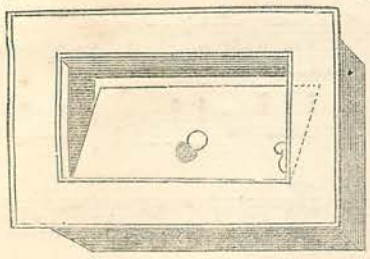
DOMESTIC INVENTIONS—SANITARY REGULATIONS, &c.

DR. ARNOTT'S VENTILATING CHIMNEY-VALVE.

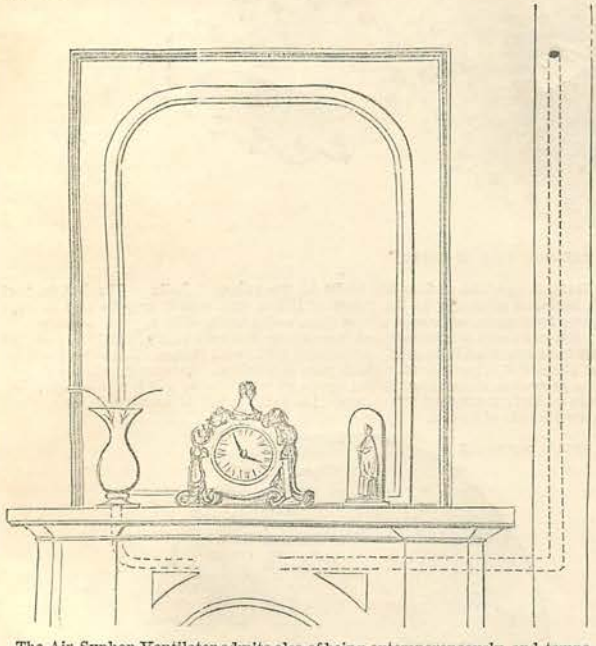
DR. ARNOTT has suggested, as some relief for an ill-ventilated room, to take a brick out of the wall, near the ceiling, so as to open a direct communication between the room and the chimney. Any occasional temporary inconvenience of down-draught will be more than compensated by the beneficial results of this simple ventilating process. As an improvement upon these chimney openings, Dr. Arnott has devised a balanced metallic valve, to prevent, during the use of fires, the escape of smoke into the room. The advantages of these openings and valves were soon so manifest, that the Referees appointed under the Building Act added a clause to their bill allowing the introduction of the valves, and directing how they are to be placed, and they are now in very extensive use. By Dr. Arnott's recommendation, in a crowded dispensary in St. James's-parish, openings were made in the chimney-flues of the rooms near the ceilings, by removing a single brick, and placing there a piece of wire-gauze, with a light curtain-flap hanging against the inside, to prevent the issue of smoke in gusty weather. The decided effect produced at once on the feelings of the inmates was so remarkable, that there was an extensive demand for the new appliance. Most of the hospitals and poorhouses in the kingdom have now these chimney-valves, and most of the medical men and others who have published of late on sanitary matters, have strongly recommended them. Dr. Arnott has freely offered this and other means of ventilation to the public; but persons desiring to use them, should be careful to employ competent makers: they are to be had of ironmongers.



PATENT AIR-SYPHON VENTILATOR.

This new mode of ventilation has been patented by Dr. Chowne, 8, Connaught-place West, Hyde-park, and is based on his finding that, "if a bent tube or hollow passage be fixed with the legs upwards, the legs being of unequal lengths, whether it be in the open air or with the shorter leg communicating with a room or other place, that the air circulates up the longer leg, and that it enters and moves down the shorter leg; and that this action is not prevented by making the shorter leg hot, whi'st the larger leg remains cold; and no artificial heat is necessary to the longer leg of the Air Syphon, to cause this action to take place." Thus, by using the chimney of an ordinary room, for example (into which air has free access), as the longer leg, and by conducting a tube or channel constituting the short leg of the Air-Syphon, from any part (as near the ceiling, for instance), into the lower part of the chimney, at the suitable place, a stream of air will proceed from the apartment down the shorter leg, and away up the longer one.

The means of ventilation can be conducted by light zinc tubes passing round and through a room, and finally into the fire-place; and tubes passing from these to the upper parts of the room, the warm air would constantly descend through them to the continuous channel, and then into the larger leg of the Syphon.



The Air-Syphon Ventilator admits also of being extemporaneously and temporarily set up in a sick-room, so as to cause a constant removal of air from the upper portion of the apartment, where it is so apt to hang about the curtain furniture of the chamber, and to impregnate it with the exhalations which are so often the result and generators of disease.

A peculiar fact is, that this mode of ventilation affords facilities hitherto not known for carrying away the heat and other products of combustion from gas-burners, and other lamps, of which the products are offensive. Again, wherever the Air-Syphon Ventilator is in operation, it is certain, that, should an accidental escape of gas take place, it will not accumulate, but descend from the upper part of the room, by means of the shorter leg of the syphon.

In the accompanying Illustration, the dotted lines represent the concealed pipes, about two inches in diameter, which are brought down to the chimney opening, and concealed behind the upper part of the jambs. In like manner, the pipe may be conducted from the bottom of an ornamental vase into the flue; when the air would take the course shown by the arrows, and thorough ventilation be thus immediately established.

DANGER FROM STOVES, FLUES, AND PIPES.

It is seldom that dwelling-houses and such-like buildings take fire and are burnt from the common accidents against which it is practically impossible wholly to guard, such as those which occur to the lighter moveable furniture, and to the drapery used in them; but, for the most part, the danger arises from the exposure of timber, in some form or other, in or about the structure, to the continued action of fire, or of heat, capable, sooner or later, of inducing the combustion of timber; and, as the source is most commonly in some stove, furnace, flue, pipe, or other tube for generating or for conveying heat, or for removing the products of combustion, much of the real danger to buildings from fire would be prevented by preventing that degree of proximity between timber and all such things as can lead to the combustion of the timber. That buildings do not take fire and burn more frequently than they do so, proves that to a great extent precautions are taken, and that dangerous proximity between the conduits of fire or of heat in a condition to induce combustion and the combustible materials in the composition of buildings is prevented. The total number of fires in the metropolitan district in the twelve years from 1833 to 1845 inclusive was 7285, of which the causes of 5515 only were known, and of these 1165 were found to have arisen from flues, and fire-places improperly constructed, from furnaces, heating and cooking apparatus, pipe-stoves, drying-stoves, bakers' ovens, and kilns. The daily returns made by the London Fire-Engine Establishment to the insurance-offices state the supposed causes of the fires which occur, and from these it appears that more than one-half of the fires *which have reached the structure of buildings*, are considered to have originated in defective or over-heated chimney-flues, in dead flues, or in some of the many varieties now in use of stoves and furnaces, and their metal tubes or other adjuncts and accessories for the purpose of distributing heat, and, in some cases, for removing heated air, as in removing the product of the combustion of gas. Further investigation generally justifies the supposition of the officers of that establishment as to the cause of the fire in any case, and for the most part proves that the danger had arisen, not from accident, properly so called, but from arrangements which admit of casualty, and, generally, arrangements made contrary to existing legislative provisions for preventing such casualties. A valuable building, used as a club-house, in Gresham-street, in the city of London, was seriously damaged by fire, from the placing of a series of small furnace-fires, to form what is termed a hot-plate, upon the wooden and timber-formed floor of the kitchen of the club-house, the thin brick hearths of the furnaces being literally bedded upon the flooring-boards. The Metropolitan Buildings Act provides "as to every furnace used for the purposes of trade or manufacture, that it must not be placed upon nor within a distance of eighteen inches of any timber or wood-work."—From "A Guide to the Proper Regulation of Buildings, Streets, Drains, and Sewers," by William Hosking, Architect and C. E.

BELL-TRAPS.

To protect buildings from the foul air generated in, or returning by, their own drains, the waste-ways should be double trapped—by a Bell-trap at the sink where waste water enters from the surface, and by a well-trap, or what workmen term, in plainer language, a stink-trap, short of the inlet to the drain; and the communication between the waste-way and the drain should have such a fall, or be so much above the bottom of the drain, that the overflow may be always from the well into the drain, and not from the drain into the well. If, however, bell-traps might be soldered down, and it were done, well-traps in addition would be unnecessary. Bell-traps are commonly left loose, because many substances which pass through the grating or strainer of the trap refuse to pass the trap, either floating so that they cannot go under the lip of the bell, or sinking in the well so that they do not get over the standing end of the drain pipe; and as tea-leaves, rice, and other matters arising from the washing of plates and dishes, the ravelled threads of housecloths, hair from brooms, and many other such like matters, find their way to the grating in the sink, or at the drain-head, and enough of them pass through and lodge in the well into which the bell is dipped, the escape becomes choked, and the trap requires to be lifted to clear the way. To solder down bell-traps is, therefore, to render the sinks useless, unless they are protected from access of such obstructions, or means be devised of clearing them away. They may be protected by a wire strainer over the sink, to stop everything that can tend to choke a bell-trap before it can reach the grating; or any ordinary obstruction may be cleared by forcing all such matters as will pass the grating of a bell-trap to go under the lip of the bell, and to rise over the end of the stand-pipe, and so pass away into the drain, and the requisite force may be obtained from a slight head of water by means of a very simple apparatus that may be always at hand in every house—a tin or other cheap metal tube of three or four feet in length, funnel-shaped at each end, and the edges formed or bound with caoutchouc, so that, when stood on end and pressed firmly down, there may be a water-tight joint. This instrument placed over the grating of any bell-trap so as to embrace it fully, and filled with water, the pressure will be sufficient to clear away any ordinary obstruction from the trap, and render it unnecessary to leave the trap loose. Such an apparatus may be applied by any maid-servant, and to any sink in or about a house, wherever, it must be added, there is clear height enough for it to be placed upright, though it is capable of being articulated to bend in some slight degree; and it may be made telescope fashion, to give the means of increasing the pressure if need be.—*Ibid.*

SEA-SIDE NUISANCES.

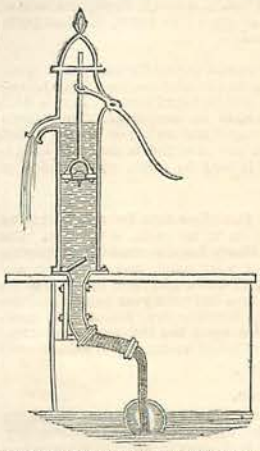
The inhabitants of, and visitors to, many of our sea-side watering-places are often exposed to annoyance, and sometimes to injury, from the discharge of the town drainage upon the much-frequented sea-beach. Cast-iron mains are commonly used at these places to conduct the soilage from the sewers and drains a little way out from the land, and these are commonly allowed to terminate at half-tide level or thereabouts, so that they are for half their time discharging noisome and pestilential streams under the nostrils of those who betake themselves to the beach for air and exercise. But ladies, with books or with needle-work, and nurses with their charges, are apt to resort to the propped-up and clean-looking round iron pipes for the convenience they offer as seats; and as they sit, they, and the children who play about them, inhale the poisonous gases which the soilage of the town emits, and many a family returns inland from the sea-side fevered with the stench at the sea-beach rather than invigorated by the sea-breezes. A few years ago the writer of these lines brought his family home to London, after a six weeks' residence at a sea-side watering-place, with all his children ill, and one of them seriously so, with fever, which resulted in the measles, brought on, he then believed, and still considers, by the cause alluded to. There were some of the town sewer pipes running out to half-tide distance

in the most accessible part of the beach, and upon some of these his children's nurse would seat herself day by day with the baby on her lap, and with the elder children playing about her, and with the children of other families similarly exposed to the same danger.—*Ibid.*

PATENT FLOATING FILTERING PUMP.

This new Pump, for cleansing and filtering unwholesome water, is the invention of Mr. S. Cheavins, of Donington, in Lincolnshire. Its advantage is to procure a pure and wholesome, as well as an abundant supply—results which, it is believed, have not hitherto been combined in a pump.

The inventor states that his Floating Filtering Pump has been tested in a tidal river, and is now used in the extensive brewery in Spalding, where it furnishes a constant and abundant supply of wholesome water, entirely free from the sand and filth which the old leaden pipes, by being placed nearly to the bottom of the water, were in the constant habit of contracting, thereby preventing the engine from obtaining a sufficient quantity of water for the supply of the brewery; and, as a still greater proof of its utility, it may be added, that it has been frequently surrounded with the weeds and rubbish carried down the river, and yet has never, in one single instance, failed to produce a copious supply. Water is sweeter and purer at the surface than it is at the bottom, and the Floating Filter totally ejects filth of every description, such as worms, &c., and all impurities of the smallest kind. The common pump, in consequence of the pipe descending within six or eight inches of the bottom, draws up with the pure water every pernicious sediment within its reach. On the other hand, the Floating Filter, by taking a supply of water within four or six inches of the surface, and rising and falling with the water, at once secures it from all sediment; and should there be any light filth floating in the same, the Filter totally ejects it, and will supply hundreds of tons of pure and wholesome water daily if required.



The importance of the purity of water for drinking was never better understood than in the present age of sanitary improvement. Now, the Patent Filter may be fixed to tanks and buts, so as to remove all apprehension of unwholesomeness in the water by any impurity drawn up with it. The Filter can also be attached, without difficulty, to pumps of the old construction.

We have seen Mr. Cheavins's Floating Filtering Pump at work, and can fully attest its successful operation.

WRIGHT'S PATENT VULCAN CHIMNEY-SWEEPING MACHINES.

The inefficacy of machinery for sweeping tortuous, angular, and irregular chimneys, has long been matter of complaint; and has, in some instances, led to the return to the employment of climbing-boys, which the application of machines was intended to supersede. The common failure of the machines hitherto used has been that they swept equally both ways, and left much of the soot in the chimneys.

The Patent Vulcan Sweeper is capable of contracting and expanding by the use of a cylinder or band of vulcanised india-rubber, upon which separate little brushes are so placed, that in ascending they easily press backwards, and leave the soot on the slopes, in the same manner as the common brush; whereas, on the return of the machine, the pressure on the little brushes being reversed, they stand firmly out and hold the head in the middle of the flue, sweeping all before it. The cylinder is fixed under a cap, and is protected from all external obstacles. The six little brushes form a round head, when all at liberty, but each one can dip down independently of the other when required to do so. There are, also, universal joints of a novel character, constructed with the vulcanised india-rubber; and, in cases where the chimney pots are very contracted, a small pilot brush, with very stiff whalebone to scratch off the hard soot, precedes the main one, and thus averts the necessity of its being squeezed through the narrow orifice, which is always attended with more or less danger to the pot, and requires so great a range of elasticity in the machine as to render it weak and inefficient in large flues. The Vulcan machines are employed in various ways, and of different sizes, to sweep stove-pipes, and every kind of chimney. They are manufactured and sold by Mr. Every, at Quarndon, near Derby.

PRECAUTIONS AGAINST CHOLERA.

Medical authorities are agreed that the remedies proper for the premonitory symptoms of cholera are the same as those found efficacious in common diarrhœa; that the most simple remedies will suffice, if given on the first manifestation of this symptom; and that the following, which are within the reach and management of every one, may be regarded as among the most useful, namely, 20 grains of opiate confection, mixed with two tablespoonfuls of peppermint-water, or with a little weak brandy-and-water, and repeated every three or four hours, or oftener, if the attack is severe, until the looseness of the bowels is stopped; or an ounce of the compound chalk mixture, with 10 or 15 grains of the aromatic confection, and from five to ten drops of laudanum, repeated in the same manner. From half a drachm to a drachm of tincture of catechu may be added to this last, if the attack is severe.

Half these quantities should be given to young persons under fifteen, and smaller doses to infants.

It is recommended to repeat these remedies night and morning, for some days after the looseness of the bowels has been stopped. But, in all cases, it is desirable, whenever practicable, that even in this earliest stage of the disorder, recourse should be had to medical advice on the spot.

Next in importance to the immediate employment of such remedies, is attention to proper diet and clothing. Every article of food which is known to favour a relaxed state of the bowels should, as far as possible, be avoided—such as every variety of green vegetable, whether cooked or not, as cucumber and salad. It will be important, also, to abstain from fruit of all kinds, though ripe, and even cooked, and whether dried or preserved. The most wholesome articles of vegetable diet are, well-baked, but not new, bread; rice, oatmeal, and good potatoes. Pickles should be avoided.

The diet should be solid rather than fluid; and those who have the means of choosing should live principally on animal food, as affording the most concentrated and invigorating diet; avoiding salted and smoked meats, pork, salted and shell-fish, cider, perry, ginger-beer, lemonade, acid liquors of all descriptions, and ardent spirits.

Great moderation, both in food and drink, is absolutely essential to safety *during the whole duration of the epidemic period.* One single act of indiscretion has, in many instances, been followed by a speedy and fatal attack.

On account of the intimate connexion between the external skin and the internal lining membrane of the bowels, warm clothing is of great importance. The wearing of flannel next the skin is therefore advisable. Recent experience on the Continent seems to show that it was useful to wear in the day-time a flannel bandage round the body, and this may become necessary in our own country during the damp and cold weather of the approaching season.

Particular attention should be paid to keeping the feet warm and dry; changing the clothes immediately after exposure to wet; and maintaining the sitting and bed-rooms well aired, dry, and warm.

It may be necessary to add a caution against the use of cold purgative medicines, such as salts, particularly Glauber salts, Epsom salts, and Seidlitz powders, which, taken *in any quantity*, in such a season, are dangerous. Drastic purgatives of all kinds should be avoided, such as senna, colocynth, and aloes, except under special medical direction.

If, notwithstanding these precautionary measures, a person is seized suddenly with cold, giddiness, nausea, vomiting, and cramps, under circumstances in which instant medical assistance cannot be procured, the concurrent testimony of the most experienced medical authority shows that the proper course is to get as soon as possible into a warm bed; to apply warmth by means of heated flannel, or bottles filled with hot water, or bags of heated camomile flowers, sand, bran, or salt, to the feet and along the spine; to have the extremities diligently rubbed; to apply a large poultice of mustard and vinegar over the region of the stomach, keeping it on fifteen or twenty minutes; and to take every half-hour a tea-*spoonful of sal* volatile in a little hot water, or a dessert-spoonful of brandy in a little hot water, or a wine-glass of hot wine whey, made by pouring a wine-glass of sherry into a tumbler of hot milk: in a word, to do everything practicable to procure a warm, general perspiration, until the arrival of the medical attendant, whose immediate care, under such circumstances, is indispensable.

It has not been deemed necessary or proper to give instructions for the treatment of the advanced stage, from the confident expectation that the proposed arrangements will supply medical attendance to all cases that may reach that condition, by which means the specific symptoms of each individual case will receive their appropriate treatment.

Whatever is preventive of cholera is equally preventive of typhus, and of every other epidemic and constantly recurring disease; and the attention of all classes is earnestly called to the striking and consoling fact, that, formidable as this malady is in its intense form and developed stage, there is no disease against which it is in our power to take such effectual precaution, both as collective communities and private individuals, by vigilant attention to it in its first or premonitory stage, and by the removal of those agencies which are known to promote the spread of all epidemic diseases.—*Abridged from the Report of the General Board of Health, to July*, 1849.

DISINFECTING PROCESS.

In all times of epidemic, it is desirable that householders should be warned of the necessity of looking to the state of the sinks, drains, cesspools, water-closets, &c., and that, as a means of prevention, those receptacles should be cleansed by pouring down them a solution of chloride of lime, and that this should be done simultaneously throughout the neighbourhood, in order to produce an effect on the public sewers; this mode of purifying being adopted at one time: thus, in 1849, it was publicly recommended, between the hours of nine and ten on each Saturday morning. This plan was carried out at Tottenham for several weeks, and here no case of cholera occurred, nor were the cases of diarrhœa more frequent or severe than usual at that season of the year. Chloride of lime may be had of any druggist. Two ounces is sufficient to be stirred into a pail-full of water, and costs only one penny.

ORIGIN OF THE "BILLS OF MORTALITY."

The Bills of Mortality were commenced in the reign of Queen Elizabeth, and ever since the year 1603 have been published by authority in London. In this respect the English metropolis stands alone; no weekly tables of the causes of the death of every inhabitant are published in the capital of any other European state. Various motives for the measure have been assigned; but the fact of continuous publication from a period anterior to the appearance of newspapers and gazettes, is remarkable and characteristic. It may be fairly referred to the natural inclination of the English people, when they are in trouble, to know the truth, and to see in figures the precise extent of their losses, although at times the sight might well make the courage of the bravest quail. On the Continent, "precautions" were used in publishing the mortality of cholera in 1849; and the deaths from all causes were not made known.

The parish-clerks of London, in the seventeenth century, when the plague was at its height, counted the deaths and reported the supposed causes; and the citizens, when the death-cart traversed the streets, anxiously studied the bill, surrounded by its gloomy symbolical border, announcing 8297 deaths in a week, out of a population of 600,000 Returns just published by order of the House of Commons, show that the total number of new houses built within the metropolitan police districts since January 1, 1839, up to September, 1849, amounts to 64,058; and the number of new streets formed to 1652, in length 200 miles. The increase of population from 1839 to 1849, within the said district, is estimated at 525,004; the total population of the metropolitan district being now about 2,336,960. In the hands of Price, Heberden, Willis, Bateman, and other statists, these records have disclosed the laws of mortality, and the causes of the insalubrity of the present cities.

STATISTICS OF METROPOLITAN BURIAL-GROUNDS.

In area, the parochial grounds take up 176 acres and 3-10ths; the Protestant Dissenters, 8 acres and 7-10ths; the Roman Catholics, 3-10ths of an acre; the Jews, 9 acres and 2-10ths; Swedish Chapel, 1-10th; undescribed, 10 acres and 9-10ths; private, 12 acres and 6-10ths. Total of intramural, 218 acres and 1-10th; total of new cemeteries, 260 acres and 5-10ths.

	Annual No. of burials exclusive of vault burials.	Average annual No. of burials per acre.	Highest No. of burials per acre in any ground.	Lowest No. of burials per acre in any ground.
Parochial grounds ..	35,747 ..	191 ..	3073 ..	11
Protestant Dissenters	1715 ..	197 ..	1210 ..	6
Roman Catholics ..	270 ..	1043 ..	1613 ..	814
Jews	340 ..	33 ..	52 ..	13
Swedish Chapel ..	10 ..	108 ..	— ..	—
Undescribed	2197 ..	294 ..	1109 ..	5
Private	5112 ..	405 ..	2323 ..	59
Total intramural ..	44.355 ..	203 ..	1080 ..	46
Total of new cemeteries	3336 ..	13 ..	155 ..	4
Vault burials	789 ..	— ..	— ..	—

It is computed that it requires seven years for a layer of bodies to decay in the metropolis.—*Banfield and Weld's Statistical Companion.*