Again, all of the parts of an oar are interrelated. A light oar can still be hard to use. This is where balance comes in. Oar balance is really two different things: *simple balance* where the oar will balance along the shaft when supported on the edge of the hand, and *hand balance weight*, the weight needed on the handles to raise the blades out of the water. Simple balance—the center of gravity— is one of the few simple things about oars. It should be far enough out towards the blade so that when the hands are raised at the beginning of a stroke, the blade will fall crisply into the water. This is part of a good feel in an oar.

Hand balance weight is a little tougher. What *is* a good hand balance weight for a pleasure oar? A good hand balance weight for a racing scull is 2-1/2 pounds. The experts consider more than that too wearing on the athlete. Smaller rowers, most women included, quickly tire at this weight, but most feel comfortable with 1-3/4 pounds. For what it's worth, I've never heard a large rower complain that the 1-3/4 pound hand balance weight oars are too light. So what is the optimum hand balance weight? The problem is that hand balance weight is directly related to how stout an oar is. If a boat is to have only one pair of really good oars — and most boats are lucky to have one pair — then the oars have to be big and strong enough so that when some large enthusiastic lout uses the boat, he won't immediately snap them off. I consider 1-3/4 pounds the maximum hand balance weight for a mixed user oar—with more work on the subject in order.

Getting a light hand balance weight—even 1-3/4 pounds—is not easy. The best way of starting is to make oars with the lightest material suitable. This generally means spruce—the lightest that you can lay your hands on. This is because the less weight you have outside the oarlocks, the less weight is needed inside to balance it. The next way of getting a light hand balance weight is to be particular about where the oar rests in the lock. The best example is again found with the racer. The clamp-on button on a racer's oar determines how far in or out his oar rests in its oarlock. It is movable, and it does get moved, sometimes by as much as 1/2 inch. When the racer loosens the button and slides the oar out, he changes his *leverage ratio* on the water, and he might be able to go a little faster. He also increases his hand balance weight which will wear him down sooner. Critical stuff. Most racers set their buttons at about 87 centimeters (34-1/4") from the end of the grip. If the oar is 300 centimeters long (118"), there is 2.45 times as much oar outside the lock as inside, and the oar has a ratio of 2.45:1. If you are going to make a pair of light, naturally balanced spruce oars, 2.6:1 is about as far as the ratio can be pushed and still end up with a hand balance weight of 1-3/4 pounds. If the blade is carved out of solid wood, then some ruthless shaving will have to be done to get it to balance at 1-3/4 pounds.

If you need a pair of oars for your light dory and the beam at the locks is 48", this is how you would proceed: If handle overlap is to be avoided, simply divide the beam in half—24"—and multiply that by 2.6. The result, 62.4", is the distance outside of the lock. Add the 24" inside the lock to get the total oar length of 86.4" or 7' 2-1/2". This is enough to make one of Phil Bolger's light dories go. If you don't mind a reasonable amount of overlap, say, about 1-1/2" (it really *is* easier once you get used to whacking your knuckles), the oar length jumps to about 7' 8" which *might* be better. All of this is not much help if you've got a long, lean St. Lawrence River skiff of 36" beam. A 6-1/2' oar isn't long enough, and outriggers aren't usually an option. You'll just have to corner Andy Steever (his address is in the membership directory) and ask him about boring out the grips and adding weight to get the oars to balance. For all others though, I am certain that if you tracked down the Old Man on the Mountain and asked him the meaning of life, he would say "long slim boats, stiff outriggers, and light, lightly balanced spoon oars."

Are spoon oars really that much better? You bet they are. Well, at least I think they are. The racers are all dead certain. They say that given two equal racers in two equal boats, if one is given a pair of flat blade oars and the other a pair of pretty spoons of the same size, then the racer with the spoon oars will beat the one with the flat blades every time. A spoon blade is more efficient; it can be made smaller and lighter than a flat blade. An ounce saved in the blade will save 2-1/2 ounces (the ratio) at the handle end, so it *is* worthwhile. As to what blade, shape, size, amount of hook, etc., is right for you and your boat, all that's needed is a place to start—use the information in the drawing if you like—and a theory of spoon oar propulsion as a guide to further development.

The bad news is that all the theories commercially available aren't of much use. There's a good selection, but they're filled with things like vectors and are impossible to understand. The good news is that they conflict with one another. The whole business is so complicated and so hard to quantify that the proponents of these theories can't even prove each other wrong. That's where the fun comes in: You can make up your own theory. It's not hard, all that's required for a good one is a little charm and plausibility. For illustrative purposes I will offer up one of my own with the understanding that no one will confuse it with fact. Rather, it should be considered as a guide to the direction to be traveled