

very strikingly the changed condition of young womanhood even then.

Now, as one of Dr. Tillett's correspondents shows, and as I have learned from other sources, the standard of scholarship has been greatly advanced in Southern colleges for women. Now "twenty-five per cent. of the girls look to supporting themselves when they leave college." Of course "they are most earnest and diligent in the prosecution of their studies." It is to be pointed out that two things are resulting from this: (1) that large numbers are pursuing less the ornamental and more the useful studies; (2) that the effect of their better scholarship in both departments is to stimulate powerfully the other students. So while the present generation of Southern girls can never become lovelier than their charming grandmothers, the new order is producing a larger class of better-educated women.

Charles F. Deems.

The Steering of Yachts.

I. A SUGGESTION.

UNDER the heading, the "Evolution of the Modern Yacht," appeared in the "North American Review" for October, 1891, an article over the signature of Lewis Herreshoff, praising the model of the *Gloriana*. Of the form of that craft I have nothing to say either in praise or censure, because I have never seen her. If she can out sail yachts of a different shape, that fact conclusively proves that hers is the better. Only one of the author's points do I wish to criticize. In praising the steering qualities of the *Gloriana* he says:

In vessels of the usual form, when driven by fresh winds the water is piled up against the lee bow, and, owing to the bluff part of the bilge being wholly or partially immersed, the water it displaces forces the bow of the boat strongly to the windward, giving the vessel a tendency to luff, or turn toward the wind. This "luffing" influence of the lee bow must be counteracted by the rudder, resulting in labor for the helmsman and loss of speed for a double reason, the obstruction caused by the piling up of the water of displacement under the lee bow, and the drag on the boat by the rudder, seeing that it must be carried at an abnormal angle to produce the required effect.

If a boat or vessel at any time, whether running free or close to the wind, carries a weather helm, no matter how slight, the tendency in this direction will be increased as the breeze freshens, causing her to careen more and more. It is not difficult to find the reason for this. The farther the vessel lies over on her side, the less becomes the steering-power of her rudder. If we could suppose her to move on after she lay upon her beam-ends, and still have a tendency to turn her bow to the wind, the helm might be placed hard up, but it would be powerless to counteract the luffing influence, because, when in a horizontal position, the rudder has lost all its steering-force, although it is still a drag on the boat.

The rule is the same whether the boat is sailing in rough or smooth water, and whether she has a bluff bow or a sharp one. The scow and the yacht are governed by the same principle; namely, when the rudder is in the nearest to a perpendicular position that it ever gets,—if the stern-post is raking, it will be always somewhat inclined,—it exerts the greatest steering-force; when it reaches a horizontal position, it loses its

capacity to steer altogether; and as it leaves the perpendicular and approaches the horizontal, it steers with diminished power; and, consequently, "must be carried at an abnormal angle" to do its work.

It will be observed that I have been stating the effect of the increased careening of the boat, and the consequent change of the position of the rudder on its steering-power alone. I have not been accounting for the tendency of the boat to luff under certain circumstances, but only for her apparently increased disposition to turn her head to the wind as she lies over on her side more, when the wind freshens, owing to the diminished steering-power of her rudder as it approaches a horizontal position. The main cause of this tendency to luff is the action of the wind on her sails. When the boom of a sloop is swung out to leeward, the influence of the breeze on her mainsail is the same as the finger of the spinner on the spoke of the spinning-wheel, it turns her around toward the wind—gives her a tendency to luff. If, while the sail remains at this angle with the keel, the increase of the breeze causes the boat to careen more, then the rudder loses some of its steering-power, and "must be carried at an abnormal angle to produce the required effect."

A result reached in a "rather obscure but interesting manner" is not quite so profitable as one the causes of which are clearly seen, and hence the above suggestion.

Isaac Delano.

II. COMMENTS BY MR. HERRESHOFF.

MR. DELANO has made an excellent beginning in the science of steering by his study of the action of the rudder, but if it be his desire fully to perfect himself in that art, closer observation will be required. The proper office of the rudder, as a factor in steering a sailing-vessel, is to create an equilibrium amongst several opposing forces, so that the desired control may be maintained over the movement of the vessel.

The careful designer seeks so to adjust the various factors that go to make up the proper balance of a yacht that the action of the rudder will be sufficient to counteract any excess that one force may exert over another. The chief thing to be done is to place the center of effort of the sail-area in proper relation to the center of lateral resistance of the hull. This is about all the designer can do; he trusts to the good sense of the master of the vessel to trim his sails properly, and to keep them in as good condition as to fit and setting as possible, all of which has marked influence on steering qualities.

The general proportions of the hull have a direct bearing on facility of steering, and the form also exerts more or less influence in the circle of forces that enter into the problem. Now if these various forces would remain always in the same relation to each other, steering would be easily performed; but with every change in the force of the wind and in the angle of inclination of the hull, new combinations are formed, and even new forces may be set up, so that the problem of steering, which might seem simple when considered as the rudder's work alone, really becomes often difficult and complex. Yachts of the "English type" nearly always carry a lee helm, when sailing close-hauled or slightly free, in fresh breezes; yachts of the old Ameri-

can type, like *Mucilage*, require almost a horse's power to steer them under the same conditions, carrying the while an abnormal weather helm.

When *Gloriana* and *Mineola* were approaching the Spit in the New York Yacht Club regatta last June, the latter yacht became in a measure unmanageable, pushing herself under the lee bow of the former yacht in a troublesome and unusual manner, the *Gloriana* all the while being under absolute control although she carried a heavier press of sail than her opponent.

These and many more circumstances convince me that other influences than merely the action of the rudder enter into the problem of steering, and I must still adhere to my statement made in the "North American Review," in October, 1891, that the perfect steering qualities of *Gloriana* in a great measure are acquired by the peculiar form of her entrance and by her manner of disposing of the water of displacement under her lee bow.

Lewis Herreshoff.

The Battle of the "Wyoming" in Japan.

IT WAS with much pleasure I read in the April number of THE CENTURY MAGAZINE the account of the United States Steamship *Wyoming* in the Straits of Shimonoséki, but I regret that the article should be marred even by a single omission or inaccuracy.

If my memory serves me rightly, "Master William Barton" was at that time Lieutenant William H. Barton. Acting Master John C. Mills should read John C. Wells, of Greenport, Long Island. I regret that the name of our ward-room messmate, an able officer, stanch friend, and popular with all the ship's

officers and crew, has been omitted entirely from the article: namely, Acting Master William Tallman, Jr., of New Bedford. He it was, I believe, who was in command of the "after 11-inch pivot-gun" (not Wells), and therefore, if I am right, to him should be given the credit. Mr. Wells was the navigating officer, and the undersigned at that time was assistant navigating officer and officer in charge of the powder and shell division. It was a hot fight, and every one on board entered into the engagement with a determination to conquer or die. From the nature of our surroundings there could be no skulking, no straggling, no retreat. To be defeated by the overwhelming numbers meant naught but death eventually by the hand of our enemies, a fate much more horrible to contemplate than to meet death amid the heat and smoke of battle.

Mr. Griffis compliments our late commander McDougal and Lieutenant-Commander and Executive Officer Young none too highly, for they truly were men of steel, modest and fearless; heroes in all the word implies.

Walter Pearce,
Late Acting Ensign, U. S. S. "Wyoming."

COMMENT.

I THANK Mr. Pearce for calling attention to my unintentional omission of the name of Acting Master William Tallman, Jr., though I was informed by the other officers of the *Wyoming* that Acting Master John C. Wells (which a mistake of the copyist made Mills) was in charge of the after pivot-gun. Master William Barton was not, as he has written me, made lieutenant until some time after the action.

William Elliot Griffis.

IN LIGHTER VEIN.

Along in June.

A Summer Series of Prairie Farm Fancies, by Doane Robinson.

WITH PICTURES BY E. W. KEMBLE.

I. MISTER TAPLEY.

ALONG in June
Sech craps I never seen,
The wheat stud up above knee-high
So kind of rich and blue-black green,
"I ruther calkerlate," sez I,
"I 'll go to town this afternoon
And buy a bran new bind-machine."

Come night, when Jones sot on the rail
A-whinin' 'bout the 'tarnal hail
Thet give the craps a swashin',
I sez,—a-pickin' up a pail,
And scoopin' up a bar'l of hail
To melt fer washin'.—
"Wall, I don't feel half-way so mean
Es ef I 'd bought thet bind-machine."

II. HERDING.

No end of rich green medder land
Spicked out with ever' kind of poseys.
Es fer es I kin understand
They 's nothin' else on earth so grand
Es just a field of prairy roseys,
Mixed up with blue, gold-beaded plumes
Of shoestring flowers and peavey blooms.
Take it a warm, sunshiny day



When prairys stretch so fer away
Ther lost at last in smokey gray,
And hulkin' yoke-worn oxen browse
Aroun' the coteaus with the cows,—
The tipsey, stag'rin' day-old calf
Mumbles a bleat and slabbers a laugh,—
And yearlin' steers so round and slick