## NEW BOOKS AND PUBLICATIONS.

THE YACHTS AND YACHTSMEN OF AMERICA. A standard work of reference. Edited by Henry A. Mott. Vol. I. New York: International Yacht Publishing Company. Pp. 692. Price $20.

This work, the first volume of which has been received, will undoubtedly be the most important contribution to the history of yachting that has ever been written, and the enterprising publishers are to be congratulated upon the success attained in the making of the book, in the cuts and type; while the editor, the well known Professor Henry A. Mott, here appears in the new and well filled role of a yachting editor. The work begins with a history of early yachting and descriptions of many types of sailing vessels of different kinds, from the five masted ship to the house boat. Accounts of yacht clubs and yachting regattas, and descriptions of a vast number of yachts, with a quantity of illustrations of vessels of all types, constitute the text. Numerous portraits are given. Many of the cuts are most elegant photogravures, and some views of the interiors and exteriors of club houses are very attractive. Under each club the general by-laws are given. The many illustrations of yachts, each one famous in its day or at the present time, illustrate most interestingly the gradual evolution of the modern type of American sailing yacht, which now approaches so nearly to the English that there is little difference between the yachts of the two countries. The frontispiece shows the Vigilant in a very handsome photogravure, and other yachts of the latest type are likewise given, so that anybody who appeals to it will find the most recent information on the subject. The great size of the book, its thoroughness, and the exhaustive treatment of the subject make it utterly out of the question for us to adequately review it, so that this short notice must be taken in place of an adequate review. The work itself speaks for its own merits.



## 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 the following week's issue*



## 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 This is for our information and not for publication.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.
**Buyers** wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same.
**Special Written Information** on matters of personal rather than gener 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.

(6196) G. H. will find a small plating dynamo described in SUPPLEMENT, No. 720.

(6197) J. H. C.—Magneto calls for telephones may be purchased from any of the dealers in electrical supplies who advertise in our columns.

(6198) D. E. writes: We wish to erect a pole 75 or 80 feet high on our school campus, and would be greatly obliged for information as to the best kind and size of timber to use and the best method of lapping or splicing upper stick to enable us to lower the top. A. You probably can do no better than to use pine for your staff. Square off five or six feet of the top and fasten on it two mast irons as far apart as the length of the square part. These are a sort of double hoop of iron or figure of eight shape, one section fitting the squared mast, the other section projecting therefrom, giving a round aperture for the top mast to slide through. A sheave or grooved pulley wheel is mortised in the foot of the top mast, with horizontal pin or journal. A couple of screw eyes are fastened to the top of the lower mast. A rope passing around and under the sheave is used to hoist the top mast; one end is secured to one screw e e, the other goes through a pulley fastened to the other screw eye. When in place the top mast is secured by a cross pin or "fid," going through a hole in it, bored just above the lower iron. The fid when in place projects about an inch on each side.

(6199) C. E. B. asks: 1. What power will the simple electric motor have with a cast iron field magnet armature made of 4 cast iron rings with a projection of iron between each coil, each ring insulated from each other, built, except casting, the same as in SUPPLEMENT, No. 641? Is this a good armature for small motors and dynamos? How close should the armature run to field magnets? A. Properly constructed, the motor will give ½ horse power. Cast iron is very objectionable for the armature. The armature wound should fit the field as closely as possible. 2. Are there any reliable rules for finding the tonnage of small boats? If so, give them. A. Measure a number of cross sections and compute it by regular rules for displacement. For general rules as to tonnage measurements we refer you to Haswell's "Mechanic's and Engineer's Pocket Book," $4 by mail. 3. Where can I get the sailing rules the New York Yacht Club use in racing? A. Address the Secretary of the New York Yacht Club, 67 Madison Avenue, New York, N. Y. 4. What is the fastest time any steam vessel has ever been known to make, and what do you think is the limit? A. About 31 miles an hour is claimed. The limit for practic work on long distances is about 20 miles an hour, less for most vessels, and more for large ocean ships. You have not given sufficient data for answering your other query.

(6200) A. B. D. says: Will you please tell how to restore the color of russet shoes? A. Mix 1 part palm oil and 3 parts common soap, and heat to 100° Fah., then add 4 parts oleic acid and 13¼ of tannmg solution, containing at least one-sixteenth of tannic acid (all parts by weight) and stir until cold. This is recommended as a valuable grease for russet leather and as a preventive of gumming.

(6201) C. E. B. asks: 1. How many lenses in a first class stereopticon and their names, from the light out? A. Generally six. Two plano-convex lenses placed near each other and near the source of light (when the latter is artificial), with their convex surfaces adjacent, but not in contact. The condenser is located between the source of light and the slide. Beyond the slide is the objective, containing (in first class instruments) the rear combination consisting of a — meniscus of flint glass, with its convex side toward the slide, and a +meniscus of crown glass with its convex side toward the — meniscus, and the front combination consisting of a biconcave lens of flint glass and a biconvex lens of crown glass. 2. What are the respective sizes of lenses to make a fifteen foot picture at a distance of sixty feet? A. A half size portrait lens is commonly used. The lenses are about 2½ inches in diameter. 3. Can a fifteen foot picture at sixty feet distance be made with an oil lamp? A. Under these conditions the picture will be dim and unsatisfactory. 4. Can the lantern as mentioned in query 3 be used in showing pictures in houses where an eight foot picture at a distance of fifteen feet is desired? If so, with what change? A. A good picture will be produced, but it will be something less than 8 feet. 5. Please give name and address of parties who sell lenses apart from the instrument. Also give names and addresses of parties who deal in strong oil lamps suited for lanterns. A. Address opticians whose advertisements appear in our columns.

(6202) O. H. says: If a certain pendulum vibrates say once in three seconds and a second pendulum once in two seconds, what rule would be required to find the ratio of the lengths of these two pendulums? What were the so-called Alabama claims spoken of in American history? A. The length of pendulums for time beats are as the squares of the time multiplied by the standard length for a given latitude. Thus for New York the standard seconds length is 39·1017 inches. For a 2 second beat the square of 2 is 4×39·1017 =156·4068 inches and for 3 seconds is 9×39·1017=351·9153 inches and for half seconds ½²=¼×39·1017=9·7754 inches. The Alabama claims were made by the United States government against England for the destruction of American vessels by the warship Alabama, which was built and equipped in England for the confederate States.

(6203) J. T. G. asks directions for making sulphate of mercury batteries, suitable for running small electric motor. A. Use a zinc and a carbon plate. No porous cupis needed. Charge with a mixture of sulphate of mercury and ammonium chloride in equal parts, mixed to a thin paste with water.



## INDEX OF INVENTIONS

**For which Letters Patent of the United States were Granted**

**August 21, 1894,**

**AND EACH BEARING THAT DATE.**

[See note at end of list about copies of these patents.]

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