Business and Personal.

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Notes & Queries

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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 This is for our information and not for publication.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.

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.

(4415) S. D. C. asks: The cheapest and best power (steam or electric) to run a woodworking plant, which requires 40 h. p. to operate it. Our electric plant has plenty of extra power, and they have offered to furnish us electric power for $5 per h. p. per month. Would it be necessary to have a motor for each machine? Please state difference of cost between the two powers. A. Steam is the cheapest for 40 horse power with a good type of engine and boiler. You can run on from 1,700 to 2,000 lb. of coal per day, or say an average of 22 tons per month, which at $3 per ton is $66, and wages of an engineer $60 per month. Oil waste and sundries $5 per month, total $131. Electric power $5 by $40 = $200. One electric motor only, is needed, with part of the time of a man to look after it with oil and sundries will bring the cost to about $225 per month. Whatever difference there is in your place for coal other than as above, you can make allowance for.

(4416) G. C. F. says: Please give me a formula for making a neutral or alkaline copper bath suitable for copper-plating zinc by the galvanic process. A. The best alkaline copper solution is that introduced by Mr. A. Watt, and subsequently modified by Mr. J. T. Sprague. Dissolve 8 ounces of copper sulphate in 1 quart hot rain water and set aside to cool. When cool, add liquid ammonia while stirring with a stick or glass rod. At first a green precipitate will fall, and then this will dissolve on adding more ammonia, until the whole solution assumes a lovely blue tint. Dilute this with an equal bulk of cold rain water, and add to it enough solution of potassium cyanide, while stirring, to destroy the fine blue color of the ammonia sulphate and give the color of old ale to the solution. Set this aside for a few hours, then pass it through a calico filter and make it up to a gallon of solution with rain water. This solution may be worked cold, but the rate of deposition is increased and the deposited copper of improved quality when the solution is heated to a temperature of from 110° to 130° Fah.

(4417) S. McI. writes: Glass and sealing wax, if rubbed on cloth, will attract light substances. Is there any way of making a magnet permanent to attract small bits of paper, or other light substances, as an ordinary horse shoe magnet attracts steel? A. Magnets will attract only magnetic materials and conductors carrying electric currents.

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