the evolution, it is found that more is gained by increasing the ship’s velocity, than by a smaller impulse in the head- sails more favourably directed. Experienced seamen differ, however, in their practice in respect of this particular.

*To box-haul a Ship.*

This is a process performed only in critical situations, as when a rock, a ship, or some danger, is suddenly seen right a-head, or when a ship misses stays. It requires the most rapid execution.

The ship being close-hauled on a wind, haul up the main­sail and mizen, and shiver the top-sails, and put the helm hard a-lee altogether. Raise the fore-tack, let go the head bowlines, and brace about the headsails sharp on the other tack. The ship will quickly lose her way, get stem-way, and then fall off, by the joint action of the headsails and of the inverted rudder. When she has fallen off eight points, brace the aftersails square, which have hitherto been kept shivering. This will at first increase the power of the rud­der, by increasing the stern-way ; and at the same time it makes no opposition to the conversion which is going on. The continuation of her circular motion will presently cause them to take the wind on their after surfaces. This will check the stem-way, stop it, and give the ship a little head­way. Now shift the helm, so that the rudder may again act, in conjunction with the headsails, in paying her off from the wind. This is the critical part of the evolution, because the ship has little or no way through the water, and will frequent­ly remain long in this position. But as there are no coun­teracting forces the ship continues to fall off. Then the wea­ther-braces of the after sails may be gently rounded in, so that the wind acting on their hinder surfaces may both push the ship a little a-head and her stern laterally in conjunction with the rudder. Thus the wind is brought upon the quar­ter, and the headsails shiver. By this time the ship has ac­quired some headway. A continuation of the rotation would now fill the headsails, and their action would be contrary to the intended evolution. They are therefore immediately braced the other way, nearly square, and the evolution is now completed in the same manner with wearing ship.

Some seamen brace all the sails aback the moment that the helm is put hard a-lee, but the after-sails no more aback than just to square the yards. This quickly gives the ship stern-way, and brings the rudder into action in its inverted direction ; and they think that the evolution is accelerated by this method.

There is another problem of seamanship deserving of our attention, which cannot properly be called an evolution. This is lying-to. This is done in general by laying some sails aback, so as to stop the head-way produced by others. But there is a considerable address necessary for doing this in such a way that the ship shall lie easily, and under command, ready to proceed in her course, and easily brought under weigh.

To bring-to with the fore or main topsail to the mast, brace that sail sharp aback, haul out the mizen, and clap the helm hard a-lee.

Suppose the fore topsail to be aback ; the other sails shoot the ship a-head, and the lee-helm makes the ship come up to the wind, which makes it come more perpendicularly on the sail which is aback. Then its impulse soon exceeds those on the other sails which are now shivering, or almost

shivering. The ship stands still awhile, and then falls off, so as to fill the after sails, which again shoot her a-head, and the process is thus repeated. A ship lying-to in this way goes a good deal a-head and also to leeward. If the main topsail be aback, the ship shoots a-head, and comes up till the diminished impulse of the drawing sails in the direction of the keel is balanced by the increased impulse on the main- topsail. She lies a long while in this position, driving slow­ly to leeward ; and she at last falls off by the beating of the water on her weather-bow. She falls off but little, and soon comes up again.

Thus a ship lying-to is not like a mere log, but has a cer­tain motion which keeps her under command. To get un­der weigh again, we must watch the time of falling off ; and when this is just about to finish, brace about briskly, and fill the sail which was aback. To aid this operation, the jib and fore-topmast stay-sail may be hoisted, and the mizen brailed up ; or, when the intended course is before the wind or large, back the fore-topsail sharp, shiver the main and mizen topsail, brail up the mizen, and hoist the jib and fore­topmast staysails altogether.

In a storm with a contrary wind, or on a lee shore, a ship is obliged to lie-to under a very low sail. Some sail is ab­solutely necessary, in order to keep the ship steadily down, otherwise she would kick about like a cork, and roll so deep as to strain and work herself to pieces. Different ships be­have best under different sails. In a very violent gale, the three lower stay-sails are in general well adapted for keeping her steady, and distributing the strain. This mode seems also well adapted for wearing, which may be done by haul­ing down the mizen-staysail. Under whatever sail the ship is brought-to in a storm, it is always with a filled sail, and never with one laid aback. The helm is lashed down hard a-lee ; and therefore the ship shoots a-head, and comes up till the sea on her weather-bow beats her off again. Getting under weigh is generally difficult ; because the ship and rigging are lofty abaft, and hinder her from falling off readi­ly when the helm is put hard a-weather. We must watch the falling off, and assist the ship by some small headsail. Sometimes the crew get up on the weather fore-shrouds in a crowd, and thus present a surface to the wind.

These examples of the three chief evolutions will enable those who are not seamen to understand the propriety of the different steps, and also to understand the other evolutions as they are described by practical authors. We are not ac­quainted with any performance in our language, where the whole are considered in a connected and systematic manner. There is a book on this subject in French, called *Le Ma­nœuvrier,* by M. Bourdé de Ville-Huet, which is in great reputation in France.

We offer this account of the subject with all proper re­spect and diffidence. We do no profess to teach ; but by pointing out the defects of the celebrated work of M. Bou- guer, and the course which may be taken to remove them, while we preserve much valuable knowledge which they contain, we may perhaps excite some persons to apply to this subject, who, by a combination of what is just in M. Bouguer’s theory, with an experimental doctrine of the im­pulses of fluids, may produce a treatise of seamanship which will not be confined to the libraries of mathematicians, but become a manual for seamen by profession.@@1 (b.b.b.)

@@@, There are several good treatises on seamanship in English ; but we think the whole topic bas become of sufficient importance to de­serve still more literary attention than it has yet received ; and we are persuaded that a well-digested, and well written marine dictionary, scientific, practical, and popular, if sufficiently copious, and undertaken by a competent hand, would he considered a great boon, not only to seamen, but to the society at large of this essentially maritime country. The most approved works on seamanship in English are the following: Falconer's Marine Dictionary; Darcy Lever's Seamanship; Theory and Practice of Seamanship, by Richard Hall Gower; Griffith’s Practical Hints ; Nicholson’s Seamanship ; Steel’s Elements and Practice of Rigging. Seamanship, and Naval Tactics. The most recent works on Seamanship with which we are acquainted, are the following: Captain Glascock’s Naval Officer’s Manual ; Lieu­tenant Martelli's Naval Officer's Guide, and Lieutenant Fordyce's Outlines of Naval Routine. Many useful practical hints may also be derived from the perusal of James’s Naval History. The best foreign writers on Seamanship and Tactics, are Pere Hoste, Morogues, Byland, Bourdé, Lescallier, and Grenier,