

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 next issue.

For Sequeira Water Meter, see adv. on page 316.
 Patent for sale. G. Neu, 191 W. Liberty St., Cin., O.
 It never fails to give relief to the lungs, is what is said of Van Bell's "Rye and Rock."
 Relief from the worst of aches. Use German Corn Remover. It never fails. Sold by all druggists. 25 cts.
 Upright Self-feeding Hand Drilling Machine. Excellent construction. Pratt & Whitney Co., Hartford, Conn.
 For Sale.—Screw Cutting Lathes. 36 in. x 18 ft.; New Haven make; good order. E. N. Brown, Pokeepsie, N. Y.
 Punching Presses and Shears for Metal-workers. Power Drill Presses, \$25 upward. Power and Foot Lathes. Low Prices. Peerless Punch and Shear Co., 115 S. Liberty St., N. Y.
 Your boiler is predisposed to weakness by thickening of the water or burning of the iron caused by impurities in feed water. They should be removed by Hotchkiss Mechanical Boiler Cleaner. 84 John St., N. Y.
 The price of Boomer & Boschert's Cider Press is so reasonable that every fruitgrower in the country can afford one. They produce more cider from the same quantity of apples than any other press. Illustrated circulars mailed free. New York Office, 15 Park Row.
 Books on Practical Science. Catalogues free. Pocket Book of Alphabets, 20 cts. Workshop Receipts; a reliable handbook for manufacturers. \$2, mail free. E. & F. N. Spon, 446 Broome St., N. Y.
 Why suffer? German Corn Remover warranted to cure. Sold by all druggists. 25 cts.
 Wanted.—An old established machinery firm on Cortland street would be pleased to represent, in New York city, a firm or company manufacturing a variety of Engines, Boilers, etc. Address Engine, Box 778, New York.
 For Sale.—No. 1 2 1/2 inch 8 roll (Schenck) Planer and Mather, with undercutter, in perfect order. Belcher & Bagnall, 40 Cortland St., N. Y.
 For Sale.—A Valuable Patent for Photographers' use, or can be manufactured on royalty. Address G. W. Baker, Wilmington, Del.
 Propellers, 10 to 36 in. Geo. F. Shedd, Waltham, Mass.
 Gardiner's Pat. Belt Clamp. See illus. adv., p. 284.
 Essay on Inventions.—What qualities will make them profitable, and how to incorporate these qualities in inventions. 25 cts. postpaid. Address N. Davenport, Valparaiso, Ind.
 Improved Skinner Portable Engines. Erie, Pa.
 "Rival" Steam Pumps for Hot or Cold Water; \$32 and upward. The John H. McGowan Co., Cincinnati, O.
 The Eureka Mower cuts a six foot swath easier than a side cut mower cuts four feet, and leaves the cut grass standing light and loose, curing in half the time. Send for circular. Eureka Mower Company, Towanda, Pa.
 The Newell Universal Mill Co., Office 34 Cortland St., New York, are manufacturers of the Newell Universal Grinder for crushing ores and grinding phosphates, bone, plaster, dyewoods, and all gummy and sticky substances. Circulars and prices forwarded upon request.
 Pure Oak Leather Belting. C. W. Arny & Son, Manufacturers Philadelphia. Correspondence solicited.
 Jenkins' Patent Valves and Packing "The Standard." Jenkins Bros., Proprietors, 11 Dey St., New York.
 Presses & Dies. Ferracute Mach. Co., Bridgeton, N. J.
 Wood Working Machinery of Improved Design and Workmanship. Cordesman, Egan & Co., Cincinnati, O.
 The "1880" Lace Cutter by mail for 50 cts.; discount to the trade. Sterling Elliott, 262 Dover St., Boston, Mass.
 Experts in Patent Causes and Mechanical Counsel. Park Benjamin & Bro., 50 Astor House, New York.
 Split Pulleys at low prices, and of same strength and appearance as Whole Pulleys. Yocom & Son's Shafting Works, Drinker St., Philadelphia, Pa.
 Malleable and Gray Iron Castings, all descriptions, by Erie Malleable Iron Company, limited. Erie, Pa.
 Long & Allstatter Co.'s Power Punch. See adv., p. 285.
 Eclipse Fan Blower and Exhauster. See adv., p. 285.
 National Steel Tube Cleaner for boiler tubes. Adjustable, durable. Chalmers-Spence Co., 40 John St., N. Y.
 Peck's Patent Drop Press. See adv., page 300.
 Corrugated Wrought Iron for Tires on Traction Engines, etc. Sole mfrs., H. Lloyd, Son & Co., Pittsburg, Pa.
 Wren's Patent Grate Bar. See adv. page 500.
 Best Oak Tanned Leather Belting Wm. F. Forepaugh, Jr., & Bros., 581 Jefferson St., Philadelphia, Pa.
 For Mill Mach'y & Mill Furnishing, see illus. adv. p.300.
 Stave, Barrel, Keg and Hogshead Machinery a specialty, by E. & B. Holmes, Buffalo, N. Y.
 Rollstone Mac. Co.'s Wood Working Mach'y ad. p. 301.
 Wright's Patent Steam Engine, with automatic cut off. The best engine made. For prices, address William Wright, Manufacturer, Newburgh, N. Y.
 For Light Machinists' Tools, etc., see Reed's adv., p. 301.
 Nickel Plating.—Sole manufacturers cast nickel anodes pure nickel salts. Importers Vienna lime, crocus, etc. Condit. Hanson & Van Winkle, Newark, N. J., and 92 and 94 Liberty St., New York.
 Saw Mill Machinery. Stearns Mfg. Co. See p. 300.
 Presses, Dies, Tools for working Sheet Metals, etc. Fruit and other Can Tools. E. W. Bliss, Brooklyn, N. Y.
 Saunders' Pipe Cutting Threading Mach. See p. 301.
 The Sweetland Chuck. See illus. adv., p. 269.
 For best Duplex Injector, see Jenks' adv., p. 269.
 The American Electric Co., Proprts Mfrs of Thompson Houston System of Electric Lighting the Arc Type. Make "Lion and Eagle" Imp'd Crusher. See p. 284.
 4 to 40 H. P. Steam Engines. See adv., p. 286.
 C. B. Rogers & Co., Norwich, Conn., Wood Working Machinery of every kind. See adv., page 285.
 For Machinists' Tools, see Whitcomb's adv., p. 301.
 See Bentel, Margedant & Co.'s adv., page 317.

Steam Hammers, Improved Hydraulic Jacks, and Tube Expanders. R. Dudgeon, 24 Columbia St., New York.
 Clark Rubber Wheels adv. See page 316.
 50,000 Sawyers wanted. Your full address for Emerson's Hand Book of Saws (free). Over 100 illustrations and pages of valuable information. How to straighten saws, etc. Emerson, Smith & Co., Beaver Falls, Pa.
 Peerless Colors—For coloring mortar. French, Richards & Co., 40 Callowhill St., Philadelphia, Pa.
 Diamond Tools. J. Dickinson, 64 Nassau St., N. Y.
 For Pat. Safety Elevators, Hoisting Engines, Friction Clutch Pulleys, Cut-off Coupling, see Frisbie's ad. p. 316.
 Tight and Slack Barrel machinery a specialty. John Greenwood & Co., Rochester, N. Y. See illus. adv. p.316.
 Elevators, Freight and Passenger, Shafting, Pulleys and Hangers. J. S. Graves & Son, Rochester, N. Y.
 For the manufacture of metallic shells, cups, ferrules, blanks, and any and all kinds of small press and stamped work in copper, brass, zinc, iron, or tin, address C. J. Godfrey & Son, Union City, Conn. The manufacture of small wares, notions, and novelties in the above line, a specialty. See advertisement on page 317.
 Akron Rubber Works, Akron, O. Moulded goods and special work of every description.
 Gear Wheels for Models (list free); Experimental Work, etc. D. Gilbert & Son, 212 Chester St., Phila., Pa.
 Gould & Eberhardt's Machinists' Tools. See adv., p. 316.
 Grain Nickel, Nickel Anodes Rolled or Cast, Nickel Salts. Greene, Tweed & Co., 118 Chambers St., N. Y.
 For Heavy Punches, etc., see illustrated advertisement of Hilles & Jones, on page 317.
 Safety Boilers. See Harrison Boiler Works adv., p. 316.
 The Medart Pat. Wrought Rim Pulley. See adv., p. 317.
 Steam Engines; Eclipse Safety Sectional Boiler. Lambertville Iron Works, Lambertville, N. J. See ad. p. 317.
 Emery, Glue, Composition, Pumice, and all Goods for Polishing Metals. Greene, Tweed & Co., New York.
 Mineral Lands Prospected, Artesian Wells Bored, by Pa. Diamond Drill Co. Box 423, Pottsville, Pa. See p.318.
 For best low price Planer and Matcher. and latest improved Sash, Door, and Blind Machinery, Send for catalogue to Rowley & Hermance, Williamsport, Pa.
 Rowland's Vertical Engine. Wearing parts of steel. Broad bearings. F. C. & A. E. Rowland, New Haven, Conn.
 The only economical and practical Gas Engine in the market is the new "Otto" Silent, built by Schleicher, Schumm & Co., Philadelphia, Pa. Send for circular.
 Ore Breaker, Crusher, and Pulverizer. Smaller sizes run by horse power. See p. 318. Totten & Co., Pittsburg.
 Use Vacuum Oil Co.'s Lubricating Oil, Rochester, N. Y.
 For Thrashing Machines, Engines, and Horse Powers, see illus. adv. of G. Westinghouse & Co., page 317.

NEW BOOKS AND PUBLICATIONS.

HENDERSON'S HAND BOOK OF PLANTS. By Peter Henderson. New York: Peter Henderson & Co.

Something between a florist's and gardener's manual and a botanical dictionary, paying special attention to such plants and flowers as may be cultivated in this country. A multitude of cross references, giving the common and local names of plants, are a valuable feature of the book, the scope of which embraces also the systematic names of all the leading genera of useful and ornamental plants, with their more important species and varieties, with brief instructions with regard to their propagation. The glossary of botanical and horticultural terms and methods of cultivation is full and useful.

THE WOOL CARDER'S VADE MECUM. By William Calvert Bramwell. Hyde Park, Mass. 1881. Published by the author.

The third and much enlarged edition of Mr. Bramwell's useful manual. Among the additions are three chapters on textile fibers used in connection with wool. The book is now, in general make up, perhaps the handsomest industrial handbook in the market.

HOW WE FED THE BABY TO MAKE HER HEALTHY AND HAPPY, WITH HEALTH HINTS. By C. E. Page, M.D. New York: Fowler & Wells.

A useful little handbook for young mothers, containing much sensible and practical advice calculated to diminish materially the murderously excessive death rate of young children. Special stress is laid upon the bad effects of over-feeding and frequent dosing of infants.

HYDROPHOBIA. By Horatio R. Bigelow, M.D. Philadelphia: D. G. Brinton.

The author's aim has been to furnish in this monograph a critical digest of the literature of hydrophobia. Contrary to the theory commonly held Dr. Bigelow is strongly inclined to believe that this disease is not primarily one of the nervous system, but a blood disease, which must be treated by remedies acting directly upon the blood.

AMERICAN CHEMICAL JOURNAL. Baltimore Md.: Published by the Editor, Professor Ira Remsen, Johns Hopkins University 8vo, pp. 448. \$3.

The second volume of this highly creditable periodical is completed with the February issue. The six numbers contain half a hundred original articles by American and foreign chemists, besides a considerable number of reports on progress in various departments of chemistry, reviews of books on chemical subjects, and many notes and items of general interest to chemists.

MODERN ARCHITECTURAL DESIGNS AND DETAILS. New York: Bicknell & Comstock. Part 7. \$1.

Includes plates 49 to 56, showing a number of large and small seaside or lake shore cottages, and southern houses, with front, back, and side elevations, floor plans, details, etc.

Notes & Queries

HINTS TO CORRESPONDENTS.

No attention will be paid to communications unless accompanied with the full name and address of the writer.
 Names and addresses of correspondents will not be given to inquirers.
 We renew our request that correspondents, in referring to former answers or articles, will be kind enough to name the date of the paper and the page, or the number of the question.
 Correspondents whose inquiries do not appear after a reasonable time should repeat them. If not then published, they may conclude that, for good reasons, the Editor declines them.
 Persons desiring special information which is purely of a personal character, and not of general interest, should remit from \$1 to \$5, according to the subject, as we cannot be expected to spend time and labor to obtain such information without remuneration.
 Any numbers of the SCIENTIFIC AMERICAN SUPPLEMENT referred to in these columns may be had at this office. Price 10 cents each.

- (1) W. B. T. writes: 1. Having read a description of canoe in SCIENTIFIC AMERICAN SUPPLEMENT No. 219, I take the liberty of asking whether said canoe, when built, would be capable of carrying two persons? If not, will you be kind enough to inform me, through your valuable paper, what dimensions are required to carry two? A. For two persons we think it should have 26 inches or 28 inches beam. 2. Will 15 oz. duck be heavy enough to cover deck? A. Yes.
- (2) J. D. W. asks how a perfectly transparent water size for gilding on glass is prepared—a preparation that may be easily worked. A. A. Isinglass, 1 oz.; dissolve in just enough water to cover it, and add 1 pint rectified wine spirit, then increase the quantity to a quart with water. Keep well corked when not in use. b. Dissolve 1/2 oz. isinglass in 1/2 pint of rum, add 1/2 pint distilled water, and filter through a piece of linen.
- (3) J. C. H. asks what the chemical constituents of fire clay are, and how it is prepared to manufacture into brick. A. Fire clay is a silicious aluminum silicate—silicate of aluminum mixed with more or less free silica and usually a little iron oxide, etc. The clay is elutriated to separate the coarser particles, the finer portion after settling, draining, and partly drying being well mixed together, pressed into form, dried slowly, but thoroughly, in the air, then fired in a kiln. 2. I am manufacturing hydraulic cement; have always presumed the bond was made by a chemical change. Yesterday I heard of some reported experiments in your city which showed by a powerful microscope that the particles of cement were fibers which, when wet, curled and twined together, thus making the bond. The theory appeared ridiculous to me. Is there anything in it? A. The bond is chiefly chemical. Consult Gillmore's "Treatise on Hydraulic Cements and Mortars."
- (4) J. S. B. asks: 1. Will you please to inform me the supply, demand, and price per pound of corundum? A. You can best obtain this information by addressing the dealers who advertise in this paper. 2. Is it probable, should corundum be found in sufficient quantities, that it will supplant the use of emery? What is the relative value as between corundum and emery, both as regards abrasive qualities and value? A. In a measure, yes. The value is determined chiefly by the comparative abrasive qualities—the standard wears away four-fifths its weight of glass. In this respect corundum from different localities varies widely. See articles on corundum and emery, SUPPLEMENTS, Nos. 125 and 42; also papers by J. Lawrence Smith and C. T. Jackson, Silliman's American Journal of Science (2d series), vii., 283; ix., 289; x., 354; xxxix., 87; xl., 112 and 123. 3. Is corundum found anywhere in the world except in this State? A. Corundum has been extensively mined at Chester, Pa; it is found also in South Carolina and Alabama, Massachusetts, and on the Pacific coast, in Brazil, Germany, and in South Africa and China. 3. Is it probable that in any reasonable length of time the supply of corundum will exceed the demand? A. Probably not. For other references on corundum see SCIENTIFIC AMERICAN, 405, vol. xxviii., 193 and 276, vol. xxxix., and 113 vol. xlii.
- (5) D. K. H. asks how files are measured. I say, for instance, a file measuring ten inches from shoulder to point is a ten-inch file, while a friend claims it is an eight-inch. Which is right? A. The tang of a file is not included in the measurement.
- (6) C. H. F. asks: What cheap solution of a glny nature—ignitable, not explosive, can I get to cement fibrous matter together, such as hemp in our common ropes cut up fine; must also be waterproof? A. A solution of shellac in wood naphtha might answer your purpose. See cements, page 2510, SUPPLEMENT, No. 158.
- (7) T. S. W. asks: How can I make a liquid stove polish to be applied with an ordinary paint brush, and afterward polished with a stove brush? A. See ans. to L. A., p. 202 (9). Diluted with a sufficient quantity of water the polish there described may be used either as a paste or paint; for the latter it must be ground very fine.
- (8) W. L. T. asks: 1. Can mica be dissolved, and if so, to what use can it be put? A. There is no solvent for mica. 2. Do you know of a machine for cutting mica to proper sizes? I have the control of a large mica mine, and will soon commence working it. A. We know of no special machinery for this purpose. 3. Do you know of what use the waste can be used for? A. See "The Utilization of Mica," page 241, vol. xxxiv.
- (9) E. H. asks what acid or acids to use for taking out ink spots from ledgers, etc. A. Shake up 2 oz. of good bleaching powder (calcium hypochlorite) with 3 oz. of cold water; let it stand to settle, decant

- the clear portion, add 1/4 oz. acetic acid, and bottle. Dry the paper as quickly as possible with clean blotting paper.
- (10) F. Y. asks: Do you know of any preparation that will remove from paper instantaneously ink stains, blots, or writing, made by inks or writing fluids, without injuring the enamel or gloss of the paper, so that it can immediately be rewritten? A. See answer to E. H., above.
- (11) O. F. N. writes: 1. I wish to draw negative pictures on glass by scratching with a needle through an opaque film. The finished plates are to be used for the same purpose, and to take the place of photographic negatives of line and dot subjects. Please tell me the best and simplest covering for the glass plates. A. As we understand you, melted beeswax colored with any opaque pigment, or thin asphaltum varnish, will answer very well. 2. Is there any better way to dispense with photography in producing gelatine relief plates? A. We know of nothing better.
- (12) O. F. D. asks whether there is an ink made that nitric acid will not affect, or if there can be one made? A. India ink of good quality is not materially altered by cold nitric acid. A solution of good asphaltum in lavender oil, with a little lampblack added, also resists the acid to a considerable extent.
- (13) L. M. asks for a receipt for making olive soap, costing not over two and a half or three cents per pound. A. See Cristian's late work on soap and candles. Address the book dealers who advertise in this paper.
- (14) R. H. asks: 1. What are water colors? A. Generally speaking, colors or pigments finely ground in gum water. 2. How are they prepared for coloring printed cards? A. Consult Penley's "System of Water Color Painting," Hatton's "Hints on Sketching in Water Colors," and Gullick and Tims' "Painting Popularly Explained."
- (15) D. D. G. writes: I have suspected for two or three years that throwing salt on ice to melt it from stone sidewalks injured the stone, and this winter has convinced me of the fact. Our stone is a sand stone, and from the effects of the salt crumbles and scales off on the top. I account for it by the sudden and extreme cold made by the salt and ice, but find few to give any credence to my suggestions. A. It is quite probable that the use of salt injures the stone in the way you suggest.
- (16) W. F. S. asks how to make the solution used in Town's weather glass. A. The materials are dilute alcohol, camphor, sal-ammoniac, and niter. See "Weather Glasses," page 290, vol. xxvi.
- (17) G. D. asks for a receipt for a cement for cementing glass. I wish something to cement the joints of glass tanks, the glass to be supported by a light frame. The cement must stand acids and a cyanous solution of metals. A. Melt together equal parts of pitch and gutta serena. See that the glass is free from grease and dry.
- (18) H. B. writes: I have two hundred gallons of white California wine, which has got pricked. Can you tell me of any compound that would bring it back to its natural state again without discoloring it? A. See answer to R. S., this page.
- (19) R. S. asks if there is a possibility of removing a flavor of acetic acid from wines caused by excessive fermentation, and if so, would like to know a remedy. A. The common remedy recommended in books is to saturate the excess of acid, with chalk, or calcined oyster shells; but such additions made in sufficient quantity to effect the object are apt to destroy the character of the wine and render it sickly. The best and safest method is to mix it with a considerable portion of full-bodied new wine, adding at the same time a little brandy, and in two or three weeks to fine it down. If too acid to admit of this it is better to make vinegar of the wine.
- (20) T. H. asks: What is the best material for the lining of an ice chest? A. Sheet zinc is commonly used for lining. The best non-conducting material for filling in the walls is powdered charcoal.
- (21) J. A. C. asks how to make fish lines waterproof. A. Boiled oil, 2 parts; gold size, 1 part; shake together in a bottle, and it is ready for use. Apply to the line, thoroughly dried, with a piece of flannel, expose to the air, and dry. After using the line two or three times it should have another coat, the application being repeated when necessary.
- (22) J. A. S. asks if there is any chemical solution that will remove the rough outside coating that is on sea shells. I wish to dress them for ornamental shells, but find it laborious and difficult, on account of the roughness, to remove this red coating by grinding. A. Grinding is about the only practical way of removing the red silicious coating. We know of no means of dissolving it without injuring the other portions.
- (23) J. J. writes. I wish to make a small boiler suitable for running a small engine, 1 1/2 inch bore 3 inches stroke: what size should it be, and what style would be best and cheapest? A. A vertical tubular boiler having about 6 square feet of heating surface.
- (24) O. N. T. asks: How many screw propellers, 18 inches in diameter, 12 inches travel, would be required to exert the same power as two propellers, 4 feet in diameter, 24 inches travel—each propeller with four blades, and driven same speed? A. Seven; but we think six would do the work very well.
- (25) W. H. S. asks: What is used to put platinum points on to brass—is it a cement? A. They are either riveted or soldered with silver solder.
- (26) W. E. B. asks (1) for a receipt for making a yeast that will be as strong, and that can be used in place of brewer's ale yeast? We wish to use it in making small beer without malt. Or can you give us directions for making ale yeast, where we have not the convenience of an ale brewery? A. Mix up 1 1/2 lb. of wheat flour to a thick paste with water, cover the vessel containing it with tissue paper, and set it aside in a moderately warm place for about a week. Soak a