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VOL. IX. DECEMBER. No. 12.

CANADA HEALTH JOURNAL,

A MONTHLY MAGAZNE OF PREVENTIVE MEDICINE

—EDITED BY—

EDWARD PLAYTER, M.D.

Public Health and National Strength and Wealth.

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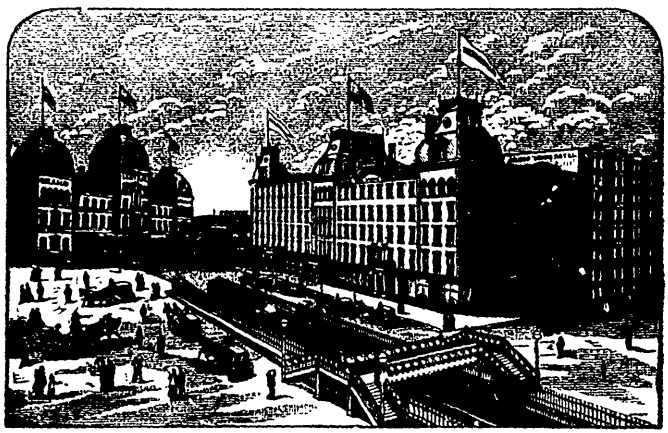

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THE CANADA HEALTH JOURNAL.

VOL. 9. DECEMBER, 1887. No. 12.

THE REPORT OF THE MEDICAL OFFICER TO THE LOCAL GOVERNMENT BOARD, GREAT BRITAIN.

THE report of the Medical Officer to the Local Government Board, for 1886, has just been issued.

Former reports have always been held in high esteem by students of preventive medicine, says the British Medical Journal, (from which we take the following synopsis,) not because they bear the stamp of authority, but because they are known to have emanated from men who have toiled consistently in the cause and have won general respect. The report now published fully maintains the high standard reached by its predecessors. Everyone of its 467 pages and numerous illustrations is worthy of study. It is a pity, therefore, that the report could not be brought out a little earlier in the year:—

VACCINATION.—In the first of these divisions the supervision of public vaccination occupies a considerable proportion of the time of the staff, and we hope it has had a commensurately beneficial effect in keeping up the standard of efficiency in vaccination. As regards the use of animal lymph, we are especially glad to find that the experience of another year has confirmed the previous observations as to the identity of result obtainable by the employment of the animal and the human lymph furnished to the National Vaccine Establishment. Complaints of injury occuring from vaccination, public and private, were received during the year from five sources, and had reference to fourteen vaccinations. They were all duly investigated, and of the fourteen cases the person said to have been injured could not be heard of in two, whilst in others the ailment was palpably unconnected with vaccination. There was no allegation of syphilis. The cases which had more or less relation to vaccination were all of erysipelas, and six fatal cases were inquired about. Three of these occuring in the Sudbury Union formed the subject of special report by Dr. Airy. They turned out to be altogether independent the one of the other, except for their occurence at the same time in a neighborhood where erysipelas was considerably prevalent.

SMALL-POX HOSPITALS.—The question of the spread of disease from small-pox hospitals continues to receive attention in the Department, and in the present volume some statistics, which have been carefully prepared by Mr. W. H. Power, are published, the object being to secure additional evidence of the correctness of the presumption put forward by the Department in former reports, and now very generally accepted, that small-pox infection has habitually been distributed from each of the metropolitan hospitals over considerable areas, most conspicuously at the commencement of epidemic periods. As regards

the method of dispersion—which really is the material point in dispute—Dr. Buchanan, sees in Mr. Power's report reason for believing that to whatever degree limitations in number of patients, and improvements in administration and in ambulance service, may have operated to reduce the danger of small-pox hospitals to their neighborhoods, these changes have had but a partial result; and a hypothesis of atmospheric convection over considerable distances is wanted, not for Fulham alone, but for London generally, in order to explain the observed behaviour of small-pox in the several districts of the metropolis. The Department claims to have established a doctrine concerning the means of small-pox spread that is applicable for the practical purposes of the inhabitants of London, and that affords to hospital authorities, if they choose to recognize it, better opportunities than they before had of preventing the unquestioned danger incurred by those who live near to small-pox hospitals.

No reference is made in the present volume to the neglect by hospital authorities of the suggestion strongly placed before the Hospital Commission of 1881, by Dr. Burdon Sanderson, that the spread of infection from a hospital could be prevented by the adoption of a system of passing the internal air of the building through a furnace, before allowing it to escape into the outer atmosphere. Dr. Sanderson took the trouble to design a circular hospital embodying his principle. It is strange, therefore, that it has been so entirely ignored by hospital authorities not only in London but elsewhere.

Cholera Survey.—A considerable portion of the inspections made during the year consisted of inquiries, in continuation of those previously reported on, into the sanitary condition of certain classes of districts, with especial reference to their state of preparation against an invasion or spread of cholera. About one-third of the total sanitary service of England and Wales has thus come under review, and there can be no doubt that the system of inspection, with its accompanying conferences and giving of advice, was greatly appreciated by local sanitary bodies; that it conduced in valuable measure towards the attainment of a better understanding of their duty by one class of authorities, and that it served the object much cared for by another class of authorities, of placing at their disposal the experience of a Public Department.

Typhus Fever.—In the winter of 1885-6 typhus fever appeared in various populous centres throughout England, and gave signs of extending. This was observed by the department, and Mr. Spear was commissioned to visit the various places in which the disease appeared. For one reason or another 67 districts came under suspicion. In the most of these, where fever was found, it proved to be the ordinary enteric fever of the country; but there were no less than 17 important centres of population in which typhus was found existing in some of them to a notable extent. As usual, its incidence was upon the most crowded and miserable localities of the various towns, sometimes the very same localities that had been the scene of lamentable outbreaks of the disease in past times.

Diphtheria.—The disease which most frequently led to official inquiry during the year was diphtheria. In investigating outbreaks of this disease, the inspectors are specially instructed

to note, *inter alia*, the conditions of commencement of the disease, its relation with schools, and any possible transmission of it over long distances; any behaviour of diphtheria that seemed to be after the fashion of miasmatic disease; any observed differences between the manner of spread of diphtheria and of other infections operating under comparable conditions; any experience of apparent relation to milk and to ailments, however trivial, in cows; the customs of the district as to animals bred, kept, and used as pets, especially noting any obscure diseases in lower animals related in any way to prevalent diphtheria in the human subject.

THE ETIOLOGY OF SCARLET FEVER.—The most lengthy and important of the reports presented by the scientific investigators who have the privilege of working for the Local Government Board is that by Dr. Klein, F. R. S., in which he follows up the research which was originated by the observation of the peculiar circumstances of the Hendon epidemic of 1886. Dr. Klein details the mode of growth and the microscopic appearances of the micrococcus obtained from the blood of patients, and states that it is identical with that found in the Hendon cow, that it is morphologically distinguishable from any other known form of micrococcus, and that has a definite mode of existence of its own. He proposes to name it the *micrococcus scarlatinae*. The tissues were examined; the sections were stained with Weigert's gentian violet and Löffler's methylen blue; the latter gave the best results, the sections being placed in a strong aqueous solution to which a few drops of an alcoholic solution of resin was then added, and the sections in a few seconds more removed. Micrococci were found in the cervical glands simply as diplococci in the lymph spaces and small blood vessels, in the glomeruli of the kidney, and in the small vessels of the engorged lung; bacilli also were found in the lymph spaces and small vessels of the neck; their presence there was attributed to the ulceration of the tonsils. In some old sections of the skin made in 1876, unmounted and stained with methylen blue, the micrococci were seen singly, doubly, and in chains in the tissue of the papillæ, and between the deepest cells of the stratum Malpighii. Two series of experiments were performed on animals. In the first series the material used for infecting these animals was cultivations of the micrococcus obtained from [the ulcers on the teats of] the Hendon cow. Thirteen such experiments were performed; in ten experiments the animals were inoculated, and in three they were fed, with the cultivations; the animals used were guinea-pigs and tame and house mice. In the animals which died, the *post mortem* appearances were always identical, and in certain instances the micrococcus scarlatinæ was recovered by cultivation from the blood. House mice were found to be much more susceptible to the disease than guinea-pigs or tame mice.

In another series of experiments the material used for infecting was cultivations of the micrococcus obtained from human beings suffering from scarlet fever. Two experiments were performed on tame mice by inoculating subcultures; six animals were used; four died with the same pathological appearances as those seen in the former series; in two instances in which cultivations were made from the blood, the micrococcus was

recovered. One experiment was performed on tame mice by feeding; one died, and in cultivations from the heart's blood the micrococcus was recovered, but accompanied by a small bacillus. Four experiments were made in calves. two by inoculation and two by feeding. The two experiments by inoculation were performed on four animals; all showed some symptoms of indisposition; in some the temperature rose; in three, bare, scaly, or sore patches appeared on the skin on about the tenth or twelfth day; the fourth became rapidly ill, and was killed on the eleventh day; there were extensive inflammatory hæmorrhagic lesions of the lyphatic system, and pericarditis. Cultivations made from the blood of this calf yielded the micrococcus scarlatinæ and a more rapidly-growing micrococcus, which liquefied gelatine. The two experiments by feeding were performed on four calves; in two, bare, scaly, or sore patches appeared; in one case in which cultivations were made from the pericardial exudation and from the heart's blood, those made from the exudation were all fertile, yielding the micrococcus scarlatinæ in all cases contaminated with a more rapidly-growing micrococcus. All the calves in both series of experiments were killed, and presented lesions of the same order as those above described. Dr. Klein found a micrococcus the same in microscopical appearances, in its mode of growth, and in its effect on animals, in a particular brand of tinned milk which had been suspected by Dr. Corfield to have produced an epidemic of scarlatina; the same micrococcus was also obtained by cultivation from the heart's blood of a monkey which died of fever during an epidemic of scarlet fever.

From these researches of Dr. Klein, coupled with the evidence collected by Mr. Power and published last year, Dr. George Buchanan, F. R. S., draws the following conclusions:—

"(1.) The disease in man and the cow alike is characterized by closely similar anatomical features.

"(2.) From the diseased tissues and organs of man and cow alike the same micrococcus can be separated, and artificial subcultures be made from it.

"(3.) These subcultures, no matter whether established from man or cow, have the property, when inoculated into calves, of producing in them every manifestation of the Hendon disease; except sores on the teats and udders; no doubt for the reason that the milk apparatus is not yet developed in calves.

("4.) But—and this I learn from Dr. Klein's later observations while this report is in preparation—the subcultures made from human scarlatina and inoculated into recently calved cows, can produce *in those cows*, along with other manifestations of the Hendon disease, *the characteristic ulcers on the teats*, ulcers identical in character with those observed at the Hendon farm.

"(5.) The subcultures, established either from the human or the cow disease, have an identical property of producing in various rodents a disease similar in its pathological manifestations to the Hendon disease in cows and to scarlatina in the human subject.

"(6.) Calves fed on subcultures established from human scarlatina obtain the Hendon disease.

"(7.) Children fed on milk from cows suffering from the Hendon disease obtain scarlatina.

"The above combine, I think, to form a mass of evidence to show that the Hendon disease is a form, occurring in the cow, of the very disease that we call *scarlatina* when it occurs in the human subject."

RELATIONS OF VETERINARY TO SANITARY SCIENCE—DISEASES OF ANIMALS COMMON TO MAN.

IT is gratifying to find that surgeons of the Veterinary art are giving their attention to the subjects of this head. Last month be referred to Mr. McEarchran's address on Veterinary Sanitary Science at the opening of the Montreal Veterinary School, and his important remarks on tuberculosis in man and animals. In the week following that in which this address was given, at the Annual Meeting of the Sanitary Association of Scotland, Mr. Robinson, F. R., C. V. S., gave a lengthy and valuable address upon the same subject, from which we take the following extracts: After explaining the manner in which absolutely safe, lymph for the purpose of vaccination may be obtained Mr. Robinson continues:

The assertion that tuberculosis or consumption may be communicated with vaccine lymph is not a mere supposition, for its possibility has been experimentally demonstrated by M. Toussoint, professor in the Veterinary School of Toulouse. . . .

Unfortunately, gentlemen, this is only one of the many ways in which this terrible malady, consumption, may be produced. It has been experimentally and accidentally communicated and over again from man to animals over and from animals of one species to another. Experimentally, it has most frequently been induced by inoculation or by the ingestion of portions of organs containing lesions of the disease. Accidentally, numerous cases have been recorded of dogs, cats, and fowls becoming consumptive from licking or picking up the expectoration of consumptive persons. It is also highly probable that many cases of infection occur in man and animals from inhalation of the bacillus when dessication of the expectorations take place and the particles get suspended and float like dust in the atmosphere of sick rooms or bryes. Sexual intercourse, and the use of spoons, glasses, or other vessels from which consumptive persons have been feeding, may be considered other probable modes of accidental contamination, but that which interests us most and is, perhaps, almost as prolific a source of conveyance as any is the use, as food, of the flesh and milk of tuberculosed animals. As has been stated, the proof of transmission from man to animals of tuberculosis is abundant, and, to most minds, the conclusion would be that the converse was equally practicable, but there are many who seem adverse to admit anything which is left to hypothesis, no matter how conclusive, and in view of the value of human life and the incurable nature of the disease, an experiment on the human subject could be looked on as little short of wilful murder. The admitted fact that man is a favourite subject of this disease, which can be transmitted from him to the lower animals, is to my mind sufficient to show that the disease is equally easily induced in him by transmission from the lower animals. There are, however, some cases recorded as accidental transmission of the disease in which the contamination has been so palpably traced from animals to man that the conclusion that the disease is so transmitted is irrefutable.

Respecting the temperature in cooking which the virus will resist, there exists, some information.

M. Toussaint, to whom the credit

belongs of having first cultivated the microbe of tuberculosis, instituted in 1881 a series of experiments, from which he learnt that a temperature of 52° C. (125.3°F.) was not sufficient to destroy the virus, this temperature being in excess of that at which steak is often cooked. Continuing these experiments, he discovered that even after being submitted to a tempertature of 71°C. (159.4°F.) the virus could still be successfully inoculated.

In view of the prevalence of tuberculosis in our animals, these experiments point to the necessity of a much more thorough control of our meat and also of our milk supply. The majority of observers seem to consider that the milk of tuberculous animals is only dangerous when the mammary gland is affected, but Dr. Bang, of the Veterinary School of Copenhagen, as well as some others who have also made experiments in this direction, conclude that the disease can be communicated by means of the milk while the mammæ still appear to be healthy.

Notwithstanding the fact that recent scientific research has made the duty of prohibiting the use of the flesh of tuberculous animals incumbent on us, we are still more lax in the matter than they appear to have been in certain parts of the Continent in the 14th, 15th, 16th, 17th, and 18th centuries. For, according to an article in last month's *Recueil de Medecine Veterinaire*, by M. Ch. Morot, a number of the cities of France prohibited the use of the flesh of animals suffering from this disease.

For very many years it has been looked upon by some in this country with more than suspicion, and from 1865 up till 1874 my father was in the habit of condemning all cases of general tuberculosis, and in cases where the disease seemed to be localized, of condemning the viscera. Having myself been privileged to follow a series of experiments on its transmission from bovines to procines, both by inoculation and ingestion, by M. St. Cyr, at the Lyons Veterinary School, in 1873, my recommendation in Greenock to our local authority to destroy all carcases, no matter how slightly affected, has been adopted since 1874.

More than this, however, is needed, gentlemen, for it appears to me that veterinary inspectors to local authorities ought to be incorporated in the public health department, and that our dairy animals should be regularly visited and examined. . . . It ought to be one of the duties of veterinary inspection to microscopically examine the milk from suspicious udders, as in some cases what appears to be only slight induration of portion of a mammary gland is the indication of tubercular infection which microscopical examination alone can verify, and for a considerable time the cow may continue to milk well and give no indications of ill health.

DIET AND THE SKIN—Dr. Fox, of New York, an exchange says read a paper on this subject before the Montreal Medico-Chirurgical Society. The great error made by practitioners in treating skin diseases, he said, is failure to treat the patient; the disease is treated, not the patient. He considered attention to diet as most important. There should be a radical change, both in the quantity and quality of the food. A dietary should be given the patient. The majority of the patients improve on starvation diet. He advised his patient to increase the quantity of fluids, and decrease the solids; to eat less and excercise more. He gets the best therapeutical results from a vegetable diet in the treatment of inflammatory skin diseases; a meat diet congests the skin, a vegetable diet lessens congestion. He is in the habit of restricting meat in winter, and forbidding it in summer.

THE AMERICAN PUBLIC HEALTH ASSOCIATION MEETING.

THE fifteenth annual meeting of this association in Memphis in November last was a very succesful one, and apart from its regular work, was of more than ordinary interest, meeting as it did in a city which ten years ago was swept with one of the severest plagues of modern times. Memphis as referred to in different addresses, owes to the association a debt of gratitude greater than does any other place, and from the many acts of hospitality and courtesy extended to the association, it appears that the city remembers her benefactors.

The president, G. M. Sternburg, M. D., U. S. A., called the meeting to order Tuesday, Nov. 8th.

J. S. Billings, M. D., U. S. A., read a paper on "Vital Statistics," as applicable to the needs of Health Departments of cities and was followed by the report of the committee on disinfectants. The report which was ordered to be published dwelt mostly upon the limiting power of heat on pathogenic organisms. The general conclusions were that 100 C is fatal, and with several a number of degrees less, to all organisms without *spores* and all *spores* even, tested are destroyed at 100 C maintained for a few minutes.

The President's address, as would naturally have been expected, was an admirable one. It dealt with the question of the necessity for a Central Health Board; urged on the broad grounds of public necessity and the needs of preventive medicine. In pointing out as in the case of the yellow-fever, how epidemics are often blessings, the president accentuated the need of not yielding to a state of inaction and false security, because for everal years our foes have been kept at bay. He pointed out that there are strong grounds for local sanitation, based on the argument of the British sanitary authorities, that cleanliness at home is the best preventative against epidemic diseases. In closing he urged that everywhere our sanitarians press for original investigation.

The committee of State Boards presented several resolutions, following which the secretary, Dr. J. A. Rauch, of Illinois, read a paper on "Cholera and Quarantine." Dr. F. Montizambert, chief quarantine officer of the St. Lawrence, pointed out how thorough the recent regulations have made Canadian quarantine and urged that similar regulations be enforced at United States Atlantic ports.

Dr. Oldright, of Toronto, in discussing the subject presented resolutions of the Ontario Provincial Board, urging the necessity for American protection to Canadian interests and introduced a resolution in favor of a dry-earth system for railway trains, to protect against the dangers of epidemic diseases being spread thereby.

The subject of "River Pollution" was introduced in a paper by Dr. C. A. Lindsley, and was discussed very generally, the importance of the subject developing much interesting information.

The Special Committee on water pollution, referred to last month, was continued unchanged.

DR. BILLINGS of the State University of Nebraska, claims to have discovered the germ of the American cattle-plague, or Texas-fever. He says the germ belongs to that class of septic germs represented by our swine-plague and rabbit septicæmia, and is a bacterium. He gives no special evidence to support his claim, but states that this will follow in the course of time.

MODERN DIET AND ITS EFFECTS ON HEALTH.

DR. M. A. Boyd, Physician to the Mater Misericodiæ Hospital, Dublin, at the last annual meeting of the British Medical Association read a paper on "Modern Diet and its Effects on Health." "There were" he said "somepoints in connection with the subject which were not of merely professional interest, but of far wider significance, and might be regarded as of national importance also, as they embraced not only our every-day condition of health as individuals, but our very physical existance as a race. Foremost amongst these points was the question how many of our modern diseases depended upon our diet as it was constituted at present, and why dyspepsia and its concomitant troubles were so prevalent in the present day. In the consideration o this subject we might reasonably ask how much man's habits and occupation in the constant struggle for commercial and intellectual supremacy had contributed to the deterioration of his nervous and digestive powers which undoubtedly existed at present. Where such a preponderance of albuminoids entered into our food as was at present the case, the additional use of alcohol with them became a necessity, to aid in their digestion, more especially as, from the impaired nervous energy of the present day, the digestive organs required the necessary stimulus they give to increase secretion. But was assimilation of a large quantity of albuminoids of benefit to our systems at large? Having regard to the fact that the poisonous ptomaines of our food were mainly derived from albuminoids, most certainly it could not be; and in this [illegible] country, where, from [illegible] influences, rheumatism and [illegible] were so necessarily endemic, a greater liability to cardiac affections necessarily ensued. As most of the albuminoid waste passed through the kidneys, had we not in the preponderance of such a diet a direct connection between our food and the prevalence in these days of Bright's disease? It therefore became a question how far the State was responsible for the character and quality of the articles of diet. He would not allude to adulterated articles that found their way into our homes, as the Food Adulteration Act gave ample means of coping with such, and did so far as was possible; but from the prevailing taste in modern diet, which included a large amount of animal food, from which the greater portion of the albuminoids was derived, there were in the present state of the laws regulating the introduction of such commodities too great facilities allowed for all sections of society to poison themselves with this form of food. The State regulated the sale and the quality of the alcohol the public consumed, but it exercised no control over the quality or character of the meat its people used. Some check must be put on the importation of American and Australian live and dead meat, if the State desired a healthy population. This might seem an interference with the rights of free trade; but it was very doubtful if the advantage to the poor of purchasing meat cheaply and using it in abundance was any advantage, looking at the matter from a public health point of view. But it might be said that it was not the abundant use of meat, but the manner of cooking it, that was injurious. Cereals required but little cooking to make them digestible: but meat and other albuminoids required a good

deal of management to prevent them being injurious, and for these latter good cooking became a most essential requisite. Granted that this was so, had not the State a greater reason to attend to the wants of its people is this respect? Schools of cooking founded by the State would seem, then, of paramount importance to enable the poor to receive that instruction which was so essential to their moral and physical welfare. Private philanthropy and intermediate school instruction were doing a good deal to remedy this want, but much more was needed to place the matter on a proper footing. If the upper and middle classes of society also desired freedom from the diseases incidental to over-feeding, they must reform their habits, and bring fashion, which played such an important part in it, to be subservient to them, and not, as at present their master; and in this way not only improve their own condition of bodily health, but set an example to the poor.

SOME OLD PEOPLE.

AN exchange gives the following brief histories:

Manuel Barriani and his wife, of Matamoras, Mex., recently celebrated the eightieth anniversary of their wedding. The husband is hale and hearty at 102, while his wife enjoys good health at 96.

Aunty Maria Kennedy had just died near Cementville, Ind. She was born 102 years ago, was a negro, and her descendants are three children, twenty grand-children and thirty-nine great grand-children.

The oldest man in Kansas, is a negro who is said, "on good authority," to have been born a slave in Fauquier County, Va., November 20, 1775, and is therefore 112 year old. He is an inveterate tobacco chewer, and insists that if he were to leave off he would die.

Mrs Francis, a widow, residing on the Welsh hills at Tymaen Pyle, England, has attained the age of 107 years, having been born on the 15th of August, 1780. She can thread her needle without using glasses, moves about with ease, and is able to attend to domestic duties.

The Rev. George R. Rogers, of Brook's Station, Ky., though 96 years old, frequently rides his horse to Louisville and back, a distance of twenty-six miles, and he still preaches and marries folks. He served throughout the war of 1812, and draws a pension for that service.

A very remarkable group was recently photographed at Charlottetown. P. E. I. It consisted of six brothers whose united ages amount to 465 years, or an average of 77½ years each, as follows: Charles Stevenson, of Tignish, 86 years; John Stevenson, New Glasgow, 82; William Stevenson, 80; Andrew Stevenson, Fredericton, P.E.I., 77; Geo. Stevenson, New Glasgow, 73; Robert Stevenson, Rustico, 67. They are all hale and hearty.

Jeffrey Wilson, who died near Mechanicsburg, Ohio, a few days ago, was born a slave in Virginia 1773, and had entered on his 115th year when he died. He was a slave for ninety-two years. He had two wives. By the first he became the father of eight children, three of whom are living, the average of their ages being 80 years, the eldest being 87 and the youngest 79 years. By his second wife he had nine children, six of whom are living,

their average age being 52 years, the eldest being 58 and the youngest 41. He had seventy six grand children, thirteen great-grand children, and one great-great-grand child, his offspring extending through four generations, there being 106 souls. In his veins flowed the blood of three races—white negro and Indian—and to this fact is attributed his longevity.

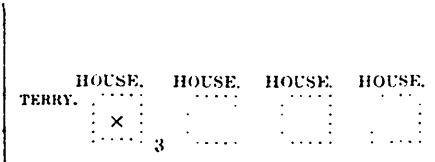
THE DRUG-STORE COW.

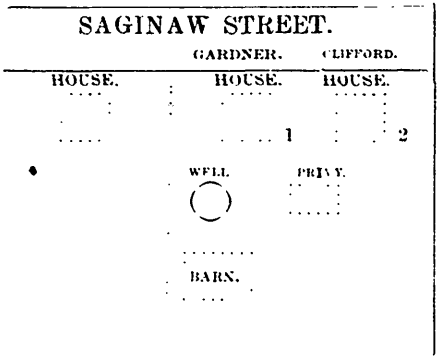
UNDER this head the Southern California Practitioner recently had a humorous article, containing much truth and "food for reflection." Few indeed of the highly puffed "infants foods" in "the market" can equal cows milk for even the young infants, if taken from a healthy, well fed and cared for cow, not too far advanced in years, and especially if it be used by the infant while the milk is yet fresh and warm—immediately on being drawn from the cow. The following are the Practitioner's remarks:—

Our ancestors were possessed of a very sincere, yet, as modern science has demonstrated, a very erroneous belief, that milk was the natural food for babes.... It was the fault, no doubt, of the rude and semi-barbarous times. These things had been handed down from the "*antiquissimis temporibus*" of which the Latins wrote. And so when the mother's supply failed, or through the dictates of fashion was withheld, the infant.... fell back upon the neighboring and friendly Durham, and kicked its heels, and laughed, and grew fat in blissful ignorance of the fact that science was soon to demonstrate that it was all wrong, and that the milk of the cow had so many per cent. too much of caseine and so many other per cents. too little of sugar, and that he was growing fat and hearty in direct contravention of all chemical laws, and it was not right. And so ingenious men set to work to find some other kind of cow that would supplant the gross and unscientific Durham, and would supply a truly scientific food for this unreasoning and unreasonable infant of the genus homo.... It has been reserved for modern science to discover traces of the animal upon the shelves and in the laboratories of the drug-store, and of that modern marvel the great pharmaceutical establishment. Here at last has been found a truly scientific food for the masterful race of infants.... and the udders of this thorough-bred laboratory cow, under the persuasive manipulations of the venerable looking man with long, white beard and big spectacles (see cut in advertisements), pour forth a never ceasing stream of infant foods, lactated foods, extracts, and other nutriments each of which is, however, the only true Jacob, all others being imposters. But (and now comes in that bane of true science, the unruly and unscientific facts) the infant thus scientifically fed will persist in a most ungrateful and entirely illogical way in not getting fat and kicking up his heels; on the contrary, despite the scientific proof that he ought to thrive, with a perversity which is very discouraging to true science he will persist in wasting away .... Brethren, there must be something wrong with the cow....There are entirely too many skinny little angels going into that other world.

HOW TYPHOID IS SPREAD.

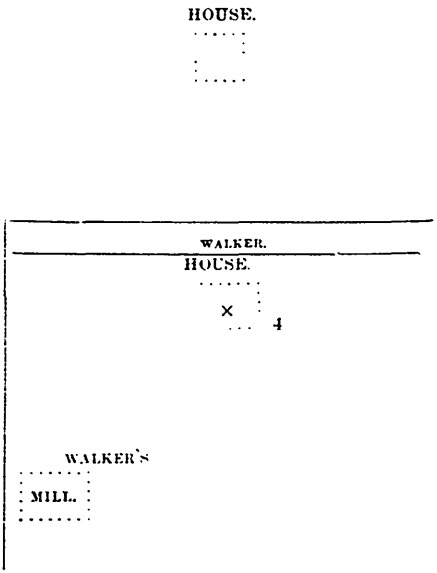
DR. H. McCall, of Lapeer, Mich., thus reports to the Michigan State Board of Health: Enclosed find a short report of typhoid cases occuring in the southern part of our town. Houses marked × are the ones in which cases occured. Nos. 1, 2, 3 and 4, order of outbreak. Cases in 2, 3 and 4, traceable to water from well in rear of No. 1.





About September 1st, 1887, Myron Gardner, railroad employee, came from the south sick with fever to his father's home, No. 1 on diagram. His case was supposed to be malarial.

No care was exercised with stools in the way of disinfection, but they were thrown into privy vault in rear of house, and in close proximity to well. Wash water was thrown on the surface of the ground, which was very dry at the time. About the 7th or 8th of September, a copious rain fell, and soaked the sandy soil; and on the 14th, William Gardner and wife, father and mother of Myron, and E. D. Gardner, a brother (who was a student at my office), and who boarded at home, were attacked with fever. On this day I got home from Washington, and found four of them down with a severe type of typhoid fever; and in two weeks Myron's wife and child were attacked. Also, a child across the street, at Terry's, who had used water from the Gardner well. About the same time, three cases occurred in Clifford's house, south of Gardner's, who all used water from the Gardner well. None of the people from either of these houses were in the Gardner house. In the Walker house, still further south, one case has occured, and I was at a loss to account for this case till a few days ago, when the young man said that at the mill where he was working they had used the Gardner water for a few days, owing to disarrangement of the pump at the mill. Two others of the mill-hands, Anderson and Lester, who used the same water, were attacked about the same time. Lester is now



convalescent; Anderson is dead, as also the child at Terry's. When I took charge of the cases I ordered the discontinuance of water from the Gardner well and the disinfection of the stools; and no new cases are now reported. People who assisted to take care of the Gardner and other families, and who used water from other sources, have not been attacked. Clearly, Myron Gardner brought the fever home, the well became infected after the first rain from slops and privy, and the other cases got their seed from the water.

THE ENGLISH SANITARY SYSTEM.

BY D. C. M C VAIL, M.D., AT THE RECENT MEETING OF THE SANITARY ASSOCIATION OF SCOTLAND.

IN the year 1875, that great law was enacted which still directs the means used for the preservation of health and the removal of disease causes in England. At the head of the whole system stands the President of the Local Government Board, and under him are a medical officer and a number of medical inspectors. The duties of these gentlemen, all highly qualified specialists, are various but have always a close bearing on the subject of public health. Frequently they are employed in investigating the causes and means of prevention of local outbreaks of disease. If in any town or rural district the Registrar-General's reports show that scarlatina, diphtheria, or enteric fever, &c., has been exceptionally prevalent, an inspector is sent down to make fully enquiry. He reports to his Board, which, in turn, communicates with the urban or rural authority, and if action if is not forthwith taken, it usually depends on that unfortunate laxity of application to which I have already referred. These medical inspectors have also charge of the proper performance of vaccination, and they make special enquiries on such subjects as the disposal of house refuse, the construction of hospitals for infectious diseases, the best methods and apparatus for disinfection of clothing, &c.

Next in importance under this law are medical officers of health and sanitary inspectors. These officials are frequently in charge of large areas. The English law permits of the combination of several districts under one medical officer or one inspection, and the permission is frequently taken advantage of. Again, however, you will observe that it is permission, not compulsion. And as the officials are appointed only for such length of time as the united districts may determine, so at the end of that time any single district may withdraw from the combination, or the whole union may be broken up into its original elements, each appointing its own officials. With the exception of London, the English law embraces in its scope the whole of England and Wales, rural as well as urban. It may appear a difficult matter to frame health regulation suitable alike for large cities like Liverpool and Birmingham and for the scattered population of rural neighbourhoods, alike too for seaport towns and inland towns, and for such variations of soil, climate, social condition, trades, and manufactures, as may be found within the boundaries of England. But this difficulty is, to a very great extent, overcome and also by the powers

which the Act confers for the making of by-laws. Urbran and rural authorities alike are permitted to make by-laws regarding the following matters :—(1.) The cleansing of pavements and footpaths : (2.) The removal of house refuse and the cleansing of ash-pits, &c. ; (3.) The regulation of common lodging houses as to the number of inmates, the separation of the sexes, cleansing and ventilation, removal of lodgers suffering from infectious diseases, &c. ; (4.) The regulation of houses and yet let as lodgings ; (5) The regulation of public mortuaries ; and yet let as lodging and accommodation of hop pickers. In addition, unbran authorities have power to make by-laws regarding offensive trades, the regulation of public walks, pleasure grounds, market places, slaughter houses, cab stands, burial grounds, &c. And perhaps most important of all, they have very ample powers as to the laying out of new streets and the erection of new buildings. These by-laws take cognizance of site, foundation, walls, chimneys, and roofs ; of ventilation, drainage, ashpits, cesspools, &c. ; in fact, of everything that is likely to influence the health of the inmates. All proposed by-laws are considered by the Local Government Board, and it is only after full explanation that they are adopted. The Board, too, issue sets of model by-laws for the guidance of local authorities, and Knight's illustrated edition of these is a most valulable guide in the practical details of sanitary procedure.

THE STRENGTH OF TEA—INTERESTING INVESTIGATIONS

CONSIDERING its universal use as a beverage, it is surprising how little is known about tea, or any standard tests of its quality and strength. It is a subject of very great importance. It appears ordinary tea drinkers are constantly taking full Medicinal doses of Theine, which can hardly fail to have an injurious effect upon health tissues. An exchange says, the quality of tea generally spoken of under the term "strength" is very vaguely defined, an as yet no relation has been ascertained between it and the amount of any particular constituent of tea. Considering the physiological properties of theine, the characteristic and essential alkaloid of tea, it might be supposed that the "strength" of tea depended to a considerable extent upon the amount of this substance present in it, and this view assumes some probability in consequence of the variable statements that have been made as to the quantity of theine obtained from various kinds of tea, which estimates range from 1 to 2 to nearly 6 per cent. A recent investigation undertaken by Paul and Cownely the results of which have been published in the Pharmaceutical Journal, has shown, however, that the variable yields previously obtained were probably due to imperfect methods of analysis, and that theine is a much more constant constituent of different kinds of tea than had been supposed. It was, in fact, found that in upwards of twenty samples of Indian and Ceylon teas, commercially valued by the brokers at prices ranging from 7d. to 3s. per pound, the proportion of theine varied only from 3.22 per cent. in the lowest to 4.66 per cent. in the highest. In the case of two samples of tea selected by experienced judges as representing extreme differences in "strength,"

the proportion of theine was practically the same in both. It is evident, therefore, that neither the market value nor "strength" of a tea is dependent upon the quantity of theine it contains. Paul and Cownley consider that it is much more probable that the "strength" is chiefly determined by the amount and condition of the astringent constituent comparable to a tannin, but before pronouncing definitely upon this point it will be necessary to acquire a better knowledge of the chemical nature of that constituent. The results of this investigation are of additional interest to the medical practitioner, because they furnish him with data concerning the approximate quantity of theine introduced into the system by habitual tea drinkers. An ordinary modern teaspoon would contain about sixty grains of tea, and, according to the housewife's well-known rule, would be the quantity allotted to each person sharing in the tea-brewing. If the tea contained the average quantity of theine—say 4 per cent.—it would represent 2½ grains of theine. According to experiments made by Paul and Cownely, infusion in boiling water during five minutes, which does not exceed the time tea is usually allowed to "stand" sufficient to remove at least half of the theine fro the leaves, so that in a case such as that supposed each tea-drinker would ingest at least a grain of theine or equal to a medicinal dose, indicated by the Pharmacopœia

MISCELLANEOUS NOTES AND SELECTIONS.

THE SECRET OF THE ELIXIR OF LIFE.—St. James Gazette is responsible for this: The *Lotus*, one of the organs of the Theosophists, has been obliging enough to take all the world into the secret of the elixir of life. This form of the philosopher's stone is it seems, neither a drug nor a potion, but series of maxims the due observance of which will insure you 1000 years of life. According to the inspired writer in the *Lotus*, a human being dies only when his will ceases to be strong enough to keep him alive. Therefore, the first essential to long life is a strong will and a determination not to die, whatever happens. There must be a "permanent and unrelaxing concentration." But beyond that much more is necessary Every animal desire—even the inclination to eat and drink—must be gradually mastered until at length the living man becomes etherealized. Ambition affection, anger—indeed, every inclination which is not purely spiritual and contemplative—must be got rid of. The critical moment in the existence of a person who seeks to live for several centuries is the period when, in the ordinary course of nature, other men die, since "every man has an inevitable tendency to repeat the actions of his ancestors." The fewer the "gross and fleshly molecules" in the man's being the better his chance of turning the awkward corner. That once achieved, he is safe.

ONE MEAL A DAY—A medical exchange gives the following;—A carthusian breakfast is a thing which has no existence, unless indeed you choose to call the meal he takes about the middle of the day by the name which it certainly deserves. * * * But if we allow him a breakfast there is no dinner. * * * Supper he has

none, save a lump of bread. This one meal in the middle of the day (breakfast or dinner as you choose) is all the carthusian stomach can count upon as the means of support. Down at the bottom of the vessel which contains it is a basin of vegetable soup, then over that a couple of poached eggs, next a bit of fish, two small red mullets to wit, lying side by side, and at the top a round open fruit tart. Add to this a salad placed in a separate dish, a good hunk of light plain wholesome bread, and two small bottles of rather small beer, and there is the whole of the *cuisine* supplied by the good refectorian for the day. By a rule which allows of no exception, no carthusian monk can taste flesh meat from the day he joins the order to the day of his death. They live to old age and in good health.

CONSUMPTION AND ITS PREVENTION.—Recent researches have demonstrated that tubercular consumption is an infectious disease, and that the sputa of those affected with it, injected into susceptible animals, reproduces in them the same disease. This sputum is therefore infectious material, and should be destroyed by burning, or by the use of chemical disinfectants. There would be little danger of infection from the moist masses of sputum, but in dessicated condition this material is liable to reach the lungs of susceptible individuals, and to induce the disease. It is well known that there is a great difference in susceptibility to pulmonary consumption, and that in certain families this disease carries off one member after another, while it is unknown in other families. Those who have this hereditary predisposition should pay special attention to individual prophylaxis. They should avoid intimate association with consumptive persons, should live under the best hygienic conditions, in dry, well ventilated apartments, and should select an occupation which will keep them in open air, rather than one which keeps them confined to the house, Above all, they should avoid the respiration of an atmosphere loaded with organic impurities, or with irritating inorganic particles—dust of various kinds. Out of door life on the high and dry plains in the centre of the continent, or in the mountains, will in most instances enable them to overcome the predisposition, if commenced before infection and the resulting tubercular lesions have occurred.—Dr. George M. Sternberg, Surg. & Major U S, Army, in Lomb. prize Essay Prophylaxis against Infections Disease.

THE USE OF WATER AT MEALS.—Opinions differ as to the effect of the of water drinking at meal times, but the view most generally received and by many acted upon is probably that it dilutes the gastric juice and so retards digestion. The British Medical Journal discussing this subject says. Apart from the fact that a moderate delay in the process of digestion is by no means a disadvantage, as Sir William Roberts has shown in his explanation of the popularity of tea and coffee, it is more than doubtful whether any such effect is in reality produced. When ingested during meals, water may do good by washing out the digested food and by exposing the undigested part more thoroughly to the action of the digestive ferments. Pepsin is a catalyptic body, and a given quantity will work almost indefinitely provided the peptones are removed as they are formed. The good effects of water, drunk freely before meals, has, however another

beneficial result—it washes away the mucus which is secreted by the mucous membrane during the intervals of repose, and favours peristalsis of the whole alimentary tract. The membrane thus cleansed is in a much better condition to receive food and convert it into soluble compounds. The accumulation of mucus is specially well marked in the morning, when the gastric walls are covered with a thick, tenacious layer. Food entering the stomach at this time will become covered with this tenacious coating, which for a time protects it from the action of the gastric ferments, and so retards digestion. The tubular contracted stomach, with its puckered mucous lining and viscid contents, a normal condition in the morning before breakfast, is not suitable to receive food. Exercise before partaking of a meal stimulates the circulation of the blood and facilitates the flow of blood through the vessels. A glass of water washes out the mucus, partially distends the stomach, wakes up peristalsis, and prepares the alimentary canal for the morning meal. Observation has shown that non-irritating liquids pass directly through the "tubular" stomach, and even if food be present they only mix with it to a slight extent. According to Dr. Leuf, who has made this subject a special study, cold water should be given to persons who have sufficient vitality to react and hot water to the others. In chronic gastric catarrh it is extremely beneficial to drink warm or hot water before meals, and salt is said in most cases to add to the good effect produced. We (Editor Can. H. Jr.,) should say a very small quantity of salt would be sufficient.

CHOLERA PREVENTION IN GREAT BRITAIN.—Dr. Thorne Thorne, gives the English system of protection against cholera as follows (Practitioner. Oct. 87: (Having deliberately abandoned the system of quarantine, we began many years ago, to organize the system of medical inspection with isolation. The medical inspection comes first into operation on our coasts. The customs officers board the vessels coming into our ports and they at once communicate to the sanitary authorities the occurrence of any case of cholera, choleraic diarrhœa, or suspected cholera A vessel so affected is detained until the medical officer of health has examined every member of the crew and passengers. Those actually sick with cholera or choleraic diarrhœa are at once removed to the port sanitary hospital, and any person certified to be suffering from any illness which that officer suspects may prove to be cholera is detained for a period of observation not to exceed two days. The medical inspection is thus followed by isolation of the sick. Unlike the quarantine system this process does not interfere with the healthy, or expose them to risk by herding them together with the sick, but, the names of the healthy and the places of their destination are taken down and the medical officers of health of the districts in question are informed of the impeding arrivals. Farther, our main trust is in the promotion of such local sanitary administration in every part of the country as shall rid us of the conditions under which alone cholera can spread. In periods of emergency, as during the past three years, a special medical survey of such districts as are exposed to risk is organized under the supervision of the medical officer of the Local Government Board, and, where needed the sanitary authorities are urged to action. Important as have been the results of the survey, they would go for little, were

it not for the steadily maintained work of sanitary authorities and their officers throughout the kingdom. In England and Wales the people have of their own accord, aside from government dictation, spent over eighty millions sterling for purposes of a sanitary character."

IMPORTANCE OF DIET.—We have always in this JOURNAL, as its readers know, urged strongly the importance of diet, in the animal ecomony, as in relation to the health. J. Leslie Foley, M.D.,L.R.C.P., Lon. of Boston, gives the following in the Canada Medical Record: Within the last decade, diet, in reference to the etiology and treatment of disease, has become an element of considerable weight. So much so, that the scale of medical opinion has shot far up in the high numbers. And well it might. Food is a great factor in health and disease. It has made and unmade nations. The energy which food develops in forming a muscle, a healthy brain, etc., expends itself equally in deranging or disorganizing a stomach, liver or kidney. As there is no portion of the body but what feels its beneficial influence so there is no part which may not be visited by its dire effects. But, verily, as one enters a restaurant, casts the eye over the inviting bill of fare, observes the coaxing dishes, smells the saliva exciting odors, it is sad to think, that comingling with the jovial conversation and good natured smiles of the bon vivants, is the harassing thought, as we trace the food from the first digestive process prehension, to the final act of defecation, with all the intervening tions, what evil may it do, are we sowing the seeds of a dyspepsia, or is there perhaps looming in the distance a Bright's disease, skin disease, etc.? Food is potent for fair or ill in skin diseases no less than in other affections. . . . . A moderate meat diet is good, but there is a tendency to take it in excess, far more meat being consumed than is of benefit. This applies more especially to the well-to-do class, meat being a luxury with the poor.

DISEASE AND THE MENTAL CONDITION.—According to the New York Tribune at a late Science meeting Dr. Hart made an address upon the co-relation of certain mental and bodily conditions in man- He said that the mind greatly influenced the body, and conversely the body greatly influenced the mind, but this, though conceded, had never been sharply defined nor technically expressed. The facts had always been floating in his mind, but a circumstance had led him to examine into the co-relation of mental and bodily conditions, and he found that patients suffering from chronic maladies whose seat was above the diaphragm were optimistic, and those who suffered from maladies seated below it were pessimistic. So lung patients were notoriously hopeful, and their certainty of recovery is actually one of the worst features of such cases, the danger being in proportion to the hopefulness. The speaker classified the percentage of mental feeling according to the disease. Thus bronchitis gave 96 per cent of optimistic feeling, phthisis gave 97 of hopefulness, heart disease 80 per cent and asthma also 80 per cent. On the contrary, men suffering with liver disease were troubled with 88 per cent of pessimism, dyspeptics had 91 per cent of misery, kidney suffers 61 per cent of unhappiness, and dysenterical patients 64 per cent. of gloom. Rheumatic patients were optimistic up to 79 per cent, but dropsical patients, through optimistical also, were only to the degree of 63 per cent.

THE PUBLIC HEALTH FOR NOVEMBER.

MORTUARY RETURNS FROM TWENTY-SIX CANADIAN CITIES AND TOWNS.

IN the twenty-six principal cities and towns in Canada which make monthly returns of deaths to the Department of Agriculture in Ottawa, there were in November 1,371 deaths; 41 more than in October. The total rate of mortality for the month was 24 per 1,000 of population per annum.

In Montreal the mortality increased from 30 per 1,000 of population in October to 31·5 in November. This increase was owing to an unusually large number of deaths from diphtheria in that city during November. In Toronto the mortality was a fraction less in November than in October; in both Quebec and Halifax it was over 20 per cent. lower in November than in October; and in Hamilton it was 15 per cent. lower. In St. John (N.B.) and in London there was a slight rise in the mortality in November and in Winnipeg a decline. In Ottawa there was a much larger increase in the mortality than in anyone of the larger cities; or from 22 per 1,000 of population in October to 27 in November.

From zymotic diseases, the total mortality, which had fallen 25 per cent. in October, as compared with September, increased about 14 per cent. in November as compared with October. This total increase, unusual for the season, was more than made up by the increase in the death-rate from this class of disease in Montreal, Quebec and Ottawa. Much the largest proportionate increase, from this disease, chiefly from typhoid, was in Ottawa.

From diarrhœal diseases there was in the totals a further decline; from 57 in October to 34 in November.

The typhoid or enteric fever mortality still further declined, in the totals, from 65 in October to 46 in November; the record for September being 70. Notwithstanding this decline in the totals from this cause, there was in Ottawa, on account of the epidemic, a very large increase.

From diphtheria the mortality increased from a total record of 138 in October to that of 187 in November. of these 187 deaths, 112 occured in Montreal, 13 in Toronto, 8 in Quebec, 8 in Ottawa, 10 in London and 9 in Winnipeg.

Measles and scarlet fever show a large increase in the month under consideration. Only three deaths were recorded from measles in October while there were 28 in November. Fifteen of these 28 were in Sherbrooke, 4 in Charlottetown, 4 in Victoria and 3 in Woodstock. Winnipeg was the chief sufferer from scarlet fever; 7 of the 8 deaths recorded from this disease being in that city.

On the whole there appears to have prevailed last month, in the various cities and towns, quite a number of epidemics of diphtheria, typhoid fever, measles and scarlatina.

A NEW ANTISEPTIC—The *Pharmaceutiche Post* publishes a notice on a new antiseptic prepared from heavy coal tar, called creolin. The claim is made that it kills bacilli, bacteria, etc., is very nearly non-poisonous, and cheaper than carbolic acid. Professor Frohner, director of the pharmakologischen Institutes, Berlin, pronounces it the best remedy known for scabies in sheep. Creolin sheep wash is used with perfect safety and excels all other remedies. Experiments are being made to test its efficiency for destroying phylloxera.

MORTUARY STATISTICS — RETURNS FOR NOVEMBER.

DEATHS IN THE 26 CITIES AND TOWNS MAKING MONTHLY REPORTS TO THE DEPART. OF AGRICULTURE, OTTAWA—CAUSES, &C.

	Total number of deaths.	Males.	Females.	Deaths from Small-pox.	Measles.	Scarlatina.	Diphtheria.	Diarrhœal Diseases.	Fever, Typh'd	Fever, Remit't & Intermit't.	Rheumatism.	Total from all Zymotic Dis's.	From Constitution'l Dis's.	Local Diseases	Development'l Diseases.	Violent Deaths.	Estimated Populat'n n'nd numbers.	Rate per 1,000 of pop. per an.	Rate in previous month.	Rate, correspond'g month last year.	Rate for year end'g 31st Dec., '86.
Montreal	503	...	...	...	1	1	112	9	9	...	...	142	51	184	114	12	186,000	31·5	30	25	31·6
Toronto	177	...	...	...	...	...	13	4	3	...	...	28	31	75	38	5	110,000	19·3	19·4	19	24
Quebec	114	...	...	...	1	...	8	5	2	...	...	20	23	36	33	2	69,000	20	25	25	31
Hamilton	46	...	...	...	...	...	3	...	3	...	...	9	11	17	7	2	41,000	13·	16	18	20·8
Halifax	50	...	...	...	...	...	...	1	1	...	...	7	9	23	9	2	39,000	15	22	20	21
Ottawa	81	...	...	...	...	...	8	4	15	...	...	29	10	28	11	3	26,000	27	22	21	30
St. John, N.B.	40	...	...	...	...	...	...	4	...	...	...	4	10	16	9	1	30,000	16	16·	12	19·5
London	38	...	...	...	...	...	10	...	1	...	...	1	5	14	7	1	22,000	19	18	19	....
Winnipeg	46	...	...	...	...	7	9	2	1	...	...	20	6	15	2	3	22,000	26	27	20	13
Kingston	20	...	...	...	...	...	...	...	...	...	...	1	6	8	4	1	15,000	...	...	...	18
Charlottetown	17	...	...	...	4	...	...	...	1	...	...	5	4	6	2	...	12,500	...	...	...	....
Brantford	18	...	...	...	...	...	2	...	1	...	...	3	6	6	1	2	12,000	...	...	...	14·5
Hull	32	...	...	...	...	...	4	...	1	...	...	6	4	10	11	1	12,000	...	...	...	....
Guelph	14	...	...	...	...	...	6	...	1	...	...	7	1	5	1	...	12,000	...	...	...	14
Belleville	13	...	...	...	...	...	...	...	...	...	...	1	2	8	1	1	11,000	...	...	...	15
St. Thomas	8	...	...	...	...	...	...	...	1	...	...	1	1	3	2	1	12,000	...	...	...	12
Three Rivers	16	...	...	...	...	...	...	...	...	...	...	1	1	9	5	...	10,000	...	...	...	30
Chatham	6	...	...	...	...	...	...	...	2	...	...	2	1	...	2	1	9,000	...	...	...	16
Sherbrooke	32	...	...	...	15	...	...	...	2	...	...	17	4	8	3	...	9,600	...	...	...	25
Peterborough	13	...	...	...	...	...	...	1	...	...	...	1	1	7	4	...	8,000	...	...	...	20
Victoria, B C	15	...	...	...	4	...	...	...	...	...	...	5	1	5	2	2	12,000	...	...	...	....
Fredericton	13	...	...	...	...	...	1	1	...	...	...	2	1	7	3	...	6,000	...	...	...	23.8
Sorel	15	...	...	...	...	...	4	1	...	...	...	5	2	5	3	...	6,000	...	...	...	50
Woodstock	20	...	...	...	3	...	5	...	2	...	...	10	...	10	...	...	6,000	...	...	...	....
St. Hyacinthe	16	...	...	...	...	...	1	...	...	...	...	1	...	2	12	1	6,000	...	...	...	.....
Galt	8	...	...	...	...	...	1	2	...	...	...	3	1	3	1	...	...	...	...	...	.....
Total	1371	...	...	...	28	8	187	34	46	...	...	331	192	510	287	41	684,000	24	24	.....	.....
London, Eng.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	19·9
28 English Towns, pop. 9,000,000	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9,250,000	...	...	...	20·9

Canada Health Journal.

A MONTHLY MAGAZINE OF PREVENTIVE MEDICINE.

THIRTEENTH YEAR of Publication. - - - - - - - - - - NINTH VOLUME.

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EDITORS' SPECIAL CORNER.

PUBLIC WATER SUPPLIES POLLUTION.

Probably no sanitary question is at the present time engaging public attention so much and so generally as this one of water pollution; and it is well that it is so, for probably no subject demands so much attention; no cause of disease is perhaps more prolific. The practice has been so long everywhere continued of pouring sewage and the refuse of manufacturies with all their foulness into the nearest stream, that good potable water—and this fact is just beginning to be realized, can hardly be found on the face of the earth. The recent bacteriological investigations of Frankland and others, clearly showing that the specific organisms which are now almost universally believed to be the infections of disease, may live and multiply in ordinary potable water, gives to this water pollution question an aspect far more serious than ever before. Within the last year, especially since the somewhat startling paper on this subject read by the Editor of this Journal in Toronto in October, 1886, at the Meeting of the American Public Health Association, the practice of pouring sewage into streams and drawing public water supplies from the same streams has been strongly condemned by the public press in some quarters. It is very gratifying to observe this, and it is to be hoped that such condemnation will soon become universal. Then there will be a change and some other method for the disposal of refuse will be put into practice. From the first this JOURNAL has strongly condemned the abominable practice of sewage disposal now in universal use, which has cost hundreds of thousands of human lives. It will not be enough to obtain water from some other source, such Artesian or other very deep wells: for the foul streams will still contaminate the air. As shown at the last meeting of the Sanitary Institute of Great Britain, by the president, Dr. Poore, extracts from whose address were given in the November number of this JOURNAL, mixing waste organic matter with water is a scientific error: with water, dead organic matter undergoes putrefaction instead of oxidation. Everything bearing upon this question shows clearly that the present method of refuse disposal must be completely changed. Whatever the difficulties, they must be squarely faced, and the pollution of streams as now practiced must be abandoned. Legislation will be necessary, there will be a great and unnecessary loss of time, and many more thousands of human lives will be sacrificed, but the change, absolute and complete, must come.

THE OTTAWA WATER SUPPLY.

That so many of the citizens of the capital are reluctant to believe that the city water supply may have become impure and even infected, after having had such a long abiding faith in the water, is natural enough; and being in ignorance

of recently demonstrated scientific facts, it is also natural enough that they find it difficult to understand how it could have become impure and infected. To some however who look deeply into these matters, it has long been a wonder that towns and cities have escaped so well as they have when consideration is given to the foul matters which everywhere flow into the sources of water supplies. What has recently occured in Ottawa, it has been predicted, time and again, in this JOURNAL, would soon or later take place in cities and towns everywhere, if the present method of sewage disposal were not discontinued. Effects surely follow causes. Every few miles along up the Ottawa River there is a village with a few hundreds of a population, the sewage and waste and washings from which flow into the river. Specific infectious excrement could hardly fail to thus occasionally find its way into the river, and there, however largely diluted, it is not necessarily destroyed. These infections are particulate, and not soluble. Some portions of the water miles and miles below, however scattered and few these portions may be, will contain the particles when once they have found their way into the river. A hundred tumblerfuls of the water may not contain any of them but the next tumblerful may. The immediate or greater danger to Ottawa is apparently from a source quite near the city. It appears that this danger could be soon and easily remedied. Doubtless many more lives will be sacrified before action is taken; a terrible responsibility resting upon some one. But this greater danger removed, there will always be the lesser one—from specific infections having their source a much greater distance away.

OBSERVATIONS AND ANNOTATIONS.

FOOD ADULTERATION.—One of the district analysts reports to the Department of Inland Revenue (last annual report) that it is obvious that the practice of adulteration is chiefly now as formerly in the hands of the coffee and spice grinders. Several convictions have been obtained and penalties enforced from these merchants.

THE SUBJECT OF MILK, the analyst says, has been lightly treated during this year, awaiting municipal action, but there is reason to believe that former prosecutions have had a wholesome restraining effect upon milk dealers, especially with regard to the dilution of milk with water, The practice however of removal of the morning's cream from the night's milk and blending this with the early morning's milk, is still prevalent and is difficult to check; requiring the constant and systematic supervision of inspectors appointed by the municipal authorities; for which the Act duly provides. The extension of the operations of the Act to the extent of the Inland Revenue District involves some changes in the mode of collecting samples from the country districts. So far it appears that country samples are as generally adulterated as those of the cities of the Dominion, and the extension of the Act will probably prove beneficial to the country at large. In large centres, this will suggest the appointment of a general district inspector.

ORILLIA has had considerable reputation as a pleasant and healthful summer resort. The Packet hopes the incoming Council will be thoroughly imbued with the necessity of placing the town in a good sanitary state, and adds: There was more sickness in Orillia last year than needful in a much less favored place, and a repetition of the record would undoubtedly turn away summer visitors. The Packet calls for changes in the law for the government of Boards of Health. "They should be as independent of the Council as the school board is. The Health Officer should not be a medical man in practice, as such cannot reasonably be expected to quarrel with unreasonable men who persist in disregarding the plain dictates of health, while receiving only a nominal remuneration for their services."

WHEN Koch's discovery of the bacillus of cholera was first published, it was pointed out that it placed in the hands of the profession a new means of recognizing with certainty whether isolated cases of cholera were examples of true Asiatic cholera or no. The following is an illustration of the value of this test: An

Italian emigrant steamer arrived at the port of New York, on board of which a suspicious case of diarrhœa had occured in a child, but the symptoms were not perfectly typical of Asiatic cholera. Cultivation tubes were inoculated from the dejecta, and taken to the Carnegie laboratory. Four days were required to allow the bacilli, if present, to grow and manifest their characteristic appearances, and it was determined to keep the vessel and its passengers under observation for that time. The cultures did develop in the manner characteristic of Koch s comma bacillus, and the diagnosis of cholera was subsequently confirmed by the occurrences of cases in which unmistakeable symptoms of Asiatic cholera were present.

MALARIAL FEVER.—At the recent international congress at Washington, Dr. Tommasi Crudeli, of Rome, Italy, read a paper relating to the "Cause, Nature and Prevention of Malarial Fever." In 1879 Klebs and Crudeli discovered the microbe of malaria, since which time many researches from different observers have confirmed their views as to the cause of Malaria. Among others Dr. Schiavazzi, an eminent bacteriologist. The results of Dr. Schiavazzi's researches, confirming Crudeli's discovery, are as follows, (Sanitarian): 1. The constant presence of a bacillus morphologically identical with that described by Klebs and Crudeli under the name of bacillus malaria, in the malarial atmosphere of Polo, and its absence in the atmosphere of non-malarial regions. 2. That inoculation of pure cultures of this bacillus fever in rabbits produces fever, with all the characteristic anatomical and clinicial symptoms of malarial-fever. 3. That the blood, spleen and lymphatic abdominal glands of those rabbits being placed in favorable condition of development, furnishes an abundant vegetation of bacilli morphologically identical with those which infected the rabbits. 4. That in animals infected by pure cultures of this bacillus the red globules of blood undergo those alterations which have been described as characteristic of malarial infection.

THE DISINFECTING TEMPERATURE.—At the same conference (at Washington) Dr. A. N. Bell, of the Sanitarian, relating to steam as a disinfectant. He quoted from the most recent writings of Dr. Sternberg that, "a temperature of 143.6° F. is fatal to all of the pathogenic and non-pathogenic organisms tested, in the absence of spores (with the single exception of sarcina lutea, which, in one experiment, grew after exposure to this temperature"). That "the cholera germ of Koch does not form spores, and there is good reason to believe that the same is true as regards the germs of yellow-fever, scarlet-fever, and of small-pox"—conclusions approximately coincident with his, Dr. Bell, observed results of the practical application of steam as a disinfectant twenty-five years ago. He read a letter from Dr. Joseph Holt, President of the State Board of Health of Louisana, describing the apparatus for the application of steam devised by him and in use at the port of New Orleans, and closed his paper with the following conclusions:—1. That steam at a temperature of 220° F., for ten minutes, or at 145° for two hours, is fatal to all known disease germs. 2. That the various devices and facilities for the application of steam for the purpose of disinfection are abundant, and may be safely left to the direction of those who require their exercise.

M. FERNET recently stated (*Brit. Med Jour.*) that four cases of typhoid fever had occurred at the Hôtel Dieu within two or three weeks. The Hôtel is well supplied with Vanne water, perfectly safe, but there is also a supply of Seine water for cleansing purposes. The taps which furnish the two kinds of water are next to each other. M. Fernet learned from an hospital attendant that he and some of his companions were in the habit of drinking Seine water in preference to that of the Vanne. The filter through which the Seine water passes before entering the taps clears the water, but does not retain the pathogenic germs it may contain.

DR. BURROWS, First Vice-President of the Association of Executive Health Officers of Ontario, and Medical Health Officer of Lindsay, who attended the late meeting of the American Public Health Association, at Memphis, was nominated a member of the Advisory Council as the representative for Ontario.

TEMPERANCE NOTES.—Judge Hughes of St. Thomas has been addressing the Grand Jury at the general sessions in Elgin. He said, "It is not my aim to give you a temperance lecture, but I do aim at suggesting and hope that every one will consider what his duty is at this juncture. He stated that there is a side-road in one of the outer townships, over which has passed from a certain village, more whiskey to supply the thirst for strong drink, of a very limited neighborhood, than was brought to the whole township besides; the result of which is, that hardly a single family of the original settlers, owns or even occupies a homestead there. He further said, what is too true, though 20 or 30 years ago it did not seem to be the case, that most of those who engage in the traffic "are themselves the worst and wickedest and the most unscrupulously daring men in the community, and they have such a hold upon their victims that they can influence them to do things which are abhorrent to decent men, which are not only base and wicked and revolting in themselves, but which sap the very foundations of right and destroy principles of truth and morality."

ABOUT COMPENSATION for the losses which men engaged in the traffic will sustain if the licensing system were stopped and the manufacture of intoxicating liquors prohibited, Judge Hughes says a great deal has been said, and we fully agree with him when he adds, "The first and the greatest loss has been to those *who have spent their all* at the taverns and places where intoxicating liquors are sold. The desolated homes and wretchedness and privations suffered by families of drunkards, will account for a great deal of the capital invested in the business; and that has a right to be taken into the account and go to the credit side against the claim for compensation. The argument that thousands of dollars now derived from the License Fund would have to be paid by the farmers and others, must fall to the ground, because money would not be required for maintaining drunkards in our jails, which is now expended as the result of their debauched lives, engendered by a legalized, yet immoral traffic. *An empty prison needs no bread.*"

UNLICENSED WINE AND BEER.—Judge Hughes says, "I am not personally in favor of prohibition, because I know that the drinking usages of society cannot be reached by Act of Parliament, nor am I in favor of the "high license" system. . . My experience as a License Commissioner has been, and is, that there is no use in trying to regulate the traffic. All regulations, as a rule, are disregarded." We should like to know what his honor would think of entire prohibition as relating to ardent spirits, permitting the manufacture and use of wine and beer (with a high duty on imported wine), and the abolition of the license system and the saloon in every form.

OF KANSAS, Governor Martin, who was once opposed to prohibition, in his last message says: "A great reform has certainly been accomplished in Kansas. Intemperance is steadily and surely decreasing. In thousands of homes where want and wretchedness and suffering were once familiar guests, plenty, happiness and contentment now abide. Thousands of wives and children are better clothed and fed than they were when the saloons absorbed all the earnings of husbands and fathers. The marvellous material growth of the State during the past six years has been accompanied by an equally marvellous moral progress, and it can be fairly and truthfully asserted that in no portion of the civilized world can a million and a half of people be found who are more temperate than are the people of Kansas."

IN THE Republic of Switzerland and the Kingdom of Sweden, as many of our readers know, the licensing system has been abandoned. In Switzerland the Government are to keep the bars. By a vote of 252,791 to 127,473 the people of Switzerland have approved a law which gives the Government the sole right to manufacture and sell spirituous liquors. The liquor sold will be more apt to be pure, and it will be sold under circumstances most likely to minimize its evil effects.

OXYGEN IN AXPHYXIA.—Dr. Gautier, of Geneva, describes a case of poisoning by carbonic oxide, which he successfully treated with inhalations of oxygen. A laborer's wife, aged 25, was found unconscious and cyanotic, with complete loss of sensation, shallow breathing, weakened

pulse, and dilated pupils, which did not react to light. An india-rubber bag, with the oxygen gas, was procured from a near chemist in about twenty minutes. The gas was pressed out of the reservoir through a glass tube into the woman's mouth. In about four minutes, after nearly five litres of oxygen had been pumped in, the patient recovered her senses. Dr. Gautier adds that oxygen inhalations were first employed by him with similar good results in a severe case of poisoning by charcoal fames in 1846.

UNIVERSALITY OF DIPHTHERIA.—At the late Washington Congress Dr. W. Earle, of Chicago, Ill., read a paper relating to sewerage, water-pollution and diphtheria. He presented the results of a study of the causes of diphtheria in localities remote from sewer gas influence in the less thickly populated Western States and Territories. He had received communications from a large number of physicians widely scattered over this great region. His conclusions were as follows: 1. Diphtheria occurs in the mountains and prairies of the great North-West with the same malignancy as in the East. 2. And with equal virulence in vicinities remote from sewers. 3. When once introduced, the residents of damp sod houses suffer with marked severity. 4. The infection is transported thousands of miles in some unrecognized vehicle. 5. There is abundant testimony that it follows the lines of railroads and steamers, making it imperative to increase the watchfulness and improve the methods of disinfection by railroad and steamboat companies. 6. The desirability of legal enactments obliging people of all classes to recognize their responsibility in regard to the control of contagious diseases.

TWO PLUMBERS named White and Ellis were recently fined $750.00 in New York for having done imperfect plumbing work and violated the sanitary code.

SYMPTOMS OF SEWER GAS POISONING.—Dr. Hun, of Albany, says that he has carefully studied twenty-nine cases, and thinks it probable that the following condition may result, besides the usual symptoms of specific disease: Vomiting and purging, either separately or combined; a form of kidney trouble; debility, in some cases in which the heart is especially involved; fever, which is frequently accompanied by chills; sore throat, which is frequeutly of a diphtheritic character; neuralgia. These conditions may occur separately, but are frequently combined, and it is especially common for the fever to be associated with the other forms of sewer gas poisoning. Finally, in cases of sewer gas poisoning there is one group of symptoms which is almost always prominent, and these symptoms are loss of appetite, drowsiness, extreme prostration and a dull, unpleasant feeling in the head; and whenever this group of symptoms occurs, not as the result of an attack of acute disease, but as a chronic condition, a suspicion is justified that the patient is exposed to sewer gas infection.

COW SHEDS, SLAUGHTER HOUSES AND TYPHOID FEVER.—A few years ago Mr. Henry Lawrence, in a paper on 'The Genesis of Typhoid Fever,' gave his experiences of typhoid fever in South Africa, during a period of thirty years, and went far to prove there was an intimate connection between typhoid fever and the presence of the manure of horned cattle. Mr. Lawrence did not venture to advance any theory as to the nature of the connection, but, I believe, suggested that it might consist in the manure being infected from some infective process in bovine cattle, analogous to typhoid fever in the human subject. An independent observer in South Africa, Dr. James F. Allen, medical adviser to the Corporation of Pietermaritzburg, has recently presented to the Corporation a report on the causes of typhoid fever in that city. Dr. Allen endeavours to establish a connection between the incidence of typhoid fever among the inhabitants of farms, and a *specific enteritis* among young calves. A significant fact ascertained by Dr. Allen was, that the *post-mortem* appearances found in the diseased condition of the calves to which he gave the name of *specific enteritis* were almost indentical with those shown in cases of typhoid fever in the human subject.

FURTHER EVIDENCE.—Dr. Brown, medical officer of health for Carlyle, gives in a recent number of the Sanitary Record, the

following: For the last three and a half years I have been in the habit of keeping notes of the sanitary conditions present in those spots in Carlisle where typhoid fever has come under observation, and find that the disease is very fatal, and persistently lingers in the immediate vicinity of slaughter-houses, cow-sheds, and places where tripe and entrails are cleansed. Thus, for instance, during the last four and a half years there occurred in Carlisle, in the vicinity of two slaughter-houses placed in close proximity, seven cases of typhoid fever. Near another slaughter-house the same number of cases. Near a shed where tripe and entrails were cleansed, five cases; at a similar place, one case; in a short street where four slaughter-houses exist, eleven cases: and near a large cow-shed, nine cases of the disease. Of these forty cases ten died, or one death in four cases, or about four times the ordinary rate of fatality from typhoid fever. Lastly comes the Metcalfe Street cow-byre and slaughter-house with its five cases of sickness, three of which died, and while the paper is being written arrives a notice of a death from typhoid fever in the Carlisle Urban District of Greystone in a house placed close to a cow-byre of the sanitary urban type.

GOOD FOR THE SYNOD.—It was decided by the Lutheran synod recently held in Richmond, Indiana, that users of tobacco will hereafter be debarred from positions in their theological institutions.

GOOD HEALTH says, prohibition sentiment is very strong in Colorado. Pueblo, the second city in the State, has an anti-saloon government; and many smaller towns have local option in active operation.

THE Belgians have a law that whenever a man is fined for drunkenness, the tavern-keeper who sold him the last drink is also fined. The best of all is that the law is enforced.

IT is said that in 1841, when the population of Great Britain was twenty-six million, twenty-three million pounds of tobacco were used. In 1887, with a population of thirty-seven million, fifty-three million pounds were consumed.

TUBERCULOUS COWS.—The N. Y. World is responsible for the following: A prominent veterinary surgeon says that Massachusetts herds of cattle are honey-combed with tuberculosis, the cattle disease which created such a sensation in Maine last winter. He has recently talked with the veterinary officers of the Bay State, who informed him that the disease had gained a very strong foothold there. He asked them why they did not expose the condition of the herds, and the reply was that it would at once create a panic. Thousands of gallons of milk are sold in Boston which are produced by diseased cows, and large quantities of beef from animals infected with tuberculosis are marketed in the city.

WE must apologize for the lateness of this number of the JOURNAL. The next number too we fear may be a little late, on account of improvements being made, but we think when it reaches our readers they will overlook the late arrival and be satisfied. When we receive exchanges a month and sometimes two months after *date* of issue, as we sometimes do, we try to take comfort in that we are not much worse in this respect than many others.

We wish all "a happy new year," and hope to visit them more regularly on the whole in future.

NOTES ON CURRENT LITERATURE.

IN THE CENTURY for December, among the most noticeable articles are "The Sea of Galilee," profusely illustrated and very interesting; "Durham Cathedral," and the first part of Mr. Kennan's Contribution, "Prison Life of the Russian Revolutionists," which done are worth more than the price of the magazine. A well illustrated article on Parisian newspapers is not less interesting. We are told that "Of mere brute news, minute particulars of scandals, crimes and horrors, such as we here in America have dumped upon our breakfast table every morning, with all the accompanying repetition and accumulation of uninteresting fact,—of all this the reader of the Parisian journal sees little or nothing. The childish or unintelligent thirst to know what has happened, regardless of the importance of the event, has not yet been developed in France by the rivalry of scrambling editors; and it may be asserted without fear of contradiction that even if they

could have it without cost and without trouble. French editors would refuse to print most of the trivial trash which cumbers the columns of even the foremost American papers." By all means give us the Parisian paper. Surely the healthiest, for the mind at least.

HARPER'S Magazine for January is an appropriate Christmas number. There is a fine frontispiece associated with a fully illustrated article, "The Adoration of the Magi." We also find articles on the following subjects: "The Italian Chamber of Deputies;" "Modern French Sculpture;" "The City of Savannah, Georgia; and "The Shore of America in Westminster Abbey;" with much other matter of interest.

ST. NICHOLAS. the foremost magazine in the world for "young folks,"gives in the January number a full complement of very good things. One is "The Brown Dwarf of Rügen," a very pretty ballad finely illustrated; others, "The Amusements of Arab Children" and "London Christmas Pantomimes," both of course illustrated, are very good too, and the latter, very funny. A full page illustration, "He Barks Every Time I Try to Taste It," is very life like and attractive. "A Girl's Military Company" will attract many who are not very young. Besides all these are many other amusing and instructive things for big and little folks.

MONEY TO BE MADE.—It is said that dull times are not known by the agents for the great publishing house of George Stinson & Co., of Portland, Maine. The reason of this exceptional success is found in the fact that they always give the public that which is keenly appreciated and at prices that all can afford. At present we understand, their agents are doing wonderfully well on several new lines. They need many more agents in all parts of the country. Those who need profitable work should apply at once. Women do as well as men. Experience is not necessary, for Messrs. Stinson & Co. undertake to show all who are willing to work, not hard but earnestly, the path to large success. It should be remembered that an agent can do a handsome business without being away from home over night. Another advantage—it costs nothing to give the business a trial, and an agent can devote all his time, or only his spare moments to it. Stinson & Co. guarantee grand success to all who engage and follow simple and plain directions that they give. We have not space to explain all here, but full particulars will be sent *free* to those who address the firm; their full address is given above.

ORDINANCES HEALTH JOURNAL.

Pure Air: The complete destruction of all waste organic matter, by fire or otherwise: no collections any where of bodily excrement—perfect sewerage or daily disinfection or deodorization with frequent removal; through ventilation of all buildings, public and private; complete isolation and disinfection in all cases of infectious disease.

Pure Water: Strict prohibition of the pollution of all inland waters—rivers, lakes, streams—by sewage or other waste substances; thorough filtration of all public water supplies; closing of suspected wells.

Pure Wholesome Food: Prompt and severe punishment of all adulterators of food, with frequent and repeated analyses; thorough inspection of foods—meat, milk, flour, bread, fruits, &c., with punishment of all offering impure or bad food; improved methods of preparation and cooking food.

Education of the Public in all Matters Pertaining to Health.

"A VALUABLE SERIAL, which ought to be in the hands of every Mayor, Alderman, Town Councillor and Health Officer in the Dominion." So it is stated of the CANADA HEALTH JOURNAL in a Report on Epidemic Diseases, &c. By J. T. Bell, Esq., late Chairman Board of Health, Belleville.

INVENTION has revolutionized the world during the last half century. Not least among the wonders of inventive progress is a method and system of can be performed all over the country without separating the workers from their homes. Pay liberal; anyone can do the work; either sex, young or old; no special ability required. Capital not needed; you are started free. Cut this out and return to us and we will send you free, something of great value and importance to you, that will start you in business, which will bring you in more money right away, than anything else in the world. *Grand outfit free.* Address TRUE & Co., Augusta, Maine.