have been used by such person, or by breathing the air in close proximity with him. Syphillis, small pox, and typhus are examples of contagious disease; and these diseases are, in a great measure, independent of some of the most important conditions of infection. They are more liable to prevail in a low than in a high temperature, and in their origin chiefly depend upon filth and bad food. Persons sick with contagious disease are liable to infect surrounding things, clothing, furniture, the air of the room, etc.; but as the character of the disease continues the same, it is still denominated contagious—communicable by persons. Infectious disease is not communicable by persons but by things, and a person sick with it, when divested of fomiles, clothing, etc., can neither communicate his disease to other persons nor to other things. In this, however, they are fortunately alike: their fomites are equally capable of being destroyed by heat. Dr. Henry's first series of experiments satisfactorily established the fact "that the infectious matter of cow-pox is rendered inert by a temperature of 140° Fahrenheit," from whence he "inferred that more active contagions are probably destructible at temperatures not exceeding 212° Fahrenheit." His next series of experiments were upon the personal fomiles of typhus and scarlet fever. Three flannel shirts, taken on three successive days from a strongly marked case of typhus fever, were subjected to 204° Fahrenheit for an hour and three-quarters. These personal *fomites* being, before the application of heat, as thoroughly charged with the contagious principle as any garment could be, were tested as follows: One was placed directly under and within twelve inches of the nostrils of a person engaged in writing, and who was excessively fatigued from previous exercise and had observed an unbroken fast for eight hours. This test of exposure was continued for The second shirt was put on and worn two hours. next to the body of a person for two hours. And the third, with the view of giving activity to any contagious matter "which might possibly have escaped decomposition," was put into an air-tight canister for twenty-six days. It was then taken out and placed within twelve inches of the face of a person for four hours, "a gentle current being contrived to blow upon him from the flannel during the whole time." In none of these instances was the fever communicated, and no injurious effects were experienced. Dr. Henry next performed a precisely similar series of experiments with the fomites of scarlet fever, which proved to his satisfaction " that by exposure to a temperature not below 200° Fahrenheit, during, at least, one hour, the contagious matter of scarlatina is either dissipated or destroyed." And he remarks, "the circumstances under which the experiments were conducted render it, I think, demonstrable that the disinfecting agency belongs to heat alone; for the receptacle in which the infected waistcoats were placed having in every instance been closed, change of air could have had no share in the effect. The phenomena, then, are reduced to their simplest form, and the results put us in possesion of a disinfecting agent the most searching that nature affords-one that penetrates into the inmost recesses of matter in all its various states." Having satisfied himself in this direction, Dr. Henry next undertook to ascertain what

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elevation of temperature "cotton and other substances likely to harbour contagion of the plague or typhus would sustain without injury, the heat being applied to both the raw staples and to their various fabrics. A quantity of raw cotton, sub-jected to a dry temperature of 190° Fahrenheit, which was steadily kept up in the inner compartment of a double vessel heated by steam during two hours, become 'fuzzy' on account of the loss of its natural moisture, and for the same cause the strength of the yarn was for the time impaired; but after being left for two or three days in a room without fire a great change had taken place in its appearance, and it was found on trial that the cotton was as capable of being spun into perfect yarn as that originally employed. On accurate trial of the twist which had been spun from it, a hank supported an equal weight with a hank of the same fineness that had been spun from cotton fresh from the bag. This fact, established by repeated experiments, proves that, with the recovery of its hygrometrical moisture, cotton which had been heated regains its tenacity and becomes as fit as ever for being applied to manufacturing purposes." A quantity of cotton yarn was tested in like manner with like result. "Articles of cotton, silk, and wool, after being manufactured, both separately and in a mixed state, into piece-goods for clothing, were submitted to the same treatment. And some of these were of the most fugitive colors and delicate textures, yet after being exposed three hours to a dry heat of 180° Fahrenheit, and then left a few hours in a cool room, they were pronounced perfectly uninjured in every respect. Furs and feathers, similarly heated, were also uninjured. In subsequent experiments the temperatures were raised forty or fifty degrees higher without injury to the fabrics."\*

Dr. Von Busch, of Berlin, having the benefit of Dr. Henry's experiments, in February and March, 1851, after having ineffectually made all the usual appliances—thorough cleansing, aeration, fumigation, etc.—for the purpose of disinfecting the Berlin Lying in Hospital of puerperal fever, determined tc try the effect of dry heat. All the beds, wardrobes, and hospital utensils being retained in the wards, common wood stoves were introduced, and a steady temperature of about 150° Fahrenheit was kept up for two days. The wards were immediately reoccupied by the same class of patients, with the same individual liabilities as before, and the result was found to be triumphant! The infection was destroyed and the inmates wore safe. A subsequent return of the disease on the following year was destroyed in the same manner.\*

A striking instance of the disinfecting power of heat to a badly infected ship is referred to in Vol. VIII. of the Royal Medico Chirurgical Transactions, as being contained in the official report of Dr. Wm. Ferguson, Inspector General and Chief Medical Director for many years in the Windward and Leeward Islands. The reference states that "the transport ship *Regalia*, being badly infected with yellow fever, while at English Harbor, underweat fumigations without the least effect in arresting future attacks or their fatality; and that it was not

\*Neue Zeitschrift Fur Geburtskunde, 1852 Be Bullderlin, The rapout. 1853.

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<sup>\*</sup>Philosophical Magazine, 1831-32.