

An inaugural essay, on the inflammatory bilious fever : as it appeared in the vicinity of Lancaster, in the summer and autumn of 1804 : for the degree of Doctor of Medicine, submitted to the examination of the Reverend John Andrews ..., the Trustees, and medical professors of the University of Pennsylvania, on the 21st day of April, 1806 / by Robert M. Cunningham, of Lancaster, Pennsylvania.

Contributors

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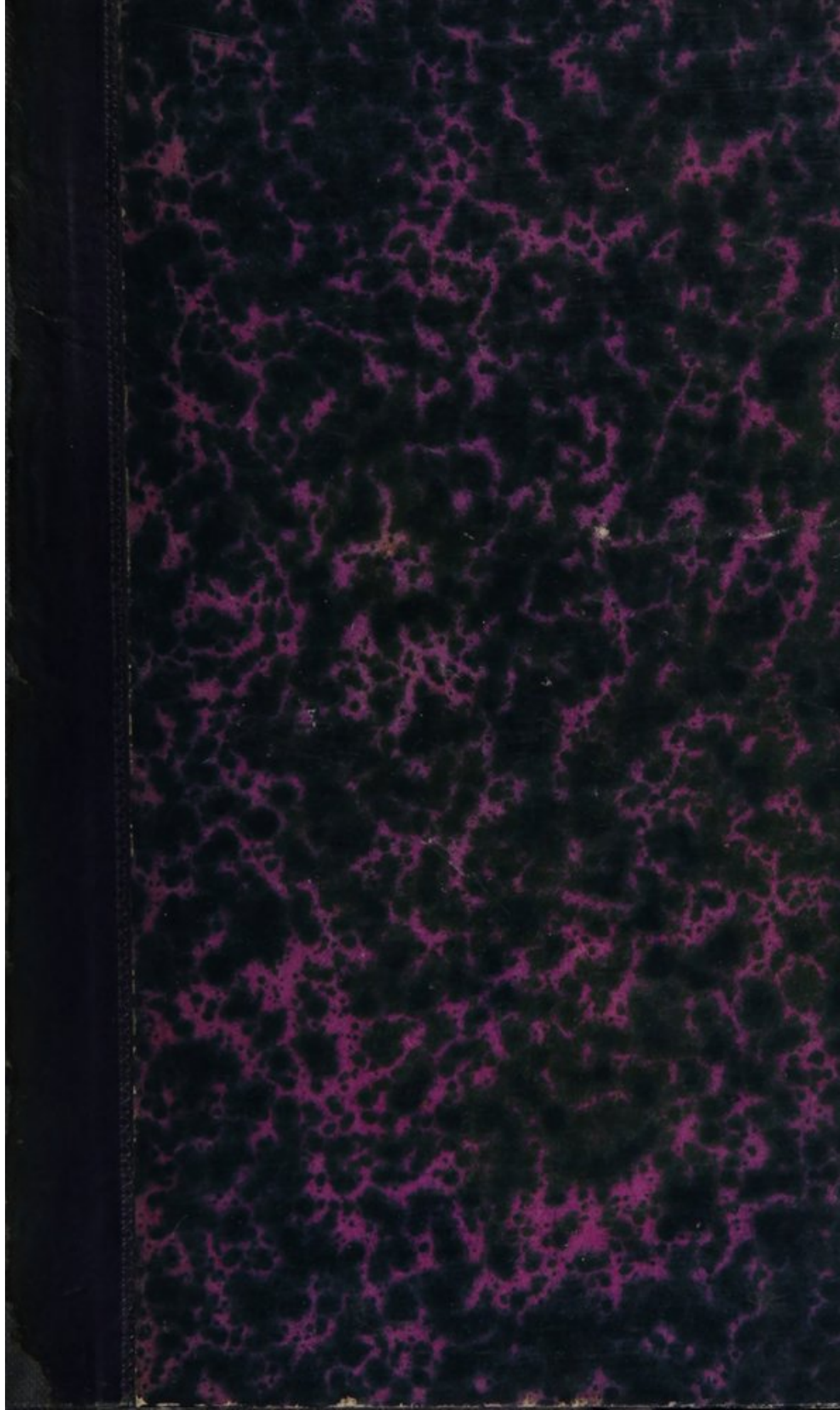
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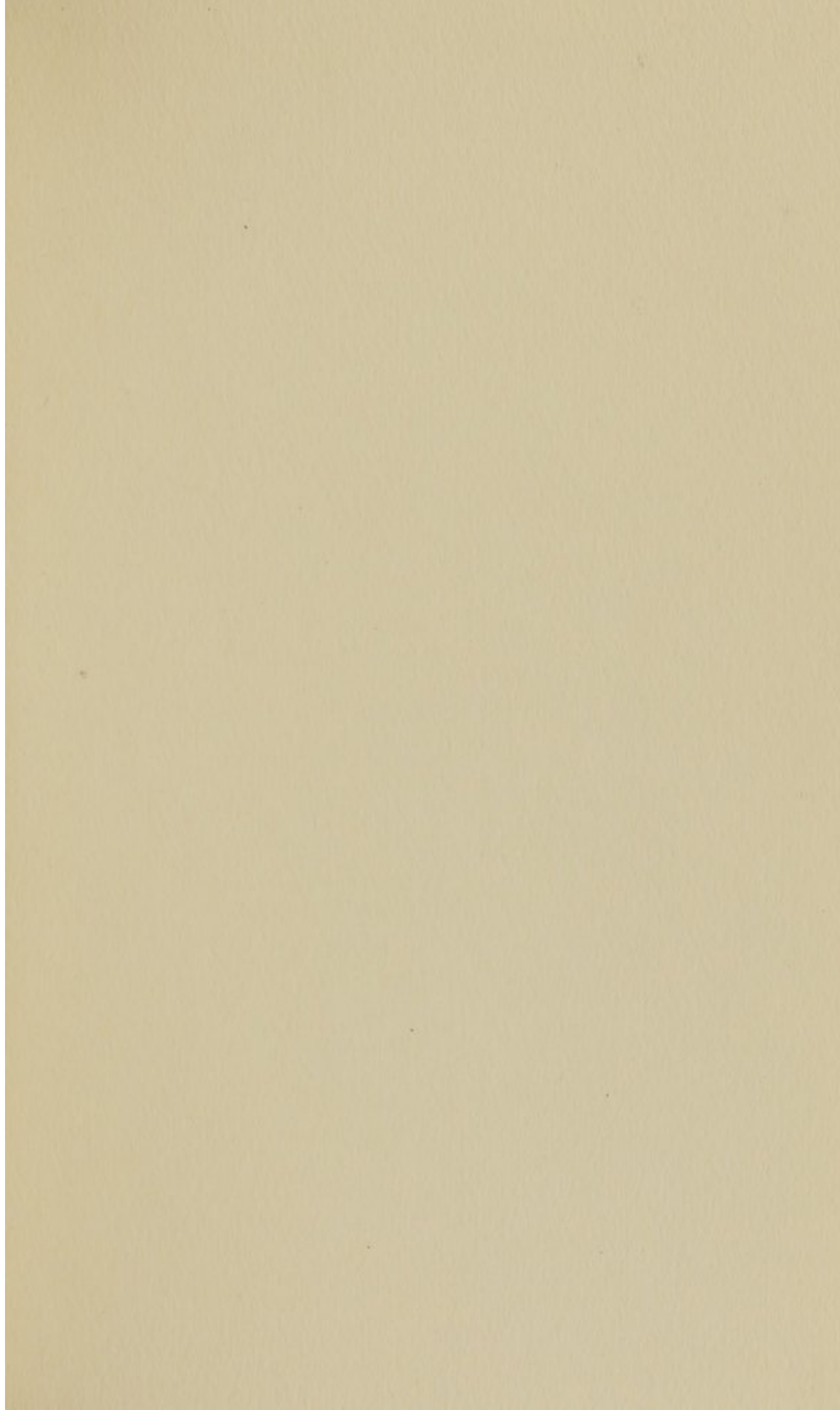
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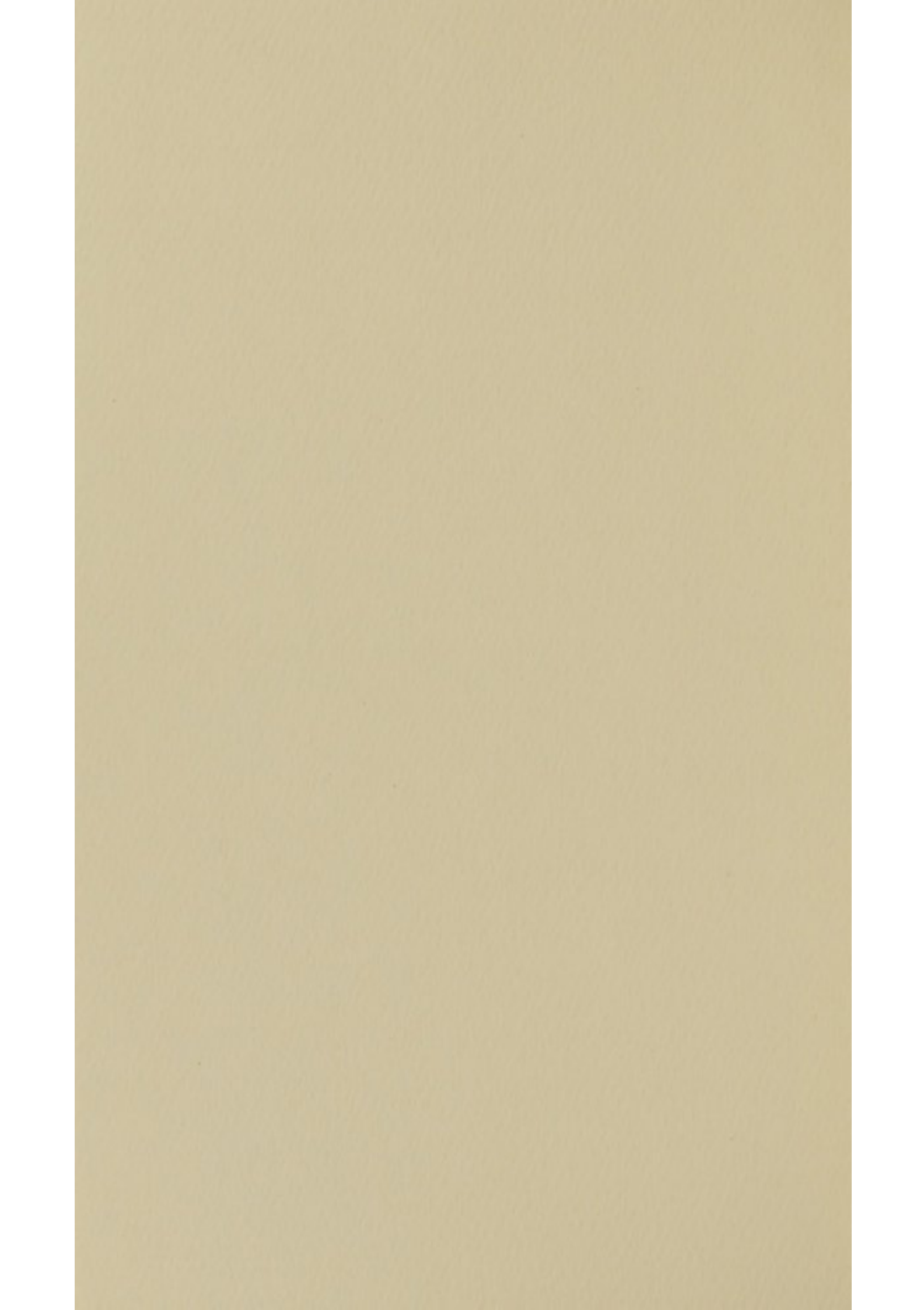
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John W. Farlane

AN INAUGURAL ESSAY,
ON THE
INFLAMMATORY BILIOUS FEVER,

AS IT APPEARED IN THE VICINITY OF LANCASTER, IN THE
SUMMER AND AUTUMN OF 1804,

FOR
THE DEGREE

OF
DOCTOR OF MEDICINE,

SUBMITTED
TO THE EXAMINATION
OF THE

REVEREND JOHN ANDREWS, D. D. PROVOST,

(PRO TEMPORE;)

THE
TRUSTEES, AND MEDICAL PROFESSORS

OF THE
UNIVERSITY OF PENNSYLVANIA,

ON THE 21st DAY OF APRIL, 1806.

BY ROBERT M. CUNNINGHAM.
OF LANCASTER, PENNSYLVANIA.

“Ornari res ipsa negat, contenta doceri.”

PHILADELPHIA:

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TO ARTHUR MAY, M. D.

Permit me to declare that under your care, I commenced my medical education: your attention towards me, and exertions for my future happiness, have been greater than a pupil had a right to expect. Be assured that the many favours conferred on me shall always be remembered with gratitude.

Please to accept this dedication as a small but sincere testimony of the high regard I entertain for your person and talents: wishing you the constant enjoyment of health and prosperity through life,

I am, Sir, your sincere friend and pupil,

ROBERT M. CUNNINGHAM.

ON THE

TO ALTHUR MAY, M. D.

I have the honor to acknowledge the receipt of your letter of the 10th inst. in relation to the proposed publication of a book on the subject of the "History of the United States," and in reply to inform you that the same has been forwarded to the proper authorities for their consideration. It is my duty to state that the same has not yet been decided upon, and that you will be advised of the result as soon as it is known.

I am, Sir, very respectfully,
Your obedient servant,
J. M. [Name]

ROBERT T. [Name]

ON THE

INFLAMMATORY BILIOUS FEVER, &c.

IN the summer and autumn of 1804 a bilious inflammatory fever prevailed in the vicinity of Lancaster, different from any epidemic that ever appeared in that healthful country.

The season was uncommonly wet; torrents of rain fell incessantly for three weeks in May, two weeks in June, nine or ten days in July, and as many in August. The earth was impregnated like a sponge with the water that fell in these showers: an immensity of water was retained in the surface of the earth during the whole summer, for before the ground was dried of one rain another fell, insomuch that the high lands were reduced to the state of marshes in dry seasons, the rivers overflowed; the creeks and small branches spread far beyond their usual boundaries; ponds were formed on level high grounds, where stagnant water was never before observed.

The peculiarities of this epidemic were several.

1. It prevailed only in those situations which are uncommonly healthy, while it passed by those which are generally sickly.

2. This epidemic assumed a number of different forms.

3 It was incurable by the usual remedies for epidemic fever of this country.

1. It prevailed only in those situations which are uncommonly healthy, while it passed by those which are generally sickly “ While Philadelphia and all the cities of the United States (Charleston excepted) were thus exempted from the yellow fever as an epidemic, the western parts of all the middle and several of the southern states were visited with the bilious fever in all its different forms. In Delaware county, in the state of New-York, at Mill River in Connecticut, and in several of the middle counties of Pennsylvania, it prevailed in the form of a yellow fever. In other parts of the United States it appeared chiefly as a highly inflammatory remittent.

It was so general that not only whole families but whole neighbourhoods were confined by it: many suffered from the want of medical advice and nursing, and some from the want of even a single attendant. In consequence of the general prevalence of this fever in some parts of Pennsylvania, the usual labours of the season were suspended: apples fell and perished upon the ground; no winter grain was sown.

This disease was observed very generally to prevail most in high situations which had been for years distinguished for their healthiness, while the low grounds

and banks of creeks and rivers were but little affected by it. The unusual quantity of rain which had fallen during the summer months, had produced moisture in the former places, which favoured putrefaction and exhalation, while both were prevented in the latter places by the grounds being completely covered with water.”*

Moisture promotes, but fluidity destroys putrefaction. Large quantities of rain dilute that water which is stagnant, and prevent the process of putrid fermentation, by which miasmata are generated; hence it is that low countries are unusually healthy in wet seasons, whereas the same seasons deposit such abundance of water on high lands that the fermentative process of putrefaction takes place, from whence arise the miasmata which are the remote cause of bilious fever.

In this way the healthy highlands exchange situations with the sickly low countries; the scene was every where reversed; the necks on the Chesapeak were uncommonly healthy, the vicinity of Susquehannah, of the creeks, and of ponds, formerly the seat of annual disease, enjoyed good health; while those salubrious situations on the higher elevations, where bilious fevers had never before approached, exhibited the appearance of an extensive hospital. For some hundred miles whole families were prostrated, one was not able to assist another; many were without medical aid, physicians not being able to visit one of ten who required their assistance, every hour funerals were seen, and great difficulty was experienced in procuring persons to perform this last office; travellers could not obtain the usual accommo-

* Rush, Medical Inquiries, vol. IV.

dations in public houses on account of the general sickness.

“*Luctus ubique pavor et plurima mortis imago.*”

It has been remarked by some that the epidemic extended wherever there was limestone, and that it was confined to limestone countries, and it has been suggested that the limestone water was the cause of this disease. That the epidemic was generally prevalent in limestone land is true; yet the limestone water was not the cause of the sickness; but the luxuriant vegetation of limestone land affords one of the necessary ingredients for the production of miasmata, and hence it is, that the disease was more prevalent in such places. But the fact is, the epidemic was not confined to limestone land; for it prevailed with its usual violence and mortality in other parts where there is no limestone.

In many places the bilious fever extended as far and no farther than the limestone land, viz: in the vicinity of mountains and infertile soils: because the sterility of such land affords little or no vegetables, the materials from which heat and moisture concoct and prepare these miasmata. But wherever there is fertility of soil and the consequent abundance of vegetation, the fever prevailed, whether the land were limestone or otherwise. Such are the dispensations of Providence, who deals out good and evil as best suits our situations, who sweetens the bitter cup of misfortune with some soothing circumstances. The inhabitants of sickly regions are comforted with the liberal productions of a luxuriant soil, while the owner of barren lands is consoled with the salubrious gases of health, with vigour, security, and long life.

In the beginning of this epidemic, every case that occurred was traced to some pond of stagnant water; six persons fell sick on one day in the same house: upon inquiry it was found that a pond of water five or six feet deep, stood stagnant in the cellar, which was filled by the copious rains of the season, the whole family, consisting of nine or ten persons, were all attacked before many days, and every individual, as soon as he recovered, suffered repeated relapses, till the frosts of the autumn destroyed the miasmata which were incessantly generated in this reservoir of disease.

Near the turnpike between Lancaster and Columbia, many cases occurred. Almost every person had attacks in a greater or less degree, except such as were secured by a very elevated situation—at one place a chain of ponds extended about half a mile, formed by a rivulet which runs through a succession of cavities or natural basins. Here the fever raged in its highest grade: not one in the vicinity of these ponds escaped. Several cases of genuine yellow fever occurred here, and in two or three instances proved fatal.

The village of Manheim suffered very generally from a mill pond contiguous to it, and the healthy village of Litiz was visited with pestilence almost universal, from stagnant water exposed on an extensive flat, owing to the overflowing waters of an adjacent rivulet.

The town of Columbia, the annual victim of autumnal fevers, was uncommonly healthy this season; which was attributed to the abundance of water in the Susquehanna, entirely covering its channel, from which miasmata were eliminated in former years, when drought prevailed.

This was universally the case along the shores of the river.

Heat, moisture and lifeless vegetables are the indispensable ingredients for that putrefaction which produces miasmata: any one of these wanting, the process cannot be affected. Suppose vegetable matter wanting, heat and moisture cannot generate miasmata of themselves; suppose heat wanting, moisture and vegetable matter are harmless: during the rainy weather in 1804 it was healthy; though moisture and vegetable matter abounded, yet for want of heat miasmata could not be generated—suppose moisture wanting, heat and vegetable matter are inert, for the vegetables become dry and are innocent, because putrefaction cannot take place without a certain degree of moisture. In forests heat and vegetable matter may abound, but are not able to generate miasmata for want of moisture, because the foliage of the forests is dried before its fall.

Factitious miasmata might probably at any time be formed by uniting these ingredients of putrefaction, viz: heat, moisture, and vegetable matter. For this process a heat not less than ninety-five or ninety-six degrees of Fahrenheit is necessary.

II. This epidemic assumed a number of different forms.

This Proteus-like disease appeared in a variety of different forms, from the highest grade of yellow fever down to bilious remittent and intermittent fever. Some had two paroxysms in the day, in some instances one paroxysm slight, the other violent; others had a severe and moderate paroxysm alternately every other day, some of the worst cases appeared to consist of only one

paroxysm, some whose symptoms were flattering in the morning, fell victims before night—whilst others whose cases seemed desperate, recovered to the surprise of all who had seen them. Mania, tetanus, convulsions, paralysis, hydrocephalus, dysentery, cholera, diarrhea, hysteria, dropsy and epistaxis, were all imitated by this insidious epidemic.

III. This epidemic did not yield to the usual remedies for the epidemic fever of the country.

Bark and wine were found to do injury, unless where the intermissions were perfect, or the disease of a very low grade, nor were they used unless by a few empirics of the place.

Bleeding, and mercurial cathartics, aided by blisters, abstinence, and the usual remedies of the present improved state of practice, were found the only successful means of treating this disease.

J. H. was attacked with this epidemic on the 27th of August, when he was bled sixteen ounces, on the 28th lost twenty ounces, on the 29th sixteen ounces, on the 30th sixteen ounces, on the 1st September ten ounces, on the 2d twenty ounces, on the 3d eight ounces, on the 4th sixteen ounces, on the 5th ten ounces, on the 6th ten ounces. Cathartics were constantly administered, and five blisters applied. During this period he had a paroxysm at mid-day and one at midnight, accompanied with mania; this patient recovered rapidly.

J. R. was attacked with the same fever on the 3d of September: he was bled very freely for five days, by which means the inflammatory symptoms were subdued, he was affected with a general paralysis of the muscu-

lar system, insomuch that he could not speak nor scarcely move a limb; he recovered gradually; in two weeks was restored to perfect health and his usual strength.

W. C. F—r, Esq. was attacked on the 9th of June; on the 10th he was twice bled and took calomel freely, on the 13th he was bled, and the calomel continued with senna, 14th bleeding repeated, 15th bleeding repeated, and the calomel was continued, two blisters were also applied, 16th bleeding repeated; after this the fever abated and he recovered rapidly. During the inflammatory stage, he was affected with phrenitis, and on this account ice was constantly applied to his head.

E. H. was attacked about the 20th August; on the 25th application was made for medical assistance: a small bleeding and two grains of mercury combined with jalap were administered; he remonstrated against blood-letting and mercury, which were omitted until the 28th, when his symptoms becoming alarming, he was prevailed on to submit to a small bleeding, but the opportunity of affording relief was now past; the stomach rejected medicine, the power of deglutition was lost—enemata were ordered, but he died on the 3d of September.

This unfortunate patient had somewhere imbibed prejudices, which occasioned a delay of five or six days at first, when remedies might have been successful; for this disease, like a raging conflagration, unless quelled in the very incipient stage, defies opposition, and regardless of remedies the most powerful, advances in spite of every effort to oppose its progress, till dissolu-

tion is completed. When prejudices exist, and where confidence is wanting, the most judicious prescriptions are lost from the reluctant and imperfect manner of receiving remedies. In courts of justice punishment by death is reserved for offences of the most atrocious nature; but such is the punishment of prejudices in medicine.

In no case was this disease contagious, or communicated from one sick person to another; every individual was affected who was exposed to the poisoned atmosphere, and susceptible of the disease in the same manner as when a jovial club, after two or three bottles a piece, experience universal intoxication. In this case would it be contended that this effect of the liquor is communicated from one individual to another by contagious influence? Is it not certain that the sufferings of each individual are the consequences of swallowing the same poisonous dose? So when a whole neighbourhood or county breathes a poisoned atmosphere, individuals sicken not by contagious influence communicated from one individual to another, but from the universal poison inhaled alike by every one.

An amiable and worthy family in our borough, by some accident received each a dose of *Phytolaca* at dinner: a scene of distress was exhibited, much resembling in a small scale our epidemic; some sickened in half an hour, some in an hour, some in two hours, whilst others experienced very little inconvenience: the symptoms also varied according to the irritability of the several systems affected, and in proportion to the quantity of the dose; some were seized with vomiting, others with diarrhea, some with cholic, and insufferable tormi-

na, whilst others were affected with only a slight nausea, stupor, languor, &c. Certainly this disease from the *Phytolaca* could not be accounted for on the principles of contagion: it is true one was attacked after another, but not by contagious influence.

Just so it happens in epidemics, every one who breathes, inhales the poisoned air, from the same cause, and not from communication with the sick.

Many cases of dropsy succeeded this fever, and many of consumption, indurated viscera, chronic fever, &c. whose issue remained doubtful five, ten, or twenty months, and at this present time many are lingering out a wearisome existence under diseases consequent to this fever.

Language can scarcely describe the scenes of distress occasioned by the fear of this disease being contagious; families deserted by their domestics, friends relinquished by friends, in their last moments—at the hour of death, which separates friends forever, which calls forth every tender sensation, when all the humanity and generosity of the heart are excited; at this solemn period to be abandoned by all, is anguish, worse than death. Instead of the soothing sympathy of relations, not one to dry the tear of exhausted nature, not one to wet the lips parched by the fervid burning of a ruthless disease.

By the ideal phantom, contagion, this formidable disease was rendered tenfold more destructive; attacks slight and trifling in themselves have been aggravated into violent and mortal cases, and many have been sent to untimely graves, by want of attentive nursing and by chagrin: tender nursing is as necessary as medicine to

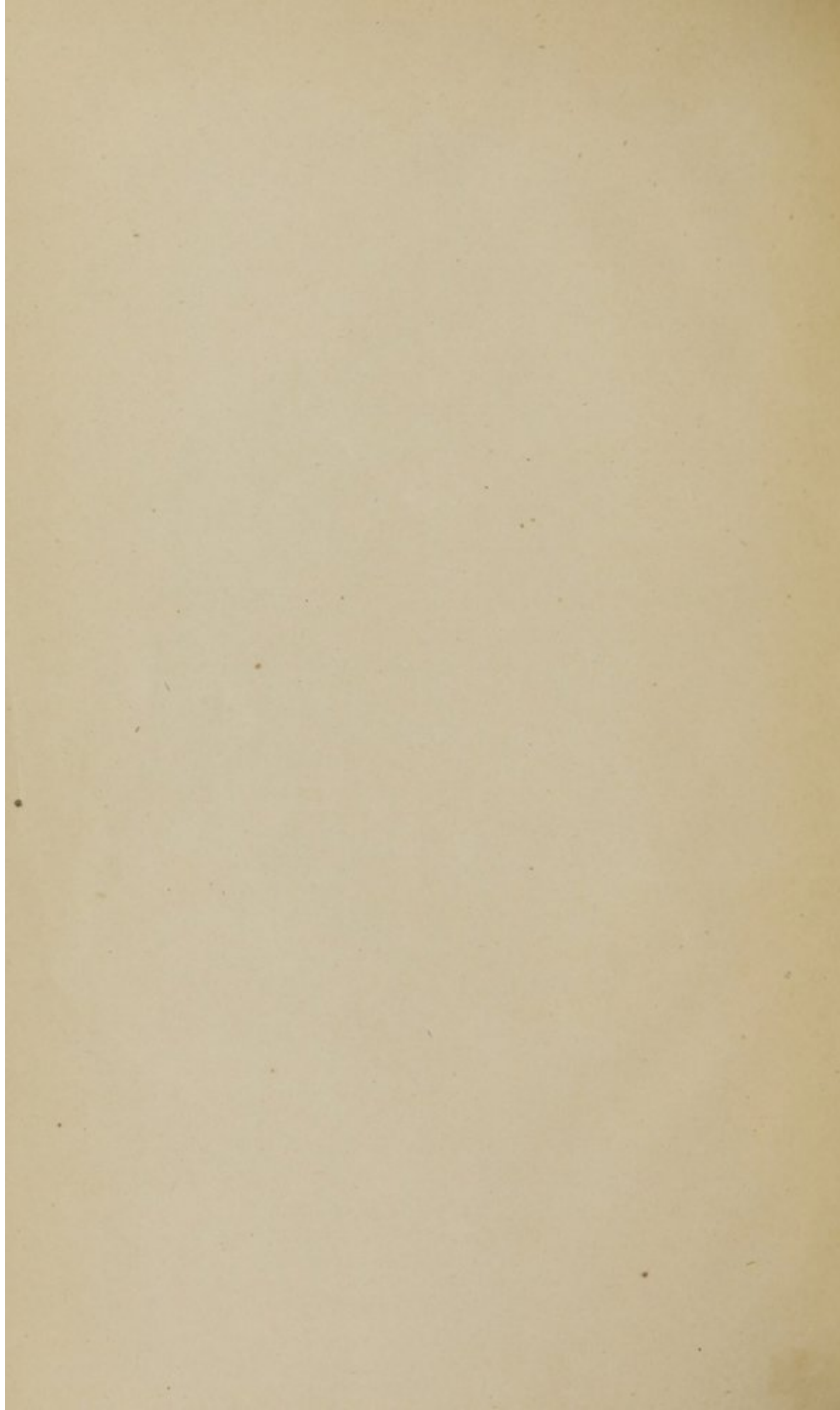
the afflicted sufferer, and the best remedies, and most judicious prescriptions are often rendered ineffectual by the want of affectionate attendants.

Moreover, how insupportable must his situation be, who supposes himself a nuisance to society, more to be shunned than serpents, and unsafe to be approached by his fellow-creatures.

Unheard to mourn, unknown to sigh,
Unfriended live, unpitied die.

I cannot conclude without expressing the warmest gratitude to the several Professors of this University, for their learned and elaborate instructions in the several branches of Medical Science, by whose assistance I have been enabled to advance thus far, and by whose learning and talents Pennsylvania can boast of one of the most promising medical schools in the world.

THE END.



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