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9. BEST STYLE OF STROKE.—In laying out the strength, the grand and essential point in light boats is not to jerk; but, beginning with a delicate drop into the water, and without a splash if possible, the rower should catch hold at once, then gradually increase the power until the resistance begins to be removed by the near approach of the blade to the surface, when the whole attention, and also the muscular efforts of the arms, are absorbed in making the feather; and consequently there is, or ought to be, no vibration or jerk, and yet the root of the thumb should be brought close up to the ribs. The feathering is strictly the turning the blade from the perpendicular to the horizontal direction, by a raising of the knuckles towards the back of the fore-arm, and consequent bending the wrist; but the oar is said to be "on the feather" from the time that it is thus turned until it re-enters the water,

although the direction is recovered as quickly as possible after the change is made from a backward to a forward motion. It is in this part and in the swing that there is so much difference of opinion; some contending for a very quick feather, some for a very high one, with a sort of hovering in the air at the end, and some for a slow feather, without this raised hover. In the time of the old heavy boats quickness of feather was all important, because they would not continue their shoot long when off the hand; and two boats nearly matched in a race might be seen alternately leading, according as they were at the moment on, or off, the stroke; consequently the time occupied by the oar returning in the air from the stroke was comparatively lost, because the boat was losing her way all the time, and in a very slow stroke was almost stationary; but in the modern narrow boats, the speed, after the stroke is finished, or "the shoot," as it is called, continues for a considerable period of time; and if, while this full velocity lasts, the oars are dropped into the water in a clumsy manner, she may actually be seen to stop, as often, in fact, really happens in a young crew trying to row faster than they ought. It is therefore found now, that a stroke which does great execution in the water, without laying any great stress upon the quickness of feather, is the most telling one; and that strength applied in the proper way, together with a finished drop into the water, and a clean feather, is the essence of the art. In all quick strokes the feathering is necessarily also quick, and without any attempt at increase of pace in that department is quite quick enough; and hence there is no necessity for the old caution, "to be quick forward." This avoids a great expenditure of power, which formerly was laid out in saving the time lost in the shoot; and it is one of the great advantages of these long, light, and narrow boats. If they are handled with skill, and not rowed too deep or jerked, they are beautiful in their shoot, and it is scarcely possible to detect the slightest alteration in their speed at any moment. Again, they require that the swing shall not be too far back, because in recovering from this long swing some weight must be thrown upon the oar, and the boat is made to dip bodily, from her narrow floor affording too slight a resistance. A very little beyond the perpendicular is therefore the proper swing in most cases; though in some few the power of recovery is so completely mastered independently of the oar or scull, that the full and long swing, as of old, is developed without the dip. It is clear, therefore, that swing is not necessarily bad, but that it requires great skill to combine it with the proper recovery; and hence, in an amateur crew, as it is difficult to meet with anything like perfection in all, it is better not to attempt to carry it out to the extreme, but to swing only about two-thirds of that amount. 105-5

10. STRAPS.—Certain very high authorities object to the use of straps, as causing the doubling forward of the body on the oar; but it appears to my humble judgment that these gentlemen have confounded the *post hoc* with the *propter hoc* in their conclusions. Straps and light boats came in together, and doubling forward came in soon afterwards; and they say that this fatal defect is caused by straps, because their use was followed by the defect; but I suspect that this unseemly habit is the result of the want of resisting power which is now felt by the light boats, and for which straps were invented, and not of the straps themselves. In the old heavy boat a man could almost raise himself off his thwart in the pull; and in the Thames wherry it was common enough to see the waterman actually showing daylight under his seat of honor. But when the light boats were introduced, it was found that it was not only impossible to execute this extreme manoeuvre, but that the attempt to carry out the old dig into the ribs, which at the same time raised the body partially, was attended with a drag of the boat under the water, which was opposed to her progress through it. In order to avoid this difficulty, and to enable the rower to raise himself without bearing on his oar more than enough to feather it, straps were introduced; but we never yet saw any one use them while meeting his oar. The bending at this time has nothing to do with the thighs, which are the parts steadied by the strap, but it is entirely at the loins where the arch forward takes place; and so far from requiring a strap to execute it, we have invariably found that the absence of one from the stretcher does not interfere with the trick. Meeting the oar is a sign of weakness in the back, or of a tendency to shirk, the one being often involuntary, and the other becoming so after a time. Whatever the cause, it is a habit which is very difficult to cure; and when weakness has produced it, wholly impossible. Here the back has not power to bring the oar through the same quantity of water in the same time as the stroke, and, therefore, the oar is allowed to be brought through the latter part of its course by the arms alone; or, in fact, is almost kept stationary, and the back meets it so as to be ready for a start beforehand in the feather, and thus to have less to do in that part of the work as well as in the stroke. Now, as it is shown that the back comes forward to meet the oar while its stroke is being finished by the arms, so it is clear that the arms pull the back forward, as well as pulling the oar back, and that, consequently, the

6. PADDLING is the portal to excellence in rowing of all kinds; and as it enables faults to be detected, so it allows them to be corrected. It consists in rowing at about half-power and quickness—that is to say, with from 20 to 30 strokes per minutes, according to their length. At this pace every fault is very visible, the goodness or badness of the time, and the keeping stroke are at once manifest, and the faults generally are exaggerated. It is now that the style of rowing should be fixed upon, and, if a crew are practising, that all should follow it as far as they are able. I have already described the proper mode of holding the oar, which is the same in all rowing; but in giving a good style the following points should be inculcated. The first to be considered is the PREPARATION ACTION, in which every man should have his rowlock just wide enough for him to touch the stopper with his oar when at his full reach forward, and he should, in starting, commence at that point, the hands being well over the toes, and the blade of the oar at right angles to the surface of the water, and about a foot from it, more or less according to that of the stroke, who must be rigidly imitated. The body is bent forward at the hips only, and between the thighs; the back being straight, the shoulders freely extended, and the head well up, with the eyes looking horizontally forward. Secondly, the DROPPING OF THE OAR, previous to pulling, which must be rapid yet light, and without the slightest splash or chop. Thirdly, the PULL, which commences almost the instant the blade touches the water, because the elasticity of the muscles and of the oar are first to be overcome; and when they are so, the oar is deep enough and the pull should commence. This is a very nice and difficult point to calculate, and nothing but practice will give the exact moment at which to begin to use the back; but to a casual observer, watching even a finished oarsman, it appears as if he began to pull as soon as he had dropped his oar; yet it is not really so, and no power is actually laid out until the blade has reached its full depth. At that instant, the body, which has been falling backwards for an exceedingly short space of time, is checked by the arms, which are all this time straight at the elbows; and the back is now exerted to drag the oar through the water until it reaches its full extent of swing, which is a little beyond the perpendicular, on the average, but more or less according to the difference of style. As soon as the full swing is attained, the arms bring the oar home by bending the elbows, keeping them close as they pass the hips, and throwing back the shoulders at the same time, when the stroke is completed by depressing the inside wrist and elevating the knuckles, in which the outside hand also follows, causing the loom to rotate on the rowlock, and changing the direction of the blade from being vertical to nearly a horizontal position as it leaves the water. At the conclusion of the stroke the root of the thumb of the inside hand should touch the ribs (the particular one which is struck depending upon the height of the rowlock and thwart), the back is straight and inclining a little beyond the perpendicular, with a graceful fall of the shoulder-blades, accompanied, as a matter of course, by a fullness of chest, and the head carried easily, but with the neck not at all bent forwards. When the knees are wide apart they are very slightly brought together during the stroke; but when they are maintained in opposition throughout, as in the "Clasper style," they do not change at all. Fourthly, the RECOVERY, which consists in first straightening the wrist, by which the oar is at the same time rotated and thrust forward, for the second action is a necessary part of the first; secondly, of a straightening of the elbow and a darting forward of the shoulders; and thirdly, of the bending of the body at the hips as far forward as possible over the toes, with the blade of the oar held in the vertical direction, which brings it to the exact point from which we started. The whole of these acts may be executed slowly and lightly, which is called paddling. When they are per-

formed with great power, yet with a long stroke, and as much quickness as is consistent with lasting the distance to be rowed, it is called "rowing hard;" and when the velocity is the highest of which the crew is capable for any distance, however short, it is called "sprinting." The average number of strokes in an eight-oar for paddling is about 25 per minute, for rowing about 42, and for a spirt about 50 to 55. 105-1

7. EASING AND STARTING are of course the exact opposites of each other; the former being merely the ceasing to row, in which all should stop exactly at the same time; and the coxswain should in all cases give the word, "Easy all," at the end of the stroke, when the oars should not be wholly recovered from the feather, but should be half-way between the horizontal and the perpendicular, and at right angles to the boat, so that as soon as the way is a little off her they may lie flat on the water, and thus prevent her being unsteady by their powers of balancing. STARTING is effected by all rowing off at the same moment, beginning with the position described in the last paragraph, or within a short distance of the utmost reach forward, and giving two short strokes and a long one when intending to get quickly off. In ordinary cases, however, it is better to paddle off with the usual steady and slow stroke.

8. THE BEST LENGTH FOR THE STROKE is that which all in the boat can well maintain without reaching so far forwards as to be unsteady in the drop, or swinging so far back as to bear too hard upon the oar, and thus occasion a downward pull upon the boat. It is of no use for the stroke-oar to over-reach his crew, though at the same time he should be able to excel them all, in order to improve them, and draw out their powers to the fullest extent. It is clear that the only limit to the length of the stroke is the reach forward, which is limited by the bend at the hip, and the swing backward, which must be confined within the bounds dictated by a careful observation of the several styles of the men composing the crew; hence, if any of them are slow and clumsy in recovering their oars, the swing must be kept within due limits, for fear of their falling at this important time; and the same with the reach forward.