo converts mechanical energy into electric energy. This it does by the forcing of the armature coils through a magnetic field. The resistance to its motion is almost identical with that offered by an armature of a magnet when drawn away from the pole of a magnet. The weight produces no resistance except as it increases journal friction.

(6284) F. G. C. writes: I have a telephone wire stretching from a pole to the house, a distance of 40 feet perhaps. It hums a great deal, and particularly at night and in cold weather. I have put an appliance called an anti-hummer or anti-singer at the house end of the line, but it does no good. Could you tell me, if I also put another anti-singer at the pole end, if it would help it? Also, what is the reason it sings in the night time? A. Try changing the tension of the wire. An intermediate insulator placed to one side of the center of the wire might answer. It hums when its natural period coincides in some way with the wind actuating it. The extra anti-hummer would probably improve it.

Communications Received.

"On Concrete Construction." By E. L. R.

TO INVENTORS.

An experience of nearly fifty years, and the preparation of more than one hundred thousand applications for patents at home and abroad, enable us to understand the laws and practice on both continents, and to possess unequalled facilities for procuring patents everywhere. A synopsis of the patent laws of the United States and all foreign countries may be had on application, and persons contemplating the securing of patents, either at home or abroad, are invited to write to this office for prices which are low, in accordance with the times and our extensive facilities for conducting the business. Address MUNN & CO., office SCIENTIFIC AMERICAN, 361 Broadway, New York.

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October 23, 1894, AND EACH BEARING THAT DATE.

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