oted at their rear ends to the axle, and provided centrally and to one side of its center with points for the attachment of the pole, which is detachably connected with the circle or plate, being connected centrally for a two horse team and at one side of the center for a three horse team.

GATE LATCH.—Philip T. Rapson, Bad Axe, Mich. This is a self-locking latch which permits the gate to be swung toward either side of the fence, and when in closed adjustment relieves the hinges from strain. On a back plate secured to the end rail of the gate is pivoted a lock plate with projecting detent pins, the locking plate having an arched top edge with a center notch, and two oppositely curved limbs at its lower edge formed with a center notch, while a check stud at its rear engages the pins on the back plate and an ear on its front face, a bolt tripped by a spring-pressed lever being mounted to slide above the locking plate. The device is of a simple, novel, and efficient character.

LITHOGRAPHIC PLATE.—Franklin F. Haggenmuller, New York City. This is a plate made of zinc, type metal, aluminum, or other metal, or of celluloid, gelatine, etc., and subjected to an embossing process to form on one side a printing stipple ready for the artist to work on, the stipple being uniform, to be readily worked on with the lithographic crayon to produce the desired picture. The improved plate may be very cheaply manufactured, and is intended to take the place of the lithographic stone now generally used.

GLOVE PACKAGE HOLDER.—Richard H. Moore, Great Barrington, Mass. This holder consists of two independent or detached strips or splints to receive the gloves, a spring jaw clamp or clip being placed on across the splints to hold the gloves between them. The improvement is designed to do away with the present inconvenient bindings for glove packages, affording spring binders or cases to hold the gloves in good condition and prevent their becoming shop-worn.

WICK RAISER FOR LAMP BURNERS.—Charles Pabst, Philadelphia, Pa. This is an improvement on a former patented invention of the same inventor, providing a simple and cheap attachment for elevating and depressing a lampwick in a reliable manner. It consists of two parallel limbs, on the ends of which are picker points passing through slots in the wick tube, a pivoted dog on one of the limbs having a hook shoulder interlocking with the edge of an aperture in the burner body through which the limbs and dog are inserted.

METALLIC RIPRAP.—Duncan T. McIntyre, Mattoon, Ill. A practical sheet piling, to protect the banks, shores, and beaches of rivers and other bodies of water from washing or being cut out, is provided by this invention. It consists of inclined metallic sheets resting against the face of the bank, the sheets having rearwardly extending lips punched through from the outer side of the plates, their vertical meeting edges interlocking and being formed into posts at the rear of the structure, the posts being embedded in the bank and thereby avoiding the use of separate posts.

URINAL ATTACHMENT. — George Schoen, New York City. This device comprises a frame to be received in the bowl and a strainer movably held to the frame, facilitating cleaning and providing for properly holding soap or other disinfectant or detergent.

NOTE.—Copies of any of the above patents will be furnished by Munn & Co., for 25 cents each. Please send name of the patentee, title of invention, and date of this paper.

NEW BOOKS AND PUBLICATIONS.

THE ROYAL ROAD TO BEAUTY, HEALTH, AND HIGHER DEVELOPMENT. By Carrica Le Favre. New York: Fowler, Wells & Co. 1892. Pp. 85. Price 25 cents.

This is a little tract devoted to vegetarianism, a subject of interest. Many of us, on ethical principles, would desire to be vegetarians, and this plea for it is perhaps something which should be welcomed by us on general principles.

MANNERS AND MONUMENTS OF PREHISTORIC PEOPLES. By the Marquis de Nadaillac. Translated by Nancy Bell (N. D'Anvers). New York and London: G. P. Putnam's Sons. 1892. Pp. xi, 412. Price $3.

This very elegant work brings the subject of anthropology well up to date, as regards its applications to extinct nations. The many finds recently made in different countries of the world are described, with numerous illustrations, some very curious, such as the illustration of the trepanned historic skull in which the appearance of the bone reveals the fact that one trepanning had been done during life and others, presumably for the obtaining of amulets, had been done after death. Fishes and fishing and efforts in navigation find adequate treatment, as well as the other subjects more generally written of.

REPORT OF THE COMMISSIONERS OF FISH AND FISHERIES FOR 1888. Washington, D. C. 1892. 8vo. Pp. 128.

This report contains some very interesting details of the work of the department for the year. The total distribution of eggs, fry and yearlings for the year ending June 30, 1889, amounted to 322,795,830, which is a very creditable showing considering that the appropriations only aggregated $257,000, and this money supports all the stations and the vessels of the department, the Albatross, Fish Hawk and Grampus. The department is a very useful one and has a world-wide reputation.

SHORT TALKS ON CHARACTER BUILDING. By G. T. Howerton, M.S. Illustrated. New York: Fowler & Wells Company. 1892. Pp. iv, 227. Price $1. No index.

This contribution to practical life, with numerous illustrations and short pithy chapters certainly abounds in good advice—advice which, whatever our individual opinions may be, would, if followed, in many cases be productive of much good. The style of illustration, in many cases, presents, on the same page, contrasting pictures of life, with considerable effect in some instances.

LEAVES AND FLOWERS; OR, PLANT STUDIES FOR YOUNG READERS. By Mary A. Spear. Boston, U. S. A.: D. C. Heath & Co. 1892. Pp. ix, 103 Price 30 cents. No index.

This charming work is designed to make the study of botany pleasant to the young. The work, with numerous illustrations and exact botanical information, is written throughout, as nearly as possible, in the form of a story, and, although it is termed plant studies, it really takes the aspect of being rather play than work. It shows how pleasant the path of learning is for the rising generation.

THE FLOOD, THE FACT OF HISTORY. A chronological vindication, and a guarantee of the second advent. By Charles A. L. Totten. New Haven, Conn.: The Our Race Publishing Company. 1892. Pp. xxii, 315. Price 75 cents.

Professor Totten, or Yale College, in this work at last has his say at full length as to bibliological chronology. To say the least, the work is a curious expression of the author's beliefs, and puts into the form of a book the ideas which won for him such notoriety during the last year.

SIMPLE LESSONS IN DRAWING FOR THE SHOP. By Orville H. Reynolds. Published by Debs Publishing Company, Terre Haute, Indiana. Pp. 83. Price $1.

This little work is for the practical draughtsman and gives very good elementary hints as to simple drawing. The practical aspect of the subject is well preserved, and the book will, no doubt, be welcomed by many who are beginning their way to acquire the draughtsman's art.

☞ Any of the above books may be purchased through this office. Send for new book catalogue just published. MUNN & Co., 361 Broadway, New York.

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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.

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.

(4609) I. H. F. asks: What glue, cement or paste is used in covering iron pulleys with paper to prevent the belt from slipping? A. Pulleys that have been in use that are to be papered should be made clean and free from grease by scratching with a file over their entire surface, cleaning with a caustic soda wash and then pickle the surface with hydrochloric acid and water equal parts. Wash with hot water and dry. When its surface will be in the best condition to receive the glue. Use the best light brown glue, which may be tested by its great strength and elasticity when breaking a piece in the hands. Make up the glue in the usual way and when ready mix a tablespoonful of strong decoction of oak bark or tannic acid, hot, to the glue and thoroughly mix. The strongest hardware paper should be used, cut and prepared by previously moistening, so as to allow of it drawing to fit the crown of the pulley. The pulley being slightly warmed, so as not to chill the glue, and temporarily hung, proceed to brush the glue on its surface, putting the paper on at once, drawing it tightly to expel any air and overlapping with glue and paper, until the proper thickness is obtained. To make the best job requires three persons. Upon stretching the paper on firmly depends its best service.

(4610) J. B. asks: What kind and how large a battery is necessary to heat a No. 36 platinum wire? I want to explode a cannon with it. A. One cell of Grenet battery will answer your purpose.

(4611) A. J. W.—Stamp ink is very difficult to remove. Alcohol is the best medium.

(4612) E. R.—In the case of a perpetual motion the Patent Office requires that a working example shall be produced.

(4613) W. R. asks: In the making of the large plunge battery in "Experimental Science" it calls for paraffine. Would beeswax answer as well? A. Yes.

(4614) C. E. L.—As to bringing your matter before the government, we cannot advise without knowing what it is.

(4615) W. G. T. asks for the composition of a cement for incandescent lamp filaments. A. The following is from "Scientific American Cyclopedia of Receipts, Notes and Queries." Take 100 grains carburet of iron (Dixon's stove polish), grind dry to a fine powder, add 10 grains lump sugar, mix well in a mortar, then add 40 grains gold bronze, mix again, then add sufficient water to make a thick paste, and apply it to the junction between the carbon and the platinum wire, allow it to stand for twenty minutes or so, then burn the joint to a cherry red heat by a fine gas flame.

(4616) C. B. A. asks: What is the reaction when oxalic acid ($C_2H_2O_4$) is made by the action of nitric acid (HnO_3) on sugar ($C_{12}H_{22}O_{11}$)? A. $C_{12}H_{22}O_{11}+O_{18}=6C_2H_2O_4+5H_2O$. The O_{18} is derived from the HNO_3; thus $12HNO_3=12NO+6H_2O+18O$. Thus we may write the reaction as follows: $C_{12}H_{22}O_{11}+12HNO_3=6C_2H_2O_4+11H_2O+12NO$.

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December 6, 1892,

AND EACH BEARING THAT DATE.

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