

DRAWN BY G. H. WHITTLE.

FROM A PHOTOGRAPH BY PURVIANCE.

BEFORE THE WIND.—THE "MAYFLOWER" LEADING THE "PURITAN" AND THE "ATLANTIC"; THE "FRISCILLA" ON THE RIGHT.

## CUP DEFENDERS OLD AND NEW.

OWING to the interest of the more recent contests for the *America's* cup, we are apt to forget that the trophy was established by accident, and that the first races for it were far different from the present ones. Though the use of vessels for purely pleasure purposes in America dates back much farther, it was not until about 1840 that the building and racing of yachts became general. During the following decade great progress was made, largely under the fostering care of Messrs. Stevens, of Hoboken, N. J., and some very fast yachts were turned out from New York yards, together with equally speedy pilot-boats, then similar in size and model to the larger yachts. Toward the end of 1850 many invitations were sent to Americans to participate in the World's Fair to be held in the following year at London, and the suggestion was made from England that some of the fast New York yachts or pilot-boats would be very welcome at the coming gathering of the British fleet at Cowes. Acting on this idea, some members of the then newly formed New York Yacht Club, headed by Commodore John C. Stevens and his brother Edwin A. Stevens, ordered a yacht from the leading builder, George Steers, for the purpose of crossing the Atlantic. The *America*, as she was named, was completed, and crossed to Havre, and later to Cowes, early in the summer of 1851; but after her first display of speed she could find no competitor among the British fleet. Although no single yacht save one was willing to accept

the challenge of Commodore Stevens for a match, an open regatta was set for August 22, the prize being a special cup offered, not by Queen Victoria, but by the Royal Yacht Squadron, open to yachts of all nations. After some hesitation, Commodore Stevens finally decided to start, and the *America* was one of the fifteen yachts which came to the line off Cowes.

While the yachts of both nations were still of the "cod's head and mackerel's tail" model formerly considered indispensable to speed, Mr. Steers had for some years experimented in exactly the opposite direction, making the bows very fine and the stern proportionately fuller. With this difference in model was a corresponding one in the cut of the *America's* sails, which were made to sit as flat as possible, while those of the opposing fleet were cut, according to the prevailing theories, with an extravagant amount of fullness or "bag." Out of the fleet of fourteen boats, all but three smaller than she, there was not one which could in any way compare with the *America* in speed. The race, as it happened, was no real test of merit, being largely a drift in tidal waters; the great point was the freely conceded superiority of the "Yankee" schooner. However, the *America* won the cup, to which little importance was attached at the time; she was sold to a British nobleman, Lord de Blaquière, and her owners returned home, leaving the British builders and shipwrights busy altering over the fleet; putting "*America* bows" on them, often regardless of rhyme or



reason, just as we have since seen "*Gloriana bows*" clapped on to everything that floats. The Royal Yacht Squadron Cup by common consent became the property of Commodore Stevens, the moving spirit of the *America* expedition. Finally, the question of some permanent and fitting disposition of the relic came up, and was solved on July 8, 1857, by its dedication as "perpetually a challenge cup for friendly competition between foreign countries." The trophy now assumed a new value far out of proportion to its cost or even the circumstances of its winning; and in place of being

This challenge came from Mr. James Ashbury, representing the Royal Thames Yacht Club, owner of the schooner *Cambria*, which, though not the fastest of her class, was a stanch, sturdy, and thoroughly comfortable sea-going vessel, a keel craft of good model, widely different from the antiquated tubs which the *America* had met twenty years before. She sailed in by Sandy Hook on July 25, 1870, a few hours ahead of the *Dauntless*, after a race from off Daunt Head, on the Irish coast, and the New York Yacht Club was for the first time confronted with the problem of choosing a de-



FROM A PHOTOGRAPH BY J. S. JOHNSTON.

THE CUP-WINNER "AMERICA," IN LATTER-DAY RIG.

forgotten after a few years, like the ordinary Queen's cups and most challenge cups, it was destined to become more and more famous with each successive contest.

After the race of 1851, yachting went on quietly in America. With the end of the civil war came the era of the big schooners. The famous ocean race in December, 1866, between the three American schooners *Henrietta*, *Fleetwing*, and *Vesta*, with other visits of the *Sappho* and *Dauntless* to British waters, together with the marked improvement in the British fleet since the visit of the *America*, finally led to the first challenge for the cup held in trust by the New York Yacht club.

fender for the *America's* cup. The solution was simple, since the club decided that its entire fleet must be pitted against the visitor.

In accordance with this decision, there came to the line off Stapleton, Staten Island, on August 8, 1870, a fleet of twenty-three schooners: seven keel—*Dauntless*, *Fleetwing*, *America*, *Rambler*, *Alarm*, *Tarolinta*, and *Restless*; and sixteen center-board—*Magic*, *Palmer*, *Calypso*, *Fleur de Lys*, *Widgeon*, *Josephine*, *Halcyon*, *Tidal Wave*, *Jessie*, *Phantom*, *Era*, *Madeline*, *Madgie*, *Silvie*, *Idler*, and *Alice*. Against this fleet, many of them built and sparred especially for light summer weather, and sailing over the crooked tidal course in New York





FROM A PHOTOGRAPH.

THE "SHADOW," THE HERRESHOFF TYPE OF 1871.

Bay, the stranger's defeat was a foregone conclusion; and she was but tenth of the fifteen yachts which finished. Like the first race around the Isle of Wight, the course was unfair and the race of no value as a true test; but even under much more favorable conditions the majority of the American fleet would have beaten the sturdy Britisher in ordinary weather. The first of the American fleet, by courtesy the first cup defender, although that honor was really shared by eight others, including the *America*, was the little *Magic*, a fast center-board schooner, a typical American yacht of the day. She was modeled and built in 1857 by R. F. Loper, at Philadelphia, as a sloop, being changed in course of years and various successive rebuildings to a schooner of 78 feet water-line, 20 feet 9 inches beam,

and 6 feet 8 inches draft. She is still in the fleet of the New York Yacht Club.

In this race the *America* was fourth at the finish. She was at the time in the service of the United States, nominally as a practice vessel for the cadets of the Naval Academy, having been rebuilt in England, used as a despatch-boat for the Confederate government, sunk for a year in the St. John's River, and raised and refitted by the United States. Considering that she was fitted out in man-of-war fashion and sailed by naval officers, her performance among the crack racers of the fleet was but another evidence of her original superiority. These first two cup races were sailed by existing yachts of the day, many of them very old craft; but for the next race, in the following year, the

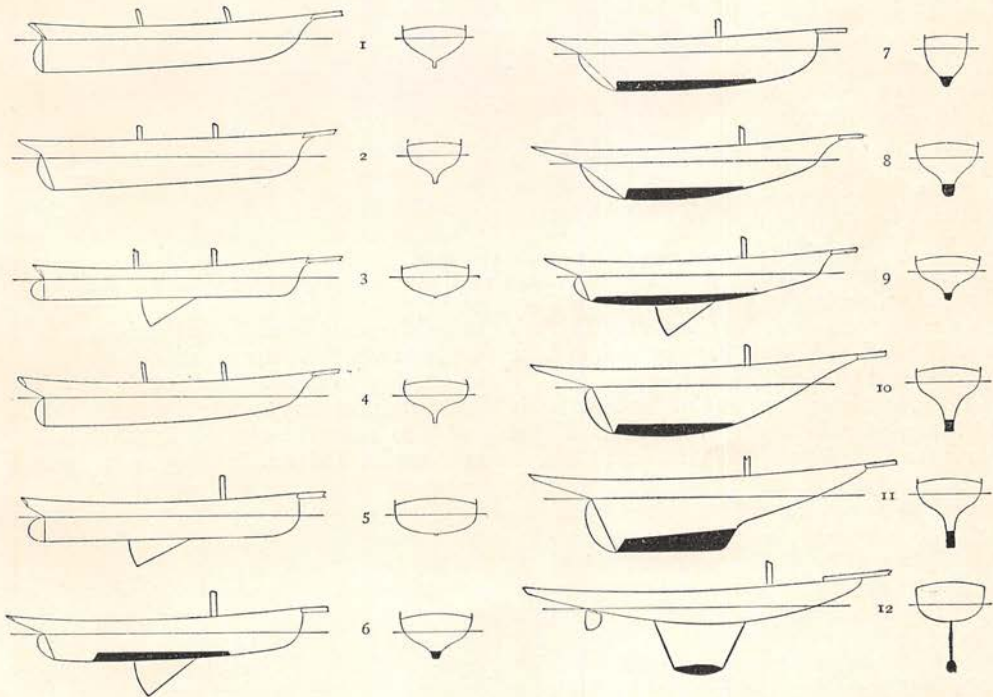
yacht *Livonia* was built, for the special purpose of competing for the cup, by Michael Ratsey, of Cowes, for Mr. Ashbury. Although intended specially for racing in America, she was of the same general type as the *Cambria*, but of improved model, a sturdy keel schooner of the prevailing heavy wooden build. While she was building there came about a great change of opinion as to the mode of defending the cup, and through the protests of some influential members of the club, as well as Mr. Ashbury, it was decided not only to sail a series of races in place of a single race, but to put one yacht, and not the whole fleet, against the challenger. At the same time the club declined to name one yacht alone for the entire series, but asserted the right to select at will a competitor for each race. The final decision, however, was



to limit the selection to four, and the *Sappho* and *Dauntless* of the keel schooners, and the *Columbia* and *Palmer* of the center-boards, were selected as the quartet of cup defenders. Five races in all out of the series of seven were sailed, the *Columbia* winning two and losing one, while the *Sappho* won two. The former yacht was just off the stocks, a center-board schooner of the national type, 96 feet water-line, 25 feet beam, and only 6 feet draft, modeled and built by J. B. Van Deusen, a builder of some prominence. The keel representative, *Sappho*, one of the historic yachts of the American fleet, was modeled and built by Poillon Brothers, the New York builders, in 1867, and was by no means a success at the start, but in 1869 she was materially improved by the process of "hipping" carried out by the late Captain Robert Fish. The planking was removed along each bilge, the timbers were built out to increase the beam,

very different conditions,—five races in place of one, two of them outside Sandy Hook, and with but a single boat in place of a fleet,—this contest was really a test of merit, which those of 1851 and 1870 were not; and in spite of the natural odds against the challenging yacht, the superior speed of the American representatives in both light and heavy weather was fully demonstrated.

In 1876, the Centennial year, a challenge was received from an unlooked-for quarter. The yacht was the *Countess of Dufferin*, modeled and built by Alexander Cuthbert, a Canadian of considerable ability as a modeler, but whose experience was wholly in yachts of the ordinary American type. The new yacht was built for the purpose of challenging for the cup, being owned by a syndicate of Canadian yachtsmen and enrolled in the Royal Canadian Yacht Club, of Toronto, Canada. On her arrival in



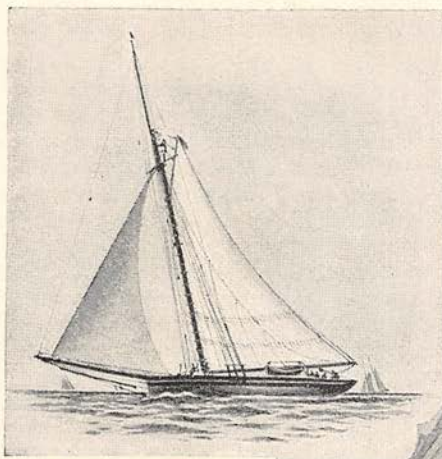
COMPARISON OF OLD AND NEW TYPES.

1. *America*, 1851, water-line 90 feet.—2. *Cambria*, 1868, water-line 100 feet.—3. *Magic*, 1857-69, water-line 79 feet.—4. *Sappho*, 1867, water-line 120 feet.—5. *Mischief*, 1879, water-line 64 feet.—6. *Puritan*, 1884, water-line 81 feet.—7. *Genesta*, 1884, water-line 81 feet.—8. *Thistle*, 1887, water-line 86 feet.—9. *Volunteer*, 1887, water-line 85 feet.—10. *Gloriana*, 1891, water-line 45 feet.—11. *Wasp*, 1892, water-line 46 feet.—12. *El Chico*, 1892, water-line 25 feet.

and new planking laid. In this improved form she began a new career under the ownership of Commodore William P. Douglas. She was in her day one of the notable keel schooners of the American fleet, a typical boat of her kind; in fact both the *Sappho* and *Columbia* were excellent representatives of the ideas and theories of American yachtsmen in 1870. Owing to the

New York in July, 1876, the New York Yacht Club selected the schooner *Madeline* alone to meet the challenger in every race. She was one of the fastest of the center-board division of the fleet, modeled and built by James E. Smith at Nyack, originally a sloop, like the *Magic*, but enlarged and altered from time to time, being almost a new yacht at the time. The two





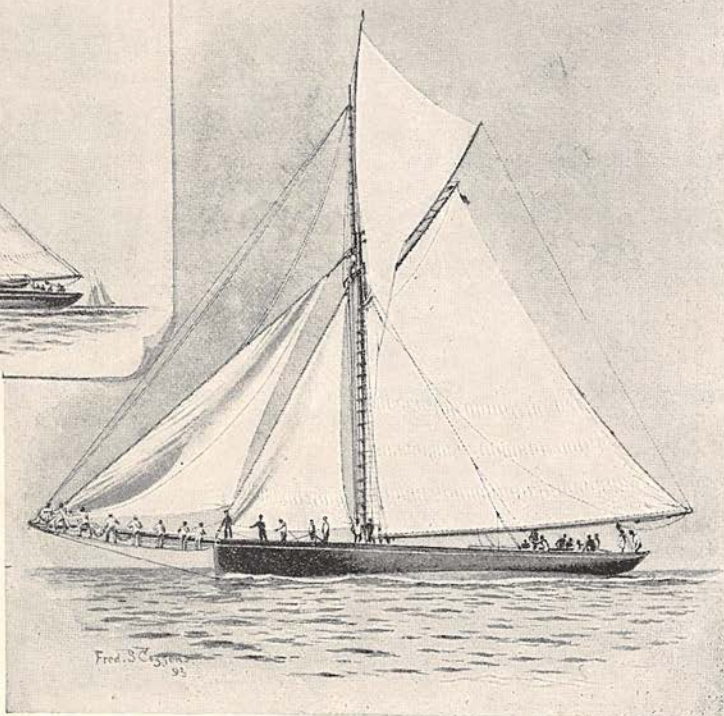
FROM A PHOTOGRAPH BY GUBELMAN.  
THE "MISCHIEF."

yachts were nearly of a size, some 95 feet water-line, 24 feet beam, and 7 feet draft, and the difference in point of model was not very great; but the Canadian yacht was very much inferior in construction, finish, and rig, her owners lacking the necessary capital for such an enterprise.

As a matter of course, the *Countess of Dufferin* was defeated, and found her way back to Lake Ontario and later to Chicago.

Five years later, Captain Cuthbert was ready to try again for the cup. This time the challenge came from the Bay of Quinte Yacht Club, of Belleville, Canada, and for the first time in the history of the cup it was from a single-stick vessel. The new yacht, the *Atalanta*, was a center-board sloop of the ordinary American type, 64 feet water-line, 19 feet beam, and 5 feet 6 inches draft; in model and also in construction she was superior to the previous challenger, but like her she suffered greatly from inferior finish, sails, and gear, the syndicate which built her having underestimated the expense of the experiment, and being unable to carry it through in such a manner as to do justice to such qualities as the model possessed. This, however, was not known at first, and in view of the similarity of type and the reputation of her builder, it was considered advisable to make certain of a proper defense of the cup.

In order to select the best of the home fleet as a defender, two important principles were introduced into international racing. The time had now come when it was deemed desirable



DRAWN BY FRED S. COZZENS, AFTER A PHOTOGRAPH.  
THE "PRISCILLA," LARGER THAN THE "MISCHIEF," BUT BUILT ON THE SAME LINES.

to build a yacht specially for the defense of the cup, and with this determination, if for no other reason than to tune up and test the new boat, it became necessary to sail a series of trial races.

Up to 1880 the course of yacht-modeling in America had run in very even grooves; systematic designing was unknown, and with very few exceptions yachts were built from small wooden models whittled and carved out by the builders. One type of yacht was in general use, the wide, shoal center-board craft, with high trunk cabin, large open cockpit, ballast all inside (and of iron, or even slag and stone), and a heavy and clumsy wooden construction. Faulty in every way as this type has since been proved, in the absence of any different standard it was considered perfect, and open doubts were expressed of the patriotism if not the sanity of the few American yachtsmen who, about 1877, called into question the merits of the American center-board sloop, and pointed out the opposing qualities of the British cutter,— her non-capsizability, due to the use of lead ballast outside of the hull; her speed in rough water; and the superiority of her rig both in proportions and in mechanical details.



A wordy warfare over these types raged for several years, gaining strength with the building of the first true English cutter, the *Muriel*, in New York in 1878; and bearing good fruit a year later in the launching of the *Mischief*, an American center-board sloop, but modified in accordance with the new theories. The plumb stem, the straight sheer, and higher free-board, with quite a shapely though short overhang, suggested the hull of the cutter, and though quite wide,—nearly 20 feet on 61 feet water-line,—she drew nearly 6 feet. Even with her sloop rig, she was a marked departure from the older boats of her class, especially as she was built of iron in place of wood, and consequently carried her ballast, all lead, at a very low point.

The first trial races ever held for the selection of a cup defender took place in October, 1881; the *Mischief* was awarded the honor. She was hauled out, and under the fostering care of her skipper, old Captain "Than" Clock, was put in as perfect condition as any yacht which has ever raced for the cup, her iron bottom being scraped and sandpapered, carefully painted with red lead, and then covered with successive coats of varnish into which "pot-lead" or graphite was rubbed with brushes until the whole hull of the yacht from plank-sheer to keel shone like a mirror. Above deck the *Mischief* was superior in rigging and canvas to most of the New York fleet of the time, and she came to the line on November 9 for the first race in absolutely faultless racing form. The Canadian champion, on the other hand, though of good model, was lacking in everything which makes a winning yacht: her wooden bottom was rough in spite of planing and painting in New York, her rig and equipment were poor, especially her sails, and she was badly manned and handled. The story of the *Madeline* and the *Countess of Dufferin* was repeated: the *Mischief* won by half an hour in each of the two races sailed, and the cup was again secured to the New York Yacht Club.

As the result of the sloop-and-cutter controversy, there was sent out to New York in the fall of 1881 the little 10-ton racing cutter *Madge*, one of the most successful of her class on the Clyde,—a deep, narrow, lead-keeled craft, with the typical cutter rig. She was owned by Mr. James Coats, of Paisley, Scotland, and his object in sending her to America was to test the type against the American sloop. The *Madge* sailed five races at New York and two at Newport, winning all but one, in which she was beaten by the *Shadow*, a famous Herreshoff sloop of more than usual depth. She also beat the *Shadow* in one of the races at Newport. The success of the *Madge* was encouraging to the cutter contingent, and not a little confusing to their oppo-

nents, but the battle of depth, low weight, and cutter rig was by no means won; there was plenty of fight still left in the sloop party. With the building of the *Bedouin*, a 70-foot cutter, in 1882, the fight went on with renewed vigor, the cutter cause being hindered at times by the failure of some of the larger ones built here, but gaining gradually as the problem became better understood of adapting to American conditions the leading principles of the cutter type; and also as the owners of such cutters as the *Bedouin* and *Oriva* came to know their boats better, and to work them up to racing form. From the performances of the *Bedouin* with the *Gracie* and *Mischief*, it was demonstrated that the modified cutter of moderate beam was at least the equal of the wide center-board sloop.

Although no more sloops were built after the failure of the *Pocahontas* in 1881, several new cutters of large size were added to the British fleet each year; and 1884 saw the launch of two, the *Genesta* and *Irex*. Following the natural course of designing under the old tonnage rule, with its heavy restriction on beam, each of these was a little narrower, deeper, and longer than the existing boats of the class, with greater displacement and sail-area, the *Genesta* being 81 feet water-line, 15 feet beam, 13 feet 6 inches draft, and the *Irex* three feet longer with the same beam and draft. At the end of the season the *Genesta* had shown herself rather better than the *Irex*, and her owner, Sir Richard Sutton, decided to challenge for the *America's* cup. Another British yachtsman, Lieutenant William Henn, R. N., an old sailor and a deep-water cruiser, had long entertained the same ambition; and, encouraged by the *Genesta's* success in her first season, he ordered a yacht from the same designer, Mr. J. Beavor Webb.

The challenge came in December, 1884, in the form of a letter announcing the desire of the owners of the *Genesta* and *Galatea* to sail for the cup. Owing to the peculiar condition attached to the cup by the New York Yacht Club in 1882, by which the challenger was prohibited from giving more than seven months' notice of his intentions, the club declined to give a formal acceptance to the challenge; although it was clearly understood that both challenges would finally be accepted. When the specified time for challenging arrived, the 1st of March, 1885, a formal challenge from both yachts was received and accepted, and the serious question of defending the cup was again before the club. One challenger was ready, the other partly built, and two months of valuable time had been wasted to the defenders through their insistence on an absurd technicality, leaving barely six months for preparation. The task, too, was far more serious than ever before: the challengers were





FROM A PHOTOGRAPH BY G. WEST & SON, SOUTHSEA, ENGLAND.

"GENESTA," "TARA," AND "IREX"—THE BRITISH TYPE OF CUTTER OF 1884-5; "GALATEA," 1885, BELONGING TO THE SAME TYPE.

racing, not cruising, craft; one of known speed, and both considerably larger than the existing American sloops. The question was further complicated by the wide difference of expert opinion among the defenders. While ample proof had been given of the advantages of many points of the cutter, there were still many of the older and more influential yachtsmen who stood by the center-board sloop of the *Arrow-Gracie* era, denouncing every innovation as unpatriotic as well as inherently wrong. The only thing that was universally conceded was the futility of attempting to defend the cup with the existing sloops *Gracie*, *Mischief*, and *Fanny*, and the consequent necessity for the construction of one or more new boats. Again the flag-officers of the New York Yacht Club came personally to the defense of the cup, and Commodore James Gordon Bennett and Vice-Commodore William P. Douglas gave an order to Mr. A. Cary Smith, the designer of the *Mischief*, for a new sloop.

In view of the success of the *Mischief*, and the fact that she was distinctively an American sloop, it was decided to build on the same general model a moderately deep center-board craft, with the proportions of the sloop rig, but with

double headsails. The hull was to be of iron, and, though there was no outside keel, the ballast was consequently much lower than in the old wooden sloops. From the first acceptance of the double challenge the air was full of rumors of cup defenders from all quarters; but as the days went by it seemed as though the new sloop, the *Priscilla*, would have the field to herself. At last, however, there came the news of another yacht from an unlooked-for quarter, to be designed by Edward Burgess, and owned by a syndicate of Boston yachtsmen, members of the Eastern Yacht Club. Mr. Burgess was known as an experienced amateur yachtsman who by a sudden ill turn of fortune had been induced to direct his attention to yacht-designing as a profession, and whose work thus far had aspired no higher than a few small cruising cutters. The stout oak keel of the new *Puritan* was laid upon a lead keel of 27 tons, carried down into a deep projecting keel; the plumb stem, the sheer, and the long counter suggested the British cutter rather than the American sloop; the draft of 8 feet 6 inches was greatly in excess of all of the old center-board boats; and the rig was essentially that of the cutter rather than the sloop, despite the



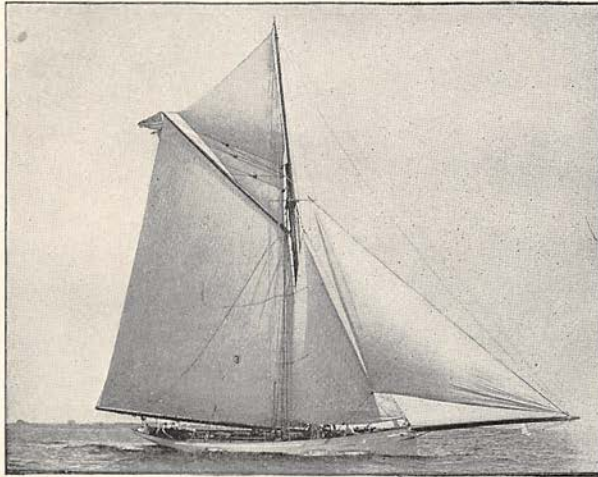
fixed bowsprit and the laced foot to the mainsail. The *Puritan* was ready in good season, making her trial trip June 17, and sailing her first race two weeks later in the annual regatta of the Eastern Yacht Club. In it she not only defeated easily sloops of the 70-foot class, but outsailed the nine schooners entered, beating the old *America* by an hour.

Not until the opening of the New York Yacht Club cruise, a month later, did the two new defenders come together, the result of the first day's run being against the *Priscilla*. Next day they met again in the hard race for the Goe-

won had she been handled as skilfully as her rival.

Of the two interested parties, the Americans were the first to lay the lessons of 1885 to heart, and to profit by them in the general adoption of the still wide but deeper hull with outside lead keel and the cutter rig; which, though properly a "center-board cutter," was delicately alluded to as a "compromise sloop." The delays incident to a first season made it impossible for the *Galatea* to come out with the *Genesta*, and her challenge was postponed to 1886. By this time the excitement of the cup races was at

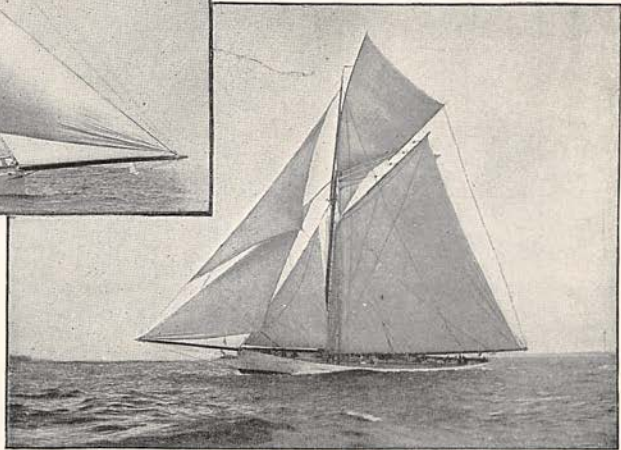
its highest point; the victory of the *Puritan* elated the Eastern yachtsmen and placed those of New York on their mettle to retrieve their laurels. General Paine, the head of the *Puritan* syndicate, was early in the field with a new Burgess boat, the *Mayflower*; the *Puritan*, purchased by another of the syndicate, J. Malcolm Forbes, was ready; the *Pris-*



THE "PURITAN."

let Cup. Again was the *Puritan* the victor, and by over ten minutes. Prior to the trial races, a few weeks later, alterations were made in the *Priscilla*, and she was materially improved from her original form; but the *Puritan's* victory in two out of the three races made her selection by the committee a matter of course, apart from her superiority as evidenced in the whole series of races between the two.

The first of the three cup races was set for September 7, but it was not until the 14th, after four failures, that the race was really made; resulting in a decided victory for the *Puritan* over the inside course on New York Bay and in light and fluky weather. The second, and, as it happened, the last race, was sailed under more satisfactory conditions, a run of twenty miles out to sea before a strengthening wind, and a beat home against a half gale and a heavy sea. Although the *Puritan* was again the victor, the result was so close, and might so easily have been reversed, that the question is still an open one with yachtsmen whether the *Genesta* might not have



FROM PHOTOGRAPHS BY J. S. JOHNSTON AND PURVIANCE.

THE "MAYFLOWER."

*cilla*, in new hands, received important alterations during the winter, and a fourth yacht was begun in New York. Of the challenger, *Galatea*; it was known that she was five feet longer than the *Genesta* on the same beam and draft, a steel cutter, and, in spite of her poor performances in her initial season, presumably as formidable an antagonist as her shorter sister. The *Mayflower* was in effect an enlarged *Puritan*, four feet longer, one foot wider and deeper, with ten tons more lead on the keel, and a larger sail-plan; the construction being the same, all wood. The other new yacht was owned by a syndicate composed of members of the Atlantic Yacht Club, from which she took her name, and was built from a model cut by Philip Ellsworth, the modeler





FROM A PHOTOGRAPH BY N. L. STEBBINS.

THE "VOLUNTEER"—THE CREW SETTING THE JIB-TOPSAIL.

of such noted yachts as the *Comet*, *Montauk*, and *Grayling*.

This year all were ready in good season, the *Mayflower*, in her first race in the Eastern Yacht regatta, showing a dangerous lack of stability which was soon remedied by additional lead on the keel and a reduction of weights aloft. The quartet sailed in all of the spring regattas about New York, and later met on the New York Yacht Club cruise, so that the trial races in September were a mere formality, the *Mayflower* having already won her place at the head of the fleet, with the *Puritan* second. When the cup races came off, in the lightest of weather, they were a disappointment, not only to the friends of the *Galatea*, but to all who wished to see good racing and a decisive test of the yachts; but the result was verified by the subsequent performances of the *Galatea* in American waters, which proved that she was not only inferior to the *Mayflower* and the *Puritan*, but

by no means equal to the *Genesta*. So far as Americans were concerned, the races taught but little this time; it was the other side which gained by the lesson. Lieutenant Henn went home in the fall, leaving his yacht laid up here, and at once entered heartily into the annual agitation for a change of the measurement rule of the Yacht Racing Association, which toward the last of the year reached a successful result. After a very thorough inquiry, in the course of which the leading British designers were called on to give their opinions at length, the old tonnage rule which had done so much both to help and hurt yachting, first in teaching the value of outside ballast, and then in compelling the construction of extremely narrow craft, was finally replaced by a length and sail-area rule very similar to that used for three years by the Seawanhaka Corinthian Yacht Club, and later generally adopted by American clubs.

The first to avail himself of the great free-



dom accorded by the new rule was Mr. George L. Watson, of Glasgow, the designer of the *Madge*. Before the rule was finally adopted he had designed a large yacht to race under it at home, and to seek the long-coveted trophy in foreign waters, and toward the end of the year the keel of the *Thistle* was laid. The radical difference between the *Thistle* and the typical British cutter of the preceding decade was shown in her beam of 20 feet 4 inches as compared with the 15 feet of the *Galatea*, the length and draft being the same, while the *Thistle* carried some 2000 feet more canvas. Although the majority of American yachtsmen were agreed that the new Clyde boat was a far more dangerous antagonist than any that had yet challenged, by common consent the defense of the cup was left to General Paine and Mr. Burgess as soon as it was known that they were ready with a new design. Once more the defending club wasted months of valuable time through refusing to recognize the early challenge of the Royal Clyde Yacht Club, a syndicate of whose members were the owners of the *Thistle*; and not until the stipulated six months' limit was reached, in March, 1887, was the challenge formally accepted and the keel of the *Volunteer* laid. The new yacht differed from the *Mayflower* mainly in added depth and draft, displacement and sail-area, each successive change from the *Puritan* being in the direction of the cutter, although the center-board was still a distinguishing feature. She was, however, of steel like the *Thistle*.

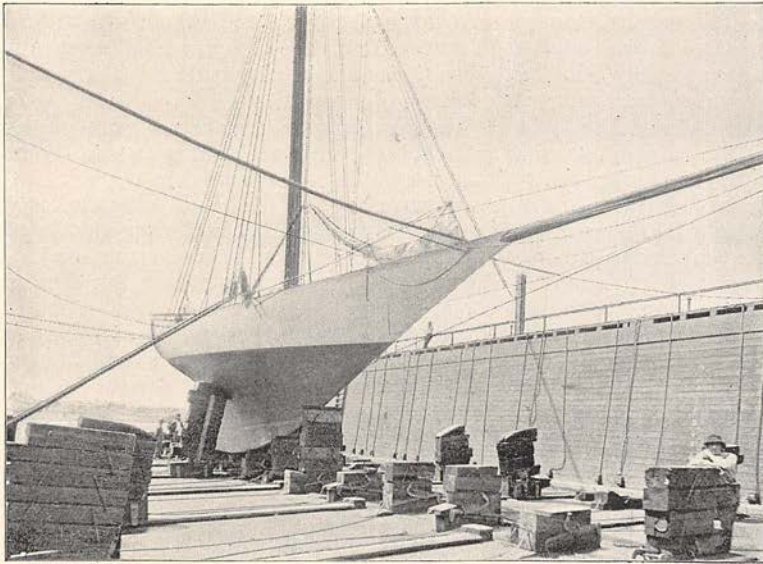
In view of the known points of resemblance and difference, the selection of the *Volunteer* as the defender of the cup was generally assumed from the first. Nor was this assumption incorrect; her performance with the older boats was but a repetition of that of the *Mayflower* in the previous year, so that the trial races, though sailed, were necessary merely for a proper tuning up of the yacht. To everybody's surprise the *Thistle* proved far less formidable than had been anticipated; her very poor performance in the first fluky race over the inside course might be excused in part through the very light wind, and the combination of bad luck and bad judgment shortly after the start; but the second race, outside the Hook, was perfectly fair and conclusive, resulting in a victory for the *Volunteer* by twelve minutes. With the adoption of more stringent conditions of challenge immediately after the *Volunteer's* victory, all contests for the *America's* cup ceased for an indefinite time, and the fleet of large yachts created by the necessity for cup defense disappeared almost as rapidly as it had come into existence. The *Priscilla* was altered below water by the addition of a trough keel and converted into a schooner, being renamed *Elma*; the *Mayflower* and *Atlantic* underwent similar changes of rig, and finally the *Volunteer*

was partly destroyed, and rebuilt with an entirely new forebody, which, with the accompanying change of rig, made her a schooner 90 feet on the water-line.

The stimulus of the great series of races was still felt, however, in the smaller classes. For a time the battle was confined to the work of American designers, the result being a victory for the keel yachts, craft both wide and deep, and with very large sail-plans, as opposed to the new compromise type of wide but shoaler center-boards. But in 1888 there came a small keel cutter, of moderate beam and draft as compared with the American boats, being some 3 feet narrower (10 feet 6 inches beam) and 1 foot shoaler, with nearly 1000 feet less sail. The *Minerva* was designed and built by Will Fife, Jr., of Fairlie, on the Clyde, being especially intended for American rules and climatic conditions. She made the passage from the Clyde to Marblehead on her own bottom, and won the admiration of American yachtsmen no less by her stylish appearance than by her obvious merits in point of speed and ease of handling through her small sail-plan. Her first season was an unbroken series of successes, and she finished her second by winning five out of ten races sailed with the *Gossoon*, a new Burgess boat built specially to beat her, and following her very closely in points of design. The forward course of designing and building was a rapid one in 1888 and 1889, so rapid that by the middle of 1890 the once numerous 40-foot class had dwindled to the *Minerva* and *Gossoon*, one yacht after another being defeated and withdrawing from the races, and by the end of the season it was completely dead. With a view to stimulating a new interest among racingmen, a larger class, 46-feet on the water-line, was started in Boston in the winter of 1890-91, and as a novelty was at first a success. One designer, Mr. Burgess, turned out five new boats for the class, which in all included some nine yachts. Save one Burgess boat, the *Beatrix*, all were keels, wide, deep, and heavily sparsed, a compromise which combined the beam of the old American sloop and the draft, displacement, lead keel, and in part the rig of the British cutter.

Early in the seventies, when the shoal center-board sloop and the schooner were being developed and perfected, there was a blind yacht-builder at Bristol, Rhode Island, who was noted for his many speedy yachts, both open cat-boats and the larger-decked craft: *Sadie*, *Orion*, *Shadow*, *Triton*, *Viking*, *Qui Vive*, *Kelpie*, *Psyche*, *Nimbus*, *Bunsby*, *Clytie*, and many smaller boats. About 1875 Mr. Herreshoff and his brother, Nathaniel G., some years younger, who had been educated as a mechanical engineer, turned their attention from sail-





FROM A PHOTOGRAPH.

THE "GLORIANA" IN DRY DOCK.

ing to steam yachts, and were soon so engrossed in the new business that the old was virtually abandoned. So thoroughly were they occupied with the improvement of hulls and engines, and the perfection of a special type of launch-boiler, that they gave no attention to sailing yachts through all the exciting times of the *Puritan-Genesta* and the following cup races, but contented themselves with turning out the fastest of steam yachts and launches, torpedo and despatch boats. At the same time the sailor instincts of the younger brother kept him always with a small yacht of some kind, a keel cruiser, anchored off his home on Narragansett Bay. The abilities of the Herreshoffs as possible rivals of Mr. Burgess had been frequently discussed by yachtsmen, and when the news came that they proposed to reënter the field of match-sailing with a 46-footer to oppose the Burgess fleet, it was hailed with joy as promising a renewal of the already flagging interest. In spite of vague and startling rumors, comparatively little was known of the new boat until she made her appearance at New York for the spring races in 1891, winning from the start, and carrying all before her throughout the season until the name of *Gloriana* was no less famous than that of *Puritan* or *Volunteer*.

A great part of this fame was due to the peculiar and striking features of her design, which were exaggerated with each succeeding race in the popular reports. Apart from all exaggeration, the new yacht was remarkable as a daring and original departure from the accepted theories of the leading designers, and we must go back to George Steers and the old *America* for a parallel. The radical

points of difference between the *America* and the yachts of her day lay in the fineness of the forward ends of her successive water-lines, giving her a long and easy bow compared with their short bluff entrance. In the case of the *Gloriana*, as compared with her immediate predecessors on both sides of the ocean, the difference lay in the radical cutting away of the bulk under water, while preserving the full area of the load water-plane, and even

an excess of bulk above water; the result being a maximum of stability through the extended area of the load water-plane, aided by the very low position of the ballast in the deep keel; the reduction of all useless frictional surface through the cutting away of the deadwood forward; and the production of a form which, through its smooth round diagonals, was easy to drive, and which changed but little as the yacht pitched and scended. Coupled with these important features was another which by its instant appeal to the eye attracted a degree of attention which it did not deserve, and claimed a credit which by no means belonged to it. The ends of the boat, not only aft but forward, were carried out to an extravagant length, the total overhang of bow and stern being over 25 feet on a water-line length of but 45 feet. Two important factors in the *Gloriana's* success were the very light construction of the hull, a double skin of thin wood on steel frames, and the perfection of every detail of her rigging and canvas; the yacht being not merely well handled, principally by her designer, Mr. N. G. Herreshoff, but kept up to perfect racing form all the season. The restless mind of her designer was not satisfied even with the success of the *Gloriana*, though it placed his name once more at the top of the list, but during the fall of 1891 he was quietly at work on a still more radical departure. Under the stimulus of much building and close racing, the tendency under the new British rule to extreme length and reduced displacement, with an accompanying cutting away of the midship section, and also of the deadwood forward and aft, was becoming stronger every



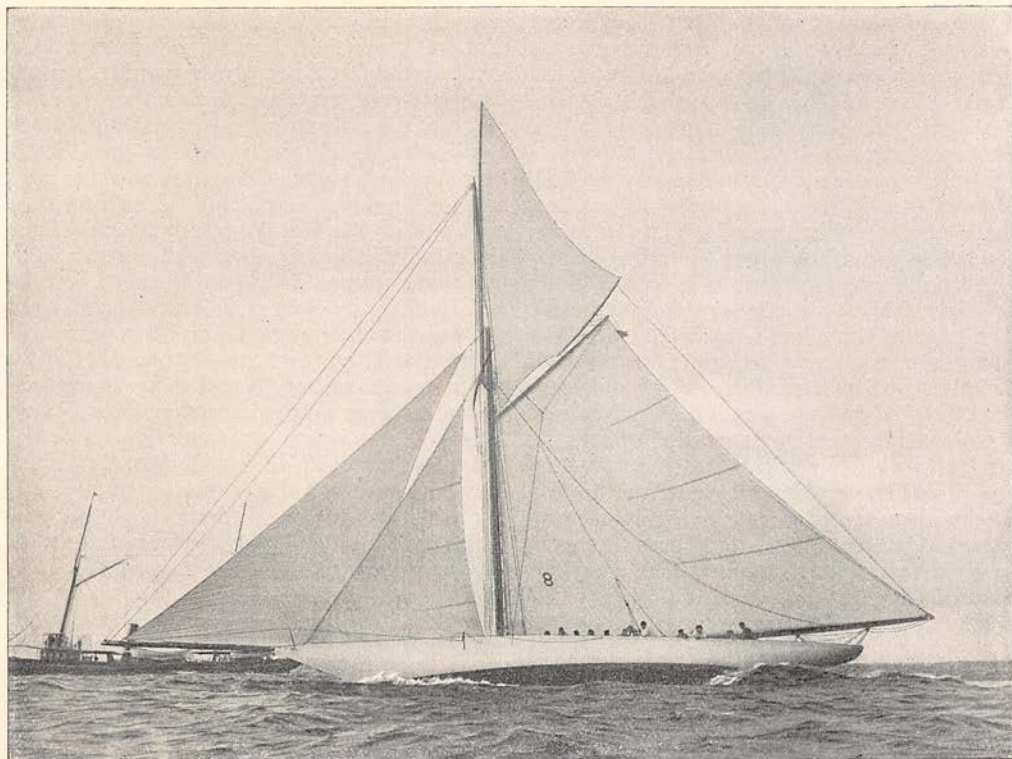
year; and in the smaller classes the winning boats were largely of shoal depth of body, but with a deep lead fin, equivalent in form to the center-board. Taking up the same line of experiment, Mr. Herreshoff produced a 25-foot boat aptly named the *Dilemma*, a shoal, canoe-like hull with the very full water-line and long ends of the *Gloriana*, and with a deep keel made of a nearly rectangular plate of steel; the ballast, on which alone she relied for her stability, being in the form of a lead cylinder or cigar bolted to the lower edge of the fin. The trials of this novel boat at the end of the season were so successful that the firm received orders from all quarters for the new "fin-keels." One, the *Wenonah*, was sent to the Clyde, where she won nearly every race against a fine fleet, the work of the leading British designers; another, the *Wee Win*, only 16-foot water-line, made a similar clean record about Southampton; and a third, *El Chico*, sailed a very successful season in New York waters. Beside these boats the Herreshoffs were called upon to defeat last year's champion, the *Gloriana*, in the 46-foot class, a task which they accomplished in the *Wasp*, an improved *Gloriana*, still fuller on the water-line, but so cut away below as to approach very closely to the extreme type, the fin-keel.

The ending of the season of 1892 was perhaps more discouraging, from a yachting standpoint, than any that has preceded it for some years. There was visible no sign of a revival of racing in the older classes, the mainstay of racing since the last cup contest; the 40-foot, the 30-foot, the 46-foot, and even the 21-foot, were either dead or in a moribund condition. It was then with gratification that the yachting world received the news of a large racing yacht from each side of the Atlantic. The Earl of Dunraven, whose name has been known to Americans for the past three years as a probable challenger for the *America's* cup, is a new addition to the limited list of British racing-owners, his first yacht, the cutter *Petronilla*, having been built in 1888. His first challenge was sent in 1889, the yacht being a 70-footer, the *Valkyrie*, a keel cutter designed by Mr. Watson; but on account of a disagreement over the altered terms under which the cup was offered, the challenge was withdrawn. Rumor of a second challenge was rife, and in September, 1892, a letter was received from Lord Dunraven which led a little later to the acceptance of a formal challenge from the Royal Yacht Squadron on his behalf, the challenging yacht being announced as a second *Valkyrie* by name, an 85-foot cutter designed by Mr. Watson. Just prior to the receipt of Lord Dunraven's notice of challenge it became known that the Herreshoffs had received an order for a large yacht, all particulars of size and ownership

being carefully withheld at first. By the time that work was commenced, however, it became known that the owner was Mr. Royal Phelps Carroll, and that his object was to visit England for a season of racing, including the challenging for the two American cups taken home by the *Genesta* in 1885, the Cape May cup and the Brenton's Reef cup, and also for the gold cup of the Royal Victoria Yacht Club, a new international trophy established in 1890, but never yet raced for. When the *Navahoe* was launched in February, it was found that she was not an extreme fin-keel, but nearer in type to the *Wasp*, an intermediate step between the normal modern type and the extreme fin. Her approximate dimensions are: length over all, 128 feet; length on water-line, 84 feet; beam, 23 feet; draft, 12 feet 6 inches. The long overhang at each end, as in the *Wasp*, gives an excessive length on deck, the form of the ends being similar to the *Wasp*, the lines, both vertical and horizontal, being round and full. The keel is nearly straight for the greater part of its length, the stern-post has but a moderate rake, and the stem is well cut away below water. Owing to her limited draft, a center-board is used, a steel plate  $1\frac{1}{2}$  inches thick and of 3 tons weight. The sail-plan is considerably larger than that of the *Volunteer*, the largest of the boats of the 1885-87 races. The hull, of course, is of steel; the interior is fully fitted up for life aboard during a season's cruising; but at the same time the interior work is as light as possible.

To meet the second *Valkyrie*, a syndicate was formed in the New York Yacht Club, headed by Mr. Archibald Rogers, owner of the *Wasp*, and an order was placed with the Herreshoffs for an 85-footer still more like that craft than the *Navahoe*, in that she is a keel boat. This yacht, named the *Colonia*, is of similar length to the *Navahoe*, but 1 foot wider, 24 feet beam, and of about 16 feet draft, the keel being of the same peculiar outline as the *Wasp's*. Following the Rogers syndicate came a second to Bristol, headed by Commodore Morgan and Mr. C. Oliver Iselin, their yacht being a departure from the other in beam, being 26 feet wide, with a center-board, draft 13 feet. Her chief peculiarity lies in the plating, the entire bottom and center-board trunk being of "Tobin bronze," a very strong non-corrosive alloy, similar in its general nature to brass or gun-metal. Owing to its smooth surface and the absence of scale, it is used in this case in place of steel, the serious objection holding against the latter that it is never at its best during the first season, a certain amount of rusting being necessary to remove the scale formed in rolling, and to make a smooth surface of metal which will hold paint. The Tobin bronze, being smooth and polished





FROM A PHOTOGRAPH BY J. S. JOHNSTON.

THE "GLORIANA" AT THE FINISH, IN THE GOELET CUP RACE, 1891.

from the first, makes an excellent racing bottom of itself, no paint being required.

With its old-time spirit Boston has also come to the defense of the trophy with two new yachts. Although the results of the racing in 1892 had demonstrated the strong points of the extreme fin type, in the three Herreshoff boats the designer had gone but half-way toward the fin, leaving a promising field open to other designers. The Boston men have transferred the fin-keel experiment from the smaller to the largest classes. The first boat was designed by Mr. John B. Paine, a talented young amateur, son of General Paine, in conjunction with his father,—a fin-keel of about 85 feet water-line, 22 feet 6 inches beam, and 13 feet 6 inches draft. The hull, with a total overhang of 35 feet, is essentially a big canoe, the depth of the hull proper being about 5 feet, the rest being made up by the steel fin with its weight of ballast below. Through this fin a center-board rises and falls, giving the necessary area of lateral plane, while near the fore end of the water-line is a second and smaller center-board. The second boat, the *Pilgrim*, owned by a syndicate of Boston yachtsmen, was designed by Messrs. Stewart

and Binney, associates of the late Mr. Burgess and his successors in the business. She goes still further than the Paine boat, though of the same approximate dimensions and form, in that she has no center-board, but an extreme draft of 22 feet, the greatest ever found in a sailing yacht. Of the yacht which will oppose the chosen one of this quartet in the final races for the *America's cup*, nothing definite is known at the time this article goes to press, save that she is of about 85 feet water-line, of composite build, designed by Mr. Watson, and built by Henderson Brothers, the designer and builders of the *Thistle*, and that she will bear the name of Lord Dunraven's former yacht *Valkyrie*. To meet the *Navahoe* in British waters, three yachts have been built, all keel cutters of an extreme type, but none of them true fin-keels: the *Britannia*, designed by Mr. Watson, is owned by the Prince of Wales; the *Calluna*, designed by Mr. Fife, by a syndicate of Clyde yachtsmen; and the *Satanita*, designed by Mr. J. M. Soper, is owned by Mr. A. D. Clarke. The various meetings of this grand racing fleet on both sides of the Atlantic promise a yachting season such as has never been approached in the past.

*W. P. Stephens.*