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At Iowa the old men who have returned are Williams (captain), quarter; Watters, right end; Burrier, left tackle; Briggs, sub center; Colthard, sub tackle; Macey, sub full-back; Hollenbeck, the second team's big tackle; Siebert, Herbert, Maresh and Buckley last year's substitutes.

With this number of old men and thirty new candidates who have reported for work it is expected that a team quite as good as that of last year will be developed.

At Minnesota, Tweet at right tackle and Hoyt at right end, will be lost from the line, and in the back field Van Valkenburg and Smith, right and left half-backs, respectively, will not return. The new material at Minnesota is promising, where it is hoped that a strong team may be again developed, although the loss of Tweet and Van Valkenburg will be most severely felt.

Chicago loses this year Henry, quarter and left half; ex-captain Speed, center; File, left end; Rich, right end; Ervin, right guard; Eldridge, right half, and Garrey, left end and quarter; but is favored with a

large quantity of valuable incoming material.

McNab, the former Michigan center, and Wheeler, the old Brown center and tackle, are both available for Chicago, while Rex Kennedy, Atwood, Carey, Cook, Remp, Perkins, Snider, Pettit, Jennison, Strauss, Flannigan, Grandberg, Spike and Hunter are looked upon as the men from whom the team will be formed.

A successful season this year at Michigan is looked forward to with confidence. Eight, and possibly nine, of the men who played in the final game with Chicago upon Thanksgiving day, will return. Snow and Redden, ends; Shorts, guard; and captain White, tackle, are among the best in the west and on this nucleus the team will be built.

At Northwestern, last year's team will sustain the loss of but two men, whose places can be ably filled, so that the old team will be practically intact.

Illinois will remain under the same system of coaching and although losing several valuable men has good prospects for a strong team.

DUCKING BOATS OF MANY WATERS

THE KIND AND HOW THEY SHOULD BE MADE

By A. G. Holmes

POSSIBLY no one form of sport is more thoroughly enjoyed than duck shooting by the vast army of sportsmen of the world, for it has an indescribable fascination. To-day we make a good bag and to-morrow possibly none. Yet the days that we draw blank are oftentimes full of pleasurable remembrances, and we look forward to the next day when we may go out in the marsh or pond, lakes or rivers. The pleasure of a good duck hunt, however, depends a great deal on the outfit we may have to use. The gun may not be a thing of beauty or guaranteed to kill at one hundred yards, but it will do; the decoys may not be good, but the ducks will sometimes come to anything if the situation is right. The boat we use, however, must be dry, safe and roomy. How hard it is to be out in the sharp weather, when

winds whistle through the reed and rice, and chill one easily, if our boat leaks and we cannot keep our kneeling-cushion or hay and blankets dry. We get cold, and though we may have good shooting, with the dampness in our boat we lose a great deal of the pleasure of the day. Again, a side shot at a bird that has slipped almost by, the boat tips and we get damp as the water comes in; or worse still, we turn over in the cold water. These things and many others we must guard against in the ducking trips. We need a boat, of the best kind; built for service and not for beauty or speed. There are, of course, places where we would not need a boat—on a duck pass with a good retriever, in the shallow ponds of the west where rubber boots are all that is needed, or in shallow rivers. But duck shooting as we generally find it—wide



A LOG DUCKING BOAT.

lakes and rivers, large marshes, deep bayous and the Great Lakes—requires boats as an absolute necessity for our sport.

Boats for duck shooting differ according to the place for which they are made and used. One locality accepts one style as best for its wants, while not far away another style is used. As the sport is at its best at those times of the year when gales and violent storms are always to be expected, the boat should be built to stand any emergency. First of all, it must be staunch and safe to shoot from; dry, buoyant and with ease of handling and a fair running quality. It should be decked over with a combing to keep out the spray and waves. The height is regulated by local conditions and the grounds upon which the boat is to be used. The length, as a rule, will vary from fourteen to sixteen feet; while width depends upon the size of the person who will use it; the widest part should, however, always be about four to five inches forward of the boat's center. The bow must be built on the form of a sledge runner, so it will go over obstructions easier and make less noise, besides leaving less wake, and making less fuss in being pushed ahead. Marsh boats are wide and low, being of extremely shallow draught; lake and river boats are deeper draught and narrower beam. We may divide the duck boats into three classes, viz.: the canoe, the skiff and the sneak boat. These three are subdivided again, as I will describe, aiming to give some practi-

cal suggestions as to their makeup: The canoe as a dugout, made from a large tree; the canoe made from inch strips (or smaller) and the canvas-covered canoe. The dugout canoe is made from a good log, pine preferably, and when sawed will be 14 or 16 feet long and about 10 to 12 inches high at the ends. A carpenter will be able to dig the boat, leaving it about an inch and a half thick on the bottom, and the sides, gradually thickening as they near the bottom, are sometimes not more

than a quarter of an inch thick at the top, a half inch will be right, as the decking strengthens the sides considerably. Of course the canoe is not dug out until it has been roughly shaped. Sometimes it is burned out after the Indian fashion, but not generally. A dugout of 26 inches can, when made, be widened to 28 inches by spreading. For lake use or on a large river a boat 28 inches extreme width, 14½ feet long, 11 inches high at bow and stern and 10 inches high at center will make an extremely fine craft. Decked over 3½ feet at the bow and 2½ feet at the stern, decking on the sides about 2 inches to the combing will leave a cockpit 8½ feet long and 24 inches wide. This gives you a boat with plenty of room in which to move about.

In decking a hunting boat the stern end should be rounded out where the combing is put in, or a board hollowed slightly if it is to be a straight piece. Your combing in a paddle boat should be in the shape of a cigar, the bow end of the combing being the point. Do not deck your boat over too much; it is a mistake often made; it is unpleasant to be obliged to poke around under decks to get at decoys or some article out of arm's reach. Make your decking higher at the center than at the sides.

A dugout canoe of the above dimensions decked over will weigh about 70 to 80 pounds. The dugout never leaks, and if made right I believe will outlast by ten years, if properly taken care of, any boat

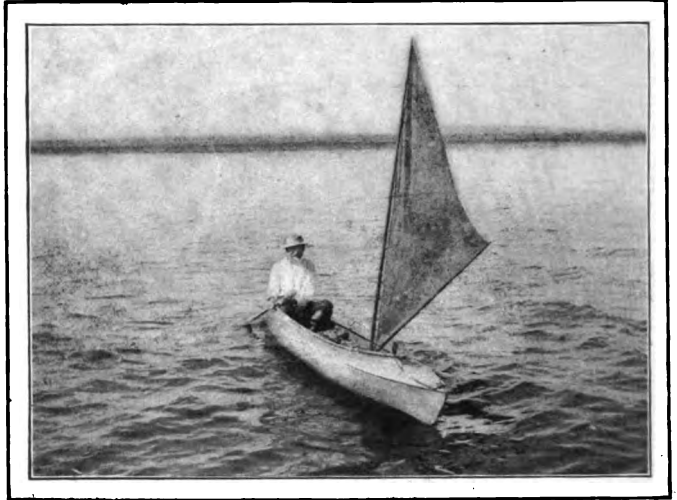
constructed out of strips or boards. They are, of course, a boat of the lumber region, and high-priced compared with others.

The strip canoe as made here is without ribs and is a smooth-skin boat. The bottom is a 2-inch board; the strips are fitted into the bow and stern pieces fastened by screws every 6 or 8 inches, and is drawn into shape by clamps, giving the boat the canoe form. The bottom strips are thicker than those at the top. When the strips are all on, the boat is smoothed over and given a good coat of white lead; it is then painted and if made right will look like a log canoe. Decked over like the dugout this is a satisfactory hunting boat, but it must be built by an expert, and needs to be looked after constantly, as it is affected by climatic changes and difficult to keep tight. These boats run a little wider than a log canoe, and as a rule are about 30 inches wide and weigh 90 pounds.

The canvas-covered canoe is made similar to the ribbed strip canoe, excepting that the strips are very thin and over these are stretched canvas and heavy coats of water-proofing. This makes a light and an easy paddling boat, capable of a fair degree of speed, as indeed are all these canoes, both under sail and paddle. A pole of about 9 feet with a V-shaped prong of steel is necessary in poling through marshes. Paddles of maple and as light as each person's taste may prefer are best. The bark canoe is not a duck boat.

The skiffs are divided into strip, board, iron, canvas and the clinker skiff, which should be built by a professional. There is also the sneak boat, which is usually outlawed by sportsmen.

The strip skiff is built on the same style as the strip canoe, but is not drawn into canoe shape. It is wider and lower, being about 9 to 10 inches high at bow and stern and about 8 to 9 inches at the center. Built as a smooth-skin boat, its dimensions are about 14½ or 15 feet long, 32 to 36 inches wide;



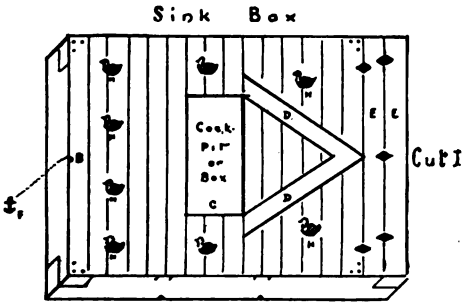
A STRIP DUCKING BOAT.

it is of very shallow draught and easy to paddle; is decked the same as the canoe, and can be used with oars very nicely.

The board skiff is built by using two boards for the bottom and two for the sides. It should have good strong ribs and is not a hard boat for an amateur to build. It is sharp at both ends and is not perfectly flat, as, when made correctly, the bottom, from the center, slopes up to both the bow and stern pieces. It is perhaps the most commonly used type and can be seen on almost any body of water; therefore I will let this description go, as most every one who has any use for a ducking boat is familiar with it.

The canvas skiff is made by stretching canvas and heavy waterproof over a clinker boat framework. However, if a canvas skiff or canoe is wanted, it will be better to buy one of the many good makes now on the market. The same comment applies to the pressed iron or heavy tin boats for ducking purposes, which are also very good, and at the same time within reach of the majority of sportsmen's pocketbooks. They are cheaper than dugouts or strip canoes, and will last a long time with proper care.

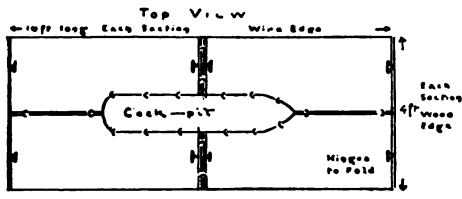
In painting a duck boat the first coat should be white lead, allowed to dry in well. The paint can then be put on; and right here let me give a little advice as regards color for a duck boat. Use a drab or a lead color. It makes the boat least conspicuous, whether in the weeds or on the bare shore, or out in the open, of any color devised for such purposes. It blends with all of the natural



A - Head to Windward B - Floor
 C - Box or Cock Pit (for lying down box mate
 Cock pit 6 1/2 ft long x 12 in. deep
 DD - Sheer Leads EE - Splash Boards
 F - Tail Anchor G - Head Anchor
 H -

Dimensions

Length of Platform	10 ft
Width	10 ft
Depth	8 in
Length - Box	4 ft 6 in
Width at Top	2 ft 4 in
Depth	22 in. to 2 ft
Width at Bottom	1 ft



CC - Combing
 DD - Sheer Leads
 EE - Splash Boards
 FF - Tail Anchor
 GG - Head Anchor
 HH -

surroundings and you can get along with less ambush or blind than with any other color. Give your boat two coats of paint inside and out and let each dry in well. Have your paddles of maple, and at least five feet long, and you will find five and one-half feet better. You can use short, light oars, with outriggers if you prefer, also bow-facing oars. A small sprit sail or a mutton-leg sail will come in extremely handy. All these boats sail quite well and are very steady. An eight foot to ten foot pole will be the proper thing, or a pole and paddle combined. Do not have your paddles so wide where the hand grasps, as the factory-made paddle. It tires your hand too much. Have them nearly round at the grip. Carry a sponge. You will often find it handy.

The user of a sink box has a great advantage over any person who has to use the regular duck boat for open-water shooting.

On the shallow flats of the great feeding grounds, half a mile or more from shore and weeds, where these birds will drop in without suspicion, the sink box is placed, with a large flock of decoys set all around.

The shooter is down to water level in the cock-pit and there is nothing to scare the ducks from the decoys until he raises up to fire at them. A man is necessary to pick up the dead birds and a sail boat is used to keep the flocks moving up and down the open water, and also to tow the sink box to and from its anchorage. I give here an outline with dimensions of a sink box in which the shooter can sit down instead of lie down. This I consider the preferable form, especially as the dimensions of the two kinds, outside of the cockpit, are identical. The timbers are pine, 8x10 inches, halved at the ends and bolted through. The decking is of 1 1/2 inch stuff, tongued and grooved, and the box is of the same stuff as the deck. There is also a movable hatch to the box, which, when locked, makes it absolutely watertight, so that there is no danger of the box filling with water and sinking when not in use. Several hundred pounds of iron is needed to get the box down to the required depth, and therefore iron decoys are used on top of the box. These iron decoys should be attached to wooden decoys, which in case of necessity can be thrown overboard, to serve as a buoy for the iron ones.

In the box, perfectly screened from the wind and waves, nice and dry, the shooter can sit comfortably, surrounded by a hundred or more decoys, and so close to the water that every bunch of ducks coming anywhere near the box will see the decoys and as a rule readily come to them. A person can use a light gun and save both in muscular exertion and ammunition. In fact the sink box is a fine thing in a country where ducks have open waters of large size with shallow bars on the feeding grounds, and where they feed away from the shores at all times. In a sink boat under such conditions one can get a large bag of birds, where in an ordinary duck boat very inferior shooting would be had. The cock-pit should be about 6 1/2 feet long and 12 to 15 inches deep, two feet wide at the top and 20 inches wide at the bottom. These measurements are for the single box to lie down in; the pit need not be so long otherwise. The double box must be enlarged quite a bit in the pit; ballast need not be used when two persons are in the box. A 2 1/2 inch combing should run around the pit above the platform deck, with splash boards as shown; these together with sheets of lead will keep out an ordinary sea.