

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.

Barrel, Keg, Hogshead, Stave Mach'y. See ad., p. 13.
Wanted, the address of party who can make shaped brush blocks, either of chestnut or sycamore. Woodbury Bros., 103 E. Houston Street, New York city.

W. F. Merrill, 27 Kilby St., Boston, Mass., Mechanical Draughtsman; special attention paid to detailed working drawings of experimental machinery, etc.

Wanted.—Light castings to make—Sewing machines, car boxes, school furniture, waterclosets, etc., etc. We do good work. Lehigh Stove Manuf. Co., Lehigh, Pa.

Contracts taken to manuf. small goods in sheet or cast brass, steel, or iron. Estimates given on receipt of model. H. C. Goodrich, 66 to 72 Ogden Place, Chicago.

Brush Electric Arc Lights and Storage Batteries. Twenty thousand Arc Lights already sold. Our largest machine gives 65 Arc Lights with 35 horse power. Our Storage Battery is the only practical one in the market. Brush Electric Co., Cleveland, O.

Engines, 10 to 50 horse power, complete, with governor, \$250 to \$550. Satisfaction guaranteed. More than eight hundred in use. For circular address Heald & Morris (Drawer 127), Baldwinville, N. Y.

Best Squaring Shears, Tinner's, and Canbers' Tools at Niagara Stamping and Tool Company, Buffalo, N. Y.

Lathes 14 in. swing, with and without back gears and screw. J. Birkenhead, Mansfield, Mass.

Five foot planers, with modern improvements. Geo. S. Lincoln & Co., Phoenix Iron Works, Hartford, Conn. The Best.—The Duerber Watch Case.

If an invention has not been patented in the United States for more than one year, it may still be patented in Canada. Cost for Canadian patent, \$40. Various other foreign patents may also be obtained. For instructions address Munn & Co., SCIENTIFIC AMERICAN Patent Agency, 261 Broadway, New York.

Farley's Directories of the Metal Workers, Hardware Trade, and Mines of the United States. Price \$3.00 each. Farley, Paul & Baker, 580 Market Street, Phila.

Improved Skinner Portable Engines. Erie, Pa.

Guild & Garrison's Steam Pump Works, Brooklyn, N. Y. Steam Pumping Machinery of every description. Send for catalogue.

Nickel Plating.—Sole manufacturers cast nickel anodes, pure nickel salts, polishing compositions, etc. Complete outfit for plating, etc. Hanson & Van Winkle, Newark, N. J., and 92 and 94 Liberty St., New York.

Lists 29, 30 & 31, describing 4,000 new and 2d-hand machines, ready for distribution. State just what machines wanted. Forsaith & Co., Manchester, N. H., & N. Y. city.

"Abbe" Bolt Forging Machines and "Palmer" Power Hammers a specialty. Forsaith & Co., Manchester, N. H.

Railway and Machine Shop Equipment. Send for Monthly Machinery List to the George Place Machinery Company, 121 Chambers and 103 Reade Streets, New York.

25' Lathes of the best design. G. A. Ohl & Co., East Newark, N. J.

"How to Keep Boilers Clean." Book sent free by James F. Hotchkiss, 84 John St., New York.

Wanted.—Patented articles or machinery to make and introduce. Gaynor & Fitzgerald, New Haven, Conn.

Water purified for all purposes, from household supplies to those of largest cities, by the improved filters manufactured by the Newark Filtering Co., 177 Commerce St., Newark, N. J.

Latest Improved Diamond Drills. Send for circular to M. C. Bullock Mfg. Co., 80 to 88 Market St., Chicago, Ill.

For Power & Economy, Alcott's Turbine, Mt. Holly, N. J.

Ice Making Machines and Machines for Cooling Breweries, etc. Pictet Artificial Ice Co. (Limited), 142 Greenwich Street. P. O. Box 3083, New York city.

Presses & Dies. Ferracute Mach. Co., Bridgeton, N. J.

Machinery for Light Manufacturing, on hand and built to order. E. E. Garvin & Co., 139 Center St., N. Y.

Drop Forgings. Billings & Spencer Co. See adv., p. 382.

Woodworking Mach'y. Rollstone Mach. Co. Adv., p. 382.

Split Pulleys at low prices, and of same strength and appearance as Whole Pulleys. Yocom & Son's Shafting Works. Drinker St., Philadelphia, Pa.

Supplement Catalogue.—Persons in pursuit of information on any special engineering, mechanical, or scientific subject, can have catalogue of contents of the SCIENTIFIC AMERICAN SUPPLEMENT sent to them free. The SUPPLEMENT contains lengthy articles embracing the whole range of engineering, mechanics, and physical science. Address Munn & Co., Publishers, New York.

C. B. Rogers & Co., Norwich, Conn., Wood Working Machinery of every kind. See adv., page 397.

The Sweetland Chuck. See illus. adv., p. 398.

Catalogues free.—Scientific Books, 100 pages; Electrical Books, 14 pages. E. & F. N. Spon, 35 Murray St., N. Y.

Knives for Woodworking Machinery, Bookbinders, and Paper Mills. Taylor, Stiles & Co., Riegelsville, N. J.

Fire Brick, Tile, and Clay Retorts, all shapes. Borgner & O'Brien, M'f'rs, 23d St., above Race, Phila., Pa.

Peck's Patent Drop Press. See adv., page 12.

Curtis Pressure Regulator and Steam Trap. See p. 12.

Diamond Drills, J. Dickinson, 64 Nassau St., N. Y.

Steam Hammers, Improved Hydraulic Jacks, and Tube Expanders. R. Dudgeon, 24 Columbia St., New York.

50,000 Emerson's Hand Book of Saws. New Edition. Free. Address Emerson, Smith & Co., Beaver Falls, Pa.

Eagle Anvils, 10 cents per pound. Fully warranted.

For Pat. Safety Elevators, Hoisting Engines. Friction Clutch Pulleys, Cut-off Coupling. See Frisbie's ad. p. 14.

Gould & Eberhardt's Machinists' Tools. See adv., p. 14.

Walrus Leather, Nickel Anodes, Turkey Emery, Pumice Stone and Composition. Greene, Tweed & Co., N. Y.

For Mill Mach'y & Mill Furnishing, see illus. adv. p. 12.

Mineral Lands Prospected, Artesian Wells Bored, by Pa. Diamond Drill Co. Box 423, Pottsville, Pa. See p. 14.

Lathes, Planers, Drills, with modern improvements. The Pratt & Whitney Co., Hartford, Conn.

For best low price Planer and Matchner, and latest improved Sash, Door, and Blind Machinery, Send for catalogue to Rowley & Hermance, Williamsport, Pa.

The Porter-Allen High Speed Steam Engine. Southwork Foundry & Mach. Co. 430 Washington Ave., Phil. Pa. Lightning Screw Plates, Labor-saving Tools, p. 14.

Blake's Patent Belt Studs. Best & strongest fastening for Leather & Rubber Belts. Greene, Tweed & Co., N. Y.

NEW BOOKS AND PUBLICATIONS.

AN OUTLINE OF QUALITATIVE ANALYSIS FOR BEGINNERS. By John T. Stoddard, Ph. D., Professor of Chemistry in Smith College. Gazette Printing Company, Northampton, Mass.

The book consists of two parts: detection of the metals, and detection of the acids, arranged in groups with directions for the analyses. A copious index makes this little manual valuable as a reference book in the laboratory.

THE QUEER, THE QUIANT, THE QUIZZICAL: A Cabinet for the Curious. By Frank H. Stauffer. R. Worthington, 770 Broadway, New York.

A collection of old time anecdotes, folk lore, and traditions. Fifteen double column pages of index, alphabetically arranged, make the book one of ready reference.

THE IMAGINATION, AND OTHER ESSAYS. By George Macdonald, LL.D. With an introduction by A. P. Peabody, D.D. D. Lothrop, Boston.

The subjects of the essays are thirteen in number, and range from literary criticism to homely truth telling on homely matters, in this latter respect reminding one of the Recreations of a Country Parson, published some twenty-five years ago, a collection, like this, bearing a true Scottish flavor. Time employed in reading George Macdonald cannot be time wasted.

AROUND THE RANCH. By Belle Kellogg Towne. D. Lothrop & Company, Boston.

A Colorado story, not entirely of rough mining life, although tinged with the free Western coloring of untrammelled freedom.

MANUAL FOR ASSAYING GOLD, SILVER, COPPER, AND LEAD ORES. By Walter Lee Brown, Chemist and Assayer. Jansen, McClurg & Company, Chicago.

This handy volume, as to size, appears to contain sufficient information in the art of assaying the ores of four prominent and somewhat related metals, to entitle it to the claim of being a manual of instruction to beginners and amateurs. It is illustrated by engravings whenever these are useful and necessary, and by their aid and the use of the text, the beginner can easily understand all the steps necessary to acquire a knowledge of the qualities of these ores by analytical treatment. A large amount of additional information is given in a copious index.

A TREATISE ON EXPLOSIVE COMPOUNDS AND MACHINE ROCK DRILLS AND BLASTING. By Henry S. Drinker. John Wiley & Sons, 15 Astor Place, New York.

The title of this book does not half show forth its value. Instead of a "treatise" it is a history, and in addition to that it is really a manual for the engineer whose business takes him below the earth's surface. The author has given facts of mining reaching back to the earliest historical records, and has utilized some of the rare old engravings when mining was in its infancy. The illustrations of modern mining appliances are good, and add largely to the value of the volume, which is a handsome quarto of 400 pages. It contains a succinct history of all the modern tunnels, with plans made on a scale.

ECONOMIC ENTOMOLOGY IN IOWA.

The growing interest in economic entomology all over the country, even in those States which are not provided with State entomologists, is well illustrated by the constantly increasing number of publications on the subject, and what is still more gratifying, these publications, as a rule, improve in quality. There is on our table a pamphlet of 42 pages, marked, "for gratuitous circulation," and entitled, "Entomological Papers from the Transactions of the Iowa State Horticultural Society for the Year 1882." The first paper therein is the prize essay, by the Hon. J. N. Dixon, on Orchard and Orchard Insects. It contains some very sound remarks on the "tramping remedy" for the various leaf folders or tortricids and especially for the curculio. Mr. Dixon writes from experience, and therefore with confidence. He is a strong advocate of Paris green, even for orchard insects.

The second paper, "Injurious Insects of 1882," by Miss Alice B. Walton, of Muscatine, Iowa, treats of various injurious species, dwelling upon their natural history and on the remedies to be employed. She considers the "tramping remedy" as not practicable in large orchards, and gives the experience of D. J. Weed, who raised a good crop of plums by fumigating the trees every two days with the smoke of burning coal tar. Further experience is certainly necessary before the value of this remedy can be established beyond doubt. Another interesting experience is the successful application of London purple for the red ants so troublesome in flower gardens. One teaspoonful of the purple mixed with a pint of water and poured into the entrance of the nest was sufficient either to kill or drive away the whole colony.

Prof. Herbert Osborne's "Entomological Notes for the Year 1882," which follows, contains observations on the habits of *Thripidae*, the author concluding that "while the thrips have diversified food habits they are capable, as in the case of apple blossoms, of causing serious injury, and form a factor not to be neglected in the problem of failure in fruit bloom." The chapter on scale insects recapitulates the natural history of several species observed during the year, and quotes from our last annual report to the Department of Agriculture on kerosene emulsions.—C. V. Riley.

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 the office. Price 10 cents each.

Correspondents sending samples of minerals, etc., for examination, should be careful to distinctly mark or label their specimens so as to avoid error in their identification.

(1) T. O. B. asks: What will kill, remove, or destroy red ants—small ones? Have tried all insect powders, but they fail. A. Place grease on pieces of paper, and distribute where the ants can get at it. Burn the papers when filled with ants. By following this method for a short time the colony will be annihilated.

(2) Oliver Bros. and others write: Can you give us a receipt for the substance used in putting up tablets to hold the edges, instead of glue and paper? The old process is too slow and unsatisfactory. A. The substance used on the edges of paper pads is composed of molasses and glue, with red coloring matter, such as fuchsine. The proportions are about the same as in printers' rollers. Probably considerably less molasses than is used in printers' rollers will answer for the purpose.

(3) T. T. M. asks: Would water glass be suitable for painting the bright parts of a bicycle, to protect them from rust? If not, please state what would. A. Have the parts nicked, or varnish them with a hard white copal varnish.

(4) C. H. H., of Idaho Territory, writes: On the morning of the 19th of June, at about three o'clock, I saw in the northeast a very plainly defined rainbow in all but color, it being of a silvery white. It was a complete bow; a very heavy cloud—"thunder"—lay in the northeast, while the moon in the west, nearly down, was shining brightly. Are such occurrences common? Was it caused by the reflection from the moon? It was seen by several. A. It was a lunar rainbow. They have been frequently observed.

MINERALS, ETC.—Specimens have been received from the following correspondents, and examined, with the results stated:

P. E. W. Co.—The specimen is galenite—lead sulphide—and probably carries silver; it may contain bismuth, but is primarily an ore of lead or silver.—H. W. G.—No. 1 is a clay, and apparently of no value; it shows no sign of metal. No. 2 is a volcanic mineral, probably porphyrite trachyte.

INDEX OF INVENTIONS

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June 26, 1883,

AND EACH BEARING THAT DATE.

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