

Disinfection and hygiene : by means of oxygen in a nascent and active condition, or artificial ozone / by Henry Bollmann Condyl.

Contributors

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Royal College of Surgeons of England

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DISINFECTION AND HYGIENE,

BY MEANS OF

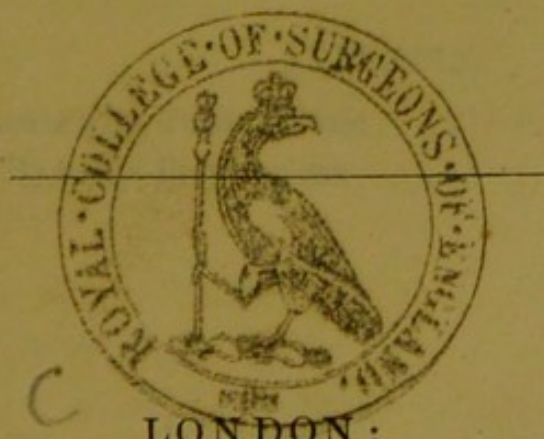
OXYGEN IN A NASCENT AND ACTIVE CONDITION,

OR

ARTIFICIAL OZONE.

BY

HENRY BOLLMANN CONDY.



LONDON :

G. P. WATERHOUSE, 275, STRAND.

1860.

DISINFECTION AND HYGIENE

BY HENRY BOLLMANN

IN A NASCENT AND ACTIVE CONDITION

PRINTED BY HARRISON AND SONS,
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HENRY BOLLMANN CONDY



G. P. WATERHOUSE, 275, ST. MARK LANE

1866

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APPENDIX.

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THE circumstance that Condry's Patent Health Powder, when employed for the above purpose stains the napkins by means of which it is applied, having been brought forward as an objection to its employment, the patentee desires to state that the stains in question, which are caused by the deposition of brown binocide of manganese, can be most readily removed by the use of any substance capable of dissolving that oxide, such as tartaric or oxalic acid, or the common "salt of lemon." Muriatic acid to a certain extent answers the purpose, but not so well as the above substances.

DISINFECTION AND HYGIENE.

AMONG the requirements of the present day, resulting from closer study of sanitary science and of the social circumstances which tend to the development of disease, must be reckoned that of deodorizing and disinfecting agents, the due employment of which, when they are of proved efficacy and properly applied, destroys those emanations from decomposing organic matter which are in a high degree detrimental to animal life, and assists materially in arresting and preventing disease, and consequently in prolonging human life.

The accomplishment of this object, viz., the obtaining a good disinfectant, has been the study of many chemists, whose labours have resulted in the introduction of a variety of substances which may be classed under two heads, viz. :—

1. Those which act by complete destruction of organic impurities, and which are actually disinfectants.

2. Those which act by double decomposition of the gases escaping from decomposing organic matter, and which may be considered as deodorizers only.

In the First Class (exclusive of the disinfectants now introduced) up to the present time, we can only reckon chlorine and the salts of hypochlorous acid, commonly called chloride of lime, soda, or potash. But to these substances—chlorine and its salts—there has arisen the very grave objection, that effective as they are in their action, the continuous elimination of chlorine is of so destructive a nature to animal and vegetable life, as to have caused medical men very generally to consider that their use, in many cases, does as much or more harm than good.

The Second Class comprehends all those metallic solutions, such as chloride of iron, of zinc, &c., which have gained popularity doubtless by their cleanliness, apparent inoffensiveness, and their having the effect of deodorizing tolerably satisfactorily, though not perfectly, most organic matter; but it is a question of grave doubt in the minds of chemists, whether their effect extends beyond neutralizing, and that not permanently, the ammonia and sulphuretted hydrogen, or compounds analogous, which are the chief *odorous* results of decomposition.

The disinfectants of both these classes hitherto used are open, among other serious objections, to this, that all of them,

The following reports and independent evidence not only furnish a very fair array of scientific testimony in favour of the efficacy of my Fluid for many most important purposes, but present, as it were, a history of the development of its extended application among the public, and a reliable account of its mode of action and properties, which will probably be more acceptable in the words of others than if given in my own.

I.

Ozone is the agent by which nature maintains the purity of the air we breathe, and the sanitary condition of the earth we inhabit.

“Schönbein’s discoveries, confirmed by the researches of Messieurs Marignac, De la Rive, Frémy, and E. Becquerel, have proved that ozone is oxygen electrified. The singular properties of oxygen thus modified, which have generally attracted the attention of chemists and philosophers, help to explain several natural phenomena of great importance.

According to M. Scutteten’s views, ozone is no longer a mere chemical agent; it is an instrument employed by Providence for the production of the grandest phenomena of nature. It is the agent which presides over the laws of atmospheric electricity, which explains the formation of aqueous meteors, the periodical and diurnal oscillations of the barometer, the means of restoring to the atmosphere the oxygen destroyed by the respiration of animals, by natural oxidation, and by combustion for the purposes of warmth, cookery, and grand industrial manufactures.

We shall find this active power exercising its influence on organized beings, exciting life, provoking maladies, and determining death. We shall find chemistry demanding of ozone the secret of its combinations with nascent oxygen; medicine calling for experiments to render healthy spots now infested by pestilence, and seeking the cause of the most fearful epidemics, and entreating for remedies against those evils which it is now powerless to subdue.

Experiments have proved beyond a doubt, that ozone is electrified oxygen. This novel condition of oxygen will probably be one day turned to account in the arts. It has no action on pure water, although, if left in contact with it for several hours, it is dissolved therein. Ozone rapidly destroys organic colouring matters, as well as ligneous and albuminous substances. It quickly destroys all oxidizable miasms, and is the most powerful disinfecting agent yet discovered.

The facts already known connected with the presence of ozone in the atmosphere are extremely curious and interesting. For instance,

one is found to be absent from inhabited houses. Slips of ozonopape paper have been kept in each of the wards of the Military hospital of Metz, for twenty-four hours, for eight-and-forty, and even for several days, without affording the slightest trace of ozone; while slips of the very same paper, hung outside the windows of the establishment, gave seven, eight, and even ten degrees of the ozonometric scale. Similar experiments have been made at Versailles by Dr. Bérigny, with the same results. It is impossible to avoid suspecting, that a clue is thus given to the different effects produced upon the health by indoor exercise and out-door exercise, by town life and country life, by labour in a metropolitan workshop, and labour in the open fields.

Dr. Bœckel noticed, that malaria always occurs when the ozonopape marks zero or the lowest possible degree, and that marsh-fevers rage most severely under exactly the same circumstances. At Strasburg the appearance of the cholera coincided with the absence of ozone, while the decrease of the epidemic was accompanied by the return of ozone. From these and similar observations it would result, that in hospital wards and sick rooms, measures should be adopted to generate a perceptible and notable quantity of ozone."—"On Ozone," extracted from *Household Words*, August 7th, 1858.)

"During the prevalence of cholera in 1854, it was found, from an extensive series of diurnal observations, that ozone could be detected all round the metropolis, while no trace of it could be found at Saint Thomas's Hospital, or at the Board of Health. It was observed that at stations of high elevation, ozone was of general occurrence, while at low levels it was absent. This might either be from the less agitation and replacement of the air at low levels, or from the deozoneing effects of the impurities existing in such atmospheres, which may afford a solution of the anomaly of the usual absence of ozone from the atmosphere of the densely inhabited parts of London."—(Dr. R. D. Thomson, at Meeting of Metropolitan Association of Medical Officers of Health, March 14, 1859.)

"Drs. Moffatt, Schönbein, and Scoutteten, are of opinion that a proper admixture of ozone and atmospheric air exercises an important influence on the animal economy, and is indispensably necessary to the due accomplishment of all the vital functions, and to the relief and modification of disorder and disease. In confined places, where ozone cannot penetrate, plants and men become blanched; the skin grows palid, the blood loses colour, lymph predominates, all the tissues soften, and serious diseases of the adynamic type break forth." (*Hygiene*, by J. H. Pickford, M.D., p. 69.)

"Ozone is said, by Schönbein, to be formed out of the oxygen of the atmosphere, by means of electrical discharges constantly taking place in the air. It combines with all oxidable, miasmatic, and malarious gases, and emanations disengaged from putrefying animal and

vegetable substances. The products of the combination are innocuous, and by this means the air is purified.”—(*On Health and the Purification of the Air*, by J. White, M.R.C.S., p. 10.)

“STATE OF THE THAMES.—Dr. Miller says:—‘It was remarkable that the organic matter in solution in the river, particularly at high water, was less during August, when the river was offensive, than in September, when there were no complaints. The chemical methods of discriminating between the injurious and the harmless organic substances when once diffused through water were very imperfect. There was, however, a mode of investigation which hitherto had been comparatively little regarded, but which promised more useful practical results. He found there was a close connection between the quantity of oxygen dissolved in water and its wholesome or offensive quality as regards organic impurities. In proportion as the oxygen diminished the water became more and more offensive. The injurious matters were the substances in a state of rapid decomposition, in which they are prone to absorb oxygen freely. The grand agent in purifying the water from the organic contaminations of the sewers is the oxygen [ozone] of the atmosphere.’—(Proceedings of the National Association for the Promotion of Social Science, in *Medical Times and Gazette*, October 15, 1859.)

II.

Permanganic acid is an ozonide, and the oxygen which is set free during the decomposition of the permanganates, is ozone.

“It is now known that ozone is undoubtedly an active condition of oxygen, by which it acquires the property of combining with bodies, which common oxygen does not possess.

To the *oxygen of permanganic acid* Schönbein applies the term *ozone*, and denotes it by O with a minus sign in the centre, this also being an *ozonide*; while the oxygen of binoxide of barium is termed *antozone*, and its symbol is O with a plus sign in the central space, the compound being an *antozonide*. When the well known experiment is made of mixing binoxide of barium and permanganic acid, the *ozone* and *antozone* rush together and form common or neutral oxygen.”—(Dr. R. D. Thomson, at meeting of Metropolitan Association of Medical Officers of Health, 14th March, 1859.)

“According to Schönbein, that which has hitherto been regarded as permanganic acid is really composed of peroxide of manganese and ozone, inasmuch as, with deoxidizing agents the so-called permanganic acid behaves exactly like ozone itself.”—(Gmelin's *Handbook of Chemistry*, note, vol. iv. p. 209.)

III.

Condy's Fluid is a solution of a permanganate, and consequently a disinfectant, whose principle of action is based on the processes of nature.

ROYAL COLLEGE OF CHEMISTRY,

July 21, 1856.

DEAR SIR,

In accordance with your request, I have carefully examined the alkaline manganates and permanganates with reference to their application for the purposes of deodorizing and disinfecting, for which you propose them. The remarkable facility with which these substances give off their oxygen to other bodies being taken into consideration, the idea of using these salts as deodorizers and disinfectants appeared to me *a priori* a most happy conception; but I was scarcely prepared for the extraordinary effects, which the manganates and permanganates are capable of producing, when employed for this purpose. Water taken from stagnating ponds, with their organic contents in a state of most active putrefaction, and emitting the most repulsive odour, may be deprived of every trace of unpleasant smell, instantaneously, and by comparatively small quantities of manganate and permanganate of potash and soda. The destruction of the organic matter, that is, its conversion into the last products of transformation, is well marked by the rapid decolorization of the deep emerald or purple solution of the manganate or permanganate, as the case may be. On allowing the brown sediment of binoxide of manganese to subside, the waters which I examined had become perfectly clear and colourless, retaining no odour whatever, or, in extreme cases requiring a large quantity of the disinfectant, but the slight odour belonging to the alkali present in the manganese salt; and which may be readily removed by the addition of a few drops of an acid.

The manganates and permanganates surpass in their deodorizing and disinfecting powers most compounds which are usually employed for this purpose. Metallic salts, such as the compounds of lead, iron, and zinc, &c., act extremely well, if the odour to be removed arise from sulphuretted hydrogen and ammonia, or substances analogous to the latter, when a metallic sulphide and a salt of a metallammonium is formed. But frequently, the odour belongs to substances of a different class, which are fixed by neither of the constituents of the metallic salt. The odour of the water, which in my experiments yielded perfectly to the action of the manganates, was scarcely altered by the use of very considerable quantities of the usual metallic salts. Moreover, the offensive substances are not destroyed by metallic salts, but only fixed; they appear again—the sulphuretted hydrogen by the action of an acid, the ammonia-like compounds by that of a powerful fixed alkali. The manganates and permanganates, on the other hand, destroy the smelling substances completely; containing, as they do, a large quantity of oxygen, the very agent which accomplishes all

natural disinfection, they give rise to an actual process of combustion, in consequence of which the cause of the odour or putrefaction is permanently removed. They resemble, in this respect, the alkaline hypochlorites, such as hypochlorite of potash, soda, or lime, (chloride of lime,) the action of which is likewise permanent. The hypochlorites act with less energy and rapidity than the manganates, and are in this respect inferior; but they have an advantage over the latter by their evolving chlorine in the gaseous state, and destroying in this manner odorous and putrefactive substances which are diffused in the atmosphere. But as the chlorine evolved is frequently found objectionable by, and injurious to patients, it would be important to ascertain whether the same effect could not be accomplished by exposing the contaminated air to the action of extended surfaces of solutions of the manganates and permanganates, either contained in shallow vessels, or diffused over sheets of wire gauze.

The manganates and permanganates have, moreover, the advantage of possessing peculiar and strongly marked colours, whereby they are readily and safely distinguished from other compounds. In consequence of this marked coloration, accidents which have been frequently caused by the incautious and erroneous use of hypochlorites, or of metallic salts, are scarcely possible with the manganates and permanganates, which are, moreover, in themselves comparatively innoxious.

I remain, Dear Sir,

Yours very truly,

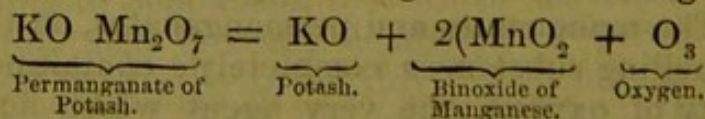
H. B. Condry, Esq.

A. W. HOFMANN.

IV.

The practical efficacy of Condry's Fluid as a disinfectant is borne out by the analysis of its mode of action, which is as simple as it is perfect.

“MANGANATE AND PERMANGANATE OF POTASH.—Condry's Disinfecting Fluid.—The same insuperable objection [the introduction by disinfectants of sulphates which in time become reduced to sulphurets, into the substance to be disinfected], applies also to every one of the sulphates of the metallic oxides which have often been suggested as disinfectants. The influence of permanganate of potash is of a different character. The potassium, equally with zinc, iron, and other metals, decomposes and renders innocuous the sulphuretted hydrogen and sulphuret of ammonium; but the principal agent of disinfection is the *nascent* oxygen which is liberated from the acid in presence of organic matter. Permanganic acid is a very unstable compound, and readily parts with three equivalents of *nascent* oxygen to any oxidizable substance, binoxide of manganese remaining;



This compound, therefore, possesses a double action: the potassium decomposes the sulphuretted hydrogen and sulphuret of ammonium, while the acid evolves oxygen in a condition of activity ready to destroy any other noxious gases in offensive organic matter.

Chloride of Zinc [Burnett's Fluid] decomposes only sulphuret of ammonium, and has no effect whatever upon sulphuretted hydrogen; permanganate of potash, by the potash alone [independently of the action of the nascent oxygen], decomposes both."—(Dr. Medlock in *Records of Pharmacy and Therapeutics*, August, 1858, p. 29.)

V.

Condy's Fluid is a true disinfectant, by its action utterly destroying the products of decomposition, and not merely an antiseptic or deodorizer. But while possessed of the property of seizing upon and transforming actually-decomposing matter, it is obvious that by reason of the oxidizing action which it exerts, this Fluid must be powerless to hinder the supervention of decay. Unlike antiseptic substances, such as the metallic salts and compounds containing carbolic acid and pyrolignates, Condy's fluid does not coagulate albumen. This property enjoyed by antiseptics of rendering insoluble albuminous matter is what constitutes the essence of the process of pickling, by means of which the comparative stability of organic substances is ensured. In restraining the decomposition of animal and vegetable matter this property is of the utmost importance; but it has nothing whatever in common with the action of disinfectants properly so called, which are all direct or indirect oxidizing agents characterized by more or less of instability. A stable constitution in themselves, as well as the power of inducing stability in organized substances submitted to their action, would seem, moreover, to be a necessary requirement in antiseptic agents. Instability of constitution, on the other hand, is essential in a true disinfectant. No other deodorizing substances can be compared for instability with the permanganates: on coming in contact with the emanations from decaying organic matter, they instantly unite with them and dash off, as it were, into stable oxy-compounds incapable of further transformation. In this union they are themselves lost, and so long as they remain undestroyed, they would seem hardly to exert any very perceptible action.*

* Putrescent matter in a highly concentrated form, occasionally assumes a condition which renders the alkaline permanganates partially inoperative. In such cases the addition of from $\frac{1}{2}$ oz. to $\frac{3}{4}$ oz. by weight of sulphuric acid per pint of Crimson Fluid will, by neutralizing the alkali, cause it to act more vigorously and to destroy a disagreeable fishy smell which, in these instances, sometimes remains.

The proper use of antiseptics is by their application to fresh organised substances to prevent decay, while that of the true disinfectants, when applied to decaying organic matter is, to restore freshness, by the destruction of the offensive products of decomposition. The employment, therefore, of antiseptic or pickling agents for the purposes of disinfection cannot but lead to deceptive results, just as the use of true oxidizing disinfectants must produce disappointment when employed to do the work of antiseptics.

“Especially as regards the offensive odours which arise from house-refuse and other putrid accumulations, it must be remembered that the *so-called deodorizers* can seldom do more than palliate the evil. The distinction between deodorizers and *true disinfectants* must be borne in mind.

The second class of disinfectants, namely, those which less or more rapidly promote complete oxidation of organic matter, are the *true disinfectants*, and properly so designated.

Manganates and permanganates of soda and potash have been suggested as disinfecting agents by Mr. Condry of Battersea, who has prepared a cheap form of their solutions, under the title of Natural Disinfectants. A report on their mode of action, by Dr. Hofmann, will be found in the Appendix A.”

APPENDIX A.—“The manganates and permanganates destroy the smelling substances completely; containing, as they do, a large quantity of oxygen, the very agent which accomplishes all natural disinfection, they give rise to an actual process of combustion, in consequence of which the cause of the odour or putrefaction is permanently removed.”—(Lindsey Blyth’s *Minute on Disinfection*, Laboratory, General Board of Health, Whitehall, January, 1857.)

“Mr. Condry has applied the idea of condensed oxygen, rendered still more powerful by being also nascent, to the disinfection of putrid matter, and by a happy scientific idea, has produced a very beautiful liquid, completely destructive of putrid matter, and there are many cases, especially in private houses, where it will be the most convenient of any to use.”—(Dr. Angus Smith, at Meeting of the Society of Arts, 22nd April, 1857.)

“DISINFECTANT AND DEODORISING FLUIDS.—We were afforded an opportunity, on Saturday, of witnessing some very interesting and important experiments made at Messrs. Condry’s Chemical Colour Works, Battersea, with the view of testing the comparative merits of several compounds or fluids now used as disinfectants and deodorizers. The importance, in a sanitary point of view, of making chemical science subservient, in a practical manner, in cases where contagion may be arrested, if not prevented, is now so generally admitted, that all public institutions, hospitals, and ships, are provided with some agent for the purpose. Those agents have, however, been open to the grave objection

that they are derived from metallic salts, which fix, but do not destroy the noxious matters with which they are brought in contact. In other words, metallic salts are only temporary in their operation, and their virtues die away in the course of a few days, while the organic deposit or impurity remains, and if not removed by some other agency, will continue to entail its pernicious consequences. Another agent, not open to this objection, and more efficient in its primary application, has been discovered by Mr. H. B. Condry, a gentleman who has devoted much time to the study of this branch of Chemistry. The fluid prepared by Mr. Condry is drawn from alkaline manganates and permanganates, and not from those metallic substances which are useful only in cases where the impurities to be removed arise from ammonia, or substances analogous to it; but in many cases the noxious odour belongs to substances of a different class which are fixed by neither of the constituents of the metallic salt. Deodorisers, having as their basis manganates and permanganates, contain a large quantity of oxygen, the agent of all natural disinfection, and produce an actual process of combustion (the only thorough destructive), by which the cause of the impurity is permanently removed. Mr. Condry's invention, as far as we are enabled to judge of its merits, appears destined to become an important agent in the economy of human life."—(*Morning Post*, January 11th, 1858.)

“The subject of the ventilation of sewers has occupied much of my attention during the last twelve months, and in conjunction with Mr. Bean, your surveyor, I have been engaged in a series of experiments with reference to the deodorization of their gases. Hitherto my experiments have been confined to ascertaining the amount of deodorizing power possessed by dry charcoal, and of the same material saturated with Condry's Patent Disinfecting Fluid. That charcoal has an extraordinary capability of arresting and absorbing fetid gases has been attested by Dr. Letheby, the City Officer of Health, and my experience fully confirms his observations on this point. But it was to Condry's Fluid, from some successful experiments made in my laboratory, that I looked for a larger amount of destructive agency. The decomposition of the components of this latter deodorizer affords such an extraordinary volume of available oxygen that it offers the most ready, cheap, and certain means of burning up impurities. The operation of charcoal, I believe, is principally exerted on the sulphuretted hydrogen and sulphide of ammonium existing in the sewer gases, but the power of nascent oxygen would not rest here. In sewer emanations there exist offensive compounds, which, although as yet they have defied the scrutiny of the chemist to define, would not resist the pyrogenic influence of free oxygen. This, therefore, appears to me the element to which we have a right to look for the most complete results. The permanganate of potash is a substance having the peculiar property of freely and easily parting with a portion of its combined oxygen to any oxidizable organic substance. The potassium, like other metallic bases, decomposes the sulphuretted hydrogen and sulphide of ammo-

nium, whilst the oxygen set free, unites with or burns, as it were, the remaining noxious gases arising from putrescent organic matter.”
—(F. J. Burge, Medical Officer of Health, in third annual Report to Board of Works, 1859.)

MEDICAL COLLEGE,
THE LABORATORY, *March 5, 1859.*

I have been requested by Mr. Condry to investigate the chemical power of his “Patent Disinfecting Fluid,” and therefore I have submitted it to a very severe test, from which I find that it has the power of removing most completely the offensive emanations from all kinds of decomposing organic matter.

Its mode of action is not like that of many so-called disinfectants which merely delay putrefaction or mask the bad odours by others which are scarcely less offensive, but it operates by a perfect destruction of the organic matter, and by the formation of oxy-compounds which are inert. I have tried its corrective powers with the matter of cesspools and the public sewers, with the foul secretions from putrid sores, with the decomposing animal matters in the dissecting room, with bilge water, and with other disgusting fluids, and have found that its action is complete. Besides which, when mixed with muriatic acid, it evolves chlorine gas, which may be made the means of purifying an atmosphere that could not easily be brought into contact with the liquid.

All these properties, together with its easy application, and its not being of a poisonous nature, make it one of the most valuable disinfectants of the present day.

HY. LETHEBY, M.B., MA. PH.D., &c.,
Professor of Chemistry in the College of the London Hospital,
and Officer of Health for the City of London.

VI.

The use of the permanganates as disinfecting agents is an original idea of the author. Condry's Fluid, which embodies that idea, being copied after nature, has an extraordinarily extensive range and variety of application.

DEPARTMENT OF SCIENCE AND ART,
SOUTH KENSINGTON, LONDON, S.W.

DEAR SIR,

February 2, 1857.

I have to thank you for the illustrations of your curious, and to me novel, application of manganates and hypermanganates.

Your obedient servant,

Henry B. Condry, Esq.,
Battersea, Surrey.

LYON PLAYFAIR.

I have carefully examined the disinfecting and deodorizing fluid manufactured by Mr. Condry, and have found it to be most rapid and efficient in its operation. The facility with which oxygen is supplied by this valuable preparation, renders the almost immediate destruction of odours in sewage a matter of certainty. The same instantaneous action is exerted on those smells which frequently increase disease in a household, and which emanate from imperfectly trapped closets and drains. For domestic use it is peculiarly adapted from the absence of any odour in the disinfectant itself, and from the facility of its application. I have also found it to have a powerful and rapid influence in the removal of the disgusting odour of putrefying flesh and of tainted meat. Water of all kinds which has been contaminated with organic matter, and has thus acquired an offensive smell and taste, is immediately deodorized, purified, and preserved by this valuable deodorizer. I consider it to be a most important addition to sanitary science, and a valuable agent in the hands of the medical profession.

ROBERT DUNDAS THOMSON, M.D., F.R.S.,

Lecturer on Chemistry at St. Thomas's Hospital, and Medical
Officer of Health for St. Marylebone.

"BANE AND ANTIDOTE.—This brings us to the subject-matter of our gossip, which is an article the *ne plus ultra* of all purifying and deodorizing agents, named 'Condry's Patent Fluid.' By reason of the extraordinary facility with which this substance evolves oxygen, it transcends all others hitherto used in the promptness and efficacy of its action, not only banishing all disagreeable odours, but destroying organically the corrupting elements which produce them. It has accordingly been pronounced, in a minute of the Board of Health, 'a true disinfectant,' and is rightly called by its inventor 'a natural disinfectant,' seeing that it acts in precisely a similar manner to the grand purifier provided by Providence for the vital air, denominated by chemists 'Ozone.' It possesses over all other known disinfectants the advantage of being neither poisonous nor offensive in taste or smell, while such is its potency that, diluted with water till the cost of the liquid does not exceed *a farthing a gallon*, it is perfectly efficacious. To dwell on the advantages of such an antidote to 'villanous smells' of every imaginable description from that of bilge water to a musty cask (including the purification of water, meat, and fish, at any stage of decomposition, so as to render them palatable and wholesome), would be a waste of time—the only question being, can all this be true? In reply to this very natural and proper inquiry, we can only refer to the unanimous testimony of some of the most eminent medical and chemical names of the day, comprising those of Lankester, Pettigrew, Brewer, Reeves, Goldsboro, Hofmann, Canton, &c., &c.; and if, after such evidence (so easily verified by each one's personal experience), any still choose to remain sceptical, we shall only give expression to the hope that they may not incur any graver inconvenience by their want of faith than that of 'paying for it through the nose.'"—(*Atlas*, September 26, 1857.)

23, PARK STREET, BRISTOL,
August 1, 1860.

SIR,

Your letter was forwarded to me here, and I have much pleasure in answering it. I have used your Disinfecting Fluid during the last two-and-a-half years in many ways, and am perfectly satisfied of its value. Sprinkled about the sick-room, it possesses advantages over other disinfectants with which I am acquainted, by rendering the air cool, refreshing, and entirely free from smell, and without injuring the clothes and furniture. In cases of *carcinoma uteri*, I have found it, used as an injection, remove the very offensive smell, and give great comfort thereby to the patient and her friends. In wounds from amputation, the operation for ruptured perinæum and prolapsus uteri, it has been particularly useful by destroying the unpleasant smell in the dressing, and improving the condition and appearance of the parts. I have not tried it internally in a sufficient number of cases to allow me to speak yet of its effects.

In removing the offensive smell from drains, &c., I have tested it severely, and (provided it has been used freely) it has always in the course of a few minutes, rendered the air perfectly sweet and pure.

In recovering and *preventing* taint in meat, it has been to my knowledge particularly successful. The meat is plunged into the diluted solution, taken out and hung up, and when cooked, *it is entirely free of all unpleasant taste*. I do not know whether you are aware of this fact.

I recommend your fluid, far and near, as a most valuable agent. A friend of mine at Liverpool, had his ship freed of the smell of guano by its use, and was so satisfied that he always now sends out in the ship stores a quantity each voyage for the use of the emigrants.

If any of the above remarks are of value to you, you can make what use you like of them, as I should like your fluid to be more generally known and used.

I am, Sir, yours truly,

AUG. TALBOT.

To Mr. Condry.

VII.

Condry's Disinfecting Fluid, having for its active principle oxygen in combination with the mildest of all the metals,—manganese,—is not deleterious nor dangerous to use, like most antiseptic and so-called disinfecting fluids, which are deadly poisons. To the latter class belong, for instance, those fluids which are composed of chloride of zinc—a compound of two poisonous substances, viz., chlorine and zinc.

HAMILTON SQUARE, BIRKENHEAD,

August 13, 1858.

SIR,

IN reply to your note of 8th instant, I beg to inform you, that I have introduced the use of Condry's Fluid to our Hospital, and also

for the purposes of the Health Committee of the township, and it has met in both instances with the highest approval.

I have also used it extensively in the sick chamber, and always find it to be an absolute preventive of the least offensiveness from the ejecta of the patients. One advantage renders it immensely superior to every other disinfectant known, all its incidental effects are beneficial to the human frame, while most, if not all others, have a disagreeable odour, or possess some injurious property.

I am, Sir, yours truly,

Mr. G. P. Waterhouse.

C. O. BAYLIS.

“CHEMICAL DISINFECTANTS.—The public is at all times but too willing to endeavour to substitute the agency of chemical disinfectants for habits of cleanliness, attention to ventilation, and thorough drainage, the neglect of which is productive of so many physical evils. Disinfectants, however powerful, should never be resorted to when the ordinary precautions necessary for the preservation of health can be fully employed. There are, unfortunately, peculiar circumstances, superinduced by a complex state of civilization, when recourse must be had to these sanitary appliances; and it is of the utmost importance, in such cases, that they should effectually accomplish the object for which they are designed, otherwise we may be deluded into a fatal security, and only restrain for a time the generating causes of disease and death. Disinfectants, so called, may thus become as destructive to life as those patent nostrums of the quack doctors, which are warranted to cure every conceivable malady to which flesh is heir. While making these remarks we are fully cognizant of the fact, that there are disinfecting agents which may be used most advantageously, in the removal of noxious exhalations and pestiferous miasms: we only seek to guard the public against a too confident reliance upon specific chemical applications, when it is possible, by ordinary care, to enforce a general compliance with the laws of nature. Amongst the agents alluded to, Condry's Patent Fluid, which not only deodorizes but disinfects, holds—and deservedly—a high place. Having, with other gentlemen, witnessed a series of experiments conducted at Mr. Condry's laboratory at Battersea, on Saturday last, we are in a position to state that the fluid is most effective in the purification of filthy water, the restoration of soundness to partially decomposed flesh, and the oxidation of impurities which invariably cause unhealthiness in the homes of thousands of our people. It is but common justice to add, that the experiments were eminently successful, and so simple, in detail, as to make the results intelligible at a glance. The fluid consists of a solution of permanganate of soda and potash; it is not poisonous, and on account of its colour—a deep red—is not liable to be mistaken for other liquids. It has, besides, the advantage of convenient portability; a small bottle, holding not more than half-a-pint, being sufficient for almost any house, for a considerable time.”—(*Morning Star*, January 11, 1858.)

Having been requested to test the efficacy of Condyl's Patent Disinfecting Fluid, I placed into a solution of it (properly prepared) a portion of horse flesh which formed the lining of a putrid abscess, from which the horse had died. Before the application of the fluid the smell was exceedingly offensive, but after a few hours' submersion this smell disappeared. I have also tried its efficacy on human urine, which had been standing some time, and from this it removed the peculiar disagreeable odour. The fact of its not being poisonous, together with its certain operation, ought to recommend it to general use.

April 2, 1858.

T. T. BUCKLAND, M.A.,
Assistant-Surgeon, 2nd Life-Guards.

"MANGANESE DISINFECTOR.—Chemistry is essentially a science of progress and utility. Every experiment made in a laboratory has utility for its object, or a truth to confirm. Latterly sanitary matters have been much discussed; and as the human family have a tendency to congregate together into large bodies, it is well that the chemist's thoughts should be directed towards the best means of utilising the sewage of populous places. It is a noble calling to cure diseases, but to prevent them is nobler still, and we cannot hold in too high esteem those men who by their inventions save us from plague and pestilence. Scheele, the discoverer of chlorine, was the first man who gave to his fellow-creatures a real preventive of contagion. To him all honour is due. Several combinations of chlorine, under the title of chloride of zinc, chloride of lime, have been very usefully applied as disinfectants; of course improvements have taken place in these things since Scheele's time; and that which we have more particularly to notice now is Condyl's Manganese Disinfectant, which possesses all the good qualities attributed to chlorine compounds, and, in many respects, is far superior to them. Unfortunately a great number of accidents, even deaths, have occurred from the chloride disinfectors now in use; it would, therefore, be better for society if the Manganese Disinfectant were generally introduced, which is said to be free from any possibility of mistake, being perfectly innoxious, and an excellent disinfecting and deodorising agent."—(*Family Herald*, Aug. 7, 1858,)

ST. JAMES'S, WESTMINSTER, VESTRY OFFICES,
14, MARSHALL STREET, GOLDEN SQUARE,

SIR,

May 16, 1857.

I HAVE tried your Disinfecting Fluid against Sir Wm. Burnett's Chloride of Zinc, and am very much pleased with the results, which are in your favour; the particulars may be known by you on application to Dr. Lankester.

H. B. Condyl, Esq.

Yours obediently,
J. H. MORGAN.

VIII.

Having the power of reducing the noxious emanations from decomposing organic matter to the state of ultimate products of transformation, Condyl's Disinfecting Fluid is, in its action, as permanent as it is sure.

BROOME PARK, NEAR CANTERBURY,
June 9, 1859.

SIR,

I thank you much for your letter. I now know more of the fluid than I did when I last wrote you, and find it perfectly available for all the uses for which I require it.

I also find experimentally that the results obtained by it are much more durable than those produced by either of the two chlorides which Beaufoy sells.

Beaufoy's chlorides are, moreover, extremely injurious to the living tissues of the body.

As a travelling article (especially in dangerous climates), your fluid is invaluable. In morasses in the East, I have had to burn gun powder in my tent and in my room before closing up for the night. Your fluid would wholly disinfect such localities.

Yours truly,

E. CHICHESTER OXENDEN.

From ANDREW CLARK, M.D., &c., London Hospital, Fellow of the Royal College of Physicians, Lettsomian Professor of Medicine to the Medical Society of London.

SIR,

I have received the sample of your Disinfecting Fluid, and thank you for it.

I had, however, before receiving your specimen, examined the fluid, tested it in various ways, and arrived at a conclusion as to its value.

One of our ablest and honestest chemists has spoken of your fluid favourably from his point of view. I can speak of it favourably from mine.

I am a pathologist. My workshop often contains so many remnants of decaying organic matter, that the atmosphere becomes unbearable to any but myself, and bearable to myself only at the expense of comfort and of health. To lessen the physical evils attendant upon the nature of my pursuits, I have carefully tried every known deodorizer, and of all that I have tried, I am free to confess that yours is among the best, if it is not the best. At all events, it is that which I use and with which I am satisfied.

I must here take exception, however, to one statement of Hoffmann,—that your fluid is instantaneous in its operation. This statement has led to great disappointment; and has induced many to discard the use of it, who in the absence of this statement, would not have discarded it. In my experience, your fluid is not instantaneous really or apparently in its operation; but it is better than that, it is *slow*, *silent*, and *sure*. It is at the same time, however, more rapid in its operation than most deodorizers, which appear to be more rapid only because they substitute one kind of smell for another, which yours does not.

I have never before given a testimonial of this kind; and I would not have given this if I had not been satisfied that it was a duty to give it for the sake of society.

I am, Sir, your obedient servant,

ANDREW CLARK, M.D.

IX.

Condy's Fluid is the only disinfectant which can be used for purifying potable water, and restoring tainted provisions.

SCARF CASTLE, LEWES ROAD, BRIGHTON,
October 10, 1857.

SIR,

Some weeks since you left me a bottle of your invaluable Disinfecting Fluid for investigation, which I have carefully tested and applied in every possible way. It is perfectly harmless and more than a common antiseptic or deodorizer, its wonderful effect upon foul and stagnant water is surprising, rendering it quite sweet and fit for use.

I have therefore great pleasure in bearing testimony to this valuable and important introduction.

I remain, Sir, truly yours,

H. SCHWEITZER,

H. B. Condy, Esq.,
Battersea.

Analytical and Experimental Chemist.

ROYAL COLLEGE OF CHEMISTRY,
November 12, 1857.

DEAR SIR,

In reply to your note I beg to state, that I have no doubt regarding the applicability of the alkaline manganates and permanganates, when well prepared and in the hands of competent persons, for the purpose of disinfecting water intended for consumption.

Nobody will hesitate to prefer water which has not required to be purified by a chemical agent. But when circumstances involve the necessity of using water which is contaminated with organic matter, and which consequently has to be purified artificially, I would employ

for this purpose the manganates and permanganates in preference to any other disinfecting agents with which I am acquainted.

I remain, Dear Sir, yours very truly,

H. B. Condry, Esq.

A. W. HOFMANN.

DEAR SIR,

ROYAL MINT, *November 16, 1857.*

I have made a few experiments on the decolouring and deodorizing properties of your manganic solution, and entirely agree with Dr. Hofmann as to its effective action.

Yours faithfully,

H. Condry, Esq.

WM. THOS. BRANDE.

21, GEORGE STREET, HANOVER SQUARE,
July 18, 1857.

I have great pleasure in bearing my testimony to the valuable properties of Mr. Condry's "Natural Disinfecting Fluid." It appears to me useful in an eminent degree, not only when used towards removing the offensive effects of putrid matter, but as a most valuable disinfectant of unwholesome and stagnant water.

The numerous diseases occasioned by impure water are the source of alarm in the metropolis, and the discovery of a harmless agent, and one efficient in purifying water for use, whether for cooking or drinking, is a boon which cannot be too highly estimated; and it is this property for which I especially recommend this disinfectant of Mr. Condry.

WM. BREWER, M.D.

"The representatives of the press accepted an invitation to witness, on Saturday, some experiments at Condry's Chemical Works, at Battersea with his patent disinfecting fluid. The fluid is of two sorts: the manganate of soda or potash, and the permanganate. The experiments were made with one only, and with the object of showing the superiority of the fluid over lime, now in course of trial as a deodorizer at Westminster. Samples of the outpourings of the Pimlico sewer were operated upon by both agents, and with striking results. Pure, that is, distilled water, and also pump water, were likewise tested for the purpose of comparison. The agent is oxygen in the nascent state; and the operation is of the nature of an actual combustion of the putrefying organic matter contained in the liquid to be deodorized, or disinfected or both. The patent article used in the experiments is of a beautiful pink colour. When a drop was added to a tumbler of pure water the effect was to render the whole pale pink. In well water the impurities, small as they are, destroyed the pink, or rather turned the whole bulk of water to a dirty brown. Then came the sewage. Treated with lime and with the patent fluid, the visible result was, a speedy precipitation of the grosser impurities. The liquid which had been limed was, however, still manifestly

impure. This was nasally evident; and when a decanted portion was treated with the patent fluid the pink colour was wanting. Not so, the decanted sewage treated originally with the fluid. Not only had the smell disappeared, but a second drop of the disinfectant rendered the contents of the tumbler of a pinky brightness; and one of the press visitors having followed the example of the patentee in tasting a portion of the contents, declared it to be pure, excellent water. Not having a like hardened devotion to rigorous scientific investigation, we declined the polite invitation to participate in the latter test, preferring acceptance of the offer of another liquid in which oxygen was present under combinations of a more agreeable character."—(*Morning and Evening Star*, July 5, 1858.)

September 22, 1857.

I do hereby certify that I have fairly tested the efficacy of "Cond's Disinfecting Fluid" upon a quantity of putrid meat which was rendered perfectly sweet thereby, after being immersed in a properly diluted solution of the fluid for a few minutes, and then washed clean in water. From my experience, I consider it superior to any disinfecting fluid in the market.

1, Grove Road, Mile End.

JOHN GRIFFITHS, Chemist.

"C'est un autre chimiste anglais, M. Condé, qui a découvert la curieuse propriété dont jouissent les permanganates alcalins dissous dans l'eau pour détruire les substances organiques, et pour les désinfecter en anéantissant leur odeur. Un chimiste de Londres, M. Hofmann, a publié tout récemment une notice sur les avantages du permanganate de soude pour désinfecter les matières organiques, pour purifier l'eau saumâtre, les substances animales, etc. M. Hofmann propose d'en faire usage pour remplacer les sels de plomb, de zinc, de cuivre, le goudron, le chlore, les chlorures, etc., toutes les fois qu'il s'agit de désinfecter des matières organiques."—(Louis Figuier, in *La Presse*, August 6, 1859.)

"At the present moment, when the Board of Health is issuing report after report on the deodorization of sewage, and inquiries into the best means of preventing contagion, of purifying water, and the multitudinous sanitary objects of the same nature are becoming more general than ever, each new specific which comes before the public with any good warranty deserves especial attention. The old liquids—as Burnett's and others—are useful to a certain extent, but imperfect. They do not destroy the infectious or noxious matter; they neutralize it for a time, but the nuisance is apt to return in full force. Chloride of lime is efficacious, but its use is dangerous, and has not unfrequently been known to produce fatal consumption, to say nothing of less serious consequences.

A disinfectant fluid has been discovered and patented by Mr. Condé, of Battersea, which professes at once to be entirely efficient and perfectly harmless. Mr. Condé performed some experiments on

Saturday, in the presence of several gentlemen well qualified to judge of the subject, and we must say, that they were singularly satisfactory. A large basin of sewage water was altogether deprived of its smell by a few drops of his, while a much larger quantity of Burnett's Fluid was only partially effective with spring water, which, as usual, contained a certain but much smaller amount of organic matter. A number of experiments were tried. The fluid of Mr. Condry turned foul water to a brown colour, in evidence of its combination with the extraneous particles, while on water already acted upon it had no effect whatever. Meat in a state positively rotten and putrid, was made, if not perfectly sweet, almost so, by the operation of this fluid, which, we should say, is itself without smell, and, we are assured, so innoxious, that water purified by its means may be drunk with perfect safety. It has an alkaline basis, and its effect is produced, not by precipitation—which is always liable to the noxious matter returning to its old form—but by chemical combination with that noxious matter, which, in such combination is made altogether harmless.

Dr. Hofmann, and many of the first practical chemists of the day, have given most decided opinions in favour of this fluid as a deodorizer and disinfectant. It has been sent out by the East Indian Company in some considerable quantity, and whenever used hitherto has never been found to fail in its effect. The matter is, we repeat, of so much importance, that we feel bound to record our sense of the perfect success of the experiments we witnessed, and of the extreme value of the invention, both in a sanitary and an economical point of view.”—(*Morning Chronicle*, January 11th, 1858.)

X.

The most simple means of detecting organic impurities in water is Condry's Disinfecting Fluid. Since its introduction by the author, it has superseded all other tests for the relative purity of water.

“The microscope can alone fully detect the nature of the organic impurities of water, but the application of “Condry's Disinfecting Fluid” supplies a ready means of chemically indicating the relative organic impurities of water. “Condry's Fluid” is a permanganate of potash or soda, in solution. When placed in water, it gives it a beautiful pink colour. The oxygen contained in the permanganate is, however, in such a state, that it readily seizes on decomposing organic matter, and converts it into inodorous and inert compounds. It is thus a deodorizer and disinfectant. Whilst the permanganate is acting on the organic matter, it is decomposed, and the water containing it loses its red colour, and in proportion to the quantity of organic matter will be the loss of colour of the permanganate. From the time

I first witnessed this property of the permanganate, I have employed it to test the relative purity of waters, and I have found it of the greatest value. In water free from organic matter, a few drops in a quart will give the water a fine pink colour, which it will retain for months, whilst waters containing organic matter rapidly lose this colour. Of course, the quantity of permanganate thus discoloured will be the measure of the impurity of the water.”—(Dr. Lankester on Pure Water, in Lecture delivered at South Kensington Museum, in May, 1859.)

“DEODORIZING AND DISINFECTING PROCESS.—Some experiments were made on Saturday last at the chemical works of the Messrs. Condry, at Battersea, to test the efficiency of Condry’s Patent Disinfecting Fluid, which consists of solutions of manganate, or permanganate of soda or potash. When used as a test of the purity of water, distilled water assumed and retained, to a great extent, the red colour of the fluid when mixed with it, and the presence of organic matter was indicated in the case of spring and less pure water, by the decolorisation of the disinfecting substance.”—(*Engineer*, July 9, 1858.)

“TEST OF THE PURITY OF WATER.—All water is liable to two kinds of impurities:—1. Inorganic or mineral substances; 2. Organic or vegetable and animal substances.

The organic impurities of water are those which are most dangerous, as these substances may ferment or putrefy, and on coming in contact with the mucous membrane of the stomach, or when taken into the blood, may induce disease. Some of the most frightful ravages of cholera have been clearly traced to the drinking of water contaminated with animal and vegetable impurities.

These impurities are either *dissolved* or *suspended* in the water. The latter may be detected by being allowed to subside, and their nature can be accurately ascertained by the aid of the microscope; they are found to consist of living and dead animal and vegetable matter. The relative quantity of dissolved and suspended organic matter can be readily tested by the aid of permanganate of potash [Condry’s Fluid.] This substance which gives to pure water a beautiful pink colour which lasts for a long time, is readily decomposed by organic matter, and its colour goes. It may be thus employed for the purpose of detecting the relative impurity of two or more waters. A certain quantity of the permanganate of potash being added to equal quantities of different waters, that water will be *the freest from organic impurities* which retains the deepest colour of the permanganate. Waters which rapidly decompose the permanganate are not fitted for drinking purposes.”—(Paper of instructions for popular information, issued by the Government Department of Science and Art.)

XI.

Condy's Fluid is also the only known test of organic impurities in air.

“ Mix one drop of “ Condy's Disinfecting Fluid,” or a very small quantity of a very weak solution of permanganate of potash in water, with one table-spoonful of pure water. The liquid should be of a faint pink colour. Drop twenty drops of this liquid into a small phial or wine-glass, and agitate it in contact with the air to be tested; organic matter in the air will decolorize the liquid. The quantity decolorized and the time it occupies, indicate respectively the quantity of organic and other oxidisable matter, and its stage of decomposition. They are in direct proportion. This result is owing to the combination of the oxygen combined in the substances in solution in the liquid, and the organic matter in the air, and to the circumstance of the resulting compound being colourless.”—(Purification of air, by J. White, Surgeon, Finchley.)

“ Just as without the use of the thermometer no nurse should ever put a patient into a bath, so should no nurse, or mother, or superintendent, be without the air test in any ward, nursery, or sleeping-room.”—(Miss Florence Nightingale's *Notes on Nursing*, note, p. 10.)

XII.

No disinfecting fluid can be compared with Condy's for use on board ship, on account of the variety of its applications, whether in purifying and freshening the air of close cabins, sweetening offensive water, recovering tainted provisions, disinfecting the hold and bilge, or as a remedial agent in numerous external complaints. It is also free from the objection found against the metallic chlorides—that they corrode the pumps and fastenings of vessels. For all except medicinal purposes sea-water can be employed, in diluting this fluid, quite as well as fresh, which is necessarily scarce on board ship.

“ MORTALITY AFLOAT.—The returns lately made upon the subject of diseases in the navy and shipping exhibit the necessity of adopting some more effective means for the prevention and cure of infection, the cause of nearly all the prevalent diseases the mariner and colonist has to contend with.

The three heads under which disease may be classed in the navy and shipping are, 1st—overtaxed powers, 2nd—climatic influence,

and 3rd and most important, putridity in water, food, refuse or atmosphere conveying the germs of typhoid, putrid, slow fever, dysentery, cholera. The first can of course be remedied by diminished labour; the second has been lately counteracted by the use of quinine; but the third has only hitherto been retarded, not cured, and even that imperfectly. Chloride of lime has long been banished from use aboard ship, from the fact of its unpleasant smell and destructive qualities, and chloride of zinc has until lately been the only deodorizer used, in the face of experience having shown that in addition to the fact that it was poisonous and therefore dangerous to leave in the hands of the inexperienced, it is not efficacious in destroying specific infective emanations, and not permanent in its action. We have great pleasure in calling attention, therefore, to a new article "Condy's Fluid," which has received the highest encomiums from the General Board of Health (by whom it has been denominated a true disinfectant), and the highest naval and military, medical, and chemical authorities of the day as a perfect, permanent and innocuous agent in deodorizing matter, such as bilge water, drains, cisterns, close cabins, cattle pens. By its use has been attained the long wished-for means of purifying water for drinking and food when required in whatever state, its great chemical principle being to supply oxygen to impurity, which thus reinstates purity. Medicinally it has acquired a large reputation for curing sore throat, scorbutic eruptions, dysentery, putrid low fevers, ulcers, and cancers, and is valuable in administering the bath for healthful purposes.

As an article of prime necessity in the present crisis in India and for colonial life, it will be welcome, possessing as it does the virtues of compactness and cheapness, costing less than one-farthing a gallon when properly diluted for use."—(*The London Commercial Record*, September 18, 1857.)

SOUTHERN HOSPITAL, PARLIAMENT STREET,
LIVERPOOL, *February 23, 1858.*

Having had further opportunities of trying the effects of "Condy's Patent Fluid," both as a general disinfectant, and also as applied to sloughing sores, I have no hesitation in recommending it as a most admirable article for use on board ship, and think that its more general use in the merchant service would tend greatly to the preservation of health of the seamen throughout long voyages.

JOSEPH JOHN POPE, M.R.C.S., &c.,
Senior House Surgeon.

S. S. CANADA, *February 26, 1858.*

This is to certify, that I have employed "Condy's Patent Fluid," and found it the best disinfectant I ever used for purifying water-closets, ice-houses, and state-rooms on board ship.

H. CHRISTIE,
Chief Steward.

NORTHERN HOSPITAL, LIVERPOOL,
February 22, 1858.

SIR,

Having been requested to state my opinion of your Fluid, as applicable or desirable for use on board ships, I have much pleasure in saying, that the results obtained at this Institution have been so satisfactory, both for general disinfecting purposes and as a local application to wounds and ulcers in a state of gangrene, that I have no hesitation in offering my opinion, that it is peculiarly adapted for use on board ships carrying passengers and going long voyages. As a disinfectant, I consider it superior to any I have ever used.

W. B. WALL,
House Surgeon.

ST. KILDA, NEAR MELBOURNE,
May 15, 1858.

SIR,

I feel great pleasure in informing you, that your disinfecting fluid proved very valuable to me during my voyage to Australia. Messrs. Green's ships are fitted in each cabin with separate accommodation, and I am quite sure that had it not been for the constant use of this fluid, the sea-sickness would have been greatly augmented. In the burning heat of the tropics, it rendered the cabin cool and wholesome, and much reduced the unpleasant smell of the ship stores, which were close underneath our cabin windows. I lost the contents of two bottles from leakage, and having given away some to the other passengers, I was unable to present any to the captain, which I much regretted, as all the passengers who tried it thought very highly of it. My voyage was made in the "Swiftsure," Captain Pryce.

I am, Sir, yours obediently,

L. B. Condry, Esq.

H. A. HARDWICK.

LIVERPOOL, *June 17, 1858.*

I can testify to the complete destruction of the smell of guano in the "Salem," and I am the owner of that ship.

J. G. STUART.

"While the origin, prevention, and treatment of dysentery, cholera, and low fevers (generally prevalent at this time of year) occupy the attention of the Boards of Health, Works, and Nuisances, the chiefs of military, naval, and shipping departments, and the medical profession generally, it is gratifying to know that science keeping pace with the necessities of the age, is continually producing an antidote or remedy for "the ills that flesh is heir to."

Among the most useful and scientific discoveries lately made is an article, having for its object the purification of impurity in every shape, whether for the ordinary daily uses of life, to disinfect and deodorize bilge water, cesspools, drains, close rooms or cattle pens, to be used in the hospital or sick room as a purifier of atmosphere

and refuse, for the treatment of ulcers, wounds, scorbutic sores, cancers, for internal administration in putrid, typhoid and low fever or what is still more important, and not hitherto attained, for the purification of drinking water and food in any climate and at any moment.

This article, which is called "Condy's Fluid" or natural disinfectant has met with the approval of the General Board of Health (by whom it has been designated a true disinfectant) and the highest medical, chemical, and scientific authorities as a perfect and permanent remove of all disagreeable odours, its peculiar features being that it is inodorous, beautiful, and singular in appearance, having neither taste nor smell, will not stain when diluted, and possessing the pure qualities of the atmosphere, oxydises substances, whether solid, liquid, or aeriform with which it is brought in contact, thereby imparting the freshness of perfect purity to matter, or recovering the same from decay.

We are, therefore, glad to be among the first to call attention to this article, for its use and application on shipboard, in hospital and for colonial life, in warm climates, will be looked upon and found to be a great boon to society, and its varied and vital purposes are so manifest that we see a large field for it commercially at the present moment in India and China: certainly it will always be welcomed in colonial markets, as it has the greatest advantage when shipping and transport is concerned, viz., that of being cheap and compact, cheap inasmuch as it costs less than a farthing a gallon when properly diluted for use, and compact, as one gallon will make 200 gallons, when diluted of the greatest strength necessary for the most difficult case of putrefaction that may arise, but more often, for the purification of water, one gallon will make 4,000 gallons."—(*Commercial Daily List*, September 15, 1857.)

XIII.

Condy's Fluid is invaluable for innumerable domestic purposes, and especially so in dairies and farm houses.

HOUGHTON-LE-SKERN

SIR,

July 28, 1860.

I have much pleasure in bearing testimony to the efficacy of your Disinfecting Fluid as a deodorizer, having now used it in various ways for the last three years. Among other instances, I may mention, that in my dairy where the milk of twenty cows is kept, I have found it of very great advantage for washing the floor (composed of lime and gravel), which was apt, by absorbing the spilt milk, to turn sour. I have a friend, too, who tried it in the case of a dead mouse or rat, which was supposed to rest under a drawing-room floor, and where it completely removed the offensive smell arising therefrom.

It occurred to me to try it in the case of a cow casting her calf in a styre which contained seven others, and at a time when I could not appropriate any separate place for her; and I am glad to say, that it overcame the usual fetid smell experienced on such occasions, and that none of the other cows were in any way affected by taint or infection.

Since I became acquainted with the valuable properties of your fluid I have fortunately not been visited with Lung Disease, though I doubt not, in such cases, it would be found extremely valuable. I must not forget also to mention the fact that a box of grouse, which was sent me last year from the north of Scotland, by some mistake was forwarded from Aberdeen to London by steam, and thence sent back by rail to Darlington. On opening it the smell was most offensive, so much so, that I despaired of using its contents. Condry's fluid was thought of, and the grouse were hung up with rags or strips of calico steeped in the fluid, put under their wings and about them, which the bad smell was removed, and the game kept quite fit for several days or a week after.

You are welcome to make any use of this communication you may think proper, feeling as I do, that from the efficacy and cheapness of your fluid, it only requires to be better known in order to be very extensively used.

I am, Sir, your obedient servant,

J. Condry, Batterssea.

DAVID NESHAM.

CONDY'S DISINFECTANT.—Our notice has been attracted to "Condry's Patent Fluid," or natural disinfectant, a most useful and scientific discovery, which has been reported on in the highest terms by the best medical and chemical authorities of the day, as a safe and permanent destroyer of bad smells, and consequently, a very essential adjunct to health. This preparation copiously possessing pure ozone of the atmosphere, is an effectual preventive to those prevailing maladies, dysentery and cholera, fatal to so many at this season, and in most cases brought on by the closeness and impurity of the atmosphere breathed by the inhabitants of crowded towns. We should strongly recommend it to be included in the list of domestic articles for daily and liberal use, in our dwellings, as it is entirely harmless, and free from all unpleasant effluvia, and its mixture with impure water imparts the freshness and purity of that taken from the spring.—(*Morning Chronicle*, Aug. 24, 1857.)

10, GRAFTON STREET, BOND STREET, W.

September 15, 1857.

Having tested your "Patent Disinfectant," in many cases requiring and in all with perfect success, I have no hesitation in stating that it is the best known to me. Its importance for institutions where there are patients who from imbecility or other causes, have no control over their evacuations is patent; in such cases as well as in cases of a more domestic or even farm-house character, I have used

it with such satisfaction that I have instructed a neighbouring chemist to send a gallon.

Faithfully yours,

GEORGE N. EPPS, M.D., M.R.C.S., Eng
Physician to Harrison's Spinal Institutions, &c. &c.

Mr. H. Bollmann Condry.

SIR,

D———M, *November 7, 185*

I always have some of your fluid put into the water with which the dairy-floor is washed and now find it perfectly sweet—before it had a greasy disagreeable smell, even after being washed with clean water, so much so that I often supposed the servant used dirty water although she assured me such was not the case.—I also have all the dairy utensils washed with a little, including the barrel in which the milk is brought down from the farm. In summer I keep saucers filled with diluted fluid in the dairy and larder changing them when brown. When game smells high I have a piece of calico dipped in the pure Condry and put on the bird, changing it every day. So highly do I think of your Fluid that I would not be without it.

Yours obediently,

H. B. Condry, Esq. London.

E. M. J.

XIV.

While the so-called disinfectants, such as the metallic chlorides and various carbolic and pyroligneous compounds, manifest their deleterious nature on being applied to vegetation, Condry's Fluid, under the same circumstances, proves itself not only innocuous, but moreover a most powerful agent in restoring and maintaining the health of plants.

WALTON ROAD, NEAR LIVERPOOL

SIR,

August 15, 1860.

I have great pleasure in giving my testimony to the excellent effect of Condry's Fluid on vegetation. Having been troubled with the green fly on my lettuce and other vegetables, I was induced to try the Fluid in its diluted form, and have experienced the most salutary results from its use, in the destruction of all the insects, and the general improvement in the growth of the vegetation. In all my experience of above thirty years as a gardener, I never met with anything to equal it.

I am, Sir, yours respectfully,

Mr. H. Bollmann Condry,
Battersea, Surrey.

JOHN MUSKIE

XV.

For veterinary purposes in general, and the cure of sheep and lambs when attacked by foot-rot, scab or fly, and for dressing after shearing; for horses, cattle and dogs infected with grease, mange and surfeit; also for dressing old sores, ulcers, gangrenous wounds and all cutaneous diseases, Condyl's Fluid stands pre-eminent.

53, GREAT MARYLEBONE STREET,
PORTLAND PLACE, W.,

R,

September 3, 1845.

I have refrained from giving any opinion on the properties of your Patent Fluid, until I had given it a full and fair trial; this I have done, having used it undiluted as a detergent and excitant to several cases of disease in the heels and feet of horses, and as a first dressing for foot-rot in sheep. In crowded, close, and ill-drained stables, I have also recommended its use, and in each case with the most marked success. I am now just returned from attendance on a kennel of dogs in which virulent distemper had broken out; here I used it diluted as a deodorizer and disinfectant, sluicing, washing, and sprinkling everything with it, with an effect far surpassing any of the compounds of chlorine I have generally used, as it completely destroyed the offensive smell, without causing the injurious irritation always produced by chlorine on the already irritated mucous membranes of the dogs suffering from this malady.

In short, Sir, I consider it a boon to the veterinary profession and the sportsman, and a benefit to humanity at large.

Yours respectfully,

W. H. KENT, M.R.C.V.S.,

Bollmann Condyl, Esq.
Battersea, Surrey.

Consulting Veterinary Surgeon, and
Canine Pathologist.

XVI.

Condyl's Fluid affords a wholesome and certain means of eradicating the nuisances to which slaughter-houses, butchers' shops and all trades dealing with animal matter, are subject.

5, FRANCIS STREET, GOLDEN SQUARE,

September 3, 1857.

We have on several occasions used "Condyl's Patent Fluid" with the most satisfactory result.

G. & H. CHARKER.

3, THREADNEEDLE STREET, E.C., LONDON

August 1, 1858.

SIR,

I have used your Disinfecting and Deodorizing Fluid for some time in my business; and during the present hot summer have found great advantage from sprinkling my premises three or four times a day with it, diluted in spring water. It keeps the shop clean and sweet; and I really believe, in some degree, thus retards the decomposition of meat.

I am, dear Sir,

Your very obedient servant,

JOHN BANISTER

Purveyor to Her Majesties

H. B. Condry.

SIR,

CANNON STREET, CITY

I have tried your Fluid, and find it answers the purpose of a disinfectant in an eminent degree: I can recommend it with pleasure.

I am, Sir, yours, &c.

Mr. Condry.

CHS. GAMBLE

22, WORMWOOD STREET, CITY

SIR,

August 9, 1858.

I have tried your Disinfectant and Patent Fluid, and find it very beneficial in my business, as it keeps the shop particularly fresh and sweet: and in every way has the desired effect.

I remain, dear Sir,

Yours obediently,

Mr. Condry.

W. J. SCOTT

WORMWOOD STREET

SIR,

July, 1858.

I have used your Fluid for some time, and find it answers admirably, and would recommend all butchers to use it, both in slaughter-houses and about the premises, as it tends to keep the place sweet.

W. MOORE

DEAR SIR,

RYE LANE, PECKHAM

I have used your Disinfecting Fluid, and find it answers the purpose of purifying the atmosphere of my shop, and retarding decomposition.

Mr. H. Condry.

JOHN BROWN

XVII.

The fact that the emanations from the bodies of large numbers of persons closely congregated in rooms are particularly injurious to the delicate and impressionable frames of children, renders Condyl's Fluid which acts by imparting oxygen or vital air, peculiarly applicable for the purposes of purifying and disinfecting schools and class-rooms.

KIRKDALE, *January 12, 1858.*

Condyl's Disinfecting Fluid has now been used at the Industrial Schools for several months, as a deodorizer with the most satisfactory results. I have, therefore, much pleasure in bearing testimony to its value.

EDWARD PARKER, F.R.C.S.,
Surgeon to the Industrial School.

DEAR SIR, SYDENHAM, *July 30, 1857.*

I am pleased with the results of the use of the Disinfecting Fluid at the U. S. I. Schools, as far as I have seen them. Will you send me a gallon bottle (or two gallons) in order that I may experiment with the substance at leisure at my own home.

Yours obediently,

L. B. Condyl, Esq., Battersea.

R. WILKINSON.

XVIII.

Pure air being of much greater importance to the sick than to the well, and the emanations from the human body being generally more noxious during sickness than in health, it is evidently of infinite importance to maintain the purity of the sick room. While bearing in mind that "no chemical disinfectant can supply the place of cleanliness and ventilation," those who have the charge of the sick may with confidence employ Condyl's Disinfecting Fluid as a valuable auxiliary, seeing that it contains, in a concentrated form, the very agent—oxygen in an active condition—by which ventilation operates. By the use of Condyl's Fluid, in addition to cleanliness and ventilation, Miss Nightingale's first nursing precept, namely, 'Keep the air breathed by the patient as pure as the external air,' may even in certain instances be surpassed; since by its

means the air of a chamber can be rendered *purser* than the external atmosphere, when the latter, as in crowded and unhealthy localities, is under the normal state of purity.

1, SAVILLE Row, V

June 11, 1857.

I have great pleasure in bearing my testimony to the favourable effects of "Condyl's Patent Fluid," as a speedy and efficient deodorizer. In removing the smells from drains, cesspools, manure heaps, and all forms of decomposing vegetable and animal substances, it is very effective. It may also be used with advantage in the sick room, and in fact, wherever the object is to prevent the giving off of unpleasant odours, or the arrest of putrefactive processes which are attended with the discharge of strongly smelling gases.

EDWIN LANKESTER, M.D., F.R.C.S.,

Medical Officer of Health of St. James's, Westminster

I have much pleasure in bearing testimony to the value of Condyl's Disinfectant, in destroying the effluvia of sick rooms and the evacuations from the sick, and in counteracting the effects of decomposition of the body after death.

CHARLES EVANS REEVES, M.D.,

Author of *Diseases of the Stomach and Duodenum, Diseases of the Spinal Cord and Paralysis, &c.* &c.

14, FINSBURY CIRCUS, E.C., LONDON

SIR,

October 11, 1858.

You were kind enough to send me some time ago a bottle of your excellent preparation for purifying sick rooms and removing offensive odours, &c. I write to mention to you, that I have used, and in practice have directed the same to be employed for the purposes you have described, and it is but fair to tell you, that my experience of its use fully justifies every assertion you have published of its value. I shall certainly continue to advise its employment in all cases in which it is adapted, and do esteem it as not only in every way preferable, but superior in its effects to chloride of lime.

Yours truly,

HENRY STEVENS,

Surgeon to the Islington Dispensary

H. B. Condyl, Esq.

SLOANE SQUARE, CHELSEA

March 20, 1858.

A resident in my house having died very suddenly and unexpectedly in full habit of body, decomposition commenced and

inued so rapidly, that before the inquest, to inquire into the cause of death, could be held, or the body interred, the effluvia arising was so intense and offensive that it was impossible to remain in the house. I used chloride of lime, chloride of zinc, and other remedies recommended for removing smells, but without any effect at all. I then tried 'Condy's Patent Fluid,' using half-a-pint, diluted with water, in sprinkling about the room, staircase, &c., which immediately removed all trace of the nuisance.

WM. T. C. WATKINS.

78, WARWICK SQUARE, BELGRAVIA,
October, 1858.

I have much pleasure in bearing my testimony to the value of 'Condy's Patent Fluid' as a disinfectant. I have had ample opportunities of testing its properties, and in every case it has proved highly efficacious in removing putrid effluvia. I consider it a remedy of great value (used topically) as well as a most important agent in the management of the sick room.

WILLIAM GROVE GRADY, M.D., M.R.C.S. E. & I.
Medical Officer to the Pimlico General Dispensary.

XIX.

Condy's Fluid recommends itself particularly as a disinfectant in hospital practice by reason of its additional utility as a curative agent. In being freely used as a topical application to sores and wounds, it is, at the same time, acting as a general disinfectant and purifier of the wards. It has sometimes been objected to its use that it stains the linen and boards. In the strong state before being diluted it undoubtedly does stain; but Condy's Fluid ought never to be employed in that form, except occasionally as a remedy. When made down for use by the addition of the proper quantity of water, it will not stain the most delicate cambric. Of course, when used concentrated as a topical application it will stain whatever it comes in contact with. But so does nitrate of silver, which is not, however, the less employed on that account. The stains from Condy's Fluid are moreover easily removed by dilute muriatic acid, aided when convenient by warmth.

No. 456 of 1859.

From the Director-General, Medical Department, to the Secretary to Government, Military Department.

SIR,

Dated February 21, 1859.

Adverting to your letter, No. 712, of the 26th January, 1858, I beg to report that "Condy's Disinfecting Fluid" sent out by the Honourable Court of Directors for trial and report, has been distributed with the greatest advantage. I have received from several medical officers who have made use of this Patent Fluid the highest testimonials in its favour, as the best of its kind ever introduced. The Surgeons of the European General, Jamsetjee Jeejeebhoy, and Artillery Hospitals at the Presidency, state that "Condy's Fluid" has been used with perfect success in destroying the offensive odour of substances, and is an excellent application to foul sores and fœtid ulcers. The same favourable reports have been received from our stations, and nearly all concur in considering it superior to the chloride of zinc, as a deodorizing and disinfecting agent.

I beg to recommend that the Home Government be solicited to send out a further supply of "Condy's Patent Fluid," and that I may be permitted to direct the Medical Storekeeper to indent upon England

I have, &c.

(Signed) B. P. ROOKE,

Director-General to Medical Department

Bombay, February 21, 1859.

(True copy.) P. M. MELVILLE, Colonel,
Secretary to Government

LIVERPOOL, *November 16, 1857*

"Condy's Disinfecting Fluid" has been tried in our hospital with very great success. As a disinfectant it is certainly the best I have ever used, or seen used, its action being almost immediate. In poultices it answers very well, destroying all smell, and cleansing the wound more quickly than any other application. I shall be glad of an opportunity of more extended trials, as I feel confident it will be found of great service in the hospital.

JOSEPH JOHN POPE, M.R.C.S.,
Senior House Surgeon, Southern Hospital

LIVERPOOL, *October 30, 1857*

Having ordered "Condy's Patent Fluid" to be applied to foul ulcers and gangrenous wounds, the results have proved most satisfactory. I have, therefore, much pleasure in bearing testimony to its valuable properties, as a general-disinfectant. I very much prefer it to any other I have ever used, and consider it extremely serviceable, in hospital practice.

W. B. WALL, M.R.C.S.,
House Surgeon, Northern Hospital

TEMPLE ROW, BIRMINGHAM,
February 24, 1858.

I hereby certify that I have made use of "Condy's Patent Fluid" as an application to foul ulcers, with a view to destroy unpleasant smells and generally to act as a disinfectant. I have found its action of the most satisfactory kind. Further I have used the fluid to sprinkle over the beds of patients, over the floors, and in the receptacles for dressings, &c., removed from wounds; in all respects its action has been sure and speedy, and I beg to recommend it to the notice of all those who may be engaged in hospital practice. In addition I have extensively used this fluid in the dissecting room; its effect has been to sweeten a decomposing part, and to act as a preservative to the issues fairly exposed to its influence by the use of saturated bandages. It is my opinion that it is a safe material to have about sick rooms, and I beg, therefore, to advocate its use as a disinfecting (as well as a leodorizing) agent.

OLIVER PEMBERTON,
Surgeon to the General Hospital, and Teacher of
Practical Anatomy, in Queen's College, Birmingham.

XX.

In addition to its power of counteracting and remedying the unwholesome results of the decomposition of animal substances, Condy's Fluid possesses the property of effectually destroying the poisonous matters engendered by the dead human subject, and thus of preventing the fatal consequences of dissection wounds. It moreover has the advantage of exerting no corroding action on the instruments used in dissection, the edge of which is rapidly blunted by the use of the metallic chlorides.

CHARING CROSS HOSPITAL, *March 5, 1857.*

This is to certify that "Condy's Solution" has been employed for the purpose of practical anatomy at the Charing Cross Hospital Medical College during the sessions of 1856-7, and has answered extremely well.

It possesses an advantage over the chlorides in not bleaching muscular structures.

S. W. J. GOLDSBRO', M.D.,
Demonstrator of Anatomy at the Charing Cross
Hospital Medical College.

CHARING CROSS HOSPITAL, *March 7, 1857.*

This is to certify that I fully concur in the opinion given by Dr. Goldsbro', of the value of "Condy's Disinfecting Fluid."

EDWIN CANTON, F.R.C.S.

ROYAL INFIRMARY SCHOOL OF MEDICINE,
LIVERPOOL, *December 1, 1857.*

I have much pleasure in bearing my testimony to the value of "Condy's Patent Fluid" as a deodorizer and disinfectant, having latterly tested its properties in a variety of ways. In the dissecting room I have found it valuable in destroying the effluvia from the decomposing bodies; and in arresting the putrefaction of substances immersed in it. In the sick room it has a most beneficial effect; and as it possesses no odour of its own, is not objectionable. It rapidly destroys the offensive smells, whether arising from the bodies or evacuations of the sick. I believe it to be the best preparation of its kind we are possessed of.

A. T. H. WATERS,

Lecturer on Anatomy and Physiology, &c. &c.

PARK STREET, GROSVENOR ROAD,
August 21, 1858.

DEAR SIR,

I have tried the effect of the Hypermanganate Solution, which you were so kind as to send me, upon different decomposing substances with very satisfactory results. I was much struck, moreover, by the rapidity with which it destroyed all trace of the very foetid odour of a post mortem examination in which I had been engaged, without leaving any other smell, or any stain upon the hands.

I am, yours truly,

JAS. MORRIS, M.D., F.R.A.S.

XXI.

On the Permanganates, as remedial agents, an entire volume might be written. The more they are employed, the greater is found to be the number of cases to which they are applicable. As local remedies, it will be seen from the following reports, that their use has produced the most marked benefit in cancerous, sloughing, and syphilitic sores, ulcers, burns, and suppurating surfaces in general, affections of the uterus, caries of bone and erysipelas, as a caustic application to warty growths, an injection in gonorrhœa, and a gargle for sore throat. Considering the nature of the action exerted by the permanganates, I think there is every reason to suppose, that the list of external diseases for which they are peculiarly well suited might be greatly augmented, especially from among affections of the skin and eyes, which are so commonly connected with bodily impurity, diseases of the rectum, and ailments accompanied with discharge

or exudation from a mucous surface—including that fatal and obscure disease diphtheria.

Comparatively little appears as yet to have been done by the medical profession in the way of testing the action of the permanganates by internal administration, and the only reports I am at present in a position to publish are those of Dr. Pettigrew, of London, and Dr. Nelson, of Birmingham, who have prescribed the pure permanganate of potash with excellent results in low fever, gangrene of the lungs, and putrid dyspepsia. But there have come to my knowledge, more or less directly, many other cases, such as of diarrhœa and leucorrhœa, in which, as an internal remedy (seconded in the latter by its use topically), the permanganate of potash has been entirely successful. The subject is well deserving of investigation, and I am convinced would richly repay the medical man who should seriously and conscientiously undertake it.

I can so far pave the way to the freer use of the permanganic salts by stating that, having during several years been in the habit of drinking water with an addition of a few drops of my Ozonised Water, I can without hesitation affirm that the permanganates in their pure form as in the above preparation, are perfectly wholesome, and though capable of exerting a most powerful action on the various matters which emanate from the body and its mucous membranes, they would seem, when properly diluted, to be almost incapable of producing any immediately sensible operation on the living structures. They may be said to act rather on the circumstances or conditions, so to speak, of the parts, than on the vital tissues themselves. This explains the remarkable fact that while possessed of unsurpassed power in thoroughly cleansing foul sores, the permanganates never cause pain or irritation, but on the contrary, uniformly produce direct alleviation of suffering.

Their use as a remedial agent is moreover attended by one most important advantage, which cannot be too much insisted on, namely, that their employment in the treatment of any particular case, is productive of such purifying and disinfecting action on all matters circumjacent to the affected part, as cannot but constitute an improvement in the general sanitary circumstances of the patient. This property would seem to point to the permanganates as calculated, in a remarkable manner, to overcome those virulently morbid conditions, on which depend the generation and propagation of such fatal and hitherto uncontrollable diseases as puerperal fever and hospital gangrene. It is one also which ought to engage the serious

attention of homœopathic practitioners who lay so much stress on purity. The preparation called Condyl's Patent Health Fluid has been manufactured expressly to meet these remedial applications of the alkaline permanganates, and it is this only which is specially recommended and sold as an external curative article.

SIR,

HAMMERSMITH, *July 28, 1860.*

After numerous experiments on the capabilities of various disinfectants, I consider yours stands pre-eminent. Its inodorous character, rapidity of action, and facility of application, as a general disinfecting agent should command for it an extensive use; whilst as a cleansing application, in a diluted state, to cancerous and other offensive ulcers, I have found it productive of the most beneficial results.

I am, Sir, yours faithfully,

FREDK. J. BURGE,

Medical Officer of Health,
Fulham District.

Mr. Condyl,
Chemical Works, Battersea.

"CONDY'S FLUID IN ULCERATED SURFACES.—This fluid, which consists of half a drachm of the permanganate of potash to a pint of water,* is being extensively tried at the Middlesex Hospital by Mr. Henry and others, in cases of burns, large ulcers, and suppurating surfaces, arising from any causes, especially where secretions are not only copious, but at the same time offensive. A case of very severe burn about the body and thighs of a female, admitted on the 2nd of October, is doing well with "Condyl's Fluid." She had Carron oil applied the first day, and "Condyl's Fluid" was commenced on the fourth day, with immediate relief to the pain. This fluid prevents any fœtor arising from the suppuration. It was employed in two or three instances of cancer of the breast, from which there had been a very foul discharge; also in obstinate ulcers of the leg, and apparently with benefit."—(Clinical Records [Editorial], *Lancet*, 1st January, 1859.)

"This combination of manganic acid and potash will, I hope, attract attention, and supply an efficacious caustic, convenient for application, less painful than all others, and free from injurious effects upon the constitution. Its well-known disinfecting effects suggests its use in all foul and phagedænic ulcers, and I have no doubt that large crops of warts may be conveniently removed by its agency."—(Mr. Weeden Cook, Surgeon to the Cancer Hospital, in *Lancet*, August 22, 1857.)

* The strength of the Fluid is considerably greater than here stated. The lotion used was apparently one composed of 2 oz. of Disinfecting Fluid (as sold) to 1 gallon of water—or 1 to 160.

"THE DEODORIZING OF FOUL ULCERS.—Mr. Weeden Cooke referred to the sulphate of lime and coal tar which has lately been much used and extolled in the French and Italian hospitals, for the purpose of cleansing foul and sloughing ulcers. He had himself employed it, and thought that its virtues and advantages were much overrated; that it sometimes produced more irritation in the part than was desirable, and that it was less convenient in application than other equally effective cleansing remedies, whilst it was far inferior in value in sloughing ulcers to the manganate and permanganate of potash [Condy's Fluid.]—(Mr. Weeden Cooke, at Medical Society of London, October 24, 1859.)

"CONDY'S DISINFECTING FLUID (PURPLE)—which is, I believe, a concentrated solution of the permanganate of potass, was used in the proportion of two drachms to a pint of water as a vaginal injection three times a day. The proportions were rapidly increased up to one fluid ounce to a pint of water. The result was in every way satisfactory. The gentleman previously alluded to, digitally examined the patient with me a few days after it had been used, and the smell was very much lessened, as also the amount of the discharge. One great advantage in the use of the permanganate is, that it has no smell of its own, and that, being soluble, it may be used either in the form of a medicated pessary, or in that of an injection. From my experience of its use, I can confidently recommend it in the proportion of one fluid ounce to a pint of water, as a deodorant in cancer of the uterus; a cupful to be used as an injection thrice daily, and the strength to be increased, if found necessary.—(Dr. T. Skinner on Carcinoma Uteri, in *British Medical Journal*, December 3, 1859.)

7, CHESTER STREET, July 18, 1857.

I have tested Mr. Condy's Disinfectant Fluid in every possible way, upon all manner of putridities, both solid and fluid, and I have no hesitation in saying that it is perfect as a true chemical disinfectant; I have used the same fluid as an internal remedy in cases of putrid and low fever, with the most beneficial effect.

W. VESALIUS PETTIGREW, M.D.,

Hon. F.R.C.S. of England, formerly Lecturer upon Anatomy and Physiology at St. George's School of Medicine.

DEAR SIR,

C———Y, August 6, 1860.

In the course of experiments with the Ozonised Fluid, it struck me, that it might possibly act in a very decisive manner in the earliest stages of erysipelas. Such cases often begin with a sensation of itching and irritation at a point, as it were, which, if not checked, spreads like wildfire. In this early stage, nitrate of silver very often acts decisively.

An opportunity occurred to me of trying your fluid in such a case, and the effect was to put an end to the malady at once.

Yours truly,
G. O.

“ON SOME OF THE USES OF PERMANGANATE OF POTASH.—In the case of a barrister, I was consulted respecting a most unhealthy eroding ulcer on the thigh. The permanganate was applied as a lotion, and was most efficacious in removing the slough, cleansing the sore, and inducing healthy action.

An elderly female, long afflicted with caries of the tibia, which, from the offensive odour generated by this condition of bone, prevented her performing the duties of her position in life, with any comfort to those around her, has enjoyed perfect freedom from this annoyance ever since she has had recourse to the permanganate as an application to the leg.

In the case of a naval officer afflicted with cancer of the breast, the application was most serviceable. From a gaping sore in most offensive condition, it occasioned the wound to assume a disposition to granulate. The odour of the apartment previous to the employment of the permanganate, was so offensive as seriously to compromise the comfort of the family. This inconvenience is entirely removed.

This lotion supersedes all the charcoal, yeast, and carrot poultices. As a deodorant, as a stimulant, as an escharotic, it is a most useful application, combining, as it does, all these three qualities: in such cases for instance, as old chronic ulcers, warty growths, syphilitic sores, a caustic in the primary stage, or in gonorrhœa, as a stimulant injection. Sufficient to cover the surface of a plate placed under the bed, or any where most convenient in the sick chamber, all odour disappears. I have employed it in my stables and in other places engendering odours. All these odours are destroyed by the dish containing the solution.

The permanganate of Potash, may be purchased, wholesale, at the Battersea Chemical Works, of Mr. Condry, the patentee.”—(Dr. G. E. Girdwood, abridged, in *Lancet*, 12th September, 1857.)

56, CURZON STREET, MAYFAIR,
August 26, 1858.

A trial of “Condry’s Fluid” has convinced me that it is really what it professes to be, viz:—not only a deodorant, but a *disinfectant*. I entertain no doubt whatever, that it will prove to the profession a most valuable auxiliary, both in the prevention and treatment of many diseases.

A. B. MADDOCK, M.D.,
Author of *Treatises on Diseases of the Chest
and Nervous Systems*.

23, SUFFOLK STREET, PALL MALL,
May 10, 1859.

I have great pleasure in bearing testimony to the efficacy of “Condry’s Fluid,” as a general disinfectant, and believe it also to be invaluable as a remedial agent.

F. R. HOUGHTON, M.R.C.S. E. & L., A.B.

SIR,

BIRMINGHAM, *August 4, 1860.*

In reply to your note, I have to acknowledge your politeness in causing a specimen of the pure Permanganate of Potash to be left at my house. I have used the liquid for my own family purposes, on occasions when its virtues were required; and have found a perfect fulfilment of the promised results. I have also requested my chemists to obtain it for medicinal purposes, which they have done, and on prescribing its use in putrid dyspepsia and gangrene of the lungs, and its external application in cancerous ulcers and the like, the effects have proved most pleasing and satisfactory.

I remain, Sir,

Your obedient servant,

H. B. Condry, Esq.

DAVID NELSON, M.D.

DEAR SIR,

LIVERPOOL, *June 8, 1858*

When I was ill, I was troubled with a nasty tongue, and a great deal of fetid matter, which was very offensive, and at Dr. Higgins's recommendation I used "Condry's Fluid" as a gargle, and it not only destroyed the fetor but took away all disagreeable smell at once. It is employed regularly in the Birkenhead Hospital to wash foul sores, and for putting into basins containing offensive matter. I find it most efficacious in our open privy this warm weather: it entirely removes all smell. Altogether it is a very valuable preparation and deserves to be universally known.

Yours faithfully,

J. G. Stuart, Esq.

EDMUND THOMPSON.

XXII.

The cause of Public Hygiene has found in Condry's Fluid a most important agent, familiarity with whose effects, far from diminishing the belief in the advantages of ventilation and cleanliness, without which disinfection is of comparatively little avail, by demonstrating to the senses the remarkable purifying properties of nascent oxygen, inculcates in the minds of those who use it, a more than ordinary appreciation of the value of those essentials of health. As an auxiliary to ventilation, due water supply, adequate drainage, and extended popular knowledge on sanitary science, the artificial ozone of Condry's Fluid, brought to bear on a large scale upon the more concentrated forms of impurity, would go far to reduce our excessive rates of mortality, to prevent contagious and epidemic diseases like cholera and typhus fever, and, perhaps, ultimately deliver us from those so-called "catching" illnesses of infancy,

such as measles and scarlatina, which we are too prone to consider to be affections necessarily incidental to childhood, and a portion of the lot of humanity in early life. No other article whatever contains, in a concentrated shape, such available power in destroying impurities and preventing diseases, as Condyl's Disinfecting Fluid.

"The above favourable results are extracted from my notes of 'Experiments made on Disinfecting Agents,' and they are such as quite convince me of the superiority of 'Condyl's Fluid' over all other disinfectants, and as such I shall, continue to recommend it.

In my official capacity, I have ordered its use in this district in houses that were infested with fever, &c., and in others, that were impregnated with foul smells, and in drains during cleansing, alteration, and repairs, and in cesspools previous to being cleansed, and it has always proved most satisfactory.

I have recommended its use to butchers, fishmongers, rag and bone merchants, and marine store dealers of the parish, who have adopted its use, and are much pleased with its efficacy.

I consider it a most valuable sanitary agent, and one that ought to be used extensively in all populous neighbourhoods."

JAMES H. MORGAN,
Sanitary Inspector of St. James's, Westminster.

DEAR CONDY, RIO DE JANEIRO, *December 7, 1858.*

I have had a personal interview with Dr. Candido on the Public Health question, which so far proved very satisfactory. He told me that he found your disinfectant the very best he had seen, and has already proposed it to the town authorities.

Yours truly,
E. L. WEIGALL.

DEAR CONDY, RIO DE JANEIRO, *May 8, 1859.*

I met Dr. Candido the other day, and he is now again engaged with the Government on the subject of disinfection. It appears after all, that the powder I made from a bottle of the stuff must have turned out right, for he tells me he has made several experiments, and there is not the slightest doubt but that it is completely efficacious.

Yours truly,
E. L. WEIGALL.

SIR, LIVERPOOL, *November 17, 1857.*

According to your instructions, I have made experiments with "Condyl's Patent Disinfecting Fluid." I have tried it in the proportions of about two ounces of the fluid to four gallons of water, in the

animals in Lower Castle Street, in that by the Fish Market, and in another that had been left unwashed for the purpose of the experiment, and the result was a complete removal of the offensive smell. I also made a trial of it, mixed in the same proportions, on some bad fish, from which it also removed the offensive smell.

I am, Sir, your obedient servant,

James Newland, Esq., C.E.,
Borough Engineer.

JOHN PARSONS,
Inspector of Scavengers.

SIR,

BARNSBURY PARK, *August 29, 1857.*

The opinion I have formed of "Condy's Patent Disinfecting Fluid" is highly favourable. I have used it at the Model Prison, and elsewhere as a disinfectant and deodorizer, especially as applied to water-closets and drains, in which it has answered fully its intended purpose. I have also used it in the dead-house with much advantage; and under my direction it has been successfully employed at the Gas Works of the Model Prison for destroying the offensive offluvia given off from foul water, &c., in the wells of the gas holders. I consider "Condy's Fluid" to be a valuable sanitary agent in the hands of those who have the medical charge of large bodies of men, and to be besides well adapted for the use of families in private houses.

I am, Sir, yours faithfully,

CHAS. LAWRENCE BRADLEY, F.R.C.S.,
Surgeon to the Pentonville Model Prison, Member of the
Epidemiological Society, &c. &c.

"DEODORIZING AND DISINFECTING PROCESS.—At a moment when the state of the Thames and the possibility of purifying its noxious waters are subjects of so much interest to all classes in the metropolis, any proposition by which so desirable an object would be likely to be attained possesses a claim to public attention. As various are the positions and pursuits of their authors are the schemes by which this wished-for end is sought to be accomplished. By some it is contended that every plan which has been shadowed out with that view must prove futile, except that in accordance with which the filth of London should be intercepted before it reached the river, and at an outlay of millions conveyed into the sea; while in the process of deodorization and disinfection others maintain is to be found the most simple and least expensive solution of the difficulties by which the question is beset. With the view of showing how much might be effected by that process some interesting experiments took place on Saturday last, at the Chemical Works of the Messrs. Condy, at Battersea. The agent employed upon the occasion was "Condy's Patent Disinfecting Fluid," which consists of solutions of manganate or permanganate of soda or potash—salts which, in consequence of their containing and emitting with facility a large quantity of oxygen, are peculiarly applicable to purposes of disinfection and deodorization. Used as a test of the purity of water, these results were obtained—

that while distilled water assumed and retained to a great extent the purple colour of the fluid when mixed with it, the presence of organic matter was indicated in the case of spring, and less pure water by the rapid decolorization of the disinfecting substance. The action of the fluid as a test of the comparative purity of different waters having been thus ascertained, its operation as contrasted with that of lime, which is now being used at an expense of 1,500*l.* per week to obviate the stench arising from the river, was shown by the following process. Two large glasses were filled with sewage water emitting a most offensive odour, that in one of the glasses being subjected to the action of lime, while into the other a small quantity of the disinfecting fluid was poured. Both those substances operated effectually as precipitants but it was alleged that, whereas in the case of the former deodorization simply had taken place, in the case of the latter actual disinfection had been produced, owing to the fact that the organic impurities contained in the water which had been subjected to its influence had undergone a process of combustion, and that the cause of the odour or putrefaction had in consequence been permanently removed, instead of being merely temporarily disguised. In illustration of this view, the test of its capability to retain the colour of the disinfecting fluid was applied to the water in each of the glasses, when the continued presence of organic matter in that which had been treated by lime, and the absence of such matter in the instance in which the fluid had been used, would appear to be established by the decolorization in the one case, and the retention of the colour in the other case, of the disinfecting agent. The result of the application of such an agent at the various outlets of the sewers running into the Thames would be, in the opinion of the patentees, to obviate a nuisance which has now assumed so serious a character. It is admitted that the process would involve a considerably larger outlay than would be necessary in the case of lime, but then the Messrs. Condry contend that that outlay would be more than counterbalanced by the value of the deposit which would be created under the operation of their scheme, and which they say would retain all its fertilizing properties, while that created under the action of lime had been proved by experience to be completely worthless as a fertilizing agent. Nothing, it may be added, could be more complete than the success of the fluid in rendering the impure water upon which it acted clear and devoid of all offensive odour. How far it would tend to solve the great Thames problem it is for the proper authorities to determine."—(*Times*, July 5, 1858.)

8, SAVILLE ROW, W.,

July 24, 1858.

DEAR SIR,

I am much obliged by your favour of the 18th. What I write to you now more especially about, is to know if you are prepared to apply your deodorizing fluid to so large a purpose as the deodorizing of the Thames. I should be glad if you could let me know early, as I am convinced your preparation would be more efficacious than

anything else, and if its cost be not too great, I think it should be applied.

Very faithfully yours,

H. B. Condry, Esq.

EDWIN LANKESTER.

"We were witnesses, on Saturday, of a series of experiments which left no doubt as to the efficacy of the process. The fluid thrown in at the mouths of the sewers would render the sewage perfectly harmless. It then becomes a mere question of expense. Messrs. Condry declare that the expense will be covered by the sale of the manure. Most unquestionably this deserves most serious consideration, and we hope that due inquiry will be made into it by those most competent, as offering a solution of the difficulty, more practicable than any we know of, and which can be fairly tried without any large preliminary expense."—(*Morning Chronicle*, July 6, 1858.)

"The agents which, in the present stage of my inquiries, seem to promise most hope of securing all possible advantages [in the disinfecting of the gases of sewers] are,—

4th. The manganates and permanganates of potash. These constitute the active principles of "Condry's Disinfecting Fluid," and form an admirable means of destroying impure gases. They, however, with others, have hitherto ranked only amongst the strictly *local* disinfectants, and from their non-diffusible nature could not be satisfactorily applied to the gases pervading the atmosphere of large sewers.

The mode by which I think they can be made available is by saturating very coarsely-powered charcoal with a rather strong solution, and securing the passage of the sewer air through the material by means of a series of traps or metal tubes."—(F. J. Burge, Medical Officer of Health, in Report for the Fulham District, to the Board of Works, September, 1858.)

"We were present on Saturday at the performance of some extremely interesting, and, at this particular time, very valuable experiments in deodorizing sewage water. The experiments were carried on by Mr. Condry, at his extensive chemical works near Battersea Bridge, and consisted of tests by his patent disinfectant and deodorizer as compared with lime, the water used for the purpose being selected, as the most offensive, from the outlet of the Pimlico sewer into the Thames. This water was certainly most obnoxious, containing not only the sewage water, but also the deleterious fluid from the adjoining gas works. In the first place, portions of the foul water were poured into glass vessels, and lime, as recommended to be used in the Thames, was applied. The almost instant result was a settlement of the foreign bodies in the bottom of the vessel. Next, some of the same water was placed in a similar vessel, and a very small quantity of Condry's patent fluid disinfectant was applied; a precipitate, as in the lime test, took place. But here, the great value of the patent fluid over lime, as a perfect deodorizer, was clearly demon-

strated in a most complete manner; for while the water on which the patent fluid was applied became perfectly clear, and retained the pinkish tint imparted to it by the fluid, that water to which the lime was applied still contained the putrescent organic matter, which renders the water so impure. Both samples of water were filtered and on the patent fluid being applied, the pinkish tint was immediately observed in the sample which had been treated with Cond's Fluid, while that in which the lime had been used became a dingy brown, thus showing the presence of organic matter. To overcome this, a larger quantity of the patent fluid was applied, and the result was the utter destruction of the impurity; in fact, there was no hesitation on the part of scientific men who supported Mr. Cond in drinking the water, which, previous to the application of the disinfectant, had been so obnoxious that none of those present could approach it. Experiments were also made with what is generally known as pump water, and with distilled water. The object was to show the power of the disinfectant in destroying the impurities of the organic matter which is known to exist in pump water, but not in that which has undergone the process of distillation. The effect was most instantaneous, the disinfectant causing the destruction of the putrescent organic matter on the moment of its application."—(*Morning Herald*, July 5, 1858.)

QUANTITIES required of each of the Principal Deodorizers to remove the odour, more or less completely, from ordinary London sewage.

Names of Deodorizers.	Nature of Action of Deodorizers.	Strength of the liquid Deodorizers. (sp. gravity.)	Quantity of dry matter of Deodorizer required per gallon of sewage. (grains.)	Result obtained
CHLORIDE OF LIME	<i>Powerful indirect oxidizer</i>	....	8	<i>Complete</i>
Quicklime	Promoter of oxidation ....	....	12	Incomplete
McDougall's Powder	Antiseptic....	....	40	Ditto.
Peat Charcoal	Feeble indirect oxidizer ....	....	150	Ditto.
CONDY'S FLUID	<i>Powerful direct oxidizer....</i>	1.055	9	<i>Complete</i>
Burnett's Fluid	Powerful antiseptic	1.594	53	Incomplete
Ledoyen's Liquid	Antiseptic....	1.160	100	Ditto.
Ellerman's Liquid	Antiseptic....	1.443	203	Ditto.

(From Table by Dr. Letheby, in *Mechi's Sewerage of Towns*, App. p. 89)

APPENDIX.

SIMPLE EXPERIMENTS,

BY WHICH FAMILIARITY MAY BE READILY ACQUIRED WITH SOME
OF THE CHIEF PROPERTIES OF CONDY'S FLUID.

To detect Impurity of Air.

Add a tea-spoonful of Condyl's Fluid (crimson) to a large jug or ewer of water, and empty the contents, in equal portions, into two hand-basins. Place one of these basins in a water-closet or ill-aired place, and the other in a well-aired hall, or in the open air. After allowing them to remain during several hours, bring them together, and compare the appearances in each. In the former, the water will be found to have lost entirely, or in a great measure, its pink hue, and the surface of the basin in contact with the water, will be covered with a thin coating of brown matter; in the latter, no change, or hardly any, will be remarked. The amount of deposit will be the measure of the impurities taken up and destroyed. (See also page 28.)

To detect Impurities in Water.

Take any number of tumblers; fill up one with distilled water and the others with samples of water contaminated with various impurities; add a certain quantity—say, five to twenty drops—of Condyl's Fluid to each, and compare the changes produced, as described at pp. 21, 22, and 46.

To demonstrate the innocuous nature of Condyl's Fluid as compared with Chloride of Zinc.

Take two flower-pots, containing each a plant of mignonette, or other common household flower; water them both during several days, one with water to which Condyl's Fluid has been added in the proportion of a tea-spoonful to a pint of water, and the other with water into which the same quantity of Burnett's Fluid has been thrown. Examine them from day to day, and in no very long lapse of time the latter will be found drooping or dead, while the former will be as flourishing as ever, or even more vigorous in its growth.

To show the poisonous properties of Chloride of Zinc as compared with those of Condyl's Fluid.

Have two ordinary glass fish-globes, each filled with water, and containing some common kind of fish, which can be easily procured; mark one globe B and the other C. At the time when the daily change of water is made, add to the globe B ten drops of Burnett's Fluid for every gallon of water, and to C Condyl's Fluid in the same proportion; continue this treatment daily, taking care always to give Burnett to B and Condyl to C, till such time as the fish in the former turns on his back, which will very soon be the case. However often this experiment is repeated, and with whatever proportion of fluid, the fish B will uniformly die first, whereas C will in many instances improve in health and condition.

Purification of Foul Gases.

Procure a "White's Air-Purifying Ventilator,"* of the several varieties made, choosing the one called the "Water Force Ventilator," which acts by the gravitation of water, and have ready a common dip tallow candle and a box of lucifer matches. The apparatus being fixed, shut up one of the two admission pipes, and adjust to the other a cone of paper or other material; fill up the reservoir with water, to which has been added Condyl's Fluid, in the proportion of two wine-glassfuls to a gallon of water. Turn the tap: the fall of the water will immediately set the fanwheel in motion and cause a current, by drawing in air from below, and discharging it above. Now light the candle, and let it burn till a long snuff has formed: place it under the cone, extinguish the flame, and allow the smoke to be drawn into the apparatus. On applying the nose to the place of exit, a marked difference will be perceived between the odour of the air discharged above and that of the smoke coming directly from the candle, which has a most disgusting smell.

This experiment may be rendered comparative by having two ventilators, in one of which other deodorizers may be tried against Condyl's.

* To be had at 142, High Holborn, or by application to the Patentee, Mr. J. White, Surgeon, Finchley, Middlesex.

Mr. White, who has devoted much time and attention to the subject of the purification of the air, has recently invented a very ingenious respirator in which, with the view of eliminating organic impurities, the air during inspiration is made to come in contact with a salt of permanganic acid. As a defence against malarious, putrescible and infectious emanations this little instrument, in certain circumstances, can hardly fail to produce most happy results.

PATENT OZONISED WATER.

purified permanganate in solution for the toilet, bath, and all purposes of personal hygiene.

This preparation removes impure and foreign tastes and odours from the mouth, and in lieu thereof substitutes purity and tastelessness; a fact which proves that its action is not like that of perfumes and many other articles, confined to disguising, or substituting new odours or tastes, but that it actually neutralises or destroys those already existing. This property, coupled with the fact that it strengthens the gums, adapts it in a high degree for purifying the mouth, for preserving the teeth, and for the immersion of artificial teeth. It purifies and softens the skin, at the same time that it renders the flesh firmer, removes secretions, and tends generally to the creation and preservation of a healthy state of the body. Its property of allaying irritation, whether due to exposure to the sun or wind, or to other causes, renders it of great value for bathing the eyes, face, or body.

LIQUOR POTASS. V. CALC. V. MAGNES. PERMANGANATIS (CONDY).

Gr. ij ad. ʒj.

Solutions of absolutely pure salts of permanganic acid, prepared of uniform strength for prescription by medical men.

Internally.—Dose from ten drops to a drachm, in half a pint or more of pure water.

Externally.—As a lotion, gargle, &c., from one to four drams, in half a pint of water.

CONDY'S PATENT HEALTH FLUID.

Especially adapted for use as an external remedy for foul sores, ulcers, piles, fistulas, boils, burns, gonorrhœa, leucorrhœa, &c.

This preparation bears the Government patent medicine stamp, without which the Health Fluid is not genuine.

CONDY'S PATENT FLUID (GREEN), OR NATURAL DISINFECTANT,

A cheap preparation, manufactured expressly

For large coarse operations, such as the disinfecting of sewage and waters, the cleansing of cesspools, drains, water-closets, the holds and bilges of ships, &c.

CONDY'S PATENT FLUID (CRIMSON), OR NATURAL DISINFECTANT,

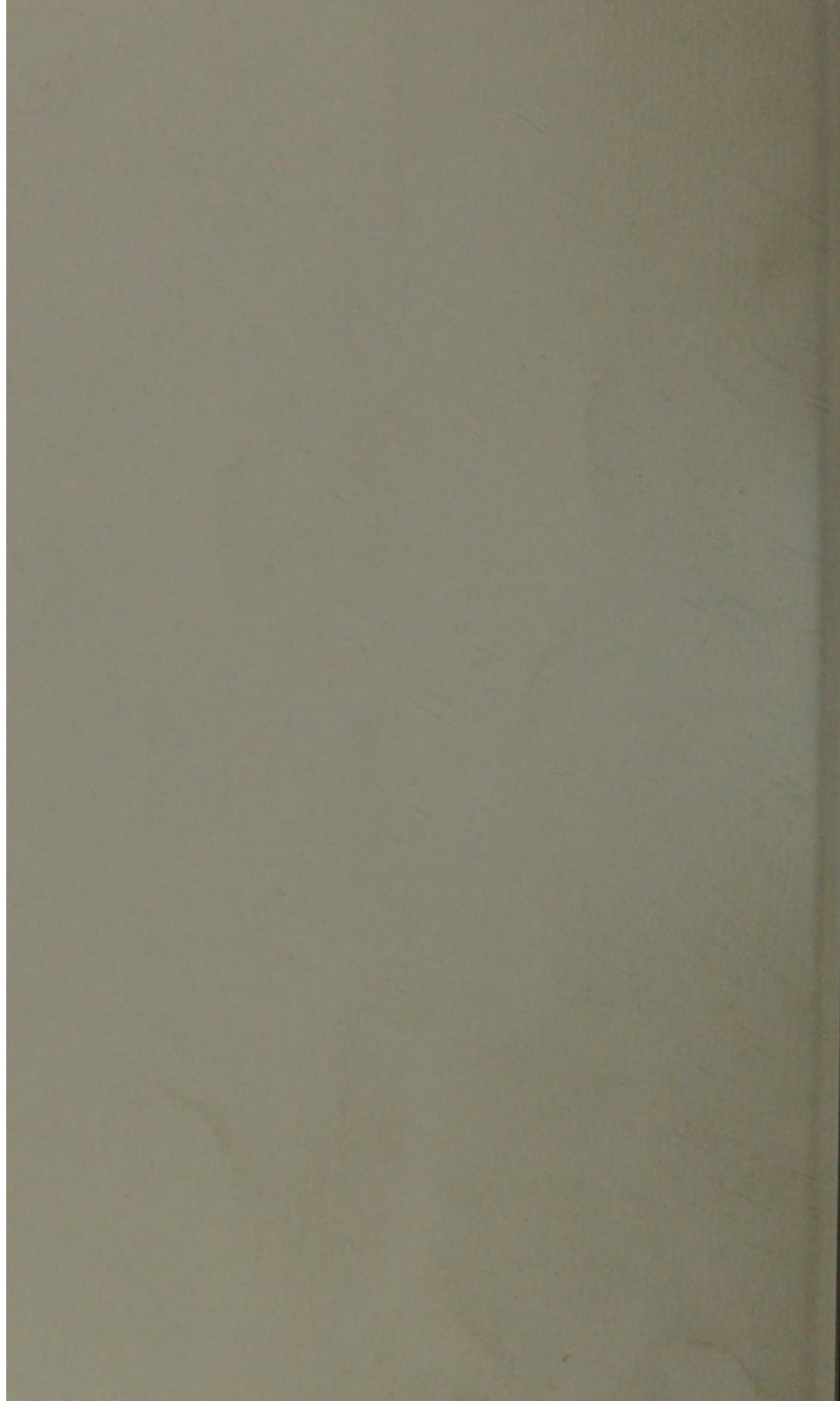
Stronger and purer than the above.

For household purposes, dairies, farms, cattle, provisions, water, sick-room, hospitals, workshops, schools, and close places in general.

One gallon makes from 200 to 300 gallons fit for use.


CONDY'S PATENT HEALTH POWDER.

This is a modification of the Natural Disinfectants adapted for use by those who object to fluids, or in circumstances where they are inadmissible.





TIGHT GUTTERS



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