

Ointment of the Bromuretted Hydrobromate of Potass.

Refined lard.....	1 ounce.
Hydrobromate of potass.....	24 grains.
Liquid bromine	6 to 12 gros.

To be used in friction.

Further researches will doubtless establish the great therapeutical properties of bromine.

 CHLORINE.

Guyton Morveau was the first to use chlorine as a disinfecting agent, and as such it has been and is in frequent use; but it is never used pure in medicine except in asphyxia from sulphuretted hydrogen gas. Chlorine in mixture with aqueous vapour is employed in the treatment of pulmonary consumption and other affections of the chest. At the temperature of 20° and under a pressure of 0,75m. water dissolves once and a half its own volume of chlorine.

To prepare the aqueous solution of Chlorine.

Mix one part of peroxide of manganese with five or six parts of a solution of muriatic acid in water, place them in a matras, to the neck of which a bent tube is affixed that passes into Wolf's apparatus of three or four bottles: the saturated water of the two last alone is to be used. Sixty *grammes* of oxide of manganese produce nearly twenty *litres* of chlorine.

It may be also made from one part and a half of common salt, one part of per-oxide of manganese, two parts of concentrated sulphuric acid, and two parts of water—to which mixture, heat is applied until no more chlorine is disengaged.

Chlorine water should be carefully preserved in small stopped bottles covered with black paper, and not

containing more than one or two ounces at the most, for if more is in them the last portions of the fluid give out all the gas, and thus diminish the amount of the whole: the black paper is to prevent the decomposition by the sun's rays.

M. Gannal proposes that each ward-keeper of hospitals should be provided with a bottle of chlorine water, and sprinkle it from time to time between the beds, and that some of it should be added to the water used in washing the spitting-pots, chamber utensils, &c. &c. The walls too should be painted, rather than whitewashed, in order to allow of their being washed once a month with chlorine water. The expense of such processes for the Hôtel Dieu, (containing twelve hundred beds,) for instance, would be under three francs (half-a-crown English.)

Cases for the medicinal employment of Chlorine and Chlorine Solution.

Braithwaite and Knapp used chlorine in scarlet fever and some cutaneous disorders: Clogel in inveterate itch, and Nysten in chronic diarrhœa and dysentery, and since M. Gannal's memoirs on the subject chlorine with aqueous vapour has been repeatedly used in phthisis, asthma, chronic pulmonary catarrh, and other chest diseases. It has also been recently employed in the treatment of chronic diseases of the liver in the form of chlorine and hydrochloric acid baths; and some are of opinion that chlorine and the chlorurets in water would be applied as a preventive of syphilis and hydrophobia.

Inhalation of Chlorine in Pulmonary Complaints.

M. Gannal makes use of an apparatus composed of a vessel with four bulbs, one of which ends in a tube somewhat flattened at the extremity. About four ounces of water, at the temperature of 30°, are poured into the vessel, and 5 drops of liquid chlorine added.

The patient then inhales by the flattened tube and expires by the nostrils.

Each inhalation should last four or five minutes, and should be repeated eight times in the day, with intervals of an hour, managed so that there shall also be an hour between the inhalation preceding and succeeding each meal.

The water should be renewed at each inhalation, and should be made from 5 drops the first day, 6 drops the second, increasing by a drop every day, until it reaches 25 drops; which last dose may be persisted in for a month at least; but should irritation of the windpipe, spitting of blood, or any other accident, take place, the 5 drops must be returned to.

If after a month the disease remains unchanged, the inhalations should be continued, but the dose of gas must be varied at each inhalation; the first, for instance, being 25 drops, the second 10 drops, the third 20, the fourth 25, the fifth 30, and so on.

The good effects are, for the most part, slowly developed, unless the catarrh be simple and recent; a chronic catarrh, or phthisis, requires about three months.

M. Cottureau has also invented an apparatus for inhalation, which insures the very gradual evolution of the chlorine.*

Chlorine Baths.

Dr. Palloni employed warm baths, with hydrochloric acid, in the petechial and putrid fevers of Italy in 1817. Drs. Wallace, (Researches respecting the Medical Powers of Chlorine Gas, particularly in Diseases of the Liver, 1825,) Julius, (Magazin der austandichen Literatur, 1826,) and Bernhard, (De Utilitat. Ac. Nitric. et Mur. &c. &c. Leipsic, 1825,) have published many observations, to show their utility in chronic disorders of the liver.

The apparatus for their administration resembles that

* M. Magendie gives a long account of this apparatus, which altogether appears too complicated for so simple an operation as that of inhalation.—*Tr.*

for vapour baths, and is so arranged that the patient does not breathe the gas, and the latter can be directed to any particular point, as the region of the liver.

The following are the proportions of materials for the evolution of chlorine for one bath:

Per-oxide of manganese.....	$\frac{1}{2}$ to 1 ounce.
Common salt.....	$1\frac{1}{2}$ ounce.
Sulphuric acid.....	1 ounce.

The temperature may be from 32° to 36° Reaumur. The quantity of the materials may be gradually trebled.

These baths cause an itching of the skin, and induce sweating; occasionally the skin turns red, and is covered with small pustules. It also becomes softer and more sensitive. Sometimes, during the bath, the itching is excessive, and the patient complains of prickly sensations like the bite of insects. After the bath he has an acid taste in the mouth; the saliva reddens turnsol paper, and sometimes the gums and teeth are irritated.

For chlorine baths nitromuriatic baths may be advantageously substituted. Dr. Bernhard makes them by the addition of an ounce and a half of nitromuriatic acid to a common warm bath. Besides their efficacy in the cure of hepatic complaints, he speaks highly of their utility in ascites, dropsy of the chest, herpetic affections, secondary syphilis, and divers menstrual derangements.

[An anonymous author in the *Journal de Chimie Médicale* for December 1834, after passing in review the chemical and physical properties of chlorine, of mucus and of pus, the chemical action of chlorine on mucus and pus, that of chlorine on the living surfaces, and its local action on a morbid surface, draws the following conclusions.

1. That mucus, in its natural state, contains only a small quantity of salts, to allow of its lubricating parts without irritating them.

2. That good-conditioned pus, only containing a small quantity of salts, appears also to be not more irritating than mucus, and that in such case the em-

ployment of chlorine, and of the acid which it generates, being inactive on these matters, is only a modifier of the morbid surfaces.

3. That as the alterations which time, diseases, or heat, induce in these matters, may probably require the employment of chlorine, and of the chloride of an oxide, it is difficult to prevent its causing a super excitement from over dose.

4. That in all cases the action of mucus, of pus, and of chlorine, &c., is commensurate with the state of the parts, with the nature of the diseases, and the susceptibility of the individual.

5. That chlorine, which is much more irritating than good-conditioned pus or mucus, prevents the decomposition of those putrescible matters, and modifies them if ill-conditioned; that in uniting with soda and ammonia, free or combined with acids less powerful than the hydrochloric, and in decomposing hydrosulphuric acid, chlorine loses its activity, at the same time that it neutralizes the hurtful effects of those substances, but that whatever of it is in excess, uncombined or changed into non-saturated hydrochloric acid, is an irritant that will more than counterbalance the good obtained, unless it modifies the local irritation.

6. That the chlorides of the oxides, when used for the chlorine they disengage, naturally present the same advantages and disadvantages as the gas itself.

Further, also, the author concludes that chlorine in small doses is useful in modifying the nature of the expectoration, rendering it less fetid, less viscid, and less irritating, and giving the bronchi the energy they needed, and changing the nature of their irritation; but its action does not extend beyond the morbid surface unless it be absorbed. It is useless in acute bronchitis, though it sometimes aids in the cure of the chronic bronchitis; and though it may be useful in smoothing the progress of pulmonary consumption, by making the expectoration less annoying, yet both in it and bronchitis the utmost caution is requisite, lest its quantity being more than is required to counteract the

expectoration and irritation, should excite the other parts of the air canal and induce cough. In like manner chlorine disinfects the disorganized parts in gangrene of the lungs, but if it reaches the non-sphacelated parts it acts as a violent irritant. He concludes by urging the necessity for great caution in its employment.

That these views are, at least in part, correct, may be seen from the fact, that chlorine introduced into healthy bronchi, causes the most violent irritation there, whereas it may be inhaled in union with aqueous vapour for some time together, in cases of bronchitis with purulent expectoration.

The last case mentioned by the anonymous author, namely, gangrene of the lungs, is certainly one of the best for the inhalation of chlorine. Dr. Crane of the St. George's Dispensary published an instance of its successful employment in pulmonary gangrene, which may be found in the 2nd vol. of the Medical Gazette for 1833. The French editors of the Archives Générales, in transferring the case to their pages, doubted whether it was one of the disease in question. I repeatedly saw the patient in company with Dr. Crane, and am convinced that these doubts are unfounded, and that it was a *bonâ fide* case of gangrene. The man completely recovered, and though his pulmonary organs remain, as might be expected, weak and sensitive to changes of temperature, he is still without cough, and able to pursue his avocations.

It is curious that Laennec should so positively state that pulmonary gangrene is incurable.—*Tr.*]

CHLORURETS OF LIME AND SODA.

The inconveniences of chlorine gas, as a disinfectant, had always been felt when it came to be applied in rooms containing many individuals. Too little of it left the miasm untouched, whilst too much induced suffoca-