him on the other tack, except she should find herself likely to gain advantage by going large ; for if the chaser persists in tacking in the wake of the other ship, the pursuit will be very much prolonged.

When the chase is to leeward, the chaser is to steer that course by which she thinks she will gain most on the chase. If, after having run a short time, the chase is found to draw more aft, the chaser should then bear away a little more ; but if the chase draw ahead, the chaser should haul up a little, and thus the course may be so regulated that the chase may always bear on the same point, and then the chaser will get up with the chase in the shortest time pos­sible ; for if any other course were steered, the chaser would either be too far ahead or too far astern, and hence the pursuit would be prolonged. The chase should run on that course which will carry her directly from the chaser, and should consider which is her best trim with respect to the wind, that she may move with the greatest possible ra­pidity from the chaser ; for some ships have more advan­tage in going large, others with the wind right aft, and others when close hauled.

Another method has been proposed for chasing a ship to leeward ; that is, by constantly steering directly for the chase. In this case, the tract described by the chaser is called the line or *curve of pursuit.* To illustrate this, let

A (fig. 32) represent the chaser, and B the chase directly to leeward of her, and running with less velocity than the pursuer, in the direction BC, perpendicular to that of the wind. Now, to construct this curve, let B*b* be the distance run by the chase in any short interval of time ; join A*b*, and make Al equal the distance run by the chaser in the same time. Again, make *bc, cd, de, ef,* &c. each equal to B*b;* join 1 *c,* and make 1 2 = A 1 ; join 2 *d,* and make 2 3 equal to A 1 ; proceed in like manner till the two distances carried forward meet as at C, and a curve described through the points A, 1, 2, 3, &c. will represent nearly the curve of pursuit ; and the less the interval Al is taken, the more ac­curately will the curve be formed. In this particular case, the length of the distance BC may be found as follows, provided the distance AB and the proportional velocities of the two ships be known.

Let the velocity of the chase be denoted by a fraction, that of the chaser being unity. Multiply the given distance AB by this fraction, and divide the product by the com­plement of the square of the same fraction, and the quo­tient will be the distance run by the chase B. Suppose AB, the distance of the chase directly to leeward of the chaser, be taken at twelve miles, and suppose the velo­city of the chase three fourths of that of the chaser, what will be the distance run by the chase before she is \*\*\*\*over- **19 y 4 9 lβ 4**

taken ? Now = — = 9 × — = 20- miles ; and

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since the velocity of the chaser to that of the chase is as 4 to 3, hence the distance run by the chaser will be =

2 3 3

20- × - = 27- miles. As the chaser alters her course at every point, and probably sails better with the wind in one direction with respect to her course than when the wind is in another direction, her velocity will be different at differ­ent points of the course. Thus, suppose her to sail faster when the wind is on the quarter, her velocity will con­stantly increase to a certain point, and will then diminish. Hence in real practice the curve of pursuit will not be ex­actly what is laid down in the above problem, and of course the measure of BC will differ a little from what we have there laid down. See Resistance of Fluids, and Seamanship**.**

If the whole fleet is to give chase, the admiral will make the proper signal, and then each ship will instantly make all the sail possible. If the retreating fleet is not much in­ferior to the other, a few of the fastest sailing vessels only are to be detached from the superior fleet, in order to pick up any stragglers, or those ships which may have fallen astern ; and the remaining part of the fleet will keep in the same line or order of sailing as the retreating fleet, so that they may, if possible, force them to action. But if the re­treating fleet is much inferior, the admiral of the superior fleet will make the signal for a general chase, and then each ship will immediately crowd all the sail possible after the retreating fleet ; or, if the chase be still less numerous, the admiral will detach one of the squadrons of his fleet, by hoisting the proper signal for that purpose, and he will fol­low with the remainder of the fleet. The squadron that chases should be very careful not to engage too far in the chase, for fear of being overpowered ; but at the same time to endeavour to satisfy themselves with regard to the object of their chase. They must pay great attention to the ad­miral’s signals at all times ; and in order to prevent separa­tion, they should collect themselves before night, especially if there be any appearance of foggy weather coming on, and endeavour to join the fleet again. The ships are dili­gently to observe when the admiral makes the signal to give over chase ; and each regarding the admiral’s ship as a fixed point, is to work back into her station, so as to form the order of line again as quickly as the nature of the chase and the distance will permit.

When a fleet is obliged to run from an enemy who is in sight, it is usual to draw up the ships in that form or order called the *order of retreat;* and the admiral, when hard pursued, without any probability of escaping, ought, if practicable, to run his ships ashore, rather than suffer them to be taken afloat, and thereby give additional strength to the enemy. In short, nothing should be neglected that may contribute to the preservation of his fleet, or prevent any part of it from falling into the hands of the conqueror.

We have now gone through the principal evolutions of fleets and squadrons nearly as they are described in the “ Elements of Rigging, Seamanship, and Naval Tactics,” and other approved publications on similar subjects. We have indeed omitted the method of forcing an enemy’s line, and of avoiding being forced, because the former will be readily understood from what we have to add on the improved me­thod of tactics of M. Grenier, and Mr Clerk of Eldin.

Various defects have been observed in the tactics usually employed at sea, especially in a line of battle, and in the mode of bringing an enemy to action. The usual order of battle first introduced by the duke of York, afterwards James II. of England, is defective from its length. Its great extent makes it difficult for the admiral to judge what orders are proper to be issued to the ships stationed at the extremities, while his signals, however distinctly made, are liable to be mistaken by the commanders of these ships. Besides, the extremities of a long line, especially if it be to leeward, are necessarily defenceless, as the enemy may