

**An epistle to a friend, on the means of preserving health, promoting happiness : and prolonging the life of man to its natural period : being a summary view of inconsiderate and useless habits that derange the system of nature, thereby causing premature old age and death : with some thoughts on the best means of preventing and overcoming disease / by Charles W. Peale.**

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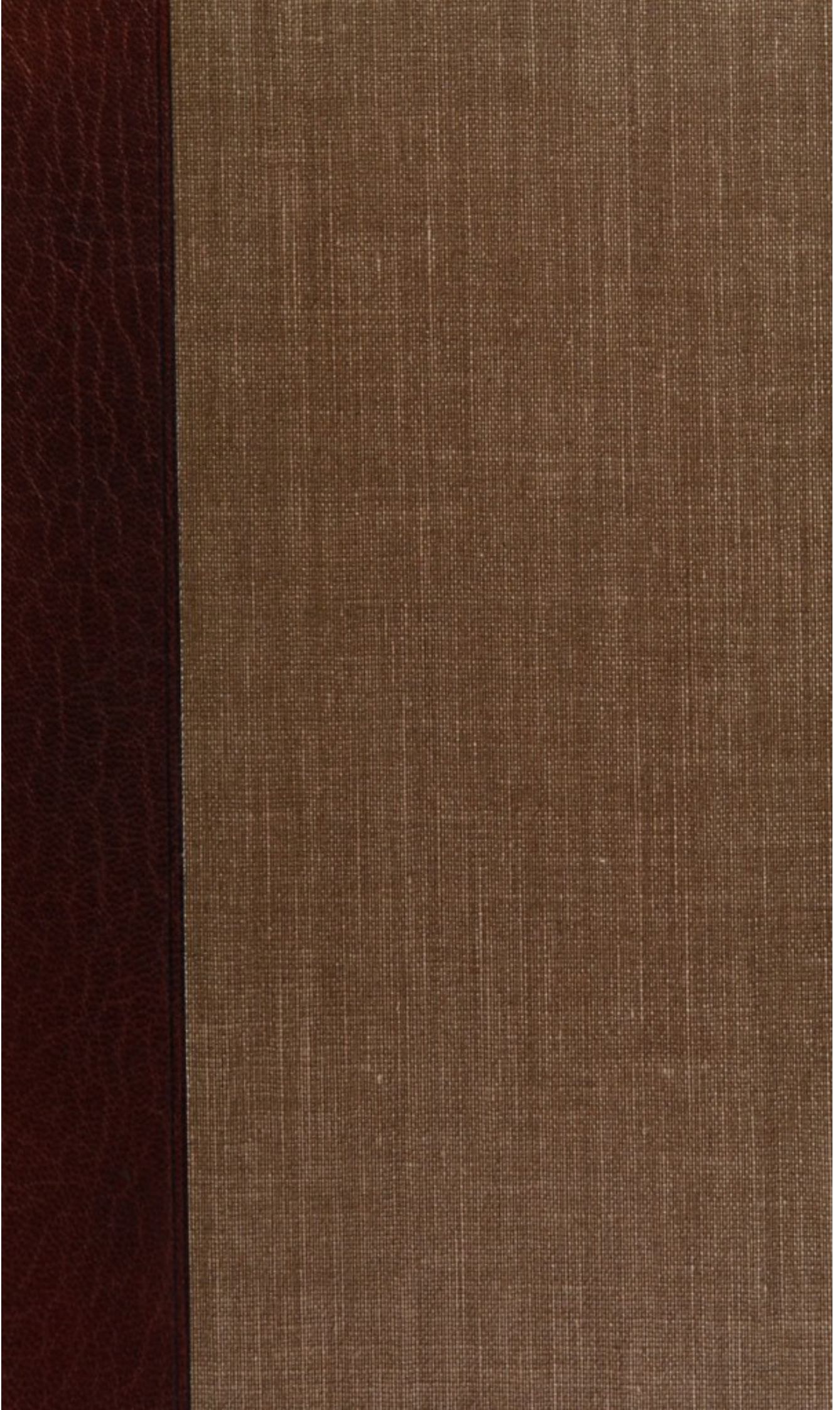
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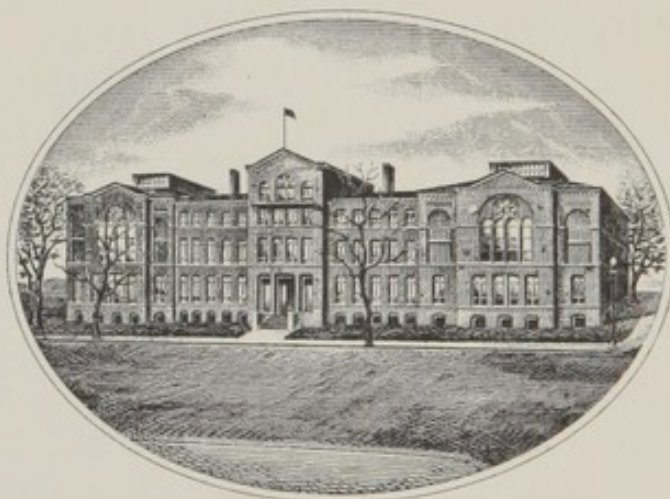
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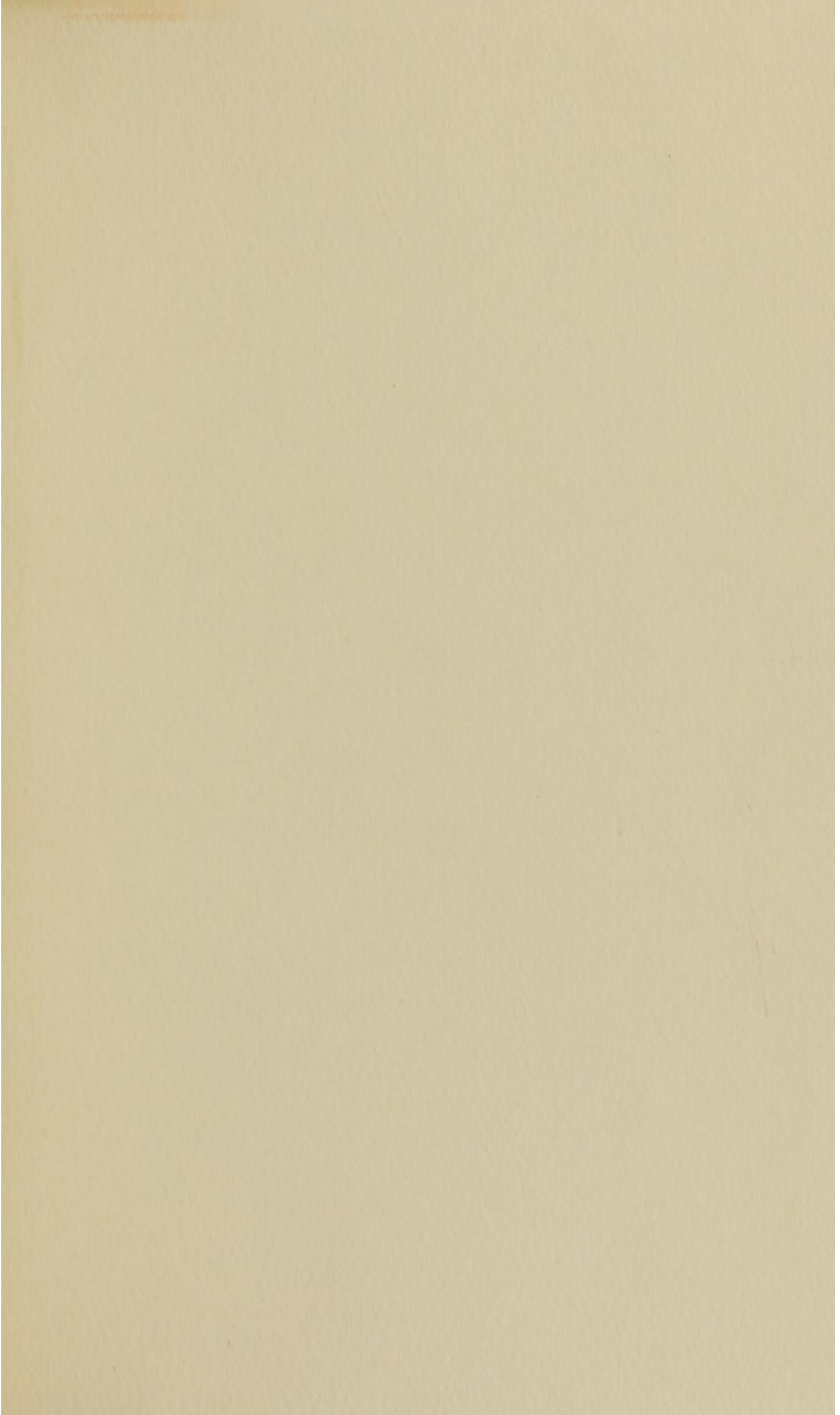


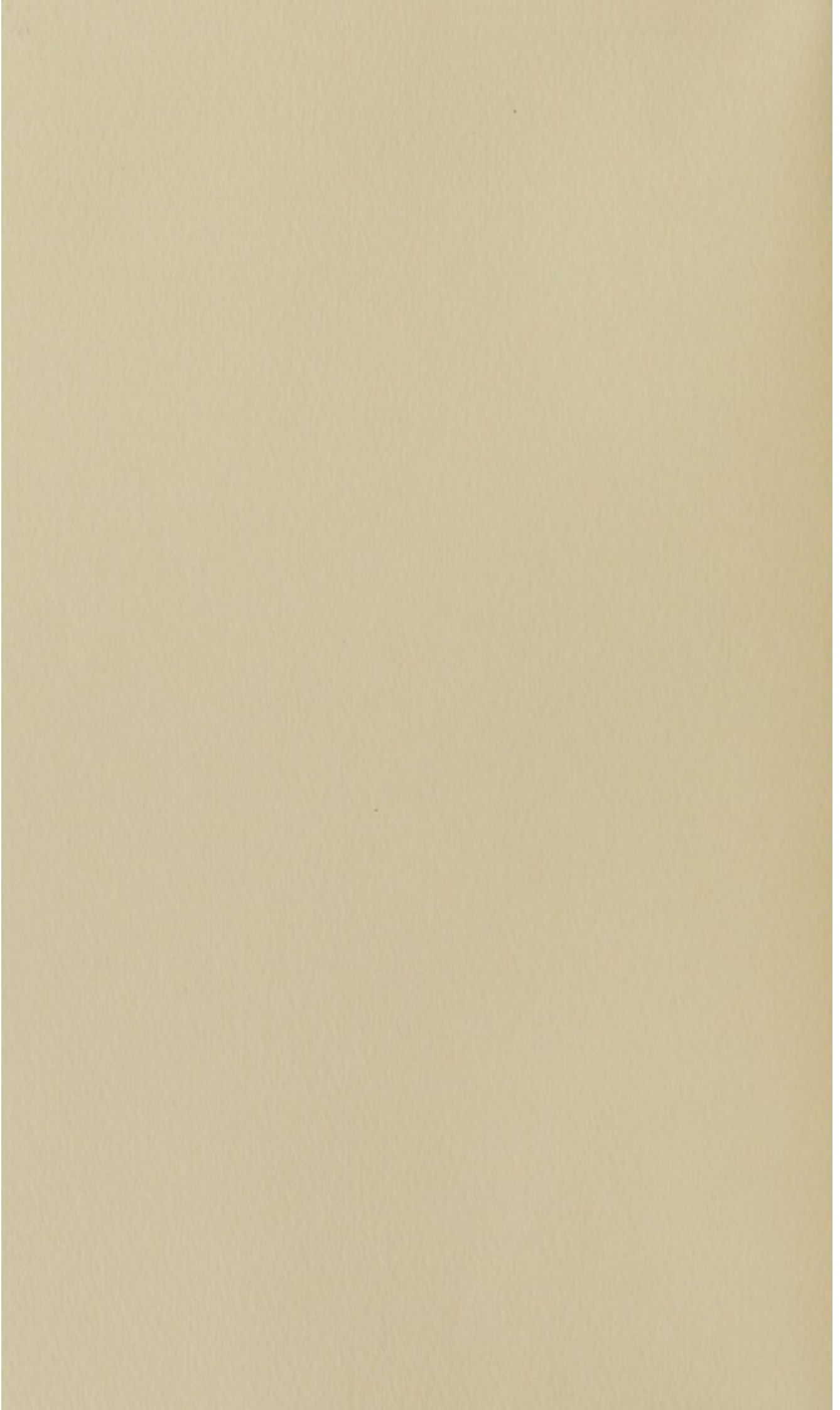
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AN  
*EPISTLE*  
TO A  
FRIEND,  
ON THE MEANS OF  
PRESERVING HEALTH,  
PROMOTING HAPPINESS;  
AND  
PROLONGING THE LIFE OF MAN TO ITS  
NATURAL PERIOD.

BEING A SUMMARY VIEW OF INCONSIDERATE AND USELESS HABITS  
THAT DERANGE THE SYSTEM OF NATURE, THEREBY CAUSING  
PREMATURE OLD AGE AND DEATH. WITH SOME THOUGHTS  
ON THE BEST MEANS OF PREVENTING AND  
OVERCOMING DISEASE.

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BY CHARLES W. PEALE.

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*“ Reflect  
“ that man creates the evil he endures.”*

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Philadelphia :  
From the Press of the late R. AITKEN,  
No. 20, North Third Street.  
By JANE AITKEN.

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1803.

THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

PHYSICS 551

PROBLEM SET 1

Due: Monday, September 10, 2012

1. A particle of mass  $m$  moves in a circular path of radius  $r$  with constant speed  $v$ . Find the magnitude of the centripetal force.

2. A particle of mass  $m$  moves in a circular path of radius  $r$  with constant speed  $v$ . Find the magnitude of the centripetal force.

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## P R E F A C E.

*The following sheets were occasioned on hearing of the indisposition of a person in a public station, whose death would be a public loss—As the latter advanced, the subject became more interesting, and naturally led to reflections that were not necessary to communicate to the person it was intended for, and having other friends to whom the ideas it contained, might be acceptable, determined to have it printed, with a greater detail of reflections, under a fond hope that by using strong, yet simple language drawn from facts, founded on actual experiments, that it might induce some of my readers to think for themselves, and on consulting their feelings, thus be led to the manly resolution of governing their conduct by reason, and to act independent of fashion or custom.*

*The preservation of health is so very important, that we might suppose that no well-disposed person could be led into any kind of excess or intemperance, knowing the natural consequence to be not only debility of the body,*



P R E F A C E.

*but also of the mind. Wantonly to destroy our intellects (the only superior quality we possess above the brute creation,) is a crime, perhaps of a blacker dye than even suicide, yet in spite of all that has been said or written, some men will be thus mad. And vain is this essay to reform those of confirmed bad habits. Some it may inform that are disposed to think, and thus do good. At least they will not be troubled to read ideas borrowed from any author, as it is simply dictated from the feelings of the*

*AUTHOR.*

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MUSEUM MARCH 3, 1802.

I have heard my dear Friend, that your health is much impaired, especially since you inhabited your new building. An *old* log-hut is better than a *new* Palace. Do not suppose that good fires will render such a habitation perfectly safe in less than one year. Four times heating an Oven will scarcely dry it sufficiently for good baking. I have been often surprised in observing the length of time necessary to dry the Furnaces and brick stoves I have built.

*Health* is a blessing that too much pains cannot be taken to obtain, and preserve; and with which every other consideration, when put in competition, is of no account.

The interest I take in your happiness, forcibly draws me from some pleasing studies, to reflect on this important subject—and I would think my time well spent if I could produce one new idea, or give a known precept, such a turn

as render it more strikingly useful ; in such a hope, I will collect the remarks I have made in my progress through life, on manners: the follies of some customs ; on economy of blessings ; and on the means of prolonging health.

To a person whose conduct is governed by reason, most of these observations are unnecessary, yet, communications of reciprocal sentiments may be acceptable. Therefore I shall not fear making this a lengthy epistle.

When a boy, the jeers of my companions could not force me to follow some practices, the forerunners of vice and misery : hence I conclude, I have been constitutionally obstinate, a disposition that requires perhaps more than my 60 years of experience to direct to advantage—so that my whole life has afforded nothing but a series of experiments.—At an early period I asked Doctor Hamilton senior (an eminent Physician near Annapolis,) what is the best drink for health? “ Toddy mun,” the old Gentleman replied in his caledonian dialect : “ the spirit must ha something to act on, and therefore acts on the sugar and does nae injury to the stomach.”

The fact was, that the Doctor loved Toddy ; in like manner, most people advise what they are

most fond of: hence, we may conclude arises the recommendation of Wine to those advancing in old age. An opinion, which I verily believe has done infinite injury to the aged.

Being accustomed to observe the manners of man; to divine the causes of his actions; to trace the motives that have led many to contract habits that had nothing solid or reasonable to recommend them. Although I cannot help lamenting their perseverance in error, yet I am far from believing that we are naturally prone to evil, but that all the errors we commit, arise from a want of consideration, with a proper direction and government of our passions. Many of those habits to an inattentive observer, may appear amusing or innocent, yet, if minutely considered, will be found the real causes of the misery of the human species.

Man, who is a rational animal; unless he is governed by his reason, is led by variously excited appetites to an abuse of many of the blessings bestowed on him.

If we are not guided by our reason, and determine our conduct by an impartial examination of our feelings, what cause have we to boast of being a little above the brute creation?

To act according to the dignified station we claim, neither fashion, custom, nor temptation, however pleasing to the taste, should induce us to an improper indulgence. How far we may venture, and where we should stop, can only be determined by our senses.

It is not a life of privation, but rather of every enjoyment, that I contend for ; it is only the *abuse* of good things which I condemn.

To enjoy life in the true sense of the word, is to do nothing but that which we know will conduce to invigorate or strengthen the system, as justified by a critical observation of the effects felt. What may be supposed to be temperance in some men, is absolutely great intemperance in others.

With regard to drinking of spiritous liquors, I divide this vice simply in *intoxication*, and *drunkenness* : If a person takes the least portion, after he feels it in his stomach, head, or pulse ; this is intoxication, no doubt there are many grades of it. The man is drunk, who staggers ; stammers ; or does foolish things.

What an infinite number of men, and even women, who daily get intoxicated according to

my definition of the word. It is often said, "I only take one or two glasses."—This, if a person is diseased, and require a stimulus, is an excellent medicine, and the two glasses may scarcely be felt. On the other hand, if the person is in good health, will not a less quantity act on the nerves? And what is the consequence?—direct debility, and that in proportion to the surcharge.

It is the same in eating: every thing should be preferred which best contributes to strengthen the system; the food should be simple; avoiding every stimulant to create an appetite; more especially such as are of an indigestible nature; since they only create a false appetite. Air, exercise, and sometimes, when the stomach is feverish, a little water, are the only safe remedies.

Observing some men from leanness, grow fat even to excess; others that were fleshy, become meagre; and great changes in their complexions: I have reasoned on the causes of such changes, after tracing some of their evil habits, and consequent derangement of nature, have calculated, (in many instances very correctly) the measure of their days.

My turn of mind has always led me to enquiries of this nature. In consequence, I have made innumerable experiments on the means of preserving health, and have sought information from others. I requested Dr. Franklin's opinion whether animal, or vegetable food was best to prolong life. His answer, as I might have expected, was indeterminate. At that period, I was making trial on myself, by living almost wholly on animal food.

The question is so combined with the quantities, qualities; and even the preparation of them by cookery, that no positive answer can be given, without a reference to a number of combined circumstances, not only of food, preparation, &c. but the manner of life, sedentary or otherwise.

The result of my observations, is, that animal food may be prepared to set easy on the most delicate stomach, and, as it affords greater nourishment for its bulk, judiciously used, is more effectual to overcome debility. A small portion of vegetables may at times be serviceable to a weak stomach.

Persons in high health, with strong digestive powers, may eat a variety of food with im-

punity, and may not immediately suffer much from occasional intemperances. Nature is kind in accommodating our bodies to some changes, that at first sensibly effect us. But there are certain laws which cannot be transgressed without incurring a penalty.

Enjoyments are bestowed on us to promote health, and to enjoy moderately, is to enjoy *long and truly*. Insensibility and inability, become companions towards the close of the scene!

What is the cause of those violent struggles in death, but a premature exit, hastened by an *improper* mode of living? Whereas by a prudent conduct, they might have lived so long, as insensibly to wear out the machine, and then depart quietly, without a pang.

Intemperance brings on many persons, who cannot count length of days, all, and even greater infirmities than belong to the aged. They feel pain in addition to their diseases of debility.

Was man to live as he should do, *enjoying* every good gift and *abusing none*, he would, baring accidents, live to extreme old age, without disease.



These are considerations that surely deserve serious attention, and, ought to produce a *determined* resolution to act with great *circumspection*, since the reward is *health* and *long life*: and on the other hand, misery and premature death !

Having made these general observations, I will next speak more particularly of aliment, and finally of physic.

This order is preferred from a persuasion and full conviction, that a *strengthened constitution* will resist disease, and repel impressions from infectious or contagious diseases, by a timely invigorating aid to the frame and *vis vitæ*.

What is the best food? a plentiful board, no doubt, is desirable, but no dinner is complete without a good *soup*. Soup made of meat, to be good, must be boiled at least six hours; one or two hours longer *simmering* will perfect it; it ought not to boil violently. As the fat rises skim it off.

This in particular, is the best food for old age; and the young will not reject it, when they find it so much superior to the soup commonly met with. Roasted meat is not so easily

digested as *boiled*, or what is infinitely better, cooked with steam; not only meats, but fish, and all kinds of vegetables, except coleworts and cabbage, which require to be boiled in water to take away their strong taste.

Puddings, and all kinds of dumplings, are best cooked in steam. The reason why many of these articles are thus *better cooked*, and have a finer flavour, is accounted for, by the *fine juices* being *retained*, when boiled in water they are extracted and lost.

I think it a good rule to have a tumbler of drink by our plate while at dinner, the more diluted the better. If water is pure, it promotes digestion better than any mixture of liquor whatever, yet impure water may be a little mended by dashing it with some kind of spirituous liquor: this may serve to destroy some animalculæ, too small to be visible to common sight; the mixture I allude to, ought to be what some persons would call spoiled water; in fact, so much diluted, as to prevent the least intoxicating quality. Such being frequently mixed with meats, aid digestion, whereas wine, or other liquors of anticeptic qualities, *harden* the food and have a contrary effect.

It is best to take sufficient time to masticate the food, the saliva then mixes with it and promotes digestion—a less quantity is thus made sufficient for the nourishment of the body—but gormandizers most commonly bolt their food, as it is vulgarly expressed; swallowing it without chewing.

The use of tea might be generally pernicious, was it not for the milk, sugar, and grain food commonly added: hot water is deemed relaxing and injurious to the fibres of the stomach; and if taken largely, destroys their tone. Yet one or two dishes of *tea* is palatable and to many, a cordial. *Coffee*, however, is to some constitutions more exhilarating, and as the French take it, after dinner, composing and salutary. *Chocolate* is more nourishing, the nut of which it is made, may be wholesome, and no doubt the rye or other flour, which is often added, strengthens this food.

*Fruits* are with very few exceptions, wholesome, but they must never be eaten unless perfectly ripe; even when cooked in the best manner, if unripe, they are only fit to be thrown away; consequently tarts, or sweet-meats of harsh crude fruits, ought never to garnish our tables, least the giddy or thoughtless might be tempted to eat of them.

Although young flesh is infinitely more nourishing than green fruit, yet it is not so wholesome as that of animals which have attained their *full growth*. *Young pork* is perhaps the most difficult to digest. The flesh of most *wild animals* is preferable to those domesticated, being easier of digestion; perhaps rendered more wholesome as such animals are necessitated to use more exercise in search of their food.

It is important to know at what periods it is most proper to take food. I am of opinion that long fasting deranges the stomach, but more especially of persons having delicate constitutions. Probably for such, it is best to eat often, though little at a time.

If obliged to wait long for our fare by an appointment to dinner, a crust of bread to quiet the stomach, is much better than wine, punch, or any liquid.

Sometimes we want an inclination to eat; have some slight indisposition; head-ache, or even cholicky pains, when by coaxing the appetite with some light food, a cure is obtained. This experiment has succeeded not only on myself, but, very frequently to those of my family who have taken my advice. When I first made

the essay with success, I supposed my age required the greater stimulus, but I found the prescription equally beneficial to *the youthful*.

From what has been now said, it would scarcely be necessary to note, that all spices may be dispensed with, or used very sparingly, merely to season and improve the flavour, not as *food*, as they do not afford the least *nourishment*.

Is it not just to suppose that every thing which will not nourish the body, has a tendency to injure the stomach? Then how much do they degrade themselves who use things, merely to gratify a viciated appetite, knowing such are not nutritive.

*Pickles* are not the least of useless articles that garnish our tables; generally being made of unripe fruit, therefore cannot be wholesome. There is only one sort that merits its place, walnuts, not because they are a tittle more wholesome than other pickles, but, because their liquor is a good substitute for a more deliterious poison, I mean ketchup. The latter being made of *mushrooms*, *the whole class* of which are more or less poisonous.

Discarding *pickles*, more attention may be afforded by the good house-wife, in her making

comfits of fruits that are ripe. Sweetmeats made in vessels of brass, copper, or bell-metal, are not wholesome. Why are those vessels preferred for such purposes?—It is pretended that the comfits are fairer, and from time immemorial having been accustomed in their families to use them, and no ill consequences remarked, no fear of poison was apprehended—that as soon as the fruit was stewed sufficiently, it was not suffered to remain in the stew-pan or kettle.

These precautions, no doubt, are absolutely necessary, otherwise the verdigrease would soon be visibly formed by the acid of the fruit in contact with the copper, brass or bell-metal.

Observe the process with a little attention, it is certainly deserving of notice. As the syrup stews down, rings will be formed round the sides of such vessels of a brighter colour the lower it descends. No one can doubt that this brightness is produced by the acid of the fruit; and consequently, some small proportion of the metal is incorporated with the preserves. I have been thus particular, knowing how difficult it is to overcome the long accustomed use of vessels made of such metals, which garnish most kitchens. The same objections hold in respect to

the use of any kinds of pottery that is glazed with lead. Stone ware, being glazed with salt, though dearer, is much to be preferred. None but stone or glass jars can be used with safety, for keeping preserved fruits.

By a proper management of iron pots, there is no danger of their changing the colour of the preserves—They should never be scoured with any hard substances that would take off the black polish acquired by a constant use in cookery.

For children, molasses may be substituted for sugar, as being less expensive, and perhaps more wholesome. Among other fruits, pumpkins cut into slices make a wholesome and cheap preserve.

A change of articles which constitute some of our meals, fashionable in America, is certainly much to be wished, especially those of the morning and evening.

To mend our manners, by discarding bad habits, and embracing customs justified by reason and found to have a happy result, require first much consideration, and afterwards no small degree of resolution. To combat fashion; to

disregard opinions founded on error, when sanctioned by persons in high stations; by the learned; aged; and by those possessing our esteem, requires great energy of mind. Few men, very few indeed are equal to the task. Yet we ought to attempt it. However, it may be prudent to avoid the appearance of singularity—but on the terms of securing to ourselves happiness, health, and long life—Can the struggle be too great for this end?

We see some of our friends use *tobacco*, and although they know, and will acknowledge that it is a nasty, loathsome, and pernicious custom, yet they continue the practice. Whether it be an indolence of our nature; or that the gratification of a sensual moment, or an affected taste, is more esteemed than the consequence of a bad habit is dreaded, it is certain that we very rarely find an individual with strength of nerves sufficient to produce a reformation. The evil may be thought of less account than the mortification they would suffer by the reform; nevertheless it is an evil. In the use of tobacco, besides personal filth, offensive breaths and dirty habitations, is productive of other and greater evils. The too copiously draining of the saliva creates thirst, and thus promotes immoderate drinking. This saliva, is doubtless, an important aid to



digestion; the improper waste of it is probably the cause of divers serious maladies, some of which steal on slowly, and imperceptibly undermine our health.

But if it is so uncommon to overcome this silly fashion; so filthy and unprofitable in its nature, how much greater must be the virtue to forbear from eating, or drinking things that we have contracted a high relish for, finding that they are either absolutely unwholesome, or devoid of nourishment.

It is only requisite to make a fair trial, by gradually discharging every thing unwholesome, or unnecessary to health; after this habit should be fairly confirmed, I am confident that it would be accompanied with greater and more rational enjoyment of the appetites bestowed on us; yet, if the excess is great, much care is really necessary in making the change; it must be done by very gradual restrictions. *Suddenly* resigning high stimulating food and drink, before nature has time to restore to a good tone a viciated constitution, may prove injurious or fatal. However, none need fear the change, if they will daily lessen the stimulus by *small portions*, especially, if they will take care to substitute any kind of nourishment, as thus their *comforts* will

not be lessened : The appetite will increase its force; the muscles of the whole frame be strengthened; the face will not be bloated or surcharged with a firey red; nor the abdomen distended immoderately, (the latter being a sure mark of too fast living,) which most commonly befall those advancing near the meridian of life, who then are most inclined to indulge in every excess.

A constitution much impaired by indiscretion, by care may be amended, and sometimes entirely restored. Whether we receive a shock by accident or imprudence—remove the cause of complaint, and use the best means, such as nourishing food, good air, and moderate exercise with a composed mind: as nature is ever labouring to restore the derangement of her system, if we do not impede her progress, sooner or later our cure will be performed. In proportion to our debility, much more care is necessary to avoid every sort of shock, or interruption of the operations of nature. Several complaints which are thought incurable, I am very much inclined to believe, if thus treated, may be removed.

Do not despise the following illustration of this principle.

I purchased a horse at auction, and being no adept in horse-flesh, was completely jockeyed.

This horse had wind-galls, &c. he foundered with my first ride of only five miles in an easy gait. Thinking that it would be impossible to sell him at the moment of commencing a journey but at a great loss, I determined to be tender of him; and fed him well, but with care, and made very short journies. By perseverance and good management for a great length of time, restored him—so much was his constitution improved, that when he was an old horse he would travel far, and carry a greater load than most horses I met with.

A well formed body is fortunate in other points of view than that of pleasing the fancy of their companions. The mental powers have the better chance of acquiring energy as well as bodily strength—and it is important not to bring restraints, for any considerable length of time, on our proper shape.

Man, in his most beautiful form, is like a wedge with the apex downward; the shoulders broad; chest full, and from thence tapering down to the feet. Women on the contrary, are esteemed most handsome, when broadest at the middle; the best form for the purposes of the sex; their thorax rather smaller than in man, that their swelling breasts may not project too much.

The form of the person is an object of vast importance to those making choice of a companion, who are not so far over-ruled by fondness, partiality or prejudice, as to disregard these considerations; but when the party is so circumstanced as to be capable of, and disposed to consider every circumstance, they ought never to choose a body so deformed as in the least to obstruct the natural powers, or endanger their progeny.

The manner of *walking*, *setting*, and *laying*, deserve some consideration. By contracting bad habits *in either*, we may impede vital motion, and injure our health. Nor must we suppose that we cannot amend ourselves, *even when advanced towards old age*. The idea that we are not capable of acquirements after we have passed a certain period little short of extreme old age, is very erroneous, and has prevented many persons, after they had passed 30, 40, 50 and 60 years, from attempting to improve themselves when they have had the desire. It may be said, that some, under such circumstances, have failed in their attempts. I am well convinced, that in such cases, those persons had previously contracted *bad habits*, such as must have produced *indolence*, the natural consequence of *an improper mode of living*. But, pursuing

the means pointed out in the preceding sketch, I doubt not that man is capable of acquiring a perfect knowledge of any science or art whatever, to which determinate rules are given, at any of the above mentioned periods. *Perseverance*, will overcome the greatest difficulties, when not impeded by a deranged system. And they must be feeble indeed, that are not improved by *experience* and *observation*. But to return to the subject. In *walking* we ought to hold ourselves upright; keeping the shoulders back, and the breast forward, so as to give the lungs room to play, and all the vital parts free action: in such position we breathe easy and enjoy the fresh air inhaled. The same rules are of equal importance in a *sitting* position, and the neglect of them most frequently is the cause of disease in persons obliged to write much. The intestines of persons *standing* are not so cramped as in sitting. In order that the *breast* may not be oppressed, they ought to hold themselves as erect as possible in either situation; not only the *breast* but also the *abdomen* may thus be relieved. I am sure if trial of this rule is *persevered in*, a happy effect will follow. Persons who have thought that they could not possibly bear the fatigues of the desk, will find to their astonishment, not only ability of body, but even their mind enlarged; their thinking faculties will have liberty for improvement.

*In bed*, the limbs should be straight and *unconstrained*, otherwise the free circulation of the blood is prevented. If a person lies on his back, the pillows should be removed, in order to keep the spine as straight as possible. But, lying on either side, requires pillows sufficiently large to fill up the distance from the head to the point of the shoulder, to prevent a constrained position; in this manner the restoring balm of sleep gives its aid to refresh our wearied bodies. On no account ought we to slumber after the moment of our *first waking in the morning*, should that happen after the early dawn or before the sun has risen. Supposing, by some accident, or unavoidable business, we may not have taken our six or eight hours of repose; in such case, it is much better to make up the deficiency at some other time, than to attempt to take *another nap*.

Whoever is accustomed thus to rise will sleep undisturbed the whole night, and awake much more refreshed than those who lazily slumber all the morning. Every means, however trifling they may appear at first view, that can tend to *strengthen our bodies*, are of vast importance to fit us for other important duties.

Reading *aloud* is of infinite service to the Lungs, as it serves to throw off peccant matter obstructing the vessels—Best performed *standing*, this should be practised, not only for health but improvement: it is an important accomplishment, which it is to be lamented should be so much neglected.

How remarkable it is, that not one in a thousand persons who assume the honorable profession of instructing others, can *read* with propriety, but perform like school boys in a monotonous tone or cadence—neither feel themselves, or give feeling to others. I shall never forget, when a boy, hearing the captain of a ship read a newspaper to a crowd collected together to hear the European news. The *manly expressive sweetness* of his voice seems still to vibrate in my ears, even at this distant period—and I have enjoyed the remembrance of it a thousand times.

*Singing*, is also serviceable, yet needs no recommendation, as it is derived from, or accompanied with a natural impulse of love, and happily never wants advocates.

*So intimately are the powers of the mind connected with the strength of the constitution,*

that the *body cannot be deranged without weakening the mental powers*. On the other hand a complacency of mind contributes much to the health of the body; nay, the mind has such an amazing influence on the external form, that even the fashion of our faces are determined by our passions.

*Vice* needs every discouragement to prevent its seeds from growth, and it might be happy if man would consider, that he *cannot long enjoy health with a poisoned mind*.

Serenity of mind goes a great way to overcome casual disease: therefore, the effect of *good actions* amply reward men independent of other duties. The natural ties and dependance we have on each other, should obligate us to have a respect for opinions which may not accord with our ideas, either of religion or politics. As the same view is not always presented to each of us, the motives in conducing to the adoption of opinions are different, yet could we compare our ideas with candour; with a forbearing patience; with a view of obtaining knowledge of the moving causes of various opinions on these subjects, not with the design of converting each other, and without insulting the feelings by supposing those differing in opinion



from us, have bad motives, or a deficiency of understanding, the latter being deemed so great an offence as to be seldom forgiven.

Were we not to estrange ourselves from each other, because we hold different professions, and to be deficient of that respect due to beings of the same nature, truth would be obtained—we would be much happier, and that hatred which is fed by the want of being better acquainted while estranged from each other, would be greatly lessened.

That sweet benevolence of disposition; that love of order; that endearing wish of communicating happiness to every animated being that surround us, are springs of health that flow in all directions when the passages are kept open; are a never-failing source, nourishing our frail bodies, which need to be supported, at times, by every aid that human invention can devise. With such a disposition of mind, and the proper attention to cleanliness and other means of preserving health, when our cities are visited by calamitous diseases, we need not fear attending on the sick, and fulfilling every tie of duty or gratitude. And the physician who lives according to the strict rules of propriety, and takes some necessary precaution to fortify his

stomach with a small portion of nourishment before his visits, will scarcely have cause to flinch from his duty in attending in the chambers of the infected.

This reflection brings to my mind an idea which I formed at the time our city was visited by the yellow fever, when I saw the inhabitants on every side quitting their occupations, and flying in every direction to the country, to avoid a disease, whose terrors were such, that too often the diseased fell a victim for want of good nursing, best obtained through the ties of consanguinity; that had this scourge of our cities brought men to think on their former mode of living, how irregular and discordant to reason and nature: and being brought thus to reflection, be induced to make a thorough reform in our manners. Then, instead of a scourge, that visitation might rather be called a blessing. But, whether it is indolence, or an obstinate dislike to change, natural to our species, the most obvious improvements, even those subject to be weighed and measured, will not be adopted by through the prevalence of *fashion*. How wonderfully strange that man will not reason, and act independently, but that he so frequently will be governed by the opinions of others.

If this position is true, how very important it is that those, from whom the public take their tone, should be wise, circumspect, and prudent, who will adopt the best customs of every country, and embrace the most beneficial means to *promote economy, health and happiness.*

*Masters of families*—they also are bound to a performance of *every social virtue*; to be an *example* to their offspring, of *prudence, industry, and true piety*: doing justice to all their connections; to their neighbours, relations, strangers, or in their commercial alliances. If the stock is not good and sound, can it be expected that the branches should flourish and produce good fruit? Not only by good examples, but *by love, the youthful mind must be won to acts of virtue and good conduct*, which is much easier, and certainly more agreeable to a tender parent than coercive means.

Parents ought to reflect what their feelings were in their youthful days, and not be so rigid as to restrain their children from innocent amusements; they ought rather themselves to return to those sports, which their taste may not then relish, but, with the view of directing a heedless offspring to draw instruction from even passing follies; and rather convince their under-

standing that many fashionable entertainments do not afford so much pleasure as the imagination may paint them when seen at a distance, and in perspective.

*Instruction* may be drawn from every source. it is necessary to know danger to avoid it. I have also observed, that too great restraint on youth often forces them to much greater excess in pursuits of pleasure than would otherwise happen; yet this is not the only evil, they are led to practise deceits, and, sometimes to commit frauds, and expose themselves to various dangers, which could their parents witness, would harrow up their most tender feelings: Ladies, in the bloom of youth, putting on the garb of *truls*, absenting themselves, under plausible pretences, from their parents, and sallying out in quest of adventures—hurrying into the crouded galleries of the Theatre under feigned characters, subjugating themselves to insult and abuse, such, and even more *indecorous frolicks*, are too often practised, which might be prevented, were parents to accompany and allow the proper relaxation necessary to youth.

As an admonition to parents I will relate a scene, which, with some variations, is very frequently acted.

A man. eminent for *scientific knowledge*, *piety*, and, *love of order*, zealous in his exertions for promoting public good, benevolent and friendly among his acquaintances, and endowed with patience and perseverance in honourable pursuits, yet so rigidly opposed to dancing and other fashionable amusements, that he would not suffer his children to partake with their acquaintances in any such entertainments.

The mother equally virtuous and good, but viewing these amusements in a more innocent point of view, from a desire to gratify her children, whom she equally loved, and wished to possess every amiable and desirable accomplishment, steals pleasure for them, which she hides from the husband. She permits her sons to go to assemblies, while she watched for their return to prevent the discovery by the father. Under a pretence of a hurry to finish some work on her hands, she persuades her husband to go to bed, as the avocations of the day, no doubt, had fatigued him : that she would take care to cover up the fire, and shut the house. He retires to bed, but not to perfect rest, only slumbers through his anxiety to know if his children are at home—he calls, has *Charles* come, and, if it is not time for him to be in bed ? (she answers in

the affirmative, and to carry on the deception, puts on her husbands boots and soon after trudges up stairs, kicking the steps as she ascends to make her husband believe it is his son going to bed.

This I conceive is a melancholy picture in a farcical dress—is virtue outraged—or vice-hood-winked. An excess of goodness, productive of infinite evils ; a jarring of conjugal and filial affections producing deceptions, disobedience, and, in short a destruction of the sacred obligations which should bind fathers, mothers and their children in harmony, duty and love.

This is a small degression from my subject of health, yet not irrelevant, amusements are often essential to preserve, or restore good health ; and none can hold a higher rank than the science of nature, whether it be studied in a Museum or pursued with more benefit to the health by the exercise which it affords in the fields.

I shall not be accused of egotism if I refer to two paragraphs in one of my preliminary Lectures on Nature. “ The lively fancy of the youthful fair, would, quickly catch a fondness for a science of such infinite variety,—what a

charming topic for conversation would this afford in their social parties! and, if we reflect how the various parts of natural science branch out into all the household and economical concerns? can we find any part of female education of greater import? The *early education* of children must generally fall on the *mother*, how important then, that *she* should be well *informed in the history of Nature*. What a delightful amusement it must be, to teach her sweet prattlers, as their minds expand, the various charges, from the creeping caterpillar to the dormant chrysalis, and gay fleeting butterfly; and also the various metamorphoses of other insects;—to know their uses in the support of other animals,—that they may be led to abstain from cruelty, or wantonly tormenting them. Thus instilling and extending, as they advance in years, a *sweet benevolence* of temper toward their brethren.

What charming conversations will a knowledge of this science afford between the father and his sons, at the age when they become agreeable and useful companions to each other. How often in the morning or evening walk might the infirmities of age be beguiled, while recounting their observations, and explaining the vivifying scenes of nature, and often by judicious remarks,

the high toned passions of the youthful nerve, might be restrained until it gains maturity. Whereas from the natural restlessness of that age, unless diverted by some useful amusements, they are heedlessly led into scenes of folly,—and, too often, vices that imbitter all their future days.”

*What sort of exercise is best? and, when most beneficial?*

Persons whose health permit it, will find *moderate walking* is preferable to riding, because motion thus obtained is more equally distributed over the whole frame. Riding on horseback is preferable to the carriage, but either are but *indolent* means of exercise, yet under certain restrictions, as sickness, great debility, or bad weather, may be substituted.

For the speedy conveyance of ourselves from place to place, riding must carry the palm.

However, even in a short ride, we find our limbs cramped, not so by walking. If fatigue is produced by walking, it is generally over the whole frame. Complaints of the breast may require the shaking of a trotting horse, if violence



of exercise be necessary. *Moderation* in all our exercises is generally best for health; however, such as will promote perspiration, are very frequently extremely salutary, by removing obstructions.

Sleeping in a tent last Summer, that I might be ready to direct the workmen in getting the bones of the Mammoth from a deep morass. A cold wind arose in the night, which blowing on one of my shoulders, produced a violent rheumatic pain. In the morning I stripped the diseased part and had it rubbed as long as I could well bear it, this in a small degree alleviated the pain. But compelled to join my utmost exertions to retrieve an accident in the work, the violence of the exercise produced a general and plentiful perspiration for some hours, and to my great astonishment, totally removed the rheumatism, when I exclaimed, *what a blessing is the necessity of labour!* Had I indulged my inclination for rest, I might have been crippled in the arm for months.

The philosopher is not degraded by sometimes joining in the sports of children. The exercise of the breast, body, and limbs is excellent in the sport of shuttlecock or ball in a large chamber. But where a like exercise can be obtained

by any kind of *mechanical employment* of designed use, it becomes more interesting to the community, although the profits might not happen to be wanted by the artist.

Cloathing ought never to *constrain* either body or limbs, therefore *suspenders* should be used by each sex ; young and old. The *confinement of the intestines by buttons and strings* often injure the constitution of the aged as well as the *youthful*.

*Overalls* are preferable to other *small-cloaths*, because garters may be dispensed with, and then the knees are not so closely bound up, as to prevent a free circulation of the blood to the extremities.

Nothing ought to be despised which contributes in the least to health, or comfort.

Flannel next the skin is generally recommended by Physicians to their Patients. It is preferable to linen or cotton, for all ages ; children will enjoy better health that have their shirts made of flannel, and their cloathing ought to be wholly of wool in the Winter, as a security against fire.

My next subject of discussion, and with which I shall conclude, is the Physical view, embracing some customs that I deem highly important for Americans to adopt, more especially as our Cities in some late seasons have been afflicted with dreadful scourges.

Frequent *bathing* is good through all seasons, but more especially in Summer.

*Cleanliness* is commendable, besides being conducive to health. When I was exposed to the infection of yellow fever, it was my practice to take a pail of cold water to my bed-room and wash from head to foot either in the morning or evening.

I have mentioned this mode, as being simple, and so easy as to be in the reach of every one at all times.

Nor is the practice the least dangerous, even to those of a delicate habit, taking the precaution to begin with washing and rubbing the hands and feet: and after completely cleaning the whole frame, to rub till perfectly dry with a *coarse* linen towel.

Some persons recommend the *shower-bath*. By observations I have made, it does not appear

*so safe as the plunging-bath*, which I esteem a great luxury, either cold or warm as circumstances may require. I have seen a friend in the most dreadful fever; complaining of extreme pain over his whole body, when placed in a well prepared bath, his pains vanished and the fever subdued in a short time, I rejoiced to hear him say “every pain was lulled,”

How much the Physician is to be pitied who knows that in very few families he can have such a prescription obeyed. Getting water to fill the best constructed plunging bath, and having it made to the proper degree of warmth, (equal to blood heat) is often a work of time and much labour.

Doctor Priestly informed me of the advantage of a vapour-bath, and the construction of one he used, with which two or three quarts of boiling water, made a complete bath.

I have invented sundry important improvements on that described by the Doctor, and under the hope of making them of general use, obtained a patent for my improvements.

In recent colds, and for paralytic, or chronic complaints, it is probable the Physicians will recommend its use.

One other machine I think every family should possess.—It is a ridiculous and foolish modesty which can blush at the mention of a remedy of such important use. Is there any means yet discovered which can so speedily give relief, and not derange the stomach as a Glyster? Can any one know its use and call it nasty? In fact, it is the most ready and effectual means to cleanse away filth. It is true, that if necessitated to get the aid of another person in administering it, that agency, is often repugnant to modesty. But when furnished with a convenient *apparatus*, we can retire alone to our apartment avoiding even the suspicion of any one of the family, and get relief in 10, 15, or 20 minutes. In so short a period to be relieved of a violent head ache, cholic, sickness of the stomach, or perhaps to abate a fever and general distress caused by the natural passage being severely bound up. What sort of modesty can it be, that revolts at such efficient means of relief! a false or foolish modesty.

I have heard it said, that in some cases, it only relieves the lower intestines—no one will

be so fool-hardy as to deny the salutary effect thus far—but the candid will allow that by a *repetition* of the injection, that the whole of the intestines may be relieved ; for as the lower parts are evacuated, the contents of the upper will press forward, aided by muscular force. I do not say that in no case other means may not be necessary, yet I am well convinced that this does not happen once in one hundred cases.

In the yellow fever I have known injections given *every hour*, and in less than 12 hours the patient from imminent danger, was in a fair way of recovery *Bathing* accompanying *injections* have proved very efficacious ; *tepid* bathing rather *cool* than *hot*, is preferred.

One of my children, about two years old, had a complaint of his bowels, at first it was thought of no account, and ripe fruit alone in such cases had frequently been found a sufficient remedy. Cherries, then in season, were given him, a fruit too hard and sour, a better choice would have been strawberries, raspberries, or even blackberries. His complaint increased so fast, that in a short time we found his life in danger ; a fever succeeded with the most dangerous and distressing symptoms—debility increas-

ed so rapidly, that probably the disease would have become fatal in less than 12 hours. Injections of *flaxseed-tea* were administered *every hour at first*, and as natural stools began to take place, giving more time between them, until nature had acquired its regular course. His food was thickened-milk with harts-horn shavings boiled in it, rice and other common prescriptions of food. To our astonishment he recovered so perfectly, that in 24 hours he was playing about the room.

Another of my sons, 17 years old, had a complaint in his bowels during my absence, at New-York, in 1798. My family unwilling to hurry me home before my business was completed in that City, did not acquaint me with his advanced state of disease, until his situation became so critical that the family was alarmed. It was then they acquainted me that he was not expected to live; the next day I reached Philadelphia, and found my son wasted to scarcely more than skin and bone, and under such extreme debility, that I am positive he could not have lasted many days. I gave him an *injection* of the *flaxseed-tea*, it immediately alleviated his pains, and the second application perfected his cure. After this our only care was to nourish him with proper food to restore his strength, and

in less than one week he was able to bear a short ride in a carriage, and soon after performed a journey with me to New-York.

I frequently use this remedy in my family, and always with pleasing success. I have also the pleasure of believing that the same prescription has saved several children in families of my acquaintance.

As these two cases are very striking, and not common in the prescriptions of Physicians of this Country, I have particularly mentioned them in hopes that the practice may be had recourse to in similar ones.

Although our Physicians approve of injections in almost every disease, they too seldom advise its administration, because, they often find it troublesome.

Although in the fore part of this letter I have pointedly given my opinion that water is the best drink to aid digestion and promote health, yet I might have added that most wines are rendered more or less unwholesome by the mixtures of the wine merchants as well as the retailers of it.— Much might be said on this subject, which I



shall reserve for another time. That you may enjoy every good gift and abuse none, is the wish of

your friend

CHARLES W. PEALE.

P. S. By a late discovery in France, water the most putrid is made pure, sweet and fit to drink. A vessel to operate this purification being brought to Philadelphia, excited much curiosity as an interesting object.

My son Raphaele's disposition to investigate cause and effect, whether of nature or art, seeing this machine, immediately conceived the principle, which had been kept a profound secret. After making some experiments that fully answered his expectation, he resolved to simplify the apparatus for the benefit of seamen and make it public.

He published in the news-papers an invitation to Merchants and Masters of vessels to see an interesting experiment at the City Tavern at half past 12 o'clock.

A large company assembled at the appointed time.—He addressed them in a short discourse

on the importance of having pure and wholesome water in their vessels making long voyages, to preserve their seamen's health ; the preventing malignant diseases, and to lessen the necessity of their ships undergoing quarantine.

He produced some very putrid water which put into an earthen pot, such as is commonly used for plants, over the hole in its bottom he placed a piece of sponge, over it sand. This pot was put into a larger one of the same kind partly filled with charred-coal, grossly powdered and moistened.

The filthy water passing through the sand in the upper pot, cleared it of all the grosser particles of dirt, &c. The water then descending through the charcoal dust. The water was by the carbonic acid rendered perfectly sweet and wholesome drink.

My son wrote to his brother Rembrandt who was then exhibiting the Skeleton of the Mammoth at New-York, and advised him for the good of the public, and especially through humanity to sufferers on the seas, to make the like experiment public in that City, and particularly to invite those engaged in maritime con-

cerns. Rembrandt gave great satisfaction to a number of spectators assembled at Adam's Hotel.

After having given the method of purifying water, a liquid so essential to the support of life, it is proper to add something for improvement in the preparation of the *staff of life*, as bread is called. Although it is a very important article in all our meals, yet it is wonderfully strange that we find so few families, as there really are, who do not follow a good process to prepare this part of their food.

It is a reflection on house keepers who possess a country so productive of fine grain as America, which is also manufactured into the best of flour, and with such advantages to bring bad bread to their table, at least, it may be construed to carelessness.

If the following directions are followed, the best of bread may be had, and a saving made of one fourth of the expence : 70 pounds of flour will make 100 pounds of bread, and it is customary for bakers to give a pound of bread for each pound of flour sent them to bake.

Some persons complain of the trouble of making bread, and the difficulty of getting yeast. I will describe simple means to overcome these difficulties. To prepare yeast, take a double-handful of hops, with an equal quantity of bran, which boil in half a gallon of water about 15 or 20 minutes—and after it has cooled to blood heat, add half a pound of leaven, previously soaked in warm water, then add two table spoon-fuls of honey—let it stand to foment in an open stone pot. To keep this yeast put it into a stone or glass vessel stopped close—It will be fit for use for two weeks in hot weather. To make *good bread*, set a sponge of this yeast just before going to bed; to 18 or 20 pound of flour put a half a pint of this yeast, or a piece of leaven the size of your fist. In the summer mix it with cold water, but in cold weather use warm water.

The next morning it will be found sufficiently raised to mix your bread.

In mixing your bread, make it so thin that it will drop from the ends of your fingers, then nead it until it will not stick to your hands, Put it then into pans the size and shape of loaves desired—the fire may immediately be put into the oven, and by the time the oven is properly heated the bread will be sufficiently raised to be baked.

One hour is generally sufficient to complete baking. It must be taken out of the pans before it is sweated.

My friend Mr. Robert Patterson of the University of Pennsylvania, has a very economical method practised in his family to cook with steam.—A large wash-kettle with a small quantity of water in the bottom over which, out of reach of the water, was a grate to support as many dishes as the kettle would hold side by side. And the kettle covered with a close wooden cover.

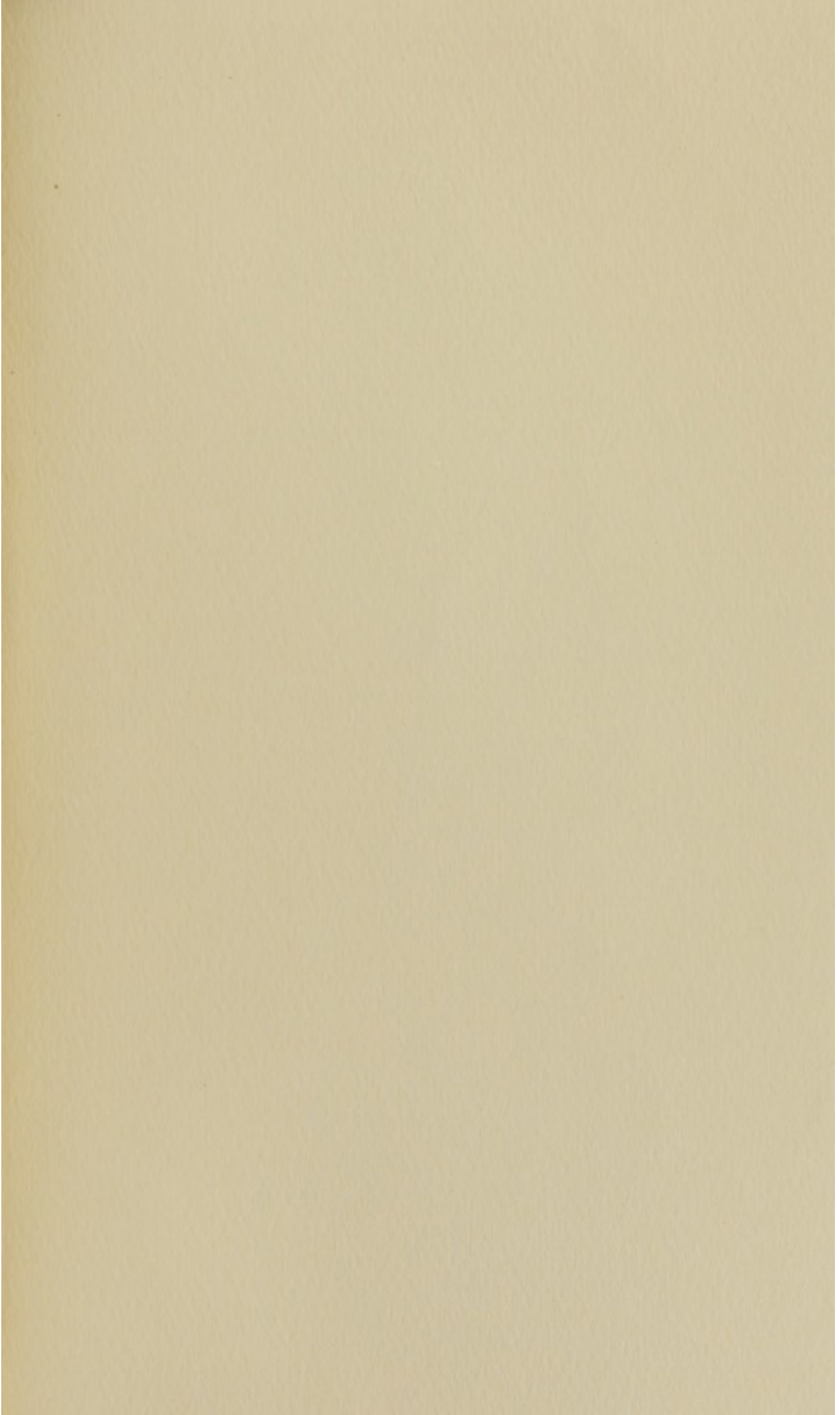
Since Mr. Patterson communicated this invention to me, Count Rumford's work has been published, in which the Count describes a like method, but the bottom of his kettle, for holding the water, is contracted.

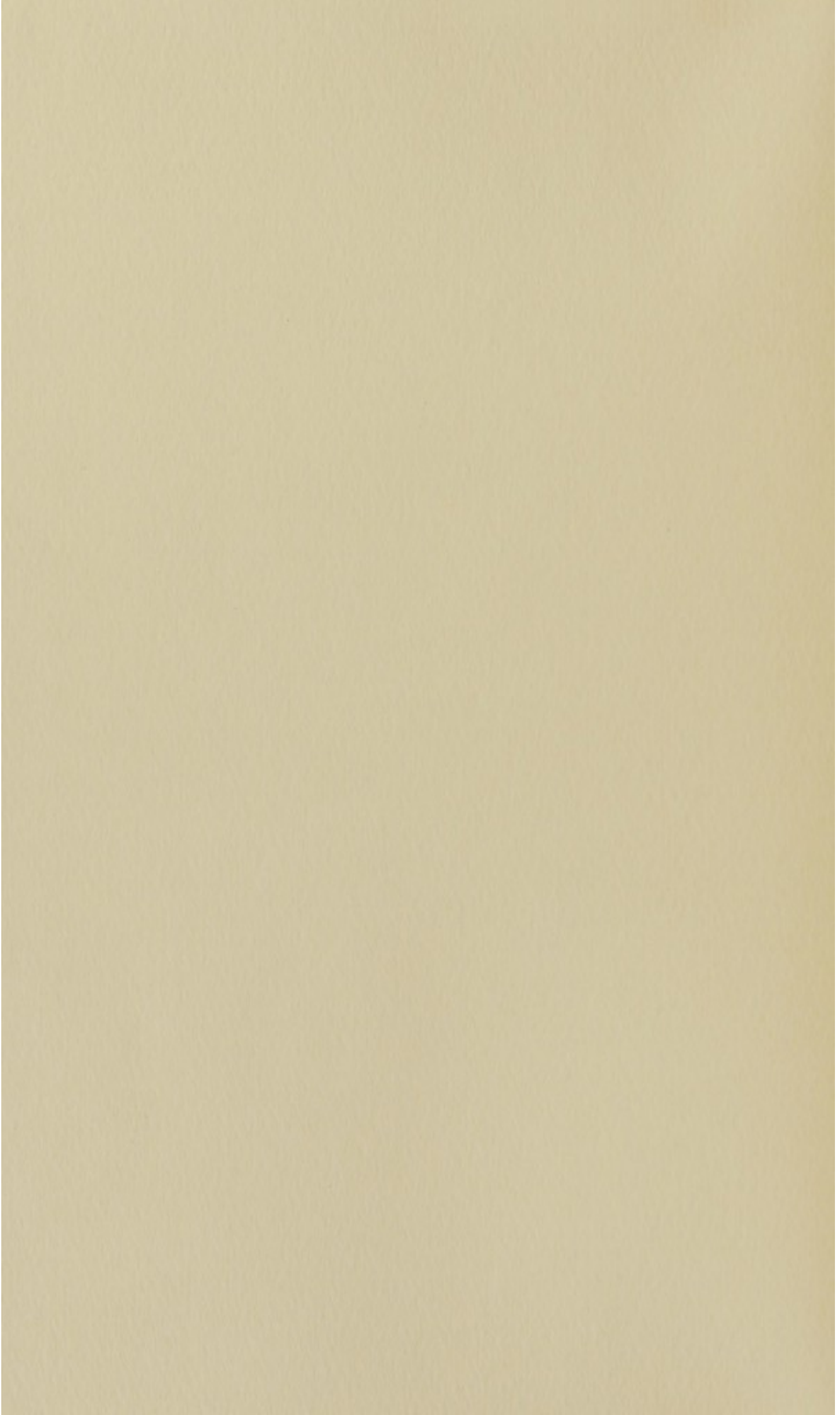
I most heartily wish my Countrymen would more generally adopt Count Rumford's ingenious improvements, for saving of fuel, by which not only is obtained, a great saving of an expensive article; but also of much labour. The latter is an important consideration in America.

THE END.

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