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ALCOHOLIC INTOLERANCE AND PREDISPOSITIONS.

Read in the Section on State Medicine at the Forty-sixth Annual Meeting of the American Medical Association at Baltimore, Md., May 7-10, 1895.

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The fact that many persons use spirits to excess at intervals, or in moderation for a life time, and from superficial observation are apparently no worse, is both misleading and dangerous. In one case it conveys the impression that spirits are harmless in small quantities, and occasional excesses are of little injury from which restoration quickly follows. In the second case the danger of repeated pathologic disturbances are masked until organic changes take place, and most serious results follow, that are not apparent except in other departures from health.

The so-called moderate user of spirits when examined critically appears differently from what he himself or friends suppose. His fancied vigor and mental health is an illusion. His freedom from pain or discomfort is the work of narcotism and diminished nerve sensibilities. Constant dulling of the senses by the steady use of small doses of alcohol removes all warnings of danger, and increases the delusions of power and capacity to determine the relation of surroundings, and proper adjustment to them. This goes on slowly or rapidly, and the effects accumulate, always along unusual lines not recognized. By and by, alterations in character and conduct appear, changes of the emotions and higher brain power manifest in irritability, suspicion, credulity, instability. Then neuritis, rheumatism, indigestion, and various complex neurotic disturbances appear. Finally, death follows some acute inflammation or fatty degeneration of the liver or heart, or lungs. Bright's disease, heart failure or the very comprehensive term neurasthenia, are used to express states of degeneration, specifically due to alcohol and its accumulative effects on the cell and nerve organization.

Recently Dr. Pierret, of Lyons, and Dr. Lanceriaux, of Paris, have presented elaborate studies of the effects of moderate drinking of wine, beer and the stronger alcohols, confirming the conclusions of other physicians in a very marked way, showing that spirits in small quantities and taken at intervals, as at meals, or at stated times, is always injurious. This injury is poisoning, cell starvation and exhaustion which may not be prominent in some cases or appear to materially disturb the normal relations of life and living, but its accumulative degenerations after a time break out in the next generation with great certainty. This tolerance of spirits always

produces predisposition in the next or succeeding generations.

The capacity to use spirits in small quantities at intervals, becomes incapacity in the next generation. The intolerance of spirits extends from indifference up to positive repugnance and acute poisoning. Many persons manifest indifference to the taste and effects of spirits. Like tobacco, at first it is repugnant, later they are not unpleasantly affected by it in small doses. The increased action of the heart and circulation of the blood to the brain is pleasing within certain limits; beyond this, pain and suffering forbid its further use. This is a common form of intolerance. Spirits are usually taken in company, from contagion or surroundings. After a certain quantity is used, the system repels it, and headache, vertigo and distress follow.

This intolerance is overcome in some cases, and paroxysmal periodicity is the form of the inebriety that follows. In some cases a marked taste and repugnance is common. Spirits are often drunk impulsively and in large quantities, with condiments to conceal the flavor. In these cases there has been a natural intolerance formerly which has been overcome by repeated effort. In other cases, this intolerance after being held in abeyance for a time, asserts itself in an emphatic change to rigid abstinence and bitter denunciations of persons who use spirits. Many of the most dogmatic reformers who have used spirits at first, then suddenly stopped, have had naturally a constitutional intolerance of spirits. This has been overcome by circumstance, principally surroundings, ill health and want of training. Finally, from some unknown causes, this repelling diathesis has attained power to assert itself over the acquired taste and forced physiologic abstinence. To the man, it is simply an effort of the will which he thinks all persons can use, but literally it is the operation of physiologic laws, not his will.

Many very interesting cases of marked changes of living and character are made examples of theories of the will, of moral force and of faith, that are untrue and misleading.

This form of intolerance may appear after the first toxic use of spirits. The intoxication has created a profound impression of antagonism to any farther use of spirits. This is both physical and mental, the pain and suffering from the action of spirits is recalled by the memory and mind so vividly, as to repel any use of spirits again. Some persons will suffer from nausea and intense depression from the odor of spirits, and even the sight of an intoxicated man is painful. Another class, after the first intoxication, are never able to retain spirits without causing most intense irritation and nausea. I have met with cases who have used beer and wine freely for varying periods before 20, then suddenly developed an intense intolerance, and ever after suf-

fered from severe headache when any form of spirits was taken. I have seen two cases, both direct descendants from inebriate parents, who could not bear any form of spirits. They suffered from functional paralysis of the stomach, ending in acute vomiting and cardiac feebleness. Both of these men enjoyed the odor of spirits, but could not use it in any form.

Many of these cases of intolerance for spirits are the direct descendants of inebriates. Others are from some allied neurotic families, in which unusual drug sensitiveness prevails. Functional peculiarities are always more noted among neurotics and tolerances or intolerances of various drugs. In the normal man not weighed down by abnormal heredity, spirits would be naturally more or less intolerant. This would follow from the complex physiologic action of alcohol, viz., the sudden rise of the heart's action, disturbance of sensation and perversion of nutrition that always follow from its use. In a neurotic this will be concealed or exaggerated. Concealed in the moderate drinker, and exaggerated in the violent opposition mentally and physically to its use. The *predisposition* to the use of spirits is a direct or indirect heredity, and a neurosis from some allied condition of degeneration. In other cases it is a defect due to some abnormal condition of the brain centers.

The largest number of persons in which this condition exists, experience very pleasant effects from the use of spirits. A sense of exhilaration and apparent physical and mental vigor, together with a certain nerve rest, and power of adaptability and enjoyment of the surroundings comes from its use. The ordinary depressions and reactions from the action of alcohol on the heart and nerve centers are not prominent or noticeable, and are not regarded as due to spirits. This pleasing physiologic state continues and fosters egotism and delusions of strength and power of control. The constant dulling of the senses removes all consciousness of danger and capacity to judge of their actual condition. Later, a variety of complex disorders appear, with changes of character and irregularity of conduct. If the man lives in an automatic circle these changes are unnoticed, and he may continue a long time, only increasing the spirits for its effects. If he lives in a circle of much strain and change he will become an inebriate and show marked symptoms of degeneration and disease. Acute inflammations of the liver, stomach, lungs, and heart failure are common. Rheumatism and neurotic disorders of very complex forms appear. Inebriety appears as a rule in all of these cases. Drug taking of all kinds follows naturally. The delusions which begins early in the case continue with increasing intensity. This is manifest in the warm defense of the moderate use of alcohol, and the delusion that spirits have some real virtue and power to help on toward an ideal physical and mental health.

I have seen cases in which the mind was wrecked and imbecile in all other lines, yet clear and emphatic in defense of the moderate use of spirits. This delusion clings to the mind tenaciously. When the case has recovered, and a long period of abstinence has supervened, it will appear in the efforts to use spirits again moderately. The physiologic impression coming from heredity, and fastened in the mind by the early exhilaration from the use of spirits, is seldom effaced. The brain is permanently impaired, the predisposition for alcohol, or any narcotic drugs,

has become a dominant idea that may be concealed for a time but is never broken up.

A certain number of persons realize early the physiologic defect of organization, and by the most heroic efforts, avoid wreck in total abstinence. In such cases certain physical conditions, and environment, are the real exacting causes. If these can be obviated or provided against, they can overcome this tendency—the value of institutional treatment is to teach these physical causes and the way to avoid them; to point out the danger, not from spirits and drugs alone, but the conditions which call for the seductive effects of such drugs. This is vaguely outlined in the confused literature of moralists, who speak of the battles with the demon appetite; of the sinful tendency to be overcome by prayer; of the influence of the lower nature to attain supremacy; of the natural tendency of man to go down, to become an animal, to give free reign to his lower instincts. In reality this, when seen from a higher point of view, is physical degeneration, with consciousness of its presence and tendency, and expectation of being able to control it. In a certain number of cases all consciousness of the real condition is absent. Paralysis exists from the beginning; in others only a partial palsy is present. In the former, delusional efforts for restoration, and delusional confidence in recovery, with continuous failures, are common symptoms. In the latter, successful and continued efforts along natural lines of cause and effect, are followed by both temporary and permanent restoration.

Many men in active life, are profoundly conscious of the danger of a single glass of spirits. They recognize the degenerative predisposition that is present urging them to take spirits, but overcome this tendency. Such cases often appeal to me for counsel to acquire new strength for this struggle. Suicide is the frequent ending of such cases; finding this craze for relief increasing and being overcome by it, give way to melancholy. This predisposition and central nerve degeneration not unfrequently dies out in middle or later life. Some unknown physiologic change takes place in the nerve centers and all desire or taste for spirits disappears. Conditions of ill health, surroundings and other causes are inoperative. He never drinks again. The taste of spirits is repelling and seem to have no effect. Such men often explain this as a mere effort of the will, or the power of some supernatural force, or the effect of some drug, or remedial appliance.

This predisposition in other cases never dies out, but always remains slumbering and ready to be fanned into a mild flame at any moment. In certain states of living and surroundings it never appears; in others, it is dominant beyond the power of control. Mental contagion, strain, irregularity of life and living, bring it into prominence. Again this degeneration breaks out at distinct periods of life then dies out, only to appear in some other form. The period of adolescence is often marked by alcoholic excess, which subsides in manhood, or appears in the senile stage again.

There are undoubtedly certain periods of life which are favorable for the development of these predispositions to seek relief from spirits or drugs. One of these periods is the menopause in women, and the senile stage in man. A vast region of unexplored facts stretch out in all directions from this point. Alcoholic intolerance and alcoholic predispositions

are physiologic and psychologic facts within the observation of any one. They are also unknown pathologic conditions, of both defective growth, and exhaustion and poisoning. The normal or approximately healthy man is not predisposed to use alcohol or narcotic drugs. While alcohol is not pleasing alone, when mixed in water and flavoring substances it may be tolerated, but when its effects are realized a natural intolerance begins. Unlike any other drug it conceals the conditions which it provokes, until such a time when they become fixed, then repugnance begins. This persistent concealment breaks out in the next generation as a physiologic bias and tendency to use the same drugs, to conceal the degeneration produced by the same causes. This persistent poisoning incapacitates and limits the vigor of the next life, giving it certain impulses to exhaustion; and breaking up its power of adaptability, causes pain and suffering which seeks relief in the same way. These subtle forces of heredity and morbid impulses, whose causes are only faintly comprehended, are expressed in these terms, intolerance and predisposition. Along this line we need new studies.

ALCOHOL IN THE GRIPPE.

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The present form of the gripe is an infectious disease finding its way through the respiratory mucous membrane, and the resulting toxins, by their migrations, tend to induce a lasting lassitude and depression that are characteristic symptoms in many of the cases. The primary cause of this disease is the susceptibility of the system. This is shown by the fact that some persons enjoy entire freedom, while others succumb to its influence every time it appears.

There are many conditions that favor it. What is called a poor circulation is accompanied by an inability to throw off morbid influences, and persons in that condition are likely to suffer from every epidemic. The same applies to indigestion, for when the body is not well nourished there is but feeble reactive force. Those having a torpid liver find the gripe an added burden to the discomfort of life, and those with an inactive skin are still more likely to suffer from its baneful influence, but among the more prominent causes of susceptibility may be classed the almost universal habit of drug taking, from the mild tonics, to patent medicines. Whenever one is out of order in any way, the first thing seems to be to swallow something, instead of trying to find out the cause of the trouble and seeking to obviate it by regulating the habits of life. This custom tends continually to lower the tone of the system, and the more it is indulged in the more evident becomes the apparent necessity of continuing the down-hill course. A large share of the deterioration of our people is due to the use of alcoholic tonics, or stimulants, as they are sometimes called. The majority do not look beyond the fact that they seem to feel better after their use, but this feeling comes from the benumbing action of the alcohol itself, and never from any building up action of the drug, because it has no such action. What is supposed by some to be that action is only an irritation resulting from the efforts of the

system to get rid of the drug. It only exhausts the vitality so much quicker, and therefore alcohol should always be considered a poison to the human system, and is already so considered by some of the highest medical authorities. The cells of the brain lie buried in a nutrient plasma, and their vigor depends upon the quality of this plasma. Should this become impregnated with alcohol in even a small degree, the action would necessarily be, so far, an abnormal one. These cells become exhausted from their natural activity and are then shrunken, depending for renewal on rest and the nutrient plasma by which they are surrounded. This has been demonstrated by experiments on dogs and pigeons. Out of a number, some were killed, and on examination the brain cells were found well nourished and full, while their companions, after exercise and fatigue, showed shrunken brain cells.

Irritability always follows exhaustion in a nerve cell, by whatever cause excited, and there is every reason to believe that insomnia, neurasthenia, and acute insanity are due to fatigue of the nerve cells through failure of the nutrient plasma to furnish the necessary nutriment for restoration. There is a collapse that frequently comes after the use of so-called tonics and stimulants. Outraged nature cries aloud for help. This it is that causes so many to return to their cups. The condition may be called brain and nerve exhaustion. It is found most difficult to treat by ordinary methods, because these nearly all depend upon rousing up the vitality by recourse to some new irritant or drug.

The strain upon the nervous energy of the individual in the pressure of modern civilization is so great that many, not knowing or realizing the inevitable result, and feeling that there is no time for rest and recuperation, seek in alcohol or some narcotic a surcease for their jaded feelings. This, with some more quickly than with others, is sure to bring about a condition of neurasthenia, so aptly termed by Dr. Beard a chronic functional disease of the nervous system, the basis of which is impoverishment of the nervous tissue in excess of repair, which may exist without any evidence of profound organic complication. We have daily before our eyes a profusion of examples of the various forms of nervous prostration. Experts can readily recognize in their patients underlying symptoms of nerve exhaustion, which their personal record showed had long antedated the expression of any distinct climax of disease.

It is difficult for the ordinary mind to see the end from the beginning, for while some individuals, probably from inheritance from a sound ancestry, are enabled to ignore the laws of health for a long time, the superficial observer can point to them with pride and say: "They do no harm, in moderation." Even the Royal Commission of England reports that the temperate use of opium in India should be viewed in the same light as the temperate use of alcohol in England, which according to their measure is harmful or harmless according to the amount and discretion with which it is used. This is altogether too much of a commercial report. It needs a commission from America, France, or possibly Germany, to get a perfectly unbiased opinion. The question of the toleration of narcotics is not settled and never will be until it is settled right. The consensus of medical opinion is coming more and more to the conclusion that alcohol is only and always a poison, and