An eulogium upon Benjamin Rush, M.D., professor of the institutes and practice of medicine and of clinical practice in the University of Pennsylvania : who departed this life April 19, 1813, in the sixty-ninth year of his age : written at the request of the Medical Society of South Carolina, and delivered before them and others, in the Circular Church of Charleston, on the 10th of June, 1813, and published at their request / by David Ramsay, M.D. member of the South Carolina Medical Society.

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202

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PROFESSOR OF THE INSTITUTES AND PRACTICE OF MEDICINE AND OF CLINICAL PRACTICE IN THE UNIVERSITY OF PENNSYLVANIA.

WHO DEPARTED THIS LIFE APRIL 19, 1813,

IN THE SIXTY-NINTH YEAR OF HIS AGE.

WRITTEN AT THE REQUEST OF THE MEDICAL SOCIETY OF SOUTH CAROLINA, AND DELIVERED BEFORE THEM AND OTHERS, IN THE CIRCULAR CHURCH OF CHARLESTON, ON THE 10th OF JUNE, 1813, AND PUBLISHED AT THEIR REQUEST.

BY DAVID RAMSAY, M. D.

MEMBER OF THE SOUTH CAROLINA MEDICAL SOCIETY.

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PREFACE.

THE medical society of South Carolina, on hearing of the death of Dr. Rush, impressed with high respect for his memory, resolved to go in mourning on the melancholy occasion. They also directed an Eulogium, commemorative of his merits to be prepared, and read before them at their next meeting; and appointed one of their members to perform that duty. The following was written in conformity to their request. The subject being the character of a learned professor and distinguished practitioner of medicine, and the persons, before whom it was at first intended to be delivered, being all physicians, the work naturally assumed a medical complexion. Before the day of delivery arrived, several of the citizens of Charleston, expressed to several of the members of the medical society, a wish that the intended tribute

of respect to the memory of Dr. Rush should be delivered in public. When the society next met, they therefore adopted a resolution to that effect, and appointed a committee to fix on time and place for a public exhibition. This change involved some difficulty. The Eulogium was already written in a plain didactic style, to be soberly read before a small number of professional gentlemen, and was not calculated for delivery before a promiscuous popular assembly. To accommodate to the change, much of the medical part of the work was omitted. By a subsequent vote of the society, the author was requested to prepare a copy for publication. This made it proper to replace what had been omitted in the public delivery of the Eulogium, and also furnished an opportunity of enlarging the medical part of it. These statements are made to account for the difference between what was delivered and what is now published.

The intention of the society was to do honour to the memory of Dr. Rush, and to do good to the public, by holding up his bright example for imitation. To answer these purposes it was necessary that not only a short sketch of his life, but of his professional merits, should be brought into view. Most of the members of the society, were of opinion that Dr. Rush had improved both the theory and practice of

medicine; and had in fact introduced a new system. It was therefore incumbent on their representative, to show what these improvements were, and in what respects his system was better than those which had preceded it. This opened a wide field and might easily have been expanded into a considerable volume. A concentrated view of the most prominent particulars was deemed most suitable to the present occasion: this has been attempted, and the result is now submitted to the public. In drawing it up Dr. Rush's works have been carefully consulted, and in stating his doctrines and practice, his own language has been preferably used. No man understood his principles or defended them better than himself. In support of these principles, and the practice grounded on them, the author adds his own experience, which has been uniformly in their favour ever since they were promulgated, and a declaration that in his opinion Dr. Rush has done much to improve both the theory and practice of medicine, and as far as his reading extends, more than any one physician either living or dead: that the merit of Dr. Rush is far from being founded on lucky accidents, such as finding new remedies for old diseases, but in the discovery of principles respecting the animal economy, which simplify the practice of physic, apply to all cases,

and furnish the physician of real talents, with a clue to direct his practice in the treatment of new diseases or new combinations of old diseases, and in cases either new or old of uncommon difficulty, and in every disease to discover its nature, and the remedies most likely to relieve it.

DAVID RAMSAY.

Charleston, July 2, 1813.

EULOGIUM, &c.

MR. PRESIDENT, AND GENTLEMEN OF THE MEDICAL SOCIETY:

FRIENDS AND COLLEAGUES,

In obedience to your commands, I rise to perform the pleasing, painful duty you assigned to me at your last meeting. To do honour to the memory of Dr. Rush, who did honour not only to our profession but to his country, and to human nature, is in unison with the finest feelings of the heart. Our society has not only abundant but peculiar reason to mourn over the death of this illustrious physician. He was the preceptor of sixty of its members; more than one half of all who have ever associated with us since our institution in 1789. We do not weep alone. Whilst we drop the tributary tear, we have with us the sympathy of our fellow citizens over all the United States; for the name of Dr. Rush gave a splendour to the American character, and greatly added to its reputation throughout the republic of

letters. His works are read coextensively with the language in which they are written, and are daily quoted as standard medical authority by the learned of different nations. Crowned heads have done him homage; but his fame has a more solid foundation in the hearts and affections of several hundreds of his pupils, and many thousands of his countrymen, who admire his talents and virtues, and are grateful for the good he has done. Numerous societies on both sides the Atlantic have done him and themselves reciprocal honour by enrolling his name in the list of their members. He has been one of the most prominent pillars, on which his country's claim to be ranked among learned nations has preeminently rested, ever since Dr. Franklin was no more. Few or none of his cotemporary fellow labourers in the field of medicine can prefer superior or even equal claims, as reformers and improvers of the theory and practice of medicine. His life was a blessing not only to our country, but to the great family of mankind. Let us review it, so that, from his bright example, we, our children, and our children's children may be stimulated to go and do likewise. We will then extract good from evil and derive a benefit from a great and irreparable national calamity.

Benjamin Rush was born December 24, 1745, (old style) on his father's plantation, about four-

teen miles to the northeast of Philadelphia. His ancestors migrated from England to Pennsylvania soon after its first settlement in the seventeenth century. In the eighth or ninth year of his age, he was sent for education to Nottingham, about sixty miles southwest from Philadelphia, where an academy had been long conducted with great reputation by the Rev. Samuel Finley, D. D. afterwards president of the college in Princeton, New-Jersey. The inhabitants of this retired spot were plain country farmers, who cultivated so indifferent a soil that they could not derive a living from it without strict economy and the daily labour of their own hands. Their whole time was occupied in providing the necessary supplies for their support in passing through this world, and in preparing them for a better. To assist them in the latter, they enjoyed the blessings of public preaching and the faithful evangelical labours of one of the wisest and best of men. In their comparatively depressed situation, as to worldly matters, their morals were a virtual reproach to the inhabitants of many districts who enjoyed a much greater proportion of the good things of this life. Almost every dwelling house was so far a church that the reading of the word of God, and the offering up of family prayers, generally recurred every day; there were few, or rather no examples of, or temptations to immorality of any kind.

Among these people, remarkable for their simplicity, industry, morality, and religion, young Rush spent five years of his early youth in acquiring a knowledge of the Greek and Latin languages. He there also learned much of human nature, and began to class mankind according to their state of society; a distinction of which he profited very much in his future speculations in political philosophy. The transition from the variegated scenes of Philadelphia to this sequestered seat of learning, industry, and religious habits, could not fail of making a strong impression on his observing mind. He there acquired a reverence for religion—its consistent professors and teachers: a prepossession in favour of regular orderly conduct, of diligence, industry, punctual attention to business, and in general of such steady habits as stamped a value on his character through life. In laying a solid foundation for correct principles and conduct he was essentially aided by the faultless example, judicious advice, and fatherly care of the learned and pious Dr. Finley. This accomplished instructor of youth was not only diligent and successful in communicating useful knowledge, but extended his views far beyond the ordinary routine of a common education. He trained his pupils for both worlds, and in his intercourse with them, had respect to their future as well as present state of existence. To young Rush he was

devoted by peculiar ties: for he was fatherless and the son of the sister of his beloved wife. A reciprocation of affection took place between the parties, much to the credit and advantage of both. Benjamin Rush found a father in his uncle Finley, and when adult, repaid the obligation in kind by acting the part of father to his son, James E. B. Finley, left an orphan when very young, by the death of his father in 1766. This new obligation was gratefully acknowledged by the subject of it, particularly by giving the name of Benjamin Rush to his first born son. This youth, in the ninth year of his age, was honoured with an affectionate letter, from his illustrious kinsman, after whom he was named, shortly before his death.* The good advice contained therein, if

* This circumstance produced two letters. The first was written in reply to the father, announcing the birth of a son, and his name. In it Dr. Rush observed, "I rejoice very much in the addition which has been made to your happiness by the birth of a son, and am much flattered by the honour you have done me by imposing my unworthy name upon him, in connexion with your illustrious father's. I shall always consider him as a grandchild, and shall expect to have him presented to me to receive my benediction before I depart hence and am no more. Kiss him a thousand times for me."

The other letter was addressed to the boy himself, as soon as he was capable of reading, and understanding what was written. This letter contained the following observations: "You will be inexcusable if you do not make a scholar, and still more so if you do not make a good man. Aristotle, the preceptor of Alexander the great, always rebuked his royal

followed, cannot fail of producing happy effects. Thus, kind offices of respect and affection have been reciprocated in these families through three generations, and seed is sown that promises to bear good fruit in the fourth. The whole, considered in a connected view, holds out encouragement to abound in works of kindness, for they often bring their own reward.

Benjamin Rush, after finishing his preparatory course of classical studies at Nottingham, was, in 1759, entered a student in the college of Princeton, then under the superintendance of president Davies. This eloquent preacher was pronounced by his pupil, Rush, not only in early youth, but in his adult age, to have been the greatest pulpit orator this country had produced. Under the tuition of this distinguished

pupil, when he saw him about to do an improper act, by saying, "remember whose son thou art." In like manner, when you are tempted or disposed to neglect your studies, to behave disrespectfully to your parents, or improperly to your brothers and sisters, or your schoolmates, "recollect whose son and whose grandson you are." Do not dishonour the blood and the name you have derived from them. If it were possible for your excellent grandfather to be made unhappy in Heaven but for a moment, it would be by hearing or seeing you commit a sin of any kind. But I hope better things of you, and that by your good conduct, and above all by your early piety, you will add (if that be possible) to the happiness of your grandfather and to the comfort and joy of all your relations and friends."

preacher, and able instructor, he, whose life we are reviewing, obtained the degree of A. B. in 1760, and before he had completed his fifteenth year. The next six years of his life were devoted to the study of medicine, under the direction of Dr. Redman, who in his day, ranked among the most eminent of the faculty in Philadelphia. The writings of Hippocrates were among the first books Benjamin Rush read in medicine, and while he was an apprentice he translated his aphorisms from Greek into English. He also began to keep a note-book of remarkable occurrences, the plan of which he afterwards improved, and continued through life. From a part of this record, written in the seventeenth year of the age of its author, we derive the only account of the yellow fever of 1762 in Philadelphia, which has descended to posterity. In the same year he was one of Dr. Shippen's ten pupils, who attended the first course of anatomical lectures given in this country. Two years after, and while he was a daily attendant in the shop of Dr. Redman, he commenced his brilliant career as an author. On the expiration of his apprenticeship, Benjamin Rush went, in 1766, to Edinburgh, to prosecute his studies at the university in that city, then in the zenith of its reputation, and there was graduated M. D. in 1768. His Thesis "*De coctione ciborum in Ventriculo,*" was written in classical Latin,

and I have reason to believe, without the help of a grinder of Theses, for it bears the characteristic marks of the peculiar style of its author. Its elegant latinity was the least part of its merits. The eagerness of its author to acquire professional knowledge, induced him to test a medical opinion in a way against which a less ardent student would have revolted. To ascertain whether fermentation had any agency in digestion, he made three unpleasant experiments on his own stomach. By taking five grains of an alkaline salt, he first destroyed any acid that might be accidentally in it, and immediately afterwards dined on beef, peas, bread, and beer. Three hours after dinner, he took an emetic of two grains of emetic tartar. The contents of his stomach, when thrown up, were proved to be acid by the usual tests.

The experiment was repeated with veal instead of beef, and water instead of beer; but in all other particulars, the same as before, and with a similar result.

The experiment was repeated a third time; but with fowl instead of beef or veal, and cabbage instead of peas, and unleavened bread instead of that which is in common use; but in all other particulars the same as before. The result was similar to what it had been in both the preceding experiments. From these facts, thrice repeated, an inference was drawn, that the aliment in the human stomach, in the course

of three hours after deglutition, underwent the aceteous fermentation.

While Dr. Rush was a student of Edinburgh, he had an opportunity of distinguishing himself, and at the same time of rendering an acceptable service to his *alma mater*, Nassau Hall. On the death of president Finley, in 1766, the Rev. Dr. Witherspoon, of Paisley, in Scotland, was chosen his successor. He at first declined an acceptance of the office, and it remained vacant more than a year. The trustees of that institution entertaining a high opinion of their alumnus Rush, appointed him their commissioner to solicit Dr. Witherspoon to accept the presidency of Princeton college, and the presbytery, of which he was a member, to consent to his dismission.—These commissions were ably and successfully executed. The address and talents of the young commissioner inspired the parties with a belief that a college which had already produced such fruit was worthy of their attention. I leave it to others to appreciate the consequences of this successful negociation, to the interests of religion and learning in America, and only refer you to the observations of Dr. Miller, the learned historian of the eighteenth century, on this event.* Dr. Rush spent in London the next

* The arrival of Dr. Witherspoon in America, from North Britain, is entitled to notice among the events which contri-

winter after his graduation in Edinburgh. In the following spring he went over to France, and in the fall of the same year returned to Philadelphia, and commenced the practice of physic. In 1769 he was elected professor of chemistry in the college of Philadelphia. This addition to Drs. Shippen, Morgan, Kuhn and Bond, who had began to lecture a few years before, made a complete set of instructors, and fully organized this first medical school in America. By a subsequent arrangement in 1791, the college was

buted to the advancement of literature and science in our country. It is not to be supposed, that a mind so vigorous, enlightened, and active as his, and placed in a conspicuous station, could fail of contributing to the literary advancement of any community in which he resided. Invited to undertake the office of president of the college of New-Jersey, this great man arrived at Princeton, in the year 1768, and immediately entered on the duties of his new station. He produced an important revolution in the system of education adopted in this seminary. He extended the study of mathematical science, and introduced into the course of instruction on natural philosophy, many improvements which had been little known in most of the American colleges, and particularly in that institution. He placed the plan of instruction in moral philosophy on a new and improved basis, and was, it is believed, the first man who taught in America the substance of those doctrines of the philosophy of the human mind, which Dr. Reid afterwards developed with so much success. And finally, under his presidency, more attention began to be paid than before, to the principles of taste and composition, and to the study of elegant literature.—*Miller's Retrospect of the eighteenth century.*

merged in an university, and Dr. Rush was appointed professor of the institutes and practice of medicine, and of clinical practice in the university of Pennsylvania.

In this and his preceding capacity, as lecturer in chemistry, Dr. Rush has been a public teacher of medicine for forty-four years, and has in several instances, and particularly in that of him who now addresses you, taught two successive generations, for the father and son have both been his pupils. From his first commencing practice Dr. Rush always had a considerable number of private pupils. Their whole number cannot now be exactly ascertained, but it is recollected that they amounted to fifty in the last nine years of his life. His class pupils, for several of the first years in which he gave lectures, varied from sixteen to thirty, but since 1789 have been from year to year rapidly increasing. In 1812 they amounted to four hundred and thirty. His pupils were generally changed every second or third year. From these data, it is not an improbable conjecture that, in the course of his life, Dr. Rush has given public instructions to two thousand two hundred and fifty pupils. These have extended the blessings of his instructions and improvement, in the theory and practice of medicine, over the United States, and in a few instances to South America, the West Indies,

and the eastern continent. On his return to Philadelphia, he found the Boerhaavian system of medicine, which locates diseases in the fluids of the human body, to be generally accredited. Having acquired at Edinburgh a partiality for the spasmodic system of Cullen, he publicly taught it as preferable to that of Boerhaave; but his active mind daily brooding over the medical systems of others, correcting them by his own observations and reasonings, and bringing the whole to the test of experience in its progressive course, began to receive new light. He was convinced that medicine was in its infancy; that there was great room for improvement. Instead of being proud of his attainments, he was disposed to exclaim "*Heu quantum nescimus.*"—Of how much are we ignorant? It would require a much longer time than is allotted to the exercises of this day, to give a complete view of the improvements Dr. Rush has introduced in our profession. A slight sketch of the most prominent is all that your time will permit to be brought into view on this occasion.

When Dr. Rush began to lecture, diseases were reduced in the manner of the botanists, to orders, classes, genera, and species. In Cullen's *Genera Morborum*, the names of one thousand three hundred and eighty-seven diseases are enumerated, each supposed to have something appropriate, and requiring in some

respects, different treatment. This embarrassing, perplexing mode of acquiring a knowledge of diseases, has been simplified by our American professor, who has substituted in its place the state of the system. In his public instructions, the name of the disease is comparatively nothing, but the nature of it every thing. His system rejects the nosological arrangement of diseases, and places all their numerous forms in morbid excitement, induced by irritants, acting upon previous debility. It rejects likewise, all prescriptions for the names of diseases, and by directing their application wholly to the forming and fluctuating state of diseases, and of the system, derives from a few active medicines, all the advantages which have been in vain expected from the numerous articles which compose European treatises upon the *materia medica.* This simple arrangement was further simplified by considering every morbid state of the system to be such as either required depletion or stimulation. The art of healing diseases, is therefore acquired by the student, who, from the pulse and other auxiliary sources of information, knows the state of the system of his patient, so far as to be a competent judge whether depletion or stimulation is indicated, and when this is ascertained, is farther instructed so as to be able to select the remedies which are best suited either to deplete or stimulate, according to the

strength, habits, and other peculiar circumstances of his patient. The younger members of our profession cannot appreciate the value of this arrangement as well as those who are seniors. The latter have had to undergo the uphill work of coming at the names of diseases by a circuitous rout, the former have been led by one or two plain paths, which speedily brought them to the same goal, or what is equivalent thereto, or rather far superior to it. The old system requires reading and memory; the new, judgment and observation. It is no exaggeration to say that a student of an investigating mind, on the present simple plan of acquiring a knowledge of the healing art, can be better prepared for entering on his profession in three years, than he could on the former system in five. Contemplating diseases through this new light, our professor found that a great majority of them, in this new and plentiful agricultural country, required depletion, and that, of all modes of depletion, bleeding was the easiest, safest, and shortest; and next to it cathartics.—That these two remedies, judiciously applied, with a suitable regimen, carried to a proper extent, and discontinued at the proper period, would often extinguish an otherwise formidable disease when in the forming state, or lay a foundation for its cure after it was actually formed. Practice, founded on these simple principles, removed much present evil, and pre-

vented more. It was about the year 1790, and twenty-one years after Dr. Rush had been a practitioner and professor of medicine, when he began to publish his new principles in medicine.* These were more or less developed by him in his successive annual course of lectures, for the subsequent twenty-three years of his life. They were also discussed in inaugural dissertations by many of the candidates for medical degrees in the same period. These young gentlemen were at full liberty to sift their merits or expose their fallacy. Freedom of inquiry was inculcated on them, not only as a privilege, but as a duty. It is believed that no man understood the human pulse better than Dr. Rush. In his lectures he used to call it "the nosometer of the system." In his printed defence of blood-letting, he asserts that the following distinct states of the pulse indicate the necessity of bleeding:

1. A full, frequent, and tense pulse.

* In the autumn of 1789, I visited Dr. Rush, and was received by him in his study. He observed that he was preparing for his next course of lectures in self-defence; that the system of Cullen was tottering; that Dr. John Brown had brought forward some new and luminous principles of medicine, but they were mixed with others which were extravagant; that he saw a gleam of light before him leading to a more simple and consistent system of medicine than the world had yet seen, and pointed out some of its leading features.

2. A full, frequent, and jerking pulse, without tension.

3. A small, frequent, but tense pulse.

4. A tense and quick pulse, without much preternatural frequency.

5. A slow but tense pulse, such as occurs in the apoplectic, hydrocephalic, and malignant states of fever, in which its strokes are from sixty, to nine in a minute.

6. An uncommonly frequent pulse, without much tension, beating from one hundred and twenty to one hundred and seventy or one hundred and eighty strokes in a minute.

7. A soft pulse, without much frequency or fulness.

8. An intermitting pulse.

9. A depressed pulse.

10. An imperceptible pulse.

These two last to be carefully distinguished from the same states of the pulse, which arise from an exhausted state of the system. In the conclusion, he observes, if all the states of pulse which have been enumerated, indicate bleeding, it must be an affecting consideration, to reflect how many lives have been lost by physicians limiting the use of the lancet only to the tense or full pulse.

To assist us in judging of the propriety of repeating venesection from the appearances of the blood, he enu-

merates the following six varieties, each indicating a different grade of inflammation:

1. Dissolved blood.

2. Blood of a scarlet colour, without any separation into crassamentum or serum.

3. Blood in which part of the crassamentum is dissolved in the serum, forming a resemblance to what is called the *lotura carnium*, or the washings of flesh in water.

4. Crassamentum, sinking to the bottom of a bowl in yellow serum.

5. Crassamentum, floating in serum, which is at first turbid, but which afterwards becomes yellow and transparent, by depositing certain red and fiery particles of blood in the bottom of the bowl.

6. Sizy blood, or blood covered with a buffy coat.

Whereupon, he asks, if bleeding be indicated by all the appearances of the blood, which have been enumerated, " how many lives have been lost by physicians limiting the use of the lancet to those cases only, where the blood discovered an inflammatory crust?" Dr. Rush overlooked no source of information, but principally depended on the pulse. From long and accurate acquaintance with all its varieties and the circumstances by which it was affected, he made himself acquainted with the state of his patient's system, and by suitable remedies reduced

it to its proper standard, and generally removed the disease. Pursuing the train of reasoning and observation just stated, and applying it to practice, our professor adopted modes of treating several diseases, which had not been usual in this country, and which by many practitioners have been deemed improvements in the practice of physic. Dr. Rush carried bleeding and the depleting system farther than ever had been done before by any of his cotemporary physicians. He in like manner urged the use of calomel, to which he gave the name of the Sampson of the *materia medica*, farther than was common among the physicians who had preceded him. Instead of making a profitable secret of his innovations in practice, he came forward boldly; taught them to his numerous pupils; published them to the world, and defended them with his pen. The witlings of the day concurred in the propriety of the name of Sampson, which he had given to this favourite remedy, calomel; but for a very different reason, because, say they, "it has slain its thousands." Unmoved by the sneers of some, the misrepresentations of others, and the general partiality for old opinions and aversion to innovations, Dr. Rush steadily pursued his course through evil report and good report. The same hand which subscribed the declaration of the political independence of these states, accomplished their eman-

cipation from medical systems formed in foreign countries, and wholly unsuitable to the state of diseases in America. These Dr. Rush pronounced to be of a higher grade, and to require more potent remedies than were usually prescribed for similar diseases in the old world. It cannot be denied that the depleting mercurial plan of treating diseases so strongly recommended by our professor, has done mischief in the hands of persons who did not understand it, or were ignorant of the limitation and cautions necessary in its application, or who were not sufficiently attentive to the varying symptoms of their patients. But it is nevertheless true, that the system, compared with those which preceded it, is a good one, and that the objections to it apply to every efficient, energetic plan of treating diseases. He is unworthy of the name of a physician, who does not occasionally risk his reputation by bold but judicious efforts to save the lives of his patients. It is to be regretted that the great reformer who introduced the innovations, commonly called the American system of medicine, did not live a few years longer to discover more of the laws of the animal economy, more principles in medicine, and at the same time, to perfect those he had already discovered and promulgated.—Than Dr. Rush, no man more readily retracted his opinions, when new light from any quarter whatever

pointed out their defects. Such candour is a characteristic of a great mind. He knew only one being, the great Eternal, 'who changeth not,' and also knew that when a fallible imperfect mortal gave up his opinion, on being convinced that it was erroneous, he became wiser than he was before. Much did he lament the injury sustained by the medical world, from the obstinate adherence of the celebrated John Hunter, to opinions he had once promulgated, and characterised him in his lectures, as one "who never gave up any thing he had once asserted till he gave up the ghost." It was not so with Dr. Rush; his latter works and lectures frequently announce his reasons for relinquishing doctrines he believed and taught in younger life.*

* An illustrious instance of this change of opinion on conviction, took place in the mind of Dr. Rush respecting the nature and origin of the yellow fever. He first believed and taught, that it was imported and contagious; but afterwards retracted both opinions for the following reasons:

"The yellow fever does not spread in the country when carried thither from the cities of the United States.

"It does not spread in yellow fever hospitals, when they are situated beyond the influence of the impure air in which it is generated.

"It does not spread in cities from any specific matter emitted from the bodies of sick people.

"It is not propagated by the artificial means which propagate contagious diseases. Dr. Firth inoculated himself above twenty times in different parts of his body with the black matter discharged from the stomachs of patients in the yellow fever, and several times with the serum of the blood, and the sali-

A friend to free inquiry, he invited his numerous pupils to think and judge for themselves, and would freely, and in a friendly manner, explain his princi-

va of patients ill with that disease, without being infected by them; nor was he indisposed after swallowing half an ounce of the black matter recently ejected from the stomach, nor by exposing himself to the vapour which was produced by throwing a quantity of that matter upon iron heated over a fire."

There are some seeming exceptions in favour of the propagation of this fever by contagion, but they admit of explanation on other principles. The circumstances which seem to favour the communication of the yellow fever from one person to another, by means of what has been supposed to be contagious, are as follow:

1. A patient being attended in a small, filthy, and close room, has sometimes communicated the disease. But the excretions of the body when thus accumulated, undergo an additional putrefactive process, and acquire the same properties as those putrid animal matters which are known to produce malignant fevers.

2. A person sleeping in the sheets, or upon a bed impregnated with the sweats or other excretions, or being exposed to the smell of the foul linen or other clothing of persons who had the yellow fever, may catch it from him. But, the disease here, as in the former case, is communicated in the same way as from any other putrid animal matters.

The yellow fever is said to arise from the effluvia of a putrid body that has died of that disease; but it may be answered, that a dead body in a state of putrefaction from any other disease, would produce under the same circumstances of season and predisposition the same kind and degree of fever.

That the yellow fever is propagated by means of an impure atmosphere, at all times, and in all places, may be inferred from the following fact:

ples, resolve their doubts, listen to their objections, and either yield to their force, or show their fallacy.

Dr. Rush's principles of medicine were by him successfully applied, to the cure of consumptions,

It appears only in those climates and seasons of the year in which heat acting upon moist animal and vegetable matters fills the air with their putrid exhalations. A vertical sun pouring its beams for ages upon a dry soil and swamps, defended from the influence of the sun by extensive forests, have not in a single instance produced this disease.

It is unknown in places where a connexion is not perceptible between it and marshes, millponds, docks, gutters, sinks, unventilated ships, and other sources of noxious air.

In the United States, no advocate for the specific nature or importation of the yellow fever has ever been able to discover a single case of it beyond the influence of an atmosphere rendered impure by putrid exhalations.

It is destroyed like its fraternal diseases, the common bilious and intermitting fevers, by means of long, continued and heavy rains.

It is completely destroyed by frost. As neither rains nor frosts act in sick rooms, nor affect the bodies of sick people, they must annihilate the disease, by acting exclusively upon the atmosphere. Very different in their nature are the smallpox and measles, which are propagated by specific contagion. They do not wait for the suns of July or August; nor do they require an impure atmosphere, or an exciting cause to give them activity. They spread in the winter and spring as well as in the summer and autumnal months: wet and dry weather do not arrest their progress, and frost (so fatal to the yellow fever) by rendering it necessary to exclude cold air from sick rooms, increases the force of their contagion, and thereby propagates them more certainly through a country. The yellow fever is likewise destroyed by intense heat and high winds. The latter, we are sure, like heavy rains and frosts,

dropsies, hydrocephalus internus, apoplexy, gout, and other diseases of the body, and also to madness and other diseases of the mind. He considers the pulmonary consumption as a disease resulting from causes which induced general debility, and that the only hope of discovering a cure for it should be directed to such

do not produce that salutary effect by acting upon the bodies or in the rooms of sick people.

If these arguments prove that the yellow fever is not contagious, they also prove that it cannot originate from importation. In support of this opinion it may be farther observed, "that the yellow fever in the West Indies, and in all other countries where it is endemic, is the offspring of vegetable putrefaction. Heat, exercise, and intemperance in drinking dispose to this fever in hot climates; but they do not produce it without the concurrence of a remote cause. This remote cause exists, at all times, in some spots of the West India islands; but in other parts, even of the same islands, where there are no marsh exhalations, the disease is unknown. In short, this disease appears, according to Dr. Lind, in all the southern parts of Europe after hot and dry weather.

The same causes (under like circumstances) must always produce the same effects. There is nothing in the air of the West Indies above other hot countries, which disposes it to produce a yellow fever. Similar degrees of heat, acting upon dead and moist vegetable matters are capable of producing it, together with all its various modifications in every part of the world.

The substance of this note is extracted from Dr. Rush's works, third and fourth volumes. His opinions on the noncontagiousness and nonimportation of yellow fever have been strongly opposed in Philadelphia and Newyork; but in Charleston, S. C. all the physicians concurred with him.

remedies as act upon the whole system. He observes that the symptoms which mark its first stage should be carefully studied, not only by physicians, but by the parents and friends of those who have a hereditary predisposition to the complaint. These are a slight fever increased by the least exercise, a burning and dryness in the palms of the hands, rheumy eyes upon waking from sleep, a dryness of the skin, more especially of the feet in the morning; an occasional flushing in one, and sometimes in both cheeks; a hoarseness; a slight or acute pain in the breast; a fixed pain in one side, or shooting pains on both sides; headach; occasional sick and fainty fits; a deficiency of appetite, and a general indisposition to exercise or motion of every kind.

The remedies for consumption in this stage of the disease, are simple and certain. They consist in a desertion of all the remote and exciting causes of the disorder, particularly sedentary employments, damp or cold situations, and whatever tends to weaken the system. When from ignorance or neglect the disease has been suffered to advance to its inflammatory state, he recommends blood-letting, a vegetable diet, cooling medicines, a dry situation, country air distant from the sea. The higher and drier the situation which is chosen for the purpose of enjoying the benefit of this remedy the better. A change of cli-

mate. Countries between the thirtieth and fortieth degrees of latitude are most friendly to consumptive people. When going to a warm climate for the winter is not practicable, he advises them to pass their nights as well as days in an open stove-room, in which nearly the same degrees of heat were kept up at all hours. This practice, in several cases, is a tolerable substitute for a warm climate. Loose dresses and a careful accommodation of them to the changes in the weather. Artificial evacuations by means of blisters and issues. A salivation has performed many cures in different parts of the United States. It is to be lamented that in a majority of the cases in which the mercury has been given, it has failed of exciting a salivation. Where it affects the mouth it generally succeeds in recent cases. In the hectic state of the complaint a salivation frequently cures. It should never be advised until the inflammatory diathesis of the system has been in a great degree reduced.

As a radical remedy, and to prevent a return of the complaint, exercise is recommended. This must be proportioned to the state of the disease and the strength of the patient, and may be either rocking in a cradle, or riding on an elastic board, commonly called a chamber horse, swinging, sailing, riding in a carriage or on horseback, and walking.

There are two methods of riding for health in this disease. The first is by short excursions; the second is by long journeys. In slight consumptive affections, and after recovery from an acute illness, short excursions are sufficient to remove the existing debility; but in the more advanced stages of consumption they are seldom effectual.

In a consumption of long continuance or of great danger, long journies on horseback are the most effectual modes of exercise. They afford a constant succession of fresh objects and company, which divert the mind from dwelling upon the danger of the existing malady; they are, moreover, attended by a constant change of air. Travelling, to be effectual in this disease, should be conducted in such a manner as that a patient may escape the extremes of heat and cold. For this purpose he should pass the winter and part of the spring in Georgia and South Carolina, and the summer in Newhampshire, Massachusetts, or Vermont, or, by crossing the lakes, and travelling along the shores of the St. Lawrence to the city of Quebec.

In these journies from north to south, or from south to north, he should be careful to keep at a distance from the seacoast. Of all modes of travelling, the best, where strength permits, is riding on horseback. This should be continued, with moderate intervals, from six to twelve months: but the cure

should not be rested upon a single journey. It should be repeated every two or three years till the patient has passed the consumptive stages of life. Nay, he must do more: he must acquire a habit of riding constantly, both at home and abroad; or " he must learn to live on horseback." Where benefit is expected from a change of climate as well as from travelling, patients should reside at least two years in the place which is chosen for that purpose.

With respect to dropsies, Dr. Rush states, that though true, it has not been generally observed, that dropsical effusions are sometimes promoted, and their absorption prevented by too much action in the arteries. That debility, under certain circumstances, disposes to excessive action, and that excessive action occurs in one part of the body at the same time that debility prevails in every other; and that an undue force or excess of action occurs in the arterial system in certain dropsies. The symptoms which indicate a morbid excitement and preternatural action of the arterial system are a hard, full, and quick pulse, sizy blood, alternation of dropsies with certain diseases which were evidently accompanied by excess of action in the arterial system, and bad effects resulting from the use of stimulating medicines. In these tonic or inflammatory dropsies, the remedies are blood-letting, vomits, purges, medicines which, by lessening the action of the arterial system, favour the

absorption and evacuation of water, such as nitre, cream of tartar, and foxglove, hard labour or exercise in such a degree as to produce fatigue, low diet, thirst, fasting, fear, a recumbent posture of the body, punctures.

The remedies for atonic dropsies, or such as are accompanied with a feeble morbid action in the blood vessels, are all such stimulating substances as increase the action of the arterial system, or determine the fluids to the urinary organs. These are bitter and aromatic substances of all kinds, exhibited in substance or in infusions of wine, spirits, beer, or water; certain acrid vegetable, such as scurvy grass, horse radish, mustard, water cresses, and garlic; opium; metallic tonics, such as chalybeate medicines of all kinds, and the mild preparations of copper and mercury; diuretics, consisting of alkaline salts, nitre, and the oxymel of squills, and colchicum; generous diet, pressure, bandages bound tightly round the belly and limbs sometimes prevent the increase or return of dropsical swellings.

Frictions, heat applied either separately or combined with moisture in the form of warm or vapour baths, has been often used with success in dropsies of too little action.

Exercise. This is probably as necessary in the atonic dropsy as it is in the consumption, and should never be omitted, when a patient is able to take it.

After stating and illustrating the two different states of action in dropsies which have been already mentioned, Dr. Rush observes, that "dropsies are often connected with a certain intermediate or mixed action in the arterial system, analogous to the typhoid action which takes place in certain fevers. In dropsies of mixed action, where too much force prevails in the action of some, and too little in the action of other of the arterial fibres, the remedies must be debilitating or stimulating, according to the greater or less predominance of tonic or atonic diathesis in the arterial system."

The distinction of dropsies, as arising from distinct states of the system, first introduced by Dr. Rush, has been of great service in correcting the too general practice of prescribing stimulating medicines indiscriminately in every case of dropsy.

Dr. Rush, having for many years been unsuccessful in all the cases except two, of internal dropsy of the brain which came under his care, began to entertain doubts of the common theory of this disease, and to suspect that the effusion of water should be considered only as the effect of a primary disease in the brain. He mentioned this opinion to Dr. Wistar in the month of June, 1788, and delivered it the winter following in his lectures. The year afterwards he was confirmed in it by hearing that the

same idea had occurred to Dr. Quin. He soon after procured and read Dr. Quin's treatise on the dropsy of the brain. With this respectable aid and his own observations and reflections, he formed a connected theory, which led to a new and more successful mode of treating this disease.

He observes, that "the internal dropsy of the brain is a disease confined chiefly to children, and that in them the brain is larger in proportion to other parts of the body than it is in adults, and of course a greater proportion of blood is sent to it in childhood than in the subsequent periods of life.

In all febrile diseases there is a preternatural determination of blood to the brain. In fevers of every kind, and in every stage of life, there is a disposition to effusion in that part to which there is the greatest determination. He then gives a description of the disease, chiefly taken from Dr. Quin, as according most with the ordinary phenomena of this disease in the United States, and enumerates the causes of it. These which act directly on the brain are falls and bruises upon the head, certain positions of the body, and childish plays, which bring on congestion or inflammation, and afterwards an affusion of water on the brain.

The indirect causes of this disease are intermittent, remittent, and continual fevers, and those which

are attended with eruptions. The internal dropsy of the brain appears to be the effect of inflammation of the brain. Having adopted this theory of the disease, he resolved upon such a change in his practice as should accord with it. The first remedy indicated by it was blood-letting. This was followed by purges, calomel, and blisters. The preceding theory of this disease has been adopted by many respectable physicians in Philadelphia and in other parts of the United States, and led to the practice that has been recommended, particularly to copious blood-letting, in consequence of which death from a dropsy of the brain is not a more frequent occurrence than from any other of the acute febrile diseases of our country.

Dr. Rush carried bleeding in apoplexy farther than had been usual before his time. He considered the importance of the part affected, and the urgency of immediate danger, to warrant extraordinary losses of blood in the most perilous disease. In his own energetic language, he advised his pupils "to bleed not only by ounces or in basins, but by pounds and by pailfuls; and that the head of the patient should be subjected to a stream of the coldest water, from a pump or otherwise, till a bleeder was procured." It is well known in Philadelphia, that, in conformity to these ideas, Dr. Physick, at one bleeding, drew ninety

ounces, by weight (or nearly one fourth of the usual quantity of blood in the human body) from Dr. Dewees, in a sudden attack of the apoplectic state of fever, and thereby restored him so speedily to health that he was able to attend to his business in three days afterwards.

Dr. Rush has also greatly improved the treatment of the gout, by recommending bleeding in case of gout where there is great morbid action in the blood vessels and viscera.

"The usual objections to bleeding, as a remedy, have been urged with more success in the gout than in any other disease. It has been generally forbidden because the gout is said to be a disease of debility. This is an error. Debility is not a disease: it is only its predisposing cause. Disease is preternatural strength in the state of the system now under consideration, occasioned by the abstraction of excitement from one part, and the accumulation of it in another part of the body. Every argument in favour of bleeding in a pleurisy applies in the present instance, for they both depend upon the same kind of morbid action in the blood vessels. Bleeding acts, moreover, alike in both cases, by abstracting the excitement from the blood vessels and restoring its natural and healthy equality to every part of the system.

"The advantages of bleeding in the gout, when performed under the circumstances that have been

mentioned, are as follow: It removes or lessens pain: it prevents those congestions and effusions which produce apoplexy, palsy, pneumonia notha, calculi in the kidneys and bladder, and chalk stones in the hands and feet.

"It shortens the duration of a fit of gout by throwing it not into the feet, but out of the system, and thus prevents a patient's lying upon his back for two or three months, with a writhing face, scolding a wife and family of children, and sometimes cursing every servant that comes near enough to endanger the touch of an inflamed limb. Besides preventing all this parade of pain and peevishness, it frequently, when assisted with other suitable remedies, restores a man to his business and society in two or three days."

Dr. Rush has also improved the theory and practical treatment of madness. He rejects the abdominal viscera, the nerves, and the mind, as the primary seats of madness, and gives reasons for his believing and teaching, that the cause of madness is seated primarily in the blood vessels of the brain. In enumerating its various exciting and predisposing causes, he observes that "single persons are more predisposed to madness than married people. Of seventy-two insane patients in the Pennsylvania hospital, in the month of April, 1812, forty-two had never been married, and

five were widows and widowers at the time they became deranged.

The absence of real and present care, which gives to the mind leisure to look back upon past, and to anticipate future and imaginary evils; and the inverted operation of all the affections of the heart upon itself, together with the want of relief in conjugal sympathy from the inevitable distresses and vexations of life, and for which friendship is a cold and feeble substitute; are probably the reasons why madness occurs more frequently in single than in married people. Celibacy is a pleasant breakfast, a tolerable dinner, but a very bad supper. The supper is not only of a bad quality, but eaten alone. No wonder it sometimes becomes a predisposing cause of madness.

"The rich are more predisposed to madness than the poor, from their exposing a larger surface of sensibility to all its remote and exciting causes. Even where mental sensibility is the same in both those classes of people, the disease is prevented in the latter by the constant pressure of bodily suffering from labour, cold, and hunger. These present evils defend their minds from such as are past and anticipated, and these are the principal causes of madness."

To the lunatics in the Pennsylvania hospital Dr. Rush paid, for many years, the most pointed attention. From his own accurate observations, and those

which had been made by others in the old European establishments of a similar nature, he deduced a theory, "that the cause of madness is seated primarily in the blood vessels of the brain, and that it depends upon the same kind of morbid and irregular actions that constitutes other arterial diseases. There is nothing specific in these actions. They are a part of the unity of disease, particularly of fever, of which madness is a chronic form, affecting that part of the brain which is the seat of the mind." In conformity to this theory, he prescribes for the mental disease commonly called the *hypochondriasis*, but by him *tristimania*, blood-letting, if the pulse be tense or full, or depressed without either fullness or tension; and also active purgatives, particularly aloes, jalap, and calomel, and emetics. These, by exciting the stomach and bowels, often remove morbid excitement from the brain, and thus restore the mind to its healthy state.

A reduced diet, consisting of food and drinks that contain but little nourishment. After reducing the action of the blood vessels to a par of debility with the nervous system, he advises stimulating aliments, drinks, and medicines. The diet should consist of solid animal food, with such vegetables as are least disposed to acidity, and both should be rendered palatable by condiments.

Frictions to the trunk of the body and limbs. Exercise, or rather labour in the open air. The excitement of pain.

Salivation.—Mercury acts in this disease: 1st, by abstracting morbid excitement from the brain to the mouth: 2d, by removing visceral obstructions; and 3d, by changing the cause of our patient's complaints and fixing them wholly upon his sore mouth. Blisters and issues.

In addition to these remedies, intended to act directly on the body, Dr. Rush recommends a variety of others which are intended to act through the medium of the mind. These are so various, as being adapted to the countless vagaries of this whimsical disease, that they cannot be abridged for the present occasion. For them I therefore refer you to the book itself.

Dr. Rush divides general madness into three states: *Mania*, *Manicula*, *Manalgia*. In attempting the cure of mania, which is the highest grade, he recommends to the physician, " when he enters the cell or chamber of his deranged patient, to catch his eye, and look him out of countenance. The dread of the eye was early imposed upon every beast of the field: the tiger, the mad bull, and the enraged dog, all fly from it. Now a man deprived of his reason, partakes so much of the nature of those animals, that he is for the most part

easily terrified or composed by the eye of a man who possesses his reason. A great effect is produced by looking the patient out of countenance, with a mild and steady eye, and varying its aspect from the highest degree of sternness down to the mildest degree of benignity, for there are keys in the eye which should be suited to the state of the patient's mind." This experiment has been long successfully tried by Dr. Rush, and witnessed by hundreds of pupils, and several of the managers of the Pennsylvania hospital.

"The countenance of a physician should assist his eye and voice in governing his deranged patient. It should be accommodated to the state of the patient's mind and conduct. There is something like contagion in the different aspects of the human face, and madmen feel it in common with other people.

"The conduct of a physician to his deranged patients should be uniformly dignified, if he wishes to acquire their obedience and respect. He should hear with silence their rude or witty answers to his questions, and upon no account ever laugh at them or with them.

"A physician should treat them with respect, and with all the ceremonies which are due to their former rank and habits of living, and endeavour to acquire their obedience and affections by acts of kindness.

"If all the means that have been mentioned should prove ineffectual to establish a government over deranged patients, recourse should be had to certain modes of coercion, such as confinement by means of a strait waistcoat or of a chair contrived for the purpose.

"Privation of their customary pleasant food. Pouring cold water under the coat sleeve, so that it may descend into the armpits and down the trunk of the body. The shower bath continued for fifteen or twenty minutes. If all these modes of punishment should fail of their intended effect, it will be proper to resort to the fear of death. By the proper application of these mild and terrifying modes of punishment, chains will seldom, and the whip never be required to govern mad people."

For the cure of general mania, Dr. Rush prescribes blood-letting, "as this grade of madness is an arterial disease of great morbid excitement, or inflammation in the brain. The bleeding should be copious on the first attack of the disease. From twenty to forty ounces of blood may be taken at once, unless fainting be induced before that quantity be drawn. It will do most service if the patient be bled in a standing posture. The effects of this early and copious bleeding are wonderful in calming mad

people. It often prevents the necessity of using any other remedy, and sometimes it cures in a few hours.

"The quantity of blood drawn should be greater than in any other organic disease. This is indicated by the strong and uncommon hold which the disease takes of the brain. In the progress of the disease he recommends solitude; darkness; an erect position of the body; low diet; purges; emetics; nitre; blisters; cold, in the form of air, water, and ice; a salivation; (too much cannot be said in its favour in general madness); opium; digitalis; camphor; the shower bath: this excellent remedy acts upon the head, by the stimulus arising from the weight and momentum of the water, and by the reaction of the blood vessels after the sedative effects of the water are over. It should be used two or three times a day."

Dr. Rush also recommends another class of prescriptions, which act upon the body through the medium of the mind.

The first remedy under this head is, "to divert the ruling passion, or subject which occupies the mind, if it be one, and fix it upon some other. Nothing effectual can be done without great attention to this direction.

"Great care should be taken by a physician to suit his conversation to the different and varying states of the minds of his patients in this disease. In

its furious state they should never be contradicted, however absurd their opinions and assertions may be, nor should we deny their requests by our answers, when it is improper to grant them.

"The cure of mental and bodily disease is to be effected by the same means. We first reduce the system, then create revulsive actions, and finally remove subsequent debility or feeble morbid actions by stimulating remedies.

"The return of regularity and order in the operations of the mind will be much aided, by obliging mad people to read with an audible voice, to copy manuscripts, and to commit interesting passages from books to memory. By means of the first their attention will be more intensely fixed upon one subject than by conversation.

"Terror acts powerfully upon the body through the medium of the mind, and should be employed in the cure of madness. A fall down a steep ridge has cured a mania of twenty years' continuance.

"Manicula differs from mania as being accompanied with a more moderate degree of the same symptoms. The remedies for this grade of madness should be the same in its inflammatory state as for mania, but of less force.

"The symptoms of manalgia, the third and last form of general madness, are taciturnity, downcast

looks, a total neglect of dress and person, long nails and beard, dishevelled or matted hair, indifference to all surrounding objects, insensibility to heat and cold.

"The remedies for it are cordial food and drinks. The former should be made savory and grateful to the taste, and the stimulus from the pleasure imparted by it should be increased by its variety.

"The warm bath.—The water should be heated above the natural temperature of the body, in which state it acts powerfully upon the arterial system.

"The cold shower bath.—The impulse imparted to the head by the descent of the water upon it, adds very much to its efficacy.

"The cold shower bath in succession to the warm bath.—This, by giving a most powerful shock to the system, has restored reason.

"A caustic applied to the back of the neck, or between the shoulders, and kept open for months or years.

"A salivation.—This, when it can be effected, seems to resuscitate the mind. Two instances occured in the Pennsylvania hospital, in which a taciturnity of a year's continuance was removed by it. Speech was excited in one of them on the very day on which the mercury affected the mouth, and the use of reason followed in a few days afterwards.

"Exercise, or rather labour, which has several advantages over exercise, in being not only more stimulating, but more durable in its effects, whereby it is more calculated to arrest wrong habits of action, and to restore such as are regular and natural.

"Errhines.—These are suggested by the general absence of secretion in the nose in mad people, and by the relief which the discharge of a few drops of tears affords in tristimania.

"Opium: iron: the datura strammonium: strong infusions of green tea and green coffee: garlic: valerian: the nitrous oxyd, and electricity, have all been administered in the Pennsylvania hospital, and some of them for several months, but never in a single instance with success when given alone. They may be given as auxiliaries to those more powerful and rational remedies which agitate the whole body and mind."

On a review of the improvements made by Dr. Rush, it appears that a free use of the lancet, in almost every case, and particularly in some in which it had rarely or never before been used, was one of his first and most common prescriptions. Let us hear him pleading his own cause in his ingenious and able defence of bleeding. This is founded on his theory of fever. Let us review them both as being fundamental to his system. We will then view his improve-

ments in the practice of physic as they ought to be, not as the effect of accident, but as resulting from principles growing out of accurate observations of the animal economy, both in its sound and morbid state, carefully combined and compared with each other. In his theory of fever, he premises, " that fevers of all kinds are preceded by general debility, natural or accidental. From this a sudden accumulation of excitability takes place, whereby a predisposition to fever is created. Depression of the whole system follows, and where the stimuli, whether morbid or natural, are continued, reaction is induced, and in this reaction, according to its greater or less force and extent consist the different degrees of fever. It is of an irregular or a convulsive nature. In common cases it is seated primarily in the blood vessels, and particularly in the arteries, which pervade every part of the body.

" All diseases are preceded by debility. There is but one exciting cause of fever, and that is stimulus; and that consists in a preternatural and convulsive action of the blood vessels. All the supposed variety of fevers have but one proximate cause, and that is morbid excitement. All ordinary fevers being seated in the blood vessels, it follows, of course, that all those local affections, we call pleurisy, angina, phrenitis, internal dropsy of the brain, pulmonary con-

sumption, and inflammation of the liver, stomach, bowels, and limbs, are symptoms only of an original and primary disease in the sanguiferous system."

The artificial division of fever into genera and species is rejected by our professor for the following reasons: "Much mischief has been done by nosological arrangements of diseases—they erect imaginary boundaries between things which are of a homogeneous nature—they degrade the human understanding, by substituting simple perceptions to its more dignified operations in judgment and reasoning—they gratify indolence in a physician, by fixing his attention upon the name of a disease, and thereby leading him to neglect the varying state of the system—they moreover lay a foundation for disputes among physicians—the whole materia medica is infected with the baneful consequences of the nomenclature of diseases; for every article in it is pointed only against their names, and hence the origin of the numerous contradictions among authors who describe the virtues and doses of the same medicines. By the rejection of the artificial arrangement of diseases a revolution must follow in medicine. Observation and judgment will take the place of reading and memory, and prescriptions will be conformed to existing circumstances."

Dr. Rush remarks that "morbid action in the blood vessels constitutes fever, and that excess in

the force and frequency in the pulsations of the arteries has been considered as the characteristic mark of what is called inflammatory fever. He then enumerates eleven usual effects of fevers or morbid excitement in the blood vessels, when not removed by medicine, and also the following thirty-seven different states of fever. 1. The malignant. It constitutes the highest grade of morbid diathesis. It is known by attacking frequently without a chilly fit, by coma, a depressed, low, or intermitting pulse, and sometimes by the absence of pain, and with a natural temperature or coldness of the skin.

2. The gangrenous state of fever. 3. The synocha, or the common inflammatory state of fever. 4. The synochus state of fever, known by a full, quick, and round pulse, without tension. 5. The synochula state of fever, in which the pulse is small but tense and quick. The patient, in this state of fever, is seldom confined to his bed.

6. The synochoid state of fever, which inclines more to the synocha than what is called the typhus or chronic state of fever.

7. The typhus state of fever is generally preceded by all those circumstances which debilitate the system, both by the action and abstraction of stimuli. The common name of this state of fever is the nervous fever. This name is improper, for it invades the ner-

vous system much less than several other states of fever. To prevent the absurd and often fatal association of ideas upon the treatment of this state of fever, it should be called, from its duration, the low chronic state of fever.

8. The typhoid state of fever is composed of the synocha and low chronic states of fever.

9. The hectic state of fever differs from all the other states of fever, by the want of regularity in its paroxysms, in which chills, fevers, and sweats are included, and by the brain, nerves, muscles, and alimentary canal being but little impaired in their functions by it.

10. Intermissions. The intermittent and remitting states of fever are common to all the states of fever which have been mentioned: but they occur most distinctly and universally in those which partake of the bilious diathesis.

11. There is a state of fever in which the morbid action of the blood vessels is so feeble as scarcely to be perceptible. Like the hectic state of fever, it seldom affects the brain, nerves, muscles, or alimentary canal. It is known in the southern states of America by the name of inward fevers.

These eleven states of fever may be considered as primary in their nature. All the states which remain to be enumerated belong to some one of them,

or they are compounds of two, three, or more of them.

12. The sweating state of fever occurs in the plague, in the yellow fever, in the small pox, the pleurisy, the rheumatism, and in the hectic and intermittent states of fever.

13. The fainting state of fever accompanies the plague, the yellow fever, the small-pox, and some states of pleurisy. It is the effect of great depression.

14. The burning state of fever has given rise to what has been called a species of fever. It is the causus of authors.

15. The cold and chilly state of fever differs from a common chilly fit by continuing four or five days, and to such a degree that the patient frequently cannot bear his arms out of the bed.

16. The intestinal state of fever. It includes the cholera morbus, diarrhœa, dysentary, and colic. The remitting bilious fever appears in all the above forms in the summer months.

17. The pulmonary state of fever includes the true and bastard pneumony in their acute forms; also catarrh from cold and influenza, and the chronic form of pneumony in what is called pulmonary consumption.

18. The eruptive state of fever includes the small-pox, measles, erysipelas, miliary fever, and chicken-pox.

19. The anginose state of fever includes all those affections of the throat which are known by the names of cynanche inflammatoria, tonsillaris, parotidea, maligna, scarlatina, and trachealis.

20. The rheumatic state of fever is confined chiefly to the labouring part of mankind. The topical affection is seated most commonly in the joints and muscles.

21. The arthritic, or gouty state of fever, differs from the rheumatic in affecting, with the joints and muscles, all the nervous and lymphatic systems, the viscera and the skin.

22. The cephalic, in which are included the phrenitic, lethargic, apoplectic, paralytic, hydrocephalic, and maniacal states of fever.

23. The nephritic state of fever is often induced by calculi; but it frequently occurs in the gout, small-pox, and malignant states of fever. It is generally accompanied with a full or tense pulse, great pain, sickness, or vomiting, and a pain along the thigh and leg.

24. The hydropic state of fever, in which are included collections of water in the lungs, cavity of the thorax, cavity of the abdomen, and lower extremities, and usually preceded and generally accompanied with morbid action in the blood vessels.

25. The hemorrhagic state of fever, in which are included discharges of blood from the nose, lungs, stomach, liver, bowels, kidneys, and bladder, hæmorrhoidal vessels, uterus, and skin.

26. The amenorrhagic state of fever occurs more frequently than is suspected by physicians. A full and quick pulse, headach, thirst, and preternatural heat often accompany chronic obstructions.

27. The chronic hepatic state of fever. The liver disease of the East-Indies is nothing but a bilious fever translated from the blood vessels, and absorbed or suffocated, as it were, in the liver. A chronic hepatitis scarcely ever exists but as a symptom of general or latent fever.

28. The hæmorrhoids are frequently a local disease; but they are sometimes accompanied with pain, giddiness, chills, and an active pulse. When these symptoms occur it should be considered as the hæmorrhoidal state of fever.

29. The opthalmia, when it occurs, as it frequently does in sickly seasons, with a quick and tense pulse, and pains diffused over the whole head, may properly be called an opthalmic state of fever.

30. The toothach; and,

31. Earach, when they arise from cold, and are attended with great heat, a quick and tense pulse, and pains in the head, are odontalgic and otalgic states of fever.

32. The apthæ, from the pain and fever which attend them, are justly entitled to the name of the apthous state of fever.

33. The symptoms of scrophula, as described by Dr. Hardy, clearly prove it to be a misplaced state of fever.

34. The scurvy has lately been proved by Dr. Claiborne to arise from so many of the causes, and possesses so many of the symptoms of the low chronic and petechial states of fever, that it may be considered as a state of fever.

35. The convulsive or spasmodic state of fever. Convulsions, it is well known, often usher in fevers, more especially in children: but the connexion between spasmodic affections and fever in adults has been less attended to by physicians. The same causes which produced general fever and hepatitis in the East-Indies in some soldiers, produced locked-jaw in others. By means of blood-letting and the other remedies for the violent state of bilious fever, the convulsions in this disease are translated from the muscles to the blood-vessels, where they immediately produced all the common symptoms of fever.

36. The hysterical and hypochondriacal state of fever. Both these states of the nervous system occur frequently in the gout, and in the malignant state of fever. It is common to say in such cases that patients

have a complication of diseases, but this is not true; for the hysterical and hypochondriacal symptoms are nothing but the effects of one remote cause, concentrating its force chiefly upon the nerves and muscles.

37. The cutaneous state of fever. Dr. Sydenham calls a dysentery a "febris introversa." Eruptions of the skin are often nothing but the reverse of this introverted fever. They are a fever translated to the skin, hence we find them most common in those countries and seasons in which fevers are epidemic. The prickly heat, the rash, and the essere of authors are all states of misplaced fever.

At the end of a long dissertation of sixty-six pages, explaining and defending his principles, Dr. Rush "commits the whole to his pupils, to be corrected and improved, and concludes with observing,

"We think our fathers fools so wise we grow.
Our wiser sons, I hope, will think us so."

His "Defence of blood-letting as a remedy for certain diseases," grounded on the preceding theory of fever, occupies eighty-six pages in his fourth volume. He therein states, that "blood-letting, in violent fevers, when used at a proper time, and in quantity suited to the force of the disease, frequently strangles a fever, when used in its forming state, and thereby saves much pain, time, and expense to a patient; and that it imparts strength to the body, by

removing the depression which is induced by the remote cause of the fever.

"It reduces the uncommon frequency of the pulse, and renders it more frequent when it is preternaturally slow; checks the nausea and vomiting which attend the malignant state of fever; renders the bowels, when costive, more easily moved by purging physic; renders the action of mercury more speedy and more certain in exciting a salivation; disposes the body to sweat spontaneously, or renders diluting and diaphoretic medicines more effectual for that purpose; suddenly removes a dryness, and gradually, a blackness from the tongue; removes or lessens pain in every part of the body, and more especially in the head; removes or lessens the burning heat of the skin, and the burning heat in the stomach, so common and so distressing in the yellow fever; removes a constant chilliness, which sometimes continues for several days, and which will neither yield to cordial drinks nor warm bedclothes; checks such sweats as are profuse without affording relief, and renders such as are partial and moderate universal and salutary. Blood-letting sometimes checks a diarrhœa and tenesmus, after astringent medicines have been given to no purpose. This has often been observed in the measles. It suddenly cures the intolerance of light which accompanies many of the

inflammatory states of fever; removes coma; induces sleep; prevents effusions of serum and blood. Hæmorrhages seldom occur where bleeding has been sufficiently copious. It prevents the chronic diseases of cough, consumption, jaundice, abscess in the liver, and all the different states of dropsy which so often follow autumnal fevers.

"Bleeding prevents the termination of malignant in the gangrenous state of fever. It also prepares the way for the successful use of the bark and other tonic remedies, by destroying, or so far weakening a morbid action in the blood vessels, that a medicine of a moderate stimulus afterwards exceeds it in force, and thereby restores equable and healthy action to the system."

But great and numerous as the advantages of blood-letting are in fevers, there have been many objections to it. Dr. Rush enumerates and refutes them as follows: blood-letting has been forbidden by physicians by the following circumstances and states of the system.

"By warm weather, or being born and having lived in a warm climate." To these he replies that "he had never, in any year of his practice, been restrained by the heat of summer in the use of the lancet, where the pulse indicated it to be necessary, and that he always found the same advantages from

it as when he had prescribed it in the winter or spring months; but at the same time concedes that he does not defend its use to the same extent, as to diseases or to quantity, in the native and long settled inhabitants of hot climates as in persons who have recently migrated to them, or who live in climates alternately hot and cold.

Great apparent weakness. This, in acute and violent fevers is always from a depressed state of the system. It resembles, in so many particulars, that weakness which is the effect of the abstraction of stimulus, that it is no wonder they have been confounded by physicians. The same symptoms sometimes arise from opposite states of the system, and occur equally from repletion and inanition. The natural remedy for the former is depletion, and no mode of depleting is so effectual or safe as blood-letting. When a fever of great morbid excitement affects persons of delicate constitutions, and such as have long been subject to debility of the chronic kind, there is in this state of the system the same morbid and preternatural action in the blood vessels that there is in persons of robust habits, and the same remedy is necessary to subdue it in both cases. It is sometimes indicated in a larger quantity in weakly than in robust people, by the plethora which is more easily induced in their relaxed and yielding blood vessels,

and by the greater facility with which ruptures and effusion take place in their viscera. Vomits, purges, sweats, and other evacuating remedies are preferred to bleeding in weakly constitutions, by some physicians; but bleeding is not only more effectual, but more safe, in such habits, than any other depleting remedy.

Infancy and childhood. This is so far from being an objection to bleeding, that the excitable state of the blood vessels in those periods of life renders it peculiarly necessary in their inflammatory diseases.

Old age. The increase of appetite in old people, their inability to use sufficient exercise, whereby their blood vessels become relaxed, plethoric, and excitable, and above all, the translation of the strength of the muscles to the arteries, and of plethora to the veins, all indicate bleeding to be more necessary, in equal circumstances, in old than in middle aged people.

Pregnancy. The inflammation and distention induced upon the uterus, directly, and indirectly upon the whole system, by pregnancy, renders bleeding in the acute states of fever then more necessary than at other times.

Coldness of the extremities and of the whole body. This cold state of fever, when it occurs early, yields more readily to bleeding than to the most cordial medicines.

The long duration of fever. Inflammatory diathesis is often protracted for many weeks in the chronic state of fever. It moreover frequently revives after having disappeared from an accidental irritant affecting some part of the body, particularly the lungs and brain. The pulmonary consumption is often the effect of a chronic fever terminating with fresh inflammatory symptoms by effusions in the lungs. It may easily be prevented by forgetting the number of the days of the patient's fever, and treating the pulmonary affection as if it were a recent complaint.

Objections are made by some to bleeding after the fifth or seventh day in a pleurisy. This prohibition was introduced into medicine at a time when a fear was entertained of arresting the progress of nature in preparing and expelling morbific matter from the system. Dr. Rush asserts, from repeated experience, that "bleeding is safe in every stage of pleurisy in which there is pain and a tense and oppressed pulse, and that it has, when used for the first time after the fifth and seventh days, saved many lives. Bleeding has likewise been limited to a certain number of ounces in several states of fever. If the force of the remote cause of a fever, its degrees of violence, and the habits of the subject of it were always the same, this rule would be a proper one; but this not being the case, we must be governed wholly by the condition of the system, manifested chiefly by the state of the

pulse. To admit of copious bleeding in one state of fever, and not in another, under equal circumstances of morbid excitement, is to prescribe for its name and to forget the changes which climate, season, and previous habits create in all its different states.

The loss of a sufficient quantity of blood is often prevented by patients being apparently worse after the first or second bleeding. This change for the worse, is occasioned by the system rising suddenly from a state of extreme depression, to a state of vigour and activity; but the symptoms consequent thereon are so far from forbidding, that they most forcibly indicate a repetition of blood-letting, and can in no other way be so readily and effectually removed.

Bleeding has been charged with being a weakening remedy. It is so, and in this its merit chiefly consists. The excessive morbid action of the blood vessels must be partially subdued in a fever, before stimulating remedies can be given with safety or advantage. Now, this is usually attempted by depleting medicines, or it is left to time and nature, all of which are frequently either deficient or excessive in their operations. On the contrary, bleeding, by suddenly reducing the morbid action of the blood vessels to a wished-for point of debility, saves a great and unnecessary waste of excitability, and thus prepares the body for the exhibition of such cordial remedies as

are proper to remove the debility which predisposed to the fever.

It has been said that bleeding renders the habitual use of it necessary to health and life. This objection to blood-letting is founded upon an ignorance of the difference between the healthy and morbid action of the blood vessels. Where blood is drawn in health, such a relaxation is induced in the blood vessels as to favour the formation of plethora, which may require habitual bleeding to remove it; but where blood is drawn only in the inflammatory state of fever, the blood vessels are reduced from a morbid degree of strength to that which is natural, in which state no predisposition to plethora is created, and no foundation laid for periodical blood-letting. But there are cases which require even this evil to be hazarded, to prevent a greater.

Bleeding has been accused of bringing on an intermittent fever. This is a new argument in its favour; for when it produces that state of fever, it converts a latent and perhaps a dangerous disease into one that is obvious to the senses, and under the dominion of medicine.

It has been said that bleeding, more especially where it is copious, predisposes to effusions of serum in the lungs, chest, bowels, limbs, and brain. In replying to this objection, the eloquent professor Rush

addressed his pupils in the following language: "Ask the poor patients who come panting to the door of our hospital, with swelled legs and hard bellies, every fall, whether they have been too copiously bled, and they will all tell you that no lancet has come near their arms. Ask the parents who still mourn the loss of children, who have died in our city of the internal dropsy of the brain, whether they were destroyed by excessive blood-letting? If the remembrance of the acute sufferings which accompanied their sickness and death will permit these parents to speak, they will tell you that every medicine except bleeding had been tried to no purpose in their children's diseases. Go to those families in which I have practised for many years, and inquire whether there is a living or a dead instance of dropsy having followed in any one of them the use of my lancet? Let the undertakers and grave-diggers bear witness against me if I have ever, in the course of my practice, conveyed the body of a single dropsical patient into their hands by excessive blood-letting? No—dropsies like abscesses and gangrenous eruptions upon the skin, arise in most cases from the want of sufficient bleeding in inflammatory diseases. Debility, whether induced by action or abstraction, seldom disposes to effusion. Who ever heard of dropsy succeeding famine? And how rarely do we see it accompany the extreme debility of old age?"

"If ever bleeding kills," says Botallus, either directly or indirectly through the instrumentality of other diseases, "it is not from its excess, but because it is not drawn in a sufficient quantity, or a proper time." And again says this excellent writer, "one hundred thousand men perish from the want of blood-letting, or from its being used out of time, to one who perishes from too much bleeding prescribed by a physician."

Evacuating remedies of another kind have been said to be more safe than bleeding, and equally effectual in reducing the inflammatory state of fever. Dr. Rush enumerates each of these evacuating remedies, and then draws a comparative view of their effects with blood-letting. "They are—vomits, purges, sweats, salivation, and blisters.

Vomits have often been effectual in curing fevers of a mild character, but they are uncertain in their operation, from the torpor induced by the fever upon the stomach. They are unsafe in many conditions of the system, as in pregnancy, and a disposition to apoplexy and ruptures. They are not subject to the control of a physician, often operating more or less than was intended by him, or indicated by the disease. They are often ineffectual in mild, and always so in fevers of great morbid action.

Purges are useful in discharging acrid fæces and bile from the bowels in fevers. They act, moreover, by creating an artificial weak part, and thus invite morbid excitement from the blood vessels to the bowels. But, like vomits, they are uncertain in their operation, and from the same cause. Many ounces of salts and castor-oil, and whole drachms of calomel and jalap have often been given without effect, to remove the costiveness which is connected with the malignant state of fever. They are not subject to the direction of a physician with respect to the time of their operation, or the quantity or quality of matter they are intended to discharge from the bowels.—They are unsafe in the advanced stage of fevers. Death, in several instances, has succeeded a plentiful spontaneous stool in debilitated habits.

Sweating was introduced into practice at a time when morbific matter was supposed to be the proximate cause of fever. It acts, not by expelling any thing exclusively morbid from the blood, but by abstracting a portion of its fluid parts, and thus reducing the action of the blood vessels. But sweating remedies are uncertain; large and repeated doses of them being often given to no purpose. They are slow and disagreeable where they succeed in curing fever. Like vomits and purges, they are not under the direction of a physician, with respect to the quantity

of fluid discharged by them. They are sometimes, even when most profuse, ineffectual in the cure of fever.

None of these objections to sweating remedies are intended to dissuade from their use, when nature shows a disposition to throw off a fever by the pores of the skin; but even then, they often require the aid of bleeding to render them effectual for that purpose.

Mercury, the Sampson of the *materia medica*, has lately added to its reputation by overcoming the inflammatory and malignant state of fever. When it acts by exciting a salivation, from half a pound to two pounds of fluid are discharged by it in a day. The depletion in this way is gradual, whereby fainting is prevented. By exciting and inflaming the glands of the mouth and throat, excitement and inflammation are abstracted from more vital parts. In morbid congestion and excitement in the brain, a salivation is of eminent service, from the proximity of the discharge to the part affected. But it ought not to be depended upon as an exclusive evacuant in the cure of fever. Because it is sometimes impossible by the largest doses of mercury to excite it when the exigencies of the system render it most necessary. Because it is not so quick in its operation as to be proportioned to the rapid progress of the malignant state of fever. Because it is at all times a disagreeable and frequently

a painful remedy, more especially where the teeth are decayed. Because it cannot be proportioned in its duration, or in the quantity of fluid discharged by it, to the violence or changes in the fever.

Blisters are useful in depleting from those parts which are the seats of topical inflammation, but their effects in reducing the morbid and excessive action of the blood vessels are very feeble. To depend upon them in cases of great inflammatory action, is as unwise as it would be to attempt to bale the water from a leaky and sinking ship by the hollow of the hand, instead of discharging it by two or three pumps.

Abstemious diet has sometimes been prescribed as a remedy for fever. It can bear no proportion in its effects to the rapidity and violence of an inflammatory fever. In chronic fever, such as occurs in the pulmonary consumption, it has often been tried to no purpose. Long before it reduces the pulse, it often induces such a relaxation of the tone of the stomach and bowels as to accelerate death.

Bleeding has great advantages over every mode of depleting that has been mentioned. It abstracts one of the exciting causes, viz.—the stimulus of the blood from the seat of fever. Blood-letting is quick in its operation, and may be accommodated to the rapidity of fever, when it manifests itself in apoplexy, palsy, and syncope. It is under the command

of a physician. He may bleed when and where he pleases, and may suit the quantity of blood he draws exactly to the condition of his patient's system. It is a more delicate depleting remedy than most of those which have been mentioned, particularly vomits, purges, and a salivation. There is no immediate danger to life from its use. Patients have sometimes died under the operations of vomits and purges; but no instance can be produced of a patient's dying in a fainty fit, brought on by bleeding. It is less weakening, when used to the extent that is necessary to cure, than the same degrees of vomiting, purging, and sweating. Convalescence is more rapid, and more perfect after bleeding, than after the successful use of any of the other evacuating remedies. By making use of blood-letting in fevers, we are not precluded from the benefits of the other evacuating remedies. Some of them are rendered more certain and more effectual by it, and there are cases of fever in which the combined or successive application of them all is barely sufficient to save life. To rely upon any one evacuating remedy to the exclusion of the others, is like trusting to a pair of oars in a sea voyage, instead of spreading every sail of a ship.

What quantity of blood may be taken with safety from a patient in an inflammatory fever? In a person of an ordinary size, there are supposed to be contained

between twenty-five and twenty-eight pounds of blood. Much more blood may be taken when the blood vessels are in a state of morbid excitement and excitability, than at any other time. One of the uses of the blood is to stimulate the blood-vessels, and thereby to assist in originating and preserving animal life. In a healthy state of the vessels, the whole mass of the blood is necessary for this purpose, but in their state of morbid excitability, a much less quantity of blood than what is natural is sufficient to keep up an equal and vigorous circulation.

An ignorance of the quantity of blood which has been drawn by design, or lost by accident, has contributed very much to encourage prejudices against blood-letting. Mr. Cline drew three hundred and twenty ounces of blood in twenty days from a patient in St. Thomas's hospital, who laboured under a contusion of the head. Dr. Haller mentions one person who lost nine pounds of blood, a second twelve, a third eighteen, and a fourth twenty-two, from the nose, at one time. A fifth lost twelve pounds by vomiting, in one night; and a sixth twenty-two from the lungs. A gentleman at Angola lost between three and four pounds daily from his nose; to cure it he was bled ninety-seven times in one year. A young woman was bled one thousand and twenty times in nineteen years, to cure her of plethora, which dis-

posed her to hysteria. Another young woman lost one hundred and twenty-five ounces of blood by a natural hæmorrhage every month; to cure it, she was bled every day or every other day for fourteen months. In none of these instances was death the consequence of these great evacuations of blood. On the contrary, all the persons alluded to recovered. Many similar instances of the safety, and even benefit of profuse discharges of blood, by nature and art, might be mentioned from other authors.

An ignorance of the rapid manner in which blood is regenerated when lost or drawn, has helped to keep up prejudices against blood-letting. A person (Dr. Haller says) lost five pounds of blood daily from the hæmorrhoidal vessels, for sixty-two days; and another seventy-five pounds of blood in ten days.—The loss each day was supplied by fresh quantities of aliment.

These facts are sufficient to establish the safety and advantages of plentiful blood-letting, in cases of violent fever, and also to show the fallacy and danger of that practice which attempts the cure of such cases of fever, by what is called moderate bleeding. It is better not to bleed at all, than to draw blood disproportioned in quantity to the violence of the fever. If the state of the pulse be our guide, the continuance of its inflammatory action, after the loss of even one

hundred ounces of blood, indicates the necessity of more bleeding, as much as it did the first time a vein was opened. In the use of this remedy, it may be truly said, as in many of the enterprises of life, that nothing is done while any thing remains to be done. Bleeding should be repeated while the symptoms which first indicated it continue, should it be until four fifths of the blood contained in the body are drawn away. In this manner we act in the use of other medicines. Who ever leaves off giving purges in a colic attended with costiveness, before the bowels are opened?

In drawing blood, the quantity should be large or small at a time, according to the state of the system. In fevers and other diseases, which run their courses in a few days or hours, and which threaten immediate dissolution, there can be no limits fixed to the quantity of blood which may be drawn at once, or in a short time; but in chronic states of fever of an inflammatory type, small and frequent bleedings are to be preferred to large ones. We use mercury, antimony, and diet drinks as alteratives in many diseases with advantage. We do not expect to remove debility by two or three immersions in a cold bath. We persist with patience in prescribing all the above remedies for months and years before we expect to reap the full benefits of them. Why should not blood-

letting be used in the same way and have the same chance of doing good.

Bleeding from an artery, commonly called arteriotomy, would probably have many advantages over venesection, could it be performed at all times with ease and safety.

Besides the cases already mentioned, there are several others in which bleeding is proper. It is generally so in madness, which is the effect of a chronic inflammation of the brain, and it is generally so in pregnancy and parturition. In the latter case it not only lessens the pains of delivery, but prevents after-pains, favours the easy and healthy secretion of milk, prevents sore breasts, swelled legs, puerperile fevers, and all the distressing pain of anomalous complaints that often follow child bearing.

Though bleeding is so extensively useful, yet there are many cases in which it is improper. It is forbidden in that state of fever, as well as in other diseases, in which there is reason to believe the brain or viscera are engorged with blood, and the whole system prostrated below the point of reaction. The pulse in these cases is feeble, and sometimes scarcely perceptible, occasioned by the quantity of blood in the blood vessels being reduced, in consequence of the stagnation of large portions of it in the viscera. By bleeding in these cases we deprive the blood vessels

of the feeble remains of the stimulus, which keep up their action, and thus precipitate death.

It is seldom proper beyond the third day in a malignant fever, if it has not been used on the day previous to it. Even the tension of the pulse is not always a sufficient warrant to bleed, for in three days, in a fever which runs its course in five days, the disorganization of the viscera is so complete that a recovery is scarcely to be expected from the lancet. The remedies which give the only chance of relief in this case are purges, blisters, and a salivation.

Where fevers are attended with paroxysms, bleeding should be omitted, or used with great caution in the close of those paroxysms. Bleeding is forbidden, or should be used cautiously in that malignant state of fever in which a weak morbid action takes place in the blood vessels. It is known by a weak and frequent pulse, such as occurs in the typhus fever, and is often met with in the malignant sore throat, and occasionally in the pleurisy and yellow fever.

It should be used sparingly in the diseases of habitual drunkards. The morbid action in such persons, though often violent, is generally transient. It may be compared to a soap bubble. The arteries by being often overstretched by the stimulus of strong drink, do not always contract with the diminution of

blood, and such patients often sink from this cause, in consequence of the free use of the lancet.

It has been forbidden after the suppurative process has begun in local inflammation. It should be omitted in pneumony after copious expectoration has taken place. The lancet can only be required where great pain in coughing and a tense pulse attend this last stage of the disease.

It may be omitted (except when the blood vessels are insulated) in those diseases in which there is time to wait, without danger to life or future health, for the circuitous operation of purging medicines, or abstemious diet. It should be avoided when it can be done without great danger to life, where there is a great and constitutional dread of the operation.

There are cases in which sizy blood should not warrant a repetition of blood-letting. In some of the fevers of our own country, we sometimes see sizy blood followed by symptoms which forbid the repeated use of the lancet, but which yield to other depleting remedies, or to such as are of a cordial nature.

Even a tense pulse does not always call for the repeated use of the lancet. There are instances of incurable consumptions, from tubercles and ulcers in the lungs, in which the pulse cannot be made to feel the least diminution of tension by either copious or frequent bleedings. There are likewise cases of hepa-

tic fever, in which the pulse cannot be subdued by this remedy. This tense state of the pulse is the effect of a suppurative process in the liver. If a sufficient quantity of blood has been drawn in the first state of this disease, there is little danger from leaving the pulse to reduce or wear itself down by a sudden or gradual discharge of the hepatic congestion. The recovery in this case is slow, but it is for the most part certain.

Lastly—there is sometimes a tension in the pulse in hæmorrhages, that will not yield to the lancet.

We now dismiss this subject on which we have dwelt uncommonly long.

Dr. Rush's fondness for the lancet was objected to him by many. But his friends consider it as a great improvement in the treatment of the serious diseases most generally prevalent in the United States. On the correctness of this opinion, his fame as an improver of medicine, in a great degree, must eventually rest.*

* In one of his lectures, Dr. Rush contrasted the nosological system of medicine with his simple system, by observing that the former was like a housekeeper who had a large house with numerous rooms and closets, and a distinct key for each of them, while the latter was like a housekeeper who had a house similarly circumstanced as to rooms and closets, but with this difference, that he had one key which opened all its rooms and closets. On the next day when he entered the lecture room, he observed drawn on the wall by one of the class, a good likeness of Dr. Cullen, with a bunch of keys in his

We have therefore for the most part used his own words in the defence of this practice, though for the sake of brevity, we have omitted the many pleasant anecdotes and striking cases by which he illustrates his principles; and for the same reasons we have often omitted or shortened the arguments he adduces in support of his principles.

The year 1793 brought the theories and the native strength of Dr. Rush's genius to the test. Philadelphia was in that year desolated by the yellow fever, after it had disappeared for thirty-one years. This baffled the skill of the oldest and most judicious physicians. They differed about the nature and treatment of it; but, in general, free evacuations were supposed to be improper from the depressed state of the pulse, which was a common symptom. The prevailing fever was considered by some as a modification of the influenza, and by others as the jail fever. Its various grades and symptoms were considered as so many different diseases, all originating from different causes. There was the same contrariety in the practice of the physicians that there was in their principles. This general calamity lasted for about one hundred days, extend-

hands, labelled *Claviculæ*, and over it a picture of Dr. Rush holding in his hand a lancet labelled *Clavis*. The professor complimented the ingenuity of his pupil, as rightly comprehending his system, and proceeded to his lecture.

ing from July till November. The deaths in the whole of this distressing period were four thousand and forty-four, or something more than thirty-eight each day, on an average. Whole families were confined by it. There was a deficiency of nurses for the sick. There was likewise a great deficiency of physicians, from the desertion of some and the sickness and death of others. At one time there were but three physicians who were able to do business out of their houses, and at this time there were probably not less than six thousand persons ill with the fever.

A cheerful countenance was scarcely to be seen for six weeks. The streets every where discovered marks of the distress that pervaded the city. In walking, for many hundred yards, few persons were met, except such as were in quest of a physician, a nurse, a bleeder, or the men who buried the dead. The hearse alone kept up the remembrance of the noise of carriages or carts in the streets. A black man leading or driving a horse with a corpse on a pair of chair wheels, met the eye in most of the streets of the city at every hour of the day, while the noise of the same wheels, passing slowly over the pavement, kept alive anguish and fear in the sick and well, every hour of the night.

All the physicians, for some time after the commencement of this disease, were unsuccessful in its

treatment. Dr. Rush tried, in the first instance, the gentle purges used in the yellow fever of 1762; but finding them unsuccessful, and observing the disease to assume uncommon symptoms of great prostration of strength, he laid them aside about the 20th of August, and had recourse to ipecacuanha on the first day of the fever, and to the usual remedies for exciting the action of the sanguiferous system, and gave bark in all its usual forms, and joined wine, brandy, and aromatics with it. He applied blisters to the limbs, neck, and head. Finding them all ineffectual, he attempted to rouse the system by wrapping the whole body in blankets dipped in warm vinegar. He rubbed the right side with mercurial ointment, with a view of exciting the action of the vessels in the whole system through the medium of the liver. None of these remedies appeared to be of any service. Perplexed and distressed by his want of success, he waited upon Dr. Stevens, an eminent and worthy physician from St. Croix, who happened then to be in Philadelphia, and asked for such advice and information upon the subject of the disease as his extensive practice in the West Indies would naturally suggest. He replied, that "he had long ago laid aside evacuations of all kinds in the yellow fever; that they had been found to be hurtful, and that the disease yielded more readily to bark, wine, and, above all, to the use of the cold

bath. He advised the bark to be given in large quantities and in every possible way, and pointed out the manner in which the cold bath should be used so as to derive the greatest benefit from it." These remedies were faithfully applied by Dr. Rush. Bark was prescribed by him in large quantities and in various ways. Buckets full of cold water were frequently thrown upon patients. The bark was offensive to the stomach, or rejected by it in every case. The cold bath was grateful, and procured relief in several cases by inducing a moisture on the skin. But three out of four of the patients died to whom the cold bath was administered in addition to the tonic remedies before mentioned.

The disease had a malignity and an obstinacy never before observed, and it spread with a rapidity and mortality far exceeding its ravages in the year 1762, when the yellow fever had last visited Philadelphia. From thirty to seventy died every day, though one third of the inhabitants of the city had fled into the country. In this dreadful state of things, what reward would be reckoned too great to the man who should find out and publish a remedy which would generally cure this wasting pestilence? Heaven, in mercy to the afflicted inhabitants, raised up such a man in Dr. Rush. Well knowing the numerous and complicated distresses which pestilential diseases had often produced

in other countries, the anguish of his soul was inexpressible. But he did not despair: he believed that good was commensurate with evil, and that there did not exist a disease for which the goodness of Providence had not provided a remedy. Under this impression he applied himself with fresh ardour to investigate this novel disease. He ransacked his library and pored over every book that treated of the yellow fever. The result of his researches, for a while, was fruitless. The accounts of the symptoms and cure of the disease, by the authors he consulted, were contradictory, and none of them appeared altogether applicable to the prevailing epidemic. He had among some old papers a manuscript account of the yellow fever as it prevailed in Virginia in the year 1741, which was given to him by Dr. Franklin, and had been written by Dr. Mitchell of Virginia. This was read with attention. In it a remark was made, "that evacuation by purges was more necessary in this than most other fevers, and that an ill-timed scrupulousness about the weakness of the body was of bad consequence in these urging circumstances." Solid reasons were given in support of this opinion, and it was added, "I can affirm that I have given a purge in this case, when the pulse has been so low that it could hardly be felt, and the debility extreme; yet both one and the other have been restored by it." This single sentence was the

groundwork of Dr. Rush's subsequent successful practice.

From these words a new train of ideas suddenly broke in upon his mind. He was led to believe that the weak and low pulse generally observed in this fever, which had hitherto deterred him from the use of strong evacuating remedies, was the effect of debility from an oppressed state of the system. His reasoning powers taught him to distinguish between this and an exhausted state.* His fears from large evacuations were in a moment dissipated. He adopted Dr. Mitchell's theory and practice, and resolved to follow them. It remained now only to fix upon a suitable purge to answer the purpose of freely discharging the contents of the bowels. Calomel, in doses of ten grains, quickened by ten or fifteen grains of jalap, was preferred. The effects of this powder, especially when repeated according to circumstances, not only answered but far exceeded his expectations. It perfectly cured four out of the first five patients to whom he gave it, notwithstanding some of them were advanced several days in the disease.

* The clown who supposes the crooked appearance of a stick when thrust into a pail of water to be real, does not err more against the laws of light than that physician who mistakes the debility which arises from oppression for an exhausted state of the system, and attempts to remove it by stimulating medicines.—*Rush's works, vol. 4, page 38.*

After such a pledge of the safety and success of this new medicine, he communicated the prescription to such of the practitioners as he met in the streets. Some of them he found had been in the use of calomel for several days, but as they had given it in small and single doses only, and had followed it by large doses of bark, wine, and laudanum, they had done little or no good with it. He imparted the prescription to the college of physicians on the third of September, and endeavoured to remove the fears of his fellow citizens, by assuring them that the disease was no longer incurable. The credit it acquired brought him an immense accession of business. It continued to be almost uniformly effectual in nearly all those cases which he was able to attend, either in person or by his pupils. But he did not rely upon purging alone to cure the disease. The theory of it which he had adopted, led him to use other remedies to abstract excess of stimulus from the system. These were blood-letting, cool air, cold drinks, low diet, and application of cold water to the body. He began by drawing a small quantity of blood at a time. The appearance of it when drawn, and its effects upon the system, satisfied him of its safety and efficacy, and encouraged him to proceed. Never did he experience such sublime joy as he now felt in contemplating the success of his remedies. It repaid him for all the toils

and studies of his life. The conquest of this formidable disease was not the effect of accident, nor of the application of a single remedy, but it was the triumph of a principle in medicine. In this joyful state of mind he entered in his note-book, dated the 10th of September—"Thank God! out of one hundred patients whom I have visited or prescribed for this day, I have lost none."

Being unable to comply with the numerous demands which were made upon him for the purging powders, notwithstanding he had employed three persons to assist his pupils in putting them up, and finding himself unable to attend all the persons who sent for him, he furnished the apothecaries with the receipt for the mercurial purges, together with printed directions for giving them, and for the treatment of the disease. Had he consulted his own interest he would silently have pursued his own plans of cure with his old patients, who still confided in him and his new remedies; but he felt at this season of universal distress, his professional obligations to all the citizens of Philadelphia, to be superior to private and personal considerations, and therefore determined, at every hazard, to do every thing in his power to save their lives. Under the influence of this disposition he addressed a letter to the college of physicians, in which he stated his objections to Dr. Stevens's reme-

dies, and defended those he had recommended. He likewise defended them in the public papers, against the attacks that were made upon them by several of the physicians of the city, and occasionally addressed such advice to the citizens as experience had suggested to be useful, to prevent the disease. In none of the recommendations of his remedies did he claim the credit of their discovery. On the contrary, he constantly endeavoured to enforce their adoption by mentioning precedents in favour of their efficacy from the highest authorities in medicine. This controversy was encouraged merely to prevent the greater evil of the depopulation of Philadelphia, by the use of remedies which had been prescribed by himself as well as others, not only without effect, but with evident injury to the sick. The repeated and numerous instances of their inefficacy, and the almost uniform success of the depleting remedies, after awhile procured submission to the latter from nearly all the persons who were affected by the fever.

Many whole families, consisting of five, six, and in three instances, of nine members, were recovered by plentiful purging and bleeding.* These remedies

* The objections that have been made by some to Dr. Rush's principles and practice, as leading to an indiscriminate use of the lancet, mercurial purges, and consequent salivation, in the treatment of the yellow fever and other

were prescribed, with great advantage, by several of the physicians of the city. But the use of them was not restricted to the physicians alone; the clergy, the apothecaries, many private citizens, several intelligent women, and two black men prescribed them with great success. Nay more, many persons prescribed them to themselves. It was owing to the almost universal use of these remedies that the mortality of the disease diminished in proportion as the number of persons who were affected by it increased. It is probable that not less than six thousand of the inhabitants of Phila-

dangerous diseases, are without foundation. His system reprobates all prescriptions, but those that are founded on their suitableness to the present circumstances of the patient. His treatment of the yellow fever in twelve successive years is distinctly laid down in his works, and is not precisely the same in any two years. In a letter dated October 15th, 1803, which the author received from him, Dr. Rush observes: "Our epidemic has been more tractable, than in some former years. I have bled sparingly, purged freely, blistered early, (sometimes on the first day) sweated profusely, with almost universal success. The last remedy was suggested to me by the moisture which I found upon touching the wrists in my first visits to my patients. I have not found it necessary to salivate in a single case. The violent pain and inflammation excited on the arms by the blisters, was a substitute for a sore mouth, and happily saved the stomach and brain by a new and revulsive action on the fourth and fifth days." To those who charged Dr. Rush with using strong mercurial medicines for ordinary complaints, he replied "that he was not in the habit of destroying musquetoes with cannon bullets."

delphia were saved from death, by purging and bleeding during the autumn of 1793.

The credit which this new mode of treating the disease acquired in all parts of the city, produced an immense influx of patients to Dr. Rush. His pupils were constantly employed; at first in putting up purging powders, but after awhile only in bleeding and visiting the sick.

Between the 8th and the 15th of September Dr. Rush visited and prescribed for between a hundred and a hundred and twenty patients a day. In the short intervals of business, which he spent at his meals, his house was filled with patients, chiefly the poor, waiting for advice. For many weeks he seldom ate without prescribing for numbers as he sat at table. To assist him, three of his pupils, Mr. Stall, Mr. Fisher, and Mr. Cox, accepted of rooms in his house, and became members of his family. Their labours now had no remission. He employed every moment in the interval of his visits to the sick, in prescribing in his house for the poor, or in sending answers to messages from his patients. Unable to comply with the numerous applications that were made to him, he was obliged to refuse many every day. His sister counted forty-seven applicants for medical aid turned off in one forenoon before eleven o'clock. In riding through the streets he was often forced to

resist the entreaties of parents imploring a visit to their children, or of children to their parents. He was sometimes obliged to tear himself from persons who attempted to stop him, and to urge his way by driving his chair as speedily as possible beyond the reach of their cries. While he was thus overwhelmed with business, and his own life endangered without being able to answer the numerous calls made on him, he received letters from his friends in the country pressing him in the strongest terms to leave the city. To one of these letters he replied, "that he had resolved to stick to his principles, his practice and his patients to the last extremity."

Dr. Rush's incessant labours of mind and body, by night and by day, nearly cost him his life; but by bleeding and purging, under the direction of Mr. Fisher, then one of his pupils, but now an eminent physician of Columbia, in this state, his valuable life was preserved for twenty-three years' further usefulness.

We have been particular in describing the yellow fever as it appeared in Philadelphia in 1793. This was the most eventful year in the life of Dr. Rush. It laid a solid foundation for his fame, which will last till sin and sickness are no more. Had the same events taken place in the early ages of the Pagan world, he would have been deified; if in the dark ages of the

Christian era, he would have been canonized, and worshipped as a saint. His friends in the nineteenth century prefer no farther claim on their countrymen, than that his meritorious and beneficial services be properly appreciated and kept in grateful remembrance. But they indulge the hope and belief, that unborn generations will point to his descendants and say, "there is a person in whose veins runs the blood of Dr. Rush." Even in his lifetime, his name operated as a draft in favour of his children for the respect and civilities of well-informed strangers, to whom they were known or introduced, or among whom they sojourned. Of this we have seen an instance in this city in 1798, when his eldest son landed in Charleston, on his return from Calcutta.

We now proceed to consider Dr. Rush as an author. His printed works consist of seven volumes, six of which treat of medical subjects, inclusive of the volume of Introductory Lectures. One is a collection of essays, literary, moral, and philosophical. Your time will not permit our review of these invaluable writings, or even to recapitulate the subjects therein discussed.* I shall therefore pass over this part of my

* Dr. Rush's works, printed in his lifetime, treat on the following subjects:

"An inquiry into the natural history of medicine among the Indians of North America, and a comparative view of their diseases and remedies, with those of civilized nations.

subject, only remarking, that his medical works are so original, and so well adapted to our local situation, that they should be carefully perused by every me-

"An account of the climate of Pennsylvania, and its influence upon the human body.

"An account of the bilious remitting fever, as it appeared in Philadelphia in the summer and autumn of the year 1780.

"An account of the *scarlatina anginosa*, as it appeared in Philadelphia in the years 1783 and 1784.

"An inquiry into the cause and cure of the cholera infantum.

"Observations on the cynanche trachealis.

"An account of the efficacy of blisters and bleeding in the cure of obstinate intermitting fevers.

"An account of the disease occasioned by drinking cold water in warm weather, and the method of curing it.

"An account of the efficacy of common salt in the cure of hæmoptysis.

"Thoughts on the cause and cure of pulmonary consumption.

"Observations upon worms in the alimentary canal, and upon anthelmintic medicines.

"An account of the external use of arsenic in the cure of cancers.

"Observations on the tetanus.

"The result of observations made upon the diseases which occurred in the military hospitals of the United States, during the revolutionary war.

"An account of the influence of the military and political events of the American revolution upon the human body.

"An inquiry into the relations of tastes and aliments to each other, and upon the influence of this relation upon health and pleasure.

"The new method of inoculating for the small-pox.

"An inquiry into the effects of ardent spirits upon the human body and mind, with an account of the means of preventing, and the remedies for curing them.

dical student; for they unfold true principles, which will lead the physician of genius to correct, efficient, and energetic practice. To the American student

"Observations on the duties of a physician, and the methods of improving medicine; accommodated to the present state of society and manners in the United States.

"An inquiry into the causes and cure of sore legs.

"An account of the state of the body and mind in old age, with observations on its diseases and their remedies.

"An inquiry into the influence of physical causes upon the moral faculty.

"Observations upon the cause and cure of pulmonary consumption.

"Observations upon the symptoms and cure of dropsies.

"Inquiry into the cause and cure of the gout.

"Observations on the nature and cure of the hydrophobia.

"An account of the measles as they appeared in Philadelphia in the spring of 1789.

"An account of the influenza, as it appeared in Philadelphia in the years 1790 and 1791.

"An inquiry into the cause of animal life.

"Outlines of a theory of fever.

"An account of the bilious yellow fever, as it appeared in Philadelphia in 1793, and of each successive year till 1805.

"An inquiry into the various sources of the usual forms of the summer and autumnal diseases in the United States, and the means of preventing them.

"Facts, intended to prove the yellow fever not to be contagious.

"Defence of blood-letting, as a remedy in certain diseases.

"An inquiry into the comparative states of medicine in Philadelphia, between the years 1760 and 1766, and 1805.

"A volume of essays, literary, moral and philosophical, in which the following subjects are discussed:

"A plan for establishing public schools in Pennsylvania, and for conducting education agreeably to a republican form

they are of incalculable value; for they convey that practical knowledge of our climate, and peculiar diseases, which will contribute more to his success than

of government. Addressed to the legislature, and citizens of Pennsylvania, in the year 1786.

"Of the mode of education proper in a republic.

"Observations upon the study of the Latin and Greek languages, as a branch of liberal education; with hints of a plan of liberal instruction without them, accommodated to the present state of society, manners, and government, in the United States.

"Thoughts upon the amusements and punishments which are proper for schools.

"Thoughts upon female education, accommodated to the present state of society, manners and government, in the United States of America.

"A defence of the Bible as a school book.

"An address to the ministers of the gospel of every denomination in the United States, upon subjects interesting to morals.

"An inquiry into the consistency of the punishment of murder by death, with reason and revelation.

"A plan of a peace-office for the United States.

"Information to Europeans who are disposed to migrate to the United States of America.

"An account of the progress of population, agriculture, manners and government, in Pennsylvania.

"An account of the manners of the German inhabitants of Pennsylvania.

"Thoughts on common sense.

"An account of the vices peculiar to the Indians of North America.

"Observations upon the influence of the habitual use of tobacco, upon health, morals, and property.

"An account of the sugar maple tree of the United States.

any books he can import from foreign countries. His miscellaneous essays deserve the serious attention of every member of our numerous legislative bodies. His lecture on medical jurisprudence should be read, not only by physicians, but by judges, jurymen, and lawyers. This subject has never before been discussed in this country, and very little can be gleaned from all who have written on it in Europe.

Dr. Rush's volume of Medical Inquiries and Observations on the Diseases of the Mind, is the fruit of accurate observation and long experience, in the Pennsylvania hospital. It was his last contribution to the literature of his country. Though for many years digested in his own mind, it was published only six months before his death. Dr. Rush was a public

"An account of the life and death of Edward Drinker, who died on the 17th of November, 1782, in the one hundred and third year of his age.

"Remarkable circumstances in the constitution and life of Ann Woods, an old woman of ninety-six years of age.

"Biographical anecdotes of Benjamin Lay.

"Biographical anecdotes of Anthony Benezet.

"Paradise of negro slaves—a dream.

"Eulogium upon Dr. William Cullen.

"Eulogium upon David Rittenhouse.

"A volume of lectures, most of which were introductory to his annual courses of lectures on the institutes and practice of medicine.

"Medical inquiries and observations on the diseases of the mind."

writer for forty-nine years, and from the nineteenth to the sixty-eighth year of his age. It was a singular opinion of his own, but in unison with his medical system, "that ideas whether acquired from books or by reflection, produced a plethora in the mind, which can only be relieved by depletion from the pen or tongue." It is matter of wonder how a physician who had so many patients to attend; a professor who had so many pupils to instruct, could find leisure to write so much, and at the same time so well. Our wonder will cease when it is known that he suffered no fragments of time to be wasted, and that he improved every opportunity of acquiring knowledge, and used all practicable means for retaining and digesting what he had acquired. In his early youth he had the best instructors, and in every period of his life great opportunities for mental improvement. He was gifted from heaven with a lively imagination, a retentive memory, a discriminating judgment, and he made the most of all these advantages. From boyhood till his last sickness, he was a constant and an indefatigable student. He read much, but thought more. His mind was constantly engrossed with at least one literary inquiry, to which, for the time, he devoted his undivided attention. To make himself master of that subject, he read, he meditated, he conversed. It was less his custom to read a book through, than to read

as much of all the authors within his reach, as bore on the subject of his present inquiry. His active mind brooded over the materials thus collected, compared his ideas, and traced their relations to each other, and from the whole drew his own conclusions. In these, and similar mental exercises, he was habitually and almost constantly employed, and daily aggregated and multiplied his intellectual stores. In this manner his sound judgment was led to form those new combinations which constitute principles in science.* He formed acquaintances with his literary fellow citizens and all well-informed strangers who visited Philadel-

* It was to Dr. Rush as his meat and drink, to combine facts, so as to deduce principles from them. "The learned pigs," said he, "which are exhibited as shows in our country, observe and think, but they cannot reason. This protracted operation of the mind can be performed only by man. Should we build facts upon facts until our pile reached the heavens, they would soon tumble to pieces, unless they were cemented by principles. Medicine without principles is an humble art and a degrading occupation. It reduces a physician to a level with the cook and the nurse, who administer to the appetites and weakness of sick people. But directed by principles it imparts the highest elevation to the intellectual and moral character of man. In spite, therefore, of the obloquy with which they have been treated, let us resolve to cultivate them as long as we live. This, gentlemen, is my determination, while I am able to totter to this chair, and if a tomb-stone be afforded after my death, to rescue my humble name for a few years from oblivion, I ask no further addition to it than that 'I was an advocate for principles in medicine.'"—*Dr. Rush's Introductory Lectures, page* 362.

phia, and drew from them every atom of information he could obtain, by conversing on the subjects with which they were best acquainted. He extracted so largely from the magazine of knowledge deposited in the expanded mind of Dr. Franklin, that he mentioned to me many years ago, his intention to write a book with the title of Frankliniana, in which he proposed to collect the fragments of wisdom which he had treasured in his memory, as they fell in conversation from the lips of this great original genius. To Dr. Rush every place was a school, every one with whom he conversed was a tutor. He was never without a book, for when he had no other, the book of nature was before him, and engaged his attention. In his lectures to his pupils, he advised them to "lay every person they met with, whether in a packet-boat, a stage wagon, or a public road, under contribution, for facts on physical subjects." What the professor recommended to them, he practised himself. His eyes and ears were open to see, hear, and profit by every occurrence. The facts he received from persons in all capacities are improved to some valuable purpose. He illustrates one of his medical theories by a fact communicated by a butcher; another from an observation made by a madman, in the Pennsylvania hospital. In his scientific work in the diseases of the mind, he refers frequently to poets, and parti-

cularly to Shakspeare, to illustrate the history of madness, and apologizes for it in the following words. "They (poets) view the human mind in all its operations, whether natural or morbid, with a microscopic eye, and hence many things arrest their attention which escape the notice of physicians." It may be useful to students to be informed that Dr. Rush constantly kept by him a note-book, consisting of two parts, in one of which he entered facts as they occurred; in the other, ideas and observations as they arose in his own mind, or were suggested by others in conversation.* His mind was under such complete discipline, that he could read or write with perfect composure, in the midst of the noise of his children, the conversation of his family, and the common interrogatories of his visiting patients. A very moderate proportion of his time was devoted to sleep, and

* In his lectures he recommends a similar practice to his pupils. His words are, "there should be no time allotted for recording facts and thoughts. It should be done directly or even indirectly, at all times, and in all places. Even where a pencil cannot be employed, a knot in a handkerchief will preserve an idea until it can be transplanted into a memorandum, or common-place book. In short, there should be no day nor night to a student, and above all, to a student of medicine. He should always, like a plant, be in an absorbing state. Even his dreams should not be permitted to sport themselves idly in his brain. Useful inferences may be deduced from them, by a person who has acquired habits of observation."—*Dr. Rush's Introductory Lectures, page 355.*

much less to the pleasures of the table. In the latter case, sittings were never prolonged but in conversation on useful subjects, and for purposes totally distinct from the gratifications of appetite. In the course of nearly seventy years spent in this manner, he acquired a sum of useful practical knowledge that has rarely been attained by one man in any age or country. It may be useful to survivors, to be informed that his incessant labours, both of mind and body, neither shortened his life, nor impaired his health. In a letter I received from him in 1803, he observes, "I continue, through divine goodness, to enjoy, in the fifty-ninth year of my age, uncommon good health." In a letter written to his kinsman, our associate, Dr. Finley in 1809, he observes: "in my sixty-fifth year I continue to enjoy uncommon health, and the same facility in studying and doing business that I possessed five and twenty years ago." And again, in another, dated March 4th, 1813, about six weeks before his death, he observes: "through divine goodness, I continue to enjoy uncommon health for a man in his sixty-ninth year. Now and then I am reminded of my age by light attacks of the tussis senilis, but they do not impair my strength nor lessen my facility in doing business."

Medical inquiries were the primary objects of Dr. Rush's attention; but he took such a comprehensive

view of his profession, that he made all branches of knowledge tributary to it. From the philosophy of mind as connected with the body, he drew many useful hints respecting the functions and diseases of the latter. Theology; metaphysics; natural and civil history; philosophy, natural, moral, and political; the principles and practices of agriculture; of the liberal, mechanical, and chemical arts; histories of voyages, travels, and of the lives of illustrious characters, and the nature of man under all its varieties of age, country, religion, climate, and form of government, were so far known to him as to furnish him with facts, illustrations, and analogies, casting light on medical subjects. To politics, in the earlier part of his life, he paid great attention; but not to the unimportant controversies stirred up by those who were contending for the loaves and fishes of government. Three great political subjects, for the time being, engrossed his whole soul—the independence of his country—the establishment of good constitutions for the United States, and for his own particular state—to enlighten the public mind and to diffuse correct ideas. On these important disquisitions he laboured night and day. Many were the productions of his pen, which, under a variety of names, issued through the medium of the press to dispel prejudices, obviate objections, correct erroneous impressions, and, in general, to dispose his

fellow citizens to discern the true, extended, permanent interest of their country, and to sacrifice to it all minor considerations. When these great national objects were secured he gradually retired from this field, not a little disgusted with the selfish, crooked politics of men of all parties, in their scramble for power and office. In the year 1798 he thus expressed himself, in a letter to him who now addresses you: "I have been alternately called an aristocrat and a democrat. I am now neither. I am a Christocrat. I believe all power, whether hereditary or elective, will always fail of producing order and happiness in the hands of man. He alone who created and redeemed man is qualified to govern him."* His first sanguine expectations,

* The other parts of this letter are so benevolent and pious, that no apology is necessary for inserting them in a note. They are as follows: "I abhor war in all its forms, and I have often wished a new nomenclature could be invented to designate all its business by more appropriate names. If the capture of a town, by a siege, were called 'national burglary,' the sacking of a country 'highway robbery,' and a battle 'murder,' it would excite more general horror in the minds of men. But, alas! these offences, 'or military evils,' must come. 'But wo unto them by whom they do come.' Never did the folly and wickedness of war appear in more striking colours than at present. On the one hand we behold a great nation, under the banner of just principles, perpetrating the most atrocious acts of fraud, oppression, and rapine; while on the other hand, we behold the nations in Europe that are opposed to her, committing equal acts of violence and cruelty, in defence of their old and corrupted civil

from the excellent institutions of our government, were very much diminished by time. But this did not lessen his respect for representative government as the best calculated to promote human happiness, but impressed more forcibly on his mind the depravity of the human heart, and that all things, as far as they depend on man, tend to evil. While his confidence and trust in every thing human abated, they increased towards God. As he became less of a politician, he became more of a Christian.

While he was engaged in the bustle of politics his country, sensible of his merit, conferred sundry offices on him. He was a member of the congress which, in 1776, declared these states free and independent.* In this event he gloried, and from it he

and ecclesiastical establishments. Between the two contending powers, I believe all the liberty of our globe will be annihilated in a few years. In the 25th chapter of Jeremiah, from the 15th verse to the end, you will find a picture of the distress which awaits our world. But let not Christians be discouraged by these events. They are intended, by producing universal misery, to produce universal prayers for the coming of that kingdom which is described in the Old and New Testament, and whose Head has been emphatically called the '*desire of all nations.*'"

* While attending his duty in congress, Dr. Rush made an observation which, probably, did not occur to any other member. It was as follows: "The late judge Wilson, Dr. Witherspoon, and Mr. John Adams, were the most copious, methodical, and correct extempore speakers in the congress

expected much good, and that of no common kind. While others counted on the increase of commerce, the influx of riches, the high rank among nations, which awaited the new formed states, Dr. Rush's attention was preferably fixed on the expansion of the human mind likely to grow out of independence. From the happy state of things which left every man at liberty to think what he pleased, and to speak what he thought; to pursue his own interest and the impulse of his mind in any way he thought best, without any control from privileged orders, or the restraints of arbitrary government, he anticipated a great increase of talents and knowledge. The progress of eloquence, of science, and of mind, in all its various pursuits, was considered by him as the necessary effect of re-

of the year 1776. They spoke often and long, *but never repeated any thing.* Now *these gentlemen had been in the practice of composing in the early part of their lives.*"

This remark was introduced, after a short preface, by Dr. Rush, thirty-three years after its date, in a lecture delivered to his pupils in 1789, in which he recommended to them, by way of improving their minds, to exercise themselves frequently in composition; "for it has," said he, "many advantages:" among others, he observes, "by habits of composition we enlarge the retentive powers of the mind and acquire order, perspicuity, and correctness in speaking.

The speech of an Indian sachem seldom contains more than three or four ideas. The same thing may be said of nearly all public speakers, however long they may remain upon their feet, who have not been in the habit of composing, and thereby of multiplying and arranging their thoughts."

publican constitutions, and in the prospect of them he rejoiced. Nor was he disappointed, for in a lecture, delivered in November 1799, he observes:— "From a strict attention to the state of mind in this country, before the year 1774 and at the present time, I am satisfied the ratio of intellect is as twenty are to one, and of knowledge as an hundred are to one, in these states, compared with what they were before the American revolution."

Dr. Rush served his country in the capacity of physician-general, in the middle department, in the revolutionary army. The observations he there made on our hospitals, army diseases, and the effects of the revolution on the army and people, are before the public. They constitute a valuable part of his works, and afford an ample testimony of his talent for accurate observation.

For the last fourteen years of his life, he was the treasurer of the national mint, by appointment of president Adams. This office was conferred as an homage to talents and learning, and did equal honour to him who gave and to him who received it.

In the establishment and support of the many private associations for the advancement of human happiness which abound in Pennsylvania, Dr. Rush was uncommonly active. Of Dickinson college, in Carlisle, he may be said to be the father. This, in point

of situation, bears the same relation to Philadelphia as Columbia to Charleston. He saw the tide of population spreading westward, and the necessity of its being accompanied with the means of acquiring an education competent to the purposes of civil society. His influence was not only instrumental in establishing this western college, but particularly so in bringing from Scotland the Rev. Dr. Nisbet, of Montrose, to preside over it. Very few have crossed the Atlantic to settle in these states, whose literary attainments were equal to this gentleman's. Dr. Rush's zeal in the cause of literature was not confined to colleges and universities, he eloquently advocated the establishment of free-schools, and for conducting the education of the youth of the country, agreeably to its republican form of government. "Let there be," he said, "free-schools established in every township, or in districts, consisting of one hundred families. In these schools let children be taught to read and write, and the use of figures. By this plan the whole state will be tied together by one system of education, and become one great and enlightened family." He further adds: "The independence of our country has created a new class of duties to every American. It becomes us, therefore, to adopt our modes of teaching to the peculiar form of our government." He observes, "that an education in our own, is to be pre-

ferred to an education in a foreign country. That the only foundation for a useful education, in a republic, is to be laid in religion. Without this there can be no virtue, and without virtue there can be no liberty; and liberty is the object and life of all republican governments." He declares, " that he would rather see the opinions of Confucius or Mahomed inculcated upon our youth, than see them grow up wholly devoid of a system of religious principles. But the religion he recommends is that of the New Testament." He observes, " All the doctrines and precepts of the Christian religion are calculated to promote the happiness of society, and the safety and well-being of civil government. A Christian cannot fail of being a republican. The history of the creation of man, and of the relation of our species to each other by birth, which is recorded in the Old Testament, is the best refutation that can be given to the divine right of kings, and the strongest argument that can be used in favour of the original and natural equality of all mankind. A Christian cannot fail of being a republican, for every precept of the Gospel inculcates those degrees of humility, self-denial, and brotherly kindness, which are directly opposed to the pride of monarchy and the pageantry of a court. A Christian cannot fail of being useful to the republic, for his religion teacheth him that no man 'liveth to himself.' And,

lastly, a Christian cannot fail of being wholly inoffensive, for his religion teacheth him, in all things, to do to others what he could wish, in like circumstances, they should do to him."

He recommends that "next to the duty which young men owe to their Creator, a regard to their country be inculcated upon them. Let our pupil be taught that he does not belong to himself, but that he is public property. Let him be taught to love his family; but let him be taught at the same time that he must forsake and even forget them, when the welfare of his country requires it. He must love private life; but he must decline no station, however public or responsible it may be, when called to it by the suffrages of his fellow citizens. He must love popularity; but he must despise it when set in competition with the dictates of his judgment, or the real interest of his country. He must love character and have a due sense of injuries; but he must be taught to appeal only to the laws of the state to defend the one and punish the other. He must avoid neutrality in all questions that divide the state; but he must shun the rage and acrimony of party spirit. He must be taught to love his fellow creatures in every part of the world; but he must cherish with a more intense and peculiar affection the citizens of the United States. He must be indulged occasionally in amusements;

but he must be taught that study and business should be his principal pursuits in life. He must love life, and endeavour to acquire as many of its conveniences as possible by industry and economy; but he must be taught that this life "is not his own" when the safety of his country requires it. While we inculcate these republican duties upon our pupil, we must not neglect at the same time to inspire him with republican principles. He must be taught that there can be no durable liberty but in a republic; and that government, like all other sciences, is of a progressive nature. To assist in rendering religious, moral and political instruction more effectual upon the minds of our youth, it will be necessary to subject their bodies to physical discipline. They should live upon a temperate diet, consisting chiefly of broths, milk and vegetables. They should avoid tasting spirituous liquors. They should also be accustomed occasionally to work with their hands in the intervals of study; and in the busy seasons of the year in the country. Moderate sleep, silence, occasional solitude and cleanliness, should be inculcated upon them." He hazards the bold assertion that "it is possible to convert men into republican machines. This must be done, if we expect them to perform their parts properly in the great machine of the government of the state. That republic is sophistica-

ted with monarchy or aristocracy that does not revolve upon the wills of the people, and these must be fitted to each other by means of education, before they can be made to produce regularity and unison in government. Too much pains cannot be taken to teach our youth to read and write our American language with propriety and elegance." He asserts that "eloquence is the first accomplishment in a republic, and often sets the whole machine of government in motion. Let our youth therefore be instructed in this art. We do not extol it too highly, when we attribute as much to the power of eloquence as to the sword in bringing about the American revolution."

He recommends that "a regular course of lectures be given upon history and chronology—that our youth be instructed in the history of the ancient republics, and the progress of liberty and tyranny in the different states of Europe, and in the numerous facts that relate to the origin and present state of commerce, together with the nature and principles of money." He considers "commerce as the best security against the influence of hereditary monopolies of land, and therefore the surest protection against aristocracy, and as next to religion in humanizing mankind, and as the means of uniting the different nations of the world together by the ties of mutual

wants and obligations. In a young country, where improvements in agriculture and manufactures are so much to be desired, the cultivation of chemistry, which explains the principles of both of them, should be considered as an object of universal importance."

"Let your youth be instructed in all the means of promoting national prosperity and independence, whether they relate to improvements in agriculture, manufactures, or inland navigation. Considering the nature of our connexion with the United States, it will be necessary to make our pupil acquainted with all the prerogatives of the national government. He must be taught wherein the obligations of individuals and of states are the same, and wherein they differ." He concludes by observing, that he "can form no idea of the golden age, so much celebrated by the poets, more delightful than the contemplation of that happiness which it is now in the power of the legislature of Pennsylvania to confer upon her citizens, by establishing proper modes and places of education in every part of the state." With the same enlightened zeal for the proper education of youth, Dr. Rush pointed out the amusements and punishments which are proper for schools, and proposed an excellent plan for female education, accommodated to existing circumstances in this country. He was uncommonly anxious that the Bible should be used as

a school book. On these several subjects this great patriot sowed good seed. It has not yet produced all its fruit; but it is not lost, and the hope of better times may be confidently indulged. The very circumstance of the great lustre which the death of the recommender of these important national measures throws over his now established fame, may induce the legislators of Pennsylvania, and of other states, to reconsider the reasons why they have so long delayed to perform their full-orbed duty to the youth of our beloved country.

The Philadelphia Dispensary, the first institution of the kind in the United States, owes its origin to the illustrious philanthropist whose death we lament. His pen demonstrated the advantages of such an institution; and when the public mind was favourably impressed towards it, he preconcerted with Dr. Moyes, the blind philosopher, to give a public lecture, the proceeds of which were to be appropriated as the beginning of a fund to support this novel institution. Curiosity, prompted by benevolence, drew forth a very large audience. A handsome sum was collected. This formed a nucleus for private contributions. These flowed in so profusely, that the institution was speedily organized, and from the year 1786 to this day, it has been a great public blessing, extending annually medical relief to several hundreds

of the sick poor in their own houses. The good example was speedily followed by Boston, Newyork, Baltimore, Charleston, and some other cities.

The enlarged ideas which grew out of the American revolution, were in unison with the comprehensive views of Dr. Rush. He reflected with horror on the sanguinary punishments annexed to crimes by European, and consequently American legislators, which had no tendency to reform offenders. To eradicate prejudices, and to substitute in their place correct ideas of the legitimate objects of penal laws, was an arduous labour, but essentially prerequisite to any reform. To accomplish a revolution in the public mind favourable to these views, and to the principles of the new republican system of government, a society was instituted in Philadelphia, for promoting political inquiries. This usually met at the house of Dr. Franklin. I have no precise information who was the first mover of these investigations; but it is well known that Dr. Rush was an active member of the society; and that in 1787, he read before it his elaborate dissertation, entitled "An Inquiry into the effects of public punishments on criminals and upon society." This was intended to prepare the public mind for a repeal of an injudicious law, passed in 1786, to introduce the punishment of hard labour for some offences which, under the old system, had been

capital. The labour which the convicts, under this new law, were to perform, was, however, to be public; and they were accordingly chained to wheelbarrows, and were employed to clean the streets and repair the roads: as a mark of infamy their heads were shaved and they wore a particular habit. This alteration of the penal system, was far from having the effect which the friends to humanity wished. Intoxication was daily seen among men who were expiating their crimes by the deprivation of their liberty. They became hardened against shame: the various degrees of vice were mixed in one mass: so that the reformation of criminals was completely defeated.

In the paper read by Dr. Rush, as above stated, he exposed the errors and mischief of the penal law that had been recently passed, and proposed that all punishments should be private, and that they should consist of confinement, different kinds of labour, low diet, and solitude, accompanied by religious instruction. The principles contained in this pamphlet, were opposed with acrimony and ridicule in the newspapers. They were considered as the schemes of a humane heart, but wild and visionary imagination, which it was impossible ever to realize. Notwithstanding a most powerful opposition, the law was repealed, after it had, by a continuance of three years, proved the correctness of the arguments which had been urged against it.

In 1788 Dr. Rush published a second pamphlet, entitled, "An Inquiry into the justice and policy of punishing murder by death," in which he denied the right of government to punish even the crime of deliberate murder by death. To this pamphlet a reply was written by the Rev. Mr. Annan, who chiefly derived his arguments from Scripture. Upon those texts Dr. Rush published a number of remarks, intended to prove that they all referred to the dispensations of Noah and Moses, and that they were completely abrogated by the doctrines and precepts of the Gospel. In the year 1793, Mr. Bradford, the attorney general of Pennsylvania, published an "Inquiry how far the punishment of death is necessary in Pennsylvania," calculated to enforce and establish the principles and arguments previously laid down by Dr. Rush. At the following session of the legislature, the punishment of death was abolished for all crimes except murder of the first degree. In all other cases, solitary confinement and labour were substituted in lieu of corporal punishment and common imprisonment. The result has been highly gratifying to the friends of humanity. Crimes have diminished in number. Few reconvictions have taken place, though many offenders have been restored to society, and in several cases before the expiration of their sentence. Criminals have been restrained from

a repetition of their offences, while they were under a discipline which often issued in their permanent reformation. At the same time, the public burdens have been lessened, for the labour of the confined culprits overpaid all expenses, both of their maintenance and of the establishment." This good example, as in the case of the dispensary, was successfully followed by several of the states, and bids fair to become general throughout the United States.

Dr. Rush's philanthropy was manifested in his great zeal to repress the immoderate use of ardent spirits and of tobacco. His "Inquiry into the effects of ardent spirits upon the human body and mind," has been more read than any of his works. All the medical philosophy that was pertinent to the subject, was incorporated with it. Brilliant descriptions of the personal and family distress occasioned by that vice, and of its havoc on the minds, bodies, and estates of its unhappy votaries, were given, and the means of prevention and cure pointed out. "It was said that the following diseases are the usual consequences of the habitual use of ardent spirits; viz. a decay of appetite, obstructions of the liver, jaundice and dropsy, hoarseness and a husky cough, which often terminate in consumption; redness and eruptions on different parts of the body, a fetid breath, epilepsy, gout in all its various forms of swelled

limbs, colic, palsy and apoplexy; madness; and that in one third of the maniacs in the Pennsylvania hospital, this terrible disease had been induced by hard drinking." It was also observed, "not less destructive are the effects of ardent spirits upon the human mind. They impair the memory, debilitate the understanding, and pervert the moral faculties: and that poverty and misery, crimes and infamy, diseases and death, are all the natural and usual consequences of the intemperate use of ardent spirits." The whole was illustrated by a scale, graduated like a thermometer, showing, at one view, the effects of certain enumerated liquors on the body, the mind, and the condition in society of those who are addicted to them. In the last year of Dr. Rush's life, he presented to the general assembly of the Presbyterian church, in the United States, one thousand copies of this popular pamphlet, to be given away among the people of their respective congregations. About the same time that numerous and respectable body passed a resolution, enjoining on their members to exert themselves in counteracting this ruinous vice.

The increasing use of tobacco was, in like manner, animadverted upon by our medical philanthropist. In his "Observations upon the influence of the habitual use of tobacco upon health, morals, and property," he proves that tobacco impairs the appetite,

prevents the early and complete digestion of the food, and thereby paves the way for the pulmonary consumption; that it produces nervous diseases; that when taken in the form of snuff, it impairs the voice by obstructing the nose, and imparts to the complexion a disagreeable dusky colour; that it creates an artificial thirst, and lays a foundation for drinking strong drinks, which often leads to drunkenness; that it disposes to idleness, which is the root of all evil." In this manner our professor employed his eloquent pen in dissuading from practices which, though to a certain extent harmless, insensibly grow into habits productive of many unforeseen evils.

Dr. Rush was a great practical physician. In the treatment of diseases he was eminently successful, and in describing their symptoms and explaining their causes, he was uncommonly accurate. Nor is this matter of wonder, for he was minutely acquainted with the histories of diseases of all ages, countries and occupations. The annals of medicine cannot produce an account of any great epidemic disease, that has visited our earth in any age or country, which is more minute, accurate, and completely satisfactory, than Dr. Rush's description of the yellow fever of 1793, in Philadelphia. Had he never wrote another line, this alone would have immortalized his name. He was a physician of no common cast. His

prescriptions were not confined to doses of medicine, but to the regulation of the diet, air, dress, exercise, and mental actions of his patients, so as to prevent disease, and to make healthy men and women from invalids. His preeminence as a physician, over so many of his cotemporaries, arose from the following circumstances:

He carefully studied the climate in which he lived,* and the symptoms of acute and chronic diseases therein prevalent, the different habits and constitutions of his patients, and varied his prescriptious with their strength, age, and sex. He marked the influence of different seasons upon the same disease, and varied his practice accordingly. He observed and recorded the influence of successive epidemic diseases upon each other, and the hurtful as well as salutary effects of his remedies, and thereby acquired a knowledge of the character of the reigning disease, in every successive season. His notes and records of the diseases which have taken place in Philadelphia for the last forty-four years, must be of incalculable value to his son and successor. In attendance upon patients, Dr. Rush's manner was so gentle and

* Dr. Rush's account of the climate of Pennsylvania, is a master-piece of its kind. Every physician should write such a one of the country in which he practises, at least for his own use.

sympathizing, that pain and distress were less poignant in his presence. On all occasions he exhibited the manners of a gentleman, and his conversation was sprightly, pleasant and instructive. His letters were peculiarly excellent; for they were dictated by a feeling heart, and adorned with the effusions of a brilliant imagination. His correspondence was extensive and his letters numerous; but every one of them, as far as can be known to an individual, contained something original, pleasant, and sprightly. I can truly say, that in the course of thirty-five years' correspondence and friendly intercourse, I never received a letter from him without being delighted and improved, nor left his company without learning something. His observations were often original, and when otherwise, far from being insipid: for he had an uncommon way of expressing common thoughts. He possessed in a high degree those talents which engage the heart. He took so lively an interest in every thing that concerned his pupils, that each of them believed himself to be a favourite, while his kind offices to all, proved that he was the common friend and father of them all. One of his lectures was devoted to their instruction in the exercise of their profession, so as to be most useful to themselves and their country. In it he particularly recommends to them so to arrange their business,

"that it shall as little as possible interfere with acts of public homage to the Supreme Being;" as "the neglect of this religious and social duty, generally produces a relaxation either in principles or morals."

He urges them "to improve the many opportunities their profession gives them, to diffuse useful knowledge of all kinds, and to take the lead in all public improvements, and particularly to disdain an ignoble silence upon public subjects." In their professional visits, he advises them "never to appear in a hurry, nor to talk of indifferent matters before they have made the necessary inquiries into the symptoms of their patient's disease—to avoid making light of any case. There is scarcely a disease so trifling, that has not directly or indirectly proved an outlet to human life. This consideration should make you anxious and punctual in your attendance upon every acute disease, and keep you from risking your reputation by an improper or hasty prognosis."

"Do not condemn or oppose unnecessarily the simple prescriptions of your patients. Yield to them in matters of little consequence, but maintain an inflexible authority over them in matters that are essential to life.

"Preserve, upon all occasions, a composed or cheerful countenance in the room of your patients, and inspire as much hope of a recovery as you can,

consistent with truth, especially in acute diseases. The extent of the influence of the will over the human body, has not yet been fully ascertained. Does the will beget insensibility to cold, heat, hunger and danger? Does it suspend pain, and raise the body above feeling the pangs of Indian tortures? Let us not then be surprised that it should enable the system to resolve a spasm, to open an obstruction, or to discharge an offending humour.

"Make it a rule never to be angry at any thing a sick man says or does to you. Sickness often adds to the natural irritability of the temper. We are therefore to bear the reproaches of our patients with meekness and silence. It is folly to resent injuries at any time; but it is cowardice to resent an injury from a sick man.

"Avoid giving a patient over in an acute disease. It is impossible to tell in such cases where life ends, and where death begins. Hundreds of patients have recovered, who have been pronounced incurable, to the great disgrace of our profession.

"Let the poor of every description be the objects of your peculiar care. Dr. Boerhaave used to say, 'they were his best patients, because God was their paymaster.' There is an inseparable connexion between a man's duty and his interest. Whenever you are called, therefore, to visit a poor patient, imagine

you hear the voice of the good Samaritan sounding in your ears: 'Take care of him and I will repay thee."

For the further prosecution of their studies, and the improvement of medicine, he recommends to his pupils to open all the dead bodies they can, without doing violence to the feelings of surviving friends, or the prejudices of the common people. "Preserve a register of the weather, and of its influence upon the vegetable productions of the year. Record the epidemics of every season, their time of appearing and disappearing, and the connexion of the weather with each of them. Preserve, likewise, an account of chronic cases. Record the name, age, and occupation of your patient; describe his disease accurately, and the changes produced in it by your remedies; mention the doses of every medicine you administer to him."

He farther recommends to them the study of the anatomy of the human mind, commonly called metaphysics. The reciprocal influence of the body and mind upon each other, can only be ascertained by an accurate knowledge of the faculties of the mind, and of their various modes of combination and action. On this subject he advises them to study the writings of Butler, Locke, Hartley, Reid, and Beattie.

He reminds them "that improvement in medicine is not to be derived only from colleges and universities. Systems of physic are the productions of men of genius and learning; but those facts which constitute real knowledge are to be met with in every walk of life. Remember how many of our most useful remedies have been discovered by quacks. Do not be afraid therefore of conversing with them, and of profiting by their ignorance and temerity in the practice of physic. Medicine has its Pharisees as well as religion. But the spirit of this sect is as unfriendly to the advancement of medicine, as it is to Christian charity. By conversing with quacks we may convey instruction to them, and thereby lessen the mischief they might otherwise do to society. In the pursuit of medical knowledge, let me advise you to converse with nurses and old women. They will often suggest facts in the history and cure of diseases, which have escaped the most sagacious observers of nature. Even negroes and Indians have sometimes stumbled upon discoveries in medicine. Be not ashamed to inquire into them. Converse with persons who have recovered from indispositions without the aid of physicians. Examine the strength and exertions of nature in these cases, and mark the plain and home-made remedy to which they ascribe their recovery. If every man in a city or district could be called upon

to relate to persons appointed to receive and publish his narrative, an exact account of the effects of those remedies which accident or whim has suggested to him, it would furnish a very useful book in medicine. To preserve the facts thus obtained, let me advise you to record them in a book to be kept for that purpose.

"Give as few medicines as possible in tinctures made with distilled spirits. Perhaps there are few cases in which it is safe to exhibit medicines prepared in spirits, in any other form than in drops. Many persons have been innocently seduced into a love of strong drink from taking large or frequent doses of bitters infused in spirits. Let not our profession be reproached, in a single instance, with adding to the calamities that have been entailed upon mankind, by this dreadful species of intemperance."

He concludes by urging his pupils to pay "particular attention to the indigenous medicines of our country. Cultivate or prepare as many of them as possible, and endeavour to enlarge the *materia medica*, by exploring the untrodden fields and forests of the United States. The ipecacuanha, the Seneka and Virginia snake-roots, the Carolina pink-root, the spice-wood, the sassafras, the butter-nut, the thoroughwort, the poke, and the stramonium, are but a small part of the medicinal productions of America.

There are many hundred other plants which now exhale invaluable medicinal virtues in the desert air. Examine, likewise, the mineral waters which are so various in their impregnation, and so common in all parts of our country. Let not the properties of the insects of America escape your investigation. We have already discovered among some of them a fly equal in its blistering qualities to the famous fly of Spain. Who knows but it may be reserved for America to furnish the world, from her productions, with cures for some of those diseases which now elude the power of medicine? Human misery of every kind is evidently on the decline. Happiness, like truth, is a unit. While the world, from the progress of intellectual, moral, and political truth, is becoming a more safe and agreeable abode for man, the votaries of medicine should not be idle. All the doors and windows of the temple of nature have been thrown open by the convulsions of the late American revolution. This is the time, therefore, to press upon her altars. We have already drawn from them discoveries in morals, philosophy, and government; all of which have human happiness for their object. Let us preserve the unity of truth and happiness, by drawing from the same source, in the present critical moment, a knowledge of antidotes to those diseases which are supposed to be incurable."

In lecturing to his class, Dr. Rush mingled the most abstruse investigation with the most agreeable eloquence—the sprightliest sallies of imagination with the most profound disquisitions; and the whole was enlivened with anecdotes, both pleasant and instructive. His language was simple and always intelligible, and his method so judicious, that a consistent view of the subject was communicated, and the recollection of the whole rendered easy. His lectures were originally written on leaves alternately blank. On the blank side he entered, from time to time, every new fact, idea, anecdote, or illustration, that he became possessed of, from any source whatever. In the course of about four years, the blank was generally so far filled up, that he found it expedient to make a new set of lectures. In this way he not only lightened the various subjects on which it was his province to instruct his class, but the light which he cast on them, for forty-four successive years, was continually brightening. The instructions he gave to his pupils by lectures, though highly valuable, were less so than the habits of thinking and observation he, in some degree, forced upon them. His constant aim was to rouse their minds from a passive to an active state, so as to enable them to instruct themselves. Since the first institution of the medical school in Pennsylvania, its capital, Philadelphia, has been the very atmosphere of medicine,

and that atmosphere has been constantly clearing from the fogs of error, and becoming more luminous from the successive and increasing diffusion of the light of truth. A portion of knowledge floated about that hallowed spot, which was imbibed by every student without his being conscious of it, and had an influence in giving to his mind a medical texture. To this happy state of things all the professors contributed. Drs. Wistar, Barton, Physick, Dorsey, Coxe, and James, the survivors of that illustrious and meritorious body, will acknowledge, that their late colleague, professor Rush, was not deficient in his quota. University of Pennsylvania, your numerous sons sympathize with you!—you have sustained a loss indeed! He who for more than forty years has attracted pupils to your institution, and with them wealth and reputation to Philadelphia, is now numbered with the dead! Those lips which have long been advantageously employed in uttering instructions to hundreds of young physicians, are now closed in silence! May Heaven grant that the mantle of your ascended Elijah may fall on some Elisha, who will support, maintain and extend the reputation of the university of Pennsylvania.

We have hitherto viewed Dr. Rush as an author, a physician, a professor, and a philosopher; let us now view him as a man. From him we may learn to be good as well as great. Such was the force of pious

example, and religious education, in the first fifteen years of his life, that though he spent the ensuing nine in Philadelphia, Edinburgh, London, and Paris, exposed to the manifold temptations which are inseparable from great cities, yet he returned, at the age of twenty-four, to his native country with the same purity of morals he brought with him from Nottingham, the country scene of his boyish years. The sneers of infidels; the syren allurements of pleasure; the fascinations of diversions, had no power to divert him from the correct principles and sober orderly habits which had been ingrafted on his mind in early youth. He came home from his travels with no excessive attachment but to his books; no other ambition than that of being a great scholar; and without any desire of making a stepping-stone of his talents and education, to procure for him the means of settling down in inglorious ease, without the farther cultivation and exertion of his talents. In a conversation which he held with the person who now addresses this audience, thirty-five years ago, Dr. Rush observed, that as he stepped from the ship that brought him home from Europe, he resolved that "no circumstance of personal charms, fortune or connexions should tempt him to perpetrate matrimony (his own phrase) till he had extended his studies so far that a family would be no impediment to his farther pro-

gress.* To this resolution of sacrificing every gratification to his love for learning, and his desire of making a distinguished figure in the republic of letters, he steadily adhered. For this he trimmed the midnight lamp: for this, though young, gay, elegant in person and manners, and possessed of the most insinuating address, he kept aloof from all scenes of dissipation, enervating pleasures, and unprofitable company, however fashionable, and devoted himself exclusively to the cultivation of those powers which God had given him. In a letter which I received from him at an early period of my life, he describes his situation in the following forcible language:—"Medicine is my wife; science is my mistress; books are my companions; my study is my grave: there I lie buried, the world 'forgetting, by the world forgot." From his early youth he thus resolved to be a great man, and a great man he became. Diligence conquers the hardest things. Intense desire of knowledge rarely fails of gaining its object. This laudable ambition was a security against vice and folly. It was also a fence placed round his virtues: but there was

* Dr. Rush did not marry till he was thirty-two years of age. The rule he generally laid down was, that no female should marry before she was sixteen, nor male before he was twenty-one; and the longer they both delayed matrimony, after these periods, the better: provided the delay in a female did not exceed twenty-four, or in a male thirty.

a stronger one; an exalted sense of moral obligations, founded on the system of divine truth as revealed in the holy Scriptures. Of this he gave a strong proof in the conformity of his life to the precepts of the Gospel. For the Scriptures he had the highest reverence, and often referred to them in his conversation and letters,* and also in his lectures, and from them drew several ingenious illustrations of his medical opinions. Of the Philadelphia Bible Society he was vice-president, and very active in the discharge of his duty. In the year 1791 he wrote an able defence of the use of the Bible as a school-book. From these oracles of divine truth, he was taught that the individuals of the human race were all related to each other,

* The reader will be so much pleased with the following extract from a letter addressed to the author when in trouble, that his egotism in inserting it will be forgiven: "May your past misfortunes serve but to enhance the value of present blessings. The late Dr. Smith has happily said in one of his sermons, 'were I to pity any man above all the rest of the human race, it should be that man who had never known affliction.' In passing by the houses of our wealthy and prosperous citizens, who, perhaps, in the course of a long life, have never known a loss in business, a death in their families, the treachery of a friend, nor public or private slander, I am disposed to say with the Pharisee, 'I thank God I am not in the condition of those rich men.' The most severe thing that can be said of a man, is that he has had his 'good things in this life,' and the most comfortable thing that can be said to a man who has hopes beyond the grave, is that in this world 'he has had his evil things."

as having a common Father and Redeemer, and, therefore, that the whole family of mankind should be embraced in the arms of an active benevolence. He was there also taught to reduce this divine principle to practice, by doing all in his power for the advancement of the happiness of his fellow men. To this, as we have seen, his whole life was devoted. His charities were great. In addition to ordinary contributions for the relief of distress, clergymen, widows, and helpless women, could always command his gratuitous professional services. It is not less true than strange, that he added to the list of his pensioners, the officers of our late revolutionary army. Here patriotism combined with benevolence! He considered that a large debt of gratitude was due from their fellow citizens to these meritorious men. They had spent the most valuable part of their lives in securing the independence of their country, for which it had not made them adequate compensation. From these liberal views, he rarely charged any of them with the usual fees for his professional services.

Piety to God was an eminent trait in the character of Dr. Rush. In all his printed works, and in all his private transactions, he expressed the most profound respect and veneration for the great Eternal. At the close of his excellent observations on the pulmonary consumption, he observes, "I cannot con-

clude this inquiry without adding, that the author of it derived from his paternal ancestors a predisposition to the pulmonary consumption; and that, between the eighteenth and forty-third year of his age, he has occasionally been afflicted with many of the symptoms of that disease, which he has described. By the constant and faithful use of many of the remedies which he has recommended, he now, in the sixty-first year of his age, enjoys nearly an uninterrupted exemption from pulmonary complaints. In humble gratitude, therefore, to that Being, who condescends to be called the "preserver of men," he thus publicly devotes this result of his experience and inquiries, to the benefit of such of his fellow creatures as may be afflicted with the same disease, sincerely wishing that they may be as useful to them as they have been to the author." In his Introductory Lecture, delivered November 3, 1806, after giving a short retrospective history of the medical school of Philadelphia, he offers up thanks to "that Almighty Being, who took the infant institution by the hand, and conferred upon it its present reputation and prosperity, and supplicates him to inspire its teachers with wisdom and knowledge, and its students with diligence, and all the virtues which adorn the profession of medicine, till science and sickness, and time and death shall be no more." In his admirable account of the bilious yellow fever of

1793, after acknowledging his obligations to his pupils, messrs. Fisher, Coxe, and Woodhouse, he concludes: " but wherewith shall I come before the great Father and Redeemer of men, and what shall I render unto him for the issue of my life from the grave?

Here all language fails—
Come then, expressive silence, muse his praise."

In his last work on the Diseases of the Mind, he begins as follows: " In entering upon the subject of the following inquiries and observations, I feel as if I were about to tread upon consecrated ground. I am aware of its difficulty and importance, and I humbly implore that Being, whose government extends to the thoughts of all his creatures, so to direct mine in this arduous undertaking, that nothing hurtful to my fellow citizens may fall from my pen, and that this work may be the means of lessening a portion of some of the greatest evils of human life."

It was not only by words, but in deeds, that he expressed his reverence for the Deity. It was his usual practice to close the day by reading to his collected family a chapter in the Bible, and afterwards by addressing his Maker in prayer, devoutly acknowledging his goodness for favours received, and humbly imploring his continued protection and blessing. His respect for the Deity led him to respect his ministers, who acted consistently with their high call-

ing. He considered their office of the greatest importance to society, both in this world and that which is to come. He strengthened their hands, and was always ready and willing to promote and encourage arrangements for their comfortable support, and for building churches, and for propagating the Gospel. In an address to ministers of every denomination, on subjects interesting to morals, he remarks: "If there were no hereafter, individuals and societies would be great gainers by attending public worship every Sunday. Rest from labour in the house of God winds up the machine of both soul and body, better than any thing else, and thereby invigorates it for the labours and duties of the ensuing week." Dr. Rush made his first essay, as an author, when an apprentice to Dr. Redman, by writing an eulogy on the Rev. Gilbert Tennent, who had been the friend and fellow labourer of the celebrated George Whitfield, and an active, useful, animated preacher of the Gospel, from 1725 till 1764. On the 27th of May, 1809, he wrote to his cousin, Dr. Finley, of this city: "The General Assembly of the Presbyterian church is now in session in Philadelphia. It is composed of many excellent men, some of whom are highly distinguished by talents and learning as well as piety. I have had some pleasant visits from a number of them, and have been amply rewarded for my civilities to them,

by their agreeable and edifying conversation. They remind me of the happy times, when their places in the church were filled by your venerable father, and his illustrious cotemporaries and friends, messrs. Tennent, Blair, Davies and Rodgers."

In these and several other ways, particularly by his pen and his practice, Dr. Rush supported the cause of morality and religion in our country, and superadded the character of a Christian to that of a scholar. Such was the tenor of the life of our illustrious countryman, who is now no more! No more the ornament of the first medical school in America! No more the instructor, the delight, and the admiration of that portion of our youth which is destined to take care of the healths and lives of their fellow citizens! No more the medical luminary of our western world! But he has not ceased to exist. His soul at this moment, lives in some part of the universe; and his body, though now mouldering in dust, Revelation assures us, at some future time, will rise from the grave, and commence a new and immortal life. Let us therefore be comforted. Death is not an eternal sleep. Its effects are only temporary. In due time they will all be done away, as though they ne'er had been. A reunion of his soul and body will constitute the same person, and the identical Dr. Rush, whom we this day lament as dead, will assuredly live again, and live forever and

ever. In this world he sought for knowledge, as the thirsty traveller in a sandy desert seeks for water; and in his course of nearly seventy years, he acquired an uncommon stock of it, and rejoiced in his success: but who can tell what will be the amount of his acquisitions and consequent pleasure in the ensuing seven hundred years, seven thousand, or if you please, seven millions of years, blest with the beatific vision of the omniscient God? But I forbear, the mind sinks beneath the weight of the sublime and happy destinies of those who are the reconciled friends of "the God of Knowledge."

Gentlemen of the Medical Society, the great ornament of our profession is lost to the republic of medicine, and by his death, an immense blank is made, not easy to be filled. It is our duty to double our diligence, to supply the loss of him who has been the preceptor of more than half of our society. He has done much to illustrate the medical history of our country, and to advance its literary fame; but much still remains to be done. No system of medicine can be perfect while there exists a single disease which we do not know or cannot cure. There cannot therefore be a complete system of medicine till our country has furnished descriptions and cures for all its peculiar diseases. Let us therefore endeavour to supply this defect, and to do all in our power to advance the

healing art. Our deceased fellow labourer in the field of medicine, has recorded his opinion, " that the physician has lived to little purpose, who does not leave his profession in a more improved state than he found it." Let us prevent that reproach from fastening on us, and at the same time do honour to the great American reformer and improver of medicine, by following his bright example. That we may be fortified against all temptations to relax in our studies, or to make a trade of our profession, let us frequently think of Dr. Rush.

150

Consumption
Dropsy
Apoplexy
Gout
Mesenics