

**The agency of alcohol, as illustrated by accurate dissections : being an account of Professor Sewall's drawings of the stomach, exhibiting its state in health, and under the various stages of alcoholic excitement and disease.**

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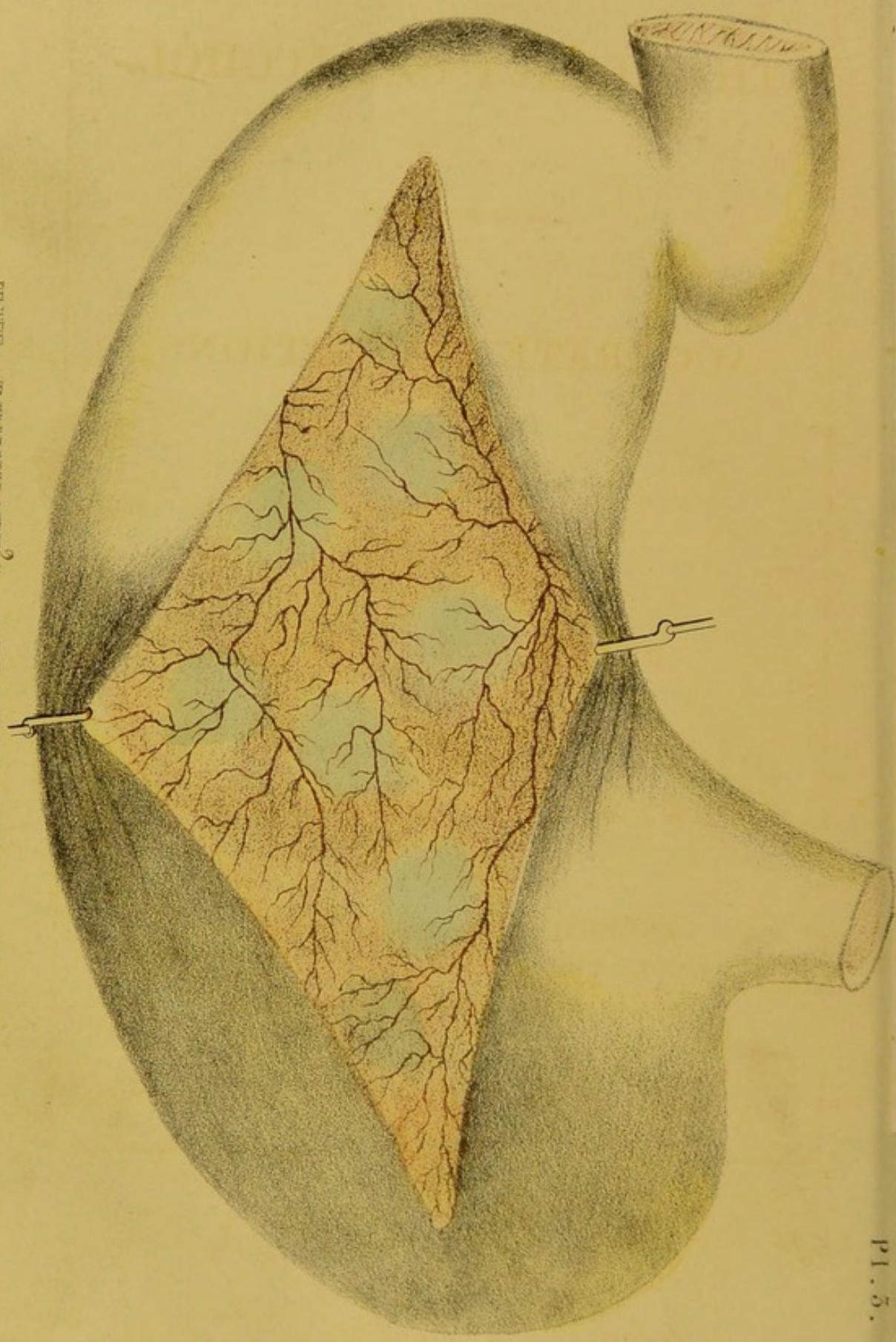
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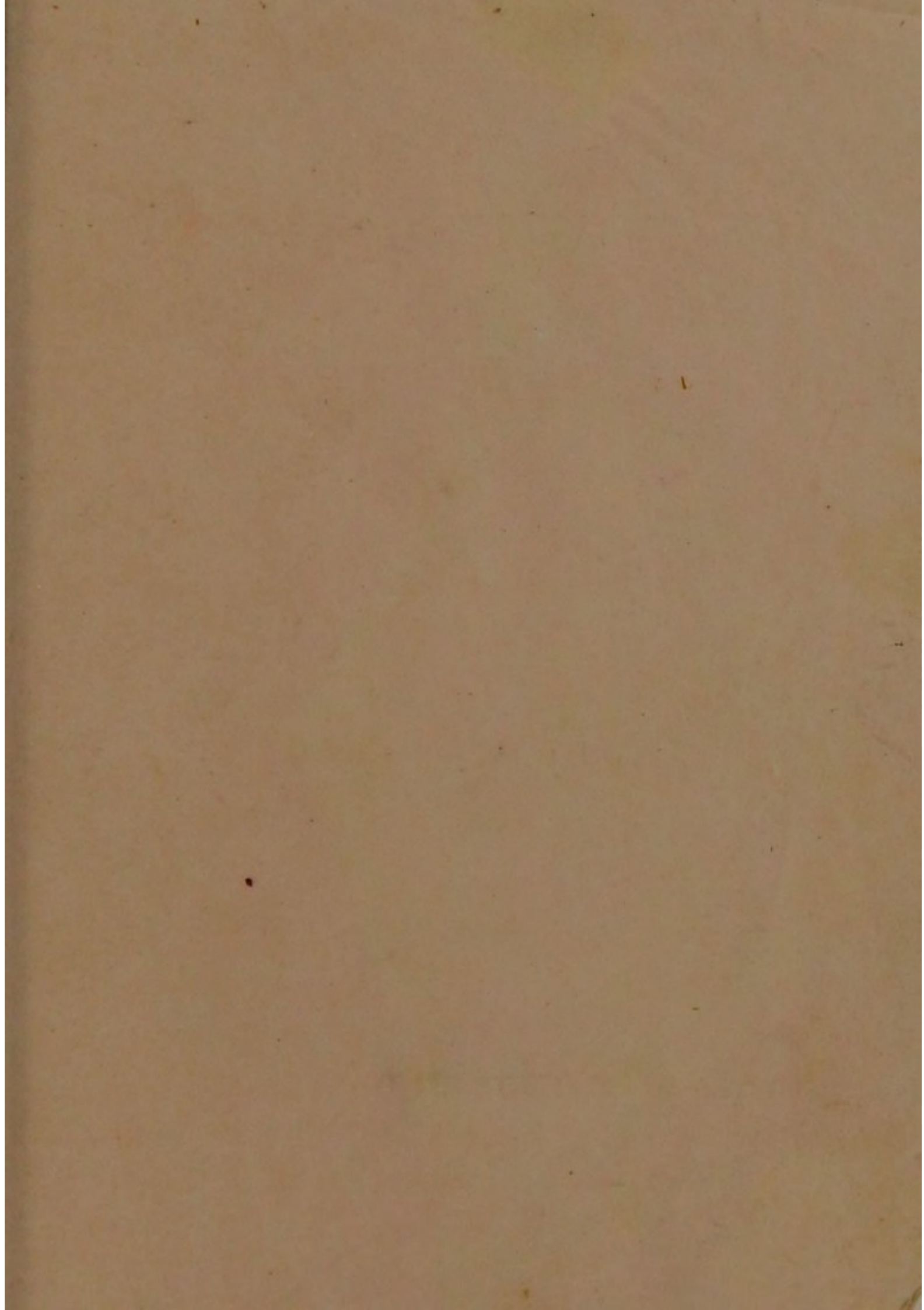


Imperfect





THE DRUNKARD'S STOMACH, FIRST STAGE.







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H. J. 2

THE AGENCY OF ALCOHOL,

AS ILLUSTRATED BY

ACCURATE DISSECTIONS;

BEING AN ACCOUNT OF

PROFESSOR SEWALL'S

DRAWINGS OF THE STOMACH,

EXHIBITING ITS STATE IN HEALTH,  
AND UNDER THE VARIOUS STAGES OF ALCOHOLIC  
EXCITEMENT AND DISEASE.



# THE AGENCY OF ALCOHOL

THE AGENCY OF ALCOHOL  
AS A FACTOR IN THE  
CAUSE OF DEATH

ACCURATE DISSECTIONS

PROFESSOR ELLIOT

DEATHS OF THE STOMACH

INQUIRY INTO THE CAUSE OF DEATH IN ALCOHOLIC

AND UNDER THE VARIOUS STAGES OF ALCOHOLIC

DEGENERATION AND DEATH

## APPENDIX C.

### THE PATHOLOGY OF DRUNKENNESS,

*Or the Physical Effects of Alcoholic Drinks, with Drawings of the Drunkard's Stomach. A LETTER addressed to EDWARD C.*

*DEHAVAN, ESQ., by THOMAS SEWALL, M. D., Professor of Pathology and the Practice of Medicine in the Columbian College, District of Columbia, U.S.*

For upwards of thirty years I have been more or less engaged in pathological researches; during which I have enjoyed many opportunities of inspecting the stomach of the drunkard after death, in the various stages and degrees of inebriation; and these drawings will be found to present a pretty accurate delineation of the principal morbid changes produced upon that organ by intemperance; changes which are eminently worthy of being brought to the view of the unsuspecting sufferer, and which, I should hope, might have some effect in deterring the temperate\* from the use of alcoholic poison.

If the morbid effects of intemperance are in some degree various in different individuals; if they are not developed with the same degree of power and rapidity in one case as in another, it is nevertheless true that alcohol is a poison, forever at war with man's nature, and in all its forms and degrees of strength, produces irritation of the stomach, which is liable to result in inflammation, ulceration and mortification, a thickening and induration of its coats, and finally scirrhus, cancer and other organic affections; and it may be asserted with confidence, that no one who indulges habitually in alcoholic drinks, whether in the form of wine or the more ardent spirits, possesses a healthy stomach.

In addition to the morbid specimens which I furnish, I present you with one drawing of the healthy stomach, which will enable you to institute a comparison, and the more fully to appreciate the morbid changes produced by alcohol.

In PLATE 1, we have a representation of the internal surface of the stomach in a healthy state, taken from an individual who was ENTIRELY *temperate*, which is copied from a sketch furnished by Professor Horner, of Philadelphia, one of the ablest anatomists of the country or age. The subject from which it was originally drawn, came under Professor Horner's own observation, and the dissection was made by his own hand; and he says that the individual was not only healthy, but *remarkably temperate and regular in all his habits*; he therefore considers the case invaluable, as furnishing a standard of observation. It is of a color slightly reddish, tinged with yellow, and exhibits something of a mottled appearance; although supplied with a multitude of blood-vessels, none of them are so large as to be visible to the naked eye. This healthy and natural appearance of the stomach would doubtless continue from the period of childhood to that of old age, if it were acted upon only by appropriate food and drink.

Account of the Plates.

\* Dr. Sewall misuses the word *temperate*; the moderate drinking of poison is not temperance, for it is opposed to health.

Plate 1.

Healthy or teetotal stomach.



## Plate 2.

The moderate  
drinker's  
stomach.

Plate 2.  
Fig. 2., the  
free-moderate  
drinker's  
stomach.

What generates  
the drunkard's  
appetite?

## Plate 3.

Drunkard's  
stomach.

Rule for  
reformed  
drunkards.

Restorative and  
repairing  
power.

In the [2nd] PLATE, we have exhibited the internal surface of the stomach of the temperate drinker, the man who takes his glass of mint sling in the morning, or his toddy on going to bed; or of him who takes his *two or three glasses of Madeira* at his dinner. And here the work of destruction begins. That beautiful net work of blood-vessels which was invisible in the healthy stomach, being excited by the stimulus of alcohol, becomes dilated and distended with blood, visible and distinct. This effect is produced upon the well-known law of the animal economy, that *an irritant applied to a sensitive texture of the body, induces an increased flow of blood to the part*. The mucous or inner coat of the stomach is a sensitive membrane, and is subject to this law. A practical illustration of this principle is shewn by reference to the human eye. If a few drops of alcohol or any other irritating substance, be brought in contact with the delicate coats of the eye, the network of fine vessels which were before invisible, becomes distended with blood and are easily seen. If this operation be repeated daily, as the temperate drinker takes his alcohol, the vessels become habitually increased in size and distended with blood. Besides this injected and dilated state of the vessels of the stomach, the mucous coat of the organ always becomes thickened and softened; and these changes occur in the [so called] temperate drinker as well as in the confirmed drunkard.

*It is by this temperate drinking that the appetite of the inebriate is first acquired;* for by nature man has no taste or desire for alcohol; it is as unnatural and averse to his constitution as to that of the horse or the ox; nor is there any apology for its use by man, that does not equally apply to the brute.

PLATE [3] represents the stomach of the confirmed drunkard; the man who has become habitually accustomed to the use of alcoholic drinks. And here we find the blood-vessels of the inner coat, which in the temperate [rather, moderate] drinker were only *slightly enlarged*, so *fully developed* as to render the most minute branches visible to the eye, like the rum blossoms on the drunkard's face; and this enlargement does not depend upon the perpetual presence of alcohol, as in the temperate [moderate] drinker, but it has become so permanent and fixed that they retain their unnatural size even after death; unless indeed the inebriate has for some time previous to this event abandoned the use of alcohol, and given nature time to restore them to their natural size. The mucous coat becomes thickened and softened, which often results in ulceration. It sometimes happens, after this state has continued for some time, that all the coats of the stomach become implicated, and are found in a very thickened and indurated condition; and thus the way is prepared for scirrhus, cancer, and other organic affections. In this state, the inebriate is never easy or satisfied, unless his stomach is excited by the presence of this or some other narcotic poison. Whenever these are withheld, he is afflicted with loss of appetite, nausea, gnawing pain, and a sinking sensation at the stomach, lassitude, debility, and temporary disturbance of all the functions of the body.

It is under these circumstances, and in this condition of the stomach, that the drunkard finds it so difficult to resist the cravings of his appetite, and to reform his habits. Difficult but not impossible. Thousands thus far sunk to ruin have reformed, and thousands are now undergoing the experiment. But it is only by total abstinence that reformation can be accomplished. No one may hope to reform by degrees, or to be cured by substituting one form of alcohol for that of another. So long as he indulges in the smallest degree, so long will his propensity to drink be perpetuated, and his stomach exhibit traces of disease.

What takes place in the stomach of the reformed drunkard, the individual who abandons the use of all intoxicating drinks? *The stomach by that extraordinary power of self-restoration with which it is endowed, gradually resumes its natural appearance.* Its engorged blood-vessels become reduced to their original size, and its natural color and healthy sensibility return. A few weeks or months, according to the observation I have made, will accomplish this renovation; after which the individual has no longer any suffering or desire for alcohol. This process is greatly facilitated and rendered more easy to the



sufferer, by cupping, blistering and other counter-irritation over the region of the stomach; by the use of cooling medicines and vegetable diet. It is nevertheless true, and should be ever borne in mind, that such is the susceptibility of the stomach of the reformed drunkard, that a repetition of the use of alcohol in the *slightest degree, and in any form, under any circumstances, or in any place*, revives the appetite; the blood-vessels again become dilated, and the morbid sensibility of the organ is re-produced. Abstinence, therefore, total abstinence, at once and forever, must be the pledge of him who means to stand.

PLATE [4] presents a view of the ulcerated or aphthous condition of the drunkard's stomach; a state which frequently exists, but is not readily apprehended on account of the obscurity of the attendant symptoms. It consists in numerous small ulcerations extending over the internal coat, and which are usually covered with a white crust, producing the aphthous appearance. Upon wiping off the crust, the mucous surface is found broken and covered with small corroding sores, of greater or less size and depth, with ragged and inflamed edges; and sometimes the inflammation extends over the intervening spaces.

PLATE [5] represents the state of the drunkard's stomach after a debauch. It was drawn from the case of one who had been for several days in a state of inebriation, but who came to his death suddenly from another cause. It shews the internal coat of the organ to have been in a state of high inflammation, and presents several livid spots, with dark grumous blood oozing from the surface.

I have had several opportunities of inspecting the stomach under similar circumstances, and I believe this plate presents about the ordinary appearance of the organ when excited to a state of inflammation by excessive indulgence in the use of alcoholic drinks. It has been remarked, that the symptoms attendant upon the ulcerated state of the stomach, and especially if unaccompanied by much inflammation, are often obscure, and such as not to denote much constitutional derangement. But in this condition of the organ the whole system suffers. There is loss of appetite, nausea, vomiting, ardent thirst, pain in the head, red eyes, bloated face, coated or red tongue, frequent pulse and symptomatic fever. These symptoms are more or less intense, according to the duration of the debauch, the quantity of liquor drank; being modified in some degree, by the constitution and habits of the individual. They are, in some respects, such as attend the ordinary inflammation of the stomach, produced by other causes, and the appropriate treatment in both is found to be nearly the same. It consists in total abstinence from all stimulating drinks, general bleeding, cupping, leeching and blistering over the stomach, cooling and mucilaginous drinks, and general perspiration, with entire rest.

The following case so fully confirms the principles here laid down, and at the same time furnishes so valuable an admonition, that I must beg leave to present you with the outlines of its history.

A gentleman equally distinguished for the powers of his mind, and the great influence which he wielded in the counsels of the nation, unfortunately acquired in early life, the habit of intemperance; but it was not that intemperance which is perpetual, it only came over him at distant periods, not oftener than once or twice in the year. In the intervals he practiced entire abstinence, while at these periods he wholly abandoned himself to his propensity, and would continue drinking until his stomach was wrought up to a high state of inflammation. I was called to attend him in at least twelve of these paroxysms, during as many years, and conducted him each time safely through the storm. It was done upon the principle of withholding at once all stimulus, and allowing the free use of iced water, with other cooling drinks, with cupping and blistering over the stomach.

In ten or twelve days he was usually well and able to attend to his business. Unfortunately, in his last paroxysm, he came under the care of those who advised that he should not abandon his cup at once, but wind off his debauch by degrees. The advice was followed, and he fell a victim to the experiment. He

Danger of  
tasting.

Plate 4.

Ulcerated  
stomach of the  
drunkard.

Plate 5.

Drunkard's  
stomach after a  
debauch.

Symptoms of  
excessive  
drinking.

Mode of cure.

A warning  
case.



died suddenly, in the vigor of his days, and height of his usefulness, lamented and wept by all who knew him.

No one may hope to be weaned from the love of alcoholic drinks, or to be cured of a fit of intoxication by diminishing the quantity alone, or by substituting one form of the poison for another. As well might the culprit who receives his fifty lashes to-day, expect a palliation of his sufferings by the infliction of forty lashes to-morrow, and thirty the day after, or by substituting the cow-hide for the cat of nine tails. The practice is opposed to all experience, and to every principle of man's constitution.

The stomach is inflamed, and must be cured like inflammation produced by other causes, by withholding stimulants, and instituting a cooling antiphlogistic treatment.

Plate 6.

Cancerous  
stomach.

PLATE [6] presents a specimen of the cancerous stomach. It was drawn from the stomach of a gentleman who had for many years followed a sea-faring life. *He was not regarded as intemperate, but used his grog daily*, and was in the habit of taking a glass of brandy in the morning, undiluted, to excite an appetite for breakfast. At length dyspepsia came on, with pain and a burning sensation in the region of the stomach, vomiting of his food an hour or two after his meals, followed by extreme emaciation and death. Upon examination of the body, the whole of the stomach, except a small portion at the left extremity, was found in a scirrhus state, its coats thickened to the extent of about two inches, and the cavity of the organ so far obliterated as scarcely to admit the passage of a probe from the left to the right extremity; so that for a considerable time before death, none of the nutriment derived from food and drink could have passed into the intestines. Near the right extremity of the stomach was a cancerous ulcer of the size and appearance represented in the drawing.

Two other  
cases.

Since the foregoing case occurred, two others of the same character, and produced by the same cause, have fallen under my observation. In both these, the one a male and the other female, the stomach was thickened, scirrhus, and cancerous, and *so extensively disorganized as not to admit of the passage of the chyme out at the pyloric orifice*. The prominent symptoms in these two cases, also, were excruciating pain, a vomiting of the food in a half digested state, followed by extreme emaciation. These subjects had indulged freely in the use of alcoholic drinks for years, and continued the habit till the stomach would no longer receive it.

In these cases of induration, scirrhus and cancer, the pyloric portion of the stomach, is more frequently the seat of disease than the left or cardiac portion, but the cardiac portion of the organ does not always escape, as the following case which occurred in my practice several years since, will show.

Mr. C., a sea-faring man of forty-five, belonged for many years to the class of temperate drinkers, but, as he lived on, he became a regular hard drinker, though never a sot. At length he began to complain of occasional fits of dyspepsia, heartburn and acrid eructations; and these symptoms were followed by a difficulty in passing solid food into the stomach, unless when masticated very finely and swallowed in small portions. As he expressed himself, there appeared to be an obstruction in the passage near the stomach. His case was examined by several physicians, who pronounced it to be a stricture in the lower part of the œsophagus. But the obstruction did not yield to the remedies for that disease, and the difficulty increased until nothing but liquids would pass, and finally even the liquids returned after reaching the point of obstruction. He suffered from gnawing and lancinating pains in the region of the stomach, as well as from extreme hunger and thirst. I have known him to swallow two gallons of water in successive mouthfuls in a single night, which would pass to the point of obstruction, and then be regurgitated, affording only momentary relief; and this was his condition several weeks previous to his dissolution.

Upon opening the body after death, about three inches of the lower portion of the œsophagus was found in a thickened and scirrhus state, the disease ex-



tending to the stomach, and so involving the cardiac orifice, as nearly to obliterate the opening and prevent the passage of food and drink. The mucous coat of the stomach exhibited strong traces of the effects of intemperance, and the pyloric portion of the organ was found in a scirrhus state.

PLATE [7] represents the appearance of the stomach of the drunkard who dies in a state of mania a potu, or *delirium tremens*.

Plate 7.

The history of the case from which this drawing was made, and which occurred in my practice some years since, will illustrate the character of the disease, and the morbid condition of the stomach.

The subject was a man, amiable in disposition, courteous in manners, high in public life. By degrees he became intemperate, and although he drank daily, his excessive indulgence was confined to paroxysms of greater or less duration. Several times during the continuance of these paroxysms, he was thrown into a state of delirium tremens, but from which he soon recovered. At length one of his paroxysms of drinking came upon him, which was of longer continuance than usual, and of greater severity. For more than a week his mind was entirely deranged, and it required two persons to confine him to his room. He imagined that his nearest friends were his greatest enemies and persecutors, and were constantly laying plans for his destruction. He fancied that he saw spectres and devils, and files of armed soldiers entering his apartment, deadly serpents crawling over his bed, and wild beasts ready to devour him. There was one individual in particular, a certain man who had often won his money at the billiard table, whom he imagined he saw grinning and skulking round the chamber, waiting an opportunity to rob him of his money. His bodily functions became more and more disturbed, accompanied with great debility; a cold, profuse, clammy sweat, and small and sinking pulse. These symptoms were followed by general spasms, which soon closed the scene.

Case of  
delirium  
tremens.

After death the body was examined. Upon laying open the stomach it presented the appearance exhibited in the plate. It contained a considerable quantity of dark fluid resembling coffee grounds; the inner surface was covered with a dark brown flaky substance, upon removing which, it exhibited marks of having been in a high state of inflammation; some portions appearing of a deep red or mahogany color, and others quite black, as if in a state of incipient mortification. It was obvious that the dark flaky matter which lined the inner coat, as well as that lying loosely in the cavity of the organ, was blood which had exuded from the vessels of the inflamed surface, and had been acted upon by gastric juice, converting it into the black vomit.

Appearance of  
the stomach.

I have had several opportunities of inspecting the body after death of those who have fallen by intemperance in a state of delirium tremens; and have found not only the symptoms attending the affection, but the morbid appearance upon dissection to be extremely uniform, and my observations fully confirm the opinion entertained by most modern pathologists, that the disease has its seat originally in the stomach, and that the affection of the brain is purely sympathetic and secondary: an opinion sustained also by the course found most successful in the treatment of the disease.

Seat of the  
disease.

Having thus spoken of intemperance as affecting the condition of the stomach, you will naturally inquire whether these effects can be produced by no other cause than alcoholic drinks? To such an inquiry, I answer that they can. There are various abuses of the stomach which may cause them. They may be produced by excess in eating, by the use of gross stimulating and luxurious diet, by too much animal food, and, especially if improperly masticated, by rich and indigestible sauces and gravies, by stimulating condiments in great abundance, such as cayenne pepper, mustard, the different spices, and the habitual use of opium in large doses.

Causes.

The striking similarity in the effects produced in the body and mind, by the habitual use of opium among the Chinese, and those which follow the use of intoxicating drinks among other nations, affords a fair inference, that the

Opium and  
alcohol.



History of  
alcohol.

General effects.

Exhaled from  
the lungs.Effects on the  
liver.

stomach in both cases suffers from the same morbid changes, and would exhibit upon dissection, the same pathological conditions.

It should be borne in mind, that while alcoholic drinks make their first and strongest impression upon the stomach, their morbid effects are not limited to this organ; the whole of the intestinal canal, and more especially the small intestines, participate more or less in their influence. The internal coat becomes irritated, inflamed, softened and ulcerated, and occasionally affected with those other organic changes delineated in the drawings of the stomach. Nor are the consequences of intemperance confined to the digestive canal alone. The distant parts of the body become in time affected also. The liver, the brain, the heart, the lungs and the kidneys become the seat of alcoholic influence, an influence which is transmitted to them in two ways. The first is upon the principle of sympathy; the second is through the medium of the circulation, and the immediate action of the alcoholic principle upon the organs as it passes through them, mingled with blood. Both may be illustrated by familiar examples. The individual who has become exhausted by labor and fasting, finds his muscular power diminished and his whole system enfeebled. Upon partaking of food his strength is immediately restored—restored long before his food is digested, or any nourishment can have been derived from it. This effect is produced by the stimulus of the food upon the stomach, which impression is transmitted to all the other organs of the body through the medium of the nervous system, upon the principle of sympathy. The second, through the medium of the circulation, may be shown by two facts. The odor of the drunkard's breath furnishes us with one of the earliest indications of intemperance. This is occasioned by the exhalation of the alcoholic principle from the bronchial vessels and air cells of the lungs; not of pure alcohol, as taken into the stomach, but as it has been absorbed and mingled with the blood, and subjected to the action of the different organs of the body; and, not containing any principle which contributes to the nourishment or renovation of the system, is cast out with other excretions as poisonous and hurtful. Magendie long since ascertained by experiment, that diluted alcohol, when subjected to the absorbing power of the veins, is taken up by them, is mingled with the blood, and afterwards passes off by the pulmonary exhalents. The case of a drunkard is mentioned, who used to amuse his comrades by passing his breath through a narrow tube and *setting it on fire as it issued from it*.

The perspirable matter which passes off from the skin, becomes charged with the odor of alcohol in the drunkard, and in some cases furnishes evidence of the kind of spirit drank. Two cases are related by Dr. Macnish, the one in a claret, and the other in a port drinker, in which the moisture exhaled from their bodies had a ruddy complexion, similar to the wine upon which they had committed their debauch. These facts show us that alcoholic drinks are absorbed, mingle and circulate with the blood, and therefore act immediately upon the different organs of the body.

It is upon these two principles that alcoholic drinks produce their morbid effects upon the different organs.

*The liver.* Alcohol in every form and proportion produces a strong and speedy effect upon this organ when used internally. Its first effect usually is to increase the action of the liver, and sometimes to such a degree as to result in inflammation. Its secretion often becomes changed from a bright yellow to a green or black, and from a thin fluid to a substance resembling tar in its consistence; and this change not unfrequently leads to the formation of biliary calculi, or gall stones. There often follows an enlargement of the organ, and a change in its structure. Aware of this fact, the poultry dealers of England are in the habit of mixing a quantity of spirit with the food of their fowls, in order to increase the size of the liver; that they may be enabled to supply the epicure with a greater abundance of that part of the animal which he regards as the most delicious. I have met with cases in which the liver has become so far enlarged from intemperance as to weigh from eight to twelve pounds, instead of four or five, its usual weight. The inflammation of the organ not unfrequently



terminates in suppuration and the formation of extensive abscesses. The liver sometimes, however, even when it manifests upon dissection great organic change in its structure, is found rather diminished in volume. This was the case in the person of the celebrated tragedian, George Frederick Cooke, who died several years since in the city of New-York. This extraordinary man was long distinguished for the profligacy of his life, as well as the native vigor of his mind and body. At the time of his death, his body was opened by Dr. Hosack, who found that the liver, while it was rather diminished in size, was in a state of induration, and surprisingly hard, so as to make considerable resistance to the knife; and it was of a lighter color than natural. The whole substance of the organ was studded with tubercles, *and the blood-vessels, which are numerous and large in the healthy state, were nearly obliterated*; shewing that the circulation had nearly ceased long before death. I have met with several cases in the course of my dissections in which the liver had become shrivelled and indurated; its blood-vessels diminished, and the organ greatly changed in its structure; the evident consequence of long continued habits of intemperance.

Liver of G. F. Cooke.

*The brain.* This organ also suffers from intemperance. Inflammation and engorgement are frequent consequences of the use of alcoholic drinks, and may take place at the time of a debauch, or arise sometime afterwards, during the stage of debility from a loss of the healthy balance of action in the system. Inflammation of the organ, when it is acute, is usually attended by furious delirium, and other indications of high cerebral excitement. It may arise from sympathy with an inflamed or irritated stomach, or it may take place from the immediate action of alcohol upon it as it is transfused into the system.

The brain

It is a fact familiar to anatomists, that alcohol has *the effect of hardening the brain and other organs which contain albumen*, when subjected to its action; and it is a common practice to immerse the brain in ardent spirits for a few days, in order to render it firmer for dissection; and upon examining the brain after death, of such as have long been accustomed to the use of ardent spirit, it is said that the organ is generally found *harder and less elastic and yielding*, than in temperate persons.

Alcohol tans the brain.

*The heart.* It has generally been supposed that the heart is less frequently affected by intemperance than most of the other vital organs; but from several cases which have fallen under my observation, and from the fact that it sympathises strongly with the stomach, and is thrown into a state of unnatural excitement by the use of alcoholic drinks, *the very effect produced by the violent agitation of the passions, the influence of which upon this organ is found so injurious*, I am inclined to think that it seldom escapes uninjured in the habitual drunkard.

The heart.

The following case came under my notice several winters since. A large, athletic man, long accustomed to the use of ardent spirit, on drinking a glass of raw whisky, dropped instantly dead. On carefully dissecting the body, no adequate cause of the sudden cessation of life could be found in any part except the heart. This organ was free from blood, hard and firmly contracted, as if affected by spasm.

Case of sudden death.

A few years since I saw an individual while engaged in public debate, drop instantly dead from an affection of the heart, being at the time highly stimulated by alcohol, and under a strong excitement of his passions. I am convinced that many of those cases of sudden death which take place with intemperate persons, are the result of a spasmodic action of the heart from sympathy with the stomach, or some other part of the system. The use of ardent spirit no doubt tends to produce an enlargement of the organ, *promotes the ossification of its valves*, as well as the development of other organic affections.

*The lungs.* Respiration in the inebriate is generally oppressed and laborious, especially after eating or violent exercise; and he is teased with a cough, attended by copious expectoration in the morning, and especially after his recovery from a fit of intoxication; and these symptoms go on increasing, and, unless arrested in their progress, often terminate in fatal bronchitis and consumption.

The lungs.



How consumption induced.	<p>This affection of the lungs is produced in two ways : first, by the immediate action of the alcoholic principle upon the highly sensitive membrane which lines the trachea, bronchial vessels and air-cells of the lungs, as it is poured out by the exhalents; and second, by the sympathy which is called into action between the lungs and other organs, already in a state of disease, and more especially that of the stomach and liver.</p>
Coughs.	<p>I have met with many cases in the course of my practice, of cough and difficult breathing, which could be relieved only by regulating the functions of the stomach, and which soon yielded on the patient's ceasing to irritate this organ with ardent spirit. I have found the liver still more frequently the source of this affection, and on restoring the organ to its healthy condition by laying aside the use of alcoholic drinks, all the pulmonary symptoms have subsided.</p>
The kidneys.	<p>On examining the lungs of the drunkard after death, they are frequently found adhering to the walls of the chest, hepatized, or affected with tubercles.</p> <p><i>The kidneys.</i> These organs and others immediately associated with them, are seldom found in a healthy state after death in the inebriate. The kidneys become enlarged, softened, granulated and of a pale color; and <i>these effects are always found to exist, in a greater or less degree, even in the temperate drinker.</i></p>
Paralysis.	<p>And the use of alcoholic drinks even in a temperate [moderate] degree, lead to some of the most harassing and fatal affections to be found in the whole catalogue of diseases. But though an important subject, and upon which much might be said in reference to intemperance, I pass on to notice an affection, which, though common, seems scarcely to have attracted the attention of those who have written upon the effects of alcoholic drinks.</p>
Cases.	<p><i>Paralysis of the lower extremities.</i> This disease which I shall here describe, is not that paralysis which takes place suddenly from an affection of the brain, or spinal marrow, but a gradual diminution of the power of sensation and of motion. Several of these cases have occurred to me within the last twenty years, three of which I will state.</p> <p>The first was in an active business man of forty-five, who gradually acquired the habit of tippling, <i>though he never drank to intoxication.</i> His practice was to take small quantities of brandy, gin, wine, &amp;c., at short intervals. He at length began to complain of debility, a sense of numbness in his lower limbs, and an inability to walk with his accustomed activity. These symptoms gradually increased, and were soon followed by other mortifying indications of imbecility. The complaint increased till he could neither walk nor stand, and for months before his death, he was lifted from his bed to his chair. Several times during the progress of the case he partially recovered, but it was only in proportion as he suspended the use of alcoholic drinks.</p>
Effect of repeated small quantities.	<p>Upon examination after death, <i>the mucous coat of his stomach was found in a state of irritation</i>, such as is usually met with in the case of a confirmed drunkard, and as represented in the [third] plate. The small intestines throughout the greater part of their extent, seemed to have participated in the irritation of the stomach.</p>
	<p>The second case was that of a highly respectable man, who made shipwreck of fair prospects and a good character, by contracting habits of intemperance upon entering public life. I was frequently called to attend him, on account of indisposition produced by paroxysms of inebriation, and yet so assiduously did he conceal his intemperance, that it was long before any one but myself suspected the cause. He seldom drank any ardent spirit, but kept his demijohn of old Madeira, which he used profusely. He first complained of weakness and want of sensibility in the lower extremities, and an inability to walk, especially to ascend long flights of steps. Upon a full representation of his situation, and the consequences that must ensue, he was induced to abandon his wine, and almost immediately recovered all his powers; but upon returning to it sometime afterwards, he relapsed into all his former weakness, and, if now living, is lost to his family and country.</p>



The third case is that of a Mr. ———, a man of thirty, of fine robust constitution. He gradually acquired the habit of tippling, but it was not upon ardent spirit. *He was never drunk*, and no one suspected him of intemperance but his family. He had not exactly the drunkard's breath, nor much of his demeanor or aspect. He consulted me several times on account of a numbness and loss of power in his lower limbs. It was not for a considerable time that I came at the real cause of the difficulty, so carefully did he conceal his habits. At length I discovered that he kept in his grocery a pipe of wine for his own use, of which he drank frequently through the day, and would often visit his store at an early hour in the morning and late at night to renew his potations. I informed him that wine was the cause of all his complaints, upon which he abandoned the traffic and his habit of drinking together. His limbs almost immediately regained their accustomed energy. He is now, after six years, in good health and a sober man.

Alcohol induces paralysis.

It had been asserted by physicians of eminence, who have enjoyed ample opportunity for observation, that intemperance in the parents confers upon the offspring, not only a predisposition to their own vice, but entails upon them a liability to diseases, both mental and physical.

The sins of the parent visited upon the children.

One writer upon this subject observes, the free use of intoxicating drinks by the parents, produces a predisposition in the children to intemperance, insanity, and various diseases of both body and mind, and if the cause be continued, becomes hereditary and is transmitted from generation to generation; occasioning a diminution in size, strength, and energy, a feebleness of vision, a feebleness and imbecility of purpose, an obtuseness of intellect, a deprivation of moral taste, a premature old age, and a general deterioration of the whole character. This is the case in every country and in every age. Another says, instances are known where the first children of a family, who were born when their parents were temperate, have been healthy, intelligent and active, while the last children who were born after the parents had become intemperate, were dwarfish and idiotic. Another medical gentleman writes, I have no doubt that a disposition to nervous diseases of a peculiar character, is transmitted by drunken parents to their offspring. There are numerous other recorded facts upon this subject, which, together with several cases that have fallen under my own observation, leave no doubt upon my mind, that the effects of intemperance are liable to be transmitted from parent to child; and I have long been in the habit of admonishing mothers, *not to poison their system or contaminate their milk during the period of gestation and nursing*, by the use of intoxicating drinks.

Diseases induced.

But time would fail me, were I to attempt an account of half the pathology of drunkenness. *Dyspepsia, jaundice, emaciation, corpulence, dropsy, ulcers, rheumatism, gout, tremors, palpitation, hysteria, epilepsy, palsy, lethargy, apoplexy, melancholy, madness, delirium tremens, and premature old age*, compose but a small part of the catalogue of diseases produced by alcoholic drinks. Indeed there is scarcely a morbid affection to which the human body is liable, that has not, in one way or another, been produced by them; there is not a disease but they have aggravated, nor a predisposition to disease which they have not called into action; and although their effects are in some degree modified by age and temperament, by habit and occupation, by climate and season of the year, and even by the intoxicating agent itself; yet the general and ultimate consequences are the same.

Allow me in conclusion, to congratulate you, and your co-laborers, upon the good already achieved by your efforts. Multitudes have been emancipated from a state of the most degrading servitude, disease has been arrested in its ravages, enterprise brought back in a thousand instances, fresh and vigorous, to the great purposes of the age; banished happiness restored to the social circle, and new worshipers called around the altar of God. For the universal consummation of such blessings, every philanthropist will pray, and every patriot extend the helping hand.



## APPENDIX D.

### CONFIRMATORY DISSECTIONS.

The *Journal of the American Temperance Union* for May, 1843, contains the following extract of a letter from Professor SEWALL, to a physician at Albany.

Stomach of the moderate drinker of alcoholic poison.

"You ask upon what observation the stomach of the temperate drinker was made? I answer, that *all the plates were drawn from the observation of nature, as exhibited in my dissections, and of cases which came under my notice*, as stated in the work; and if the testimony of such men as Horner, Mott, and Warren, does not establish their correctness, I need not expect to satisfy the community, although I have the additional testimony of some of the most distinguished of the British physicians, who say, '*they are entirely accurate and faithful to nature.*' I am not surprised that the stomach of the temperate drinker should be singled out, and that it should have given such deep offence. I know that with a certain class, this is a delicate and tender point, and the plate presents to them a painful, a revolting spectacle; and if I could, in justice to the cause of truth and humanity, have spared the feelings of the temperate drinker I would have done so; and even now, *if he can make himself believe that there is no intermediate pathological state between the healthy stomach and that of the confirmed drunkard*; if he can persuade himself that at one moment the stomach is entirely healthy, and that *without any intermediate transition*, the aggravated state of disease represented in the stomach of the confirmed drunkard, is developed all at once, then he may get rid of the annoyance, and quiet himself with the idea that though a temperate drinker, his stomach is still healthy and sound."

The same Journal also contains a letter from HORACE GREEN, Esq. M. D., confirming Dr. Sewall's dissections, and referring to a discussion which had been raised by Dr. Hun, of Albany, upon *theoretical* grounds only.

Testimony of Dr. H. Green.

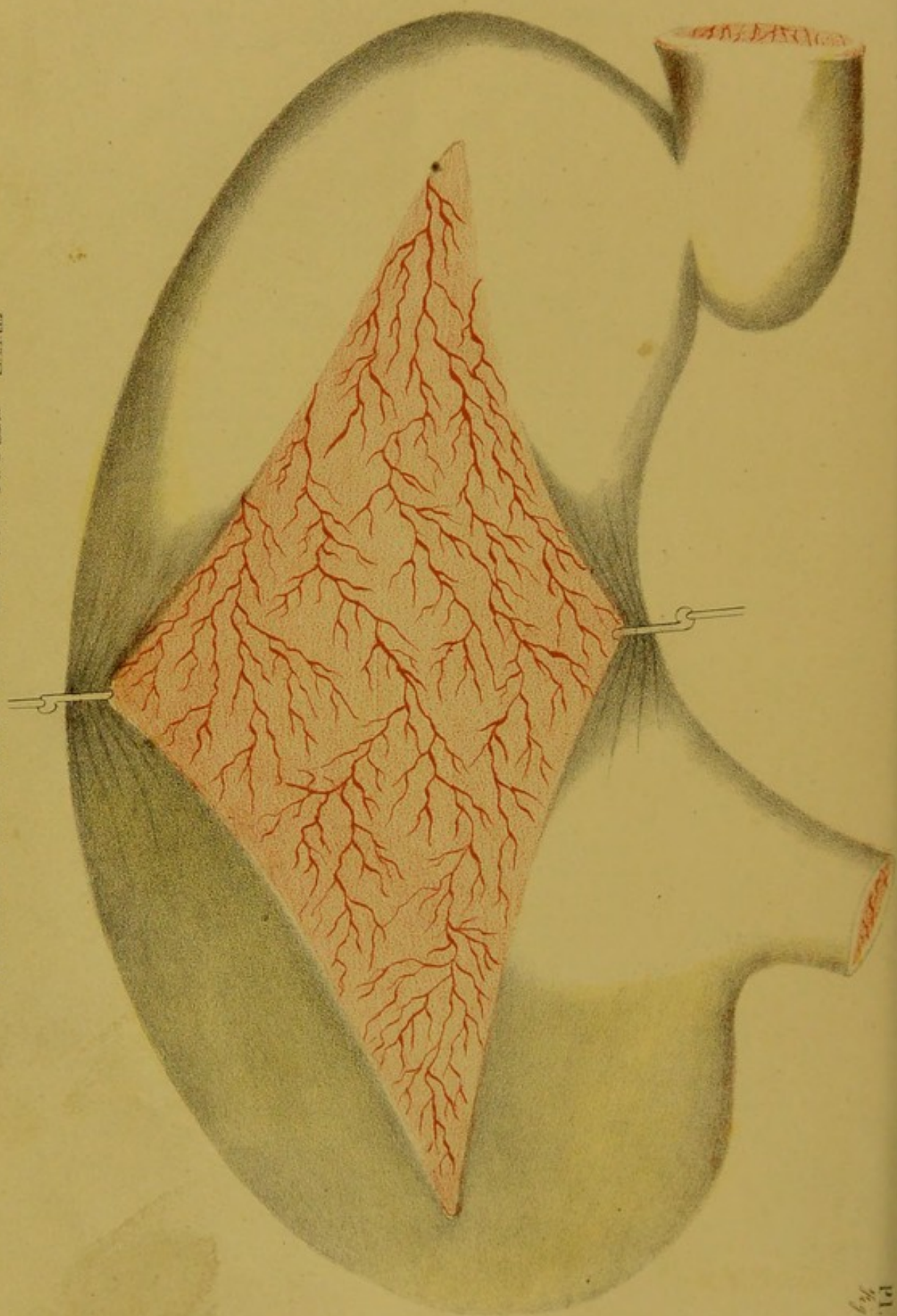
"Since my letter to you, of the 8th of March, I have had an opportunity of inspecting the stomach of a '*temperate* [moderate] drinker.' An individual died, after a short illness, of a disease in which the stomach was not in any degree involved. This individual had been accustomed for several years to drink moderately of wine, daily. Yet he had enjoyed for a long time preceding his death, almost uninterrupted health. On examination of the body, the cause of death was found to be remote from the stomach, and had not, in any degree, involved that organ. The stomach was removed, and I had an opportunity of comparing its coats directly with the *plate which has occasioned so much discussion*. The following is the note which I made at the time:—'*The stomach was found empty, and nearly in a healthy condition, except the capillary vessels, which were enlarged and congested, especially about the upper part of its greater curvature, and around the cardiac orifice.* Here the mucous membrane, coursing about one half of this organ, presents an appearance almost precisely like that exhibited in the "2nd Plate" of Dr. Sewall's delineations of the morbid stomach; with these exceptions, that the *branches* of the vessels, although equally distinct, were *shorter* and more zigzag, and the whole not so highly colored as they are in the drawing.'

"This case was particularly interesting to me, as I was confident, from knowing all the circumstances of the case, that this condition of the stomach had its origin in the '*temperate*' use of alcoholic drinks, and from the effects of the disease, or the remedies employed; and yet I am well aware that such a case cannot be admitted as '*positive*' testimony to the point, because, for professional reasons, all the details and circumstances of the case cannot be given."







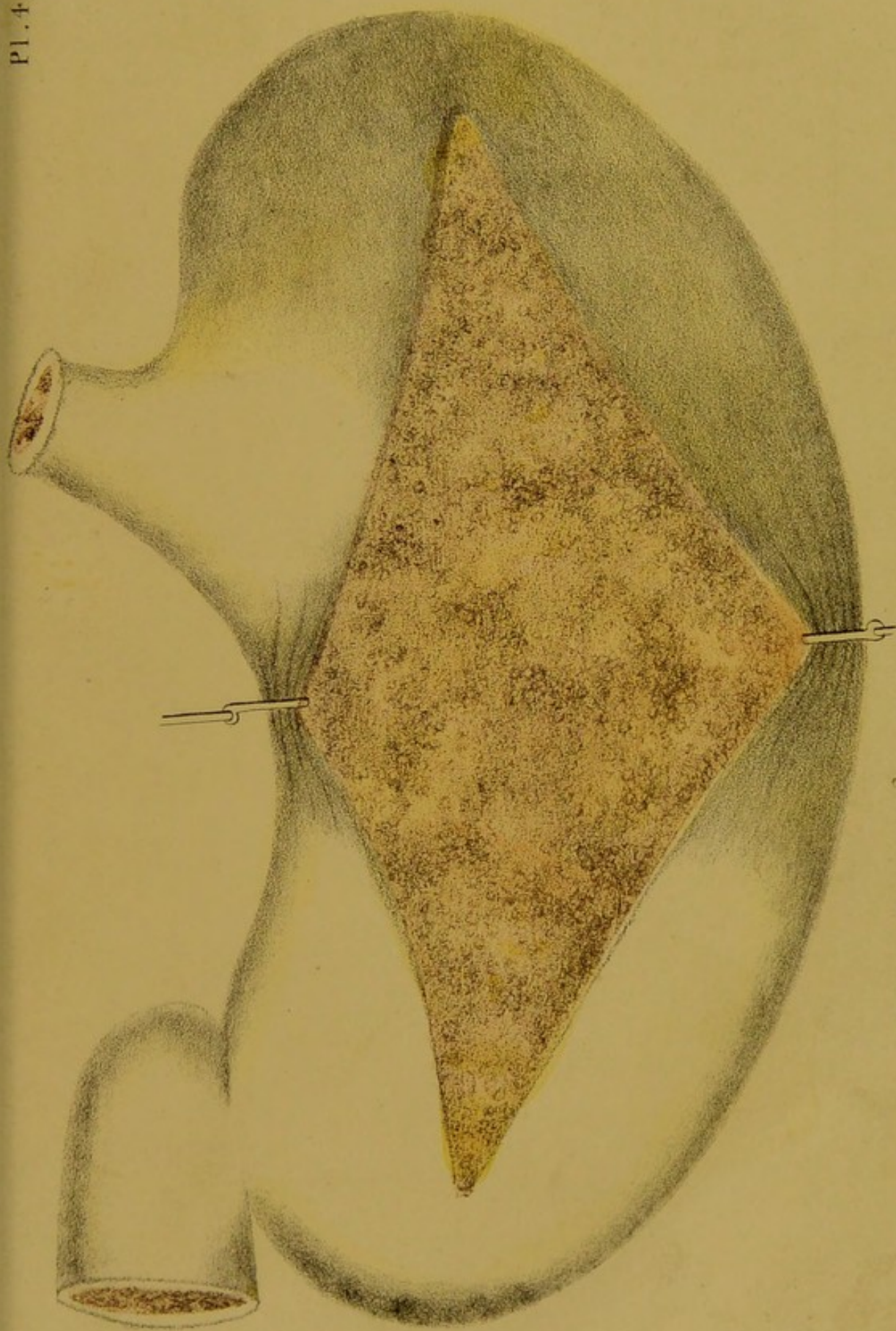


THE STOMACH OF A MODERATE DRINKER.



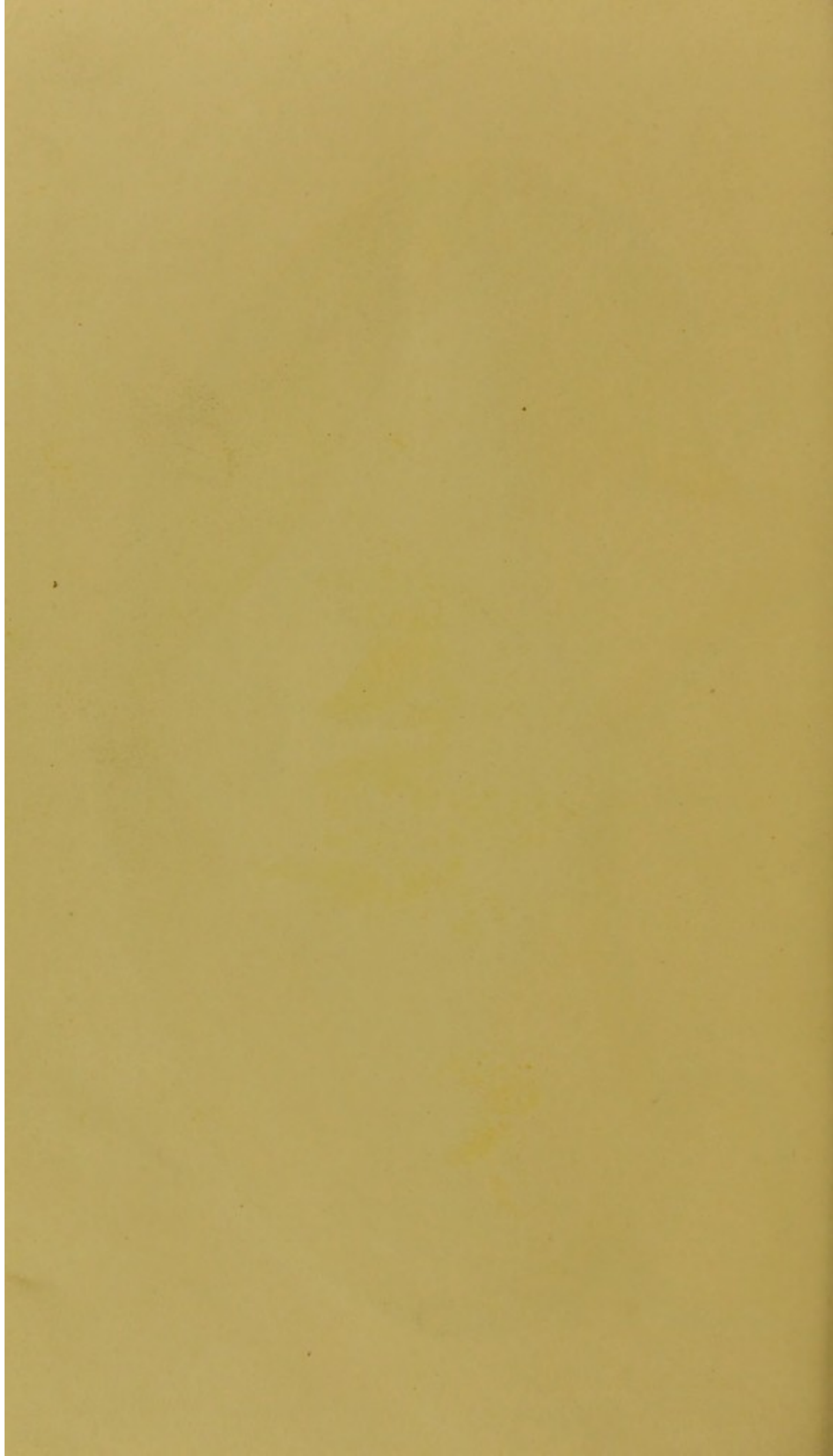






THE DRUNKARD'S ULTERATED STOMACH.

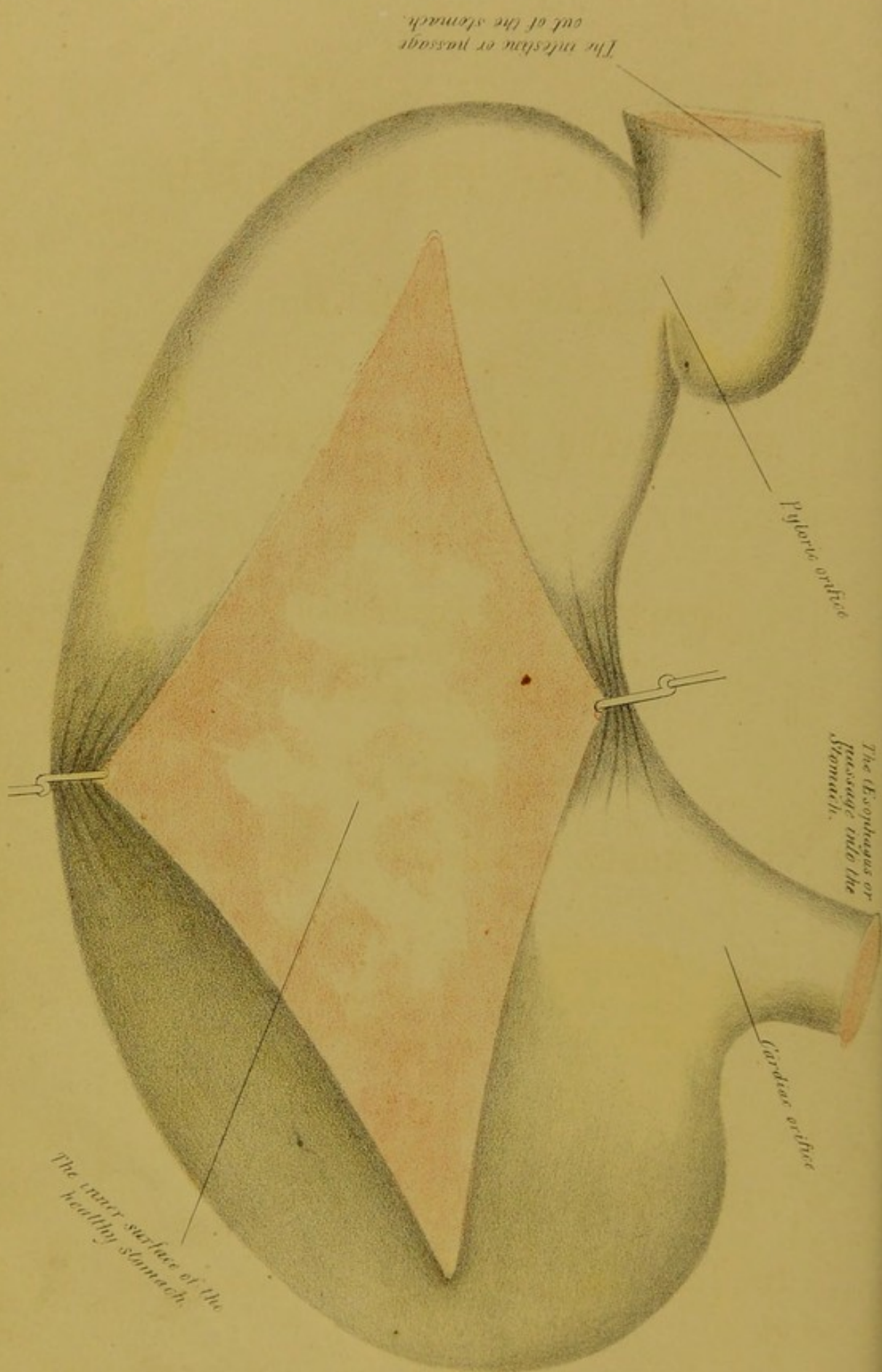












THE STOMACH IN A HEALTHY STATE.







