The Possibilities of Land Culture.

A remarkable illustration of what may be done with ten acres of land only has been furnished by a fruit planter named Dillon, of Woodland, California. Six years ago he planted five acres with Muscatel grape, since which he has added two more acres. He has also planted one acre with prunes, nectarines, and peaches. From the five acres first mentioned his gross returns last year were $1,200. Last year he planted three-fourths of an acre of beets, which yielded 35 tons. By the aid of these, and a little bran or short, he kept a span of horses and two cows seven months, besides which he sold $30 worth of beets. One of the cows yields from 10 pounds to 11 pounds of butter per week, besides the milk which the planter's small family uses. By the side of his fencing Dillon further planted 20 walnut trees, which have borne fruit for two years. From the wood cut from these trees this year in the trimmings he made a little over three cords of stove wood. Gum trees planted six years ago, and some of them 12 inches in diameter, will make when cut into wood from one-fourth to one-half a cord of wood per tree. In the condition in which he now has his fruits and vines, this enterprising grower on a small scale states that he can make a living for himself and family, and lay by from $800 to $1,000 annually. His family consists of himself, wife, and one child. It is evident that Mr. Dillon, of Woodland, California, does not allow anything within his reach to lie idle or unutilized.

Preservative Vapors.

Mention is made in the *Lancet* of two small specimens of lungs, recently exhibited by a well known physician, which had been kept in chloroform vapor, untouched, in their respective bottles, for thirty-five years, and were well preserved. An illustration of the preservative power of ammonia vapor is also cited, namely, a specimen of blood which had been drawn from a sheep's neck in April, 1862, and kept in a well corked bottle ever since, and being still perfectly fresh and fluid. It is found that structures containing much fat become saponified unless chloroform is mixed with ammonia, and that, when it is desirable to retain the color of the blood, the addition to the chloroform of coal gas, which contains sufficient carbonic oxide for the purpose, is entirely successful.

Recipe for Oatmeal Cakes.

For the benefit of various inquirers Mr. S. N. Stewart gives the following recipe for the oatmeal cakes or crackers recently mentioned in our paper: To coarse oat meal, such as is here known as coarsest Akron (from Akron, Ohio), add sufficient white flour to hold it together. While dry add salt and shortening—butter is best—and rub thoroughly together; then add cold water enough to make quite soft. Let it stand half an hour, when it will have become a stiff dough. Roll very thin, cut in cakes, and bake brown in a slow oven. If fine oatmeal is used, no white flour need be added. Of course they can be made without shortening.

OIL EXTRACTOR.

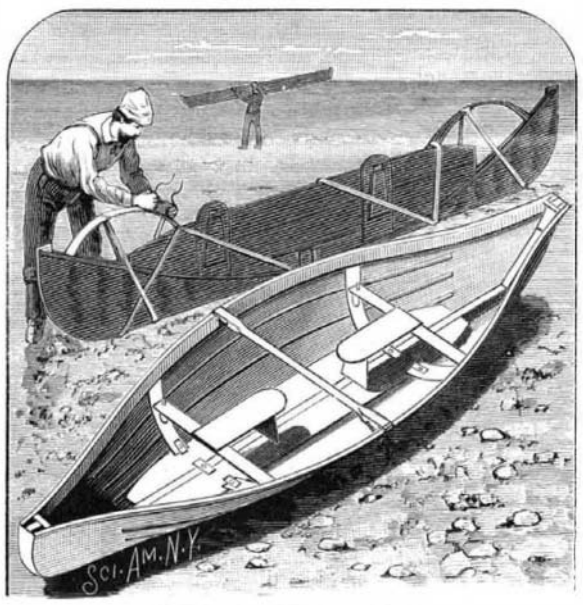
A simple and efficient device for extracting oil from fish liver or blubber, and which can be used on board vessels or on shore, has been recently patented by Mr. F. Payzant, of Lockport, Nova Scotia. A cylindrical furnace is provided with a grate, below which is an ash pit. Air is admitted to the fire by a pipe entering the furnace below the grate and having its upper end, which is above the top of the furnace,

PAYZANT'S OIL EXTRACTOR.

provided with an adjustable hood for catching the air. The furnace is surrounded by a water jacket which can be filled by means of a funnel. The furnace is moved about by the aid of handles attached to it. It is placed upright in a tank, vat, or tub containing the liver or blubber, and is held in place by suitable arms. To use the extractor the jacket is filled with water and fire is started in the furnace. The heated water forces the oil from the liver or blubber and it rises to the surface, the livers sinking to the bottom of the vessel. The oil is then skimmed off, or removed by dippers, or is drawn off by means of a suitable faucet. The jacket must be kept full of water, as the direct heat from the fire will not extract the oil. The engraving represents the extractor with certain parts cut away to show the interior.

FOLDING BOAT.

The accompanying engraving presents two views of a folding boat recently patented by Mr. C. M. Douglas, of Toronto, Canada, and now being manufactured by the Ontario Canoe Company, of Peterboro, Canada. To the ends of the keelson are secured a stem and stern post braced and stiffened by blocks. The gunwales are curved like the sides of the boat, and are hinged at the ends to the stem and stern posts by shackles, so that they can be folded down when the boat is to be folded for transportation. The shell of the vessel is formed of waterproof canvas or other suitable material tacked to the gunwales and to the bottom of the keelson. Strips are tacked to the outer and inner surface of the canvas for the purpose of stiffening it. There



DOUGLAS' FOLDING BOAT.

are two or more stretchers used, which are curved in the same manner as the ribs of ordinary boats, and passed into recesses in the upper edge of the keelson, over which recesses prongs fastened to the keelson project, and under the prongs the stretchers pass. The upper ends of the stretchers are passed in between the canvas and the inner strip of the gunwale, which extends below the outer strip and keeps the gunwales raised and separated. The stretchers are made of wood or steel. On the inner surfaces of the stretchers blocks are secured from which upwardly projecting pins pass into holes in transverse boards serving as stiffeners for the ribs and supports for the seat. False bottom planks rest on each side of the keelson, and are kept in place by buttons. The boat can be folded very compactly, so as to be easily transported, and can be rapidly erected, while the plan permits a light and yet strong construction.

Oxalic Acid in Bleaching.

The march of improvement, in the processes of bleaching vegetable fiber, has hardly kept pace with that of dyeing. Indications that it will do so ere long are not wanting, but as yet we go on in the old way. We get rid of the impurities, natural and otherwise, by prolonged boiling in soda lye. We follow this with our bleach proper, consisting of solutions of chlorinated lime (chloride of lime), at first concentrated, then weaker and weaker. We alternate these with the souring, sometimes with sulphuric acid, sometimes with hydrochloric, and with baths of soda lye. The acids set free the chlorine of the solution of chlorinated lime, which saturates the fibers, and combines with the lime, while the lye serves to neutralize the otherwise destructive action of the acid. During these operations the tissues are washed many times with the largest possible quantity of water. Improvements in these operations cannot come too soon. At present they are costly and inconvenient. The water must be heated. The capital required for the first installation is considerable, and even with the best tools and appliances the time taken up, and the amount of hand labor required, are also great.

In order to lessen the inconveniences, says the *Moniteur des Fils et Tissus*, Mr. C. Beyrich, of Arnsdorf, Silesia, has proposed a process based on the three following points: 1. That oxalic acid, either free or as the oxalate of potassa, possesses the property of combining with the lime of the chlorinated lime more energetically than either or both of the acids commonly used in bleaching. 2. That the oxalic acid never attacks the fiber as do the other acids. 3. That the presence of vegetable substances, which, under the common system, are removed before the bleaching proper, does not interfere with the action of oxalic acid.

Of the three substances which compose chlorinated lime, but one, hypochlorite of lime, may be said to be of practical value in bleaching. Instantly deprived of its lime in presence of oxalic acid, the hypochlorous acid is set free, and almost immediately decomposed; its two constituents, chlorine and oxygen, being in the nascent state, act with redoubled energy; the oxygen directly on the coloring matter, the chlorine indirectly through the decomposition of water.

The cloth to be bleached is soaked at a temperature of from 20° to 26° C. for five or six hours in a bath of chlorinated lime, to which oxalic acid has been added. All of the oxalic acid is not introduced at once, the greater part being thus used, and the remainder in an hour or two. After bleaching, the goods are carefully rinsed and passed through a weak solution of sulphuric acid, then through one of sodic carbonate to neutralize the acid, and finally rinsed and dried.

The objections to the process, on the score of the expense of the oxalic acid, would probably not hold were a demand created for the acid The materials of which it is made are comparatively cheap, the methods of manufacture simple, and, stimulated by the demand, active competition would reduce cost. It must not, however, be forgotten that the oxalate of lime formed on the fabric is one of the most insoluble salts known. For scouring, many bleachers prefer hydrochloric acid to sulphuric, because the resulting salt is so readily washed out. They would find the oxalate of lime more objectionable than the sulphate, because of its greater insolubility. The invention is a move in the right direction, and as such it is deserving of a fair trial both with and without the modifications which will readily suggest themselves to experienced hands.

A Learned Woman.

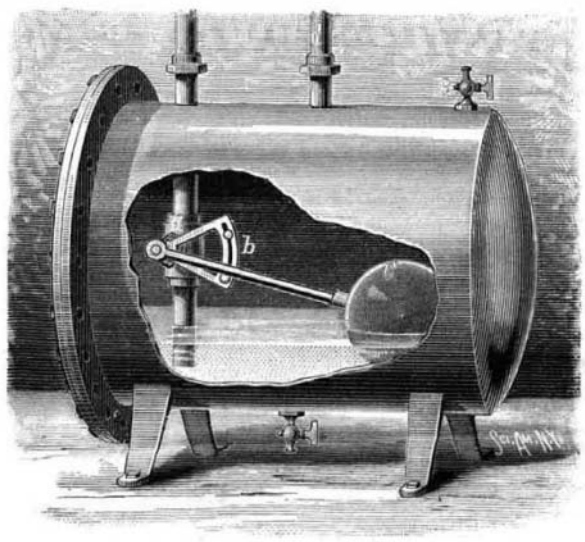
The life of Miss Anna Sutton, recently published in England, presents a character which it is more easy to admire than to imitate. She was born in the province of Ulster, Ireland, in 1791, and died in 1881. At 20 years of age, having previously received only a rudimental education, she found a Latin grammar, and forthwith attempted to master it. She learned the language, and read all the chief classics. Next she took up Greek and read the New Testament, Homer and such other Greek works as fell in her way. French, Italian, Hebrew, Arabic, and Chaldaic followed, and when past 80 years of age she astonished a learned descendant of Abraham by conversing with him in Hebrew. After the age of 70 she lost her eyesight and learned to read the books for the blind printed in raised letters. She was a devoted member of the Methodist communion and a "class leader" till within a year of her death. She, of course, must have had an extraordinary aptitude for languages. Still, her example shows how much more than is supposed the average mind is capable of doing, in any direction to which the taste may lead.

Flying Money.

While riding on top of a freight car in Chicago last Saturday, going toward the fair grounds, C. W. Leffler noticed a piece of paper flying toward him over the tops of the cars. The train was running at the rate of five or six miles an hour, and the bit of paper when first seen was distant some four or five car lengths. It came directly toward him, and kept on coming until it struck him near his vest watch pocket. He grabbed it, held on to it, scanned it, and ascertained that it was a genuine one dollar bill. Where it came from, or how it got started, will remain a mystery. It is not every day that money is obtained in that way.—*Aurora (Ill.) Beacon.*

STEAM TRAP.

The steam trap herewith illustrated was recently patented by Mr. James A. Trane, of La Crosse, Wis. The trap case is made, preferably, of cast metal, has one removable head, and is furnished with legs for standing on the floor. In the case is fitted an inlet pipe and a waste pipe, for the water, the latter pipe extending nearly to the bottom of the case, and being provided with a valve which has for its



TRANE'S STEAM TRAP.

stem a triangular plate, *b*, having a curved slot in which two stop pins are adjustably fitted. On the center of the valve stem is one end of a lever, to the other end of which is a float, *c*, and which plays between the two stop pins. The lower pin is so adjusted that the float will close the valve when it descends by the fall of water, and shut off the escape through the pipe, just before the water falls below the end of the pipe. The other pin is to be set according to the height it is desired that the water shall rise before opening the pipe. On the top of the case is an air cock, *e*, and at the bottom a waste cock to draw off the water in cold weather when the trap is not in use.

By this arrangement the water cannot in any case be forced out so that the steam will blow through.