

J. Knight

A
REVIEW
OF THE
IMPROVEMENTS, PROGRESS
AND
STATE
OF
MEDICINE
IN THE
XVIIIth CENTURY.

READ ON THE FIRST DAY OF THE XIXth CENTURY,
BEFORE THE
MEDICAL SOCIETY
OF
SOUTH-CAROLINA,
IN PURSUANCE OF THEIR VOTE,
AND
PUBLISHED AT THEIR REQUEST.

By DAVID RAMSAY, M. D.

CHARLESTON:
PRINTED BY W. P. YOUNG, FRANKLIN'S HEAD,
NO. 43, BROAD-STREET.



TO

BENJAMIN RUSH, M. D. ✓

THE AMERICAN SYDENHAM,

WHOSE WRITINGS AND OBSERVATIONS

HAVE GREATLY IMPROVED

THE ART OF MEDICINE,

WHOSE PRECEPTS HAVE FORMED,

AND WHOSE EXAMPLE HAS STIMULATED

MANY OTHERS TO IMPROVE IT.

THE FOLLOWING OBSERVATIONS,

ARE, WITH EQUAL PROPRIETY AND RESPECT

INSCRIBED, BY

The Author.

A REVIEW, &c.

Mr. VICE-PRESIDENT, and

GENTLEMEN of the MEDICAL SOCIETY,

MILLIONS of the human race have lived and died without ever having seen such a day as the present. No one, who now hears me, has ever seen its fellow. No one, who now hears me, will ever see the like again. As each successive summer clothes the trees of the forest with a new foilage, so each successive century, with a few exceptions, presents a new set of inhabitants. On this singular day, of which only one occurs in the life of man, it is decent and proper to make a pause, and look back on that important division of time, which yesterday was completely and for ever closed. It was, therefore, wisely resolved by our society, to appoint one of its members to introduce the new century, by recapitulating what had been done by, and for our profession, in the old.

While the great and striking improvements made by our predecessors, in the healing art, are passing in review before us, the advantages which have resulted from their labours, cannot fail of enkindling in our breasts a holy ambition to imitate their glorious example, by perfecting what they have left undone. I have only to regret that your choice has fallen on one, who has neither the leisure, the knowledge, nor the books necessary to fulfil your intentions. Were my talents equal to the important subject, great would be your entertainment, while I distinctly brought to your recollection the means and the men, who, in the course of the last century, have raised our profes-

tion from an uncertain conjectural art, to the high pitch of credit and usefulness which it now holds in the estimation of mankind ; but feeling, as I most sincerely do, my own incompetency to the arduous task, I cast myself on your candor to overlook the defects of my imperfect attempt.

To obtain a more correct view, of what has been done in the 18th century, we must carry our enquiries a little farther back to the previous state of literature. Lord Bacon may justly be called the father of all modern science. He was a meteor, from whose lustre all nature received some light. Though no physician, he directed physicians to the proper mode of advancing their own profession. He broke the fetters which had bound the human mind from the days of Aristotle, and pointed out the true way for extending and improving useful knowledge. His new mode of philosophizing by experiments, and observations, laid the foundation of the discoveries of the immortal Newton. Sydenham applied the same principles to the healing art, and sought for its improvement, by carefully observing the rise and progress of diseases, and every circumstance that tended to restore or preserve health. This great genius, to whom our profession is so much indebted, departed this life near the end of the 17th century. The improvements he made in the knowledge and treatment of diseases were great ; but he rendered the world much greater service by setting an example of the only true way of improving the art of physic—he began, and others followed. From his day to the present, hundreds and thousands, pursuing the plan he laid down, have each contributed to the common stock ; and, in the aggregate, greatly extended the benefits resulting to mankind from the medical profession.

In the early parts of the 17th century, there was nothing that had the semblance of rational theory in medicine. Nor could any be reasonably expected from physicians who were ignorant of the circulation of the blood, and of the progress of aliment to nutrition. Harvey, by discovering the first, and Pecquet, and Asellius, by discovering the last, set the medical world a thinking, and furnished

nished proper materials for future improvement. These great men, all of whom belonged to the 17th century, laid the foundation of true principles of theory and practice in medicine.

The 18th century began with fair prospects of improvement—for physicians, a short time before the commencement of that æra, were taught to form just notions of the animal economy, and attentively to observe the nature and progress of diseases. The illustrious Boerhaave, possessed of these lights, and of all the knowledge of his predecessors, began publicly to teach medicine in Leyden, in the year 1701. The industry of this great man, in the pursuit of knowledge, was almost incredible. The rising sun has often surprized him with its unexpected rays, after spending whole nights in reading or making philosophical experiments. His comprehensive mind soon collected the scattered fragments of medical science, and formed the whole into a system. This is in all your hands, and for the next ensuing 60 or 70 years was generally received and practised upon by physicians. When we consider that nothing systematic had appeared before, and the many important truths that were unfolded in this, we cannot but feel a grateful sense of the many obligations we are under to the illustrious Boerhaave.

About thirty-five years ago, a theory of diseases, which had first been introduced by Hoffman, was so fully explained, and so ably supported by the celebrated Cullen, of Edinburgh, as to be generally received in that university, and from it extensively propagated. He made spasm to be the proximate cause of fever. According to his system, diseases were seated in the solids, and not in the fluids, as was alledged by the followers of Boerhaave. Though these theories seem to clash in every point, yet the practice grounded on both nearly co-incided. What a Boerhaavian prescribed to alter or expeimorhific matter from the fluids, was substantially the same with what a disciple of Cullen ordered, to remove the spasmodic stricture of the solids.

Dr. John Brown next arose, who blended some great and important leading principles of medicine, with the

wild fallies and eccentricities of an original genius. He reduced all diseases to two kinds, called, by him, sthenic and asthenic ; and pronounced life to be a forced state, occasioned by the operation of stimuli on excitable matter.

We have lately had presented to our view, a system by Dr. Darwin, in which diseases are deduced from the power of sympathy ; and last, though not least, our ingenious countryman, Dr. Rush, has proposed to our consideration, a convulsive motion of the arterial system, as a proximate cause of fever. Instead of examining the comparative merit of these systems, it will accord more with your expectations, that I should present to your view the actual improvements that have been made in the several arts which are necessarily connected with a judicious exercise of the healing art.

First, and as the foundation of all, I begin with anatomy. Of this the ancients were in a great measure ignorant—superstition, and the dread of handling dead bodies, was so general, and with so much difficulty removed, that as late as the 16th century, Charles the Vth called a council of ecclesiastics, to consider of the lawfulness of dissecting human bodies. It was not till the days of Vesalius, who died in 1564, that anatomy began to be cultivated. From his time there have been a few professed anatomists, who made it their study to acquire a knowledge of every part of the human body ; but the knowledge of this art never became general till within the last 100 years. It is said by the biographers of William and John Hunter, both of whom were born and died in the 18th century, that they were the first in England who opened a proper anatomical school, in which the arts of injection, dissection, and of making preparations of different parts of the human body, and of surgery, were systematically taught. Since their time, there have been hundreds, whose knowledge in anatomy far exceeded any thing that was generally known before.

That the absorbents were a distinct system of vessels, is a discovery claimed both by Hunter and Monro. It is not my business to decide between them ; but it is granted on both sides, that the discovery was made about the year 1750.

1750. Several phœnomena in the animal economy, have been accounted for, from the action of these vessels, which were before inexplicable. Whoever contrives a method of increasing their action, without increasing the action of other parts of the system, in a correspondent proportion, will simplify and shorten the cure of many diseases.

Within the last hundred years, thousands of human bodies have been dissected, and every part minutely examined, and its functions, uses, connexions, and relations, accurately ascertained. Several auxiliary arts, have contributed to the progress of anatomical knowledge. Ruysch, who died in 1731, was the first who found out the arts of injection, and making anatomical preparations. This was probably begun in the latter end of the 17th century, but it has been carried to a most astonishing degree of perfection in the 18th. Museums have been instituted, containing fœtuses, in regular gradation, from their first formation to the size of a child on the point of its birth. Of adults of all ages, and of animals of all sorts and countries. By means of colored injections, communications between different parts of the human body have been found, which were never thought of before, and the evanescent terminations of vessels, have been traced with an exactness that was unattainable by any other means. The very modern art of corroding the containing vessels, and leaving the injected matter hardened in the precise form of the vessels, when filled with their appropriate fluids, has put it in the power of gentlemen to study anatomy without disobliging their senses. The improvements in optics, which have principally taken place in the 18th century, have also furnished our modern anatomists with the means of ascertaining minute subdivisions of parts of the human body, which had not been known before, nor ever could by the unassisted human eye. Lyonet who lived till the year 1789, was the first contriver of the anatomical microscope. The engravers art, which has been so much improved within the last fifty years, has also contributed to the diffusion of anatomical knowledge. To this may be added the ingenious imitation of the internal, as well as external parts of the human body, by workers

workers in wax. Such a facility has been given to the acquisition of anatomical knowledge in the 18th century, that it is shameful for any gentleman, pretending to a liberal education, to be destitute of it ; and it is easy for such, in the course of a winter, to acquire a knowledge of the human body, exceeding not only all that Hippocrates or Galen ever knew, but all that was known by the majority of practising physicians and surgeons in the first 17 centuries of the christian era.

This increase of anatomical knowledge, has produced the most beneficial consequences ; it has given new lights, by which physicians have been enabled to explain the animal functions and deduce rational theories of diseases. The art of surgery has been particularly indebted to it. The man, who undertakes to operate on parts, the structure of which is unknown to him, must put to hazard very important interests of his unhappy patient. More knowledge of anatomy, than was possessed by the bulk of surgeons in and before the 17th century, is necessary to the successful performance of many operations in surgery. I would particularly mention the operation of lithotomy, for the hydrocele ; for the aneurism, for the fistula lachrymalis, for the bubonocoele, for the cataract. The first instance, that has occurred in my medical reading, of any person who, blind from his birth, had obtained sight from the aid of surgery, took place in the year 1728, under the hands of surgeon Cheselden, of London. The use of a proper tourniquet, without which fatal hemorrhages must often have taken place in the amputation of large limbs, was first introduced by Mr Petit, who lived till the year 1750. The use of the actual cautery, to restrain hemorrhage in amputations, though not universal, was frequent in the 17th century, and had not entirely ceased fifty years ago. This was succeeded by passing a threaded needle at a considerable distance round the divided arteries, with excruciating pain to the unhappy patient. A mode of securing the arteries, by means of the tenaculum, has been introduced into general use within the last fifty years, which is as effectual, and infinitely less painful. Amputations of the largest limbs, are now performed without

out the use of the needle. In consequence of this improvement, almost the whole of the sufferings of the patient may be comprized within the space of two minutes, which in the former mode of operating, extended to six or seven, and sometimes to ten.

Modern surgeons are much more sparing in the use of caustic applications than their predecessors. Many cures are now daily accomplished by gentle means, which 70 or 80 years ago were supposed to be unattainable without recurring to those which were severe and painful. The use of long forceps in gunshot wounds, and the opinion which was generally entertained that such wounds were poisonous, occasioned unnecessary havoc both of limbs and lives, till they were superseded by a more correct theory, and by an easy superficial mode of dressing; both of which have been lately introduced. The double incision in amputations—the present mode of removing cancerous breasts, and encysted tumours—the lateral operation for the stone in the bladder—the use of the cutting gorget—amputation in the joint of the shoulder, and the superior neatness, ease, and expedition of the present surgery, reflect great honor on the 18th century.

To enumerate all the improvements that have been made in surgery, within even the last sixty years, would be to transcribe a great part of the works of Monro, Heister, the two Hunters, Pott, and of many more. The last of these gentlemen, who has been dead only twelve years, in his valuable treatise on the diseases of the head, first pointed out a communication between the adjacent periosteum and dura mater, without which knowledge many lives have been lost, which might have been saved. Ignorant of this, preceding surgeons must have attended solely to the external wound, while the internal danger, if known, might have been remedied. Pott also first taught us a new and easy mode of reducing fractures by the bent position. This has greatly alleviated the pains and distresses resulting from broken bones.

To contrast the state of surgery, in the 18th century, with what it was in the 17th, give me leave to call to your recollection a case that occurred one hundred and fourteen years

years ago in the enlightened kingdom of France. In the year 1686, it was the misfortune of Lewis the XIVth to have a fistula in ano. The disease was then so little understood, and had so seldom been relieved by any treatment, that the anxiety of the nation was called forth in behalf of their endangered monarch. Repeated consultations were held, new instruments were contrived, all patients in the Hotel de Dieu, and the vicinity, laboring under a similar complaint, were minutely examined, and subjected to operations, to give experience to the surgeon of the king. The operation was at length resolved upon, and successfully performed. One hundred thousand livres were given to Felix the surgeon, and as much to Fagon, the consulting physician; and a grand national thanksgiving was, by public authority, enjoined, and religiously observed: So great have been the improvements, and so extensive the diffusion of knowledge in anatomy and surgery, since the time of Lewis the XIVth, that in our infant country, the United States of America, not yet two centuries old, there are scores of young men, who have not attained their 30th year, who are as capable of giving complete relief, in similar complaints, as the lucky Felix, whose fortune was made by a single operation.

The first book published on the subject of midwifery, in Britain, was in the year 1540, by Thomas Reynold, entitled "the Byrthe of Mankind." Three or four authors followed in the 17th century, who did little more than copy from Reynold. It was reserved for the 18th century to bring this art to such a degree of perfection, that farther improvements, are scarcely to be expected. The first public lectures on midwifery, in England, were given about eighty years ago, by Dr. Moubay, in his own house.

The first hospital in the British dominions, for lying-in women, was established by Sir Richard Manningham, in 1739: Since that period several other similar institutions have been added—one in particular, for the delivery of poor women, in their own houses, was instituted in 1780. In the first six years after its establishment, it had given professional

professional assistance and accommodation to nine thousand eight hundred and nineteen women.

Ah, little do the rich consider, that in their judicious charities, they are only putting out their money on interest for their own, as well as their country's advantage. It has doubtless often been the case, that the contributors to these benevolent institutions, have received their donations back again, in a fourfold proportion, in the persons of their wives and daughters, who have been more judiciously treated, in the hour of nature's sorrow, from the hands of those who had acquired a more accurate knowledge of their profession, in public foundations, than they ever could in private practice.

In these useful institutions, which both began in Great Britain, and astonishingly increased in the 18th century, many hundreds, perhaps I might say thousands, have been practically taught the useful art of midwifery, while the theory of it has been abundantly illustrated, by several able writers, and particularly by Drs. Smellie, Hamilton and Denman; the two last of these gentlemen are still alive, and the other lived till the year 1763, and is said, by his biographer, "to have been the first writer who considered the shape and size of the female pelvis, as adapted to the head of the fœtus, and to have abolished many superstitious notions, and erroneous customs, that prevailed in the management of women in labor, and of children; and to have had the satisfaction to see the most of his maxims adopted in the greatest part of Europe." He is also said to have instructed nearly one thousand pupils in his art.

The ignorance that prevailed before, in this profession, is surprising. Footling deliveries, which are now common and safe, were then scarcely attempted; and in such cases deliveries were effected by the painful and dangerous process of turning the child. Van Swieten quotes several authors of reputation, who had advised lying-in women to keep their beds, till the tenth or twelfth day after parturition; and this was frequently done without changing their bed linen. The children were also incased from head to foot, so as to be totally deprived of the use of their limbs.

These absurd and unnatural practices have, within the last half century, been gradually exploded.

A volume would hardly be sufficient to detail the improvements that have taken place in the theory and practice of physic within the last hundred years. Physicians, who were ignorant of the circulation of the blood, were incompetent to reason on the animal functions. Before Harvey there could be no physiology at all, nor any knowledge either of the internal structure, or functions of any one part of the body. Before Asellius and Pecquet, there could be no idea of nourishment. No one knew how our food passed into the blood, whether it went there or not, or what became of it. Since these new lights shone upon us, a new æra commenced in medicine. Reasoning and observation have gone hand in hand, and reciprocally corrected each other, till a consistent system, both of physiology and pathology, has been introduced.

From this accurate knowledge of the human functions has resulted the art of instructing the deaf and dumb in a method of receiving and communicating ideas. Braidwood of Edinburgh, and the Abbe Sicard of Paris, from an attentive study of the organs of speech, have within the last thirty years, taught numbers of such unfortunate persons, who would otherwise have been lost to society, not only to read and write, but to hold conversation.

These improvements in the various departments of medicine, have been acquired by vigorous exertions of great men. One source, from which much useful knowledge has been obtained, was the dissection of dead bodies, to ascertain the nature and seat of the disorders of which they died. Lieutaud, who has been dead but 20 years, is said to have dissected an almost incredible number of bodies. The result has been communicated to the public in a Latin work, on the seats and causes of diseases. In the year 1760, Morgagni obliged the world with his voluminous, and very important work, "*De Causis & Sedibus morborum per anatomen indagatis*," which continued the observations of others, and also those he had made in sixty years practice, on comparing the symptoms of diseases in living subjects, with
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the appearance of the morbid parts of the same, when dissected.

An infinity of experiments have been made within the last fifty years for medical purposes. The Abbe Fontana is said to have made six thousand experiments on 4000 animals. Think not that these philosophical martyrdoms were useless cruelties. By means of them several laws of the animal economy have been explained. The virtues and powers of medicines have been ascertained; and all has tended to enlighten physicians in the god-like work of alleviating human misery.

An instance will illustrate this position, as well as the general object of my discourse. The first society for the recovery of drowned persons, was instituted in Amsterdam, in 1767. Before that period the received theory was, that drowned persons died in consequence of water rushing into their stomachs. The practice founded thereon was little more than vain attempts to dislodge the offending water, by rolling the unhappy sufferers on barrels. In the eighteenth century ingenious men drowned animals in transparent vessels, filled with water. They attentively observed all the circumstances of their death, and obtained further light by dissecting them after they had ceased to breathe. The result was, a conviction that they died from want of air, and not from a surplussage of water. The next object of experiment was to ascertain the best mode of re-animating the collapsed lungs. From the whole resulted a rational plan of restoring life to the apparently dead. In the four years immediately following the institution of the first humane society in Amsterdam, one hundred and fifty drowned persons were recovered in the United Provinces, by the means pointed out and recommended by the society. In the cases published by them, there were several persons restored, who had been under water from fourteen minutes to an hour and a half. It appears from the records of the humane society, in England, instituted in the year 1774, that upwards of 2000 persons, who had been thus restored to life, after being apparently drowned, walked in procession, on a day set apart a few years ago, to solicit the public charity in behalf of the institution.

stitution. How many must have been lost to their friends and the community, before mankind were acquainted with the god-like art of restoring suspended animation?

The cool regimen in fevers, was introduced in England by Sydenham; but such is the force of prejudice, that the benefits of this innovation were very limited for many years after his death. It is but lately that the progress and dissemination of medical knowledge has made them general.

The cool regimen, within a few years, has been farther extended by washing patients in several cases with cold water. The experience of many, who have adopted this practice, and the support it has received from the pen of Dr. Currie, an eminent physician now practising in Liverpool, give us reason to believe that kind Providence has placed the means of obviating diseases, more within the reach of all men, than has been generally supposed.

Societies, or associations of learned men, for literary purposes, have been multiplied in the 18th century. To mention all the names of such of these as have been established within that period, would fill up several pages. In our young country they are more numerous than the states themselves, and all of them have been founded within the last forty years. In several of these the advancement of medical knowledge is the sole object. In nearly all others it has received partial attention. In both cases they have eminently contributed to the advancement of the healing art. By means of them the observations of many private practitioners have been made public. Discoveries made in one part of the world have been communicated to every other. Useful hints have been first collected, and afterwards, by means of printing disseminated, and knowledge consequently diffused to a degree before unknown. These societies have been particularly useful to our profession—for such is the varying nature of diseases, that something new is always occurring. There are few practitioners who do not occasionally see what was never seen before. It is no exaggeration to assert, that the medical facts and observations, which have been published in the 18th century, have done more towards explaining the functions, and curing the diseases of the human body, than all that remained

remained on record for many, perhaps for all the centuries that had preceded since the creation.

Hospitals and infirmaries, for the relief of the sick, have increased in the 18th century, far beyond what had before taken place. In that period, at least, seventeen new ones have been founded in London and Westminster, and many more in different parts of England, and twelve in Ireland. Most of these have been excellent schools, in which young medical students were taught the practical part of their profession, and enjoyed opportunities of profiting by the prescriptions of veterans in the art. Charity to the sick and poor has gone hand in hand with the diffusion of medical knowledge, and they have reciprocally aided each other. Two novel institutions of this kind, the first that the world has ever seen, reflect equal honor on England and the 18th century. One has been lately instituted for ascertaining, by experiments, the precise effects of the newly discovered elastic fluids. The other for the relief of cancerous patients, in which it is intended to give the utmost scope to medical ingenuity for discovering the best plan of treating that hitherto incurable disease. For this last purpose one gentleman has lately given £.3000.

It may be proper here to mention, that the most celebrated medical school in Europe, was founded in the 18th century. It was in the year 1719, that the elder Monro of Edinburgh began to give lectures in anatomy. He was soon seconded by able professors in every department of medicine. From the joint labors of them and their successors, within the last eighty years, several thousand pupils have been ably fitted for practice.

The materia medica has been eminently improved in the 18th century. The uses of old medicines have been extended. New ones have been introduced. Pharmacy has been stripped of useless superfluities and prescriptions simplified. Sir Hans Sloan, who died in 1752, was the first who introduced Peruvian bark into general use in England. The virtues of this invaluable drug in mortifications, and in scrophula, were unknown eighty years ago. During the 17th century, and for a considerable part of
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the 18th, many entertained great prejudices against the Peruvian bark. The fever and ague which is now daily cured by persons of no medical education, was then a very serious disease. The practice opposed to it, unaided by this grand febrifuge, was so feeble that it frequently failed altogether, and was in many cases so tedious that the constitution received material injury before it succeeded. Dr. Fothergill, in the year 1756, mentions, that the bark had been forbidden to many British students at Leyden, affected with agues; and that to his knowledge some of them had fallen sacrifices to the unhappy prejudices existing against that remedy.

In the 17th century, physicians were as much afraid of antimony, as they now are of arsenic. In that period, physicians were expelled from medical associations for using it in their practice. To take an emetic was then reckoned a serious business, and was counted the last resource of art. Madame de Maintenon who sought for celebrity, by doing what others could not, was sent home by her friends, in the year 1666, as a mad woman, for having taken an emetic, without the pressure of dangerous disease, and afterwards a walk in the same day. Our overseers and nurses now prescribe them with freedom, and often with advantage.

Dr. James, the inventor of the antimonial powder, called by his name, lived till the year 1776. No composition, either ancient or modern, has been so extensively useful as this celebrated febrifuge. It is no exaggeration to say, that in millions of cases it has procured relief to persons laboring under painful and dangerous diseases.

Without peruvian bark, tartar emetic, and glauber's salts, poor would be our means for combating the endemial diseases of our country; yet these three valuable medicines were very little known, and less used, by those who inhabited the same and similar countries, one hundred years ago.

Opium has been used to alleviate pain since the days of Homer, but it was rarely prescribed, and that by a few who kept it a secret. A knowledge of its virtues and uses was a source of both fame and fortune to Paracelsus and
others,

others, in the 16th and 17th centuries. The liquid laudanum of Sydenham, was spoken of in his time, and for many years since his decease, as something almost peculiar to himself, it is now so frequently used and so freely prescribed by people of both sexes, as to be generally found in most decent families for domestic prescription.

The virtues of opium, in mortifications, were first announced to the public by Mr. Pott, whose recent death has been already mentioned. Its efficacy in relieving the lues, was first published by Dr. Michaelis, at the close of our revolutionary war.

Some of the most important uses of mercury have been but lately discovered. The time when it was first introduced into general practice, as a powerful remedy for Hydrocephalus in ternus for diseases of the liver; for the dropsy, and for fevers, must be within the recollection of many physicians who are now alive. In pursuance of a principle laid down and illustrated by John Hunter, of curing one disease by another, mercury has been, of late, successfully used in transferring diseases of the head, of the eyes, and of the bowels to the mouth, where they are less dangerous and more manageable. Ipecacuanha has been advantageously employed by a few, since the days of Piso, as an emetic, and cathartic; but it has only come into general use since the commencement of the 18th century. A knowledge of its virtues, when given in small doses as a tonic, and antidyenteric medicine is of very modern date. Uva Ursi, which is now so celebrated in nephritic complaints, was scarcely known as an article of the *materia medica*, till De Haen, in his *ratio medendi*, printed in the year 1761, proclaimed to the world its virtues. Since that time, there is reason to believe, that it has saved many patients from the painful and dangerous operation of lithotomy.

Columbo root, which is now so commonly and successfully prescribed in dyspepsia, and disorders of the stomach, was very little known or used before the publication of Dr. Percival's essays, in 1772.

Digitalis has been long enrolled in the list of medicines; but it is only since 1785, that in consequence of the publications

cations of Dr. Withering, and others, its virtues in dropsies have been generally known. It is much less since some well attested cases of its efficacy in consumptions, give us ground to hope, that we have found out a remedy, that in some cases, will cure, or at least relieve that hitherto incurable complaint; but on this subject further experience must decide.

The uses of lead were very limited, till Goulard, about the middle of the 18th century, introduced some preparations of it into general practice, as an useful external application. Some very late experiments inform us, that it may be taken internally, in small doses, both safely and advantageously.

Time would fail in dwelling particularly on the benefits derived from Seneca snakeroot, magnesia, castor oil, quassia, simarouba, angustura bark, and a variety of other medicines, which have been either first introduced, or introduced into general practice in the 18th century.

From the connexion that exists between all the sciences, they often reflect light on each other. Sixty years ago, thunder and lightning were supposed by philosophers to be the consequence of accidental mixtures of nitre and sulphur in the atmosphere. Our illustrious countryman, Dr. Franklin, by a strong effort of genius, and hazardous, but decisive experiments, instituted in or about the year 1753, first demonstrated their identity with electricity, and taught lightning to play harmless round our heads. His discoveries on this subject, not only extended the knowledge of philosophers, but enlarged the resources of physicians, for electricity in their hands has been found serviceable in various diseases.

I cannot close my observations on the subject of medicines, without congratulating you, that a handsome beginning has lately been made towards an American materia medica, by Dr. Barton of Philadelphia. This well informed and indefatigable interpreter of nature, has prosecuted, and continues to prosecute this subject with so much industry and ability, as to give us ground to hope, that at no very distant day, remedies for our endemial diseases will be found in our own country. Among other discoveries

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on this subject, an insect equal to the Spanish fly, for raising a blister, has been lately pointed out by Dr. Chapman, of Pennsylvania, which has been repeatedly, and successfully used for that purpose, by several physicians of the United States.

Botany is intimately connected with medicine, and the great improvements lately made in the one, have reflected light on the other. In the 17th century, the fragments of botanical knowledge were not reduced to system. Tournefort, who died in 1708, introduced an arrangement that was ingenious and useful; but that, and every thing of the kind has, by common consent, given way to the system of Linnæus. This great naturalist, who was born and died in the eighteenth century, has the same title to celebrity in botany, that Newton has in philosophy. He has reduced all vegetables to twenty-four classes. These are subdivided into orders, genera, species, and varieties. By this artificial arrangement, any vegetable, in any part of the world, that is found to possess uncommon virtue, either in medicine or the arts, may, by a botanical description (especially if accompanied with a drawing) be so designated as to be easily known by persons in the most distant regions of the globe, who are acquainted with the Linnæan system.

This knowledge has been successfully employed to identify articles of the materia medica, and to prevent frauds and impositions in the transfer thereof; but much greater benefits may be expected to result from it. It is well known, that the Author of Nature, for the most part, has conferred similar virtues on the different species of the same genera. By pursuing this track, the ingenious botanical physician may encrease his knowledge of medicinal vegetables to an amazing extent.

I leave the farther investigation of this subject to my successor, who on the commencement of the 20th century, will entertain the then medical society of South Carolina, with discoveries made in the 19th, of the powers and virtues of vegetables far exceeding any thing that is now either known or thought of. The names and distinctive characters of every thing that bears a flower, have been systematically arranged in the century which ended yesterday.

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That which has begun to day, building on this foundation, will doubtless proceed to ascertain their respective virtues and uses. In accomplishing this great work, the Linnæan system of the 18th century will enable the literati of all parties, languages and countries, to co-operate.

So great, and so many have been the very late improvements in chemistry, that it has undergone a complete revolution. Such of our profession, as were initiated in this essential part of a medical education, thirty or forty years ago, must once more submit to be learners, or be incapable of profiting by the perusal of the latest authors, who have treated on this useful art. Anterior to the last fifty years, the objects of chemistry were chiefly metals and medicines. But within that period, they have been surprisingly enlarged. Earth, air, water, heat, light and fire have been subjected to its empire. The various changes of matter in the nutrition and formation of animals, and vegetables, and in breaking them down after death into their pristine elements, and either fertilising the earth, or poisoning the air, have been successfully investigated. From these investigations, physicians, as well as philosophers, have derived advantages. It is not your wish, nor my intention, to speak of chemistry as a branch of general science; but only as auxiliary to, and connected with the practice of medicine. In this limited view of the subject, I observe that it has taught us many improvements in preparing and compounding sundry articles of the *materia medica*, so as to render them more efficient in practice, and also a cheaper mode of preparing sundry medicines. Mr. Ward, who died not many years ago, first found out a mode of preparing oil of vitriol from sulphur, by which it was obtained equally good, at one-fourth of its former price. Volatile alkali, which formerly was obtained from the horns of only one animal, is now extracted from the bones of all.

Substitutes of equal efficacy have taken the place of disagreeable medicines. The sal seignette, and soda phosphorata, will render a patient as essential service as glauber's salt, though infinitely less nauseous.

Ventilators have been introduced by the celebrated Dr. Hales,

Hales, who died in 1761, by means of which foul air may be removed from hospitals, ships, prisons, and such places, where many have been confined in narrow limits.

A simple and easy process has been lately contrived, by which salt water may be rendered drinkable.

Chemistry, in the 18th century, has reflected much light on medicine, by analysing the various human secretions, and constituent parts of the human body. Experiments made with calculi, and with gall stones, have led to a successful mode of prying their effects.

By a recent analysis of the bones of ricketty patients, a discovery has been made that calcareous phosphate was wanting to give strength and consistence to such bones. To ascertain the practicability of introducing the deficient calcareous phosphate into the living subject, fowls were fed on a paste, mixed with calcareous phosphate, and pulverised madder root, for two months, and then killed. On dissection, it was found that the calcareous phosphate, colored with madder root, had been conveyed to the part effected, and the solidity of the bones thereby increased. From the whole resulted a rational theory and successful practice for the relief of ricketty patients. In this, and a variety of similar methods, the modern improvements in chemistry have lent an essential aid to the successful practice of physic.

In the 17th century, philosophers were busied in ascertaining the elasticity, weight and density of common air; but in the 18th, important discoveries have been made of its component parts. About thirty years ago, Dr. Priestly discovered, that atmospheric air consists principally of two elastic fluids---the one has been called azotic, or nitrogene gas, the other oxygen gas or vital air. From this much good is likely to result to medicine. Every vegetable that grows, is found to be doubly useful in absorbing tainted, and emitting wholesome air. Oxygen, or vital air, has been successfully employed in relieving some of the most obstinate diseases to which human nature is liable. Fixed air, or carbonic gas, has also been found useful in a variety of cases. The attention of medical men is now fixed on pneumatic medicine. We must patiently wait till time,

experience and a farther application of elastic fluids, to medical purposes, shall throw more light on this novel subject; but from the promising issue of a few experiments, already made, we may reasonably indulge the hope, that great benefits will, at no very distant day, result from a more accurate and experimental knowledge of the virtues and uses of the different kinds of air, which modern chemistry has brought to view.

Should any object, that notwithstanding all our boasted improvements in medicine, and the arts connected with it, that mankind continue to die as heretofore. To such I reply, that as man is made mortal, physic cannot make him immortal. Nevertheless, it may be truly affirmed, that we have a better chance for life and health than our ancestors had.

In cases of accidents, or of the many natural diseases, which require the hand of an operator, how much greater is our chance of obtaining relief from the arts of modern surgery, in the hands of men who are intimately acquainted with the internal structure of the human body, than our forefathers could have had, when anatomy and surgery were both in their infancy? In so little comparative estimation, were the professors of the latter art formerly held, that the 18th century was considerably advanced before a separation took place between the duties of barbers and surgeons; which had been previously discharged by the same men, under the compound name of surgeon-barbers.

In the 17th century, many physicians excluded fresh air from their patients; and attempted, by external warmth, and heating drinks, and medicines, to force sweats. Even the enlightened Sydenham, placed his chief dependence for the cure of many of them, on the lancet, a purge, and diluting pifans. How inefficient must such practice have been, and how little chance for their lives must the feverish patients of those days have had, when compared with their descendants; indulged with fresh air, and treated for similar disorders with the preparations of antimony, mercury, bark, opium, cantharides and neutral salts, as given in modern practice?

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Than Sydenham, the world never produced a man of more medical genius. Were he to rise from his grave, repossessed of all the knowledge he was master of in 1689, at the time of his death, and to resume the practice of physic, under a prohibition of reading the works of Boerhaave, Van Swieten, Cullen, and other medical luminaries of the 18th century, and to remain ignorant of the improvements that have been made in the practice of physic, since his death, poor would be his success, when contrasted with that of many of our young practitioners of inferior genius, possessed of the more efficient modern medicines, and directed by those great lights, which never shone on him.

A familiar instance will illustrate this position: If Sydenham had been consulted in case of a burn, he would have applied spirit of wine; but those who had read the treatise of Goulard on lead, published about the middle of the 18th century would have moistened the affected parts with his celebrated vegeto mineral water. Subsequent experience has demonstrated, that the immediate, constant, and successive application, even of cold water, to the affected parts, not only removes present pain, but prepares them sooner and better for healing dressings, than the pain-giving ardent spirits, formerly recommended and used. Those who doubt of the value of late improvements in our profession, are requested, in case of their being burnt, to try the difference between Sydenham's prescription of spirit of wine, and the modern ones last mentioned.

The art of preserving and restoring health, is no longer confined to folios, and inaccessible to all who are not adepts in the Latin and Greek languages. It has been explained in our mother tongue, and stripped of the terms of art. This diffusion of medical knowledge, among common people, by Tissot, Buchan, Hamilton, Underwood, and other popular writers, may have encouraged some adventurous persons to go beyond their depth; but the good resulting from it has far over-balanced the evil. Much of superstition, and many popular errors, have been exploded; the common people have been accustomed to think and reason on medical subjects. They are consequently
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less liable to be duped by ignorant or designing pretenders. They have been taught not to expect impossibilities from medicines; but to place a due reliance on air, exercise and their own exertions. The remote and predisposing causes of diseases, have been more generally known, and of course guarded against. The consequences of indolence, intemperance, and ungoverned passions, have been so clearly pointed out, that few can offend, but with their eyes open. Mothers of families, with the aid of common understandings, enlightened and directed by the judicious precepts of Hamilton and Underwood, are now much more capable of managing themselves, and their children, in the ordinary course of things, than their grandmothers were from the advice of physicians, detailed to them only on pressing emergencies.

The lives and healths of pregnant women, and of their offspring, are not now, as formerly, endangered by the absurd practice of tight lacing. Lying-in women are no longer, as was usual in the days of Sydenham, and long since, confined to their beds for eight or ten days after parturition, in the unpleasant situation consequent thereon. Nor are children swathed, like Egyptian mummies, nor their breasts and bowels confined by tight stays, but they are indulged with the free use of their limbs. Since the discontinuance of these unnatural practices, there have been fewer instances of crookedness, especially among the female sex.

I appeal to those, who can look back on thirty, forty, or fifty years, whether a great reformation, in these particulars, has not taken place within the sphere of their own observation; and whether in consequence of more judicious treatment there are not more women safely carried through the perilous periods of pregnancy and childbirth; and whether there are not fewer instances of deformity, and a greater proportion of children raised at the present time, than formerly. In the same number of families, where our ancestors counted four or five, we can now shew seven or eight. Our schools, our streets, and our houses are filled with straight, well formed children, most of whom have happily got over the small pox, with-

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out any of those marks of it, which deformed their grandmothers.

This terrible disorder could not be avoided for centuries past, either by us or our ancestors; but how great is the difference in our favor? Till the 18th century inoculation was unknown in a great part of Europe, and the whole of America. The small pox then, like a wide spreading pestilence, swept off whole families. Among those who survived many lost one or both of their eyes, and were deprived of a great proportion of their personal charms, by deep indentations on the human face divine. When the beneficial practice of inoculation was first introduced, and for several years after, the most skilful inoculators were unreasonably afraid of cool air. They loaded their patients with mercury, and tortured them with deep crucial incisions, in which extraneous substances, impregnated with the variolous matter, were buried. It is within the recollection of many, that about forty years ago, when the first general inoculation took place in Charleston, there was a scene of the deepest distress, and such a stagnation of business, that the grass grew in the streets. The number of deaths was so great, that our old inhabitants suppose it to have been nearly equal to a third of the whole number of inoculated persons. There were then able physicians; but they labored under such mistakes and prejudices, that it was no uncommon practice to nail blankets over the shut windows of closed rooms, to exclude every particle of cool fresh air from their variolous patients, whose comfort and safety depended on its free admission. The practice of inoculation, is of late so much improved, and simplified, that persons without medical education, now undertake it with more ease and safety, than the ablest practitioners did forty or fifty years ago.

The dangers from inoculated small pox are now comparatively slight. Even these are in a fair way of being rendered so by substituting in their place a new disease called the cow-pox. The inconveniences from this are very inconsiderable, and yet it is said to afford effectual security against the small pox. Very few years have elapsed since this new practice was introduced in England;
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and but a few months since the same has been attempted in the United States. The success attending it has been so great, and the recommendations of it by Drs. Jenner, Pearson, Lettsome, Woodville, and others in England, and by Dr. Waterhouse in these United States, so pointed and satisfactory that its universal reception will probably be no very distant event. In this case, if farther experience corresponds with the past, the extermination of the small pox will be a necessary consequence.

Our profession, in the 18th century, has triumphed as much over the scurvy, as over the small pox. A few voyages round the world, and many to the East-Indies, have been made at different periods in the course of the three last centuries ; but very little improvement was made in the art of preserving the health of seamen, till within the last 60 years. Dr. Lind may properly be called the father of nautical medicine. Before his time history is full of the failure of maritime expeditions, and of the havoc of the human race in long voyages, from the general prevalence of scurvy. In the preface to his valuable work on this disease, he states that it alone, had cut off more lives, in the last war in which his country was engaged, than the united efforts of the French and Spanish arms. In the first voyage for the establishment of the East-India company (which took place near the beginning of the 17th century) out of 480 men, 105 died of scurvy, before they had reached the Cape of Good Hope. Sir Richard Hawkins, an intelligent navigator, who lived at the same time, has left on record, that in twenty years he alone, could give an account of ten thousand mariners, who had been consumed by the scurvy. About sixty years ago, Lord Anson, in his voyage round the world, lost from the same disorder, four in five of his original number ; and was obliged to draw all the men, capable of doing duty, from two of his vessels to man the third.

These historical facts are stated as specimens of the havoc made among mariners, before medical philosophers had successfully turned their attention to the diseases of seamen, and particularly to the prevention and cure of the scurvy. The lights lately thrown on this disease, have
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completely subjected it to the empire of medicine. The sea air has been acquitted of all malignity; and it has been proved, that as much (if not more) health may be enjoyed in the longest voyages, as on land. The track of those who sail to distant regions is no longer marked with blood. Commerce, at present, is carried on without that waste of human life, which till lately increased with its increase, and extended with its extent. A voyage round the world has of late been attended with as little danger as the tour of Europe.

This great revolution in favor of humanity, has been effected in the last 60 years by simple means partly known before; but within that period, for the first time, reduced to system, under the direction of medical philosophers. It is worth while to trace the progress of these improvements in nautical medicine. Physicians, from an attentive consideration of the nature and symptoms of the scurvy, referred it to the class of putrid diseases. They next instituted experiments, to ascertain the best mode of enabling the human system to resist all tendency to a septic diathesis—In prosecuting this subject, they found that fixed air, evolved in the process of fermentation, was among the most powerful means for accomplishing their wishes. They also discovered, that it abounded in wine, in cyder, in beer, in prepared cabbages, in rye, barley, oatmeal, and several other substances, especially when in a fermenting state. Barley, in the form of malt, was selected as being the most convenient vehicle for impregnating the human system with this antiseptic gas: for it afforded materials for making a pleasant fermenting drink, by converting it into wort; which at any time might thus be procured fresh and good in the longest voyages.

These, and similar reasonings, experiments, and observations of Drs. Macbride, Pringle, Lind, and others, laid the outlines of a plan for preventing and curing the scurvy. The whole was submitted to the test of experience: vessels were furnished with stores, agreeably to these ideas, and sent to sea. The success exceeded all expectation. The judicious use of wort, of beer, of sour

of acids, particularly of lemon juice, together with attention to diet, to climates, to cleanliness and purification of the air have, under the divine favor, been instrumental in preserving the lives of many thousands within the last 40 years. If a Roman, who saved the life of but one citizen, was deemed worthy of a civic crown, what honors are not due to the medical philosophers just mentioned; and also to Robertson, to Cook, to Clarke, to Blane, to Trotter, and others, who have reduced these modern regulations, for preserving the health of seamen, to so plain a system, that any intelligent captain may put them in practice?

This has been in such a progressive state of improvement, that though the number of seamen, voted by the British parliament, is now 20,000 more than ever were employed before; yet with all this increase of force, the whole number of patients admitted into Haslar and Plymouth hospitals, in the first five years of the present war between France and England, (from 1793 to 1797) is 27,000 less than were admitted into the same hospitals the five first years of the last war (from 1778 to 1782) between the same nations.

The philosophic captain Cook, in addition to some new and beneficial regulations of his own, has the merit of being the first who reduced the improvements of modern nautical medicine to practice, with unprecedented success. About thirty years ago, with a company of 118 men, he performed a voyage of three years and eighteen days, throughout all the climates, from 52 degrees north, to 72 degrees south, with the loss of only one man, who had been previously diseased. The improved methods he had adopted for the preservation of the health of his crew, being generally known, voyages to distant regions, and even round the world, have been since more frequently undertaken, and without any serious apprehension from the consequences of long confinement on shipboard.

The Columbia, fitted out at Boston, in 1787, sailed round the world, and returned in the usual time with the loss of only one man. Three years ago, forty-eight vessels sailed from Salem, in Massachusetts, to the East-Indies.

dies. In these, and other equally distant voyages, (which have astonishingly increased, especially in our country, within the last ten years) we seldom or never hear of the scurvy, or of any uncommon sickness or mortality.

Such have been the triumphs of our profession, in favor of seamen. They have also been great in alleviating the miseries of those who live on land. Medical philosophy, in the 18th century, has been successfully employed in devising the most effectual means of preserving the health of men in general, and particularly in cities, armies, camps, hospitals and gaols. Physicians, by writing in a popular style, and in the English language (both of which began to be fashionable in the eighteenth century) have enlightened their fellow-men on the subject of cleanliness, on the necessity of pure water, of wholesome air, and free ventilation. They have instructed them in the comparative merit of different articles of diet. They have taught them the advantages of temperance, activity, and well governed passions.

It is said, from good authority, that many of the modern regulations introduced into the police of the city of London, favorable to the health of its inhabitants, were adopted on the suggestion and recommendation of the late great and good Dr. Fothergill.

Sir John Pringle, who died in the year 1782, was the first physician who treated fully on the diseases of armies, and pointed out the means of preserving the health of soldiers in camps, garrisons, and hospitals. He also was among the first who treated of the gaol fever. In these departments of medicine, he has been followed by others, who have enlarged and improved the whole into system.

Much of the health of mankind depends on what they eat and drink, and this has been very much influenced by the advice and opinion of physicians. In the 17th century, animal food constituted an undue proportion of the food of man; but in the 18th century they have been taught better. Physicians have recommended the free use of greens, and other vegetables; and both by their precepts and example, encouraged horticulture and farming. Sir John Pringle quotes the authority of Miller, the keep-

er of the botanic garden, at Chelsea, and author of the *Gardeners' dictionary*, for the truth of the following assertion: "that the quantity of vegetables used in and near London, at the time of the revolution in 1688, was not more than one sixth of what was used in the same place, about the year one thousand seven hundred and fifty." In the same period, hopped beer, wine, vinous liquors, fruit and sugar, have also been introduced into more general use. The same medical influence, which has been exerted in favor of these, has been directed with all its force (and doubtless in many cases with success) against the free use of ardent spirits. Physicians, by experiments and reasoning, have demonstrated, that the latter instead of affording any nourishment, lay the foundation of many diseases, and undermine life itself. They also proved, that the former were strongly antiseptic, and not only supported and strengthened the human system, but enabled it to resist many diseases. As the articles thus recommended were agreeable to our undepraved taste, they were readily introduced into common use.

The austerity of the 17th century, forbade almost every thing, in which the natural relish of man delighted, and enjoined, as beneficial only, such things as were painful and unpleasant. This principle ran through their medicine, and their surgery. They denied fresh air, cold water, and ripe fruits, to persons laboring under fevers, putrid dysenteries, and such like diseases; and their dressings of wounds were harsh and severe. The same principle influenced them in the choice of their food and drink. They were particularly hostile to sugar, and discouraged its use. In 1700, the importation of sugar into England, amounted only to 481 425 hundred weight; but in 1790, the recommendation of physicians, aided by its own agreeableness, had increased the consumption of it in the same country, to 166,573,344 pounds, which is about twenty pounds for each person in the kingdom. The demand for this article has progressively increased ever since; and it is now to be found in almost every hovel, the tenant of which has the means of purchasing it. Over and above its own salutary qualities, it has indirectly diminished the use of animal

mal food ; for the addition of it to many vegetable mixtures, has communicated to them such an agreeable relish, as to cause their more general consumption. In these ways sugar has contributed much to the eradication of a scorbutic diathesis, and of a tendency to putrid diseases in the human system, and at the same time it has lowered the high-toned inflammatory habit, which resulted from the excessive use of animal food. In both cases it has promoted the health of the human race.

In estimating the benefits, that have resulted to mankind from the labors of physicians in the 18th century, we must extend our views far beyond the administration of medicine. In that enlightened period, the air we breathe, the aliment we consume, the clothes we wear, the passions and habits in which we indulge, the peculiarities incidental to our profession, age, and situation ; and in short every circumstance, connected with health or disease, has been the object of medical investigation. The great triumphs obtained over the small pox and scurvy, have not been so much from medicine, as from the application of medical principles. Who can tell the extent of the benefits that have resulted from the pointed recommendation of medical men in favor of cleanliness ? Attention to this matter, we are informed by Buchan, has nearly exterminated cutaneous diseases from all decent families in Britain. It has also extinguished the germ of infection, and often prevented the ravages of pestilence. The writings of this useful popular writer have, within the last forty years, been read by thousands, and enlightened them in the great art of preserving health.

In addition to several improved systems of medicine, and to the treatises already mentioned on the diseases of seamen, and of armies—the physicians of the 18th century have obliged the world with valuable publications on the diseases of literary persons, of tradesmen, of pregnant and puerperal women, of children, on fevers of almost every species, on the plague, on melancholy and mental derangement, on the follies of youth, and the infirmities of age. They have treated largely of aliment, and minutely of the medical police of cities, and on the means
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of obviating infection and contagion. They have lighted up a blaze of medical knowledge, by which a few diseases have been nearly consumed; some destroyed in their embryo state; others entirely prevented; and all, more or less, mitigated. They have also seconded and enforced the claims of our holy religion; for they have demonstrated, from acknowledged laws of the animal economy, that the cheerful hopes, which the doctrines of the christian religion inspire, and the restraints which it imposes (particularly its divine precepts enjoining the forgiveness of injuries) have a direct and positive influence in promoting the health of the body, as well as the purity of the mind. On the whole, medical philosophy, in its late wide ranges, has effected a revolution in the habits of men, and in the nature and treatment of their diseases, which has eminently conduced to the lessening of human misery.

In support of this assertion, I observe, that the plague, pestilential fevers, putrid scurvies and dysenteries, have much abated in the 18th century. This is true, in the great scale of enlightened nations, though the general prevalence of the yellow fever, in the sea ports of the United States, for the last seven years, seems to form a local exception. Platerus, a physician at Basil, who lived in the 17th century, gives an account of seven different pestilential fevers, or plagues, which afflicted that city within seventy years. Bartholine mentions five that raged in Denmark in the same period. In the city of London, in the 14th century, there were five; in the 15th, two; in the 16th, seven; and in the 17th there were four. The first of these began in 1603, and continued more or less every year, till 1611; the second in 1625; the third in 1636, and continued for 13 years; and the fourth in 1665. In these four visitations of the plague, in the 17th century, the city of London lost 133 985 persons. In York 11,000 died of an epidemic fever in 1691. In the 18th century, nothing of the kind has taken place in any part of England, and only one (and that 60 years ago) in Marseilles; which, in former centuries, used to be head quarters of the plague.

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That this abatement of the plague has, at least, in part, been effected by the smiles of Providence on the modern improvements, suggested by members of our profession, may be inferred from this circumstance: that Constantinople, Aleppo, Grand Cairo, and other places, on which the sun of medical philosophy has never shone, do now, and throughout the 18th century, have suffered as much from the ravages of this disease, as they had ever done before.

If your patience is not already exhausted, I beg your indulgence for a few minutes longer, while I make some observations on the history and state of medicine in our own country. A considerable number of original writers, or of improvements in medicine, cannot reasonably be expected in these infant states; several of which are only in the first century of their existence; and none of which have completed their second. Nevertheless inoculation, and the modern successful methods of treating the small pox, were as early, if not earlier introduced in America, than in Great Britain.

The revd. Dr. Cotton Mather recommended, and Dr. Boylston (one of the ancestors of president Adams) practised inoculation in Boston, as early as the year 1720. Dr. Mather received his first impression, in favor of this practice, from a vol. of the transactions of the Royal Society of London, which gave an account of inoculation, at Constantinople. This he shewed to Dr. Douglass, who treated the proposal with ridicule. He was more successful in his application to Dr. Boylston, who began to inoculate at the risk, not only of his practice, but even of his life. The friends and enemies of the practice filled the news-papers of the day, with arguments for and against it. The whole of the influence, which the learning and piety of the New-England clergy has always given them, was exerted; and the whole of it was necessary to induce their hearers to consent to inoculation. The practice, by degrees, extended through New-England, to New-York and Philadelphia, and finally to Charleston, where it was partially adopted in 1738, and afterwards became general in 1760.

The earliest publication in America, on a medical subject,

ject, which has come in my way, was a treatise on the iliac passion by the late Dr. Cadwallader of Philadelphia, printed about 60 years ago. In this, the enlightened author very ably explodes the then common practice of giving quicksilver, and drastic purges, and recommends in their place, mild cathartics, with the occasional use of opiates. About the same time, Dr. Tennant, of Virginia, wrote a treatise on the pleurisy, in which he brought into public view the virtues of seneca snake-root, which were before unknown. Dr. Colden of New-York, and Dr. Ogden of Long-Island, at this early period, favored the public with their observations on a species of sore throat, which was then prevalent and mortal. I have not been so happy as to meet with either of these performances, but have heard a favorable account of each of them. There are doubtless several other early writers in America, but they have not come to my knowledge.*

At the commencement of our revolutionary war, Dr. John Jones of New York, one of the most eminent physicians and surgeons that ever graced this country, published a work, entitled "Plain Remarks on Wounds and Fractures," addressed to the students and young practitioners in America. This was particularly designed for the benefit of the surgeons in the army and navy of the United States; and will long remain a monument, both of the professional skill and patriotism of its worthy author.

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* On this occasion, I beg leave to point out to my fellow citizens, the propriety of their collecting, in some permanent place of deposit, all such written or printed letters, papers, sermons, pamphlets, or books, as reflect light on the history, customs, manners or literature of the early settlers of this country. From inattention to this matter many valuable documents are in danger of being lost to the community. The Massachusetts Historical society has been founded for this express purpose, and has been carried on with so much zeal and industry, as will entitle its members to the thanks of many, in unborn generations; who will doubtless be curious to trace the rise and progress of our country from small beginnings, to great national importance. I seriously recommend to my countrymen, either to send their collections to this society, or to erect one for similar purposes nearer their respective homes.

The yellow fever, which for eight years past, has infested our seaport towns, has given birth to much medical discussion; but as the writers on this subject are still living, any observations on them, at present, would be premature.

Fain would I point out to your recollection, the many valuable and important writings of Dr. Rush, who has rescued America from the reproach of producing no original writers in medicine; but he lives, and long may he live the pride and boast of his country; and delay to a far distant day, that celebration of his fame, which is only decent after the death of its subject. For the same reason, I must, in silence, pass over the literary productions of Dr. Mitchell of New-York. If we may judge of the full harvest, by the first fruits that have already appeared in his early youth, we may confidently indulge the hope, that in the progress of his valuable life, he will largely contribute to the growing fame of his country.

The first medical lectures, in America were given in or about the year 1763, by Dr. Shippen, the present professor of anatomy and surgery in the university of Pennsylvania; who had been prepared for the able discharge of this duty, by the celebrated Dr. William Hunter of London. The trustees of the college of Philadelphia, with the venerable Franklin at their head, soon after enriched their institution with the lectures of the enlightened Morgan, and of the judicious Kuhn, who had been a pupil of Linnæus. One was still wanting to complete a system of medical education. The trustees turned their eyes to young Rush, who had then scarcely completed his apprenticeship, and they encouraged him to prosecute his studies in Europe, with the promise of a professor's chair on his return. With how much judgment and advantage this was done, the noble ardor for medical improvements, which he possesses, and with which he has the happy art of inspiring his numerous pupils, affords the most ample testimony. Whilst these young professors were engaged in teaching anatomy, surgery, materia medica and chemistry, the venerable Bond, then an old practitioner, was appointed to illustrate the practice of physic, by chemical lectures on the cases of patients in the Pennsylvania hospital. Some of

these original professors have been succeeded by younger men, who are not inferior to their predecessors ; and promise to continue in the 19th century, that generous ambition for medical distinction which had began among Americans in the 18th. In such high estimation are they held, that their lectures are attended every season, by more than 100 medical students.

Much praise is due to the trustees of the college of Philadelphia, who, at this early day, established the first medical institution in America, and began to confer degrees, while their country was a colony of Great Britain. With pleasure I add, that since we have been free and independent states, other medical establishments have been made in New-York, Cambridge university in Massachusetts, and Dartmouth college in New-Hampshire. In each of which are professors of merit and talents.

It reflects no small honor on our young country, which only began to be settled by civilized people in the 17th century, that at the close of the 18th, there are in it so many medical schools, and in particular that in the three adjoining states of New-York, New-Jersey and Pennsylvania, within the distance of 120 miles, there are three professors of chemistry, Mitchell, Maclean and Woodhouse ; who, for an accurate knowledge of their department, can bear a comparison with the professors of the same in the oldest seminaries of Europe. The greatest chemist of the world, has also fixed his residence among us, and in the woods of Northumberland continues those philosophical experiments which have done so much honor to the 18th century.

Our country is now favored with a periodical publication, under the title of the Medical Repository, which, in addition to many valuable original essays, chiefly from the ingenious editors, Drs. Mitchell and Miller, brings to the view of the American student, all that is new, ingenious, or useful, in foreign publications, on the subject of medicine, or the arts connected therewith.

In the medical history of South-Carolina, the yellow fever and small-pox have been the most injurious epidemics. My information relative to these two diseases, prior
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to the year 1763, has been chiefly furnished by Dr. Prioleau, as collected from the manuscripts of his accurate and observing grandfather, the venerable Samuel Prioleau, esquire, who died in the year 1792, at the age of 74. From these, it appears, that in the year 1693, a disease prevailed in Charleston, which swept off a great part of the inhabitants, and some whole families. This was then called the plague, though afterwards supposed to have been the yellow fever.

In the year 1732, the yellow fever began to rage in May, and continued till Sept. or October. In the height of the disorder there were from eight to twelve whites buried in a day, besides people of colour. The ringing of the bells was forbidden, and little or no business was done. In the year 1739, the yellow fever raged nearly as violently as in the year 1732; it was observed to fall most severely on Europeans. In 1745, and 1749, it returned, but with less violence; however, many young people, mostly Europeans, died of it. It appeared again in a few cases, in 1753, and 1755, but did not spread. In all these visitations, it was generally supposed that the yellow fever was imported; and it was remarked, that it never spread in the country, though often carried there by infected persons, who died out of Charleston, after having caught the disease in it.

For forty-two years after 1749, there was no epidemic attack of this disease, though there were occasionally, in different summers, a few sporadic cases of it. In the year 1792, a new æra of the yellow fever commenced. It raged in this city in that year, and also in 1794, 95, 96, 97, 99, and 1800. In those last seven visitations of this disease, it extended from July to November; but was most rife in August and September. With a very few exceptions, (chiefly children) it exclusively fell on strangers to the air of Charleston, and was in no instance contagious. In the years 1796 & 97, it raged with its greatest violence. In the two last years it has considerably abated. In the year 1799, the whole number of deaths from it, was 239; and in 1800 no more than 134: but this decreased mortality was partly owing to the decreased number of strangers; for such

were cautious of visiting Charleston in the warm months. In Philadelphia, it began with great violence in the year 1793; and from that time to the present, it has been more or less epidemic almost every year in nearly all the seaports of the United States.

The years 1699, and 1717, are the dates of the two first attacks of the small pox in Charleston. In both it proved fatal to a considerable proportion of the inhabitants. It returned in 1732, but effectual care was taken to prevent its spreading. In the year 1738 it was imported in a Guinea ship, and spread so extensively, that there was not a sufficiency of well persons to attend the sick, and many perished from neglect and want. There was scarcely a house in which there had not been one or more deaths. Dr Mowbray, surgeon of a British man of war, then in the harbour, proposed inoculation; but the physicians opposed it. Col. Beale, who was informed of the success of inoculation in Boston, had his family inoculated. Mr. Philip Prioleau, was the first person in Charleston, who submitted to the operation. The success which attended this first experiment, encouraged several others to follow the example. The disease soon after abated.

About the beginning of the year 1760, the small-pox was discovered in the house of a pilot, on White Point—guards were placed round the house, and every precaution taken to prevent the spreading of the disease, but in vain. When the persons, first infected at White Point, where either dead, or well, the house in which they had lain, was ordered to be cleansed. In doing this, a great smoke was made, which being carried by an easterly wind, propagated the disease extensively to the westward, in the line of the smoke. Inoculation was resolved upon, and became general. Fifteen hundred persons are said to have been inoculated in one day; but it is also said that 500 of these died. This mortality, though great, was comparatively less than what had taken place in the year 1738.

In the year 1763, the small-pox again became epidemic; but as there were few to have it, and inoculation was generally adopted, its ravages were not extensive—For 17 years after the year 1763, the small-pox was seldom

or

or never heard of. During the siege of Charleston, it was introduced, and immediately after the surrender of the town, on the 12th of May, 1780, a general inoculation took place. As the cool regimen was then universally adopted, the disease passed over without any considerable loss or inconvenience. Since that time, no pains have been taken to exclude the small-pox. To inoculate for it, is a thing of course, and the disease has ceased to be formidable.

For 80 or 90 years after the first settlement of South-Carolina, the practice of physic was almost entirely in the hands of Europeans: among these were several able physicians, who possessed an accurate knowledge of the diseases of our country. In this class, Dr. Moultrie, the elder, was eminently distinguished. He died 28 years ago, after having been at the head of his profession for more than forty years. He was the idol of his patients. They who had him once, could not be satisfied, in case of need, without having him again. So great was the confidence reposed in his judgment, that they who were usually attended by him, preferred his advice and assistance, even on the festive evening of St. Andrew's day, to that of any other professional man, in his most collected moments. He possessed excellent talents for observation, and was wonderfully sagacious in finding out the hidden causes of diseases, and adapting remedies for their removal. His death was regretted as a great public calamity; several of the ladies of Charleston bedewed his grave with their tears, and went into mourning on the occasion. The year after his decease was distinguished by the deaths of several women in child birth. While he lived they thought themselves secure of the best assistance in the power of man, or of art, in case of extremity. In losing him, they lost their hopes. Depressing fears sunk their spirits, and in an unusual number of cases, produced fatal consequences.

In that early period of American medical history, which was before Dr. Rush began his brilliant career, as an author, there were more experiments made, more observations recorded, and more medical writings ushered into public view, by the physicians of Charleston, than of any
other

other part of the American continent. Dr. John Lining, of this city, favored the public with a series of judicious statical experiments, perseveringly conducted through the whole of the year 1740. He was one of the first experimenters in the novel subject of electricity, with which he became acquainted, in corresponding with Dr. Franklin, soon after the discoveries of that celebrated man had astonished the philosophers of both the old and new-hemisphere. Dr. Lining also, in the year 1753, published an accurate history of the American yellow fever, which was the first that had been given to the public from our continent.

Dr. Lionel Chalmers made, and recorded observations on the weather, for ten successive years, that is from 1750 to 1760. The same able physician, furnished a particular account of the opisthotonus, and tetanus, which was communicated to the Medical Society, in London, in the year 1754, and afterwards published in the first volume of their transactions. He also prepared for the press an account of the weather and diseases of South-Carolina, which was published in London, in the year 1776; but his most valuable work, was an essay on fevers, printed in Charleston, in the year 1767. In this he unfolded the outlines of the modern spasmodic theory of fevers. Hoffman had before glanced at the same principles; but their compleat illustration was reserved for Cullen, and laid the foundation of his fame.

Dr. Garden, about the year 1764, gave to the public an account of the virtues of pink-root, and at the same time gave a botanical description of the plant. This truly scientific physician was much devoted to the study of natural history, and particularly of botany, and made sundry communications on those subjects to his philosophical friends in Europe.

In compliment to him the greatest botanist of the age, gave the name of *Gardenia* to one of the most beautiful flowering shrubs in the world.

William Buil was the first native of South Carolina, who obtained a degree in medicine. He had been a pupil of Boerhaave; and in the year 1734 defended a thesis "*De Colica*

Colica Pictonum," before the university of Leyden. He is quoted by Van Swieten, as his fellow student, with the title of the learned Dr. Bull.

John Moultrie was the first Carolinian who obtained a medical degree from the university of Edinburgh, where in the year 1749, he defended a thesis "*Dè Febre Flava*." Between the years 1768 and 1778, ten more natives obtained the same honor. Three of these, viz. Drs. Fayssoux, Harris and Chanler, have been presidents of our society.

Since the revolutionary war, the number of native students has very much increased. Among them are several young men of great hopes. If we may judge of their professional skill, by the specimens they have already given, we may augur well to our country. It is no inconsiderable evidence of the increasing prosperity of South-Carolina, and of the progress of medical knowledge therein, that at the close of the 18th century, in the space of four years, fifteen of its native sons, viz. Johnson, Alston Huger, North, Prioleau, Brailsford, Bellinger, Akin, Baron, Gough, Glover, Huncombe, Screven, Smith and Tidyman, have been admitted to the degree of doctors of medicine, which is treble the number of all the Carolinians, who had attained that honor 32 years ago, at the expiration of one hundred years from the first settlement of the province, in 1669. In that long period of our infancy, the whole number of native graduates, was only five, viz. Bull, Moultrie, Chanler, Caw, and Fayssoux.

From a review of all that has been said, we have reason to congratulate ourselves, that we were born in this enlightened period. The age of investigation, of philosophy, and of medicine.

While we bid adieu to the 18th century, we cannot but recollect its many triumphs. In it the human race have been more safely ushered into life, and in their passage through it, many of their unavoidable sufferings have been considerably lessened. In it every branch of medical knowledge has been carried to an amazing extent. Every department of the healing art has been improved. The chances for health and life have been enlarged. The avenues to death have been contracted. The deaf have been taught

to understand—the dumb to converse, the blind to see, and the apparently dead have been raised to life. We may reasonably indulge an honest pride, for having been bred to so useful a profession, and for being members of so respectable a fraternity. Among the practitioners of medicine, in the 18th century, are to be numbered, several of the greatest, wisest and best of men, who have been the ornaments of human nature, and the benefactors of mankind. In support of this assertion, I need only call your attention to the names of Boerhaave, Ruysch, Haller, Monro, Cheselden, Hoffman, Heister, Mead, Petit, Sloane, Morgagni, Pringle, Cullen, Gregory, Hunter, Fothergill, Tronchin, Pott, Warren, and many others, who were the lights of the world, and men of the most extensive erudition, and unbounded philanthropy; who spent their lives in acquiring and diffusing a knowledge of the means of prolonging life, preserving health, and lessening human misery.

In our own state, what ancient inhabitant of Carolina, who has not heard the names of Lining, Moultrie, Chalmers, and Garden, mentioned with the greatest respect, as gentlemen and physicians of the first character for usefulness and respectability. Since the establishment of our society, we have been witnesses of the great professional merit, and the high place in the hearts of our citizens, which was held by Turnbull and Fayssoux; and of the high expectations which were formed from the youthful merit of Bartram and Lehré.

We have this day entered on a new century—on so singular an occasion, the first, the last, and the only one we ever have seen, or ever shall see, let me urge you to suffer no opportunity to escape of adding to the common fund of medical knowledge. The plan of improving our profession, by observation and induction, which has rendered the names of Hippocrates and Sydenham so famous in medical history, is as open to us, as it was to them. Poor was the stock, to which our forefathers succeeded at the commencement of the 18th century, compared with that which devolves on us, on this the first day of the 19th. Let those who follow us in the 20th, have as much reason
to

to respect our memories, as we have to venerate those who have gone before us. Our climate is too warm for anatomical pursuits; but its natural history is yet unexplored, and presents an ample field for investigation. The studies of botany and chemistry are particularly useful in our new country. Without a knowledge of their principles, we will remain unacquainted with half the riches and resources we possess, in our vegetables, and minerals. Little has been done among us, in this way, since the days of Garden and Walter. Let us resume the subject, and prosecute it with increasing ardor. Our small treehold, the gift of the widow of the amiable Dr. Savage, is very suitable for, and may be conveniently improved as a garden, in which may be drawn together specimens of all the useful vegetables of our own country, and such domesticated as are of foreign growth, and accord with our climate. I know, but one native tree, and only four native plants, the virtues of which have been thoroughly investigated in the United States. I mean the persimmon tree, by Dr. Woodhouse; the phytolacca, or poke, by Dr. Shultz; the stramonium, or James-town weed, by Dr. Cooper; the sumach, by Dr. Horsfield; and tobacco, by Dr. Brailsford.

The value of rice, though the source of our wealth, is but partially known; an accurate analysis of it, and a series of well conducted experiments thereon, would raise it in the estimation of mankind*. Nothing grows in vain; but we have yet found out the uses of only a small part. No disease is incurable, though there are several which physicians have been hitherto unable to cure. Sixteen centuries of the christian æra had elapsed before the circulation of the blood was known. It is within the last thirty years, that the celebrated Priestly discovered the constituent parts of the air, in which we, and our ancestors, lived and breathed, without knowing any thing of its composition; and it is much less since it has been discovered,

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* When this was written, Dr. Tidyman's ingenious inaugural dissertation "De Oryza Satina," had not made its appearance in Charleston, though printed in Europe a few months before.

that these constituent parts of common air, when detached, are among the most powerful agents in nature. Who can tell what new discoveries are at hand, which may introduce a new æra in medicine, and make the cure of those diseases practicable, which now baffle all our skill? You all know the immense difference between what the small-pox and scurvy now are, and what they were in the first half of the 18th century. The detection of some new law of the animal economy --of some new principle in medicine --of some new remedy, or of new virtues in old ones, may produce equal relief to suffering humanity; in some, perhaps in all those diseases, which are now the reproach of our art. Wonders have already been effected by digitalis, by fixed and by vital airs; and many experiments are now making to ascertain their precise effects. Whether it shall fall to the lot of any of us, by these, or by other means, to enrich our profession, by new and beneficial discoveries, is only known to that Being, who is the giver of wisdom, and who knows all things; but to promote the happiness of our fellow-citizens, by the knowledge which we now possess, is in the power of us all.

Coeval with the institution of our society, was an offer on our part, to establish a dispensary for the gratuitous relief of such of the inhabitants, in their own houses, as were unable to pay medical bills, though competent to maintain themselves. This proposition fell through, at that time, because from the embarrassed situation of the inhabitants, a sufficient number did not offer to subscribe, for defraying the expences of an apothecary's shop, at which the prescriptions of the physicians should be made up. Our situation is now so much altered for the better, that I trust, what could not then be done, might now be easily effected. Let us do honor to the new century by immediately renewing the proposition. As an inducement to its acceptance, the citizens may be informed, that the annual expence of the institution, would not exceed two hundred pounds, and it is probable that so small a sum could in no other way relieve so great a portion of human misery.

Most of us are inhabitants of a city, the police of which

which needs much reformation. Let such of our members, as may be decently invited to seats in the city council, not refuse them, but cheerfully join in aiding to introduce such regulations, as may promote the health of the city. Let us oppose our whole weight to the avarice of the inhabitants, who to increase their income, would subdivide lots, and crowd house to house, to the exclusion of fresh air. Since the great fire in 1666, which burnt 13,000 houses in London, there has been no plague in that city. This is with good reason supposed to be the effect of an enlightened policy, adopted immediately after that event, for widening the streets, and rebuilding the city on an improved plan, and keeping it constantly clean. Their success should stimulate us to follow so good an example. Let us, in our respective spheres, give all possible encouragement to the supplying of Charleston with wholesome water, and with pure air; and of removing from it every nuisance that might be the source of disease. We shall thus act worthy of the profession of medicine, the object of which is not to accumulate wealth, but to promote the health and happiness of the human race.

May this society continue to flourish for centuries to come, till time shall be no more. In particular, may my present feeble attempt to call to your recollection, the improvements which have been made in our profession, in the century which ended last night, be far exceeded by an abler member, who on this day hundred years will, as I trust and hope, better entertain the Medical Society of South Carolina, with greater improvements, and more brilliant discoveries made by you, your contemporaries and successors, in the century which began this morning.

David Ramsay.

January 1, 1801.

