

THE CHILLING AND PRESSING OF COD LIVER OIL

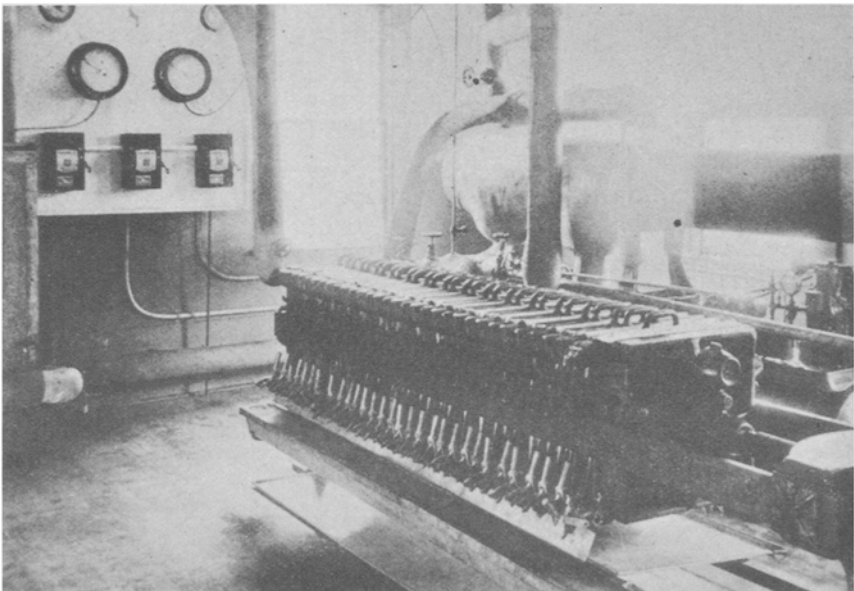
For a long time it has been a universal practice to chill and press crude cod liver oil to remove the cod liver stearin from oil that is intended for medicinal purposes.

Crude cod liver oil when made from strictly fresh livers under modern manufacturing conditions does not differ markedly in color, odor and taste from the pressed oil which is obtained from it by chilling and removing the stearin. Furthermore, our tests show that the vitamin potency of crude oil and the medicinal oil pressed from it is practically the same.

The objection to crude oil for medicinal purposes is that at low temperature the stearin solidifies. The oil becomes cloudy, somewhat thickened, or possibly semi-solid depending on the temperature. Accordingly, to make a more attractive product, manufacturers have for a long time removed the stearin from cod liver oil intended for medicinal use.

In the early days the method for removing stearin was rather crude. The manufacturer pressed "on the weather," by which he meant that he held his oil until winter, when nature supplied the required temperature necessary for solidifying the stearin.

In the early attempts at artificial chilling of cod liver oil, the manufacturer placed an ice and salt mixture around metal cans containing oil. These cans were rectangular, narrow and deep, and very similar to those



Equipment described in the text for chilling and pressing cod liver oil

used in the artificial manufacture of ice. While this procedure served to satisfactorily chill the oil, it was not a complete success because the manufacturer could not press the chilled mass at ordinary temperatures without some of the stearin melting and becoming mixed with the non-freezing oil.

The next step in the development of artificial chilling of cod liver oil was to provide a brine cooled room of sufficient size to contain an open tank for chilling the oil and a press for separating the stearin. While a decided improvement over anything that had been previously used, this process was still open to a number of objections. It was expensive due to the large space that had to be maintained at a low temperature. Two or three days were required to obtain a satisfactory crystallization of stearin. The pressing of the oil was attended with a certain amount of atmospheric oxidation, which destroyed the vitamin potency of the oil to some extent. Obviously, in order to produce the highest type of product, it was necessary to conduct the chilling and pressing process under the best possible conditions. As a consequence, the equipment shown in the accompanying photograph was developed.

At the back of the photograph the reader will notice two horizontal pipes. In the lower pipe the cod liver oil is chilled. It consists of two concentric pipes, the inner of which contains the oil and a spiral worm for moving it towards the press; the outer insulated pipe contains the low temperature brine. The chilled mass slowly moves into the press where the stearin is removed. From there the non-freezing oil passes to the receiving tanks on the floor below.

Those of our readers who are mechanically inclined will be interested to know that the two dials shown on the center of the instrument board are recording thermometers; one of these gives a constant record of the temperatures of the brine, and the other constantly records the temperature of the oil that is being chilled.

By means of this type of equipment, we rapidly reduce the temperature of the crude cod liver oil to a point where the stearin solidifies. Also the chilling and pressing is all done out of contact with the air.

It is needless to point out that by means of modern equipment of this type, the present day manufacturer can produce a cod liver oil far superior to that manufactured in the earlier days.

—*Patchwork. E. L. Patch Co., Boston*
