

**82.—THE "KURREN" AND "KEITEL" (FISHING-VESSELS) OF THE  
COURLAND HAFF.****By ERNST ANCHER.**

The principal need of our fishing-vessels is that they should draw very little water; for the fishing-ports and landing-places along the entire coast of Lithuania are exceedingly shallow, the water often being only one foot deep, and in the northern part of the Haff there are many banks which, under certain circumstances, cannot be avoided. This makes it impossible to have fish-tanks in our vessels, as these would cause them to draw more water and render them useless in many places along our coast. Our seine-fisheries are dependent on various local circumstances, which are unfortunately of such a nature as to yield almost exclusively dead fish.

The main object of all fishing-vessels is that they should be suitable for cruising and for casting the net in a fresh and heavy breeze and in short waves, and these conditions determine the method of building our vessels.

The bottom is not even, but rises from the mainmast to the prow (one-third of the entire length) about 5 inches in a straight line. A stronger rise would make sailing easier, as well as cruising in calm water or long waves, but in the short waves of the Haff it would prove an impediment. Towards the stern the rise is very inconsiderable. Thereby the vessel drags in the water and moves a little heavier than would otherwise be the case, but as it draws but little water this proves no serious difficulty, the steady movement of the vessel remedying the evil. Moreover, the yawing to which all vessels which draw little water are subject is avoided. Crosswise the bottom also slants a little towards the center and also towards the sides. This, of course, is not favorable to sailing with a fresh breeze, but it increases the strength of the vessel in a strong wind. The bottom should be as broad as possible and obtuse at both the stern and the prow, so as to make the vessel float in the water with ease.

The sides of the vessel are not straight; the lowest plank bulges out considerably, the second is somewhat straighter, and the third rises almost perpendicularly. Thereby the side of the vessel assumes the shape of a curve, on which the vessel rests when leaning over, and is enabled to withstand the rolling of the waves. Towards the prow the sides must be straight, so as not to cut the waves, but allow these to lift the vessel easily. A vessel constructed in this manner may cruise with perfect security even in the shortest waves. The vessel needs no ballast, but will be safest without any. The bottom is 3 to 3½ inches thick, and made of pine wood. The lower planks of the sides, made of oak

wood, are about  $2\frac{1}{2}$  inches thick, and gradually diminish in thickness towards the top, the upper plank being only  $1\frac{1}{4}$  inches thick.

Of the sails, which are manufactured here, sprit-sails are the best in wind; the two small foresails also render better service than a large stay-sail, and are therefore preferred by the fishermen. In reefing the mainsail, the small foremast is taken down entirely, and the sprit-sail remains spread. The mainsail is reefed from the top. It is somewhat narrower at the top than at the bottom, and by reefing it from the top there is no danger of rolling the sail too tight and of tearing it. The reef-line is simply tied at the top of the sprit, and in reefing it is made loose and tied lower down.

The great advantage of these vessels is their strength, as they can withstand almost any storm. I own a cutter built in the United States. In moderate wind I can always outsail our vessels, and even in a tolerably stiff breeze I can cruise as well as they; but if a strong wind springs up I can no longer cruise, but must think of my own safety, while our vessels keep on in their course.

RUSS, EAST PRUSSIA, *July 1, 1880.*

### 83.—WOODEN TANK FOR THE TRANSPORTATION OF LIVING FISH.

By MAX VON DEM BORNE.

The tank has a double bottom, in order that dirt may be separated from the fish. If water is poured into the tank, it will flow out by the pipe from below the upper bottom, and take the dirt out of the tank.

There should be three inches of air below the cover. On warm days some ice may be placed on the cover.

BERNEUCHEN, *February 29, 1884.*

