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THE SCIENTIFIC AMERICAN SUPPLEMENT.

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MODERN ROWING RACES.

Our aquatic sports seem to be assuming an artificial nature which is rendering them more and more unlike those of an earlier and less "advanced" period. Rowing races certainly have become reduced to competitions in which the conditions imposed by Nature, which give zest to the exercise and, through their very variety, constantly call forth fresh skill, are carefully eliminated. There is no sport more exhilarating, more healthful, or more reliable in results than this, when genuinely followed; but as it is now practised it is scarcely possible to place it on a level with the sports of the turf. It is an undeniable fact that horse racing has resulted in vast improvements in the breed of horses, and thus a genuine good is gained, which at least neutralizes the evils attending the practice. But we doubt if any corresponding advantage can be shown in favor of modern struggles at the oar.

We have learned to build boats so light and fragile that almost the rope dancer's skill is required to maintain one's equilibrium in them. They are utterly useless save in water as smooth as glass. The oarsmen are educated to so fine a pitch of physical culture that exhausted Nature too often passes the dividing line, and the superb athlete breaks down and becomes a life-long invalid. In fine, boat, water, oars, training, conditions of wind and weather, everything attending the sport, are all subservient to the single aim of disposing men so that by muscular work they can accomplish a certain distance in a certain time. So far as boat and water play any part, a result equally useful would be reached did the crews, instead of risking their lives under a torrid sun, seat themselves comfortably in a gymnasium and pull in concert against machines which would register the mechanical effect of their efforts in foot pounds, the crew with the largest registered number to be declared the winners.

The reports of the recent regatta at Saratoga tell us that the Cornell men won by sheer force of strength. They showed no technical excellence in their rowing; their appearance was not especially graceful; they lacked what is technically called form; but they lifted their boat, as it were, by main strength, and pushed it forward with the power and endurance of giants.

We do not think that such work is entitled to the name of skillful boating; and certainly, in point of heroism, it must be considered inferior to that ability which guides the lifeboat through the surf to the wreck, or pulls against varying tides and currents, or urges the sharp bowed whale boat in pursuit of the sea monster, or even handles the oar in a high running sea. To our minds, races occurring, not in hot July but in cool October, and not in mere shells on a placid lake, but in staunch cutters in a sea and tide way, would be infinitely more beneficial to the participants, and at the same time would call for the display of higher qualities, both of physical strength and calm judgment.

OUR YACHTS AND YACHTING.

There are abundant criticisms which may justly be urged against our present so-called yachting. Our yacht fleets are supposed to be a nursery of marine architecture, a constant field for experimentation in the construction of sailing craft of the finest possible form. The building of yachts is presumed to have higher aims than the mere furnishing of pleasure boats. We have, it is true, produced many beautiful models, famous the world over, but some of the best judges of naval architecture assert that we have never surpassed the celebrated America, built by Steers nearly a quarter of a century ago. That vessel has recently been in dry dock refitting, and certainly it is difficult to imagine more exquisite lines than her under-water body presents. We cannot therefore claim any material advance in the hull architecture; nor can we assert that we have built vessels with improved seagoing qualities. The America crossed the ocean years ago to sail for the Queen's cup. A few yachts have done so since, but the pleasure vessels rarely go to sea during a stormy season of the year. Yet pilot boats even smaller in size constantly cruise hundreds of miles from land in midwinter, and in the fiercest gales; and Long Island and New England fishermen unhesitatingly put to sea in storms which would send every yacht close-reefed into the nearest harbor. Nor has our yacht squadron shown itself of value as a school for seamen. The wretched incompetence exhibited in the circumstances attending the disastrous capsizing of the Mohawk, the largest sailing yacht in the country, in New York harbor a few days ago, is too fresh in the public mind to need any commenting upon in this regard.

So far as competition goes, the yacht race has become a matter of speed, no matter how gained. We have seen repeated instances of vessels fitted with sails so largely out of proportion to the hulls that a moderate breeze would be very liable to throw the latter on their beam ends. But to counteract the enormous heeling tendency, racing crews of unusual numbers are brought on board, and each man is provided with a sand bag. He is simply living ballast, and his duty is to transport himself and sandbag as far to windward as he can get. The pressure on the sails is met, not by build, nor by displacement, by breadth of shoulder, but by weight of men and sand bags. Not long ago a catamaran (two parallel hulls covered by a transverse staging and rigged with mast and sails) fairly vanquished a number of crack yachts. The yacht owners loudly protested against being conquered by so outlandish a craft, forgetting the fact that the ingenious builder merely gained stability by a device substantially the same and very much more effective, though of course more obvious, than theirs. Certainly the means he adopted were not a whit more artificial.

The Rev. Dr. Hepworth, of this city, an enthusiastic yachtsman, has, since the above was written, published a work in which our yachting is mercilessly criticized. He says of the yachts: "They have generally very graceful lines, great breadth of beam, which makes them roomy and comfortable under deck, but are often so overloaded with spars and canvas that they are unfit for rough outside work. Our topmasts run up to such an incredible hight that, when the boat begins to roll in a seaway, it seems as though she would never stop until she had jerked out her spars.

"The crowning defect, and one which we are beginning to acknowledge, is the shape of the bows. They are so sharp that they not only cut through the water when it is smooth, but they also cut into it and under it when there is any seaway on. The only thing that holds the head of a yacht up in rough weather is its preposterous bowsprit and jib-boom. We crawl along inshore and run for a harbor when the wind blows a reefing breeze. The play of a coaster or lumberman is the agony of a yacht."

In this country, where a large standing navy no less than an army is deemed unnecessary, it follows that not only the military but the marine service must in time of need be derived from the people. Our geographical position moreover renders it likely that a war between ourselves and a foreign power would mainly be waged afloat. An advantage to the community therefore primarily exists in fostering aquatic skill, while there are other advantages, sufficiently indicated above, which also might be secured. In this view the present condition of our aquatic sports is plainly one which might greatly be modified to the general benefit.

THE VENTILATION OF RAILWAY CARS.

Scarcely less important than the long-vexed and almost hopelessly unsolved problem of securing good air in public assembly rooms is the proper ventilation of public conveyances. Under no other conditions are we packed so numerously in limited spaces; and as a rule our journeys are of longer duration than the times we spend in places of public amusement, instruction, or worship.

The problem, so far as it relates to railway cars, was discussed at considerable length at the recent convention of the Master Car Builder's Association. Neither the committee's report nor the subsequent remarks of the members of the association give much cause, however, for expecting any immediate relief from the poisonous atmosphere the traveling public has to put up with as a rule. The important fact that pure air is desirable in public conveyances is recognized in a languid sort of way; but, so the committee say: "The subject (of securing it) is still practically encumbered with difficulties, and our only hope is that, by treating it piecemeal, the difficulties may one by one be overcome." The past year has been "quite barren" of improvement in ventilating devices, still an increasing interest in the matter among car builders shows that "some progress is being made in the right direction."

But two or three recent devices were noticed by the association, and of these nothing positive was determined. Mr. Daniel S. Darling, of Brooklyn, submitted the model of a ventilated car, by which he claimed to meet all the requirements of the case. By this plan the fresh air is taken in through an opening at the crown in the ends of the car, immediately under the roof, the opening to be regulated according to the speed of the train and the quantity of air desired. The inflowing air is received in an air chamber and delivered through side openings a quarter of an inch wide, extending the whole length of the car. With an inlet 12 inches by 6, and a speed of 20 miles an hour, a steady supply of 800 cubic feet of fresh air a minute is promised, or enough to effect an entire change of air in the car every three minutes. No attempt appears to be made in this plan to prevent the entrance of smoke and dust; while the current, entering the body of the car in sheets, would seem to be specially favorable to drafts, though the inventor is of opinion that in a car ventilated in this way the fresh air will be diffused very gently.

Mr. H. A. Gouge, of New York, also presented a model illustrating some improvements on his mode of car ventilation. This plan has been tried the past year in a car running on the Boston and Albany road, giving, it was reported, very good satisfaction in warm weather. In cold wethera the warming of the car was defective, especially on an accommodation train; but that difficulty Mr. Gouge was confident he could overcome. Another car on the same road was provided with a fan ventilator, with excellent results in warm weather and with a moderate rate of speed; but it was very difficult to heat the air sufficiently in cold weather, and the air was rather close when the car was not in motion.

Still another plan was tried on the same road, the management of which seems to be commendably in earnest in this matter: a plan devised by Mr. Gates, of Boston. It consists in lowering the head lining a few inches so as to make an air chamber between it and the roof, from which chamber the fresh air enters the body of the car through wire cloth or perforations extending the entire length of the car. The entrance and exit of the air is regulated by swing sashes at each end of the car. So far the plan seems to work well, but a longer trial must be made before a decided opinion can be expressed in regard to its merits. A similar device is on trial on the Pennsylvania Road.

Favorable report was also made of the Winchell ventilator, with which certain western roads have been experimenting. The Canada Southern has had it, without deflectors, on four cars, and the representative of the road pronounced its operation very satisfactory. A little smoke got in, but not enough to be troublesome. The system consists