## Scientific American.

## FIFTY YEARS OF INTERNATIONAL YACHT RACING.

I. SCHOONER TO SLOOP.

On a certain Friday morning late in the summer of the year of our Lord 1851, the year of the great World's Fair in London, there was gathered in the famous roadstead off Cowes, Isle of Wight, such a concourse of yachts and pleasure boats of high and low degree as not even that ancient vachting town had seen in the memory of its oldest inhabitants. It was the occasion of the World's Fair International Regatta, in which foreign yacht clubs had been invited to pit their craft against the fleetest schooners and cutters of the British Isles. The start, after the manner of those days, was to be a "standing" one, or to speak more nautically, it was to be made from an anchorage. The contestants, fifteen in all, were moored abreast in a double line, and at the sound of the starting gun, kites were spread, moorings slipped, and the whole fleet moved off merrily to the eastward before a favoring wind, on their sixtymile race around the Isle of Wight.

The vachts were of all shapes, sizes, and rig, as the following table will show, and the duty of giving to the affair its international flavor devolved upon one rakish-looking schooner, which even to an unpracticed eye presented strong individualities in her model, rig, and sail-plan.

CONTESTANTS FOR THE ROYAL SQUADRON \$500 CUP.

Name.	Tonnage.	Rig.
Brilliant"	. 392	Three-masted schooner
'Constance "	218	Schooner
'Wyvern'	205	"
'Alarm''	198	Cutter
America "	170	Schooner
Beatrice "	. 161	"
'Gyneg Queen "	160	**
'Gypag Queen ''	84	Cutter
· Mona "	62	Out to
'Ione"		Schooner
'Freak''		Cutter
'Eclipse''		66
· Volante ''	.1 48	
'Aurora''	1 47	**

The schooner was the yacht "America," designed and built by George Steers for Commodore John C. Stevens and others of the New York Yacht Club for the express purpose of testing American ideas of yacht construction against those which were current at that time in the mother country, Steers was already famous for his fast pilot boats, and the "America" was modeled and rigged according to prevailing American ideas of that day. Her dimensions were as follows: Length on waterline, 88 feet; length over all, 94 feet; beam, 22½ feet; draught, 11½ feet. She carried a large single jib laced to a boom, a lug foresail, a mainsail laced to the boom, a main topsail, but no foretopmast or foretopsail. In her model the "America" was radically different from the crowd of yachts through which she was steadily threading her way into the leading position. That was the age of the "cod's head and mackerel tail" theories in Great Britain, when it was believed that the ideal form for a racing yacht was that which had the greatest beam at a point well forward of amidships, with a rather bluff bow, a long run and a fine afterbody. In the "America," on the contrary, the point of greatest beam was aft of the center, her bow was long and sharp and her afterbody relatively short and full. But it was in the cut and set of her sails that the stranger presented the greatest contrast to her competitors. The English yachtsmen believed that in order to get the best results out of a sail it should be made somewhat "baggy." The mainsails for instance were cut at the foot in a low sweeping curve which hung well below the boom, to the outer end of which the sail was stretched by the usual tackle. The sails of the "America" on the contrary were laced at the foot to the boom and relatively they set "as flat as" the proverbial "board." The consequence was that while some of the English cutters and schooners held their own fairly well with the "America" down the wind, as soon as sheets were flattened in for that supreme test of a yacht, a thrash to windward, the visitor walked away from the home craft in a way that made the eyes of the British yachting sharps bulge with amazement. When the "America" rounded the Needles for the final stretch back to Cowes none of the fleet was in sight, although the subsequent lightening of the wind enabled the diminutive cutter "Aurora," of 47 tons, to overhaul the 170-ton schooner and finish but 24 minutes astern in a race of 10 hours and 34 minutes. This race was sailed, be it said, with no allowance for tonnage; but had such an allowance been made, the "America" would still have beaten the little "Aurora," though by the narrow margin of two minutes.

Such, in brief, is the history of the winning of the Royal Yacht Squadron five hundred dollar cup-popularly, but erroneously, known as the Queen's cup. There was an international race in the same month of August for the Queen's cup over the same course, the Royal Yacht Squadron having decided to throw the prize open to all the world on condition that time allowance would have to be given to the smaller vessels; but the "America" did not enter. The cup won by her and brought to this country is named after the famous

schooner, and should always be spoken of as the "America" cup.

THE FIRST CHALLENGE-"CAMBRIA."

Associated with Commodore John C. Stevens in the ownership of "America" were Hamilton Weeks, George L. Schuyler, James Hamilton, and J. B. Finlay. The death of the Commodore in 1857 ied to the presentation of the "America" cup by the owners to the New York Yacht Club to be held as a perpetual international challenge cup. The secretary of the club lost no time in forwarding to the leading yacht clubs of the world a statement of the fact and purpose of the transfer of the cup; and having done this he awaited the arrival of a challenge. The wait was a long one, for it was not until the fall of 1868 that a communication was received from an English yachtsman, Mr. James Asbury, suggesting that a "champion schooner" should be sent over the following year "to take part in the matches of the Royal Yacht Squadron," and offering also to race his own schooner, the "Cambria," against the said vessel round Long Island "for the final possession of the 'America's' Queen's (sic) cup of 1851." After a lengthy correspondence, in which Mr. Asbury, among other things, endeavored to bar out the centerboard, the terms of the match were drawn up satisfactory to both parties.

The "Cambria," a deep-keel schooner, was launched in 1868, from Ratsey's famous yard at Cowes-the same Ratsey, by the way, that is responsible for the muchadmired sails of the challenger of the present year, "Shamrock." Her leading dimensions were as follows: Waterline length, 108 feet; beam, 21 feet; draught, 12 feet. She had 4 tons of lead on her keel, and 21 tons of lead stowed inside between her frames. Taken all round, she was a capable boat, and a worthy representative of the English racing schooner of that day. To lend additional zest to her visit, James Gordon Bennett, owner of the big schooner "Dauntless," 1161/2 feet on the water line by 26 feet 7 inches beam, challenged Mr. Asbury to a westward race across the Atlantic. which challenge was accepted. The start was made on July 4, 1870, and the race was won by the "Cambria," which passed Sandy Hook 1 hour and 17 ininutes ahead of the American boat.

The race for the "America" cup took place August 8, 1870, and it was sailed under similar conditions to those under which, 19 years before, the "America" had defeated a fleet of English yachts. The fastest schooners of the New York Yacht Club gathered off Stapleton, S. I., and the start was made from an anchorage. At the weather end of the line was the "Cambria," and next to her the famous "America," resolved to prove that the nineteen years of intervening time since she won the cup had robbed her of none of her old-time speed. In addition to the "America," no less than six fast keel schooners chafed at their moorings, and if they should fail to outfoot the English yacht, there was a fleet of sixteen centerboard schooners to be reckoned with, among which were such fliers as the "Magic," "Idler," "Madeline," and "Silvie." The race was sailed over the New York Yacht Club course, and at the sound of the starting gun it was trip anchor and hoist sail. The "Magic" was the first away, and at the lightship she was leading the second boat, the "Idler," by over 5 minutes, the "America" by 12 minutes, and the "Cambria" by 24 minutes and 3 seconds. She held her lead to the finish, beating the "Cambria" by 27 minutes and 3 seconds actual time. The "Cambria" finished in the tenth position, being beaten by two keel and seven centerboard schooners. On corrected time the "Cambria" was beaten by the "Magic" 39 minutes and 12 seconds and by the old "America" 13 minutes and 47 seconds. It was evident that the "America" cup was in no danger of being captured by the English schooners of that day. Compared with the "Cambria," the "Magic" was a small boat. Her waterline length was 79 feet, beam 20 feet, and she was of only 97 tons to the "Cambria's" 227

SECOND CHALLENGE-"LIVONIA."

Mr. Asbury was not discouraged by his defeat, and immediately on his return to England, he ordered a new schooner from Ratsey, to be named the "Livonia. Her dimensions were as follows: Waterline length, 115 feet 2 inches; beam, 23 feet 7 inches; draught, 12 feet 6 inches; tonnage, 264 tons, , Mr. Asbury's second challenge came through the Royal Harwich Yacht Club, and after much discussion, first in England and then in America, in which the New York Yacht Club made the concession that the "Livonia" should sail against one selected vessel and not against a whole fleet, it was decided that seven races should be sailed, the New York Yacht Club to select its champion on the day of the race. The first race was to be over the Yacht Club course, and the succeeding races were to be held alternately off Sandy Hook and over the club course.

On October 16, 1871, the day of the first race, there was a light wind blowing, and accordingly the "Columbia," a remarkable light-weather boat, was selected. The start was made from an anchorage, and the shoaldraught centerboard, taking the lead at the very outset, drew steadily ahead and finished 25 minutes 28 seconds in the lead.

For the second race, 20 miles to windward and return, the "Columbia" was again selected. In this race the "Livonia" did better and led to the outer mark, but she was beaten in the run home, the "Columbia" winning by 10 minutes 33 seconds corrected time.

On the day of the third race the wind was fresh, and accordingly the big keel schooner "Dauntless" was chosen to meet the challenger. Just before starting she met with an accident, however, which led to the "Columbia" taking her place. The strong wind was not to her liking, and she met with a series of mishaps including the disablement of the steering gear, which led to the "Livonia" winning by 15 minutes 10 seconds; this, by the way, being the only race in the whole fifty years of contests in which the English yacht has won.

In the fourth race the "Livonia" was confronted by the big keel schooner "Sappho," of 310 tons. This splendid craft had the following dimensions: Waterline length, 120 feet; beam, 24 feet 9 inches; draught, 12 feet 6 inches. She held the record to Queenstown of 12 days 9 hours 36 minutes, and the defeat of the "Livonia" was inevitable. The race was over the outside course, and in the twenty mile thrash to windward she beat the challenger by 27 minutes 35 seconds; finally winning the race by 30 minutes 21 seconds. In the last race, held over the club course, the "Livonia" was again beaten, this time by 25 minutes 27 seconds.

THIRD CHALLENGE-"COUNTESS OF DUFFERIN."

The next challenge came from the Royal Canadian Yacht Club, and after the usual correspondence, the club made a second important concession, this time to the effect that they would select a single cup defender several days before the day of the first race. This was a manifestly fair and sportsmanlike decision, and placed the challenging and defending yachts on equal grounds. The centerboard schooner "Madeline," which had already amply demonstrated her superiority to the other fast schooners of the club, was selected. She was a typical shoal-draught, broad-hulled schooner, with a length over all of 106 feet, a beam of 24 feet, and a draught of 7 feet 4 inches. The challenger, which bore the name "Countess of Dufferin," was a centerboard schooner of even more pronounced character than the "Madeline," drawing about a foot less water on practically the same length and beam; her over all length being 107 feet, her beam 24 feet, and her draught 6 feet 6 inches.

Although the Canadian boat certainly made a more creditable showing than the "Cambria" and "Livonia," it was the same old story. In both races the "Madeline" took the lead at once and was never headed. In the first race, sailed on August 11, 1876, she came in a winner by the comfortable margin of 10 minutes 59 seconds; and in the second race, sailed in a very light wind, she won by 27 minutes 14 seconds. It should be mentioned that the brave old "America," now in her twenty-sixth year, requested to be allowed to sail over the course, and her time, taken by the regatta committee, showed that she had beaten the Canadian yacht by 19 minutes and 9 seconds—a striking testimony to the superb qualities of George Steers' epoch-marking vessel.

## FOURTH CHALLENGE-" ATALANTA."

Nothing daunted by their defeat, the Canadians resolved upon another trial in New York waters, and Mr. Alexander Cuthbert, the builder and captain of the "Countess of Dufferin," was commissioned to build a 64-foot centerboard sloop for the purpose, a challenge being meanwhile sent on behalf of the Bay of Quinte Yacht Club, of Belleville, Ontario. The "Atalanta," as she was called, was 70 feet over all, 64 feet on the waterline, and had a beam of 19 feet and a draught of only 5 feet 6 inches. The New York Yacht Club possessed already several very fast sloops, and it was now for the first time that the present custom of sailing a series of trial races for the purpose of selecting a yacht to defend the cup was followed. The choice fell upon the sloop "Mischief," a centerboard sloop, 61 feet on the waterline, 20 feet beam, and 5 feet draught, designed by A. Carey Smith. Two races were sailed November 8 and 10, 1881, in which the Canadian yacht was hopelessly beaten, the "Mischief" winning by the wide margin of 28 minutes 2014 seconds in the first race and 38 minutes 54 seconds in the second. In both these races it was mainly the fine qualities of the American yacht in going to windward that enabled her to cross the finish with such an overwhelming

(To be continued.)

THE city of New York has made an appropriation of \$10,000 for the purpose of making a great relief map of the whole city. The map will be in the neighborhood of 50 feet square, and will show all the important public and private buildings. There will be sectional views of some of our great office buildings, together with models of the best sailing and steam yachts. Buffalo will also be represented in probably the same manner, with a relief map which will show Niagara Falls and its power plants.