Translated for the Journal of the Franklin Institute.

A New Flesh Broth for the Sick. By JUSTUS LIEBIG.

To prepare a portion for one person of this flesh broth, take a half pound of meat of some freshly slaughtered animal (beef or chicken,) chop it finely, and mix it well with eighteen ounces of distilled water, to which has been added four drops of pure hydrochloric acid and from a half to one drachm of culinary salt. After standing for an hour, the whole is thrown upon a conical hair sieve,* such as is to be found in every kitchen, and suffered to drain without the application of any pressure. The first cloudy droppings are returned to the sieve until it flows quite clearly. A half pound of distilled water is then thrown in small portions upon the residue in the sieve. In this way is obtained about a pound of liquid (cold extract of flesh,) of a red color and pleasant broth taste. It is administered to the patient, cold, by cups full at pleasure. It should not be heated, as it then becomes cloudy, and gives rise to a thick deposit of flesh-albumen, and hæmatin.

A young girl of eighteen years of age, having become sick in my house from an attack of typhus, gave occasion for this preparation, through a remark of my family physician, (Dr. Pfeufer,) that in a certain stage of this disease the greatest difficulty which is presented to the physician arises from the defective digestion, a consequence of the condition of the intestines; and besides, from the want of a suitable diet for digestion and the formation of blood. In fact, in the ordinary broth prepared by boiling, there are wanting all those very components of flesh that are necessary to the formation of blood-albumen, and the yolk of egg which is added is very poor in these substances, for it contains in the whole, $82\frac{1}{2}$ per cent. water and fat, and only $17\frac{1}{2}$ per cent. of a substance like egg-albumen, or a very similar substance, and whether this replaces flesh-albumen in its nutritive powers, is, according to Majendie's experiments, at least doubtful. Besides flesh-albumen, the new broth contains a quantity of hæmatin, and therein a far greater quantity of the iron for the formation of the blood corpuscles, and finally the digestive hydrochloric acid.

A great difficulty in the use of this broth is, that sourness arises from its undergoing change in warm weather; it enters regularly into fermentation, like sugar-water with yeast, without giving rise to a bad smell; the body thus formed is very well worthy of investigation. The extraction of the flesh must, therefore, be undertaken with quite cold water, and in a cool place. Ice water and external ice cooling remove this difficulty completely; above all, it is strictly to be cared for, that the flesh is *fresh, and not several days old*.

This broth has come into use in the present City Hospital (Munich) as well as in the private practice of several of the most distinguished of our physicians, as Doctors von Gietl and Pfeufer.

I would, perhaps, have hesitated about giving so simple a thing a greater publicity than it merits, had not a late, and for my family, important event, fully convinced me of the great nutritive power of this soup.

* Or such a strainer as is used in this country for calves-foot jelly. Trans.

and the natural wish arose that its use might be proved in larger circles, and that other sick might experience its beneficial effects.

A young married lady, who, in consequence of inflammation of the ovaries, could partake of no solid food, was kept exclusively upon this diet for two months, and to the perfect restoration of her health; during this time she improved perceptibly, both in flesh and strength.

The patients generally take the soup without any resistance as long as they are sick, but as soon as they can partake of other food, they refuse it, which, perhaps, arises from the color and slight flesh smell. For many, therefore, it might prove of use to color the broth brown by burned sugar. *Annalen de Chemie und Pharmacie*. Aug., 1854. VOL. xci, p. 244.

On Baker's Furnace.

To the Committee on Publications:

BOSTON, MAY 18th, 1854.

SIR:—In consequence of the articles respecting Baker's Steam Boiler Furnace in your *Journal* for September and October, by Mr. Isherwood, I beg leave respectfully to submit the accompanying certificate, which answers any doubts as to the true value of the furnace; and I beg for it a place in your valuable *Journal*.

Respectfully, yours,

J. AMORY.

The undersigned having, at the request of Mr. Amory, the agent for Baker's patent boiler furnace, visited the blacksmith's shop at the Navy Yard, in Charlestown, for the purpose of observing the effect produced by the peculiar mode of setting steam boilers, in conformity with the said patent, as exhibited in the furnace which is in regular operation at that shop, respectfully submit the following statement:

Our attention was called to the prefatory remarks contained in a report made by Mr. B. F. Isherwood, and published in the *Franklin Journal*, of some comparative experiments on one of the said furnaces, at the Navy Yard in Washington, and on the furnace constructed under the direction of the Engineer-in-Chief at that Yard. In those remarks, Mr. Isherwood contradicts the fact asserted by Mr. Baker in the specification of his invention, that in the form of constructing what he calls "reverberating chambers," in combination with the fire places and boiler, "they are made to revolve and retain the volatile products underneath the boiler long enough to be consumed." This allegation of Mr. Baker's specification is controverted by Mr. Isherwood, by various arguments, in the course of which he uses the following language:

"As far as regards the revolving and retaining of the heated gases by means of the arches, it is quite certain these gases will not be at all *revolved* or retained, but instead of following the shading in Fig. 2, representing their course, according to Mr. Baker, they will follow in a straight line, taking the shortest and most direct route from furnace to chimney, and leaving the arches beneath the dotted line, Fig. 2, filled with quiescent gases. In a word, the reverberating chambers of Mr. Baker do not reverberate, and cannot, as arranged, be made to do so."

We are not called on to reply to the argument of Mr. Isherwood, but