AN INAUGURAL DISSERTATION ON

The Pathological Effect of Alcohol

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To
The Medical Faculty
of The University of Nashville
This Dissertation
is most respectfully inscribed
By
Their friend & pupil
The
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The Pathological Effects of Alcohol.

In choosing the above subject for an Inaugural Dissertation, I have been actuated by a belief of its great importance, and of its universal prevalence, which happily for mankind is becoming less and less common.
The pathological effects of alcohol commence when it is taken into the mouth; it there produces irritation, with heat and dryness of the throat and tongue. After reaching the stomach its effects are of a powerfully irritant and caustic poison. It is quickly absorbed into the current of the circulation, where it would require volumes to record its many and varied effects. Alcohol belongs to the class of narcotics, which are defined to be medicines which pass through and nerve centers and act as first to gatt and then to depress nervous power and have further a special action on the intellectual part of the brain that is the mind and the physical ties by which mind is connected with matter, as those of volition and sensation, by which the mind is connected with the body, feeling it or knowing it, and the five senses by which the mind through the body is connected with external things. These intellectual properties of which is the brain are all more or less affected by narcotics.
The first effects of alcohol are characterized by excitement of the nervous and vascular systems. The pulse is increased, the face flushed, the eyes animated and red, and the intellectual functions are powerfully excited. This disturbance of the mind is not of a partial, but of a general character, tending to all the intellectual functions. The mind itself is confused, bewildered, and volition is impaired, so that the man stagers in his walk and exhibits many other abnormal nervous phenomena. This state is accompanied with excitement of the vascular system, and frequently with nausea and vomiting; it is followed by an irresistible desire to sleep, which continues for some time, and is attended with copious perspiration. When the patient awakens he complains of headache, loathing of food, great thirst, and lassitude; the tongue is furrowed and the mouth clammy. This degree of poisoning may prove fatal by the excitement producing disease in all those organs which are predisposed, or by the occurrence of some accident, which in his torpid state, he is unable to avoid. Other symptoms now supervene, the patient lays in
in a state of insensableness for many hours, the pulse is generally pulsless or imperceptible, the pupils are dilated, the countenance is commonly pale, sometimes flushed; the breathing is slow, laboured and often stertorous. Convulsions frequently occur, and an apoplectic disposition is called into effect and the individual dies of apoplexy, or some other disease of the brain.

If large quantities of alcohol have been taken at once there will seldom be much preliminary excitement; coma approaches in a few minutes and soon becomes profound; the face is mostly pale; the breathing stertorous & of a spirituous odor; the pupils are dilated and insensible to light; and death takes place in a few hours, sometimes immediately. The stomach of those poisoned by alcohol usually presents patches of thickened, inflamed mucous membrane of a cherry red color, the margins of the patches being more florid and consisting of a network of enlarged capillary vessels. The small intestines have their coats thickened and ulcerated. The appearances within the head are serous effusion under the arachnoid membrane.
minute injection of the vessels, gorging of the large veins, effusion of serum into the ventricles, extravasation of blood upon the brain, producing pressure & laceration of its substance. The blood in the heart & large vessels is dark fluid and unatmospheric. The lungs are filled with the same dark fluid. The liver is peculiarly liable to disease, and is said by McNish, never to escape in confirmed cases. This disease is known as the Drum Drinkers Liver and is characterized by a brown color, induration, deposition of various kinds in its substance, hypertrophy of the granules, and total destruction of function. The pancreas is indurated, indurated mesenteric glands, serous glands, inflammation, suppuration, & hardening of the kidneys. Cataract of the bladder. Incontinence of urine is extremely common with gin drinkers, and is apparently brought on by the stimulating character of the urine which is made thus stimulating by the amount of alcohol it contains. Gin drinkers are peculiarly liable to aneurisms.
from the debilitated condition of their System, and the continued excitement of the heart & arteries. Apoplexy of the S urge, varicose Veins, mania, Epilepsy, tending to Gangrene of Wounds, and Spontaneous Combustion. These are a few only of the many diseases which are produced by Alcohol. For if we inquire into the history & cause of disease, the list of Maladies which are produced or are influenced by alcoholic stimu- lants will be found a long, gory, and disgusting one. With the immediate consequences of the indulgence in the use of alcoholic Liquors, we are all so familiar that the lesson of horror, early imprinted on the mind of the young Spartan by the spectacle of a drunken Helot, is entirely lost upon us. The terrorizing uncertain walk—the loosen confused speech—the red eye & the distorted countenance of the drunkard shock us no longer, & even the total, though temporary, deprivation of Reason—the connecting link which makes Man kindred to the Beasts serves rather as matter of jest & of ridicule than of pity & dismay. We stand with this destroyer, as the Indian with his
Venomous serpents, but unlike him we possess no talisman to protect us in our mad career. Man dies by pestilence, by famine, by the edge of the sword, his joys, his hopes fade before the withering blast of many a dastardly agent of evil, but Intemperance must be conceded the first place amongst the destroyers whether we regard the number of its victims or the amount of evil which follows its train. The evil habits comprehended under this familiar term constitute peculiarly the blot upon our national character. It is affirmed on good authority that as great a quantity of ardent spirits are consumed by us as by all the rest of the World; and the miseries occasioned by their use are in the same ratio common in our land. This very common use of Alcoholic stimulants had its origin in false notions of Physiology, which consists in mistaking those stimulants which merely produce reaction in the system for the Vital Stimuli which are a certain amount of eternal heat, atmospheric air, Water, Nutrition; these not merely produce a change in the composition of the organic structure, and stimulate by disturbing
the balance of the system, but they renovate the tissues by entering in a manner indispensable to life into their composition.

These influences, which are constantly in action and which while they stimulate have no exhaustion after them, are the only efficient means of restoring the powers of the body after sickness.

There are many other stimuli which excite reaction but which are not renovating. Indeed, for the most part, have no restorative action on the organs, which except in producing symptoms or phenomena of reaction, have no vivifying influence, but on the contrary, they are injurious in proportion to the changes effected by them in the organic composition.

An endless injury has been done to medicine and many lives have been lost by this mistake or confounding the different stimuli together, the false notion having been thereby introduced, that because certain stimuli feed as it were the flame of life, stimulating agents generally are necessary to life.

Thus have arisen pernicious abuses in hygiene,
the worst of which was the concentrating alcoholic stimuli into substances of daily use, and attributing to them the power not only of strengthening but of renovating the organs; a doctrine false in Physiology & eminently destructive in practice. Medicine has ceased to expect any benefit from medicinal substances in the way of strengthening the Vital energy; the pretended virtues of such remedies are displayed nowhere but in the treatises on Materia Medica & false Physiology.

The greater frequency of Renal Disease in cold than in warm climates, may be accounted for by the fact of the larger amount of spirituous liquors consumed by the inhabitants of Cold regions, which is the most common & citing cause of Renal Disease. In Bright's Disease, we have a long train of anatomical changes characterised by softening of the Kidneys; it acquires a yellow or mottled appearance; the whole cortical part is converted into granulated tissue with interstitial deposit of an opaque white substance; the Kidney is generally enlarged, is
quite rough and scabrous to the touch externally, and is seen to rise in numerous small projections of yellow or purplish color; its form is often lobulated; its texture converted into a semicarilaginous substance, with the tubular portions drawn near to the surface. The suprahepatic glands are often tuberculated, granular.

In the peritoneum, pleura, and pericardium, there is a marked swelling, the mucous coat of the lungs is discolored, the spleen is softened, the mucous coat of the stomach and intestines presents redness, effusion of lymph, enlarged muciparous glands, ulceration.

This is one of the gravest diseases to which the human family is heir, whilst the following authors Dr. Burbridge, Elliott, Robinson, Abercrombie, Alison, Bell & Stokes, Watson, Wood, Dickson, etc., all concur in the statement that intemperance is the great predisposing cause, that which disturbs the blood, overtaxes for a long time the kidneys, in their functional exercise prevents their organic actions.
Dr. Bright uses the following strong language. "When intemperance has laid the foundation, the mischief will generally be so deeply rooted before the discovery is made, that could we remove the exciting cause, little could be hoped from remedies; but at the same time a more impor-
we warning against the intemperate use of ardent spirits cannot be derived from any other form of disease with which we are acquainted, since most assuredly by no other do so many individuals fall victims to this vice.

The liver, from its proximity to the stomach and the spirits reaching it, is so concentrated a form, rarely escapes in drunkenness.

The diseases which are most liable to be excited in this organ are hypertrophy, atrophy, inflammation, carcinic inflammation, and cirrhosis or granular liver. This disease consists of a deposit of an albuminous-fibrous matter, caused by protracted irritation, followed by hypertrophy of some of the granules, with atrophy of others; the texture of the granulation is dense, compact, and are surround.
by a distinct capsule. They exhibit a great variety of color, some being brownish, some of a yellowish white or mottled appearance, producing what has been called the Kutmut Liver.

This state of the organ is attended with destruction of function, it is seldom met with except in old drunkards.

Fatty degeneration is another disease of this organ, frequently produced by the same cause; it consists in the diffusion through its substance of an oily fluid, which Dr. Addison says is frequently of a dirty brown color, it is composed of an infinite number of carbonaceous granules.

In those who have used considerable quantities of alcohol for a long time it is a matter of great nicety to say where Physiology ceases and Pathology begins; we certainly cannot guess when we diminish our capacity for the ordinary duties of life—when we shorten life—when we disturb or disorder any of our physical functions, when most of all we damage our intellectual functions.

The drunkard certainly does all this, yet there are
are many who do all this and are still not drunkards. There are obviously intemperate as well in a Pathological, as in a Moral sense. There are many men, I am perfectly aware, who through a long life have used small quantities of ardent spirits occasionally, without any ill consequences; the use of them is in this way always begun, but after a while progressively an artificial necessity is built up in the system, which calls for a regular and regularly increasing quantity to be taken, in order that the stomach and brain may be enabled to perform their functions without it; the whole system flabby and falls into a languid, seble condition, he is restless and agitated, possessing the ball central neither of his mind nor of his body, he is unable to forget his pressing want for a moment, or to substitute any other means of excitement; he who has arrived at this stage is no longer a temperate man; although as yet no trembling of the hands nor pattering of the tongue, may give war

ning
ning of his danger—although as yet no eye keeps watch at his own door for his dreaded coming—no brown-haunted Wise Trembles at the sound of his distant footsteps, nor his children shrink from the glare of his savage and unsteady eye: all this impends and will be developed in his onward career as slowly as the alternation of day & night, or the uncheck’d progress of the seasons.

The stomach under these circumstances, has lost its ordinary sensibilities—the common appetite for healthy & nourishing food—the thirst for cool bland fluids are gone: the organ cannot be roused to action by the specific stimuli to which it is adapted physiologically to respond, its excitability is changed; it refuses to be roused, except by one class of agents; the presence of these is constantly desired, their absence is attended by an incessant craving which all unite in describing as the most intolerable of all sensation.
The digestive organs are subjected to a long train of disorders. The stomach loses its functional capacity & its tone; there is anorexia, with itching & vomiting in the morning. The mucus membrane of the mouth, cheeks, throat & the surface of the tongue and lips are of a fiery red, or ulcerated with aphthae. The breath is foetid. Digestion is depraved. The bowels for a while constive & inactive, are apt to be relaxed into diarrhoea, or irritated into dysentery.

The skin & eyes are tipped with the yellow hue of jaundice. The lower extremities become edematous, and while the limbs emaciate the body grows tumid. The man is stupid, drowsy, indolent and imbecile; his hand, his tongue, his whole frame tremble; he is unprix and unwilling to think, and his reflections are of the most gloomy character. He feels overwhelmed at the calamity, he has brought upon himself; he sheds tears readily and profusely & vows future abstinence, but the
seduces offers again the Cup of Life: and
he is again transformed into the image of
a brute: he is at last aroused from some
beauty fit of intimation by a violent Convulsion,
which is succeeded by another & another: they
so off leaving him with a body debilitated to
the lowest Muscular debility, and a mind
disordered & unresting: his pulse is small &
quick, and rapid, his skin cold & from
time to time covered with a clammy sweat;
his stomach will scarcely retain anything:
his tongue is foul coated thicken with a
frothy, yellowish fur & swollen indented
against the teeth and trembling violently
when protruded.
If the patient survives these symptoms,
inflammation of a subacute character is de
developed in the stomach, which is attended by
thickening of its walls sometimes to half an
inch, or even an inch in thickness, its tuni
ces matted together & probably ulcerated.
That alcohol is absorbed I suppose no one
will deny, for there is abundant proof of the
fact; thus alcohol has been found in the various secretions & tissues of the body.
Dr. Brown mentions a case where the brain had the smell of alcohol. Dr. Osborn found in the ventricles nearly four ounces of fluid having the smell & taste of alcohol. Dr. Wolf found the smell of brandy throughout the body; and Dr. Bercy says that alcohol in its pure state can be distilled from the bodies of drowned. Many other authorities could be added if it were necessary. Its effects in the blood are to cause viscosity & thickening of that fluid (which can be proved out of the body) to this lentor is to be ascribed the conjunctivae found in the veins & capillaries; the latter showing itself in the blebs upon the nose, and in the visage, features and eyes of the sit.
Alcohol interferes with the function of calorigenation, this is proved by the fact of the number who die annually from this cause. Dr. Baldus gives an account of from 15 to 18 hundred persons perishing in the streets of St. Petersburg.
in one night from this cause, there are thousands of similar cases reported in the papers & periodicals; it is probable that the hydrogen of the alcohol, united with all of the oxygen introduced by the lungs, to the exclusion of the carbon, forming water & giving out very little heat. The carbon & ether matrices thus left, are deposited in various parts of the body, laying the foundation for future disease. There is a peculiar aromatic odor eliminated from the bodies of drunkards which is exceedingly distinctive, and proves the saturation of their systems with alcohol; these seem without exception to have been the subjects of spontaneous combustion which, however disputed by some, is said by Mitchell to be proved beyond controversy.

I come now to the consideration of that disease which is produced by alcohol and nothing else. It has been known by various names; the drunkards themselves call it the 'horrors,' and well does it deserve the appellation for the hallucinations of the cat
are of the most gloomy characters; he is filled with dismay with despair, and hence some have regarded it as the Demon, Mania of the ancients. Armstrong entitles it the Brain fever of Frencrofts. Craigie gives it the double name of Meningitis Phantasmatophilia and Mythical brain fever. Pearson calls it Belerium Prenem, a phrase which points out the two most striking incidents of its history—the disturbance of mind and the nervous muscular derangement always attendant on it. It is most commonly spoken of in this country as Mania of Pneum, which is probably the best appellation both on account of its familiarity and of its pithy reference to the cause.

"Mania of Pneum, madness from drink," yet the derangement of the general health which so closely resembles fever seems to ally the affection to Belerium rather than to the other forms of insanity.

The cause which produces it is obvious and distinctly known, it arises from the
use of the various forms of alcoholic mixture in inordinate amount.

The habitual use of opium occasionally much bodily disorder but that it ever produces mania a little, I do not believe.

Some have maintained that delirium rem

er was the result of the sudden abstraction of stimuli, rather than of their continued use; this is certain; untrue; for we have multiplied thousands of cases, whose individ

uals have under strong moral influence ceased entirely from the use of alcoholic drinks, with out any ill consequences following; the keepers of prisons make very little of the danger of such attacks, though they have every means of observing their number and frequen

zy.

This enforced abstinence may be attri

buted to the delirium maniacicum, spoken of by Du eptra, and occurring in the subjects of severe injuries of intemperate habit.

The first symptoms observable in the disease under consideration, are those which indicate mental disorder, the patient's sum
dull melancholy & abstracted, affects solitude, shows a fear of being left alone in the dark, gives replies when not apostate, he tucks no food; his hands & tongue tremble violently; the skin is hot & dry; the eye suffused, glaring & unsteady; at night his careless and restless; when he falls into a sleep it is deep & soporose, but is disturbed by bad dreams & distressing fancies, or he sleeps with his eyes open, muttering & moaning and waking in alarm; from one of these brief slumber he starts abruptly into wild insanity; his countenance is flushed & distorted; his respiration hurried; his pulse quick & rapid; he labors under an undefined, but excessive terror; all who approach him are regarded as enemies, who seek to injure him; he resists furiously every offer of kindness.

The delirium of this disease is peculiar and characteristic; it is always from theреннев are full of fear & distress, the patient sees apparitions in the shape of blue devils, whose aspect is fierce and hostile.
he is engaged in mortal combat with muscular forces; in the terror of his flight he will scale a wall or leap a precipice to escape; will often inflict the severest injuries on himself and complain of others for having done it. In most cases there is inexpressible depressive activity of the muscular system. The patient is constantly in motion, starting, springing up, turning from side to side; the pulse can scarcely be felt for the ceaseless pulsations. The Cervix is ubruning. The stream of words or of thought; generally uncontrolled by any meaning, flows on for days at a time without intermission. If the disease is to terminate fatally, convulsions generally supervene and end the life of the patient.

The special Pathology of this singular affection has never been clearly made out. As but few die of it in its early stages the opportunities for investigation into its nature have been but limited. It is the nature of the poison to which it owes its origin to affect with derangement both functional
and structural every organ and tissue
of the body, hence the confusion amongst
authors who have written on the subject
itself any two of them giving the same symptoms.

There can be little doubt however that
it is dependent on lesion of the nervous sys-
tem for its most characteristic phenomena.
Thus we find the brain to have lost its
delicate & elastic texture, it is apt to be of
Morbid softness or unnaturally hard with
congestion of its Cappillaries. The Membra-
nes are thickened & rough and lose their
transparency; there is effusions on their sur-
face, and in the Ventricle of the brain.

These are the symptoms occurring
in those whose habits of intemperance
have at last overpowered their long aided
constitution. A set of symptoms simi-
lar to these, but less in severity, have probably
after assailed him in Miserable Morning
succeeding Nights of Fast & Debouchery; and
he has been in the habit of curing them
by a resort to the Poison which produced
Then, but the potent restorative now fails to restore or recruit for a moment, the energies of which it has gradually drained the system; in this complicated condition of indirect debility, extenuated by ills, functional disorder, and structural derangement, we must have recourse to some other stimulant, or nature will sink hopelessly undermined and worn out.

He must have stimulants, he will tell you, but I would not yield to his insane desires so much as to give him one drop of ardent spirit: I would in them with the immortal Rush lay the positive injunction “touch not—taste not—handle not.”

Opium here offers us a valuable remedy, with it we can always control the most unmanageable set if given in proper quantities, and I would accord it freely, for an opium eater is far preferable to a drunkard and yet we should not totally abandon him, but try and wean him from the use of the opium by the substitution of other narcotics.
as the help. Sacteomium, nose-gums, etc.,
and by a gradual diminution of dose.
If these means should fail, I would not hesitate
to withdraw all stimuli whatever, if I am
told of the danger of this. I reply that this
danger has been greatly exaggerated as the
records of prisons, houses of correction and
Temperance Societies prove.
I think it would admit of easy proof, that
Mania, convulsions & death, are much more liable
to occur during an course of uninterrupted
incontinence, than upon its abrupt intermission.
If a prophylactic system of treat-
ment I should like to say much more, but I
must extend my treatise to an inconvenient
length, for he will be a second Jenner, who
is so fortunate as to discover the the means of
preventing so much misery & debauchery.
It may be divided into Moral & Physical.
While I would not undervalue the power of
Moral means, I consider them entirely inade-
quate to the accomplishment of the object for
who has not observed the utter impotence of
The strongest resolutions of which the inebriate is in his better moments capable, how vain the pretense of reformation, although reiterated with prayers and tears. The moral and intellectual faculties are totally be numbed, even the love of life is extinguished in him, and but one thought one desire prevails the whole man.

This new and artificial instinct is no less strong it would seem than those of our original nature, for it seizes over its victim as awe as powerful as that of hunger, of thirst, or of the general impulse.

This subject has engaged the attention of many scientific Physicians. Physicists, all over the world, the treatment proposed by them, which has for its object, the associating of nauseating drugs with the accustomed stimulants, seems most calculated to do good. This if persevered in will often do much in the way of reformation.

I know of several respectable Physicians, who have succeeded in relieving themselves, as well as others, by the use of small doses of Calomel & Rheubarb, taken at the time.
of the accustomed draught, they say that it relieves the internal craving in a remarkable manner.ramer a German physician thinks that this craving is susceptible of cure, recommends sulphuric acid for the purpose.

I think that it is peculiarly the duty of physicians to expel themselves to eradicate this evil from the community, since it was mainly by their agency that it was brought into common use, and it is said, that a majority of the late were made so by the doctors.

If this is true, it is but justice, that they should come forward promptly, undo the mischief they have done, but instead of this it has often given report, to see intelligent physicians prescribing to their patients, for comparatively trifling disorders, the various forms of alcoholic medicine, as “Dr. Bitter,” &c., when they knew or should have known that it would ultimately in their eternal destruction.

I cannot conceive how it is possible for a physician to be justified in recommending medicines containing alcohol to a patient when there is the least danger of his contracting a love for strong drink from it.