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The Editor is always glad to receive for examination illustrated articles on subjects of timely interest. If the photographs are sharp, the articles short, and the facts authentic, the contributions will receive special attention. Accepted articles will be paid for at regular space rates.

## PEARY'S ARCTIC DISCOVERIES.

The greatest credit is due to that indomitable explorer, Lieutenant Peary, for his latest work in defining the geography of the Arctic regions. Although he has not as yet succeeded in reaching the North Pole, or, indeed, in traveling as far north as did Nansen and Abuzzi, he has made a contribution to our knowledge of the Arctic regions which, in extent and usefulness, compares favorably with the work of any previous explorers, and may be regarded as an ample return for the risks and labors of his long season of exploration. As a result of his work around the northern coast of Greenland, the geographical boundaries of the great island of the northern hemisphere are now defined with scientific accuracy. The only break in the coast line consists of a short length of unsurveyed land between Independence Bay—so named by Peary at the time of its discovery, nine years ago—and Cape Bismarck on the east coast of Greenland. Thus the explorations of Greenland, which have been in progress now for a thousand years past, are practically completed by Peary's arduous labors and thoroughly scientific methods. His work, stated in detail, consists of surveying that portion of the coast line of Melville Bay on the west of Greenland; a survey of the entire northwestern, north and northeastern coast as far south as Independence Bay; and the accurate mapping out of the channel which extends through Smith's Sound to the Arctic Ocean on the north coast of Greenland. Peary has also traveled 2,400 miles on the great inland ice cap, and has located its extreme northern limits; twice he has crossed Grinnell Land; and he has also given us an accurate location of its western shore to a point considerably south of existing surveys. It is true that other explorers have traveled further north than he; but their work, although of great scientific interest, and carrying perhaps more of the elements of the spectacular, has not given to the world such a considerable increase in its geographical knowledge as results from Peary's latest travels.

Peary has also done great service to Arctic exploration by proving that his theories as to the best method of traveling are correct. He set out on this last trip with the conviction that, if the North Pole is ever to be reached, it must be done with the co-operation of the natives and with the extensive use of dogs and sledges. In his recent work he has given practical proof of the soundness of his theories. Early in the next spring it is his purpose to make a final "dash for the North Pole" which, if successful, will add greatly to his well-earned fame. Should he succeed in reaching it, he will confer a double benefit upon Arctic exploration, since he will at once settle a greatly overrated, but much-considered question, and by so doing will divert the energy of subsequent explorers to the more useful work of mapping out the undiscovered regions within the Arctic circle and rounding out to completeness our geographical knowledge of the northern hemisphere.

## "COLUMBIA" AND "SHAMROCK."

Now that we are on the eve of another of those great contests which stir so deeply the yachting and marine world, a comparison of "Columbia" and "Shamrock" in respect to their construction and past performances is of undoubted interest. In the first place, it is certain that never before have the English and American boats been so similar in size, model, materials, or spread of sail—never, indeed, if we may venture a forecast, have they been so equally matched in speed. In both yachts the framing of the hull consists of nickel steel, and the plating of a bronze alloy of great ductility and tensile strength,

Tobin bronze being used in the "Columbia" and imadium in the "Shamrock." Neither boat will have much advantage in this respect, the strength for weight, and the degree of polish of the underbody being about the same. In the above-water portion of the hulls "Shamrock" must be considerably lighter, for her freeboard is, on an average, some six inches lower and hence 80 feet of plating and framing is saved. Moreover, the weight of the deck is less, the "Shamrock" being decked with thin steel plating and the "Columbia" with wood. The lower freeboard and lighter deck of "Shamrock" may account to a certain extent for the unexpected ease with which she carries her exceptionally lofty rig.

Compared as to sailplan and rig, the advantage in weight probably lies with "Columbia;" for Herreshoff has always been well in advance of his competitors in his ability to spread and hold up to its work a big sail area on a wonderfully light set of spars, shrouds and stays. The pole-mast of "Shamrock" is an innovation, the credit of which is due to Watson; and it is undoubtedly, in proportion to its great length (158 feet 6 inches over all), a very light piece of work. It is the next logical advance in construction upon the telescoping topmast first used by Herreshoff upon "Columbia" in 1899. At the same time it probably weighs more in place than the mast of "Columbia." It is not less than 11 feet longer over all; and the saving in weight at the hounds is offset by the fact that "Columbia" is using the hollow wooden topmast which was built for "Constitution." The standing and running gear on "Shamrock" is somewhat heavier, as it must needs be, to hold her lofty sailspread up to its work. Both yachts have hollow steel boom, gaff, and topsail spars. The boom of the "Columbia" being trussed, must be, we presume, somewhat the lighter of the two.

It is generally believed that "Shamrock" carries so large a sailspread that she will have to make a heavy time allowance to "Columbia," as large; if not larger than that given by "Constitution." This expectation is based upon the mistaken idea that the base of the triangle for sail area measurement in "Shamrock" is proportionately as great as the perpendicular. As a matter of fact it is a relatively short base, and as much under the normal as the perpendicular is above it. The boom of the "Shamrock," which has been erroneously given as anywhere from 110 to 120 feet in length, in reality measures exactly 102 feet 9 inches over all, as against 107 feet, the length of "Columbia's" boom. When the tape-line of the official measurer comes to be laid over the yachts it will be found that the distance from end of boom to forward point of measurement is less than 183 feet in "Shamrock," or only two feet more than that of "Columbia" when she met the first "Shamrock" in 1899.

The short boom and lofty rig on the challenger show the lessons taught by the racing experience of the past few years, one of the most important of which is that the exaggerated length of the main boom on modern cutters is a mistake, the mainsail becoming too long on the foot for the best effect in driving the yacht to windward. The first hint of this came when the rig of the German Emperor's "Meteor" was changed from the cutter to the yawl type, the yacht showing a marked improvement under her reduced sail area. Further evidence to the same effect was forthcoming in "Shamrock I.;" for much of the improvement seen in that yacht this year is due to a reduced mainsail, her present boom being several feet shorter than the one used in 1899.

A comparison of the models of the two yachts shows a marked point of difference in the fact that the point of fullest cross-section in "Shamrock II." lies considerably farther forward than it does in "Columbia." Her bow is as much fuller as her run and quarters are finer than those of the American yacht; and the difference becomes accentuated as the yachts are heeled down in a breeze. Of neither model can it be said that, under all conditions of wind and sea and on all points of sailing, it is the better; for although the "Shamrock's" model should be easier to drive at high speed in a smooth sea, owing to the tendency to wave-making being less, the sharper sections of the "Columbia's" bow will give her an enormous advantage in a thrash to the windward mark in a strong breeze and against a short, steep sea. Under these conditions we expect to see "Shamrock" pounding heavily," as did "Vigilant" in the memorable windward and leeward race in 1893, while "Columbia" will take the seas with something of the ease which enabled "Valkyrie II." to reach the weather mark an easy victor, over her bluff-bowed competitor. For sailing with sheets hard aboard there never was such a perfectly modeled and balanced boat among the 90-footers as "Columbia," and if the Cup is to remain another year with the New York Yacht Club it is upon this point of sailing that the victory will be won. In running and reaching there was but little to choose between "Columbia" and "Shamrock I.;"

but "Shamrock II." has beaten the latter boat in a 13 to 17-knot breeze, under perfectly fair conditions, at the rate of 5 minutes in 15 miles of running, and 6 minutes in 10 miles on a broad reach. The result of the coming races will depend, as we have said, very largely upon conditions of wind and sea.

## NEW YORK-BUFFALO ENDURANCE RACE.

A few months ago the Automobile Club of America announced that an endurance test between New York and Buffalo would be held in September. Owing to the various town and city ordinances, it was not possible to have a real long-distance race like the Paris-Berlin contest, but it was quite feasible to have a series of short runs in which the good points of the various machines could be brought out. A speed of 15 miles an hour was the highest which was permitted during the test. There were eighty-nine vehicles entered, and seventy-eight started at eight o'clock on the morning of September 9, from the Central Park plaza. The vehicles embraced almost every type of American machine. The arrangements were admirable and there was no confusion. The vehicles were started at intervals of thirty seconds, giving the spectators a chance to obtain a good view of the various carriages. There was an absence of the very high-power machines, such as the 40-horse power Winton racer and the racers of Albert Bostwick and W. K. Vanderbilt, Jr. The journey was made by way of Poughkeepsie, Rhinebeck, Hudson, Albany and then through Schenectady, Amsterdam, Fonda, Herkimer, Syracuse and Rochester. At Rochester, owing to the death of the President, the run was abandoned.

The first day's run included a hill-climbing contest up Nelson Hill, three miles north of Peekskill. It was very satisfactory, and fifty of the machines succeeded in climbing the hill. Not a single motor bicycle succeeded in reaching the top. The first half of the hill, which is nearly a mile long, has a sixteen per cent grade. The Grout Brothers' stanhope, a steam carriage, weighing 800 pounds, was the winner in the first class, as it climbed the hill in two minutes and forty-five seconds. Poughkeepsie was reached first by Mr. A. L. McMurtry, in a gasoline machine, arriving there at 3:30.

The next morning, September 10, sixty-eight machines started from Poughkeepsie. There were a number of minor accidents, but the system of checking was excellent. The men at one checking point got on to a train and moved to a distant station, while those that were behind them moved up one or two stations. Mr. David Wolfe Bishop's 30 horse power racer was the first to arrive at Albany, which city he reached at three o'clock. Mr. B. B. McGregor's 12 horse power gasoline car was next, and then followed Mr. Packard in a gasoline machine and Col. J. J. Astor in his new gasoline car. The distance was 75.4 miles and a stop was made at Hudson.

On September 11, sixty-six machines left Albany, and at the close of the control at Fonda only fifty-one had arrived. The first to reach Herkimer was D. W. Bishop in his French racer. He got in at 3:29, having made the 38 miles in two hours and fifteen minutes. The only woman to arrive within the time limit was Mrs. W. H. Browning, who accompanied her husband. The roads were very bad and the carriages and drivers were drenched with mud. One automobilist said he had ridden a thousand miles but never experienced worse conditions. After the run had started the first day, it was found that the "test run" had become a point-to-point race, the points being the noon and night "controls." This was not the case with all the competitors, but it was with the majority of them.

The start from Herkimer on September 12 was made at eight o'clock as usual, and Syracuse was reached at 2:34, D. W. Bishop coming in first, covered with mud and soaked to the skin with the heavy rain. The next arrivals were three steam carriages. Fifty-six of the carriages started from Herkimer, and the most of them had ropes tied around the driving wheels to prevent skidding. Quick traveling was impossible and the number of small accidents was considerable. The endurance test ended at Rochester, September 13, when the officers of the Club learned upon arrival of the precarious condition of President McKinley. Forty-one automobiles arrived at Rochester before the closing of the night control at half past ten o'clock and eight others came in during the morning, but they were not officially checked. The number of vehicles that made the start from Syracuse was fifty-one. The news of the President's death was received with great sorrow, and thirty of the chauffeurs decided to proceed to Buffalo at once, but the carriages were stripped of their numbers and there was no racing. The official figures show that of the sixty-seven automobiles that left Albany, fifty-one were in condition to start from Herkimer on the following day, while the same number began the trip from Syracuse to Rochester. The greatest loss was on the last day's run. The International Sweepstakes race of a hundred miles was also abandoned.