

THE
SANITARY JOURNAL,
DEVOTED TO
PUBLIC HEALTH.

VOL. I.]

SEPTEMBER 1875.

[No. 9.

Original Communications.

THE VENTILATION OF DRAINS.

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[The following remarks were read, under the above title, in conjunction with a portion of the paper published in our last issue, at the recent meeting of the Canada Medical Association at Halifax.—ED. SANT. JOUR.]

Proceeding now to consider the means taken to prevent the poisoning of districts from sewer gas (when, indeed, any means at all have been taken), we find that they generally consist of efforts to *ventilate sewers*, occasional unscientific efforts to *ventilate house drains into sewers*, and the use of *traps*.

It would take too long to refer to the various kinds of *traps* that have been invented. The two most common kinds, the *siphon* and the *bell*, are, I presume, sufficiently familiar to most persons. Many of us, however, are so rigidly excluded, by the laws of Queen Biddy, from the realms of the kitchen, and scullery, that we know little of her triumph over the bell trap by a simple removal of that grating, a proceeding which at once unseals the trap.

A less common method of unsealing is by evaporation, and this we should bear in mind the night we return and re-open

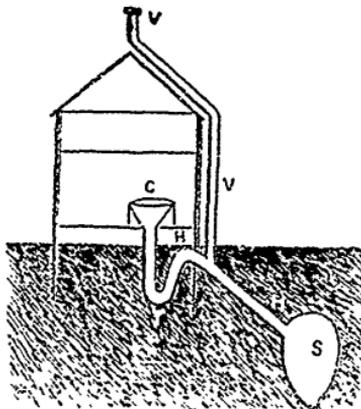
our house after a prolonged visit to the country. If we do remember that the drain has been unused, we will at once pour water into our traps, and then open all our doors and windows for a few hours.

Another method of unsealing is by suction. When a drain or pipe is running full bore, and with great rapidity, the water from small connecting traps, emptying into the side, will be drawn out as by a piston syringe. This may obtain, in a hotel or other house of several stories, with a main soil pipe and a number of connecting traps.

I believe that the forcing of traps from the expansion of sewer gas is a most common, and often undetected, cause of disease.

It will readily be seen that this forcing may be obviated by providing a vent in the wall of the drain. The best place will, of course, be as near as possible to the trap on the sewer side of it (inasmuch as this is the highest spot between the trap and street drain), and of course at the top of the arch, the highest point, and also that at which it will not be sealed by water.

The remarks in this paragraph may be better understood by a reference to the accompanying cut, representing roughly a vertical section of a two-story house, with water-closet (C), trap (T), house drain (H H), street sewer (S), and ventilating shaft (V V) rising from the house drain just outside the house on the sewer side of the trap.

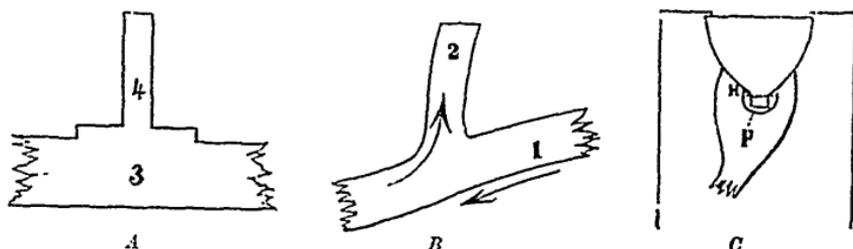


The vent is made by means of a tube leading up from the drain to the top of the house or other convenient and safe spot. These last words "safe spot" were not duly taken into consideration in the English town of Croydon. In that town a bye-law was passed, compelling householders to run their rain-pipes into the sewers, and this effort at drain ventilation was followed by fearful mortality rates. It was soon discovered that the rain pipes, opening, as they did, under the cornices of the houses, conducted the sewer gas straight into the open windows. This was rectified, and the beneficial results of the original intention were soon apparent. A similar caution has to be observed in respect to bringing the pipes too close to chimnies, down which there is sometimes a powerful current, when not used for their original object of smoke conductors. Then, too, cistern water has been poisoned by a too close proximity of sewer ventilators. In this connection I may refer to the mischief that is often insidiously going on from the over-flow pipes of cisterns, whether untrapped, or whether they are forced or unsealed by suction or evaporation in the ways I have before mentioned. Water saved in tanks for drinking purposes, has been thus made the vehicle of disease. But to return to my ventilating tubes, for it is often better to have two, and we may thus have a diluting process, the tubes taking turns in acting as inlet and outlet shafts, admitting pure air as well as expelling foul. The two small tubes can often be used with less derangement of artistic effect, than one large one. It is almost useless to remark that the single tube sometimes acts as an inlet also, and I may here say that all ordinary calculations as to inlet and outlet shafts more frequently "gang alee" in sewer ventilation than in ordinary ventilation, owing to the drains being close, and to other modifying circumstances. Hence we must put every shaft in such a position that it can do no harm. It is an improvement to place a charcoal tray in the top of the ventilating tube. In passing now towards our street sewer I would merely refer for a moment to the plans of attempting

to ventilate from the house drain into the street drain, (a down-hill ventilation,) for the purpose of pointing out how the most common natural laws are sometimes outraged. In this connection, my reason for saying before that the house drain ought not to empty into the top of the arch will be apparent. The house drain would then act as a ventilating shaft to the street drain.

Far more attention has been paid to the ventilation of street drains or sewers, and as less has been left to the private individual and his medical adviser, owing to the existence and aid of the city engineer, I will devote less time to this portion of the subject.

Various have been the devices, fans, furnaces, hot-air shafts, making use of factory chimnies, &c., &c. These have been found costly and unsatisfactory, and sanitary engineers now rely upon frequent openings to the surface, passing the air through charcoal trays of various forms, and keeping as far as possible from the sidewalks. It is a good plan to make a sort of collecting place for foul air in the vicinity of the ventilating shaft (4), as shown in diagram (A), or to make a break in the line of the sewer at the point where it gives off the ventilating shaft (2), as in diagram B.



There are many things to which I would have liked to allude, such as the evils resulting from soakage in the course of the drain, and the means to prevent it; the prevention of deposit, by making the streams join in diagonal currents instead of at right angles; the precautions to be observed in laying and joining pipes; the proper shapes of drains under varying circumstances; flushing apparatus, &c. But as time is so brief I cannot trespass on it, but must defer the consideration of these points to a subsequent occasion.

There is, however, one point which is of such importance to nearly all our city families that I cannot pass it by in this paper. It is the uttering of a protest against that abominable nuisance which is commonly called the *pan closet* as shown in diagram C.

The two most serious objections to it are, first, that the side of the receiver is soiled every time the pan (P) which is hinged at H, drops feces on to it, and it cannot be cleaned. The second is, that every time the pan drops, the trap (formed by it) is unsealed, and permits a volume of sewer gas to pass into the house.

In conclusion, gentlemen, my apology for submitting this paper upon which I have bestowed so little preparation is my desire to bring before your attention a matter so much overlooked, and yet of such great practical importance, and to ask you to use your influence to remedy the existing state of things, and to make this one among your efforts in the exercise of that trust which God has committed into your hands.



DISPOSAL AND UTILIZATION OF EXCRETA AND SEWAGE.

In the first part of this paper, published in the last number of the *SANITARY JOURNAL*, I noticed the different methods of removing excreta from the vicinity of dwellings, and the dangers arising, through water contamination, from inefficient modes of removal; alluding more particularly to the advantages of immediate deodorization with dry earth—of what is called the dry-earth system of removal. I will now notice the three principal methods of disposing of and utilizing excreta and sewage after it has been removed from the immediate vicinity of dwellings; namely:—

1. That of discharging it into water, as of a river or lake or the sea, and which is the two general, and on this continent universal, method in the water-carriage system.
2. That of carbonization, in retorts; the products being

various gases, ammoniacal liquid, a tar-like substance, and a residuum of animal charcoal.

3. That of employing it as a fertilizer, either after certain processes of manufacture or by applying it directly to the soil, as in irrigation—the passage of liquid sewage over and through the soil—or in the form of a deodorized powder.

Of the first method, I think nothing can be said in its favour. In seaboard towns sewage *may* be allowed to flow into the sea, but as Dr. Parks says, “In inland towns it cannot be discharged into rivers.” It not only destroys the fish, silts the beds of streams and creates palpable nuisances, but it is impossible to say when or where its pernicious effects upon the health of communities will end, through contaminating the drinking water and fouling the atmosphere. Though the water becomes purified in a degree by the influence of water plants and by oxidation, the purification must be an exceedingly slow process. According to experiments of Frankland*, the water in the river Irwell, which receives the sewage of Manchester, after a flow of 11 miles and falling over six weirs, showed but little improvement. Dr. Letheby † considers that purification takes place more rapidly, and that if sewage is mixed with twenty times its bulk of water and flows a distance of 9 miles it will be completely oxidised. On the other hand, however, Parkes says, “Average London sewage diluted with nine parts of water and syphoned from one vessel into another so as to represent a flow of 96 and 192 miles, gave a percentage reduction in the organic nitrogen of 28.4 and 33.3 respectively.” He found unchanged epithelium in unfiltered Thames water after a transit of 80 miles in a barrel, and after being kept five months.

It is satisfactory to know that this “barbarous” method of disposing of sewage is gradually going out of use; and it is most desirable that it should be abandoned at an early period. Britain, it is generally known, is at this time greatly exercised

* Reports of the Commissioners appointed to inquire into the Pollution of Rivers, 1870.

† Report of East London Water Bill Committee, 1867.

over the Rivers Pollution question, and while laws are being enacted to prevent further pollution, meetings are being held and committees appointed to enquire into the best means of purifying rivers. The marvel is that the polluting process has been permitted to go on for so long a time. Will Canada benefit by the lesson conveyed?

Furthermore, not only is this mode absolutely and directly injurious to the public health, but the soil is impoverished, and the means of obtaining our daily bread is thereby rendered less efficacious, because we do not return to the soil those ingredients taken from it by our crops.

Probably the earliest traceable attempts at utilizing sewage by applying it to the soil, are those of the Israelites at the period when Jerusalem was a prosperous and flourishing city. Their large and costly aqueducts, still extant, provided abundance of water with which to flush their sewers and convey their sewage to large tanks, whence the liquid part could be drawn to be used for irrigation, and the solid sediment employed to fertilize in another form.

The great fertility of China has been largely attributed to the care with which the inhabitants return to the soil that which they have taken from it.

The following fundamental laws of national economy laid down by Professor Thudichum, are exceedingly important and should be universally carried out.

"1. The basis of human life, the very root of all society, is to produce food in such quantities, that a surplus of it may be exchanged for commodities resulting from the labours of other people unable to produce food.

"2. This capacity to produce food must be rendered permanent by a strict observance of the laws of nature regulating vegetable life, the knowledge of which is the basis of agricultural science.

"3. The first and most important of these laws is, that we must return to the soil the mineral ingredients we take from it in gathering our crops. The atmosphere furnishes the nutritive elements, and the soil the minerals, out of which vegetable fibres, vessels and structures containing food are built up. Without these mineral ingredients no harvest can possibly flourish.

“4. These mineral ingredients are continually ejected from human beings and animals in their excrements, by returning which to the soil we furnish it with building materials for new crops, at the same time keeping pure the atmosphere we breathe, and the water we drink, and thus preventing epidemics and death.”

F. C. Krepp, in his work on “The Sewage Question,” says:

“It has appeared that human excrements have a very high value indeed, containing as they do the very minerals indispensable to the production of the new crops serving for our food, with also certain organic nitrogenous substances, besides greatly assisting in the formation of the nutritive elements of breadstuffs and other vegetables, and evolving certain fertilizing gases, which will largely increase the harvest if only made to penetrate the soil instead of polluting the atmosphere.

“The best authorities value fæcal matter at 10s. sterling at least as the annual product of an average individual, giving an increased yield of crops worth £1,000,000 for every million inhabitants; a national wealth, which as yet, in most countries, is nearly all wasted or utterly lost.

“We have found that, to make good this enormous loss, guano, bones and other fertilizers are imported, and all sorts of temporary make-shifts employed, involving a continual serious drain of capital and diminution of national wealth. We have noticed besides, that the guano-beds of Peru are nearly exhausted, and have asked ourselves, What is to become of our agriculture when this foreign supply of manure is cut off?

“Again, we have noticed that, in spite of all the capital continually wasted on these poor palliatives, the soil almost everywhere diminishes in fertility, a given number of acres yielding no longer the same produce they did in former times; that this astounding fact is especially striking in the United States of America, a country acting, with regard to her agricultural interests, somewhat like a fast young heir, squandering in a very short time resources intended and sufficient to last him for his whole life.

“We have seen how bountiful the reward, if we obey the divine Laws of Nature, by applying to our agriculture the most valuable mineral or organic substances daily ejected from our bodies, and how severe the punishment if we neglect to do so, and allow fæcal gases, fluids and solids to pollute our atmosphere, infect our soil and poison our wells” and other water sources.

To every one who gives the subject due consideration it must be evident that for two grand reasons, one as affecting public health, the other a matter of economy, it is absolutely essential to utilize human excreta by disposing of it in the earth.

The carbonizing process has not been very extensively tried. A Mr. Hickey, C. E., of Bengal Presidency, in 1859, proposed to carbonize sewage in retorts, either with or without previous admixture with charcoal. It is similar to the plan referred to in the last number of the *SANITARY JOURNAL*, now in use in Glasgow, and which was proposed by Mr. Sanford about the time of Mr. Hickey's proposal. The great cost of the necessary apparatus and the low price obtained for the resulting ammoniacal products, are said to have been unfavourable to the success of the plan in India. In Great Britain, however, Parkes says, it may be commercially successful; and, that "there can be no question that it is an excellent plan in a purely sanitary point of view." It does not, however, return to the soil that which has been taken from it.

This leads to the consideration of the third method of disposing of and utilizing sewage excreta, namely, that of employing it as a fertilizer of the soil. A good many manufactories have been established and carried on in different countries for manufacturing from excreta and sewage manure that would be easy of transport and readily applicable to the soil. None of them, however, appear to have been very profitable, and the works have for the most part been abandoned. In England, one manure manufacturing company was obliged to wind up partly by reason of actions for nuisances, on account of the effluvia created. Now if the excreta can be disposed of by the dry earth plan, or any of the dry methods, this difficulty will usually be in a large degree obviated; and then too the amount of sewage water will be very materially lessened and the sewage may be treated and manipulated with less expense.

The *Coventry Sewage Works* appear to have solved in a great measure the difficulty of disposing of sewage. The town

of Coventry, England, contains about 40,000 inhabitants, and the sewage amounts to 2,000,000 gallons in the twenty-four hours. The sewage difficulty had long been an insurmountable obstacle, and the corporation had purchased land for a sewage farm, but abandoned it on account of the estimated cost of the necessary pumping and distributing works. A company came forward and offered to relieve the corporation from all liability as to the sewage, and their offer was accepted. The company erected works at a cost of £114,000 stg., and the annual expense is between £4,000 and £5,000. The works have been in operation since April, 1874; they are situated on the banks of the river Sherburne, about 1½ mile below the town, whence the sewage is delivered by gravitation. After being passed through a solid sewage extractor, the sewage is chemically treated, is allowed to subside in tanks, and is finally filtered through a bed of earth 4½ acres in extent and 5 feet in depth. This renders the affluent water of "a good standard of purity;" it has no perceptible smell, and is almost free from color, and is allowed to flow into the river. It is said the inhabitants can now see the bottom of the river, though for eight years previously they had been unable to do so. According to Prof. Voelcker the precipitate which subsides in the tanks has a manurial value, when dried, of from 35s. to 40s. per ton. By an improved method of treating this "sludge," as by mixing it when in a semi-fluid state with ground mineral phosphates, a chemical affinity taking place, and the "water of the sludge becoming crystalized," a manure can be produced of any desired value, or worth £7 or £8 per ton. It is said there is nothing offensive in any part of the works, and the town, from the latest reports, July 1875, is in a good sanitary condition, "few deaths or illnesses have occurred from zymiotic disease."

The question of the value of the manure and the profits of the process is of minor importance in comparison with the health of towns, which must in some way get rid of the sewage.

Now as regards *sewage farming* as a means of disposing of sewage, Dr. Alfred Carpenter, of Croydon, has a theory that all vegetation, especially rye-grass, has the power of assimilating organic matter through the spongiolles of the roots. As far as rye-grass is concerned, according to an extract from the *Popular Science Monthly* in the *SANITARY JOURNAL* for July, the theory appears to be confirmed by practice. The attention of Dr. Carpenter has been largely occupied for many years past with a sewage farm at Croydon, and I cannot do better than conclude this paper with a history of it, as given in the extract below from the *British Medical Journal*, June 19th, 1875. I shall endeavor on some other occasion to give the manurial or agricultural value of the earth excrement of the dry earth system, the facility of transporting and means of applying it, &c :

“ A paper read by Dr. Alfred Carpenter before the Society of Medical Officers of Health, a short time since, on the power of soil, air, and vegetation combined, to defecate sewage, and the power which plants possess of assimilating organic matter, gave rise to a somewhat lively discussion. The opponents of sewage-farming stoutly declared that a sewage-farm was necessarily a pestilential marsh, which gave rise to malaria and nausea, and that the produce was not only innutritious, but unwholesome ; whilst the size to which the root-crops attained was only a proof of the dropsical character of the produce, and formed no test of the nutritive properties. Finally, it was stated that cattle could not thrive upon such fodder, and a challenge was given to prove the contrary.

Dr. Carpenter took up the gauntlet thus thrown down, and pledged himself to convince any gentleman who would take the trouble to visit the Beddington Farm, that not only was the farm wholesome in its surroundings, that it was not a pestilential swamp, but that cattle did thrive upon the produce during their lives, and made excellent meat when killed ; and a *dejeuner* was promised, the solid portion at least of which was to consist entirely of sewage-farm produce. Pursuant to this invitation, a large number of gentlemen visited the Beddington Farm last Saturday, the 12th inst.

The Beddington Farm has, for the past fifteen years, received the sewage of about 52 thousand inhabitants of Croydon daily, in quantities varying from a minimum of three millions to a maximum of ten millions of gallons *per diem*. The smaller

quantity would probably represent the sewage proper, and the larger the increase due to storm-water. In an agricultural district like Croydon, the amount of sewage proper would seldom vary to any appreciable extent. Under a proper system of sewerage, storm-water should have, as at Reading, separate and distinct channels provided. As it is, the sewage flows on to the farm in the varying quantities mentioned; and, after being strained through two of Baldwin Latham's patent extractors, which take out lumps of solid matter, dead animals, and other miscellaneous articles, which always find their way into a town sewer, the strained liquid flows onward to the farm. The Latham's extractors, which are in general use in all towns, resemble gigantic sieves, revolving on their own centres, and strain effectually all the coarser solid impurities from the liquid. This solid matter is mixed with ashes and other refuse, and the compost finds a ready sale at 2s. 6d. per yard or load to the neighboring gardeners and farmers.

The liquid sewage then flows on to the farm, which is about 480 acres in extent. Of these, there are from 150 to 200 acres generally laid down with rye-grass; 50 acres are meadow, and used chiefly for cleansing the storm-water; 82 are laid down as market-gardens; the remainder being used for mangolds, roots, and cereals. From the great absorbing power of rye-grass, that plant will always be the best adapted for sewage-farming. It can be cropped seven and in some cases eight times yearly. One plot of ground under this cultivation recently produced fifteen and a half tons per acre, and the amount realized by the sale of several successive crops produced £111 : 13 : 6 during the past spring. The grass finds a ready sale in the neighborhood.*

The acreage under sewer-irrigation is found to be amply sufficient to purify the liquid. Dr. Carpenter calculates that in about six hours from the time the sewage enters the receiving house, and nine hours from the time it leaves the Croydon dwellings, the effluent water flows into the Wandle in a purified state, or colorless, odorless, and almost tasteless. The very slight brackish taste which is perceptible may be partly ascribed to the knowledge of what it really is. It is not, however, recommended or intended that this water should be used for domestic purposes.

The cattle on the estate, numbering about one hundred head, consists of ordinary mixed breed, not of the best pedigree

*One field of wheat last year yielded 54 bushels per acre. A crop of potatoes yielded £19 per acre, and a plot of rhubarb £26 10s. per acre.

or quality ; yet they all look healthy and in good condition, and many were born and bred on the farm. In fattening them, it is of course necessary to supplement their ordinary food with cake, as in all other cases.

The mean death-rate of the neighborhood immediately surrounding the farm for four years has been 13 6325 per 1,000, and this may be fairly considered as the normal rate. What, however, may be taken as a most critical test is, that the health of the children in the Infant Orphan Asylum, which abuts on and overlooks the farm, is remarkably good.

As long as sewage exists, of course there must be some unpleasant smells, which will, under any system of defecation, make themselves apparent ; but, as far as it is possible to be, there is an almost entire absence of any offensiveness in the Beddington Farm. In any case, it is only the smell of fresh sewage, which, if unpleasant, is certainly free from the deleterious qualities of stale sewage.

Of the luncheon, which was entirely produced on the farm, we can, in common with all the other guests, speak in terms of the highest praise. The beef was succulent, tender, and fat, such as *Front de Bœuf* or *Milo* himself would have delighted in ; and the same standard of excellence applied to the bread, pastry, salads, and other, edibles.

We should have been glad to have had a reliable set of figures, in order to see properly the actual profit or loss on the farm, and the amount of capital invested in laying it out. From a rough dissection of Dr. Carpenter's figures, we should estimate that the receipts were about equal to the expenses, but it appears that capital charges have been paid out of current expenses, so that the year's deficit is not really a deficit in the proper sense of the term. In a corporation also their is not the same amount of personal responsibility, management, economy practiced as on a private farm. Colonel Jones, of Hafyd, and Mr. Morgan of the Lodge Farm, Barking, both show a profit on their sewage-farms ; and we cannot believe but that the same result should be attained at Croydon, notwithstanding the exorbitant rental which they have to pay of £10 per acre ; the value of the land being, before the local board took the farm, twenty-two shillings per acre. Mr. Maclagan has, however, stated that he knew of lands whose value has been raised by sewage-farms from thirty shillings to £48 per acre.

These facts point conclusively to the inference that, where practicable, a sewage-farm is the proper solution of the sewage

difficult, when the surroundings are favorable. In large manufacturing towns or in places where land suitable cannot be obtained, or, if obtained, a heavy pumping expense is necessitated, of course some other system of defecation and disposal must be adopted. Croydon is exceptionally well situated in this respect. The sewage flows of its own gravitation, wherever required, all over the farm, and with such force as to supply motive power through tribunes to the double Latham's extractor, which would otherwise require an engine of about two-horse power to accomplish. The land is naturally of very poor quality, consisting mainly of a gravel and boulders.

The farm utilises the whole of the sewage of Croydon in a satisfactory manner, and has raised the town from being erstwhile one of the worst, into one of the best, sewered towns in the kingdom. If there be any deficit in the balance-sheet, the inhabitants can fairly look upon it as a modification and improved substitute, which it really is, for a sewers rate. The health of towns is the prime consideration, to be secured at all costs, but there can be no objection to make use of the best systems extant, and utilising the dirt by carrying it to the right place, and thereby make two blades of grass grow where one only grew before.

TORONTO, Aug. 1875.

M.D.

THE PREVENTION OF INFECTIOUS DISEASES.

The common people in most country districts have a fixed belief that the doctors "take something" to prevent them contracting those diseases of their patients which are "catching." Physicians are not unfrequently asked what it is they thus take, and their unsatisfactory replies are charitably attributed to a natural unwillingness to diminish their income by keeping all their patrons in good health!

It were just as well that medical men were more prompt in offering information on preventive precautions, and in no direction were it better worth while to instruct the laity in some of the knowledge peculiar to our profession. In Great Britain, the Society of Medical Officers of Health have lately published a pamphlet containing rules for the guidance of families and persons who are in the presence of infectious diseases. Though there is little novel or peculiar in their recommendations, we believe an abstract of them will not be amiss in this connection: They first of all urge separation

of the sick from the other members of the family as soon as illness appears, and advise that the sick person be placed, if possible, in an upper room, where all carpets, curtains, and unnecessary furniture must be removed. Fresh air is to be admitted to the room by opening the upper window-sash. The fire-place to be kept open, and a fire lighted, if the weather be not too hot; whilst fresh air is to be freely admitted through the whole house by means of open windows and doors, with the object, of course, of diluting the contagion.

The advice is then given to hang up a sheet outside the door of the sick room, and keep it wet with a mixture made either with a quarter of a pint of carbolic acid, or a pound of chlorate of lime and a gallon of water, the floor to be frequently sprinkled with similar disinfectants, and cloths wetted with them should be hung up in the room. Everything that passes from the sick person should be received into vessels containing half-a-pint of solution of green copperas, made by dissolving one pound in a gallon of water. Every sink, closet, or privy should have a quantity of one of these disinfectants poured in daily, and the greatest care should be taken to prevent the contamination of wells or drinking water by any discharges from the sick. All cups, glasses, etc., used by the sick should, it is advised, be first washed in the above solution of carbolic acid, and then in hot water, before being used by other persons, and no article of food should remain in the sick room, or be given to anyone else after being in the sick-room. The linen of the bed and that worn by the patient should, as soon as it is removed, be put into the carbolic acid solution, and remain in it at least half an hour, afterwards being boiled in water. Instead of handkerchiefs, small pieces of rag are recommended, which can be burnt when soiled.

It is advised that all persons attending on persons with infectious diseases should abstain from the use of woolen garments, as they are apt to retain infection; they should wear cotton or linen dresses, which can be washed. The nurses, too, are directed always to wash immediately after attending to the sick person, and to use carbolic acid soap. It is further well urged that no visitors should be allowed to the sick, save those absolutely necessary, as the clothing of visitors is apt to carry away infection. This may well remind us of the arguments often so strenuously urged as to the necessity of all practitioners who attend many labors entirely abstaining from attendance on cases of scarlatina or other infectious fevers as long as attending obstetric practice.

With regard to scarlet fever, it is advised that the scales and dusty powder which peel from the skin in this disease and the crusts in small-pox, as they are highly infectious, may be prevented from escaping by smearing the body of the patient over every day with camphorated oil. This practice, subjoined with the use of warm baths and carbolic acid soap, is most essential. With regard to the date of convalescence, it is well remarked that the sick person must not be allowed to mix with the rest of the family until peeling off has quite ceased, and the skin is quite smooth again; and all clothes used during the time of illness, or in any way exposed to infection, must not be worn again until they are properly disinfected.

When the illness is over comes the disinfecting and cleansing of the sick-room. This should be done in the following way: All articles of clothing and bedding should be spread out and hung upon lines. The fire-place, windows, and other openings are to be closed, and half a pound of sulphur is to be put in an iron dish over a pail of water, and there burnt, so as to let the fumes of the sulphur attack every part of the room, etc., for twenty-four hours. After this the room is to be thoroughly ventilated by opening the doors and windows widely, the ceilings are to be whitewashed, and the paper stripped off the walls and burnt, whilst the furniture, and all wood and painted work, is to be thoroughly washed with soap and water with a little chloride of lime mingled with it. In addition to this, beds, mattresses, and articles which cannot well be washed should, if possible, be subjected to the action of heat in a disinfecting chamber, provided, if possible, by the local authorities.

Some excellent advice is given about the danger of children attending school. No child from a house where there is an infectious disease should be allowed to attend school, even though the child is itself well, as it may carry infection, and thus spread the disease to many. And no child should be allowed to re-enter school without a certificate from the medical attendant allowing it to do so without danger to the rest.

Finally, in case the patient die, it is recommended that the body should not be removed from the room unless to carry it to a public mortuary. The body should be put into a coffin as soon as possible, with a pound or two of carbolic acid, and the coffin should be fastened down and burial take place without any delay.—*Medical and Surgical Reporter.*

AERATED BREAD.

A New Invention ; from the *Sanitary Record*, July 24. 1875.

That our present state of bread-making is in an unsatisfactory state is a fact which we think few people will be disposed to deny. The unpleasant circumstances which occasionally come to light through the medium of the police courts, as our columns have shown on more than one occasion, leave an unfavourable impression on the public mind. The incidents of the dough being *mixed by manual labour in a close underground cell, by perspiring men in a semi state of nudity*, are not comfortable to contemplate. From time to time the remains of insect life may be discovered in bread which has been purchased even in first class localities.

These circumstances all point to the necessity which exists for abolishing *in toto* the primitive and objectional method of making bread by hand labour, whilst there is that inevitable danger of the "baker's plague," roby bread, being caused by the constant use of the old-fashioned wooden troughs.

Besides these evils there is also another important reason why the present reason for manufacturing the "staff of life" should be changed, and that is the loss of nitrogenous and nutritious qualities through fermentation. It is by no means improbable that 10 per cent. of the flesh-forming constituents of flour may be lost by being converted into carbonic acid.

When we look at an ordinary piece of bread we see that the vesiculation varies from the minutest size to that of more than an inch in diameter. The very large vesicles being caused by a copious evolution of carbonic acid through sundry patches of flour. If this process were carried out long enough, there would be very little food value left in the bread. A worse result than this happens occasionally when lactic and other acids are caused by false fermentation from the use of putrescent or highly impure yeast, the effect of using the ordinary baker's yeast being to give rise to a species of fermentation of which at present very little is known. One thing however, is very certain, that some of these ferment growths resemble in a marked manner the ferments found in certain diseases of the blood. Whether, however, the one has ever conduced to produce the other is more than can be positively affirmed, but there is at least a probability that the one may be the result of the other.

Various methods of vesiculation have from time to time been attempted to obviate these dangers, such as the mixture of

hydrochloric acid and carbonate of soda, and several other effervescing mixtures; but the best of these are liable to contain impurities to a considerable extent, which are not always free from danger, and must inevitably produce a larger proportion of salt than can be considered advisable in an article so largely consumed as bread.

All endeavours to raise bread without importing fermentative matter propose to accomplish the object by the formation of carbonic acid within the dough. This can only be properly attempted by adopting all the necessary precautions.

In the first place, the gas must be produced in a separate generator, then it must be washed and purified, and finally introduced into the dough from a receiver at a perfectly controllable pressure.

It must be obvious to anyone who examines a piece of properly aerated bread that a much greater certainty of thorough vesiculation can be obtained by this method, whilst the necessity of this impregnation being accomplished by machinery has led to the perfection of that system of bread-making by the Aerated Bread Company. If no other result has been accomplished by this company than the introduction of machinery into the manufacture of bread, and the superseding of the old dirty, foul, and laborious system of bread-making, that would have deserved our best appreciation.

The best food value in the flour being secured, no waste or destruction of any of its most important constituents can occur in any of the processes adopted in making aerated bread; and as the wheat is ground, dressed, mixed, aerated, and baked without the possibility of pollution either in dangerous ferments or disgusting manipulation, bread so made can alone be considered really pure.

As we said before, the present primitive, dirty, and uncertain system of bread-making is a disgrace to our civilization, and we gladly welcome any method which will insure a cleanly and wholesome compound and effect a much needed sanitary reform.

Several ladies in Nashville have signed an agreement to abstain from all outward adornment on Sundays, wearing only the plainest sort of apparel. Ruin is thus threatened to the millinery establishments, there being no place left in which to display the last sweet thing in bonnets.—*Health Reformer*.

THE EFFECT OF LIGHT, regarded as the revival of life in the vegetable world, has just been illustrated by the observations near Athens of Prof. Hendreich under very curious circumstances. The mines at Laurium, concerning which of late years there have been such active diplomatic procedures, consist for the most part of the scoriæ produced by the workings of the ancient Greeks. These still contain a great deal of silver, which can be extracted by the superior appliances of modern times. Beneath these scoriæ have lain in a dormant state for at least 1,500 years the seeds of a papaveraceous plant, of the genus *Gluucium*. But since the scoriæ have been removed to the furnaces, this plant has sprung up with its pretty yellow petals, over the whole space which they covered. Unknown in modern times, it was described by Pliny and Dioscorides, and had disappeared from the face of the globe for fifteen or twenty centuries.—*Union Med.*

PRESERVATION OF FOOD BY COMPRESSED AIR.—Professor Paul Burt communicated to the Academic des Sciences some of the results of the experiments which he has long been engaged in conducting with compressed air. Specimens of meat submitted to a compression of forty-four atmospheres were found at the end of three weeks to be in a state of perfect preservation. Cutlets were declared to be in as good a condition as when quite recent, a little more tasteless perhaps. Eggs which had been beaten up and exposed to the compression on May 28 were found to be on June 28 as fresh as at first, while others beaten up at the same time and left in open vessels were frightfully stinking. Oxygen, then, at this strong tension either kills vibriones or at least prevents their development in organic matters. Fruits, as strawberries, cherries, etc., comport themselves in like manner, as also does moistened bread. The coagulation of milk is not prevented by compression, being only retarded. It thus seems that in oxygen of high tension we possess an agent for the preservation of animal and vegetable substances, which may prove of utility in scientific investigation, and perhaps in commercial pursuits.—*L'Institut.*

DEGENERATION OF THE FACTORY POPULATION.—In his evidence before the Royal commission on the working of the Factory and Workshops Acts, Dr. Ferguson, who has held office as certifying surgeon under the Factory Acts at Bolton for fourteen years, stated as the result of his observations that there

is a steady degeneration going on among the factory population. He did not believe that it was so much the factory labour that operated prejudicially—the mills being more healthy to work in now than they were in years gone by—as the habits and mode of life of the factory workers. By free indulgence in stimulants, and in many cases excess in smoking, parents debilitated their own constitutions and transmitted feeble constitutions to their children. Again, children were often fed on tea and coffee after they were weaned, instead of getting good milk. Another cause of degeneration among boys was that at least one-half of those over twelve years of age either smoked or chewed tobacco, or perhaps indulged in both vices. There is no doubt that the excessive use of stimulants and tobacco is very general in factory districts, and is to some extent the cause of degeneration of the population; but as the chairman of the Commission observed, the remedy for this unfortunate state of things is scarcely within the reach of Parliament. We hope to return to the subject after the Factory Commissioners have concluded their labours.—*Med. Times and Gaz.*

THE FORTHCOMING SOCIAL SCIENCE CONGRESS.—Among the several questions selected for discussion in the health department of the forthcoming Social Science Congress, at Brighton, are:—1. To what causes are to be attributed the ill construction and want of sanitary provisions which exist in the dwellings of the upper and middle classes? and what is the best method which should be adopted to remedy and rectify the same? 2. What are the advantages or disadvantages of water-supply being lodged in the hands of local authorities?

IMPROVED DRAINAGE.—The Artizan's Laborers', and General Dwellings Company, of England, is devoted to the general purposes of improving dwellings of the laboring classes by the erection of houses with the best sanitary arrangements, suited to tenants of moderate means, and purchasable on easy terms. In making the drainage of their houses, the company invariably and as a fixed rule, avoids carrying the drains under any portion of the houses. A drain is arranged at the backs of two rows of houses, running lengthwise in the gardens, and into the main drains. The drain pipes are led from the backs of the houses instead of beneath them, and hence into the street, as is generally done in all other modes of house drainage. It has been found that the death rate in houses thus drained, when

compared with that of a similar number of ordinarily drained houses, has been much less.

A WESTERN JOURNAL, probably wishing to do the handsome thing by the local doctor, recently announced "that Dr. C. was called 'n, and under his prompt and skillful treatment the young man died on Wednesday afternoon."

To the Editor of the SANITARY JOURNAL.

DEAR SIR.—Will you kindly inform me through your journal, as the information may be useful and interesting to many of your readers, if there is not some remedy for, some means of preventing the depositing of refuse and filth upon vacant lots in this city, in order to fill cavities and low places. By so doing you will confer a favor upon

Yours truly,

A SUFFERER.

Toronto, August 21st, 1875.

[We think the following, now in force, should apply to and reach the matter in question.—ED. SANT. JR.]

An Act respecting the public health, 36 Vic., cap. 43.

1. The health officers of any municipality or police village in Ontario, or any two of them, may, in the day time, as often as they think necessary, enter into and upon any premises in the place for which they hold office, and examine such premises.

2. If upon such examination they find that the premises are in a filthy or unclean state, or that any matter or thing is there which, in their opinion, may endanger the public health, they or any two of them, may order the proprietor or occupant of the premises to cleanse the same and to remove what is so found there.

3. Such health officers, in case the proprietor or occupier of the premises neglect or refuse to obey their directions, may call to their assistance all constables and any other persons they think fit, and may enter on the premises and cleanse the same, and remove there from and destroy what in their opinion it is necessary to remove or destroy for the preservation of the public health.

THE SANITARY JOURNAL,

DEVOTED TO PUBLIC HEALTH.

VOL. I.

TORONTO, SEPT. 1ST, 1875.

No. 9.

CREMATION AND BURIAL.

This is the subject of a lengthy paper by Dr. J. F. Adams in the last annual Report of the State Board of Health of Massachusetts; it is the subject of numerous articles in medical journals; in June, F. S. Hayden, F. R. C. S. E. addressed to the London *Times* his final and longest letter on the subject of disposing of the dead, and as the *Medical Times and Gazette* observes, certainly the fact that that journal devoted, at that season of the year, three full columns of its pages to Mr. Hayden's letter, is as strong proof as can be obtained of the wide spread interest taken in the subject; our contemporary, the *Canada Medical and Surgical Journal*, of Montreal, in the June number, contains an article on the same, strongly advocating cremation; and we have recently received a pamphlet on the "Disposal of the Dead," being the last of a series of lectures on "Hygiene and Public Health," delivered in Montreal, last winter, by Geo. H. Baynes, M. D. So that the wide spread interest may be said to be taking root in Canada, and a discussion of the question to be springing up.

We have not given the subject a great deal of attention, not regarding it as, at present, one of the most important matters connected with public health, but so far as we have been enabled to learn, we cannot think there is any necessity, either on sanitary or even economic grounds, for change in the present method of disposing of the dead; though there certainly appears to be a necessity for improvements, indeed for very radical reform, in the present manner of burial.

After sending out circulars of enquiry to nearly 500 physicians in the United States, Great Britain, and Ireland, who were supposed to take special interest in sanitary matters, and receiving 171 answers, Dr. Adams, in the report above mentioned, says, "We must confess to being greatly surprised at the small amount of evidence we have been able to gather of any positive injury known to result from burial grounds." Yet Dr. Baynes in his published lecture says, in effect, that by the adoption of cremation the bill of health will advance rapidly, and the frightful return of death perceptibly diminish; and again, "it is impossible to calculate the immense revolution that would take place in the bill of mortality." Depend upon it, it is against decomposing filth above ground, and perhaps in sewers beneath, specific contagion, over-crowding of the living, defective drainage, intemperance, and such like evils, we must wage war, these are the chief removable causes of disease—and to combat which requires the exercise of our best and greatest energies. It is not so much against the slowly decomposing body of our friend or neighbor, properly buried a depth of six or seven feet in "nature's great deodorizer" and disinfectant, that we need contend. Unquestionably, in many instances injury to health has arisen through the present method of disposal of the dead, but it must be attributed to the improper *manner* of burial and not to the system itself; to the proximity of drinking water and dwellings to burying grounds, or to intramural sepulture, which may now be said to be almost entirely abandoned.

Burial, "Earth to earth," certainly appears to be the most natural method of disposal. The great purifying power of fire is spoken of; but there is no approach in nature to any provision for consuming by fire of dead organic matter. And it is generally admitted that it is always best, and safest, to follow as far as possible the indications of nature. Undoubtedly the great fire of London in 1666 did purify that city, and it may have been a providential provision, or interposition. So fearfully bad must have been the sanitary condition of the city, so reeking with corruption, that one could almost imagine

it approaching a condition of spontaneous combustibility ; there, collected among the living, was the dead and the filth of centuries. Only fire could purify it in time to save the remaining inhabitants. But let us bury the dead in proper coffins, a safe distance from dwellings and water supply, toward that quarter whence winds least frequently blow, (in Toronto, for example, to the north-east) and a good depth, and not too near together, in suitable soil, and it cannot be conceived possible for any harm to arise to the living from the dead. The earth would undoubtedly destroy or render harmless all the elements or matters arising from the slow and gradual decomposition before it would be possible for them to contaminate either the air above ground or the drinking water. The most rapid increase of population, after the lapse of centuries, would not be likely to require a change in this mode of disposal of the dead. Mr. Seymour Hayden estimates that, allowing for the increase of population and mortality—for a probable mean of prospective annual mortality of 200,000—for the city of London, a field of 2,000 acres will bury its dead forever ; allowing the entire resolution of the body to take place in from three to seven years.

One important and essential reform that is needed in connection with our burial system is, that all places of burial, cemeteries, &c., be as soon as possible placed under the supervision of a competent superintendent, or be regulated by boards of health, and not be entrusted to speculative associations.

As to the economical aspect of cremation ; it has not been shown that there would necessarily be anything saved by this system. The undertakers paraphernalia and display are not essential to burial ; cremation would not necessarily do away with these. That they are superfluous, and indeed ridiculous, few will deny. On this point, a London exchange, the *Medical Times & Gazette*, says:

“ For some years there has been a quiet and gradually increasing revolt against the tyranny of the undertaker ; and ordinary funerals have, during the last ten or fifteen years,

been conducted with much less expense and undertaker's display. For this change we are, in part, indebted to the burial guilds that have been established in connexion with what is called the High Church party."

The *Canada Medical and Surgical Journal* mentions a known case in which \$25 or \$30 were borrowed to bury a relative, where "half a cord of wood, at \$8 per cord, would have reduced his remains to ashes" in a Sieman's furnace. Add to this the labor and attendance on the furnace, and a body might be decently and properly buried for less. Perfect cremation requires quite a complicated apparatus, and more skilled labor than burial, and while it would consequently be more likely to be imperfectly accomplished, it would seemingly be more expensive than burial.

Dr. Holland, in his reply to Sir Henry Thompson, naturally questions the seriousness of the latter in his estimates of the manurial value of the ashes and bone earth resulting from cremation, and thinks it amounts to a suggestion, as in fact it does, "that we use our father's ashes as a turnip dressing."

FLOWER MISSION.—In the August number of this JOURNAL, in an item on the "Flower Mission" in London, for sending flowers to the sick in the Hospitals, a belief was expressed that if some one would move in the matter in Toronto and elsewhere, there would be enough ladies to render sufficient aid to make success certain. It is pleasing to observe that a move has been made in this city to establish such an agency, and that large numbers of bouquets of flowers, were last Saturday (Aug. 28) distributed in the wards of the General Hospital. Many books were also sent to the patients. It is to be hoped that the Mission will extend to other Charitable Institutions; and that the ladies in other cities and Towns will go and do likewise.

OTTAWA MATTERS.—Dr. J. P. Lynn, Medical Health Officer, Ottawa, in a letter to the *Times*, Aug. 23, gives some valuable suggestions regarding the disinfection of privies. Like other cities, Ottawa has its stagnant pools, and household refuse,

kitchen slops, etc., scattered over back yards; hence, foul atmospheres and stench. The doctor complains of the laws, which being yet elementary, they require the aid of private exertion. He wisely suggests the necessity of daily throwing into the privy vaults, which should be properly ventilated, "a quantity of dry earth, or coal ashes, a shovelful of lime, or a couple of handfuls of copperas. It is made most thorough by the combined use of dry earth and copperas, experiment having shewn the last to be the best chemical disinfectant for privies. He further says, however, "Your readers doubtless well remember the revoltingly filthy condition of many portions of the city prior to the organization of the sanitary bureau, and will, I venture to believe, readily acknowledge the improvement that has since manifested itself under the action of its officers."

SMALL-POX AND PAPER RAGS.—Two outbreaks of small-pox from contact with paper rags have recently been recorded; one in a Boston medical journal and one in the *Sanitary Record*. Some forty cases occurred in the one and over twenty in the other. One person well pitted from small-pox was attacked and died. In the Boston report, about one-third of those affected died, and it was said "in no case did vaccination appear to prevent." It is submitted (Dr. Robinson, M. H. O., in *Sanitary Record*) that this illustrates "the potency for mischief of mediate sources of contagion—to wit, infected clothes;" and urged that rag-dealers be required to purify their obnoxious wares, as by dry heat or sulphurous acid fumes.

STATE MEDICINE.—The Universities of Oxford and Cambridge have each made arrangements for an examination in subjects bearing upon Preventive or State Medicine and public health, and to grant certificates for proficiency therein. The examinations take place in October. The *Lancet* heartily wishes success to this effort to supply a long-felt deficiency.

MARRIAGE OF COUSINS.—Mr. G. H. Darwin has recently read a paper on this subject at a meeting of the London Statistical Society, and the investigations he has made, by means of cir-

culars of enquiry sent to members of the upper and middle classes, and to heads of asylums for the insane, and by diligent study of Burke's "Peerage," have failed to show any evil resulting from the marriages of first cousins. He acknowledges that the opinion of prominent medical men is against such intermarriages, and says: "My paper is far from giving anything like a satisfactory solution of the question as to the effects of consanguineous marriages, but it does, I think, show that the assertion that this question has already been set at rest cannot be substantiated. The subject still demands attention."

THE *Lancet* notices two instances in which disease was undoubtedly transmitted from human beings to domestic animals. In one case dogs took small-pox from human patients, and in the other the whooping-cough was communicated to a cat from children. Might not animals communicate such diseases to human beings?

A SUGGESTION.—We beg to suggest to the Montreal Health Department that *possibly* the most effectual (and economical in view of the late proceedings there) method of overcoming the anti-vaccination propensities of the *habitants* would be one similar to that adopted in India. There, where the practice of vaccination is said to be making fair progress, the medical officers state that one great obstacle, the religious scruples of the natives, are now overcome by the payment to them of one *anna* (three cents) per child. This would probably be much more likely to succeed than a plan proposing to make a charge for vaccinating.

A CURIOUS FACT.—In a lecture by Dr. Moore, Diplomate in State Medicine, on "Meteorology in its bearing on Health and Disease," in the lecture hall of the Royal Dublin Society, a fact came out about measles, which appears to corroborate the conclusion of Dr. Ballard, that a temperature below 42° F. is as unfavorable to the spread of the disease as a temperature above 59° F.

ANOTHER POISONOUS DYE.—The green flannel which lines gum boots is said to have given rise to severe local symptoms, attributed to arsenious salts used to give it its color.

THE *Bombay Gazette* states that proposals have been made, and will probably be carried into effect, for establishing sanatoria on the hills for the wives and families of European soldiers. It is said this want has long been felt.

OVER-CROWDING.—Dr. Russell, of Glasgow, in his invaluable reports upon the health of that city, has conclusively shown that the death-rate, in its various statistical subdivisions, is invariably governed by the proportion of families living in single rooms.

THE *Lancet* notices two instances in which disease was undoubtedly transmitted from human beings to domestic animals. In one case dogs took small-pox from human patients, and in the other the hooping-cough was communicated to a cat from children. Might not animals communicate such diseases to human beings?

TWO SUBJECTS FOR CONSIDERATION.—Dr. H. B. Baker, Secretary of the State Board of Health, Michigan, reported at the July meeting, that, at the meeting in May, at Louisville, of the American Medical Association, Dr. Bowditch, of Massachusetts, spoke of the ventilation of sewers, privies, etc., by shafts conveying the gases to the tops of the houses. He suggested the question whether the gases are properly disposed of in that manner, and related a case where the upper rooms of a dwelling had a disagreeable odor from that source. And that a paper was read by Dr. Thoms, of New York, on "Floating Hospitals," advocating this method of giving the children of cities fresher and purer air than they can obtain in tenement-houses. During the discussion, Dr. Wilson, Medical Director of the United States Navy, remarked that his experience led him to believe that "malaria" would never pass a continuous surface of water of one mile in width; that a river two miles in width, even though passing through a deadly malarious region, might be traversed safely if one did not go ashore.

SEWER GAS AND TYPHOID.—A case of typhoid fever has been reported in the *Practitioner* by Dr. Carroll. The patient was a chambermaid in a carefully kept country seat on Staten Island. The case was well marked, and death took place on the 27th day. The house had all practical provisions for all hygienic needs. Every precaution had seemingly been taken by the plumber as to traps, ventilating pipes, etc., but on close investigation the leaden soil pipe, leading from the servant's water-closet, was found to be "corroded with numerous pin-holes" through which sewer-gas escaped. The most careful inquiries failed to elicit any other cause for the disease. The writer thinks this case strong evidence against Professor Tyndall's alleged "direct continuation of a diseased intestine" cause. It is also, we think, good evidence against the water-closet system for the removal of excrement.

POISONOUS CANNED SALMON.—A correspondent in the *Sanitarian*, Dr. Balch, says he was called, June 22nd, 1875, to a family of five persons, all of whom were affected with vomiting, and (all but one) purging severely, about three hours after eating canned salmon. All recovered, though some were nauseated and had griping pains for eighteen hours. The can had been opened two days previous, and some had been eaten at that time without unpleasant results. Putrefactive change had most likely taken place; as many are aware, fish is liable to this change and may then when eaten give rise to poisonous symptoms.

RESUSCITATION EXTRAORDINARY.—At the July meeting of the Michigan State Board of Health, an interesting case of resuscitation of a girl supposed to have been dead from drowning was reported by the Rev. Mr. Brook, of the State University. Efforts were continued for six hours before signs of life appeared, but the patient was finally restored to life.

A SANITARY QUESTION.—Why could not each one of our subscribers aid the cause of Preventing Medicine, and enable us to make improvements in the *JOURNAL* by getting a friend to subscribe for it, or even by sending us a few good names to whom we might send specimen copies?

SPECIAL NOTICE, to all whom it may concern. Since the commencement of the publication of this JOURNAL, large numbers of copies have been sent to medical men and leading men of all professions and classes throughout the country, with a request that if they did not desire to become subscribers they would kindly signify this by returning the number. We cannot conceive of any better, simpler or fairer method of placing such a journal within the reach of the public, and thus extending its circulation and usefulness. It gives those receiving it an opportunity to examine it at their leisure, without having their more valuable time occupied by the solicitations (sometimes too urgent and unpleasant) of a canvasser. To simply advertize is not satisfactory. People, before subscribing for any paper, wish to see it; in this plan they are saved the trouble of sending for a sample copy. The success or result of this method has been about as follows: A few (many thanks to them) sent the price of the copy, 20 cents, saying, they did not like to return the number, but had so much other reading matter, or were not prepared to subscribe at present, expressing admiration of the journal and wishing it all success. Much the largest proportion of those who apparently did not wish to subscribe returned the *first* number sent, for the most part in good order, a few of these omitting to send the name, it not being in all cases on the journal, we did not of course stop sending to them; the next largest proportion returned the *second* number sent, or did not take it from the post-office, whence it was returned. Of this we have not the least complaint to make. A few, however, a few from whom we had expected quite differently, members of Parliament and Senators, more laymen than physicians, some possibly from oversight, received from the post-office *three, four* and *five* numbers, and then returned one, *refused*, without a cent, or a line of explanation. Of these we have just reason to complain. We are publishing a journal which is very generally acknowledged to be a public benefit, publishing it at a loss of valuable time and a good deal of money, for it is yet, partly on account of the large numbers of copies sent out, far from being a *pecuniary*

success, though we, of course, trust in the future, and we cannot well afford to send so many numbers to these gentlemen for nothing. We are constrained and inclined to believe they have not given these little details, small to them but not to us, any consideration or thought, or they would hardly have done as they have.

To those who continue to receive the JOURNAL, and have done so from the early numbers, and we suppose intend at some future time to pay for it, we have only to say, pardon us for writing so much about ourselves and about what does not concern them, and do not, in the busy details of life, forget our little matter. We require and need the amount of subscription from each, in order to continue the publication of the JOURNAL. No doubt their intentions are good, but being a small matter, to each, it is put off from time to time.

POISONING BY ANILINE DYES.—Several cases of poisoning by the use of stockings and undershirts dyed by coralline, have been reported. The *Med. & Surg. Reporter* mentions a case, reported from Stettin, in which a gentleman had bought a hat in a shop there, and, after having worn it for one or two days, was troubled with unbearable headache; at the same time little ulcers formed upon his forehead, his eyes were inflamed, and the whole of the upper part of his head was much swollen. It was evident that these symptoms were caused by the hat, and upon examination by a chemist it was found that the brown leather in the inside of the hat was colored with a poisonous aniline dye. It appears, says the *Reporter*, that inflammation is unavoidable when this dye is in contact with any part of the skin.

THE GERMAN PUBLIC HEALTH ASSOCIATION meets this year in Munich, September 13, 14, and 15. The subjects laid down for discussion are as follows:—1. Determination of a plan to study epidemics of typhus. 2. On the hygienic requirements of new buildings, especially in the new quarters of large cities. 3. Requirements of the diet in orphan asylums, barracks,

prisons, and also in common life. 4. On the objects, means and limits of the inspection of bread and meats. 5. On public slaughter houses, with special reference to the duties of communities toward butchers.

VACCINATION.—The Sanitary Commissioner for the Punjab, (*Med. Times & Gaz.* July 31,) reports, for the period ending May 15, 1875, 593 deaths under the head of small-pox. Of this number, 426 occurred in the districts south of the Sutlej, and only 167 in the districts north of that river. The population of the two localities being in the ratio of nearly two to one, it results that the less numerous population on the south is suffering, as a consequence of its prejudice against vaccination, far more severely than the less numerous population on the north, who have taken to vaccination with comparative readiness in the last few years.

According to the annual report of the Medical officer of Aberdeen, Scotland, 92 small-pox cases were treated in the small-pox hospital during the year, of which 11 died. The mortality was in the following ratios:—well vaccinated, 1.75; indifferently vaccinated, 27.2; unvaccinated, 29.1 per cent. Of all the patients admitted, only one, a female, had been re-vaccinated, and she had the disease in the mildest possible form.

AS OTHERS SEE US.—THE SANITARY JOURNAL, edited by E. Playter M. D. :—This valuable journal, since its new form of issue, seems to increase in efficiency. The papers are written on all important subjects connected with public health. The selections are made with special reference to every day matters of household hygiene. We can only say, as we have said before, that for this alone the serial should be in every household.—*Leader*, Aug. 9 1875.

THE SANITARY JOURNAL, published in Toronto, and edited by Dr. E. Playter, is a very excellent magazine, and deserves to be sustained by liberal patronage. It is doing a good work in instructing the people on many important questions pertaining to public health.—*Health Reformer*, August, '75.