

feeling as before. In September I was desired to visit him, and found him emaciated and reduced to such a degree that he could neither walk nor stand. The abdomen was so much distended that veins were visible over the surface. The right side at this time presented a feeling as if water might be there, and with the advice of a physician who was present, I introduced a trochar; it met with no resistance; nothing but a little blood followed. The wound healed in a few days, and the boy lived a fortnight. After death, permission was granted to examine the body. On opening the abdomen, large lumps of fat presented themselves to view, varying in size from 2 to 4 inches in diameter. On cutting them, matter was found in the centre, occupying a space large as a bean. The intestines were enveloped in this mass. From the pubis upward extended a hard fleshy substance, originating from the neck of the bladder, and connected with the kidney of the left side by strong adhesion. The stomach, liver, &c. were not readily seen, being pressed under the ribs so as to encroach upon the cavity of the thorax; they were of natural appearance, as were also the organs of the chest. The boy weighed 40 lbs. after death, and after removing the tumours he weighed 24 lbs. The substance removed weighed 15 lb. 8 oz. and 8 oz. of water were floating in the abdomen.

Desultory remarks on Poisons, Antidotes, etc. suggested by the perusal of Orfila's General System of Toxicology. By Wm. TULLY, M.D.

[Communicated for the New-England Journal of Medicine, &c.]

THE term Poison, if it means any thing definite, denotes an agent which in improper, and ill-timed quantities, produces deleterious effects upon an animal system.

The term, Medicine, denotes an agent, which in proper and well-timed quantities, is capable in some manner or degree of counteracting disease.

It is in the highest degree probable, that every article capable of acting upon an animal system, may, by skilful and judicious management, be rendered medicinal, and that no article which under these circumstances, is incapable of proving medicinal, can be at the same time poisonous.

It is however true, that all poisons have not in fact been employed as medicines; nor in the present state of science is the management of all understood; but there is the most conclusive analogy in favour of the opinion, that they are all capable of such an application.

Poisoning, then, is only an occasional ill effect of a medicine ; and the terms poison and medicine appear to be perfectly convertible. They seem to have been so considered by the enlightened Greeks, who called both by the same name. It is said to have been a maxim with Linnæus, that poisons differ from medicines, not in their virtues, but in their doses.

Medicines, and consequently poisons, most probably produce their primary effects, either upon the external surface of the body, or upon the membrane which extends from the nostrils into the lungs, or upon the alimentary canal. Other parts of the system, it is most likely, are affected either by propagation of action along continuous parts, or through the medium of the nervous system ; and it seems pretty evident, that all produce, both medicinal and deleterious effects, by virtue of some peculiar action which they excite. The quantity of the agent employed, the particular structure of the part affected, and the state of the part, at the time, occasion important modifications of the effects produced. Those effects which are medicinal, are capable of being produced in much greater variety, than those which are deleterious or poisonous ; and the similarity and diversity of such effects affords the foundation of one of the best species of classification in *Materia Medica*. Those effects which are deleterious or poisonous, are comparatively few ; and were we to treat exclusively of the ill effects of articles, this would in like manner, afford a good foundation for classification. But classification, either from the unprepared articles themselves or from the proximate principle in which the power resides, or from the effect exclusively, applies equally to medicines and poisons, and in the two first instances, must coincide. In the last, for obvious reasons, they do not coincide.

Poisoning, or the deleterious effects of agents upon an animal system, consists in some degree of disorganization, irritation, stupefaction and exhaustion, or some combination of these. These effects of poisonous drugs, seem to correspond pretty regularly with some specific disease, and the variety of these effects, is limited to inflammation, either phlegmonous, erysipelatous, or gangrenous, or to ulceration, or to cholera, diarrhœa, dysentery, or cholic, or to convulsions, coma, apoplexy or palsy, or to marasmus.

It is obvious that there can be but two methods to remedy poisoning, the removal of the operating article, and the counteraction of its effects. The method of removal must be regulated by the qualities of the agent, and the part to which it is applied. The counteracting means must depend altogether upon the effects produced. As no two animal systems can ever be

supposed to be in identically the same state, or even any individual system at different times, there can be no such thing as absolute identity of effect, either medicinal or deleterious, from any one agent, and consequently there can be no such thing as specific remedies, specific poisons, or specific antidotes.

The physician is almost universally called not to remove the acting cause, but merely to obviate the deleterious effects. When he is required to remove the cause, it is always from the alimentary canal, and this can be accomplished much more speedily and effectually, by suitable emetics and cathartics, than by any chemical means, whose operation is at best but slow, and cannot but be retarded and modified by the vital power of an animal system. Even the few instances of poisoning by acids and alkalis, can hardly be considered as forming an exception to this remark.

As it is in the highest degree probable, that no agent produces its medicinal or deleterious effects, in consequence of being taken into the mass of the circulating fluids, either from the external surface, or from the membrane which lines the nose and lungs, or from the alimentary canal ; and as it is still more highly probable, that if any article should be taken up by the absorbents of any part, it would be decomposed, and its elements again combined in some new form, or somehow so changed, as to destroy its identity, or modify its effects ; and as injections into the blood vessels, even of substances absolutely inert when applied in any other way, must always, by their mere mechanical effects, produce more or less mischief, this can never be a method of applying agents for medicinal purposes, and from the nature of the process, can never be a casual method, by which they may cause injury ; so that experiments of this kind upon living animals, are not only entirely futile and useless, as respects the acquisition of any profitable knowledge, either of the medicinal or deleterious effects of agents, but are in fact, absolutely barbarous and cruel.

As tying the œsophagus, however dextrously done, must always be productive of very great disturbance in an animal system, and in consequence of the injury from the cutting and the application of the ligature, together with the necessary inflammation, adhesion, and interruption of function, must inevitably, in a longer or shorter period, and of itself, prove fatal ; and as confining even an otherwise inert article to the stomach, in such a manner, and with such accompanying circumstances, would unquestionably cause effects very widely different from what could possibly take place under different circumstances, and might upon mere mechanical principles, greatly aggravate the symptoms ; and as such a process can never be employed either

to promote the operation of remedies, or happen from casualty, so as to produce deleterious effects, this operation must be considered to be much more futile and barbarous, than injections into the blood vessels, and in my view affords satisfactory evidence, that the man who can coolly and deliberately practice such cruelties, under the idea that he is promoting the cause of science, is a fitter candidate for the strait-waistcoat, and a mad-house, than for the countenance and applause of a humane and truly enlightened community.

As a knowledge of all the possible ill effects of agents upon the skin, bronchial membrane and alimentary canal, and the circumstances under which they may take place, is a necessary part of *Materia Medica*, and is absolutely essential to the best use, and safe employment of every efficient article of medicine, so Toxicology as a distinct branch, is altogether useless, and seems to stand in the same relation to *Materia Medica* as empiricism to rational practice, or as Alchymy to Chemistry; and as the cure of disease depends upon treatment, which must be carefully adapted to the existing symptoms and conditions of the patient, so the search after specifics and antidotes, appears about as judicious, as the search after a universal remedy, a universal solvent, or the philosopher's stone.

Orfila's work seems in fact, to be founded altogether upon the erroneous principles of specific remedies, specific poisons, and specific antidotes; and though a work upon such false premises, may contain many useful facts, yet observations, experiments and reasoning, made under such impressions, and with such views, can be but little relied upon, and in general, are incapable of being applied to much useful purpose. Such a writer must of necessity combat a mere image of straw of his own setting up, and finally must inevitably lose himself and his disciples, in pursuit of an *ignis-fatuus*. Indeed the plan of searching after and relying upon particular antidotes, seems to be a remnant of the ancient doctrine of specifics, and leads directly to the empirical method of prescribing merely to the names, instead of the symptoms of diseases.

From an attentive examination of Orfila's work, the general notions upon physiology and pathology, seem to be no better than the doctrines upon poisons, and their antidotes; as for instance the confounding of the convulsions of death, with high phlogistic or sthenic diathesis.

It is a matter of surprise that the American editor of this work should have supposed that savages understand the management of poisons, or the ill effects of agents upon an animal system, better than scientific physicians. What they do, must be altogether up-

on the false principles above exposed, and consequently altogether empyrical in the loosest sense of the term. The notion in question must have been formed without consideration, or its author must have been deficient in a knowledge of the true principles which regulate sound medical practice. Suitable instruction in the principles of Physiology, Pathology and Materia Medica, affords the best possible qualification for the management of poisoning or the deleterious effects of medicinal agents.

Perhaps the most striking difference between ancient and modern physic consists in the improved, enlarged and more liberal views at present entertained by physicians upon this subject. Formerly it was a principal employment of the practitioner, to search out poisons and their antidotes, but of late, many of those very poisons afford the most efficacious means of restoring health.

The dread of poisoning has ever been confined to ignorant, superstitious and barbarous ages, and like witches and ghosts, has always fled before the light of science. Poisoned food, poisoned cups, poisoned springs, poisoned arrows, and even poisoned bullets, have at different periods, filled the world with terror; but since accurate observations and satisfactory evidence have demonstrated, that malignant and pestilential diseases frequently spring up without any assignable cause, and that lacerated and contused wounds are ever liable to assume a gangrenous state, these phantoms have nearly vanished from the civilized world, and it is much to be regretted, that Orfila, or even Accum, or any reputable medical writer, should attempt to revive such delusions of a credulous age.

Although many valuable things may occasionally be dug out of a heap of rubbish, so that in this point of view Orfila may merit a cursory reading, yet it has always been matter of wonder, that his work should have acquired so much celebrity. His cruel and inhuman experiments are disgusting to all the better feelings of the heart, and unlike those instituted for the demonstration of the circulation of the blood, have not the apology, even of the most inconsiderable degree of utility.

It will be perceived, that these remarks are intended to refer more particularly to the great body of Orfila's work, and are not designed to apply to the effects of the bites of rabid animals, the bites of venomous reptiles, the stings of venomous insects, specific contagions, morbid secretions, or to exhalations from decaying animal and vegetable substances. These have little or no affinity with poisonous drugs.

and certainly requires a treatment founded upon widely different principles from what the Official system to suppose that time permitted it would be easy to show that most of the opinions on this subject are as fallacious as those already considered.

The first principle of the treatment of poisoning is to remove the poison from the system as soon as possible. This is the most important and the most difficult part of the treatment. It is the only part of the treatment which is not a matter of course. It is the only part of the treatment which is not a matter of course. It is the only part of the treatment which is not a matter of course.

The second principle of the treatment of poisoning is to support the system. This is the most important and the most difficult part of the treatment. It is the only part of the treatment which is not a matter of course. It is the only part of the treatment which is not a matter of course. It is the only part of the treatment which is not a matter of course.

The third principle of the treatment of poisoning is to remove the poison from the system as soon as possible. This is the most important and the most difficult part of the treatment. It is the only part of the treatment which is not a matter of course. It is the only part of the treatment which is not a matter of course. It is the only part of the treatment which is not a matter of course.

The fourth principle of the treatment of poisoning is to support the system. This is the most important and the most difficult part of the treatment. It is the only part of the treatment which is not a matter of course. It is the only part of the treatment which is not a matter of course. It is the only part of the treatment which is not a matter of course.

The fifth principle of the treatment of poisoning is to remove the poison from the system as soon as possible. This is the most important and the most difficult part of the treatment. It is the only part of the treatment which is not a matter of course. It is the only part of the treatment which is not a matter of course. It is the only part of the treatment which is not a matter of course.

The sixth principle of the treatment of poisoning is to support the system. This is the most important and the most difficult part of the treatment. It is the only part of the treatment which is not a matter of course. It is the only part of the treatment which is not a matter of course. It is the only part of the treatment which is not a matter of course.