

Two obstacles have presented themselves to its prompt introduction into general use. The first is the source of supply, and the second the name.

Since the chloride of aluminum has never been a commercial article, and it was important to secure large quantities at a moderate price, half a ton was first made to determine the best method of production. Supplies can now be insured at a cost not exceeding that of the poisonous chloride of zinc, and below that of carbolic acid—indeed, so far below carbolic acid that it must supersede this where disinfectants are used in abundance—to water streets, closets, alloys, etc., which are now often redolent of the tar acid odor, that by no means finds favor in every household.

Secondly, as to the name. An antiseptic and disinfectant of such a character as this non-poisonous chloride, cannot be too widely used. That a long scientific name is an objection in a commercial point of view, and attended with great inconvenience, every one will admit. Carbolic acid is usually termed "carbolic" acid by the people, and every chemist is called upon daily to check popular blunders in naming articles asked for across the counter. I recently heard a respectable youth ask a dispensing clerk for "evorescing," and I was astonished to see a bottle of effervescent citrate of magnesia opened to supply the demand. I have consulted several medical friends and chemists as to the best popular name for the hydrated chloride of aluminum, and after many fruitless efforts, have determined on calling it "chloralum." I am aware of the objections to be raised to this, but since I searched for a single word whereby to designate it, one that would, in some sense, indicate the nature of the compound, and at the same time be quite new, I have resolved to adhere to a name which, like telegram, may become popular in spite of classical objectors.

All this matter of business may seem irrelevant; but only those who have happened to introduce some novelty are aware of the insurmountable barriers which present themselves in commerce.

And now, referring to the more pleasant part of my revelations—the results of experiments—it is not unimportant to state, that in January last I had to pay from 12s. to 24s. per pound for small quantities of the chloride to be found in the shops of manufacturing chemists in London. I did hear that the Messrs. Bell, of Newcastle, had supplied the anhydrous chloride to be mixed with size by Manchester cloth dressers; but, on application to this firm, I was told they had discontinued the manufacture of the metal, and, therefore, had none of the chloride. With the small quantities I could find, amounting in the whole to less than a couple of pounds, I made solutions of much greater strength than I have since found requisite, and immersed raw hide, meat, the feet of cattle cut off at the knee, rough fat, and other agents, for various periods, varying from a few minutes to twenty-four hours. The result was absolute preservation, and, what is more astonishing, after keeping these specimens up to the present time, I find no insects attacking them, as in the case of other means of preservation, even with arseniates.

Meat dipped in solution of 1.030 to 1.040 specific gravity, had a strong astringent flavor; but a retriever dog did not object to make a daily meal of flesh thus preserved,

and thrived well on it. I know from previous work that the chloride was non-poisonous; but I repeated my experiments to satisfy myself on the point, and then commenced preserving fish. I tried large quantities of place, soles, cod, whiting, mackerel, haddock, mullet, and other kinds. Some were bought when far from fresh, and a dip purified them and arrested decomposition. A flabby cod, of suspicious appearance, became firm, and was good eating after a day's immersion. We had the least success with the mackerel and mullet, and, as a rule, none with the fish that had not been cleansed.

Mr. Frank Buckland aided me in procuring salmon from Thurso, Aberdeen, and Galway, dipped in the solution, when caught, and sent up to London without ice. All the fish arrived in good order, and kept several days. A sea trout was dipped in the solution in Aberdeen, exposed to 80° for thirty hours, and then sent up in a box. Mr. Buckland and Mr. Brudenell Carter tasted the fish, and coincided in the judgment termed of it in my household. The trout was firm and of excellent flavor, and, in both respects, contrasted favorably with salmon that had been transported in ice. The result of these experiments was, that the fish would bear immersion for five or six days. The scales softened, and the flavor was somewhat affected by longer immersions. Shces of fish were apt to discolor and lose their flavor in a much shorter time than whole fish; but a salmon split in two would dry slowly and prove good eating many days after being caught. As an aid in the drying of cod on the Newfoundland coast and elsewhere, a mild solution of the chloride would be invaluable, since thousands of tons of fish have to be thrown away, when caught in abundance, because they can not be dried fast enough.

The chloride of aluminum is a deliquescent salt; but it has a tendency to part with its chlorine, and thus no obstacle is offered to the drying of the fish. These experiments show how safe an agent chloralum is, and every medical man can appreciate on the importance of having an inoffensive agent to be used in the sinks, dust-holes, and accumulations of filth and garbage in and around kitchens. A raid on the dust-holes and dust-pans is, probably, next in importance to the disposal and disinfection of sewage, and physicians have never had an antiseptic at their disposal which could safely be used in the dirtiest corners of most dwellings.

For ordinary disinfecting purposes, solutions varying from 1.006 to 1.010 specific gravity, are quite strong. Stronger solutions are usually unnecessary, and impart flavor to edible substances.

Any one who wishes to try a convincing experiment as to the value of chloralum, should drop some in strong sewage water. The solid matter is precipitated more rapidly than by the use of a persalt of iron, and the odor disappears. I am quite satisfied that it will aid those who are attempting to deal with the sewage of towns by combined mechanical and chemical means when irrigation is impracticable. It has one great virtue, which Dr. Budd, in a letter to myself, says must belong to "the antiseptic of the future," viz.: that it is quite harmless to vegetation. The chlorine combines with ammonia and other bases, and alumina is deposited with the solid organic elements. In the dead house, the dissecting room,

museum laboratory, chloralum will be found invaluable.

It is most important to increase the number of agents available for sanitary purposes. The destruction of animal poisons, so much neglected a few years since, marks an epoch in medical history which is in pleasant contrast to the days of long prescriptions and infallible cures. Cattle-plague times, fortunately, brought into fashion the stamping out of a malignant contagion, and, for this purpose, a good antiseptic, which cannot do harm, offend the most delicate nose, nor soil the finest linen, is a great desideratum.

I have striven to show, for years past, that we have a very distinct and destructive group of diseases in animals—the epizootics proper—propagated through time and space by contagion. Wherever these epizootics appear, antiseptics are of great value to destroy the virus as it is thrown off by the sick animals. All excreta should be disinfected, and all agents which are at all likely to be contaminated by the breath or discharges.

In the contagious pleuro-pneumonia I noted, some years since, that mild cases are controlled, and even cured, by astringent preparations, such as the sesquichloride of iron, and in the earliest stages of exudation, the internal use of chloralum would tend to limit the disease. It must be understood that I do not advocate treating cases of pleuro-pneumonia, except when special circumstances render it very desirable to do so. As a rule, the animals do best without medicine, but the early exudation occurs rapidly, much in the same way as hemorrhage and hemostatic properties of the chlorides of iron and aluminum render good service.

In the foot and mouth disease, which should never be permitted to reach our farms, a chloralum solution checks the discharge, destroys the virus, favors the cicatrization of ulcers and may be regarded as the best remedy to be used.

In conclusion, I wish to direct the attention of surgeons to the use of the hydrated chloride of aluminum in the treatment of wounds, erysipelas, gangrene, and various contagious inflammatory diseases of the superficial parts, such as the contagious ophthalmia of children, soldiers, etc. In fever wards, and every sick chamber, gargles and lotions containing it will frequently be found of use, and linen can be dipped in solution of it before removal from the sick chamber. It is a powerful styptic, and, in the treatment of chronic and acute discharges, hemorrhage, etc., it is of great value. It is sufficient to have drawn attention to this subject, to insure the multiplication of experiments; and the more the new compound is tried, the better will it be appreciated.

#### Poisonous Effects of Carbolic Acid.

The *Edinburgh Medical Journal* says. Professor Bardeleben found that when externally applied in surgical cases carbolic acid was absorbed, and acted poisonously in about 1 case in 10. This poisonous action was revealed, often, so early as the second day, by a peculiar effect on the urine which, pale at first, becomes gradually darker, on standing. No albumen was present in the urine, but the patients lost appetite and strength. He recommends as a substitute the sulphocarbonate of zinc, first employed by Wood. Mr. Lister states that he has never observed the