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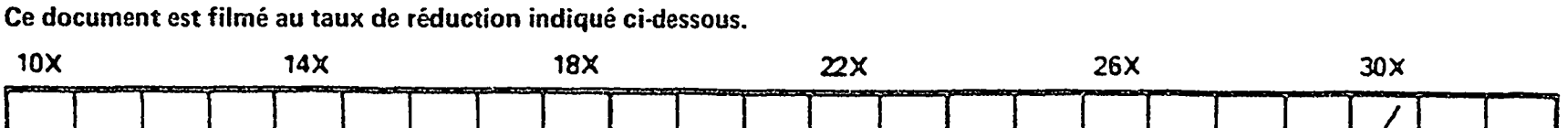

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Original Communication.

CIRCUMSPECTIVE REVIEW OF HYGIENE.

(Continued.)

Another eminent labourer in the cause of hygiene, to be noticed, is Count Rumford. Whilst in the service of the King of Bavaria, he prosecuted his most useful labours for elevating the poor, improving the condition of their dwellings as regards ventilation and warmth, and suggesting means for a more liberal alimentation. Prominent among the earliest of the physicians of the last century in promoting the health and comfort of our seamen ranks Sir Gilbert Blane. He succeeded in introducing into every ship in the service the use of lemon juice, as a preventative and cure for scurvy. This measure has had the beneficial effect of almost completely eradicating scurvy at sea, and has done more to keep up our naval force in a state of efficiency than any other measure. Sir Gilbert sedulously directed his attention to improve the condition both of the men engaged in the service, and of the medical officers whose duty it was to superintend their health. He caused regular returns or journals of the state of health and disease to be kept by every surgeon in the service, and forwarded periodically to the Navy Board, and embodied his large experience in a work entitled "Observations on the Diseases of Seamen."

To illustrate forcibly the great work of Sanitary Reform in the Navy accomplished by Sir Gilbert Blane, it will be only necessary to mention, that while in the year 1726, Admiral Hozier, in sailing to the West Indies, buried his ship's company twice, and that within the limits of the South American command, the "Centurion" lost more than a century ago—200 out of 400 men from scurvy. From 1830 to 1836, the British squadron, employed in South America, lost by disease of every description only 115 out of 17,254 men. In 1779, the proportion dying, of the employed, was 1 in 8; in 1811, 1 in 32; from 1830 to 1836, 1 in 72.—(See Wilson's Report.) We must not attribute altogether this immense diminished death-rate to the suppression of scurvy, by the supply of lemon juice, but give the due meed of praise to the enforced temperance accomplished by the then head of the Navy department, Sir William Burnett. Previously to 1825, half-a-pint of spirits was allowed to every person serving in the fleet; at which time a salutary change was introduced, by the reduction of the spirits to a quarter of a pint daily, and the allowance of tea or coffee instead. Another important factor in the accomplishment of this important change, was a greatly improved dietary. Previously to the year 1797, the nutriment supplied by rations to seamen and marines was one-third less than it is now: the results, scurvy, putrid ulcers, malignant dysentery, and fevers. The other auxiliaries for the improvement of health were, at the same time, carefully attended to, viz., employment, berthing, cleaning, and ventilating.

The scope of scientific hygiene is not merely to preserve health and prevent the development of disease; it aims also at ameliorating and perfecting the various instruments of life, and at promoting the full development of all the powers of the system. Having very briefly reviewed its progress in the Navy, let us now examine the record in the Army, as given by Dr. Balfour, Inspector-General of Hospitals. In the stations of the United Kingdom, the sickness is represented by 1,025 admissions, and the mortality by 9.35 deaths per 1,000 men. The class of diseases which give rise to the largest

proportion of cases is venereal, by which one-third of all admissions in the hospital is caused; next in rank, miasmatic diseases, diseases of the integumentary system and respiratory system. Tubercular diseases, chiefly phthisis, occasion upwards of one-third of the whole mortality, and diseases of the respiratory system next to them. The Mediterranean station, Gibralter: the sickness here is represented by 894 admissions, and the mortality by 8.86 deaths per 1,000 men. Of miasmatic diseases, continued fevers most prevalent causes represented; over-crowding—the space in one of the barracks only 322 cubic feet per man; 2nd, exposure to sun heat; 3rd, imperfect drainage and sewerage; diarrhœa, dysentery and cholera four times as prevalent as among troops at home; venereal diseases give rise to one-fourth admissions into hospital. In the stations of British America: diseases of the respiratory system and phthisis stand first. In British Columbia: influenza and venereal are the prevailing diseases. In the West India stations: tubercular diseases and those of the respiratory system are the most fatal, causing upwards of two-fifths of all the deaths In the West Africa stations: the most prevalent diseases, dysentery, diarrhœa and cholera. In St. Helena: the most fatal diseases are those of the nervous system, tubercular diseases, and continued fevers. Cape of Good Hope: the most fatal is continued fever. Mauritius: the most fatal diseases, cholera, dysentery and diarrhœa. Ceylon: hepatitis, tubercular diseases, and those of nervous system. Australia: the most fatal are the tubercular, which caused 4.67 deaths per 1,000 strength; circulatory system, 2.34; nervous system, 2.13. New Zealand: the most fatal are those of the tubercular class. China: the fatal diseases, dysentery, diarrhœa, cholera, continued fever and rheumatism.

In England, the annual rate of mortality among soldiers is 10 per 1,000. In India, it is 67 per 1,000, of which 50 per 1,000 are due to zymotic diseases; fevers, 17 in 1,000; dysentery and liver diseases, 20; cholera and diarrhœa, 10 in 1,000. Delirium tremens, catarrh, syphilis, rheumatism and scurvy are much more fatal in India than in England or America.

These reports should certainly give the death blow to the banishment of our invalids for pulmonary diseases. They serve to show the salubrity of our own climate, and to diminish our aspirations for the "sunny South." Statistics dispel these illusions, and prove that consumption lurks as fatally in the balmy zephyr, or the sultry tropical breeze. If we examined the grave stones in the cemeteries of the various localities that, from time to time, have been the fashionable resort of consumptive invalids, we should quickly find that the reputed favorable influence of the climate has been a delusion and a snare. Contrast the maximum of injury resulting from fatigue of travel, deprivation of home comforts and associations, with the minimum of prophylactic influence of climate, and the prudent result arrived at would be the quietly awaiting the issue of the disease, surrounded by the loved ones at home. Instead of endeavoring to avert a termination, which in nine-tenths of the cases of patients sent from home to die, is inevitable, it would be far wiser to endeavor to direct the attention of the public to the factors of the disease. That the greater number of the ailments to which mankind are subject, are entailed upon them by their ignorance, carelessness and apathy, is an observation familiar to every practitioner in medicine. How large a proportion of his patients might, by the simplest hygienic precautions, have altogether avoided the maladies they are suffering under, or have rendered their duration less prolonged and their character less grave. In the fourth annual report of Board of Health for State of Massachusetts, the death from consumption in ten years were 45,000. The most prominent cause, Dr. Bowditch clearly established, to be soil moisture. Dr. Elisha Harris thus speaks on the subject.—"Inquiries that I had begun upon general sanitary questions in every town in the State of New York in 1859, as a committee of the State Medical Society, prepared me to believe your opinions (that soil moisture is a prominent cause of consumption in New England and probably elsewhere) were well founded, when you first mentioned them to me in 1862." The percentages of the

opinion of the profession in Massachusetts on the question are as follows: 80 per cent. take the affirmative, 10 per cent. the negative, 0.95 per cent. doubtful, and 9.04 per cent. returned no answer. The fact is unquestioned, that wherever a superabundance of moisture exists, the crops are meagre and the inhabitants affected with fever, rheumatism and consumption. Whilst cholera carries terror to the mind by the rapidity of its ravages, consumption and the ordinary epidemics are in reality more alarming from their permanence (often becoming endemic), and from the fact of their slower operation challenging, in a less marked degree, the public attention. The annual slaughter in England and Wales, from preventible causes of typhus, which attacks person in the vigor of life, have been shown to be double the amount of what was suffered by the allied armies in the battle of Waterloo.

Simcoe. C. W. C.

Selected Articles.

CARBONIC ACID AND ITS FATAL EFFECTS.

BY W. H. THAYER, M.D.

[Read before Med. Society, Co. of Kings, N. Y., Oct. 20, 1874.]

The success of a doctrine depends much upon the manner in which it is presented by its advocates; and scientific facts may sometimes fail to receive universal assent, for want of being forcibly put

The necessity of a thorough ventilation of sick rooms is nothing more than what is taught by every well-informed and thoughtful doctor of medicine. Yet so far are the majority of physicians from putting their ideas on this matter in practice with any considerable degree of consistency, that it cannot be supposed they thoroughly appreciate the premises. I purpose, therefore, to put the subject in another form, to see if it cannot be presented in such a manner as to produce a more decided effect.

I start with the proposition that the most serious impediment to recovery in fatal cases of acute disease is the daily

and hourly administration of fatal doses of carbonic acid gas; and the same treatment is the chief cause of the gravity of many cases which, without this poison, would be of mild form.

So little alive to this fact are a very large proportion of medical men that it will require copious and well-authenticated illustrations to convince them. And the difficulty will be rendered still greater by the errors in some of the domestic habits of physicians themselves.

I do not intend to enter into the subject of hygiene in general, or even the management of chronic diseases, but shall confine myself to the fatal or dangerous use of carbonic acid gas, so fearfully common in the treatment of acute disease. Let a person be attacked with no matter what form of acute disease, and in nine houses out of ten the doors and windows will be immediately closed to shut out draughts, and every step taken to retain the air of the room, and avoid any material change. Most houses are now built without open fireplaces, and are warmed by stoves, heaters or furnaces, which supply to parlors and bedrooms the air of the dining-room or the cellar. The lungs and the skin of the patient and attendants are constantly exhaling carbonic acid, and the lamps or gaslights are furnishing an additional supply, so that the atmosphere of the room is rapidly charged with it.

Now what is the effect of the inhalation of carbonic acid? The following bit of history will show what it does when inhaled undiluted: In the summer of 1872, a vine-grower, in the eastern part of France, having his vats partly filled with grapes, which had been pressed, and were already in the process of fermentation, had occasion to climb down into one of the vats. He had no sooner reached the bottom than he fell insensible. One of his sons followed immediately to assist his father, but dropped at once beside him, and another person going to their rescue shared their fate. They were with some difficulty all drawn up, but life was extinct. They were asphyxiated before they could save themselves, by the carbonic acid gas which had accumulated in a dense layer over the fermenting grapes.

Similar instances of immediate death from the inhalation of pure carbonic acid gas sometimes occur in wells which have been closely covered for many years, where the escaping gas from the soil slowly accumulates, and, having no current of air to aid its diffusion, gravitates by its weight to the bottom of the well, gradually displacing the atmospheric air. The man who opens the well, and, having put in a ladder, goes down into it, falls insensible before he reaches the bottom.

There are historic instances of slower death by the diluted carbonic acid of a close room filled with people—from that of the famous Black Hole of Calcutta down—which are so familiar to all medical men that they need not be repeated here. There can be no doubt that death in cholera is chiefly due to poisoning by carbonic acid. The blood corpuscles lose their power of taking up oxygen, and as a consequence we find the air of expiration containing oxygen alone, while carbonic acid accumulates in the tissues.

Having seen the effect of undiluted carbonic acid gas upon the healthy system, let us inquire what influence it has upon subjects of acute disease, when diluted to the proportion in which it is commonly found in an ill-ventilated apartment. I will present a very striking instance, taken from a paper on *The Causes of Typhoid Fever in Massachusetts*, published in the Second Annual Report of the State Board of Health of Massachusetts:

"A young butcher, between twenty and thirty years of age, was attacked with typhoid fever. He was a bachelor, and occupied a good-sized chamber, lighted by two windows, and having an open fireplace.

"The fever was mild, with daily febrile exacerbation, hot skin, thirst, slight diarrhœa, and rose spots, with no violent symptoms. There was no indication for drugs. He was bathed two or three times a day with tepid water, and was allowed water freely, iced or not, according to his taste. The covering of his body was regulated by his sensations. A slight wood fire, just enough to insure ventilation, was kept in the fireplace, and one of the windows was raised a little.

"As soon as his family, who lived in the country, heard of his illness, two of them, a maiden aunt and a sister, came to the city to take care of him. They reached his house one afternoon, just after my visit. My patient was, as described above, comfortably sick, with a pulse about eighty, and without delirium. They were frightened to find their relative, who was sick with typhoid fever, so poorly cared for. Guided by their theory of the proper treatment of fever, they proceeded without informing me to reform matters.

"They pinned a blanket over each window so as to exclude the light, and closed the open window; they closed the chimney with a fireboard and set up an 'air tight' stove, in which they made a fire. In order to make him sweat he was packed in blankets, and hot herb tea was given him.

"When I called the next day, I found his room dark, and filled with a hot and foul atmosphere. The odor was of that offensive sort that sick chambers are too often charged with. But the greatest change was in the sick man, whom I had left so comfortable the day before. He was wrapped in blankets, his skin was dry and very hot, his tongue dry, his lip cracked, his eye wild, his pulse 120, and he was so restless and delirious that it was all his attendants could do to keep him in bed.

"His aunt said she came to nurse her nephew, and had found him with open windows, exposed to noise and currents of air, drinking cold water as freely as he chose, and taking no medicine. These evils she had endeavored to remedy, but in spite of all her efforts he had grown rapidly worse."

The physician states his conversation with the aunt, and his refusal to continue in charge unless everything was restored as it had been on her arrival. The windows were opened, the stove was removed, a fire made in the chimney, and the blankets were taken from the patient. He goes on to say, "I gave the sick man a tumbler of water, which he drank as if he were quenching an internal fire. All this they bore in silence, but when I called for a large tub, and made preparations for a bath, they remonstrated: a bath, and particularly a cold bath would kill him.

"Remonstances were unavailing, and my patient got a cool affusion by pouring water all over him. He was then put to bed, lightly covered, and soon went to sleep. By night his condition had considerably improved, and on the next day, twenty-four hours later, his fever assumed its previous mild type. His pulse was about 80, and his head tolerably clear. He made a satisfactory convalescence."

The case just related is a fair specimen of a very common malpractice, occurring every day, but escaping notice because the effects of carbonic acid poisoning are not often brought out in so bold relief. The gas existing in a small amount as a component part of the atmosphere, and insidiously accumulating in every inhabited room, we do not easily estimate its effects or the frequency of their occurrence, until we undertake its thorough removal; and it is by cases in which this has been successfully done that we can discover the terrible influence of this poison upon acute diseases. I shall therefore further illustrate it by showing the marked improvement that takes place in acute diseases upon the removal of patients from an atmosphere that is saturated with it. The following cases exhibit the subject in a still more marked manner than

the one already cited. They are the most remarkable that ever were published, and ought to be reprinted every ten years, until the whole medical profession has fully assimilated the knowledge they afford. The account about to be given is from a citizen of Perth Amboy, and statements of Dr. C. McKnight Smith, to Dr. John H. Griscom of New York, in 1852, published in the transactions of the New York Academy of Medicin and afterwards included in a letter from Dr. Griscom to a select committee of the U. S. Senate, on the causes of the sickness and mortality in emigrant ships, and published in their report in 1854, It is as follows:

"In August, 1837, a number of ships with emigrant passengers, arrived at Perth Amboy from Liverpool and other ports, on some of which ship fever prevailed. There was no hospital or other accommodation in the town, and an arrangement was made to land the sick, and place them in an open wood about a mile and a-half from the town. Rough shanties, floored with boards, and covered with sails, were erected, and thirty-six patients were taken from on board ship, with boats, and carried in wagons to the encampment. Of the thirty-six, twelve were insensible, in the last stage of fever, and not expected to live twenty-four hours.

"The day after the landing there was a heavy rain, and the sick were found next morning wet, and their bedding—such as it was—drenched with the rain. The number at the encampment was increased by new patients to eighty-two.

"On board the ship which was cleansed after landing the passengers, four of the crew were taken with typhus, and two of them died. Some of the nurses at the encampment were taken sick, but recovered. All the eighty-two passengers recovered."

Dr. Smith, who attended them, says: "The medical treatment was exceedingly simple, consisting, in the main, of an occasional laxative or enema, vegetable acid and bitters; wine was liberally administered, together with the free use of cold water, buttermilk and animal broths. The four sailors who sickened after the arrival of the vessel were removed to the room of an ordinary dwelling-house; the medical treatment in their case was precisely similar, yet two of them died. My opinion is, that had the eighty-two treated at the encampment been placed in a common hospital, many of them would also have fallen victims." Thus far, Dr. Smith. The main object of my paper is to show that the administration of poisonous doses of carbonic acid gas forms a veryprominent part

of the usual treatment of acute diseases, and in saying that the treatment of the four sailors was precisely similar to that of the emigrants, the reporter makes a very important error. I contend that this matter of getting rid of the carbonic acid from the atmosphere, which is usually referred to as of secondary importance, should be considered as much a part of the medical treatment as the administration of any article of the materia medica, as it is of much more serious consequence than the use of any one of them.

Two very grave cases of double pneumonia, lately treated, gave convincing evidence of the imperative necessity of ridding the air of the sick room of carbonic acid gas. In both cases I was satisfied that if the amount of carbonic acid which we find in average sick rooms had been added to the atmosphere of the room, the patients would have died, for they could not have borne the addition of any other depressing influence.

The first case was that of a young man, twenty years old, a book-keeper, not robust, and a sufferer from serious dyspepsia for several years past. * * *

The case was very grave when the pneumonia became double, and the patient's aspect was so bad on that morning that a neighboring physician, who was called in before I arrived, would not advise any remedies, as he considered him dying and past relief. The lividity of his nails continued very marked for two or three days. But persistent nourishment, active stimulation, free use of carbonate of ammonia, exchanged for the oil of turpentine when the sputa became watery and bloody, quinine, counter irritation, and the careful and thorough removal of carbonic acid from the air, brought him through. Although the weather was cool, so that we had a fire in the grate, two windows were kept constantly wide open, and an outer door, on the opposite side of the room, much of the time, and a current secured through the room, and across the bed. This was persisted in day and night, and in all weathers, including a cold rain storm; *and of all the agents in his treatment I considered the careful removal of the vitiated air the most important.* * * * *

The other case referred to is that of a lady, 60 years of age, whom I treated in April, 1874, with double pneumonia, followed by diphtheria, involving the entire mouth and pharynx, which latter relapsed and was complicated with acute nephritis, characterized with albuminuria and œdema of lower extremities. Under a series of affections of so grave a character, a

woman of 60 might well be expected to succumb. But she recovered completely —a result which I should not have dared to hope for, had not a good current of air been maintained through her room by means of open windows and doors, day and night, and in all weathers, the temperature being raised by a fire.

In four other cases of simple pneumonia, treated last spring, the recovery was remarkably rapid under similar circumstances.

I need not multiply instances; but in all acute affections I have always regarded the means employed for a constant and thorough removal of vitiated air from the sick room as the most important of all remedial measures, and in grave cases as giving the patient many additional chances of life.

In support of my own opinion and practice I have an opportunity of adducing the valuable testimony of Dr. C. R. Agnew, in the following letter from him:

"NEW YORK, *Oct.* 14, 1874.

"WM. HENRY THAYER, M. D.:

"*My Dear Doctor*—I must answer briefly and from memory the questions you propound regarding my experience in treating cases of pneumonia in the open air. At the breaking out of the late war I took charge of the State Volunteer Hospital, New York, and had about 120 beds in the north building of the New York Hospital filled with promiscuous cases. * * Among the pneumonic cases were several cases of double pneumonia, marked by very distressing, threatening and intractible dyspnœa. They were treated as I had been taught to treat such cases. I ventilated the wards as well as I could, and separated the cases as much as possible, but without beneficial result.

"Finally, I adopted the expedient of carrying the patients on litters into the open air and placing them at the south side of the hospital building, where nothing could obstruct the freest circulation of the atmosphere. The litters were all provided with good thick hair mattrasses and enough of fleecy blankets to protect the patients. * * * I sent the litters out in the early morning, and sometimes kept them out till after dark.

"The effect upon the condition of the patients was invariably favorable —there was marked relief of the dyspnœa within half an hour after the removal from the wards—and I firmly believe that I saved some cases of pneumonia that I otherwise

should have lost; this was especially true of some cases of double pneumonia following measles in the adult. I invariably noticed that the recovery was quicker—the resolution went on with astonishing rapidity—and that there was a more vigorous play of the recuperative forces. I had similar experience with fever cases. Indeed I followed the plan of carrying my sickest patients out of doors, and leaving the convalescents to take care of themselves.

"I ought to say that this practice extended through the summer and autumn and well into the winter.

"Ever sincerely yours,

"C. R. AGNEW."

Wherever we have the deadly influence of carbonic acid in the sick room, we have also an accumulation of organic matters which have been eliminated through the lungs and skin, which are unquestionably a dangerous addition to the air which is to be respired, especially in the case of zymotic diseases. We are not so well acquainted with the toxic properties of these excreta as of the carbonic acid, but for practical purposes it is sufficient to know that the measures which free the atmosphere of one will also get rid of the other. * * *

The greatest obstacle to the growth of correct views on this important division of therapeutics is to be found in the faulty construction of houses and contrivances for warming. If we live at home in an atmosphere constantly poisoned by carbonic acid, we are not likely to appreciate fully its effect upon the sick. I trust that the presentation of such very strong illustrations as I have been enabled to offer, may aid in inducing a more earnest attention to the subject.*

One word as to the tendency to the accumulation of carbonic acid in a room. The error often comes from a misapprehension of the means required to get rid of it. Experiments show that it is diffused through the air, and will be found pretty equally throughout any close room, except that it is in its greatest amount near the ceiling in an occupied room, simply because when exhaled it is warmer than the air of the

*It is not safe to reason from the well to the sick, to infer that the sick can tolerate an atmosphere that the well are often accustomed to. It is true that thousands of people continue to live, and without serious sickness for a time, in rooms largely charged with carbonic acid gas. In a condition of ordinary vigor the system may resist the deleterious influence for a long time, or become gradually accustomed to a lower vitality, or eventually develop some chronic affection. But the proportion of carbonic acid in the atmosphere that one in ordinary health could bear will be sufficient to aggravate materially the severity of an acute disease.

room. Therefore, it is to be removed only by an entire and steady change of the whole atmosphere of the room; which can be accomplished by having a perceptible current through it from side to side, and in no other way. We ought to be convinced of the insufficiency of one open window for getting rid of anything noxious in the air, when we see how long a cloud of tobacco smoke will hang almost motionless in the room when there is an opening on one side only. It should convince us that something more than the moderate opening of one window is needed to purify the sick room of its poisonousgases.

In the outer air, even in the city streets, the amount of carbonic acid has little variation, and is kept within healthy limits, by the force of currents aiding its diffusion; but in an occupied room it constantly accumulates, and even with tolerable contrivances for ventilation is found by examination, to exist in an amount far beyond its normal proportion. In the experiments of the late Dr. R. C. Stiles (published in the report of the Metropolitan Board of Health for 1869), on the atmosphere of the public schools in Brooklyn, some of which are regarded by the Board of Education as models in their method of ventilation, the amount of carbonic acid was always in excess, in one school being present in eight times the ordinary amount. The atmosphere of a large proportion of dwelling-houses would not give any more favorable results.—*Sanitarian.*

EXTRACT FROM PARERS READ BEFORE THE AMERICAN PUBLIC HEALTH ASSOCIATION—SECOND ANNUAL SESSION.

[The second annual session of the American Public Health Association commenced November 11th, 1874 at 12 o'clock in the hall of the College of Physicians, Philadelphia, and continued four days. Many prominent members of the Association were present, including physicians of the highest standing in the United States. The written papers were of a high order, and more numerous than could be read during the session. We take the following extracts from exchanges.—ED.]

HEREDITARY DEFECTS.

J. R. Black, M. D., of Ohio, read a paper on "The Influence of Hereditary Defects upon the Health of the People, with suggestions in regard to Prevention and Eradication."

A hereditary defect he said may imply a disease directly transmitted, as in syphillis or scrofula; or a deformity, as in harelip, or simply tendency to some disease, as in insanity or tuberculosis. The way in which ordinary forms of hereditary defects originates is not difficult to comprehend. It is often practically demonstrated to every competent observer, especially in the large cities.

As a rule, the residents of a salubrious country district are freer from taints of blood and defects of organization than those of a city, and a removal of persons into the latter place produces an impairment of health of a transmissible quality. The digestive organs are the first of the vital harmonies to fail from bad habits of life.

If those habits be continued for a generation or two an inbred weakness of these organs will become an inheritence of the offspring. If the infringement of vital law consists of great mental strain, or in the continued and excessive use of stimulants and narcotics, some form of nervous impairment will ensue, which, if prolonged, may end in insanity or predisposition to attacks of nervous disorder.

If the syphilitic taint is engrafted upon the blood, this, with insufficient out-door exercise, and the long-continued breathing of impure house air, will be sure to give rise to pulmonary consumption.

Those who have given the laws of health any attention are aware that there are few persons who do not violate them, nor is obedience at all impracticable.

Of late, the achievements of science have actually tended to produce an increase in the number of degenerate men and women, because every one does not know and act for himself in sanitary matters, but relies on the knowledge confined to a few scientists. The latter cannot manipulate health, vigor, and good constitutions into their fellow-beings.

The first and great requisite to prevent all this is knowledge of what constitutes true vigor, sympathy, and health. Not a very few persons are of the opinion that these conditions are very well known to the popular mind. Observations have led to a very different conclusion. Many have gained vague ideas on the subject, most frequently from those who have more vanity. A few thoroughly understand the purpose of one or more of the conditions of health, and perhaps, attach an undue importance to them. This knowledge, to be useful, needs to be personal and thorough; no mere elementary smattering to which the mind may passively assent, but such a deep and

thorough familiarity with the subject which will enforce the conviction that the alternatives of pleasure or pain, health or sickness, long lives or short ones, are, except from chances infinitesimally small, wholly in our power. Precisely that which prevents sickness will also prevent the stamping of an inherent defect upon the organization.

MUNICIPAL BOARDS OF HEALTH.

Professor Le Conte read a paper on the subject of the "Organization of Municipal Boards of Health." The gentleman prefaced his remarks with a quotation from a recent letter from Paris, France, in which the neatness of Paris streets was described. Prof. Le Conte said the fundamental cause of most of the complaints in regard to the inefficiency of officials arose from the fact that those in authority were chosen without due regard to their fitness for the duties to which they were assigned. The speaker then presented a plan for the formation of the board, which would do away with many if not all the evil results of the present system. He recommended that the members should comprise three classes of citizens: First, students of sanitary science, to be appointed or recommended by some responsible medical organization; second, business men eminent for prudence and thoroughness in the discharge of their duty; and third, politicians or men familiar with the workings of the municipal departments. The duties of the first would be to determine and order what is necessary to the public health; the second to see that it is done with the least possible inconvenience and expense to citizens, and the third to procure the necessary appropriations.

HEALTH AND HIGHER CULTURE.

The Rev. Samuel Osgood, D.D., delivered a discourse on "The Relations of Health and Higher Culture."

After noting the difference between modern society and the society of the ancients, he said, that the demands upon us had increased until we were in danger of becoming a nervous, uncomfortable, discontented, wretched race, unless we use our best thought and effort to bring the highest wisdom, and virtue, and order that are within our reach to bear upon our way of living. Hence the excellence of this American Health Association that now calls us together. * * * Strictly speaking, health is a part of the higher culture, for body and mind are practically inseparable, and we know nothing of the sound mind apart from sound blood and brain. I am willing,

for the present purpose, to take Herbert Spencer's definition of life as the basis of our discussion, and to allow that *life is the continuous adjustment of internal relations to external relations*, if by external relations we comprehend those which are social and religious as well as those which are physical. If life is the continuous adjustment of internal relations, to external relations, then healthy life is such adjustment truly and fully carried out, and he is the healthy man who lives in true relations with nature, man and God. Whatever might be the aspiration of the soul, our knowledge must come through the senses, but unless the senses were perfect in action and thoroughly trained, the mind could not be advanced. Reference was then made to the bad methods of cooking food in this country. He said our vices and follies come in great part from what goes into the mouth. The cannon and the sword had at times done terrible work, but the pipe and the bottle, the cigar box and the whiskey cask, were likely to beat them both.

FACTORS OF DISEASE.

Prof. S. D. Gross, M.D., in speaking of the effects of bad drainage, made mention of the appalling epidemics which raged for a time in a ladies' school at Pittsfield, Mass., and later at a hotel in Washington. The poisons of infectious and cutaneous diseases were next treated. The speaker related many instances in which the poisons of various diseases were communicated from person to person in an almost unaccountable manner. The specific poisons of cholera, diptheria, smallpox, scarlatina, were referred to as particularly tenacious and potent. The average mortality from zymotic diseases was 26½ per cent. of all deaths.

BUILDING GROUND AND HEALTH.

Ezra M. Hunt, M.D., President of the Sanitary Commission of New Jersey, presented a paper on "Building Ground in its Relations to Health and Disease." It states that the condition of the ground has very much to do with all questions of health. The character of the soil, the degree to which it can dispose of all that comes in contact with it, whether in the form of gases of animal or vegetable decay, or of pure and impure liquids, all have intrinsic and vital bearings upon human health. We want more of a dry earth system. Perfect under-drainage is the first great need of most cities. Regulations of cellars, and of all other holes below the surface is the next great study. The proper airing of all sub-structure,

because of its proximity to the ground, comes in next for consideration. What can we do to sweeten or purify surface-soil already formed in another point. The great question of what to do with all refuse so as to keep it out of city soil is the large and momentous subject which must ever present itself to our attention. He strongly condemned the building of houses on foundations made up of earth mixed with refuse and rubbish;* such grounds will absorb large quantities of water, and being covered from the sun's rays hold the dampness, and this together with the decomposition which naturally takes place, are among the most prolific causes of typhus and typhoid fevers during the winter months.

ON VACCINATION.

Dr. Joseph M. Toner, of Washington, D.C., read an elaborate treatise on "Conditions and accidents which endanger, limit, or prevent vaccination from giving full protection from Small-pox."

Vaccinators in Great Britain, he said, are required to stand an examination as to their qualifications before receiving an appointment. I but assert the conviction of not only every medical man, but of every intelligent citizen, that a properly performed and successful vaccination, whether with humanized or animal virus, is as complete a protection against small-pox now as it ever was, and is a more perfect prophylactic than we possess against any other known disease.

SPURIOUS VACCINATION.—This general head may comprise all we have to say on deviations from the normal course of the true protective vesicle. Perfectly good vaccine lymph, even in the primary examination, may produce a spurious pustule, and consequently secure no immunity from small-pox, and it is the duty of the vaccinator to remedy and detect this accident. If the papular state be hastened the vesicle will be illy formed, and the lymph opaque and unfit to use in propagating the disease, and does not promise complete protection. The centre of the vesicle in such a case is not well defined, and the regular stages of the early development have been interrupted, and the areola either does not form or is not of normal appearance. A condition must always be suspicious in the development of any undue itching set up about the second or third day. Where the papulæ assume a conoidal shape about the fifth day, and have a straw-colored or opaque lymph, or broken, ragged, weeping vesicle, with an ill-defined areola about the sixth or seventh day, it can at once be

pronounced as spurious. Vaccination may be retarded somewhat in its course, but I think it can never be accelerated beyond a day or so without destroying its protective character.

When the reading of this paper was concluded, Dr. Moreau Morris, of New York, said that the first point seemed to be how to get vaccine virus. So far as his experience extended he was satisfied that humanized lymph was equally protective with bovine. Concerning the collection of virus, its use, and its introduction, he referred to the mode of collecting virus used by physicians, and said that he believed the vaccine should be kept at an even temperature, and not preserved beyond a certain length of time.

General E. L. Viele, civil engineer, presented a paper on "Principles and Practice in Drainage and Sewerage, in connection with Water Supplies." The speaker said that it sometimes seemed to him that it required more skill and true courage to conduct a sanitary campaign than to marshal an army. Of all the problems presented by the subject, none were more important than those connected with drainage and sewerage. Water was unceasing in its activity, ever destroying and renewing. It should be studied everywhere, in the forest and in the fields; but, more than all, it should be studied in the city. The portion which was retained in the soil was the cause of much of the disease which afflicts mankind. The after-effect of malarial diseases was then alluded to, showing that though the patient might recover, it would be almost impossible for him fully to regain his former health.

A report or the condition of some parts of Salem, Mass., was then quoted, showing that near portions of flat land, where waste water was allowed to collect, many fatal cases of typhoid fever occur every year. Every dwelling should have drains around it, connecting with some general outlet. The chief source of the great fever epidemics was an undrained soil. Experience had shown that in the country, in insalubrious districts, the laying of drains had always been followed by a decrease in the death rate. In the country the wells were generally little better than reservoirs for waste water. The use of hydraulic cement would obviate all this, and the overflow of the cesspools should be made to filter through charcoal.

Stephen Smith, M. D., of New York read a paper on "The Reciprocal Relations of the Public Health Service and the Highest Educational Qualifications of the Medical Profession."

PUBLIC HEALTH SERVICE AND THE MEDICAL PROFESSION.

After expressing a hope that in future the term physician might be better defined than in the past, the Doctor continued: *It requires but little penetration to discover that there* is a growing confidence in American communities in preventive medicine. Public health service can never inspire the proper degree of confidence unless it is sustained by medical science and medical art, in their highest degree of development. This science wears an organization with every needed scientific appointment, which shall be capable of searching out all the hidden sources of disease, and be of service in warding off pestilence, or mitigating its severity. It will also seek out and correct all those conditions which tend to deteriorate the physical condition of each generation, which impair development, and which diminish longevity. Its real efficiency and success must depend primarily upon the state of development of the medical sciences, the extent to which such service relies upon these sciences, and in their application in practice. The relations between the two, health source and the development of scientific and practical medicine, were assumed by the writer to be reciprocal, inasmuch as they were so intimately related that it was impossible for the former to advance without a corresponding advance of the latter.

(To be continued.)

THE PENALTY.

Extract from a Report on Public Hygiene and State Medicine, by Dr. T. M. Logan: read before the State Medical Society of California, 1874:

Do we need futher instances of the certain but logical penalty of the violation of sanitary laws? We have them in the history of the terrible epidemics which have scourged the people of Shreveport, Memphis, and Buenos Ayres. Shreveport has been described as the receptacle of all kinds of nuisances. Her streets were sodden with filth, and the suburbs were packed with fostering vegetable and animal garbage, for which there was no outlet. The air became poisioned with noxious emanations, and every breath inhaled so tainted the blood that nothing was wanting to develope yellow fever into the fearful epidemic it became, but the germ supplied from New Orleans. Once planted it had to run its course, and the citizens, in the

utter impotency of medicine to cope with its malignity, had to wait and trust to the frosts of Winter for its extermination.

Memphis had hardly any sanitary advantage over Shreveport. Situated on a high bank of the Mississippi, with proper drainage and a decent system of sewerage, it ought to be one of the healthiest cities of this great river. But there is no such system of sewerage—in fact no drainage at all. Hence it hardly required innoculation from abroad to start the epidemic. Had there been no yellow fever, there would probably have been something equally as fatal.

The situation of Buenos Ayres, on the estuary of the La Plata, one hundred and fifty miles from the sea, is not an unhealthy one. In fact, though on a flat, like Chicago and Sacramento, the climate has always been famed for salubrity, and the name of the city, "Good Air," is a universal advertisement in its favor. But trusting to the good air given by nature, no drainage or sewerage was attempted. Each house had its cesspool, where all the *cloacæ* have been sunk for three hundred years, and when one pit is filled up another is made by the side of it.

Two years ago the yellow fever appeared there for the first time, and nothing like its virulence and fearful mortality was ever before experienced in the history of this disease. It was more fatal, according to the population, than the great plague of London, in 1665. More recently this once famously healthy city has again become the victim of epidemic disease—this time Asiatic cholera—if possible more fatally dreadful than the yellow fever. Buenos Ayres is paying the certain penalty of a contempt for sanitary laws. The lesson of the past epidemics there and in the Mississippi Valley was merely the value of applied sanitary science in saving cities, and of the utter helplessness of cities not so protected. The cholera has only gone into Winter quarters, and with the approaching Summer and Autumn will almost certainly reappear, and terribly visit such places as are unprepared. Let us take warning.

REAL STUDIES.—The boy or girl who can give the name of every river and the height of every mountain in Asia, the age of every reigning sovereign in Europe, the date of every battle in America can hardly be as well off for all this burdensome knowledge as one who knows the elements of human physiology and anatomy, who is taught more of the knowledge useful in after life, and can tell how to help himself or another in case of accident or emergency. The boy who is to go into

active life, and the girl who is to become head of a household, will have little occasion and less opportunity to use the greater part of the "crammed" lessons so industriously accumulated during their school years. A fair knowledge of the rules that are at the bottom of all healthful activity, a general acquaintance with anatomy, and a well-grounded taste for natural sciences will all grow into and become a part of their daily lives, and such things are far less likely to make pretentious men or women than that kind of smattering "memorized" facts and dates and words which is too often the penalty of superficial study. The German name "Real School" might suggest the introduction into our own schools of real studies; of instruction in subjects of absolute knowledge; of matters that have to do with every-day life and actions of each one of us, instead of some of the learning of the schools, mere abstractions, which are but a poor sort of mental gymnastics, and only serve to train the mind at the expense of its real work in after years for feats of strength and trials of skill that lead to no good now and serve for no end in the future.—*Cincinnati Trade List.*

HONEY-MOON JOURNEYS.—We have before adverted in terms of censure to the common practice of winding up a marriage with a journey. There is scarcely any time in the life of a young woman when she is less prepared to encounter the fatigues of travel than immediately after the strain on body and nerve involved by the preparation for marriage and its consummation. But at this juncture she is often dragged away on a "wedding tour," and compelled to endure the labor, and excitement, and irregularities of a prolonged journey. The effect may not tell at once, the moral stimulus preventing present exhaustion. But reaction will come sooner or later, and the penalty with it. Physicians of course are not consulted as to the propriety of such journeys, and parents, though they may have their misgivings, are averse to crossing the plans of the dear young people. But the subject is one of importance, and should claim the earnest attention both of parents and of professional men. If young people can not settle down quietly at home after marriage, and if they must have a little more poetry before the prose which is to come, let them quietly take flight to some rural habitation, and repose there amid flowers and birds, until they can appreciate the home which is awaiting their return. —*Pacific Medical and Surgical Journal.*

Training Schools for Nurses.—The *Cincinnati Lancet and Observer* calls loudly for a training school for nurses, and suggests that institutions of that sort might be conveniently established in connection with our hospitals for those who desire employment as nurses, where they could be given a short course of lectures, with practical bed-side instruction. The idea is a good one, and well worthy the consideration of the profession. What medical man has not frequently wished "from the bottom of his heart" for a competent nurse to attend to a patient, and bewailed the supreme incompetency of self-styled professional nurses; who, however, are not altogether to blame, as there is no means whereby they can receive proper instructions in the art or practice of waiting upon the sick.

Draining for Health.—A paper, by Dr. Lyster, of Detroit, was read at the Quarterly Meeting of the Michigan State Board, in July, 1874, on "Draining for Health," in which it was shown that in England and Scotland the inhabitants gain from 20 to 25 per cent. in years and suffer less than half the sickness in well-drained districts. It appears from this paper that all the best breeds of cattle, horses, sheep, and fowls in the Kingdom come from the well-drained districts. While the Registrar-General, Dr. Farr, says that from these districts "industry and the army receive their best recruits." Dr. Lyster believes that whenever drainage of lands is found profitable in the increase and reliability of crops, it is found advantageous to all animal life living upon it.

Saw-dust Brandy.—The latest discovery, according to the *Clinic*, is sawdust brandy; which, it is said upon good authority, a German chemist has produced. "We are friends to the temperance movement," says the editor of the *Clinic*, "and want it to succeed; but what chance will it have when a man can take a rip-saw and go out and get drunk with a fence-rail? What is the use of a prohibitory liquor law if a man is able to get the *delirium tremens* by drinking the legs of his kitchen chairs? You may shut an inebriate out of a gin-shop and keep him away from taverns; but if he can become uproarious on boiled saw-dust and desiccated window-sills, any effort at reform must necessarily be a failure. It will be wise, therefore, if temperance societies will butcher the German chemist before he goes any further. His recipe ought not to be made public. He should be stuffed with distilled boards until he perishes with *mania a potu*."

ADULTERATED HOUSES.—The *Pall Mall Gazette* calls for more stringest laws regarding the structure of dwellings, and says in no one respect are sanitary legislation and administration so defective as they are with regard to houses. It believes that much disease and crime arise through men and women living in unwholesome habitations, and thinks the same law should apply to those who lease and sell houses that has been applied to the sellers of milk and groceries. It certainly appears to be nothing more than reasonable and just that the man who sells or lets a house should be held answerable for that house being free from anything injurious to health. There should be no reserve of foul air in the rooms caused by want of proper ventilation; no circulation of sewer gases in the basement caused by the absence of proper traps to the drains; no pollution of water caused by the escape-pipe of the cistern running directly into the sewer. These things are as much adulterations as alum is of bread or sand of sugar. As the law does not allow a man to sell poisons under the name of spices, it should not allow builders and land-lords to sell and rent fever-traps under the name of houses. "What is wanted," says the *Gazette*, "is a General Building Act, specifying certain sanitary requisites, without which no house can be wholesome, and enacting that in future no new house shall be inhabited until it has been warrented to possess them, and that all houses already inhabited shall be provided with them within a certain time after the passing of the act."

THE QUESTION OF SMOKING.—In a paper on Tobacco and Public Health, Dr. Drysdale states that he has frequently seen grave evils arise from the use of Virginia and other forms of tobacco used in England. Thus, in one week in 1874, he saw two young men with almost complete loss of vision, the one from smoking about an ounce of shag daily for years, the other from chewing tobacco constantly. Dyspepsia, diarrhœa, and piles were, he conceived, often caused by the use of tobacco; and palpitation of the heart and functional disease of that organ were commonly met with in smokers, especially in young men of delicate health. Chronic smoking caused a peculiar aspect of the tongue; in some cases the organ appeared as if brushed over with nitrate of silver. Stomatitis and dusky fauces were common in smokers; smoking tended, unless great cleanliness were observed, to injure the teeth greatly; and, among the poorer classes, it was quite deplorable to see the filthy condition of mouth caused by

addiction to tobacco in many instances. It was fortunate that women did not as yet use tobacco in England; for it was found, in the State tobacco factory at Iglau, in Vienna, that the female operatives who were suckling had their milk so impregnated with nicotine as to kill the infant in a large proportion of cases. Besides which, tobacco smoking contaminates the air of rooms and railway carriages, and is disagreeable to everybody, male and female, and not only to smokers. The use of tobacco favored paralysis of different kinds, paralysis agitans especially; and there could be no doubt in the minds of all who closely, and without prejudice, studied the case, that tobacco smoking was quite unlike tea or coffee; it was simply a vice, and not useful, but injurious to health.—*Medical and Surgical Reporter.*

To the Editor of the SANITARY JOURNAL.

DEAR SIR,—In Germany and Russia leading sanitary reformers have organized national sanitary associations for promoting the study of sanitary science, and developing means for its practical application. England has its National Sanitary Association doing much service in the cause of sanitary reform; the United States has its Public Health Association, the second annual session of which has but recently been held in Philadelphia; our sister city of Montreal has an organized sanitary association. And yet progressive Ontario has not taken a step, nor has its capital city, toward the establishment of a health association of any description. This is to be lamented. Associations of this character are necessary for the progress of the great movement toward thorough sanitary organization. They act the part of pioneers in investigation, and in the education of the people in the great truths of sanitary science.

I think it might be of service if you would, through your valuable journal, bring before the public as frequently, and as forcibly as possible, the great good that might accrue from the establishment of a sanitary association, either as a provincial society, or in connection with Toronto only, as may be desired, and thus, perhaps, encourage some one to move decidedly in the matter. We, in Ontario, should not be behind any other country or place in any such movement.

Respectfully yours,

TORONTO, Dec. 17, 1874. SANITARIAN.

THE SANITARY JOURNAL,

DEVOTED TO PUBLIC HEALTH.

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A FEW WORDS WITH OUR READERS.

Through this, the fourth number of the SANITARY JOURNAL, we want to have a few words directly with our patrons and subscribers; perhaps at this particular season of the year, too, something of the sort may be expected. The JOURNAL made its *debut* in July last, and is, as the *Canada Medical Record* says, "With the exception of a Bulletin issued by the Health Officers of Montreal, the only sanitary journal published in Canada." While fully realizing the broad field requiring culture, and believing the time had come when it might be cultivated with profit, we yet were reluctant to enter upon the work with anything more than the present small bi-monthly, as a sort of experiment; and the publication of it was commenced with all the hopes, doubts and fears that usually beset those who engage in any entirely new enterprise. With each issue of the journal, hopes in the future have been strengthened. Fifty per cent. more copies of this number are being published and circulated than of any previous number.

We have reason to be gratified with the manner in which the *Journal* has been received, especially by leading members of the medical profession, and also by the press; and we take this opportunity to tender to these our thanks. The want of more space is greatly felt, and it is hoped and believed sufficient encouragement will be received to warrant the publication of a monthly, of the same size, or larger, after the next

two numbers, or after the expiration of the first year. It would enable the publisher to make preparations for so doing, if those who have ordered the *Journal* without remitting the cash, and also, as many of those who have signified their desire to be subscribers by retaining the last number as can make it convenient, would remit the small amount of subscription—small to each subscriber, but in the aggregate, large. The printer must be paid.

We wish all our readers, each, individually, a VERY HAPPY NEW YEAR.

POISONOUS WALL PAPER.

A great deal of attention is at the present time being attracted toward wall papers colored with poisonous pigments. Numerous reported instances leave hardly any room to doubt that many cases of disease of a more or less serious character have been produced by occupying rooms with walls covered with paper colored with arsenical compounds. It is possible, too, indeed it is quite within the pale of probability, as so large a portion of this sort of paper is used for covering walls, that many more cases of illness have been caused by their use than are known or even suspected to have had this origin.

In the First Annual Report of the Michigan State Board of Health, 1873, Professor Kedzie gives the history of several cases of disease evidently occasioned by the coloring matter of wall paper.

In the *Sanitary Record* (London, Eng.) for July, 1874, is published a lecture by Dr. George Johnson, which gives a most instructive and extended view of this source of disease. A number of cases of poisoning are given, in which the symptoms are defined, and the exposure unequivocal. The writer shows that the symptoms are similar to those which are known to occur more or less constantly and severely amongst work-people engaged in the manufacture of arsenical pig-

ments, or of papers, leaves, and artificial flowers colored with such compounds. To the arguments of those who doubt the injurious effects of such papers, and who maintain that, if they were really so detrimental to health, their very general use for so many years past would have been followed by numerous instead of rare cases of illness, Dr. Johnson replies that all cases do not come to light, that many cases fail to be detected or are erroneously diagnosticated, and that much depends on the susceptibility or idiosyncrasy of those exposed. He institutes a comparison between "summer asthma, or hay fever," or autumnal catarrh, and this variety of arsenical poisoning. Happily, but few individuals, comparatively, are so sensitive as to be much inconvenienced by inhaling the pollen or parasite from a neighboring grass-field. So, also, there are not many who cannot endure the presence of a small amount of arsenical dust in the atmosphere without suffering symptoms of chronic poisoning. "Perhaps it would be better for the public safety," says the Boston *Medical and Surgical Journal*, in referring to the subject, "and would more speedily rid the market of the dangerous material, if there were a more general susceptibility."

The following case was reported in the London *Lancet* (Oct. 1874) by Dr. Allbutt, of Leeds:

"A young married lady had great nervous prostration, with excessive excitement, and various forms of hysteria; there was broken sleep at night, watering and weakness of the eyes; a bitter, metallic taste on the lips; loss of natural appetite, and often great thirst. She could not walk far without being quite worn out; and then suffered from some palpitation of the heart. Worst of all, however, was the excessive vomiting, not only after meals, but during the night. Nothing seemed to be of any avail in the treament of these various symptoms; but at last I was lead to examine the wall of the room, and I found the light green paper to contain a large amount of arsenic. I ordered all the paper to be taken off, and a non-arsenical one to replace it. With a change of air my patient recovered her health, and on her return home

she continued to live in the same room, but never with any return of the symptoms. I must not forget to state that this lady, before being taken ill, lived in a room in the same house, which, however, had not a green wall-paper. It was only when she removed into the other room that the symptoms manifested themselves. On the removal of the paper they all disappeared."

The greens used in coloring wall-paper are Scheele's Green (arsenite of copper) and Schweinfurt Green (aceto-arsenite of copper, Paris Green)—both compounds of two poisonous metals, arsenic and copper. Dr. F. W. Draper states that many paper printers cannot work more than two or three weeks at one time with these pigments without suffering alarming symptoms.[1] Professor Bloxam, of London, Eng., says that the use of Scheele's Green in coloring feathers and textile fabrics has proved "very injurious to the health of the work-people.[2]" According to Professor Taylor, dressmakers not unfrequently suffer severely from handling artificial flowers colored with these compounds.[3]

Dr. Kedzie found 5.47 grains of arsenic to each square foot of surface of a specimen of paper sent him for analysis; which would give about six ounces of arsenic on the walls of an ordinary-sized room. According to a letter in the Philadelphia *Medical and Surgical Reporter*, about two pounds of the compound of arsenic and copper may be on the surface of the paper in a room of ordinary dimensions. This is extremely dry, and notwithstanding its weight, is supposed to mingle, in the form of an impalpable powder, with the asmosphere of the room, and to be taken into the system by inhalation and absorption by the skin. Although insoluble in water, Professor Taylor states that it is sufficiently soluble in the acid mucous fluids of the stomach to be taken up by the absorbents and conveyed into the blood.

Hamberg has conducted a series of experiments on the air of a room hung with paper colored with Schweinfurt

1 Report of the State Board of Health, Massachusetts. 2 Bloxam's Chemistry, Inorganic and Organic. 3 Taylor's Medical Jurisprudence.

Green, and has arrived at the conclusion that the poison exists in the air in the form of a gas, probably arseniuretted hydrogen, and not as a powder; but it appears the theory of chemical decomposition and the formation of poisonous gases is not generally accepted.

The most common symptoms exhibi ·d in many cases of this form of arsenical poisoning appear to be pains, resembling those of rheumatism, darting pains in various parts of the body, languor and weakness.

Some green colored papers do not contain arsenic, and are not poisonous. But on the other hand, "many papers," says Dr. Kedsie, "are loaded with arsenic, in which no distinct green color is discernable, the arsenical green being so combined with other pigments as to conceal its characteristic color, giving a tone to the ground-work of the paper, which is very soft and agreeable to persons of good taste." And it is said the poison may be found not only in the pale green and gray, but even in blue and brown hangings.

SANITARY REGULATIONS.

In a Bulletin issued by the Health Officers of Montreal, legislation is desired for the purpose of instituting by-laws for the prevention of disease. The regulations it is desired to enforce are as follows:

"That medical men report to the Board of Health all cases of disease coming under their treatment within twenty-four hours thereafter.

"That all boarding-house, hotel or house-keepers report cases of contagious disease on their premises to the Board.

"The Health officers to visit localities where contagious maladies exist, and adopt such precautions as may be required, such as sending patients to hospital when they cannot conveniently be isolated; disinfecting or even burning all that can possibly spread the contagion; and in cases of small-pox, vaccinating or re-vaccinating members of the family, neighbors or attendants on the sick most exposed to the infection.

"The Corporation ambulance to be alone employed for transport of the sick, carters or other persons being strictly forbidden to do so.

Bodies of persons deceased of contagious diseases to be disinfected and interred within so many hours after death as may be decided on; simple hearses devoid of trappings or other ornaments that might absorb the contagion only to be used; and the bodies not allowed to enter any church or charnel-house, but be at once burried.

"The officers of Health and Sanitary police to have authority to enter into any house or other building, and examine its sanitary condition from top to bottom, and inquire into the vaccination or non-vaccination of the children.

"To facilitate vaccination the city to be divided into four districts, with an office in each, for performance of the operation, and where a register of vaccination will be kept.

"Forms to be distributed to the different religious denominations for record of births, and to be collected by the officers once a week; with aid of these it will be possible to have children vaccinated at the legal age, and form a statistical compilation of some value.

"Death certificates should only be signed by a doctor, and brought to the Health Office; when no certificate is given, the Board reserve right to hold an investigation to ascertain the cause of death.

"The sale of milk must be regulated, as it is at present sold in such an adulterated and diluted form as to be insufficient to nourish children. Adulterated liquors, being the cause of frequent sickness, should be analyzed, and their sale also regulated."

The Report of the Chairman of the Health Committee, Montreal, Oct. 28th, 1874, has been received. It contains some valuable suggestions. In August last, the Report states, the Montreal City Council appointed a delegation to visit the principal cities in the United States, with the view of making enquiries into the working of their Health Departments:

The delegation found Boston, apparently, a very clean city. A circumstance is mentioned in which a landlady had complained to her boarders because they had thrown the rind of a melon into the street; she had picked up the rind, and requested them not to repeat the act, as if the inspector found it out she might be fined.

Regarding Vaccination, – the plan followed in that city, by the Health Department, was to visit the manufactories where a large number of people were employed, and induce the manufacturers to employ only those who had been vaccinated. The clergy also aided in the matter. Three doctors canvassed the city thoroughly. Dr. Green, the Health Officer, believed that while vaccination was good, the greatest success was attained by *isolation*.

The Boston Health Department has its own horses (160 in

number), carts and stables, horse-shoers and wheelwrights. It removes garbage and ashes, and attends to watering, sweeping and cleaning the streets.

Milk has been inspected in that city, and there has been an annual report upon it, for the past 14 years. The inspector tests its quality with a lactometer, and, when below the standard, he gets it analyzed; this always results in conviction..

The Report recommends the re-modeling of the Health Department of Montreal. It recommends that, instead of two physicians, only one be employed, who shall be well paid, and shall devote his whole time to the department. It advises that no more contracts be entered into to do the city sanitary cleaning, and says the work can be done better and cheaper by the department itself; and suggests that stables be built, and horses and waggons be purchased at once, for this purpose. A small-pox hospital, public baths, meat inspection, and other matters are noticed.

Regarding the inspection of milk, a subject referred to in the last number of the SANITARY JOURNAL. the Report says:—"Our attention has been drawn time and again to the state of our infantile death-rate, especially by our city physicians; the adulteration of milk, which is the sole nourishment of the infant, being the more direct cause. We should not neglect this important article of food, but at once initiate measures to give us fuller powers than we now possess. I would recommend that a Milk Inspector be appointed, whose duty should be to visit all places, keep a strict watchfulness where cattle are fed and supplied with food for dairy purposes, analyze with a lactometer and keep a daily record. By this means a general supervision would be exercised. In cases of prosecution, a chemist could be employed to analyze the milk."

A HEALTHY YEAR.—It appears from the address of the President of the American Public Health Association, that the present has been an exceptionally healthy year. This is shown by the reports now coming in of the various countries of the civilized world. Not only has there not been a movement of the great epidemics, but the general death rate has been much less than during the preceding year.

THE VIENNA CONFERENCE.—An important event in the history of the present year was the meeting at Vienna, in July, of the International Sanitary Conference, to consult "on the establishment of uniform quarantine regulations, and the formation of an international commission on pestilential diseases." Representatives were present from England, France, Germany, Russia, Italy, Turkey, Portugal, Switzerland, Sweden, Denmark, Norway, Greece, Egypt, Persia and other minor governments.

ABOUT WINES.—In many low forms of fever, and frequently in convalescing after acute disease, some form of alcoholic stimulant appears to be almost indispensable to recovery. Experience has proved that the same quantity of alcohol taken into the stomach in the form of wine, and again in a state of simple mixture with water, will produce quite different effects upon the constitution; the former being much less injurious. Wines consist of water and alcohol, together with sugar, mucilage, tannin, acetic acid, coloring matter, extractive, and various salts, chiefly potassium tartrates; while their flavor, or *bouquet*, is supposed to be due to a volatile oily compound. Wines undergo great changes with age: their tartrates and a part of their coloring matter are separated, and their flavor improves, while they become less intoxicating and less liable to produce diseases of the liver and kidneys. On the authority of Brand, port wine contains about 23 per cent. of alcohol: sherry, about 19 per cent.; claret, 12 to 19 per cent., and champagne 12 per cent. Roussillon, imported by Messrs. Quetton St. George & Co., of Toronto, according to Professor Croft, of University College, contains 14·86 per cent. of alcohol, and 9·10 of solid matter; Alicante, imported by the same gentlemen, 15·47 per cent. of alcohol, and 14·25 of solid matter. Of these, the Alicante contains the greater amount of sugar and the smaller quantity of acid. These two wines, the prices of which are given on the back of this journal, appear to be peculiarly adapted to convalescents. This is the opinion of a number of medical men whom we have heard speak of them. This is more especially the case with the Alicante, which on account of its smoothness and agreeable bouquet, is usually acceptable to the stomach; with some, however, the more acid Roussillon agrees better.

Dr. Larocque, of the Health Department of Montreal, has sent us a Report, and some Sanitary Regulations, but too late for this issue. He asks us to be kind enough to give him some information regarding our *Sanitary Organization* in Toronto. Where shall he find it?