blue circle is formed around and at a short dstance from the drop, while light yellowish-brown striæ form towards the centre. The same takes place with oil of black mustard, but from twenty-five to thirty-drops of the oil are required. With whale oil, the colour is reddish, after twelve to fifteen minutes violet on the edge, and in two hours violet throughout. Olive oil gives a pale-yellow, passing into greenish-yellow. Linseed oil is at first dark reddish brown, and then black.

The more solid fat, stearin, is separated from the more fluid olein by pressure, to make stearin-candles, or, the fats being decomposed, the more solid stearic acid is separated from buttery or fluid acids, to make stearic acid lights. Under this head we may embrace spermaceti and wax. There is but little novelty offered on any of these points.

To separate the solid from the more fluid fat in palm oil, lard &c., the fats are granulated and pressed cold in bags by a powerful hydraulic press, the olein which flows out being used for soap. The contents of the bags being again granulated, and pressed between warm plates of iron, the balance of the olein, with some margarin and stearin, is then removed. To remove colour from the stearin thus obtained, it is fused with a very little nitric acid. To remove still further all the olein, Morfit proposed mixing it with a little oil of turpentine, and then pressing. See Morfit's 'Chemistry Applied to the Manufacture of Soap and Candles.' According to Heintz (Ber. d. Berl. Acad.), stearin from mutton suet becomes transparent at 124° to 126°, but does not fuse before 144°.

A process is described in the 'Rep. Pat. Inv.' Oct. 1850, for mixing some twenty to thirty per cent. of rosin with fatty bodies in the melted state, by adding sulphuric acid gradually, heating it from twelve to eighteen hours, so as to evolve sulphurous acid, and then submitting the dark-brown crystalline solid to distillation by heated steam. The solid and oily portions are then separated by pressure.

To test for the presence of stearic acid, Geith pours over two drachms of wax, one ounce of lime-water, diluted with one ounce of water. If the acid be present, the liquid loses its alkalinity, and remains clear. Buchner proposes fusibility and specific gravity as an approximate test of the presence of stearic acid, or tallow. Tallow fuses at 108°, yellow wax at 142°. ('Buchner's Rep.' xliv.)

Our knowledge of the composition and alliances of the waxes has been much enlarged by Brodie's investigations of common beeswax and Chinese wax. He found common wax to consist of *cerotic acid* (formerly *cerin*), soluble in hot alcohol, of the composition $C_{54}H_{54}O_4$, therefore of the fat acid series $C_n H_n O_4$; and of *palmitate of meliss-ether* (formerly *myricin*.) By saponifying myricin he obtained palmitic acid and melissin, which last has the formula $C_{60}H_{62}O_2$ ($=C_n H_{n+2} O_2$), or that of an alcohol. By the action of lime and potassa on melissin, he obtained the corresponding acid, melissic acid, $C_{60}H_{60}O_4$. Upon examining Chinese wax, he found it consist chiefly of cerotate of cerote-ether, $=C_{54}H_{55}O$, $C_{54}H_{53}O_3$, for by saponification he obtained cerotic acid, $C_{54}H_{54}O_4$, and cerotin (the alcohol) $C_{54}H_{56}O_2$ ($C H_{n+2} O_3$).—('Phil. Mag.' Sept. 1848, '*Amer. Journ.*' (2) vii. 427.)

UTILISATION OF BRINE—A PRACTICAL APPLICATION OF DIALYSIS.

Mr Whitelaw, of Glasgow, has recently described the result of a patent process of his own for utilising the brine of salted meat. When fresh meat, he said, had been sprinkled with salt for a few days, it was found swimming in brine. Fresh meat contained more than three fourths of its weight of water, which was retained in it as in a sponge. But flesh had not the power to retain brine to that extent, and in similar circumstances it absorbed only about half as much saturated brine as of water, so that under the action of salt flesh allowed a portion of its water to flow out. This expelled water, as might naturally be expected, was saturated with the soluble nutritive ingredients of the flesh—it was, in fact, juice of flesh—soup—with all its valuable and restorative properties. In the large curing establishments of this city very considerable quantities of this brine were produced, and thrown away as useless. This was the material to which Mr. Whitelaw has applied the process of dialysis, and he thought with success, for the removal of the salts of the brine, and for the production at a cheap rate of pure fresh extract of meat. His process he stated as follows:—The brine, after being filtered to free it from any particles of flesh or mechanical impurities it might contain, was then subjected to the operation of dialysis. The vessels or bags in which he conducted the operations might be made of various materials and of many shapes, but whatever might be their material or shape he called them "dialysers." Such an apparatus as the following would be found to answer the purpose:—A square vat made of a framework of iron filled up with sheets of skin or parchment paper in such a way as to be water-tight, and strengthened if necessary by stays or straps of metal. The sides, ends, and bottom being composed of this soft, dialysing material, exposed a great surface to the action of the water contained in an outer vat, in which the dialyser was placed. He found a series of ox bladders fitted with stop-cocks, or gutta percha mouth tubes, and plugs, and hung on rods stretching across and into vats of water, a very cheap and effective arrangement. He could also employ skins of animals, either as open bags or closed, and fitted with stop-cocks, or bags of double cloth, with a layer of soft gelatine between them. Other arrangements would readily suggest themselves, and might be adopted according to circumstances. But supposing the bladder arrangement was taken, which, he thought, would be found practically the best, being cheap, easily managed, and exposing a great surface to the dialytic action. The bladders were filled with the filtered brine by means of fillers, and hung in rows on poles across, and suspended into vats of water. The water in those vats was renewed once a day, or oftener if required, and he found that actually at the end of the third or fourth day, according to the size of the bladders employed, almost all the common salt and nitre of the brine had been removed, and that the liquid contained in the bladders was pure juice of flesh in a fresh and wholesome condition. The juice as obtained from the "dialysers," might now be employed in making rich soups without any further