

The employment of these irritant drugs as excitants in the daily diet of children, youth and adult persons having normal stomachs, is a most irrational practice which is doubtless productive of an incalculable amount of harm. At the best it must lead to the taking of more food than is required, thus not only overtaxing the secretory organs, but also burdening the liver, intestines and kidneys with an unduly large amount of excretory work; and at the worst it must result in a relatively early exhaustion of both sets of glands, as well as in catarrhal inflammations of the alimentary canal and all the unnumbered maladies grouped under the terms lithemia or uricacidemia, not to mention the more dangerous affections of various organs which are believed to owe their origin often to an excess of uric acid and the xanthin bases, and the more obscure forms of autointoxication. It is not intended, however, to condemn the use of table salt, or the various mild articles employed merely to flavor our foods.

It should be time enough to spur the digestive functions with drug irritants when, in the absence of imprudent eating, they are found to be flagging in their work. Usually, when they fail to meet the demands made upon them, except after acute illness or in old age, it is because the demands have been outrageously heavy. In the majority of cases of dyspepsia there is, in the earlier stages at least, an excess rather than a deficiency of the hydrochloric acid, and generally of pepsin and rennet ferment as well, and in these cases the gastric irritants so recklessly employed by the cooks are as useless and injurious as are the scarcely more powerful stomachics which are still so often ignorantly prescribed for them by physicians.

There is more in dietetics than is dreamed of in many of our philosophies. The diet can be made quite as potent for good or harm as our most frequently used medicaments. Besides the abuse of nitrogenous foods and of the sharper condiments, much might be said, if time permitted, of the overloading of the stomach which constantly results from the bad custom of tempting the palate with a lot of rich and often indigestible sweets after the appetite has been fully satisfied and, considering the artificial stimulation just described, after the needs of the body have already been more than supplied. And I shall not enlarge upon the popular fallacies regarding the importance of fruit in the diet of man. Palatable, and often useful as many kinds of fruit are medicinally to counteract some of the effects of over-eating, they do not supply to the system any indispensable elements not present in other articles of much higher food value and not so prone to disagree. In moderation most kinds of fully ripe fruit are safe enough for healthy persons, and for many of those whose chief complaint is constipation, but those of lithemic tendency need to indulge in them sparingly if at all.

#### CONCLUSIONS.

To sum up: We should never advise our patients to "eat everything" until we have thoroughly cured their diseased digestive organs and freed them from the lithemic condition; and powerful as are our modern weapons against these, we can not often succeed in accomplishing such a radical cure until the patients have reformed their unhygienic habits, not only in their eating and drinking, but also in both their work and play. They must learn self-denial and at least the rudiments of the immutable laws of health and, having learned, obey them. They must take into their stomachs, in approximately right proportions, the things that

will nourish and strengthen them, and little or none of those whose chief effect is to derange or irritate the functions or tissues of the body. In many cases, besides, they must give up sedentary employments or pleasures and take regularly, every day, an adequate amount of exercise out of doors. In short, oxygenation must be made to bear its proper ratio to alimentation.

Nor should we advise even the well persons in the families under our charge to "eat everything," without some regard to their idiosyncrasies and tendencies, as well as a reasonable amount of care that they do not follow a harmful acquired taste for too much of the rich and complicated viands or such an undue proportion of nitrogenous food as would make patients of them a few years later, by setting up gradually insidious forms of chronic disease which would inevitably result, at a relatively early period of their lives, in gout or rheumatism, or in other more serious and fatal organic affections.

#### POISONING FROM AUTOINTOXICATION.\*

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In Hufeland's "Art of Prolonging Life," written in 1790, and one of the few books of that century still published and read, there is a distinct recognition of autointoxication states generated in the intestinal canal by the fermentation and changes of foods and drinks. Several of the proprietary medicines owe their success to the recognition of this condition and the application of antiseptic and eliminative measures. One such remedy, widely advertised and supported by volumes of testimonials as having cured obscure disorders and averted serious diseases, contains sulphate of magnesia and soda concealed by some flavoring substances. The value of this remedy is in its power to overcome these auto-intoxicative states which are largely unknown. A book written by an unknown man, claiming to be the science of a new life, nothing more than a promulgation of the theory of two meals a day, points out the same range of causes, with abstinence as the remedy. Eating large quantities of food three times a day is very apt to produce intestinal troubles by supplying more nutriment than can be assimilated, and furnishing the conditions for poisoning from that which is not used. Every practitioner is familiar with autointoxication and infection from the presence of foods which undergo putrefactive changes. The good results from antiseptic and eliminative treatment demonstrate this. The limits of this present paper make it impossible to do more than call attention to a particular form of autointoxication due largely to the products and chemical disturbances which follow from the use of beer and spirits. The common theory that spirits increase or in some way aid digestion, and can be used with foods with comparative safety, has no support in modern research. Persons who drink wine and beer only at meals are never good types of health and free from digestive disorders so common to all classes. Moderate users of spirits only at meals are not common in this country, for the reason that they are unable to confine the use of spirits to the time of food-taking. Literally, such persons soon begin to drink at other times and occasions, and often to excess. The average moderate drinking man, whether using spirits at meals or on other occasions, very soon becomes an

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invalid. Often this invalidism is called "rheumatism," "malaria," etc., and is marked by local palsy, headaches, irregularity of the heart's action, insomnia, dyspeptic symptoms, catarrhal difficulties, with alternate constipation and diarrhea. These and other obscure symptoms are ascribed to various causes and are rarely recognized as having any connection with the use of beer or spirits. The disappearance of all these symptoms after periods of total abstinence from spirits is usually ascribed to some other cause. The ordinary beer drinker is the most prominent example of autointoxication. In many instances but little change is noted in the first period of addiction. One may use beer daily for a long time, without any noticeable change, but sooner or later a class of symptoms will appear which clearly point out the presence of toxic products and their absorption into the system. The fatty degeneration so characteristic in beer-drinkers, associated with increase of flesh, loss of vigor and enfeebled action of the heart, is common to most cases. Enfeebled vigor and slow vitality is noticeable, particularly among the English workmen in large cities and towns. Such persons have every appearance of health, but when injured or attacked with disease, have no resisting power and die from apparently trivial causes. In this country beer-drinkers usually are dyspeptics, and have catarrhal and other local inflammations. They suffer from influenza, malaria, are sluggish, exhibit mental feebleness, and are great patrons of the doctors and the free dispensaries. The use of wines and stronger liquors in moderation or excess is followed by neuralgias, insomnia, and obscure pains which are called "rheumatism," and "malaria," or "the sequelæ of the grip." Other symptoms of disability which are noted in persons who use spirits to excess are frequently apparent in disorders of the nervous system. Some of the most obscure symptoms pointing to changes in the brain disappear rapidly from the discontinuance of spirits. In clinical studies this fact is so apparent that careful inquiries are always directed toward the habits of the patient to determine the influence of alcohol, if possible. The fact of using alcohol is becoming of greater significance clinically, and next to syphilis is a contributory cause in the production of a great variety of disease, and should be inquired into in every obscure case.

#### ACTION OF ALCOHOL.

Recent pathologic studies have cleared away much of the obscurity concerning the action of alcohol on the organism. We now know that alcohol, even in a small quantity, has a peculiar corroding action on both cell and tissue, impairing its power of growth and repair, and diminishing its functional activity. The nutrition which would naturally be used to repair cell and tissue is diverted, changed, and becomes waste products. The action of alcohol on the nerves, particularly those which control the blood-vessels, lessens the power of control and permit the blood to pass with greater force and volume, putting greater strain on the walls of the minute arteries, and is probably followed in many instances by minute hemorrhages. Alcohol in the blood diminishes the oxygen-carrying property, destroying the hemoglobin, and is followed by states of starvation. The waste products increase and the power of elimination decreases, hence all the processes of digestion are disturbed and altered. The waste products are retained and become sources for the growth of pathogenic germs. Both the liver and kidneys are subjected to increased activity with diminished nutrition. The pathologic condition is clearly that of starvation and irritation which

rapidly merges into inflammation and exhaustion. The products of these deranged metamorphoses become real poisons, and their presence in the system is marked by many and obscure symptoms. Often the evidence of these pathologic conditions is confirmed by the results of treatment. An example will make this more clear. A moderate-drinking lawyer who was an invalid, having been unsuccessfully treated by many physicians for many grave diseases, suddenly became a convert to "Christian Science." He abandoned the use of all spirits, and lived on a restricted diet, with mineral waters. The recovery which followed was attributed entirely to mind effects. In reality, it was simply the removal of the causes, viz., the spirits, overeating, and the autointoxication which followed.

Again, a farmer, who used cider-brandy regularly every day, was thought to have gastro-enteritis, with colitis and local paralysis. Heart lesion and asthma were also present. After various efforts to recover, which were unsuccessful, he gave up all use of spirits, and was treated in a sanitarium, by baths, milk, and a restricted diet. The result was most satisfactory, and the recovery very rapid. These are common instances which are often seen in practice. The young physician trained in the technique of modern diagnosis would find very grave symptoms of organic disease in such cases. To the older physician with experience and an intuitive diagnostic sense, the term "bilious" would express his conception of diagnosis and subsequent treatment. A great variety of obscure symptoms whose origin would be doubtful, should always be treated on this supposition that the poisonous products may be spirits and allied causes. Inflammatory states and bacterial sources of infection, localized lesions, and irritations may all spring from the same source, and their sudden recovery following the use of commonplace remedies and placebos should be considered evidence of their toxic origin. Many of the most wonderful cures ascribed to various remedies are nothing more than the removal of toxic poisons. In neurotic persons these conditions are probably often present, and the value of a hospital treatment is very often due to a change of diet and removal of certain causes which were not recognized. The action of a cathartic in all inflammatory conditions is a practical measure along this same line. Neurasthenic states of the brain and nervous system, from overwork and neglect of normal living, may strongly predispose to the formation of toxins in the intestinal tract, the absorption of which will still farther complicate and add to the disorders present. Want of proper muscular exercise, confinement in bad surroundings, using food not adapted to the climate and work, are also prominent causes. Insomnia is another common condition following poisoning. In a patient under my care, where insomnia led up to morphia taking, the treatment by baths, mineral waters, and restricted diet resulted in complete recovery. The original cause was toxemia. The use of beer for its supposed food and strength value often increases this condition. The temporary relief which follows from its anesthetic action on the nerve-centers creates the impression of cure, while in reality the poisoning is increased. Spirit taking for the same reason is often followed by the same results. Sclerotic states of the brain and cord which follow the moderate or immoderate use of spirits, and the slight hemorrhages which we now realize to be very common, are all the direct results of the changes in the metabolism and the formation of poisoned products which in themselves become sources of injury. The term "bilious," in disrepute among

modern physicians, and indicating in a general way some unknown congested condition, has pointed out lines of treatment the results of which have been far more satisfactory and nearer a final cure than from any modern remedies. The hydropathic theory of disease and its treatment, particularly the internal use of water, is also much nearer the most advanced teachings of science and its practical application. I append some clinical illustrations of these facts which will bring them into greater prominence. I select some extreme cases as examples of the possibilities of relief from treatment based on this theory of autointoxications.

#### RESULTS OF TREATMENT.

A lawyer at 52 gave up business on the supposition that he had paresis and must die. A period of ten years of active treatment and consultation had confirmed the opinion that he was incurable. He continued to use spirits every day, at meals and at intervals, eating very heartily, and exercising very little. He suffered from palsy, lancinating pains, insomnia, and gastro-intestinal disturbance, was intensely irritable, and depressed at times, and had delusions of exaltation, which slowly increased. By an accident, he was forced to stay at a sanitarium, where he reluctantly consented to the withdrawal of spirits and the substitution of baths and moderate exercise. The change was so pronounced that the treatment was continued. Three months afterward all symptoms had subsided and he was able to go about free from pain and fully restored. He returned to his profession, working moderately and living abstemiously, using baths daily. Four years afterward he was still well and strong. The inference was clear that his paresis was very largely functional, and due to the toxic conditions of the body. This case was the subject of much discussion, and has been published in the journals.

An instance of a remarkable cure ascribed to a preparation of soda was undoubtedly due to hygienic measures of baths, abstinence from spirits, and a limited diet, followed continuously for months. I pointed out this probable fact to the disgust of the physician, who thought he had made a discovery of a new use of soda.

A second example of the same class was that of a prominent clergyman, who for years had used wines at table, and beer at intervals for its supposed tonic action. After an attack of influenza, hemiplegia with great enfeeblement came on. The urine showed disease of the kidneys and the stomach and intestinal tract were also deranged. Several very elaborate diagnoses of grave diseases were made by physicians, and equally elaborate plans for treatment were suggested. He was finally put under the care of a country doctor with no hope of recovery and the only expectation of making his last days comfortable. This physician used a cabinet bath for profuse sweating, and massage followed by a course of dieting, with mineral waters, and passive exercise. The recovery was rapid. The paralysis disappeared. His mental condition changed, and all symptoms of inflammation vanished. The restoration was complete. He did not resume his profession, but went into active outdoor service, and is now—three years afterward—well and vigorous. This case, like the other, was clearly one of poisoning which was rapidly merging into a chronic condition, but fortunately the removal of the active causes enabled Nature to restore much of the lost health and vigor.

An active, energetic lawyer, 55 years of age, had a convulsive attack, with unconsciousness, followed by

hemiplegia and mental feebleness. This was considered cerebral hemorrhage. The physician gave spirits as a tonic and large quantities of liquid foods to keep up his strength. He had been a wine-drinker at the table, also a very hearty eater of meat, using large quantities of rich food, and occasionally using spirits. For two years he suffered from headaches and intestinal troubles and prolonged periods of prostration. Albumin was found in the urine, and his case was regarded as serious. I was called to witness his signature to a will, and to determine his mental condition. Acting on my advice, the family physician removed all spirits, and restricted the diet, giving mineral waters and baths daily. The result was very marked, with rapid recovery and complete change. After a tour to Europe, under the care of a physician, he returned in good health and vigor, and is now—six years after—strong and well. This was a clear case of autointoxication and the supposed hemorrhage was a poison attack from accumulation of toxins in the brain-centers.

A mechanic and mill-owner, without hereditary history, who had been temperate and regular in his habits up to 46 years of age, returned from a trip to Europe with the habit of using wine at meals. For the next five years he drank sweet wines freely at the table, using large quantities of rich foods on the supposition that he needed more strength and vigor with increased age and work. Attacks of rheumatism, with headache and extreme exhaustion, appeared and were treated by the physician without success. Inflammatory conditions of the joints followed, and convulsive attacks with great irritability and mental changes appeared. These were associated with depression of spirits and physical exhaustion. He went to a sanitarium; spirits were removed, the diet restricted and active eliminative treatment carried out for several months. Recovery followed. He resumed his business and two years later began to use wine at the table again, with rich foods. Strong spirits were taken at intervals, for strength. Later, rheumatism reappeared, then convulsive attacks which were pronounced epileptic. The physician continued to allow wine at meals, using narcotics to prevent the attacks, until finally death took place from acute pneumonia. In this case undoubtedly autointoxication from the use of wines and foods was the special exciting cause of the epilepsy and death. Had abstinence from spirits, rigid diet and careful eliminative treatment been persevered in, the result might have been different. The poisonous irritants and toxins concentrated in the brain-centers were the exciting cause of the explosions of nerve energies and the subsequent debility and death.

#### NECESSITY OF RECOGNITION OF ACTION OF SPIRITS.

I conclude at this point with a statement of the necessity of recognizing the poisonous action of spirits whether taken in moderation or excess, and summarize what I wish to make prominent as follows:

1. Alcohol in any form, taken into the body as a beverage, is not only a poison but produces other poisons, and associated with other substances may develop toxins. Alcohol is also an anesthetic and not a tonic or so-called stimulant. It increases the waste products of the body and diminishes the power of elimination. It also destroys the phagocytes of the blood, and thus removes and lessens the protective power of the blood-cells.

2. Whenever alcohol is used continuously as a beverage, for its medicinal effects, favorable conditions and soils for the cultivation and growth of poisoned compounds are created. These may be neutralized by other

conditions and not be apparent in the derangements of the functional activities which follow. Where disturbance and derangements of the nutrient and functional activities of the body are associated with the use of alcohol, their transient character and disappearance by the removal of spirits suggests the causes.

3. The functional and organic symptoms of derangement appearing in those who use spirits in moderation or excess, which quickly disappear by abstinence and eliminative measures, are clear indications of autointoxications from this source. Obscure symptoms of the nervous system in persons who use spirits should always be examined in relation to the toxic origin from this source. Also grave nutrient disturbances should suggest the same cause with the same treatment.

4. The treatment of all such cases, in which alcohol is used in any form, should be by antiseptic and eliminative measures, and the supposition should always include the possibility of poison by chemical products formed in the body.

## PROPOSED NATIONAL BUREAU OF MATERIA MEDICA.

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At the Richmond meeting of the AMERICAN MEDICAL ASSOCIATION, in 1881, I read a paper before the Section on Materia Medica and Therapeutics, entitled "The Materia Medica of the Future." In this paper I called attention to a condition of affairs threatening progress in materia medica science and, in a resolution offered for me by Professor Dunster, of the University of Michigan, after the reading of the paper, I suggested a way out of some of the difficulties which I then foresaw. The correctness of my reasoning at that time has been amply proved by subsequent events.

From the Richmond meeting I went to Washington and proposed to Prof. Spencer F. Baird, the secretary of the Smithsonian Institution, the advisability of establishing a national laboratory of materia medica under the auspices of the Government. Conferences were held with the heads of various departments, including the medical departments of the army, navy, and marine-hospital service, army medical museum, national board of health, etc. Professor Baird finally said that he considered the plan one of the most important ever brought to the attention of the Government. But lack of appropriation caused its abandonment at the time. In papers read before the Ninth International Medical Congress, Philadelphia County Medical Society and the AMERICAN MEDICAL ASSOCIATION, I again and again advocated the plan. The AMERICAN MEDICAL ASSOCIATION memorialized Congress on the subject in 1891, and reprints of my paper<sup>1</sup> accompanied it.

What I contend is that the "Materia Medica of the Future" depends for progress upon the proper interpretation and application of the patent and trade-mark laws. If those laws are so applied as to leave materia medica products free to the science, so that they can be investigated by the co-operative work of the profession, and the knowledge thus evolved reduced to law and embodied in system without the interference of self-interested persons who seek to appropriate it for the purposes of exploitation by misleading advertisements, their application for the protection of capital invested in the drug business will be beneficial. If, on the contrary, these laws are so applied as to create

monopolies in medical products, and encourage dishonesty in advertising, they will prove a hindrance to materia medica science and a curse to the American people.

Under act of Congress approved June 4, 1898, a commission was appointed to revise the statutes relating to patents and trade-marks. This commission reported Dec. 4, 1900, and the subject comes before the next Congress for debate. The time is therefore opportune, and it is important that the subject should be understood by the profession in all its bearings. Accordingly I beg attention to the following paper, which I have arranged in the form of a prospectus for a proposed bureau of materia medica. That the Government should inaugurate such a bureau all will doubtless agree. If the Government will not do so an association might be formed of the teachers of materia medica, and the work done by the experts connected with the medical and pharmaceutical schools and colleges working under the auspices of the association.

The plan I have suggested in the following paper is tentative, and needs most earnest consideration and discussion. When the right plan is reached, the committee on national legislation of the AMERICAN MEDICAL ASSOCIATION will be in a position to bring it before Congress.

### PROSPECTUS.

The objects of this bureau are: 1, to establish the standards of the materia medica preparations on the market and keep them under analytic and pharmacodynamic observation, with the aid and co-operation of the expert chemists, physiologists, biologists, botanists, pharmacologists and clinicians connected with the medical schools and colleges, and the pharmacists and manufacturers of medicinal drugs and chemicals; 2, to act as the medium of communication between the scientific workers in the laboratories, hospitals and clinics engaged in the investigation of new materia medica products, and those engaged in manufacturing and marketing them, to develop the knowledge of their origin, genesis, nature, composition, methods of manufacture, standardization, pharmacodynamic properties and therapeutic uses; 3, to collect the knowledge of materia medica products, reduce it to law, embody it in system, and publish it for the benefit of science; 4, to aid the manufacturers of materia medica products and preparations who conform their goods to recognized standards in the introduction of their brands to commence by advocating that the medical profession in prescribing shall specify those brands which comply with scientific and professional requirements.

### STANDARDS.

The necessity for authoritative standards to fix the nomenclature, define the character, establish the purity, and regulate the strength of medicine, is recognized by all civilized countries. These authoritative standards are called pharmacopeias. The "United States Pharmacopeia" is an authoritative list of medicinal substances with definitions, descriptions, or formulae for their preparation. The work was devised, and is decennially revised by a committee appointed by a congress of physicians and pharmacists, which assembles in Washington every ten years for that purpose. The pharmacopeias of all nations, except those of the United States, Chili and Greece, are issued under the authority of the respective governments, and therefore partake of the nature of laws.

### WANT OF UNIFORMITY IN MATERIA MEDICA PRODUCTS AND PREPARATIONS.

Compliance with the Pharmacopeia not being obligatory, there is a wide difference of uniformity in this country between the products of the various manufacturers. The processes of the Pharmacopeia yield products with characters which distinguish them from the products yielded by other processes. There are, for example, quite an extensive variety of processes extant for making fluid extracts. Taking the products of the Pharmacopeia as standard, and comparing the products of the other processes with them, grading them in accordance with their resemblance to the official fluid extracts, decided difference of character will be observed between the two extremes. The Pharmacopeia directs a certain process for the manufacture of tinctures. It is evident that the tinctures prepared by the official process, and those prepared by diluting the dif-

1. JOURNAL A. M. A., Oct. 24, 1891, p. 623.