never preſenting to the enemy any part of a fleet without its being flanked ; ſo that were the commander of the adverſe fleet to attack thoſe parts which hitherto have been reckoned weakeſt, he might find himſelf defeated when he looked for conqueſt. With this view he propoſes a new or­der of battle ; in which the fleet, compoſed of three divi­ſions, inſtead of being drawn up in one line as uſual, ſhall be ranged on the three ſides of a regular lozenge, formed by the intersecting of the two cloſe-hauled lines. It is obvious that one of the divſions of a fleet ranged in this manner will always be formed in the order of battle ; whilst the two others, reſting upon the firſt ſhip ahead and the laſt aſtern of that diviſion, will be formed on the cloſe-hauled line oppo­ſite, and will ſtand on checquerwiſe on the ſame tack with the ſhips which are in the line of battle, ſerving to cover the headmoſt and ſternmoſt of thoſe ſhips, and thereby prevent the enemy from penetrating the line or doubling the rear.

Our author thinks it a great miſtake, though very gene­rally fallen into, that the weather gage is of any advantage to a fleet equal in force to its enemy and willing to engage. To him the great art of war at ſea appears to conſiſt in drawing or keeping to *windward a part of the adverse fleet,* and collecting all one’s forces againſt that part ; and it is chiefly to effect this purpoſe that he propoles his new ſyſtem of tactics. The reader, who would underſtand his principles, muſt never loſe sight of this evident truth, that each ship of a fleet necessarily occupies at all times the centre of an horizon ; which the author divides into two unequal parts, calling the greater the *direct and graduated ſpace,* and the leſs the *indirect, crossed, and ungraduated ſpace.* The reaſon of theſe appellations is, that on the greater ſegment of the horizontal circle there are twenty different points, which may be marked by degrees from one of the cloſe-hauled lines to the other, and to which a ſhip may ſail from the centre by ſo many direct courſes without tacking ; whereas to the other twelve points, including that from which the wind blows, she cannot arrive but by steering croſs courſes, which muſt necessarily delay her progreſs.

Suppoſe now a fleet to leeward, ſo diſpoſed as that only a part of it can fight with another equally numerous, and ranged to windward in a single line ; and let the lee fleet be ranged on the three ſides of a lozenge *ab, cd, ef* (fig. *55.).* The squadron *ab,* which is moſt to windward, being drawn up in line of battle, cannot be fought but by an equal num­ber AB of the weather fleet AB, CD, F. All the rest of that fleet therefore muſt remain inactive, unleſs the ſhips which are not engaged ſhould try to paſs to leeward of the fleet *ab, cd, ef.* But ſhould the ſhips of the weather fleet, which are placed between B and F, bear away as they ap­pear in the figure between C*i* and F*i,* it is evident that the ſhips between A and B, which are fighting to windward, cannot bear away with them. Suppoſe now that, after the ships between Ci and F*i* have passed to leeward, the ſquadrons *cd, ef,* which are ranged according to the new ſyſtem, and have not yet been engaged, ſhould come to windward and join with their friends *ab* againſt that ſquadron of the enemy AB which is ſtill to windward and engaged; it ſeems almoſt inevitable but that the ſquadron AB muſt be destroyed by ſo great a ſuperiority, before it could receive any aſſiſtance from the ſhips to leeward between Ci and Ft. No doubt thoſe ſhips would endeavour to ſuccour their friends ; but with reſpect to them, the ſquadron AB muſt be conſidered as placed in that part of the horizon which our author calls crossed *and indirect,* and to which they would not be able to repair but by steering alternately the two cloſe-hauled lines; and assiſtance brought by ſo tedious a courſe would come too late to be of essential ſervice. It is from this apparent­ly well ſupported concluſion that the viſcount de Grenier deduces the propriety of his propoſed ordert of sailing and order of battle.

Of orders of sailing, he thinks, there can be no occaſion for more than three ; one, when a ſleet is to paſs a ſtrait ; another, when it fleers in an open ſea, either looking for the enemy or trying to avoid him ; and the third, when it has an extenſive cruiſe to perform, in which the ſhips ſhould be ſo dispoſed as not to be ſurpriſed or cut off by the enemy. His firſt order of sailing differs not ſrom that in common uſe. It is and muſt be obſerved (ſays he) in any narrow road, whatever may be the occaſion of its narrowneſs, whether rocks or sands.

In the second order of ſailing, when the fleet is looking for the enemy or trying to avoid him, the columns *a b, cd, ef,* are to be formed on three ſides of a regular lozenge, and ranged on the two cloſe-hauled lines. The ſhips of the two diviſions *cd, ef,* ſometimes to windward (as in fig. 56.@@), and ſometimes to leeward (as in fig. 57. ), of the third diviſion *ab,* are to be formed on two parallels of one of the cloſe- hauled lines in the wakes of their reſpective headmoſt ſhips ; and the third diviſion *ab* is to be ranged ahead or aſtern of the two others on the other cloſe-hauled line, and nevertheless to ſteer chequerwiſe the ſame courſe as the two divi­ſions *cd* and *ef.* When *ab* is to windward of *ed* and *ef* (fig. 57.), the viſcount calls that the *primitive* windward order ot ſailing ; and when to leeward (fig. 56.), the fleet is in the *leeward primitive* order of ſailing. The position of the three diviſions in the windward primitive order of ſail­ing is the ſame for the order of battle natural ; for the or­der of retreat ; and for the order of circumvallation; when the object is to ſeparate from the hoſtile fleet a part of its ſhips in order to engage the remainder with more advantage. The position of the three diviſions in the leeward primitive order of sailing is alſo the ſame for the order of battle in­verted ; for the order of chasing ; and for the order of con­voy ; ſo that in no poſſible caſe, when looking for the ene­my or wiſhing to avoid him, need the admiral perplex him­ſelf with more than theſe two poſitions on the one or the other tack, whatever movements he may wiſh the fleet to make.

In the third order of sailing, the diviſions *c d* and *e f,* in­ſtead of bearing on the headmoſt and ſternmoſt ſhips of the diviſion *a b,* may be very conveniently placed at conſiderable diſtances from that diviſion, without the ſmalleſt dan­ger of being ſurpriſed by the enemy, provided the ſhips of each of the diviſions keep always their reſpective poſitions in the two lines of bearing. For if we ſuppoſe the three diviſions to be in ſuch poſitions that *a b* and e f are at the diſtance of ſix leagues from each other (fig. 58), and that the two diviſions c *d* and *e f* rest on the extremities of the baſe of the triangle STV, while the centre ſhip of the divi­ſion *a b* reſts on its ſummit T ; none of the diviſions could be cut off by an enemy, however formidable, ſeen from its centre ſhip at the diſtance of ſix leagues. For if, upon the proper ſignal being thrown out, the diviſion *ab* ſhould fleer from T towards X, on the courſe oppoſite to the cloſe-haul­ed line it steered before, and the two diviſions *e d* and *e f* steer from V and S towards X likewiſe ; it is plain that each of theſe three diviſions would have only three leagues to run in order to join the other two in the windward pri­mitive order of sailing, which is the ſame with the order of battle natural ; whilſt the enemy, which was first perceived at the diſtance of ſix leagues, muſt necessarily run nine before he could come up with the neareſt of theſe ſquadrons. And if frigates were placed ahead, and in the intervals between the diviſions, at the points *y y y* to windward and leeward of the fleet, the enemy might be ſeen at a ſtill greater diſtance, and the danger of ſurpriſe be ſtill ſo much leſs.

@@@[mu] Plate CCCCXCVIII.