gas and electric lighting, illumination and photometry. In the present volume, Mr. Boverton Redwood's treatise on petroleum industry and lamps cannot be too highly commended as being of immediate interest, especially in this country.

L'OR. Propriétés Physiques et Chimiques — Gisements — Extraction—Applications—Dosage. Introduction de M. U. Le Vernier. Avec 67 figures intercalées dans le texte. Propriétés Physiques et Chimiques Gisements, Gisements filconiens—Gisements sédimentaires Alluvions auriferes. Extraction Applications. Orfévrerie—Médailles—Monnaies. Dosage. Essai des minerals—Essai des alliages. Paris: Librairie J. B. Bailliére et fils. 1896. Pp. 420. Price $1.

This nicely illustrated and well printed monograph treats of the entire subject of gold, from its mining and metallurgy to the analysis of its ores. The absence of an index is made of but small moment by the presence of a very full table of contents. The house of Bailliére have done a great service to science in the very extensive series of monographs which they have issued, and the present will be accepted as by no means the least important of their series.

HEATING AND VENTILATING BUILDINGS. An elementary treatise. By Rolla C. Carpenter. New York: John Wiley & Sons. London: Chapman & Hall, Limited. 1895. Pp. xiii, 411. Price $3.

This excellent and serious work, with numerous illustrations, tables and data, treats systematically of the subject of heating modern buildings by all methods, including even heating with electricity. We note that the expense of electrical heating receives due consideration, the necessarily low efficiency of the system when the electricity is generated by steam plants militating strongly against its use. While we feel that the entire book deserves great commendation, and while it really fills a void in technical literature, we would refer to the section devoted to electrical heating as an indication of the thoroughness and conservatism of treatment. Immediately preceding the excellent index is a series of twenty-one tables of different data to be used by the engineer.

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.

Whereas, the copartnership heretofore existing in the City and State of New York between Orson D. Munn and Alfred E Beach, under the copartnership name of Munn & Co., and having its principal place of business at No. 361 Broadway, in the City and State of New York, has been dissolved by the death of Alfred E. Beach on January 1, 1896; and

Whereas, the said copartnership had business relations with foreign countries and transacted business in the State of New York for a period of five years and upward; and

Whereas, I, Orson D. Munn, the surviving copartner, am desirous to continue the business conducted by the said copartnership and to continue the use of the name of Munn & Co.

Now, I, Orson D. Munn, do hereby certify and declare that I am the person dealing under such name of Munn & Co., and that my place of abode is 14 East Twenty-second Street, City of New York, and that my principal place of business is at No. 361 Broadway, in the City and State of New York.

(Signed) ORSON D. MUNN. [L.S.]

In presence of
A. A. HOPKINS.

City and County of New York, ss:

On this 6th day of January, in the year 1896, before me personally came Orson D. Munn, to me known to be the individual described in and who executed the foregoing instrument and acknowledged to me that he executed the same for the purposes therein mentioned.

(Signed) A. A. HOPKINS,
[L.S.] Notary Public,
Kings County, New York.

Certificate filed in New York County.

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.

(6700) W. A. E. says: Please inform me through the columns of the SCIENTIFIC AMERICAN what ingredients are used in making flash light powder for use in photography, and how it is prepared. A. Magnesium powder, 6 ounces; potassium chlorate, 12 ounces; antimony sulphide, 2 ounces; 75 to 150 grains of the powder should be used. 2. 15 grains of gun cotton and 30 grains of magnesium powder are used.

3. Magnesium	40	per cent.
Permanganate of potassium	40	"
Peroxide of barium	20	"

4. Purchase 1 ounce of magnesium powder and 1 ounce of negative gun cotton from dealers in photographic materials. Place on a dust pan enough cotton, when pulled out, to measure about 3½ inches in diameter. Sprinkle it over with 20 grains of magnesium powder to form a thin, even film. Lay over the magnesium thus arranged a very thin layer of gun cotton. Connect to the bunch of cotton a small fuse of twisted cotton about 6 inches long, so that it will extend to the side of the dust pan. Then set the pan on a step ladder near the object, and when ready, light the gun cotton fuse with a match, when instantly a brilliant flash will ensue. There are several ready prepared magnesium compounds now sold with special devices and lamps to fire them.

(6701) C. W., Ontario, Canada, asks for simple method of testing drinking water. A. General. Evaporate by gentle heat a small sample of the water nearly to dryness in a clean porcelain cup, moisten the residue with acetic acid, and add to a portion of it a few drops of strong hydrosulphuric acid—pure water saturated with the gas evolved by the action of dilute sulphuric acid on iron monosulphide; a black precipitate indicates lead. Add to another portion of the dilute acetic acid solution a little pure hydrochloric acid; a white precipitate which redissolves on diluting with boiling water indicates lead. To the remainder of the solution add a few drops of dilute sulphuric acid and let it stand for a time; a white, heavy precipitate indicates lead. 1. Test for Hard or Soft Water.—Dissolve a small quantity of good soap in alcohol. Let a few drops fall into a glass of water. If it turns milky, it is hard; if not, it is soft. 2. Test for Earthy Matters or Alkali.—Take litmus paper dipped in vinegar, and if, on immersion, the paper returns to its true shade, the water does not contain earthy matter or alkali. If a few drops of sirup be added to a water containing an earthy matter, it will turn green. 3. Test for Carbonic Acid.—Take equal parts of water and clear lime water. If combined or free carbonic acid is present, a precipitate is seen, in which, if a few drops of muriatic acid be added, an effervescence commences. 4. Test for Magnesia.—Boil the water to a twentieth part of its weight, and then drop a few grains of neutral carbonate of ammonia into a glass of it and a few drops of phosphate of soda. If magnesia be present, it will fall to the bottom. 5. Test for Iron.—a. Boil a little nutgall and add to the water. If it turns gray or slate black, iron is present. b. Dissolve a little prussiate of potash, and, if iron is present, it will turn blue. 6. Test for Lime.—Into a glass of water put two drops of oxalic acid and blow upon it. If it gets milky, lime is present. 7. Test for Acid.—Take a piece of litmus paper. If it turns red, there must be acid. If it precipitates on adding lime water, it is carbonic acid. If a blue sugar paper is turned red, it is a mineral acid.

(6702) Engineer writes: Would it require more power to propel a fan in a cylinder in which there was compressed air than it would in the same cylinder with the air pumped out? Or, in other words, would the compressed air offer any resistance to the fan? A. Any medium that the fan revolves in offers a resistance due to the pressure of driving the medium forward, as well also to the friction of the blades, proportional to the density of the medium. Thus a vacuum may be said to have no resistance, while air at atmospheric pressure and when compressed resists the motion of fans in proportion to its density at various pressures.

(6703) G. G. C. writes: Your answer to G. G. C. in the last edition is good so far as it goes, but if it is not asking too much, I would like to ask one or two more questions. 1. Does temper or thickness in the bell of a steam whistle affect the sound? A. Not materially. 2. Are the air waves causing the sound produced by the vibration of the metal of which the bell is made, or by the interrupted exit of steam? A. By the fluttering of the issuing steam mainly.

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January 14, 1896,

AND EACH BEARING THAT DATE.

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