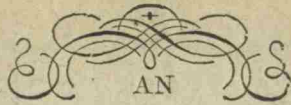


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No. 148



AN

INAUGURAL DISSERTATION

ON

The Pathological Effect Of Alcohol.

SUBMITTED TO THE
PRESIDENT, BOARD OF TRUSTEES, AND MEDICAL FACULTY
OF THE

UNIVERSITY OF NASHVILLE,

FOR THE DEGREE OF

DOCTOR OF MEDICINE.

BY

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OF

Decatur, Alabama.



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To
The Medical Faculty
of The University of Nashville
This Dissertation
Is most respectfully Inscribed
By
Their Friend & Pupil
The
Author.

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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.

1
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 Fauces.

After reaching the Stomach its effects are of a powerfully irritant and Caustic Poison.

It is quickly absorbed into the current of the Circulation, when 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 to nerves and nerve centres, and act so as first to exalt 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 & sensation, by which the Mind is connected with the body, feeling it, or governing it; and the five senses by which the mind through the body is connected with external things.

These Intellectual properties the Centre of which is the Brain are all more or less affected by Narcotics.

The first effects of Alcohol are characterised by excitement of the nervous & vascular systems.

The pulse is increased in ^{frequency}, the face flushed the Eyes animated & red, and the Intellectual functions are powerfully excited. This disturbance of the mind is not of a partial, but of a general character, extending 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 awakes he complains of headache, loathing of food, great thirst, and lassitude; the tongue is furred 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 insensibility for many hours, - the pulse is generally feeble or imperceptible, - the pupils are dilated, - the countenance is commonly pale, sometimes flushed, - the breathing is slow, laborious 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 & soon becomes profound; the face is vastly pale, the breathing stertorous & of a spiritous 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 serosity 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 unarterialised; & the Lungs are filled with the same dark fluid.

The Liver is peculiarly liable to Disease, and is said by Mc Nish, never to escape in confirmed Wopors, this Disease is known as the Drunk Drinker's Liver and is characterised by a brown color, induration, depositions of various kinds in its substance, hypertrophy of the granules, and total destruction of function.

The Pancreas is indurated, - indurated Mesenteric Glands, - Scimus Splenis, - inflammation, supuration, & hardening of the Kidnies, - Catarrh of the Bladder, - incontinence of urine, is exceedingly common with Drunkards, and is apparently brought on by the stimulating character of the urine which is made thus stimulating by the amount of alcohol it contains.

Drunkards are peculiarly liable to Anurisms,
from

from the debilitated condition of their System,
and the continued excitement of the heart & Arteries.

Apoplexy of the Lungs, Varicose Veins, mania,
Epilepsy, tendency to Gangren 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 stimuli; will be found a long, gloomy, 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 exhibition of a drunken Helot, is entirely lost upon us; the tottering uncertain Walk - the broken confused speech - the red Eye & the distorted countenance of the Drunken Road Shock us no longer, & even the total, though temporary, deprivation of Reason - The connecting link which makes man kindred to the Deity, serves rather as matter of jest & of ridicule, than of pity & dismay. We sport with this destroyer, as the Indian with his

Venemous 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 fall before the with-
 ering blast of many & derisful agents of evil, but to
 Intemperance must be conceded, the first place
 amongst the destroyers, whether we regard the num-
 ber of its victims, or the amount of evil which follow in its tra-
 ain. 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 stimuli, had
 its origin in false notions of Physiology, which
 conceits in mistaking those stimulants which
 merely produce reaction in the system, for the
 vital Stimuli; which are a certain amount of ext-
 ernal heat, atmospheric air, Water, & nutriment, these
 not merely produce a change in the composition
 of the organic structures, 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 mistaking 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 converting 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 spiritous liquors, consumed by the inhabitants of cold regions; which is the most common & exciting 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 corticle part is converted into granulated texture, 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 semi cartilaginous substance, with the tubular portions drawn near to the surface; & the supra Renal Glands are often tuberculated, & granular.

Tropical effusions are seen in the cellular tissue; peritoneum, pleura, & pericardium; empyema & oedema of the Lungs; Diseased Liver; softened Spleen; the mucous coat of the stomach & 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 viz. Burbridge, Elliotson, Robinson, Abercrombie, Alison, Bell & Stokes, Watson, Wood, Dickson, etc. all concur in the statement that intemperance is the great predisposing cause, that which deteriorates the blood, over tasks for a long time the Kidneys in their functional exercise & prevents their organic actions.

Dr Bright uses the following strong language. -
 -age. 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 for from
 remedies; but at the same time a more impress-
 -ive warning against the intemperate use of
 ardent spirits cannot be derived from any
 other form of disease with which we are acq-
 -uainted, 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 Drunkards.

The diseases which are most liable to be excited
 in this organ, are Hypertrophy, Atrophy, Inflamma-
 -tion, Chronic inflammation, and Cirrhosis or
 Bran-drinkers Liver; this disease, consists of a
 deposition of an albumina-fibrous matter,
 caused by protracted irritation, followed by
 Hypertrophy of some of the granules, with
 atrophy of others; the texture of the granulat-
 -ions is dense & compact, and are surrou-

by a distinct capsule; they exhibit a great variety color, some being brownish, some of a yellowish white or mottled appearance, producing what has been called the Nutmeg Liver. This state of the organ is attended with destruction of function; it is seldom met 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, & 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 & Pathology begins; we certainly commit excess 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 derange our intellectual functions.

The Drunkard certainly does all this; yet there
are

are many who do all this and are still not Drunkards; these 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 & gradually an artificial necessity, is built up in the system, which calls for a regular & 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 flags & falls into a languid, feeble condition, he is restless and agitated, possessing the full control 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 fattening of the tongue, may give warn-

ing

ning of his danger— although as yet no eye keeps watch at his own door for his dreaded coming— no brokenhearted Wife trembles at the 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 surely as the alternation of day & night, or the unchecked 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 insatiate craving, which all unite in describing as the most intolerable of all sensations.

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 mucous 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 coarctive & inactive, are apt to be relaxed into Diarrhoea; or irritated into Dysentery.

The skin & Eyes are tinged 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 trembles; he is unfit 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

seducer, offers again the cup of life, and he is again transformed into the image of a brute; he is at last aroused from some beastly fit of intoxication by a violent Convulsion, which is succeeded by another & another; they go off leaving him with a body debilitated to the lowest muscular debility, and a mind disordered & unstrung; 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 thick with a foetid, yellowish fur, & swollen & indented against the teeth and trembling violently when protruded.

If the patient survives these symptoms, inflammation of a subacute character is developed in the stomach, which is attended by thickening of its walls sometimes to half an inch, or even an inch in thickness, its tunics 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 Boos mentions a case where the brain had the smell of alcohol. Dr Osgood found in the Ventricle, nearly four ounces of fluid having the smell & taste of alcohol. Dr Wolf found the smell of Brandy throughout the body; and Dr Percy says that alcohol in its pure state can be distilled from the bodies of Drunkards; 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 extent is to be ascribed the congestions found in the Veins & capillaries; the latter showing itself in the bloom upon the nose, and in the Vesage, feature and Eyes of the sot.

Alcohol interferes with the function of calorification, this is proved by the fact of the numbers who die annually from this cause, thus Baupri gives an account of from 13 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, unites with all of the oxygen introduced by the lungs; to the exclusion of the carbon; forming water & giving out very little heat. The carbon & effete matters, thus left, are deposited in various parts of the body, laying the foundation for future disease. There is a peculiar saccharine 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 Mitchel 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 "Horror"; and well does it deserve the appellation, for the hallucinations of the Sat

are of the most gloomy character; he is filled with dismay with despair; and hence some have regarded it as the Demonia Mania of the ancients. Armstrong entitles it the Brain fever of Brunward, Craigie gives it the double name of Meningitis Phantasmatophora, & Mythic brain fever.

Pearson calls it Delirium tremens, a phrase which points out the two most striking incidents of its history - the disturbance of mind, and the nervo muscular derangement always attendant on it.

It is most commonly spoken of in this Country as mania-Potu, which is probably the best appellation, both on account of its familiarity and of its pithy reference to the cause,

"Mania-a-Potu, madness from drink."

yet the derangement of the general health which so closely resembles fever, seems to ally the affection to delirium 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 occasions much bodily disorder but that it ever produces mania-a-potu, I do not believe.

Some have maintained that delirium tremens, was the result of the sudden abstraction of stimuli, rather than of their continued use; this is certainly untrue; for we have multiplied thousands of cases, where individuals 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 & frequency.

So this enforced abstinence may be attributed the delirium traumaticum, spoken of by Dupuytren, and occurring in the subjects of severe injuries if of intemperate habits.

The first symptoms observable in the disease under consideration, are those which indicate mental disorder; the patient seems

dull melancholy & abstracted, affects solitude, shows a fear of being left alone in the dark, gives replies when not spoken to; he takes no food; his hands & tongue tremble violently; the skin is hot & dry; the eye suffused, glaring & unsteady; at night he is wakeful and restless; when he falls into a doze, it is heavy & soporose, but is disturbed by bad dreams & distressing fancies, - or he sleeps with his eyes open, murmuring & moaning and waking in alarm; from one of these brief slumbers 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 seem to injure him; he resists furiously every offer of kindness.

The delirium of this disease is peculiar and characteristic; it is always gloomy; the reveries 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 numerous foes; 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 irrepressible & excessive activity of the muscular system. The patient is constantly in motion, starting, springing up, & tossing from side to side; the pulse can scarcely be felt for the ceaseless subsultus.

The Delirium is unbroken. The stream of words & of thought; generally unconnected 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 & seat 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 scarcely any two of them giving the same symptoms.

There can be little doubt however that it is dependant on lesion of the nervous system 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 Capillaries. The Membranes are thickened & rough, and lose their transparency; there is effusions on their surface, and in the Ventricles of the Brain.

These are the symptoms occurring in those whose habits of intemperance have at last overpowered their long abused constitutions. A set of symptoms similar to these, but less in severity, have probably often assailed him in miserable mornings succeeding nights of riot & debauchery; and he has been in the habit of curing them by a resort to the Poison which produced

them, 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—excitability exhausted by excess; functional disorder, and structural derangement, we must have recourse to some other stimulant, or nature will sink hopelessly undermined & 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 spirits; I would on 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 controul 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 hop, Sactucarium, Nyssejama, &c.,
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
inebriety, than upon its abrupt intermissions.

Of a prophylactic system of treat-
ment I should like to say much, were it
not for extending 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 & debasement.

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 impotency of

the strongest resolutions of which the inebriate is, in his better moments capable; how vain the promises of reformation; although reiterated with prayers & tears; the moral & intellectual faculties are totally benumbed, even the love of life is extinguished in him, and but one thought one desire pervades the whole man.

This new and artificial instinct is no less strong it would seem than those of our original nature, for it exerts over its victims as sway as powerful as that of hunger, of thirst, or of the Venereal impulse.

This subject has engaged the attention of many scientific Physicians & Philanthropists, all over the World, the treatment proposed by them, which has for its object, the associating of nauseating drugs with the accustomed stimulus, seems best 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 intemperate craving, in a remarkable manner, Cramer 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 exert 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 Lots, 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 grieved my heart, to see intelligent Physicians prescribing to their patients, for comparatively trifling disorders the various forms of alcoholic medicines, as Tonic Bitters, &c, when they knew, or should have known that it would ultimate 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.