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THE INTERNATIONAL YACHT RACE.

Probably no former event in the history of yacht racing has attracted so much attention as the trial for the championship between British and American yachts in the vicinity of New York during the week commencing Sept. 7. The arrangements for the contest were not made without a great deal of correspondence, extending through many months. The race was for the possession of the prize cup won by the yacht America, in a contest with a fleet of British yachts off Cowes, England, in 1851; and its having remained on this side of the Atlantic for the thirty-four succeeding years as a standing challenge for British yachtsmen, made the latter extremely cautious in their preparations for an effort to win back the cup this year. The New York Yacht Club has held the cup under a deed of gift from the original owners of the America, under the condition of its remaining a perpetual challenge cup, not being the property of any boat winning a match in which it is the prize, but of the club to which such boat belongs, and subject to future competition for its possession. The New York Club, therefore, invited all regular organizations of American yachtsmen to unite with them in preliminary trials, with the view of selecting the best American yacht to defend the cup against the British yacht Genesta, which had been chosen to compete for it as the best representative "all-around" yacht of the different British yacht clubs.

When the challenges for this race were issued, it was

quickly concluded that there was no centerboard sloop in this country of sufficient length to match against the Genesta, whereupon the flag officers of the New York Club ordered such a one built, and about the same time some members of the Eastern Yacht Club also ordered another, both being centerboard sloops. Of these two yachts, the Puritan, of the Eastern Yacht Club, was selected to sail against the Genesta.

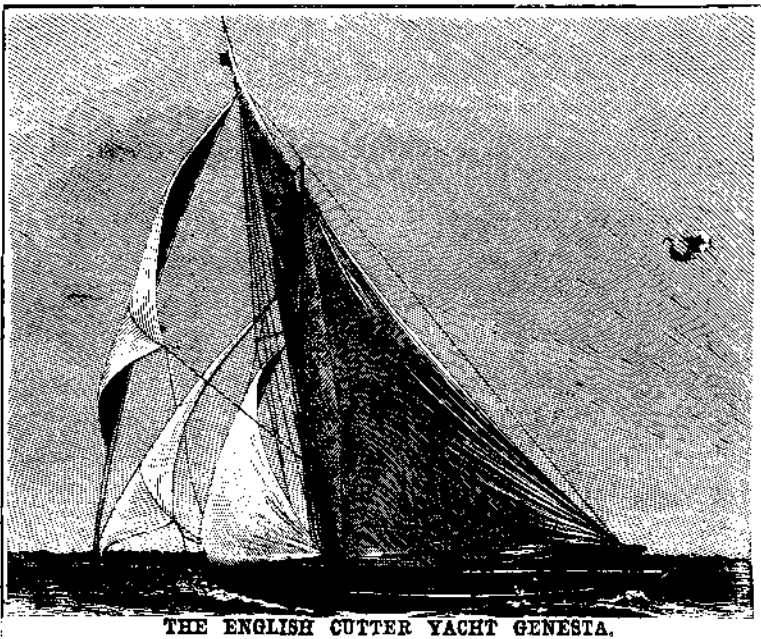
The Puritan is of wood, and was built at South Boston. Her dimensions are: 93 feet in length over all, 81 feet at the water line, 22 feet 7 inches extreme beam, and 8 feet draught. Mast, 78 feet long; topmast, 44 feet long; and bowsprit, outboard, 38 feet; main boom, 76 feet; gaff, 47 feet; and spinnaker boom, 64 feet. All her spars are of Oregon pine. She was not selected for the trial until after a contest with the Priscilla, built by the New York yachtsmen, and minor changes in her sails, ballast, and some other details were being made up to within a few days of the race, every precaution being taken to have her in the best possible condition to creditably represent American yachting interests.

The Genesta, which has come over here to race for the cup, is owned by Sir Richard Sutton, of the Royal Yacht Club; she was designed by J. Beavor-Webb, and built on the Clyde, being of composite build, with steel frame and elm and teak planking. She is 96 feet long over all, 81 feet on the water line, 15 feet extreme beam, 11 feet 9 inches depth of hold, and 13 feet 6 inches draught.

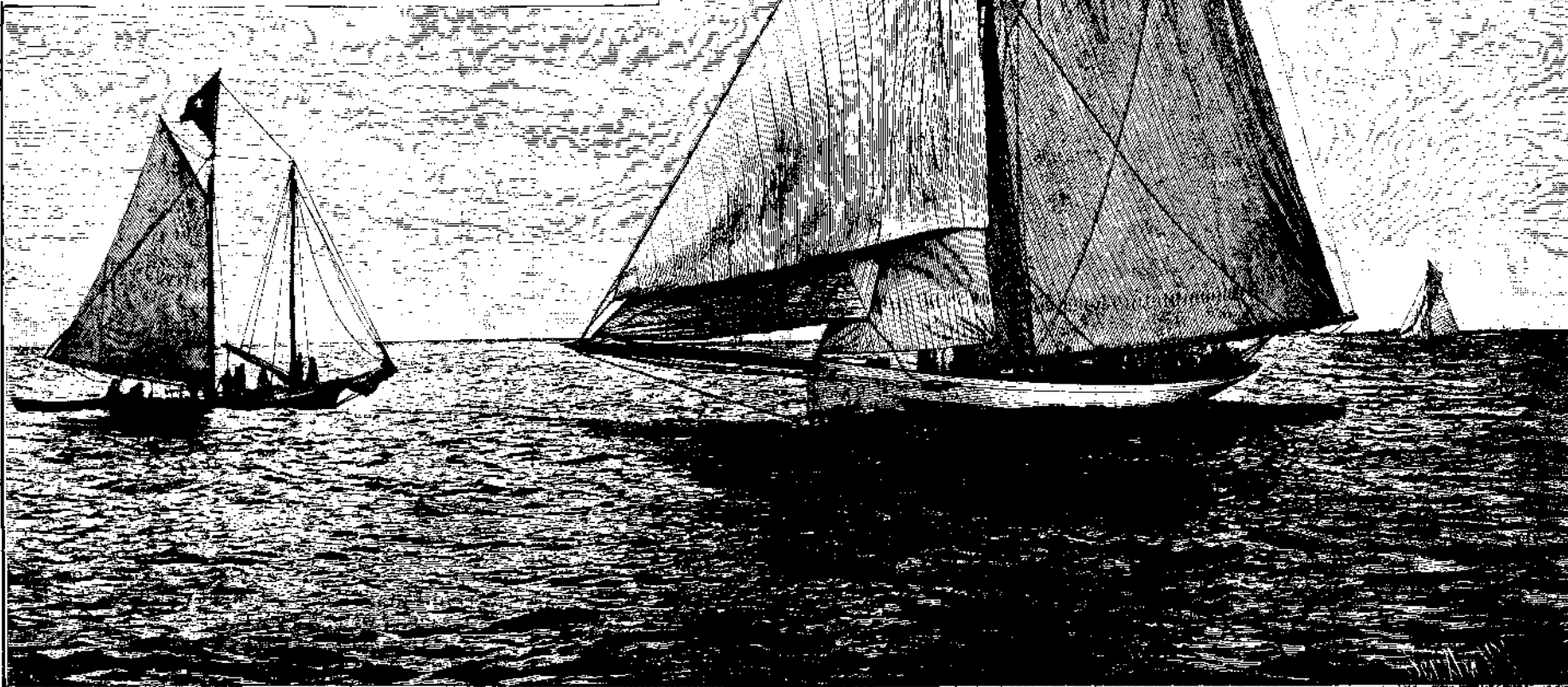
The great differences in width and draught of the two yachts at once mark the broad distinction between the two classes of vessels, the Genesta being of the cutter, or "knife-blade," style, while centerboard sloops like the Puritan are sometimes styled in yachting vernacular "skimming dishes."

The particulars of the Genesta's spars are given as follows: Mast from deck to hounds, 52 feet; topmast from fid to sheave, 47 feet; extreme boom, 70 feet; gaff, 44 feet; bowsprit, outboard, 36 $\frac{1}{2}$ feet; spinnaker boom, 64 feet; club of topsail, 42 feet. While the Genesta has not always been successful heretofore, she is to be credited with a long list of victories, under the most diverse conditions, since her first race, at the regatta of the New Thames Yacht Club, in the spring of 1884. Her passage across the Atlantic from Queenstown was made in twenty-four days under jury rig, that is, a mast and bowsprit two-thirds the length of her racing spars, and a small mainsail.

The cup won by the America in 1851, and which is the subject of the international contest, became the actual property of the owners of that schooner, as a prize won under the offer of the Royal Yacht Squadron of Great Britain, for which all nations were allowed to compete. It is of solid silver, ewer-shaped, and elaborately ornamented, standing two feet high and weighing over 100 ounces. Around its broadest part are medallions variously inscribed, the first inscription being: "One hundred guinea cup, won August 22, 1851, at Cowes, England, by yacht America, at the Royal



THE ENGLISH CUTTER YACHT GENESTA.



THE INTERNATIONAL YACHT RACE.—VIEW OF THE AMERICAN CENTERBOARD YACHT PURITAN.

Yacht Squadron regatta, open to all nations, beating," after which follow the names of all the vessels which started in the race.

The programme for the races was as follows: Sept. 7, outside Sandy Hook, twenty miles to windward and return; Sept. 9, over the regular New York Club course, when, if a third race should become necessary to decide the contest, it was to be sailed over a forty mile triangular course outside Sandy Hook.

A Good Suggestion.

In giving estimates, says one of our contemporaries, do not make your calculations on loose scraps of paper and then throw them away, keeping only a memorandum of the amount.

The Longest Single Span Girder.

The new railroad bridge over the Ohio between Evansville, Ind., and Henderson, Ky., which was formally opened for traffic in the early part of August, enjoys the distinction of having the longest single span girder of any bridge yet constructed.

The bridge at Cincinnati, built several years ago, has a clear span of 515 feet, and was at the time of building the longest railway girder known.

The Effects of Lightning Stroke.

At a recent meeting of the Berlin "Verein fur Innere Medicin," Dr. Liman described the changes present in the bodies of two men who had been killed by lightning when taking shelter under the trees of the Thiergarten.

Decision in Regard to Patent Harrows.

Justice Stanley Matthews has decided in favor of the plaintiffs in the now celebrated case of D. C. and H. C. Reed and Co., patentees of the spring tooth harrow, vs. Chase, Taylor & Co. et al., for infringement of patent, which was tried in the United States Court at Grand Rapids, Mich.

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NEW YORK, SATURDAY, SEPTEMBER 12, 1885.

Contents.

(Illustrated articles are marked with an asterisk.)

Table listing various articles such as American Association, meeting, Heat consumed in a blast furnace, and others with their respective page numbers.

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THE SCIENTIFIC AMERICAN SUPPLEMENT

No. 506,

For the Week Ending September 12, 1885.

Price 10 cents. For sale by all newsdealers.

Table listing contents of the supplement by section: I. CHEMISTRY, II. ENGINEERING, ETC., III. TECHNOLOGY, IV. ARCHITECTURE, V. MEDICINE, HYGIENE, ETC., VI. METEOROLOGY, VII. MISCELLANEOUS.

NEW YORK CABLE ROAD.

New York is now about to have its experience with a surface cable road, and having been a little behind other cities in this respect, it starts out with the advantage of their blunders as a warning.

The Third Avenue Railroad Company has completed its cable line on Tenth Avenue from 125th to 186th Street, and formally opened it to the public on the 29th of August. The constructing engineer, Mr. D. J. Miller, was an assistant on the Chicago Cable Railway, and his experience there suggested several novel features for the New York road.

More specific objections are due to the fact that often they work anything but satisfactorily, and are not always subject to that immediate control which should be an absolute requisite on any road passing through crowded thoroughfares.

The Tenth Avenue Road has therefore removed the essential fault of the system by providing for the contingency of a broken cable. Throughout its entire length, the road is constructed with a double cable. Both are contained in the same tube, so that in case of accident to one, it will be a matter of but a few minutes to put the other in operation.

The motive power plant is located at 128th Street and Tenth Avenue, where a handsome building of iron and moulded brick, 100 by 200 feet, has been erected, and furnishes ample and well arranged accommodation. The engines and cable gearing are placed in the basement.

A considerable speed is claimed for the new road. The round trip of 6 1/4 miles, it is stated, can be made in 40 minutes.

SUBMARINE WARFARE.

The probability that the not distant future will see the perfection of the submarine torpedo boat and ram furnishes still another argument against the construction of great forts for harbor defense.