

Zembla, first the determination of the cold and warm currents between the coast and Nova Zembla; second to decide the limit of the polar ice, and to take measurements of the deep seas; third, to ascertain the extension of the Gulf Stream, and what becomes of it when it meets the polar ice; fourth, to learn especially the distribution of the Gulf Stream along the coast of Nova Zembla; fifth, to affix accurately the extension of certain parts of North-Western Nova Zembla. To the East and North-East, the points to be inquired into are, first, the expansion of the Kora, and all that portion of the sea nearest to it on the East; second, to penetrate north-easterly to the limit of the polar ice; third, at least to make an effort to get as far as possible to the East, and to explore the regions along the mouths of the Siberian rivers; fourth, to make accurate geographic determinations along the least known portions of the Siberian coast; fifth, to prosecute studies in regard to the hunting ventures of the Norwegians and Russians in Nova Zembla. These two regions of country will be entrusted to two different sailing vessels respectively each provided with a competent commander, a specialist in physical geography, and a zoologist. The experience gained by these expeditions during 1872 is to be utilized still further in a much more extended and more completely equipped exploration in 1873, in which the same persons will take part.

—*Meteorological Storm-Warnings.*—A motion was made in the British Parliament, just before its last adjournment, for the appointment of a committee to report upon the practical effect of the storm-warnings issued by the Meteorological office, specifying how many had been verified by the results, and how many the contrary. The return has, we believe, not yet been made although the general subject has been discussed at considerable length in the London journals. Under the administration of the government meteorological system of storm-warnings conducted by Admiral Fitzroy, the attempt was made to indicate the probable approach of gales and storms, with the general direction from which the storm was to be expected. These were announced during the day time by two large bodies in the shape of a drum and a cone variously adjusted, and at night by means of lights. After Admiral Fitzroy's death, and the reorganization of the system, but one drum was used, and that only raised to show that a serious atmospheric disturbance existed somewhere on or near the British coast. This is exhibited for thirty-six hours after the telegraphic message directing it to be hoisted, and is merely intended to give an intimation to seamen to be on the look-out for approaching bad weather. At the present time there are 74 drum signals in England and Wales, 32 in Scotland, 12 in Ireland, 3 in the Isle of Man, and 2 in Jersey.

A similar system has quite recently been adopted by the signal service of the United States, under General Meyer. The day signal here consists of a flag instead of a drum, and is likewise intended only to indicate the probable approach of a storm blowing at the rate of thirty miles an hour. The short time during which this system has been in operation has been sufficient to prove its value; and during the late severe gales all over the country much loss of life and property has been prevented by proper attention to the indications given. For a considerable time the signal-office has given telegraphic announcements of the probabilities of the weather; and we learn from an abstract of the report of the Chief Signal Officer, General Meyer, that 65 per cent of these prognostications have been verified by the results; and as the theory of atmospheric disturbances is better understood the percentage of verifications will continually increase.

—*Disinfectants.*—Coming now to pass under review the chief disinfectant agent, we shall begin with chlorine as indubitably one of greatest intrinsic power and widest sphere of application. Nevertheless circumstances occur positively incompatible with the employment of chlorine; these will be made obvious as we proceed. Chlorine itself is a gas heavier than air, and of yellow colour, or rather yellowish-green; hence the name chlorine from "chloros," a Greek designation for that tint. It is violently irritating to the throat and lungs, hence cannot be breathed without injury except under circumstances of extreme dilution. For this reason pure chlorine is rarely used as a common or popular disinfectant, although in cases permitting its application strongly to be recommended. More generally, the disinfecting power of chlorine is applied through the substance known in commerce as chloride of lime, though advancing no chemical title to that designation. The excellence of chloride of lime regarded as a disinfectant is, that it evolves chlorine so slowly as to be no longer incompatible with safe inspiration. Proportionally, however, to this modification, this taming down of the pure agent, is its disinfective inefficiency; so that whenever the fullest action of chlorine is

desired, and circumstances do not forbid, pure chlorine should preferentially be used. Take the following as a suitable case. An uninhabited chamber has lodged patient or patients suffering from infectious or contagious disease. Furniture, bed-clothes, hangings, are one and all contaminated, or supposed to be contaminated. In this case, fumigation with pure chlorine may be applied with good effect; but the operator should bear in mind that all dyed and printed textile fabrics will be bleached more or less, chlorine being the most powerful of all bleaching agents. Oil-polished articles of furniture, such as dining-tables, will not suffer perceptibly, but French-polished surfaces will be more affected. Having resolved on chlorine fumigation, the following routine should be adopted. Windows should be shut, the fire-place also, by letting down the register-door if a register-stove, or, if not, by some means equivalent. These precautions taken, the chlorine may be generated. Two or three pounds of black oxide of manganese being mingled with half as much common salt, the mixture is to be thrown into an iron pan, for which purpose nothing is better than a frying-pan. The latter is to be set in another vessel containing hot sand, and both placed in the middle of the room to be fumigated. A mixture of oil of vitriol and water in equal parts is next to be poured on the salt and manganese, the whole stirred round with a stick or iron rod; then the operator should leave, shutting the door behind him. During this operation no chlorine must be breathed, or the effect will be very painful, not to say even more serious. The operation is not difficult to conduct, under the precautions indicated. Chlorine, being a heavy gas, takes some time to rise to the level of the operator's nose and mouth, and, being coloured, is visible. The apartment should not be entered for twenty-four hours at least, and then carefully. If, on opening the door, the smell of chlorine be very perceptible, the door should be allowed to remain open, the operator retiring. Amongst all means of disinfection by chemists, this is without doubt the one of greatest power, but is also one that from its very nature cannot often be applied. Chloride of lime, however, may always be used. Mixed with water, floors and walls can be profitably scrubbed with it. Linen and cotton articles can be steeped in this solution with advantage to their colour as well as their sanitary purity. Chloride of lime is injurious to textile fabrics, however, by acting on the fibre, and diminishing its strength. This fact some of us find illustrated by our washerwomen, who are too well aware of the bleaching power of chloride of lime. If a recommendation of ours could be of avail, chamber walls would always be scrubbed with a solution of chloride of lime in water previous to repapering. It is alarming for one acquainted with miasms, their nature and effects, to reflect on the germs of disease imprisoned on house-walls in the process of repapering. In addition to surface impurities, the paper-hangers' paste adds others, and a pabulum of growth for yet another series. It is much to be regretted that some ingenious person has not invented an ornamental washable wall-paper. Beyond the varnished varieties of paper-hangings only adapted to offices and coarse wall-work, nothing in this way has been done.—*Tinsley's Magazine.*

—*Electricity.*—Electricity has achieved, the *Pall Mall Gazette* says, a new triumph. Already employed to restore vigour and nimbleness to the gouty limbs of decrepit *bons vivants*, the recent discoveries of Dr. Bernier, a French physician, show electricity to be an efficient remedy for the evil effects of excessive drinking on the human nose. The doctor maintains that, by application of an electric current to noses even of the most Bacchic hue, the flesh may be made "to come again as the flesh of a little child," and supports his assertion by a case performed on a female patient of his own, a woman of high rank. "Knights of the burning lamp," who have still some regard for personal appearance, will appreciate Dr. Bernier's discovery, as it promises them immunity from the dreaded outward testimony to their pet vice. There is one danger, however, in the discovery—namely, its tendency, if confirmed, to encourage the growth of secret intemperance.

—*Chloral in Cholera.*—Dr. von Reichard has employed chloral in the recent epidemic of cholera at Riga—first to calm the cramps at the outset; secondly, to lessen the præcordial anguish in the last stage; thirdly, to arrest the vomiting; fourthly, to induce sleep, for which the patients have earnestly prayed. It has successfully fulfilled all these indications. In one case, in which the patient was *in extremis*, and had apparently not three hours to live, sixty grains of chloral gave calm sleep; the temperature rose; the pulse fell from 130 to 90, and regained a certain fulness; the *facies cholericæ* disappeared; and the patient was, as it were, snatched from the jaws of death. Dr. Blumenthal, in three cases of severe cholera saved two out of three patients. The doses administered were sixty grains in half-an-ounce of water twice or thrice in an hour.—*Berlin Clin. Wochenschrift; Gazette Méd. de Strasbourg.*