

sufferers on the plains of Italy and Helvetia: but as the above stated diseases of our fellow-citizens will probably be terminated by the *asthenic languor* of July; so, we will hope, the *almost paralytic asthenia* of our enemies may prevent the further effusions of blood on the continent, and be the means of restoring health, peace, and happiness, to all the nations of Europe.

R. W.

On the means of destroying the Virus of Ulcers, and Contagious Miasmata.

[Extracted from Dr. ROLLO's "Treatise on the *Diabetes Mellitus*;" and the "*Annales de Chimie*"; No. 86 and 87.]

IN our preceding Number we gave a plate representing the apparatus for applying gases, or factitious air, to wounds, which was properly designed for the present Number; but, from accidental mistake of the engraver, as well as those who superintend the stitching, this plate has been misplaced. At present, therefore, we shall supply the explanation before omitted, and accompany it with a concise account of this improvement.

Cit. GUITON introduces this interesting memoir, in the 86th Number of the "*Annales de Chimie*," with the following liberal remark: "the manner in which Dr. ROLLO treats this subject, makes it a branch of that extensive and hitherto unexplored science, animal chemistry; and affords us new hopes (as Dr. Rollo observes) of seeing the resources of medicine and surgery increased, by a practical application of the doctrine of pneumatic chemistry.

"Dr. Rollo examines the action of morbid matter on wounds. Independent of the ulcers which usually follow erysipelas, and of those which are known by the term of hospital ulcers, he believes he has observed a particular species proceeding from a deleterious germ which attaches to a part of the wound; which, like other poisons, possesses the property of *assimilation*, increasing by its own progressive virulence; but which does not affect other ulcers of a specific character, such as the venereal, scrophulous, and variolous.

"Dr. Rollo has endeavoured to destroy this morbid poison by chemical means, locally applied; for this purpose he made use of the oxygenated muriatic acid, the nitrates of silver and mercury, and the oxygenated muriatic acid gas. The manner of applying these substances is as follows:—the wound ought first to be washed with luke-warm water; immediately after which the ulcerated part should be touched with the nitrat of silver; the

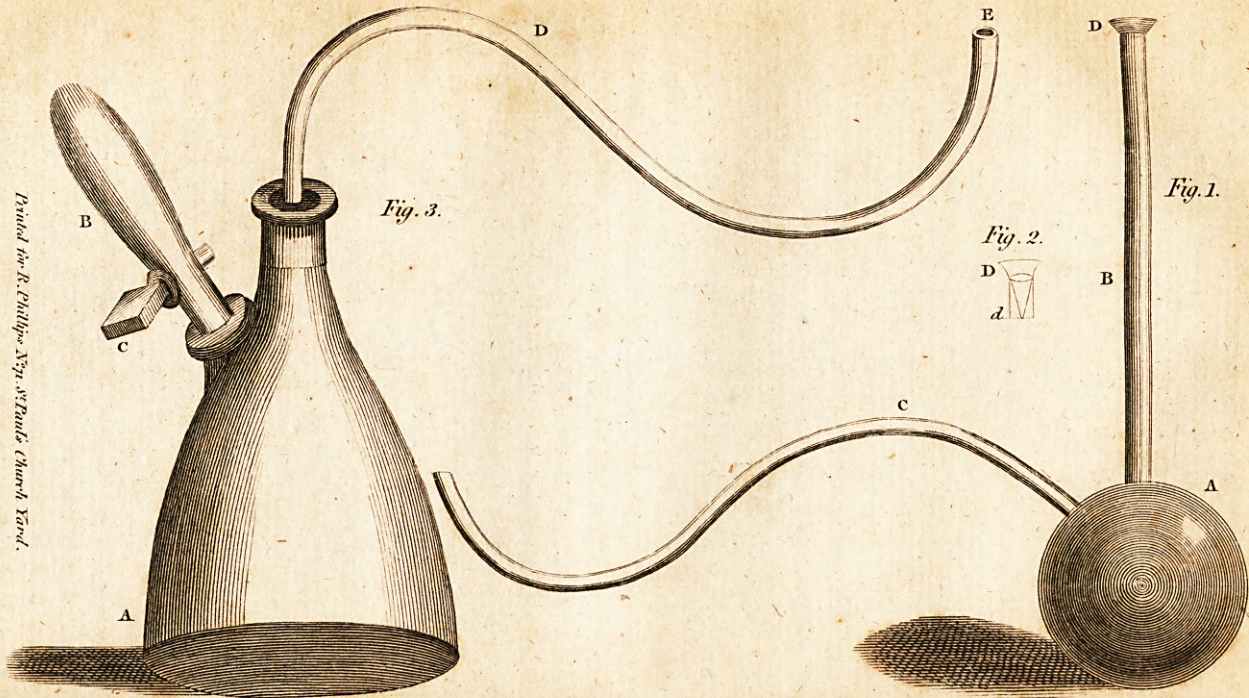


Fig. 1.

Fig. 2.

Fig. 3.

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the wound then must be moistened with a solution of the nitrat of mercury diluted with water, or a mixture of oxygenated muriatic acid and distilled water; after which, the whole is to be covered with linen dipt in one or the other of these liquids. The oxygenated muriatic gas is immediately directed to the ulcer, and the diluted solution of the nitrat of mercury is, as before prescribed, applied to the wound. By this treatment the wound soon becomes cicatrized:—this experiment has failed only in cases where the ulceration was so extensive that it could not be entirely covered with the nitrat of silver, or the oxygenated muriatic acid gas.

“ One of these ulcers, after having been dusted with a considerable quantity of the nitrate of silver reduced to a fine powder, appeared to be in an excellent condition, twelve hours after this dressing; it was firm, and apparently much revived; an effect which must have been produced by the sulphurated hydrogen gas acting on the surface of the ulcer.”

Dr. Rollo gives an account of some experiments published by Dr. Crawford, in the 80th volume of the “*Philosophical Transactions*” on the matter of cancer; and expresses his regret, that this valuable paper is not more generally known: as, says he, “*there can be little doubt of chemical changes and combinations being produced on fores.*” Dr. Rollo farther observes, “*that this subject has not been carried on, since then, as it ought to have been; trusting it will gradually appear of great importance, especially as the discovery of the changes the discharge of a fore undergoes, will probably point out, at the same time, the remedy for the fore.*”—*A Treatise on the Diabetes Mellitus*: Edit. first. Vol. II. p. 263.

Before, however, we can proceed to give the result of Dr. Crawford’s ingenious experiments, together with the opinions of this eminent medical philosopher, we shall previously furnish the reader with a concise explanation of the plate mentioned in the beginning of this paper, and which has been misplaced to our preceding Number.

Description of the plate affixed to No. IV.

A, (Fig. 3) is a glass bottle, or decanter, designed to contain the materials necessary to produce the gas. B, a vial, or small flask, intended to contain the acid, and which allows it to pass, at pleasure, into the decanter A, by means of the cock C.

D, is a glass-tube which serves to conduct the gas, and to the extremity of which, marked E, a bladder must be fixed. Of the smaller spherical glass vessel, with a straight and curved tube, we find no explanation in the “*Annales de Chimie*”; and although it is there stated, that Mr. BLADES, of

of Ludgate-Hill, London, sells this apparatus, yet, upon application at the warehouse we learnt, that the latter vessel does not form a part of his contrivance.

The bladder is used only, when the gas is to be applied for a certain length of time, and in order to keep it uniformly distended with facility, by renewing the effervescence as occasion may require. As to the oxygenated muriatic acid gas, its effect is very quick, or almost instantaneous, so that it is only necessary to apply the orifice of the tube to the wound, for a few seconds.

Dr. Crawford concludes his experimental inquiry into the nature of cancerous matter, with the following important observations :

“ It appears from the experiments which have been recited, that in cancerous and other malignant ulcers, the animal fibres undergo nearly the same changes which are produced in them by destructive distillation. The purulent matter prepared for the purpose of healing the ulcer is, in such cases, mixed with animal air and volatile alkali. The compound formed by the union of these substances, which may perhaps not improperly be termed hepatised ammonia, decomposes metallic salts, and acts upon metals; for we have seen that when it was placed in a jar over mercury for several days, the surface of the mercury acquired a black colour, and that it instantly occasioned a dark precipitate in a solution of nitrated silver. These facts seem to afford an explanation of the changes produced in metallic salts, when they are applied to malignant ulcers. The volatile alkali combines with the acid of the metallic salt, and the animal hepatic air revives the metal, either by imparting to it the inflammable principle, or by uniting with the pure air which the salt is supposed to contain. The metal, thus revived, is probably in some cases again corroded by the hepatised ammonia, which communicates to it a black colour. Thus we may account for the dark incrustation frequently formed upon the tongue and internal fauces, when venereal ulcers of the throat are washed with a solution of corrosive sublimate. And hence also the dark tinge which is frequently communicated by ill-conditioned ulcers to poultices made with a solution of sugar of lead. The action of the hepatised ammonia likewise explains the reason why the probes are frequently corroded when they are introduced into sinuous ulcers, or applied to the surfaces of carious bones. To the same cause it is probably owing, that polished metallic vessels are quickly tarnished when they are exposed to the effluvia of putrid animal substances.

“ From the foregoing experiments it moreover appears, that animal hepatic air imparts to the fat of animals recently killed a green colour; that it renders the muscular fibres soft and flaccid, and increases the tendency to putrefaction. It is therefore a septic principle; and hence it is extremely probable;

probable, that the compound of this fluid with volatile alkali, which is found in the matter discharged by the open cancer, produces deleterious effects: for although the mischief in cancerous ulcers seems principally to depend on a morbid action of the vessels, whence the unhealthy state of the matter discharged by such ulcers is supposed to derive its origin, yet, from the corrosion of the larger blood vessels, and the obstruction in the contiguous glands, there can be little doubt that this matter aggravates the disease. The experiments recited above appear to prove, that the hepatified ammonia is the ingredient which communicates to the cancerous matter its putrid smell, its greater thinness, and in a word, all the peculiar properties by which it differs from healthy pus.

“ From these considerations it was inferred, that a medicine which would decompose the hepatified ammonia, and destroy the fetor of the animal hepatic air, without at the same time increasing the morbid action of the vessels, would be productive of salutary effects. The nitrous acid does not destroy the fetor of hepatic air, unless it be highly concentrated; and in this state it is well known that it speedily corrodes animal substances. But the fetor of hepatic air quickly disappears when it is mixed with the dephlogisticated marine acid, even though the latter be so much diluted with water as to render it a very mild application. I have found that this acid, diluted with thrice its weight of water, gives but little pain when it is applied to ulcers that are not very irritable; and in several cases of cancer it appeared to correct the fetor, and to produce a thicker and more healthy pus. It is proper, however, to remark, that other cases occurred in which it did not seem to be attended with the same salutary effects. Indeed some cancerous ulcers are so extremely irritable, that applications which are at all of a stimulating nature, cannot be ventured upon with safety. And hence, if the observations which I have made on the efficacy of this acid as an external application, should be confirmed by future experience, it must be left to the judgment of the surgeon to determine both the degree of its dilution, and the cases in which it may be employed with advantage.

“ The dephlogisticated marine acid, as is generally known, has the power of destroying the colour, the smell, and perhaps the taste, of the greater part of animal and vegetable substances. We have seen that it corrects the fetor of putrid flesh. And I have found, that when it is poured in sufficient quantity upon hemlock and opium, these narcotics speedily lose their sensible qualities. As it appears, therefore, to possess the power of correcting the vegetable, and probably many of the animal poisons, it seemed not unlikely, that it might be useful as an internal medicine. Conceiving that its exhibition would be perfectly safe, I once took 20 drops of it, diluted with water. I soon afterwards, however, felt an obtuse pain, with a sense of constriction in my stomach and bowels. This uneasiness, notwithstanding the use of emetics and laxatives, lasted for several days, and was at length removed.

removed by drinking water impregnated with sulphureous hepatic air. I afterwards found that the manganese, which had been used in the distillation of the acid, contained a small portion of lead.

“DR. INGENHOUSZ informed me, that a Dutchman of his acquaintance, some time ago, drank a considerable quantity of the dephlogisticated marine acid: the effects which it produced were so extremely violent, that he narrowly escaped with his life. If, therefore, this acid should hereafter be employed as an internal medicine, it would be necessary to prepare it by means of manganese that has been previously separated, by a chemical process, from the lead and the other metals with which that substance is usually contaminated.”

This quotation has induced DR. ROLLO to observe, that at his request, MR. CRUIKSHANK made some experiments on the matter of this sore, and that the following account contains the result, with his remarks, as communicated to us in April 1795.

“The matter of this sore is sparingly soluble in water, but readily diffused through it, producing a milky appearance. Pure volatile alkali first reduces it to a transparent jelly, and after some time dissolves the greatest part; a similar effect is produced on pure pus. These solutions are but partially precipitated by acids, particularly the sulphuric. The tincture of litmus, and of Brazil wood are not changed by this matter; it does not therefore possess either acid or alkaline properties. If to the filtered solution of this matter in distilled water, a little nitrated silver be added, a whitish-coloured precipitate will be produced. Similar precipitates, but much more copious, are occasioned by nitrated and muriated mercury. When pure pus is treated in the same manner, these precipitates, particularly that by muriated mercury, have somewhat of a different appearance, which it would be difficult to describe. The fetid smell is somewhat changed by lime-water, but not destroyed; the sulphuric acid rather increases it; a similar effect is produced by alcohol, and by the alkaline solution of arsenic. A decoction of the Peruvian bark does not destroy the fetor. This, however, is effected by the nitrates and muriates of mercury, by the nitrous acid; but most completely by the oxygenated muriatic acid, and gas. Nitrated silver produces very little change either on its colour or smell, a circumstance the more remarkable, as this salt possesses the property of destroying most offensive smells, even that of the matter of cancer.

“It must be allowed that the offensive smell of the matter of this sore is produced by that part of the discharge which is altered from the nature of pure pus; for we know that every ill-conditioned discharge has more or less smell, while good pus has none. It is a known fact in chemistry, admitting of few exceptions, that a substance cannot have its smell totally destroyed or altered, without having its properties changed at the same time. If therefore this peculiar matter, by the addition of nitrated or muriated mercury, the oxygenated muriatic acid, &c. should have its smell completely destroyed, there
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is every reason to believe that its peculiar properties also will be so; and should it be capable in its original state of producing an ill-conditioned action in fores, the addition of such substances might prevent this mischief. If it should be supposed therefore that an acrid matter somehow produced on the surface of fores, were capable of inducing ulceration of a specific kind, and that this ulceration, like the venereal, should generate more matter of a nature similar to itself, capable of extending the mischief, and even of bringing on a general affection of the system, some important conclusions might be drawn from these experiments.

“ 1st. It is easy to see, that a sore once clean, might be preserved from the effects of the matter alluded to, by washing it at every dressing with a weak solution of nitrated mercury, or the oxygenated muriatic acid, and that even the generation of such matter might be entirely prevented by the same means.

“ 2d. After the action has taken place, and before a general disposition is formed, it might be possible to put a stop to its progress by very active topical applications, such as should be capable not only of destroying the specific nature of the matter generated, but also the action itself. From the experiments already related, it is evident we would prefer in this case, the most active mercurial preparations, such as red precipitate not entirely deprived of its acid, or the muriated mercury; and if an actual caustic were to be employed, we should have recourse to the strong nitrous acid, applied in Mr. HUMPAGE'S method, rather than the nitrated silver, especially as it may have also the effect of changing the nature of the discharge; this consists in dipping a little lint in the acid, and applying it to the part: it communicates less pain than any other caustic, except the nitrate of silver.

“ With regard to the action of the different substances on fores, and as caustics, they may be thus arranged:

“ 1st. Substances exciting action, and producing death, in parts, by the excess of that action; as arsenic, and muriated mercury.

“ 2d. Substances acting simply by burning or destroying the part, and whose actions are always limited; as, nitrated silver, nitrated mercury, and nitrous acid.

“ 3d. Substances acting by dissolving the part, and whose action is so diffusive that it is difficultly limited; as, common caustic, or the mixture of potash and lime.

“ 4th. Substances acting chemically on the part by decomposition; as, oxygenated muriatic acid, in the form of gas, or combined with water.

“ On the whole, though we have supposed the formation of a new morbid poison, on the surface of certain fores, under peculiar circumstances or management, yet we are rather inclined to change the appellation *new*, to a poison which

which has been probably *overlooked*. We have seen the commencing ulceration remain some days stationary, we have seen it extending, while the other parts of the former sore were cicatrising, and the constitutional effects not taking place until the ulceration had occupied a large part of the sore; and we have seen that the painful state and extreme sensibility did not occur until the system was affected. Therefore it may be presumed the early ulceration had been unattended to, and the state of the sore remarked only by authors after it had assumed the appearance of phagedæna. For when the ulceration had so spread as to produce the constitutional affection, and the consequent rapid changes on the sore, the character of the virulent sore described as phagedæna was formed.

“ The account we have given of this sore may excite more attention to the state of a large sore in an hospital with a considerable discharge, and lead to a trial of the applications pointed out; to forward cicatrification, and prevent any untoward changes from the production of a poison on the surface of the sore.

“ Since the attention and manner of treating sores as described, have been pursued in this hospital, we have had none such, nor even the hospital-sore, indeed this we cannot possibly have, as ventilation and the destruction of general contagion are so carefully and unremittingly performed. We have had, however, three very remarkable sores following bubo in the groin, and chancre on the penis, which terminated fatally. These cases occurred before the adoption of the new remedies, and were treated by mercury, and appeared to be the effect of the mercurial disease on a peculiar constitution. The sores were irritable and sloughing, and the only favourable changes were produced by the use of opium, the hepatised ammonia, and the application to the sores of the hydrogenous, hepatic, and carbonic acid gases.

“ The sore which has been described and noticed by us at the beginning of this account as peculiar to hospitals, though well marked by many, yet we have our doubts, but that many of these were this peculiar sore, and owing to the poison we have suggested. Whatever it may be, it adds another fact in corroboration of the advantages both medicine and surgery are likely to derive from the new doctrines of chemistry.

“ We have already seen the utility of substances readily parting with their oxygen, applied to irritable sores, and also of the hydrogenous, hepatic, and carbonic acid gases to irritable sores. See Vol. I. pag. 62, and which was contained in the Notes of the first case of Diabetes, dispersed in January last. In page 61 of the same volume, it is observed, that the oxygenated muriatic gas was found to destroy the offensive smell of sores, that it destroyed specific contagion, and could be easily obtained, and very safely used. We had therefore given it a preference to other things, and in order that it may be more generally tried, we insert Mr. Cruickshank's manner of procuring and using it in the wards of this hospital.

“ This consists in intimately mixing two parts of common salt, and one of crystallised manganese, previously reduced to powder. Two ounces of this compound are introduced into a small basin; about an ounce of water is then added, and afterwards an ounce and a half of the concentrated vitriolic or sulphuric acid at different times, so as to preserve a gradual discharge of the oxygenated muriatic acid gas. One of these basins is sufficient for a ward or room, containing five or six beds, and more must be employed according to the size of the apartment.”

Historical Inquiry into the State of Medicine among the Hebrews: being an Inaugural Dissertation maintained, by MEYER LEWIN, under the Presidency of Professor CURTIUS SPRENGEL, on the 19th November, 1798, in the University of HALLE.

SEVERAL authors have attempted to give an account of the history of medicine among the Hebrews; but they in general attended more to inquiries relative to diseases mentioned in Sacred History, than to the history of the art itself. Few documents are to be found which relate to the medicine of the Hebrews, in those histories of medicine by REY, FRIEND, and BLACK; or even in Professor SPRENGEL's general history of this science: some articles are scattered in his chapter on the medicine of the Egyptians, and in that on the medicine of the Eastern nations.

The sects of Platonists, and of Paracelsus, have, according to our author, derived their origin from Judaism; and the Hebrews have always adopted the manners and customs of other nations, notwithstanding the prohibitions laid on the people of Israel, against imitating the manners of the barbarians.

According to the doctrine of the Patriarchs, both good and evil came from God; invocation, or submission, were regarded as the only means of extirpating diseases. When the Hebrews were in Egypt, they found there established principles of medicine. By order of Joseph, the Egyptian physicians embalmed the body of Jacob. Moses, who was acquainted with all the learning of the Egyptians, inserted that art in his code of medicinal and dietetic laws; he described the white leprosy with great exactness: he also appears to have made use of their superstitious recipes, by the erection of the brazen serpent. Already had he suppressed the Egyptian magicians, by prodigies more wonderful than theirs.

The tribe of Levi, at length assumed the practice of physic; the prophet attributed epidemic diseases to heavenly wrath. The Philistines, afflicted with leprous tumours, could not be cured till after the restitution of the ark.

Even