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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.

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(4661) J. Q. A. asks: 1. What truth is there in the theory that water impregnated with filth from drainage becomes pure or usable by passage over successive falls, or by being thrown to a height into the atmosphere? A. There is a good deal in the theory, not so much, however, but that every effort should be made to start a water system with pure water. Aeration cannot be relied on to destroy all injurious matter. It is known to do some good. 2. Is the Thames water at London made use of after simply throwing to a height of 50 feet? A. We do not know of any such use of the Thames water at London proper. Much of the London water comes from the New River. 3. Do any American cities use impure water after such treatment? A. Aeration is used in this country, and river water from below cities is often used, but how much of the improvement is due to dilution and how much to aeration is as yet unsettled.

(4662) A. B. asks: 1. Is there any simple method which can be relied upon to precipitate the lime contained in hard water and yet not injure the water for drinking purposes? We understand the lime cannot be eliminated by filtration. Is this a fact? A. Water may be hard from the presence of calcium sulphate or calcium bicarbonate. The latter can be precipitated by Clark's softening process, which consists in the addition of just enough lime water to precipitate the whole as neutral carbonate, followed by filtration or settling. Calcium sulphate cannot be removed by any practical process. For either impurity, simple filtration is useless. 2. How may branches and trunks of small trees be seasoned in the round to prevent splitting? A. Try painting the ends with metallic paint or coat with hot pitch.

(4663) V. N. asks if there is a chemical or chemicals which will prevent water from freezing, and if so, to how low a degree of temperature. A. A strong solution of calcium chloride will not freeze above —8°F. Glycerine mixed with water will lower its freezing point a number of degrees. Alcohol will do the same.

(4664) D. C. G.—Eight square feet of radiating to one square foot of heating surface in boilers is the usual practice.

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Boiler, brick set, and portable ranges, cook, heating, and all kinds of gas, gasoline, and oil stoves and ranges, elevated, A. Weiskittel & Son ... 22,379
Boots and shoes, I. Prouty & Co. ... 22,355
Brandy, cognac, Brossault & Co. ... 22,366
Car couplers and their parts, Trojan Car Coupler Company ... 22,381
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Chocolate, H. L. Pierce ... 22,356
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Canadian patents may now be obtained by the inventors for any of the inventions named in the foregoing list, provided they are simple, at a cost of $40 each. If complicated the cost will be a little more. For full instructions address Munn & Co., 361 Broadway, New York. Other foreign patents may also be obtained.

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