Correspondence.

New Form of Heating Apparatus for Pharmaceutical Purposes.

To the Editor of the Canadian Pharmaceutical Journal.

DEAR SIR,—I send you a description of a heating apparatus, devised by myself, which I have found to answer admirably, both from its simplicity, and also from the facility with which a constant and easy regulated heat can be obtained, for any length of time, at a trifling expense, as compared with that of alcohol, which we have to use during the summer, when fires are not in use.

Take a common coal oil lamp, with the common B, burner; have a double drum made from two copper tubes, about 8 inches long—the one, 1½ inches in diameter, the other 2 to 2¼ diameter—the smaller one placed inside the larger; the space between them closed, and all well soldered, so as to be watertight. A suitable copper vessel, or tin with copper bottom, say 7 inches wide by 6 inches deep, or any convenient size, to act as a water or steam bath, is to be attached to the top of the drum, by three small tubes inserted in the end, and passing through the bottom of the large vessel, leaving a space of half or five-eighths of an inch between the bottom of the vessel and the top of the drum. The apparatus may be supported on a tripod, or any other way, high enough to allow the lamp to be placed with the conical top of the burner inside the tube or drum—the smaller tube having been left to project half an inch below the outer one, so that it may go down clear to the inside of the burner. Having filled the drum by pouring water into the large vessel, allowing it to rise from one-fourth to one-half an inch in depth, place the lighted lamp in its place, and in a very short time the water will boil strongly—in mine, 20 oz. boil in ten minutes.

The lamp must be carefully trimmed, and it is well to try it with a glass chimney, to ensure a nice flame; for if it be uneven, and the least point of flame touches the tube, the apparatus will smoke.

The flame can be regulated by turning it up until it is seen to smoke a little, and then lowering it to ensure its burning clear.

This gives, as will be seen, a great heating surface, and by confining the steam by having the vessel containing the matter to be heated made to fit very close into the mouth of the other, a heat much above that of boiling water can be obtained. By leaving it open, and regulating the flame of the lamp, any desired temperature, within certain limits, can be insured; whether for infusions or decoctions. Ointments can be nicely made in a common earthen bowl set over the vessel, and it is also handy for a glass retort.

I remain,
Yours respectfully,
THOS. CARRE.

Meaford, April 10th, 1869.

COD-LIVER OIL.

CAROLS OF COCKAYNE, BY HENRY S. LEIGH.

On the bleak shores of Norway, I've lately been told,
Large numbers of cod-fish are found,
And the animals' livers are afterwards sold
At so many "pfennings" per pound;
From which is extracted, with infinite toil,
A villainous fluid called cod-liver oil.

Now, I don't mind a powder, a pill, or a draught—
Though I mingle the former with jam,—
And many's the mixture I've cheerfully quaff'd,
And the pill I have gulp'd like a lamb.
But then I envelop my pills in tin-foil,
And I can't do the same with my cod-liver oil!

In the course of my lifetime I've swallowed enough
To have floated a ship of the line,
And it's purely the fault of this horrible stuff
That I've ceased to enjoy ginger wine.
For how can you wonder to see me recoil
From a liquor I mix'd with my cod-liver oil?

There are few deeds of daring from which I should quail—
There are few things I'd tremble to do;
But there's one kind of tonic that makes me turn pale,
And quite spoils my appetite, too:
But you see, just at present, I've got none to spoil,
So I don't mind alluding to cod-liver oil!

Impurities of Chloroform.*

Pure chloroform is neutral to test-paper; its specific gravity is 1·49 to 1·5, and it boils at 1·40 F. If dropped into distilled water, it collects at the bottom in transparent globules. When it is mixed with an equal volume of officinal sulphuric acid in a glass-stoppered bottle, no heat is evolved; and after standing for twenty-four hours, only a faint yellow colour is imparted to the acid. On evaporating three or four drachms of pure chloroform, from a porcelain plate, no pungency or empyreuma is observed, but a slightly aromatic odour; and the plate is covered with a film of moisture without odour or taste.

The most common impurities and adulterations of chloroform are alcohol; ether; chlorinated pyrogenous oils; hydrochloric and hypochlorous acids; chlorine, and Dutch liquid.

Alcohol and ether reduce the specific gravity of chloroform below the normal standard; and the impure liquid when dropped into distilled water, falls to the bottom in milky globules (Mialhe) A solution of bichromate of potassa in sulphuric acid becomes green, on the addition of chloroform containing alcohol (Procter); and almond oil is rendered milky by the admixture of chloroform having 5 or 6 per cent. of this impurity. (Soubeiran). Albumen (white of egg) is coagulated by chloroform, if alcohol is present. Chloroform that contains alcohol or ether is diminished in volume by agitation with water; and when potassium or sodium is thrown into the adulterated article, sharp, acrid fumes are evolved. Ether may also be recognized by its smell; and by tinging drops of chloroform dull-red, which have been added to an aqueous solution of iodine (Berchon).

Chlorinated pyrogenous oils are detected by shaking together equal volumes of the impure article and pure, strong sulphuric acid; a brown coloration is produced. These impurities result, most frequently, from the use of methylated, instead of rectified spirits, in the preparation of chloroform.

Hypochlorus acid and chlorine are recognized by their odour and bleaching power.

Hydrochloric acid is detected by its acid reaction, and after its extraction with water, by the ordinary tests.

The presence of Dutch liquid is revealed by the addition of an alcoholic solution of potassa; volatile chloride of acetyl is evolved, of a disagreeable odour.

* From "Chloroform, and a New Method of Administering it." By A. M. Rosebrugh, M.D., Toronto.

Denton on the Origin of Petroleum.

Professor Denton says that petroleum is not a *coal* oil, but a *coral* oil. Among his arguments in support of this theory are the following.—It is rarely met with in a coal district. Not even a *smell* of it has Prof. D. perceived in any of the coal mines which he has visited. If it is from coal it should never be found in rocks older than the coal measures. The contrary is true. "In this country nearly all the oil hitherto obtained has been from beds that lie below the coal measures, and sometimes at great depth below them. On Oil Creek, in Pennsylvania, it is found by boring in shales and sandstones, sometimes to a depth of one thousand feet; these beds belonging to the Chemung group of the Devonian formation, and many hundred feet below the coal measures. At Enniskillen, in Canada West, where the oil has at one time came up in springs, and overflowed, leaving a thick bed of asphaltum covering the ground for an acre, the limestone in which borings are made contains characteristic fossils of the Hamilton group of the Devonian formation. The oil wells in Western Kentucky, and in some parts of Tennessee, are in the Trenton limestone—that is, in the lower Silurian formation. The same oil floats on the surface of a limestone quarry near Chicago, the limestone belonging to the Niagara group of the Silurian formation; showing conclusively that it has no necessary connection with coal."

The immense quantity of free oil forbids the belief that it could have been produced from sea plants. It would require large subterranean lakes of it, to pour out the thousands of barrels which some wells have daily yielded. The sea-weeds of the Silurian and Devonian times contained so little bituminous matter that their impressions do not even darken the light-coloured shales in which they are found.

Against the theory that it has been distilled from bituminous shales may be said, that for this strong heat is required; and generally, where it is found in greatest abundance, there is the least appearance of igneous action.

Professor D. has in his possession numerous specimens of fossil coral from Devonian and Silurian rocks, the honeycomb cells of which are filled with this oil. He has seen the same from different parts of the country. We quote a portion of his conclusion: "I have found it repeatedly in these corals, and in no other part of the rock invariably accompanying the corals, and never connected with any other fossil; these corals frequently in the centre of limestone blocks. Reefs of such coral would furnish oil in quantities sufficient to account for the immense deposits that have been discovered. Preserved by them in compact bodies, the oil taking up at least half the space of the coral reef, we can readily sup-