

maintained, as fairly established, viz., that matter exuding as a result of simple inflammation, may afterwards degenerate, according to the state of the constitution, into various forms of heterologous deposit.—(See e.g. *Copland and Quain, in Medico-Chirurgical Transactions*, vol. xxxiii., p. 144.)

Still more, if we regard it, as I think we may, as an established fact, that the vital properties of living fluids, as well as solids, are of temporary duration only, and are subject to the general law of increased action being followed by diminished action, or accelerated loss of vitality, we can understand how the most important consequences of inflammation, both beneficial and injurious, should be produced;—how the matter that was concerned in it being peculiarly excited, and, therefore, quickly rendered *effete*, should be peculiarly liable to Absorption, which we know to be the agent by which its injurious effects are chiefly effaced;—how the increased absorption should, under certain circumstances, extending to the adjoining sound parts, effect that destruction of texture which we call Ulceration; and how, in other circumstances, either of peculiar violence of the inflammation, or depressed vitality of the organ inflamed, this form of diseased action should, by the established laws of vitality, lead to premature death of the diseased part, *i. e.*, either to partial Sloughing or more extensive Gangrene. All these are facts of the highest practical importance, of which we have explanations so far satisfactory, on the strict principles of induction, when we look to the changes that take place in inflamed parts in those living actions which I have referred to the heads of Vital Attractions and Repulsions, and Vital Affinities. But I will venture to say, that we never shall have any explanation of them consistent with the supposition, that the contractions of living solids are the only changes in organic life which are truly vital, *i. e.*, dependent on laws essentially distinct from those that regulate the changes of inorganic matter.

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ART. VI.—*Adulterated Medicines in the Country Districts of the United States.* By A. WILLARD, M.D., of Greene, New York. (*New York Journal of Medicine*, vol. viii., No. 3. New Series. May 1852.)

The following remarks form the substance of a Report made to the Chenango County Medical Society, in pursuance of a

resolution adopted by the Society for the purpose of carrying out the request of the United States Medical Association, as expressed in a resolution offered by Dr Huston, Chairman of the Committee on Spurious and Adulterated Drugs, and adopted by the Association at its meeting in May 1850.

The Government of the United States has wisely appointed an officer, whose business it is to inspect all imported drugs and chemicals, and to permit none to be entered at the different customhouses, excepting such as are pure and unadulterated. This duty is undoubtedly performed with all the care and attention which the framers of the law contemplated; at least we are at liberty to suppose that such is the case; so that the importer and wholesale dealer are, in a great measure, protected from frauds in their purchases of *foreign* articles. But it does not necessarily follow, that the retailer and the consumer are equally safe from imposition; nor is there any law to prevent abuses in the home manufacture of chemicals, or in the preparation of those compounds by the apothecary, which are in constant and daily use by the physician.

Every medical practitioner in the country knows full well, how often he is disappointed in the effects which he expects to obtain from the exhibition of certain remedies,—remedies which, he has the best authority for believing, are to produce certain positive and unequivocal results,—results for which he waits anxiously, but too often waits in vain. His trials of an article which he purchases as perfectly pure, not unfrequently lead him into the firm belief of its inutility, or, still worse, of its absolute injuriousness to his patient, while the article in its purity, if it could be thus procured, would be found to possess all the valuable properties ascribed to it.

We do not wish to make wholesale charges; but we cannot doubt the fact, that there is no traffic which opens so wide a door for fraud, imposition, and iniquity, as the trade in drugs, and the manufacture of chemicals and pharmaceutical compounds. And it is not alone in the more costly preparations of this sort that fraud and imposition exist. Even the cheapest are not only adulterated, but sometimes an article of the kind is found which contains not one particle of the substance which it purports to be. For instance, we have now in our possession a specimen purchased for precipitated carbonate of iron, which was nicely bottled and labelled with what purported to be the manufacturer's name, which consists entirely of Spanish brown. Another article was purchased for litharge, which it is believed contained no particle of lead, but seemed to consist entirely of some yellow earthy

substance, such as yellow ochre, or some other cheap material of the kind. Most practitioners in the country are in the habit of preparing their own tincture of muriate of iron. That which is purchased from the apothecary is so variable in its strength, that it is not to be depended on; and, indeed, that which they prepare for themselves is little better, in consequence of the very great impurity of the precipitated carbonate, which is generally used in its manufacture. We have seldom been able to dissolve more than one-half or two-thirds of the iron, and of course the preparation varies in strength in proportion to the amount of iron it contains.

If, however, a pure carbonate be formed, the acid will dissolve every particle of it, and the resulting tincture will be found to possess all the valuable properties which are expected to be found in it.

Sweet spirits of nitre is an article, which it is extremely difficult to find in the country of equal and uniform strength. It is manufactured either by the chemist or the drug-seller (we do not exactly know which) of all sorts of strength, to suit purchasers, and hence it comes to us labelled with a multitude of F's, from a round half-dozen or so, which are supposed to indicate the different degrees of strength, down to that which is not considered worthy of being dignified with any F at all. This last is the preparation which is most usually brought into the country, and it not unfrequently requires an individual of a most exquisite nicety of taste and smell to distinguish it from ordinary whisky. Precisely the same remarks will apply to aqua ammonia. Perhaps there are scarcely two samples of this article which contain the same amount of ammoniacal gas, so that, in ordering it for internal exhibition, the prescriber never knows the exact amount of the alkali he directs.

It would evidently be an improvement, if both this and spirits of nitre could be prepared of uniform strength for internal use. Aqua ammonia is frequently required of greater strength for external application, so that there would seem to be a necessity for two preparations. But no such reason exists for the multitude of F's that are attached to the various samples of spirits of nitre; indeed we believe that no reason can be given for this, aside from the cupidity of the manufacturer.

Occasionally castor-oil is found adulterated with some cheaper oil,—perhaps lard-oil. If thus adulterated, the taste is not materially altered; perhaps it may be somewhat improved; but the activity of the remedy is very much diminished, so that it becomes almost impossible to apportion the dose

in such a manner as to be at all certain of its effects. In an article so much used as a household remedy as this, this iniquitous adulteration is much to be regretted.

We have recently been shewn a specimen of olive-oil adulterated probably with lard-oil. Its appearance was very fine, nicely bottled and labelled, and every way calculated to deceive the eye; but its impurity was readily detected by the taste, which indicated pretty conclusively that the foreign oil was procured from half putrid materials.

The compounded spirits of sulphuric ether (Hoffman's Anodyne) is seldom found in the country. The spirit of sulphuric ether is sold for it, which contains not one particle of ethereal oil, the ingredient to which the former remedy owes its peculiar virtues.

The compounded spirits of lavender is a preparation which perhaps never comes to us in the shape in which it is directed to be made by the Dispensatories. The various writers on pharmacy state that it is a delightful compound,—an elegant preparation,—a grateful cordial; but we, at least, have never been able to procure it in so delightful, elegant, and grateful a form. On the contrary, that which we have usually procured exhales anything but the delightful and pleasant aroma of fresh lavender and rosemary. We are led to believe, that it is now generally, if not always, made, by dissolving the essential oils of lavender, rosemary, and cloves in alcohol, in very variable quantities, to suit the notions of the compounder, and colouring the mixture with red sanders. If fresh oils were used, this might be a very tolerable substitute for the officinal preparation, always providing the oils were pure. The oil of lavender ordinarily used by the apothecary is probably procured from the broad-leaved variety of the plant, instead of the narrow-leaved, which is more costly as well as more fragrant. The former variety smells pretty strongly of turpentine, and both are not unfrequently pretty largely adulterated with it, so that, in the compound we are considering, we get a most villanous essence of turpentine instead of lavender.

We frequently get Croton-oil in the country which will not even produce redness of the skin. It is needless to say that some cheap oil is mixed with it.

It is perhaps useless for us to speak of the very extensive adulterations of those medicines which come to us in the form of powders. Their inefficiency is well known. Among these ipecacuanha, rhubarb, and jalap are frequently so diluted by the addition of inert substances, that it is difficult to designate a proper dose; and many times, an amount is required

that is extremely inconvenient to the patient, and not a little annoying to the prescriber.

We presume that, in the cities, with the aid of Government examiners of drugs, Colleges of pharmacy, Pharmaceutical Societies, and sundry other appliances, suited to keep the trade within the bounds of propriety, the sale of adulterated drugs is very much lessened; at least, we so understand from various sources; but we must be allowed to doubt, whether the law with all its terrors, aided by all the appliances aforesaid, has made men in any degree more honest than they were before it went into effect, unless it be upon compulsion. That there are more bad drugs in the country than heretofore is perhaps not the fact; but that the quantity is materially lessened, is very much to be doubted. The reason, or at least one reason, for this is, that in the country but very few in proportion to the whole number that sell drugs, know any thing at all about the trade; many not being able, indeed, to distinguish one drug from another, except by the label on the package. We have known Peruvian bark sold for rhubarb, *uva ursi* for buchu, and Virginia snake root for pink root. The object of the country trader is very much the same as that of the merchant princes, that is, to make money, and whatever purchases they make, are made with a single eye to the expected profits, and whatever will afford a profit is considered a legitimate article for traffic. Hence a country store is a sort of "*omnium gatherum*," the contents of which would put entirely in the shade the multifarious catalogue of the famous Mr Caleb Quotem.

As traders most usually purchase drugs for the sake of the profits their sales will yield, the quality is the last matter inquired about;—the cost is the principal thing; and whether they will yield a fair per-centage is the question; and there are to be found in the cities, plenty of very accommodating gentlemen, who are not only willing but anxious to sell drugs at almost any price, at which the purchaser may require them.

Hence it will be seen that the country is flooded with impure and adulterated articles, in consequence of ignorance of the quality on the one hand, and insatiable cupidity and recklessness of human life on the other.