

VOLTAIRE'S RELATION TO MEDICINE *

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IN idealizing the great men whose discoveries have transformed what, a short time ago, was little more than a speculative system of philosophy, into a science whose bounds are fixed only by the limiting qualities of humanity, it should be remembered that the followers of Hippocrates are not the only ones who merit gratitude for what they accomplished for medicine. Medical growth implies more than the work of gifted doctors alone. All who have striven for human development have furthered this art which joins or crosses every thread of social fabric and which has always been more than a system of healing.

Medicine must be the last barrier but one between man and the fates. It stands at the entrance and exit of life and, since it seems nearest the mystery, it has always been patiently looked to to disclose what lies behind that strange curtain which rises and drops so abruptly. It is so bound up in our souls with the arts and humanities, that its history is inseparable from the history of all human thought and behavior. Its records, at first sight seeming to mark a development and ascendancy quite its own, are really the records of the desires and fears and beliefs universal to humanity; and neither they nor the men who helped make them can be understood by themselves.

As long as thought was not free, medicine, in common with other branches of learning, had to struggle with tradition, dogma, prej-

udice, superstition, all backed by the might of church and state. Society, inevitably averse to reality, placed, as long as it could, these deadly taboos across the path of whatever might bring it and reality face to face. It was only as, little by little, opinions ceased to be matters reviewed by the police, and when investigation was no longer regarded as offensive to God, that the problems of medicine, so long waiting solution, could be brought into the light to be studied.

The broader vision which made this development possible came from the men outside of our profession quite as much as from those within it; and it was these allies of ours especially who risked their lives in the struggle for the establishment of tolerance. They fought our battles, and their names must be placed with the names of actual medical craftsmen who, in wresting secrets from Nature, made com-

mentary give place to observation and controlled fancy by experiment. Euripides and Petrarch and Bacon and Luther, each in his own way and according to his lights, helped to break down the barriers which kept men's eyes from the truth; each helped to mold public opinion to a point where scientific medicine became possible. Some did the work which resulted ultimately in advantage to our art without having touched on medical subjects at all; others, like Athanasius Kircher (1602-1680), the Jesuit priest, the earliest microscopist; like Antony van Leeuwenhoek



FRANÇOIS MARIE AROUET DE VOLTAIRE
(1694-1778).

* Read at a meeting of the Harvard Medical History Club, Boston, Mass., November 1, 1916.

(1632–1723), the wealthy brewer's son of Delft, who gave the first accurate figurations of bacteria, who demonstrated the capillary anastomosis between arteries and veins, who presented twenty-six microscopes to the Royal Society and contributed many papers to it; like Descartes (1596–1650), who, in establishing the physical theory of vision, laid the foundation of ophthalmology; men such as these threw light on our problems through solving problems of their own.

Among the men who figured in shaping medical history in more ways than one, must be counted Voltaire. It would be superfluous to add one word here as to what Voltaire's wit and fancy and satire accomplished to establish truth in the world as a principle. But it seems not unreasonable to suggest that in fighting for general tolerance, he did more to advance our profession than some of its own members who, however distinguished, compromised with the old dogmas. It may be remembered that Sir Thomas Browne (1605–82), in writing to correct "Vulgar Errors," was proved hopelessly enmeshed in them himself. But Voltaire, in addition to being a social reformer, did much to spread actual medical learning. As an encyclopedist he was obliged to treat of medical subjects, and he gave himself a wide range; throughout all he wrote on these topics appears an uncanny sagacity which led him to champion those explanations of human behavior which, as it turns out, have best stood the test of time. Perhaps it cannot be said of him that he was

an original thinker. His genius was of a different order from Franklin's, whose most casual glance at a subject resulted in some entirely new benefit to it. But he assembled from all parts of the earth stray bits of information, fused them together and presented them as a whole, in his own way. Thanks to his special talent he was able to give to the world views on medical topics saner than those held by most of the physicians of the times.

He is represented as the ruthless iconoclast, bitter and sarcastic and unforgiving. But he has a way of tempering his invectives with a naïve or witty word which reveals a fundamental belief in the good intentions of humanity; and many incidents in his life, of which I recall two, indicate quite plainly to me that as a man he was of an essentially kindly nature. Appreciating Marmon-
tel's verses, he urged this young man, a total stranger to him, to come to Paris from the Limousin, with the assurance that the Controller General of Finance, M.



MARMONTEL, whose *Moral Tales* delighted the salons of Paris.

Orri, would take care of him. But when the future author of the *Moral Tales* arrived in Paris, Orri was no longer in favor and could do nothing for him. While he was staggering under this blow, Voltaire said to him, "I have not invited you here to abandon you. I will suffer you to have no other creditor than Voltaire." And in another and more intimate relationship, Voltaire's gentleness of character for those he really loved seems to have been unmistakable. This was when he discovered that Madame du Chatelet

had been untrue to him. After hours of unhappiness and despair, when she came to him and asked his forgiveness, he said to her, "Madame, everything you do is right," and really forgave her.

He seems to have been born with a mania for liberty which his early troubles only deepened. Thrown into the Bastille more than once, banished from France for years, he never really, except for tactical purposes, changed his views on oppression and organized dishonesty.

During the XVIII century, Great Britain was the only European country which had curtailed the arbitrary powers of Royalty. In France Louis XV was able to forbid the publication of the famous encyclopedia, and many writers were persecuted without reason and with scant mercy. It seemed that there was an unmistakable advantage to learning in England as compared with its position in France, and Voltaire was incited to work for a similar intellectual enfranchisement for his countrymen.

It was during his visit to England as a young man, that he came to realize how much France was remaining behind in the development of true wisdom. While there, he attended the stately funeral of Newton, and, as Parton informs us,

"In extreme old age his eye would kindle and his countenance light up when he spoke of having lived in a land where a professor of mathematics, solely because he was great in his vocation, could be buried in a temple where the

ashes of kings reposed and the highest subjects in the kingdom felt it an honor to assist in bearing thither his body."

His British experiences seem to have vitalized the main springs of his mind and to have given direction to his energy. But he was too accurate an observer of human nature to confuse political with intellectual freedom. He knew, as well as Le Bon, how the crowd is made up; he saw that democracy was a dream and realized that the few govern. But he saw also, and just as unerringly, that the advancement of humanity depended on learning.

There was no lack of proof in his time of the terrible penalties men were forced to pay for expressing the most abstract ideas. It may be remembered that in the century in which Voltaire was born the French Parliament issued a decree which forbade all persons, under pain of death, to hold or to teach any method contrary to the ancient and approved authors. This decree came about from the

visit of two chemists to Paris who audaciously recognized five elements different from the four elements of Aristotle, and who further failed to agree with the categories and substantial forms of the master. They were tried, their books were solemnly burned and they were banished. But Parliament passed the Act referred to in order to show that it did not propose to deal so leniently with similar offenders in the future. Regarding this incident Voltaire says, "Respect for tradi-



LADY MARY WORTLEY MONTAGU, through whose determination inoculation was introduced into England.

tion has hindered intellectual progress for centuries and was extended in the case of Aristotle to the most servile credulity." The same Parliament of Paris which avenged the insult by the chemists to Aristotle, forbade the use of quinine and emetics. Against prejudices such as these Voltaire made war to the end of his days.

In our boyhood, we heard chiefly of Voltaire as the ruthless atheist who wanted to destroy religion. As a matter of fact, he attacked everything, whether military or ecclesiastical or political or social, in which he saw domination and oppression, with pretence and quackery tagging inevitably behind them. "Fanaticism," he writes, "is a mental disease as contagious as smallpox. Once it has eaten into the brain, it is almost incurable." And elsewhere he says, "The world is full of quacks, in medicine, in theology, in politics, in philosophy," and he asked to be saved from such men as Mesmer. The ideas which he stood for and scattered (and he was the most read author of his day), and which were thought as outrageous for so long, are now largely current. They had, perforce, to become so before medicine could come to its own.

The century in which he passed his adult years was poorer in great medical men than the preceding one. Harvey and Malpighi and Redi and Sylvius and Willis and Sydenham had done their work and joined the immortals. In Voltaire's own century, the work of Pinel and Jenner was accomplished after his own was finished; of Voltaire's contemporaries, Von Haller, of whom it was said that the only things that he lacked were the faults common to great men, stands out now as the chief towering figure; Boerhaave was the teacher acclaimed everywhere, and John Hunter was revolutionizing surgery in England. But it was chiefly a century of progress in the collateral sciences of botany and chemistry, as is shown by such names that stand out in it as those of Linnæus, Priestley and Lavoisier.

There was no clinical instruction until 1745, and quackery and imposture of all kinds flourished like weeds in a garden badly kept. The insane were regarded as menagerie animals to be viewed in some places on the payment of a fee. Until the middle of the century in Germany, surgeons were called "Feldscheerer," because their duties included shaving the officers; and in France surgeons were separated from barbers and wig-makers only in 1743, following by twenty years the establishment of the Academy of Surgery, which was accomplished by Voltaire's friend, François de L. La Péronie (1678-1747) of Montpellier. The great physicians were well-to-do and often cultivated men, but far less inspiring than in the preceding century. Medicine itself was in a rather chaotic condition, as few members of the profession had profited in an all around way by its most advanced teaching.

But in spite of the fact that medicine was sterile in his time, throughout all that Voltaire wrote about physicians and medicine it is easy to recognize the witty author as their loyal admirer and defender. Physicians whom he thinks unworthy he attacks, sometimes with scant justice; but everywhere through his writings shines his un-failing belief in this oldest of arts, and his admiration for its prophets.

He had much to say about doctors, past and contemporaneous. Against Gerhardt Van Swieten (1700-1772), first physician to Maria Theresa, who opposed the introduction into Vienna of certain books on philosophy (one of them Voltaire's) and who also, like his teacher Boerhaave, opposed inoculation against smallpox, Voltaire directed the following satirical verses:

Un certain charlatan, qui s'est mis en crédit
 Pretend qu'a son exemple, on n'ait jamais d'esprit.
 Tu n'y parviendras pas, apostât d'Hippocrate,
 Tu guérirerais plutôt les vapeurs de ma rate.
 Va cesser de vexer les vivants et les morts
 Tyran de ma pensée, assassin de mon corps.
 Tu peux bien empêcher les malades de vivre.

Tu peux les tuer tous, mais mon pas un bon livre.
 Tu les brules, Jérôme; et de tes condamnés
 La flamme, en m'éclairant, noircit ton vilain nez.

Of Simon-André Tissot (1728-97) the famous practitioner of Lausanne who became widely known through his popular writings on onanism, on the hygiene of literary men, and on the diseases of men of the world, Voltaire writes to a woman friend,—“He has never cured anybody and is more ill than everybody while he writes his little medical books.”

But much of the evil he says against doctors was justified or put out in the spirit of pure fun. “I know nothing more laughable,” he writes a friend, “than a doctor who does not die of old age.” And again, “Illness more cruel than Kings persecutes me. It only needs doctors to finish me off.” As a matter of fact, he believed in them.

“The first to bleed or purge happily a patient with apoplexy; the first to conceive the idea to put a bistoury into the bladder for the purpose of extracting a stone and then to close the wound up again, the first who knew how to keep gangrene from some part of the body—these men were almost divine and not at all like the physicians described by Molière. You may see fevers and ills of all kinds being cured without it being proved whether nature or the doctor worked the cure. You see diseases whose outcome cannot be foretold; twenty doctors are mistaken until the one who has the finest intelligence, the clearest vision, discovers the nature of the disease. It is, therefore, an art and the superman knows the fine points of it. Thus La Péyronie made the diagnosis that a certain courtier must have swallowed a sharp bone which resulted in an ulcer and endangered his life; Boerhaave found the cause of the cruel and hidden disease of the Count Vassenaar. There is, therefore, a true art of medicine; but in every art, then, are Virgils and Malvius.” And elsewhere he says, “Les maladies sont plus anciennes que la médecine

et tous les besoins ont existé avant le secours.”

“Molière made no mistake in ridiculing physicians,” he said, “for, for a long time, out of every hundred doctors, ninety were quacks. But it is just as true that a good doctor can often save life and limb. Men who pass their lives restoring health to others would be superior to all the great ones of the earth and would resemble divinity. To conserve and repair is almost as fine as to make. For five hundred years the Romans had no doctors; being occupied solely with killing they made no attempt to save life. What, then, did they do at Rome when they had putrid fever or bubonocoele or pneumonia? They died.” In writing concerning Van Dale, the Dutch physician, he said: “The Devil should not try his tricks on a clever physician. Those familiar with nature are dangerous for the wonder-workers. I advise the Devil always to apply to the faculty of theology—not to the medical faculty.”

He had the keenest appreciation of the Greeks, and of Harvey, and of Boerhaave, and of men of their kind, and he speaks with affection of the various men who attended him in his illnesses. He resents Rousseau's ungrateful treatment of Cabanis, a surgeon of great reputation, who passed sounds on the author of the “Social Contract.” “It seems that ingratitude holds a high place in the philosophy of Jean Jacques,” Voltaire exclaims. Voltaire knew Haller and appreciated his rare talents, though he thought him stiff and unbending, and said of him that his “Protestant zeal makes intolerance a fashion in the Canton of Berne.” There was ill-feeling on both sides. Casanova, the Venetian charlatan and gossip and “*homme à bonnes fortunes*,” relates that after a visit to the Swiss savant he visited Voltaire, to whom, in his mischief-making way, he brought up the name of Von Haller. “There,” exclaimed Voltaire, “is a great man—one we must all bow to.”

"I am sorry," Casanova replied, "to inform you that Von Haller entertains no such opinion of you." "Well," Voltaire answered, "the fact is that in all probability we both are mistaken."

To Doctor Doran, who invented bougies, he sent his compliments though he did not need him. He summons L'Écluse, surgeon dentist of the King of Poland (formerly a concert hall singer), to repair the "irreparable teeth" of his niece. He recounts with great satisfaction that it was Lilio, a Roman physician, and not Gregory XIII, who reformed the calendar. "It wasn't so with the Greeks," Voltaire adds; "with them the glory of the invention remains with the artist."

In sending his portrait in 1775 to Dr. J. B. Silva (1682-1742), first doctor to the Queen, who had attended him, he included these verses:

At the shrine of Epidaurus
it was etiquette
to bring

An image of the person
whom the gods had
cured or saved;

So to Silva, who in mastering
death has like
a god behaved,

We should offer the same thing.

O Modern Esculapius, I owe my days to you
And you look upon your handiwork in seeing me
anew.

He tells us that Theophraste Renaudot (1586-1653) the founder of the *Gazette de France*,¹ published thirty-four years (1631) before the first Oxford Gazette, was a doctor.

¹ These early gazettes, like the Roman *Acta Diurna*, contained official announcements of current events. Renaudot's information came directly from Richelieu.

He forgives J. B. Morin (1583-1656), who cast the horoscope of Louis XIV. "He was a savant in spite of the prejudices of the times," he exclaims. Of G. Patin (1602-1672) he says that he was more famous for his letters than for his medicine. "This man seems to prove that those who hastily write up current events are misleading historians." It is the letters of Patin, who was Dean of the Paris Faculty, which Garrison cited as showing the "sterile inefficiency of the internists of the seventeenth century."

Through Voltaire's works allusions to medicine and physicians abound. In writing of physicians, he says, "The small number of great physicians who came to Rome were slaves. Thus, to the Grand Seigneurs of Rome, a doctor became a luxury like a *chef*. Every rich man had in his suite, perfumers, bathers, musicians and doctors. The celebrated Musa, physician to Augustus, was a slave. He was given his freedom and made a Roman Knight, and from

then on, medical men became persons of importance. When Christianity became established, various councils forbade monks to practice medicine, which was just the opposite which should have been done if good to the human race was to be gained. How fortunate it would have been if monks had been made to study medicine and to cure the ills of humanity for the love of God. Having nothing but Heaven to gain, there would have been no quacks. They might have poisoned infidels, but this would have



VON HALLER, the great man without humor.

been good for the church. Perhaps then Luther would never have robbed our holy father, the Pope, of the half of Christian Europe; for at the first fever of the Augustin Luther, a Dominican could have given him pills. You may say he would have refused to take them; but perhaps they could have found a way of making him."

He abhorred the ceremonials that were and still seem, in a way, inseparable from the practice of medicine, as he abhorred shams of all kinds. "I have always had a secret aversion for that Swiss doctor of yours," he wrote a friend. "I despise a man who dares not tell you what remedy it is that he is giving you. The absurd quackery of diagnosticating diseases by temperaments and by urine is the shame of medicine and of reason." And elsewhere he says, "How foolish it is that we know what the cook gives us for supper, and don't know what a doctor gives us when we are ill."

When in 1778 he died at the age of eighty-four, his organs were all normal, only "dry," as the autopsy report has it. But he was frequently ill, as may be expected of a body lodging a mind to which repose is unknown, and he wrote much about illness.

"I regard long illnesses as a kind of death which separates us from the rest of the world and makes it forget us. I am trying to get used to this first kind of death so that the second shall not frighten me so much."

"It is the lot of old age to be ill and these little warnings are the clock strikings which announce that very soon there will be no more time for us. Animals have the advantage of humans; no clock sounds their hour and they die without guessing it; they have no theologians to tell them the four ends of life or to pester their last moments with impertinent ceremonies; it costs them nothing to be buried and no one contests their wills. But we have the best of them after all, for they know only habit while we have friendship."

Throughout all his writings one may find perspicacity and common sense in his recommendations as to the conduct of life and the care of body and mind. When well himself, he praised hygiene above remedies and was an advocate of the *Natura Victrix* formula. Under the heading of "Medicine" in the philosophical dictionary, the doctor says to the Princess:

"Let Nature be your doctor in chief. It is she who does everything. Of all those who have extended their life to one hundred years, not one belongs to the faculty. The King of France (Louis XV) has already buried forty of his physicians."

The Princess replies:

"In truth I hope to bury you too."

Voltaire relates many anecdotes which throw light on some of the quasi-medical customs of the times. One of them shows the distinction between social position and justice. Constantin, a midwife, performed a criminal operation on a lady of the court so unskillfully that the patient was fatally injured. She was in great suffering, and her lover, when he saw her, wishing to relieve her sufferings, became possessed of what might now seem an access of kindly zeal, and killed her by breaking open her head. He fled and was banished, but later, after arranging an advantageous marriage for the King's brother, was again welcomed at court. But for the unfortunate midwife there was no such mercy. She was hanged and thrown into quicklime. "There would have been no use in coming to visit her," says the sprightly Patin, "there was nothing left to recognize her by."

Regarding witchcraft he relates that the Marechale d'Ancre, an Italian friend of Marie de Medicis, whose husband, Concini, had been murdered with at least the connivance of Louis XIII, called a Hebrew doctor called Montalto from Italy to see her, having first complied with the recognized formula in such matters by obtaining permission from the Pope. At that time, it

may be remembered, Paris physicians did not have as good reputations as the Italians, it being these latter who were reputed as masters of all the arts. It was claimed against the Marechale that this Montalto was a magician and that he had sacrificed a white cock at the Marechale's. At any rate, he could not cure the lady of her vapors, which were so compelling that instead of believing herself a witch, she conceived the counter idea that she was bewitched herself. She then had the weakness to summon two exorcist priests from Milan, who said masses for the vaporous lady and assured her she was cured. But when, in addition to the charges against her of magic, she had questions put to her regarding the death of Henry IV, husband of Maria de Medicis, she collapsed. Having laughed at the accusations of magic, she wept when questioned about the dead king and made a bad impression on the judge. She was beheaded and cast into the flames. Voltaire opposed with violence and with ridicule the idea so popular in his time, of the frequency with which people were disposed of by poison. The most celebrated of women poisoners who experimented with poison on the sick she visited in the hospitals, and who was beheaded and burned for her crimes in 1676, Madame de Brinvilliers, has more crimes accredited to her than she committed, he says. He holds the same opinion in regard to Catherine de Medicis. It is only in recent years that it has become increasingly probable that he



SILVA, physician to the Faculties of Paris and Montpéllier.

was right about this; and that appendicitis, and kindred abdominal diseases were the real cause of many of the reputed cases of poisoning.

He understood fully the contagion which robs crowds of their wits. It is true that he had almost unparalleled opportunities for observing examples of hysteria in the convulsionists as they were called, who, in the XVIII century flocked to the tomb of the Diacre de Pâris, or the saint Pâris, in the remote little cemetery of St. Médard.

The miracles that were worked there were looked upon by the simple people as a recognition by the Almighty of the cult launched by the unhappy Jansen, who died without knowing what a fuss his earnestly conceived book was to kick up. Singing, dancing, groaning, grunting, barking, mewing, hissing, declaiming, prophesying, with the ordinary motor accompaniments of feeling, reached such a height in this hitherto quiet churchyard that the king found it necessary to close it—or, as a wit put it,

“By order of the king; God is forbidden to perform miracles in this place.”

Voltaire wrote much about these occurrences, and analyzed them as did Collins,² who described them anew in 1908.

One of Voltaire's burlesques took the form of the following verse, relative to this famous tomb:

The deity, to lighten France's night
Within this tomb encloses all its might.
Hither the blind come hurrying; and then

² *N. Y. Medical Record*, July 4, 1908.

With hands that grope their way, return again.
 The halt come limping to this tomb, and all
 Crying *bosanna*, dance and leap—and fall.
 The listening deaf approach—and hear no sound.
 “La Pucelle”—9-III-63.

In Voltaire's time, hospitals were in an overcrowded and unsanitary condition; filth was everywhere, contagion flourished, and, as Bass says of them, “even physicians declined hospital service as equivalent to a sentence of death.” Voltaire perceived the menace of the huge Hôtel Dieu and wanted it split up into a number of smaller pavilions, scattered in different parts of the city. Of hospitals in general he said:

“There is hardly a city in Europe today without hospitals. Turkey has them for animals, which seems an extravagant charity. It would be better to forget animals and save more men. The great mass of charitable institutions proves a truth to which little attention is paid—it is this, that mankind is not so bad as

it is painted; that, in spite of all the false opinions that he holds, in spite of the horrors of war, which change a man into a brute, it is easy to believe that this animal is really kind and only ugly when aroused, like other animals. The trouble is that he is teased too much. Modern Rome has almost as many houses of charity as antique Rome had triumphal arches and other monuments of conquest. The Trinité in Rome once maintained

445,000 pilgrims for three days—but perhaps that is an encouragement to vagabondage more than an act of charity, as pilgrims are usually tramps. Of all hospitals, the Hôtel Dieu of Paris receives daily more poor patients than any other. There are often from 4000 to 5000 at a time. In this case, the number defeats the purpose of the charity. At the same time it is the receptacle of all terrible human miseries and the temple of the true virtue

which tries to succor them. It would be well to bear in mind the contrast between a fête at Versailles, between an opera at Paris, where all the delights and magnificence are united with such art, and of a hospital where all the suffering, despair and death are crowded together with such horror. Large cities are like that. In the charitable institutions, the drawbacks are often greater than the advantages. A proof of the abuse connected with them is that the poor devils whom they take there are afraid to be there. It



MARQUISE DE BRINVILLIERS trying out her poisons on the patients in the Hôtel Dieu.

is especially bad when the town gets too big, when there are four or five patients in one bed,³ when a poor fellow gives the scurvy to the neighbor from whom he catches the smallpox. The futility and even the danger of medicine under these circumstances is proved. It has often been proposed to split up the Hôtel Dieu into several better situated hospitals—but the

³ Beds were built with the purpose of accommodating several people at once.

money is never forthcoming. It is easy to get it to send men out on the border to be killed—but then there is none left to save them with.”

Voltaire's most striking characteristic as an author in general is his modernity, and this is particularly remarkable in that it continues into matters scientific. It seems less surprising that Euripides should have seen into the real hearts of men through the veils of symbolism that surrounded human customs in ancient Greece, than it is that a French wit and playwright and letter writer should have so unerringly picked out the truth from the many medical systems of his time.

Much that he says about medical subjects could be incorporated in textbooks to-day. He was dead before Pinel (1745-1826) wrote his first book, and yet in the article on madness in the *Philosophical Dictionary* may be found the same prophetic teachings which have made Pinel immortal as the savior of the insane.

“What is madness? It is having incoherent thoughts and conduct. Madness, during the waking state, is a disease which prevents a man from thinking and acting as other people do. No longer capable of directing his affairs, they are taken from him; Society excludes him for not being able to hold the ideas which suits it; if he is dangerous, he is shut up; if violent, he is restrained. Sometimes he is cured by baths, by blood letting, or by a chosen regimen.

“Such a man is not destitute of ideas; he has them, like every one else when awake and often when sleeping. One might ask how this immortal spiritual mind, the brain's tenant, receiving all its ideas by the senses, never delivers a sane judgment. It sees objects just as the minds of Aristotle and Plato and Locke and Newton saw them. It hears the same sounds and has the same sense of touch. How does it happen, then, that it collects

such an extravagant mess, without being able to make use of the perceptions it receives in common with the philosophers? If this simple and everlasting substance is subserved by the same instruments as serve the minds which are lodged in the brains of the wisest of men, why does it not reason as they do?

“I will admit at once, if my madman sees red and the wise men see blue; if, when these latter hear music, my madman hears an ass braying; if, when they are at church, my madman fancies himself at the play; if, when they hear

‘yes,’ he hears ‘no’—why then his mind might think the opposite of what theirs do. But my madman has the same perceptions as they have and there is no evident reason why his mind, having been furnished with all the tools by the senses, should not make use of them.

“Close reflections make one suspect that the faculty of thinking, the divine gift to man, is subject to derangement like the other senses. A lunatic is a sick man whose brain suffers, as the gouty man is one who



Le diacre de Paris.

is ill in hands and feet; he thought with his brain as he walked with his feet, without understanding his incomprehensible power of walking any more than he understood his incomprehensible power of thinking. There is a gout of the brain as well as of the feet. Finally, after all reasoning, perhaps faith alone can convince us that a simple and immaterial substance can be ill.

“The physicians say to an insane patient, ‘My friend, you have lost common sense. Your mind is as pure and as spiritual as ours, but ours is well situated, while yours is not. For yours, the windows are shut—it lacks air and suffocates.’ The patient, in a sane moment, might answer, ‘My friend, you assume the question; my windows are as wide open as yours are, as I see the same things and hear the same words; so it follows that my mind makes good use of the senses, or that it is itself a perverted sense, a deteriorated quality, or my mind itself is insane, or else I have no mind at all.’

“One of the doctors might answer, ‘My dear friend, perhaps God has created unbalanced minds as he has created balanced ones.’ To which might be answered, ‘If I believed that I would be madder than I am now. Come, you who know so much, tell me why I am mad.’ If the doctors have a little sense left, they will reply, ‘I do not know at all.’ In a moment of lucidity, the madman might say to that, ‘Poor fellows—you who do not know the cause of my trouble and cannot cure it, tremble lest you become just like me—or perhaps worse. You are of no better stock than Charles VI of France, Henry VI of England, or the Emperor Venceslas, all of whom lost the faculty of reasoning in the same century. Your minds are not better than those of Blaise Pascal, Jacques Abbadie, and Jonathan Swift, all three of whom died mad. The last of these at least founded a hospital for us. Would you

like me to engage a place for you in it?’ ”

And by way of appendix he adds:

“I am distressed that Hippocrates prescribed asses’ blood for insanity, and still more that the ‘Manuel des dames’ says that poor people become sane when they catch the itch. These are pleasing receipts; they appear to have been invented by the patients.”

Voltaire wrote much about syphilis, the grand pox, as he called it. He draws distinction between it and leprosy and believed, as many of the best informed still do, that syphilis originated in America. Two things prove this, he says:

“First, that quantities of authors, physicians and surgeons of the XVI century attest the truth of it. Second, the silence of all physicians and poets of antiquity, who did not know this disease and never pronounced its name. This seems very conclusive. Physicians, from Hippocrates down, could not have failed to describe the disease, to name it, to see remedies for it. The poets, as mischievous as the doctors are industrious, would have spoken in their satires, of the clap, the chancre, the bubo, all the things which precede and follow this awful malady. You will find no word in Horace, in Catullus, in Martial, in Juvenal, which has the slightest relation to it, although they write freely of all the effects of dissipation. It is certain that the smallpox was not known to the Romans till the VI century, and that the American pox was not brought to Europe until the end of the XV century, and that leprosy is as different from both of them as it is from St. Vitus’ dance.

In 1496, the Parliament of Paris passed a decree which read that all affected with the great pox who were not citizens of Paris, should leave town within twenty-four hours or be hanged. The decree was

neither Christian nor legal nor reasonable; but it proves that the pox was regarded as a new menace, which had nothing to do with leprosy, since they did not hang lepers who slept in Paris. Men can give leprosy to each other through dirt, but as for the pox, it is Nature that has made this present to America. We have already reproached this Nature, so good and so bad, so clear-sighted and so blind, for having defeated its object by poisoning the source of life, and we still lament being unable to find a solution for this terrible difficulty."

The societies for prophylaxis of venereal diseases might turn to their profit the conversation between the surgeon and his questioner in "L'Homme aux quarante Écus." The surgeon replies to the question as to how syphilis may be gotten rid of:

"There is only one way, and that is for all the princes of Europe to form a league, as in the days of Godfrey of Bouillon. A crusade against syphilis would surely be more sensible than those directed in old times against Saladin, Melecsala and the Albigenses. It would be better to form an agreement for the purpose of stamping out this enemy common to all humanity, than to be always busy watching for the right moment to devastate the earth and cover the fields with dead, for the purpose of filching from one's neighbor two or three cities or a few villages. I am speaking against my own interest, for war and the pox make my fortune."

It was inevitable that the speculation and experiments on a subject like generation, which were active in his time, should have excited the human Voltaire. Harvey, under the stimulus of his teacher, Fabricius, did an enormous amount of work on animals along these lines, and in 1651 published his book "Excitationes de generatione" and, as Voltaire puts it, took for his *devise* "*Omnium ab ove.*"

Before Harvey, practically all views had been molded on Aristotle's theory that the male parent furnished the body of the future embryo, while the female only nourished and formed the seed.

It was argument based on the denial of the maternal relationship that secured the acquittal of the accused in Æschylus's "Furies." Apollo defended Orestes charged with murdering his mother, Clytemnestra, by saying:

Not the true parent is the woman's womb
That bears the child—she doth but nurse the seed
New sown: the male is parent—she for him
As stranger for a stranger, hoards the germ
Of life, unless the gods its promise blight,
And proof hereof before you will I set.
Birth may from fathers, without mothers be:
See at your side a witness of the same,
Athena, daughter of Olympian Zeus
Never within the darkness of the womb
Fostered, nor fashioned, but a bud more bright
Than any Goddess in her breast might bear.

(Trans. by Morshead.)

In 1677 Leeuwenhoek communicated to the Royal Society of London the discovery which his pupil Hamen had made, by means of the microscope, of the living spermatozoa. Leeuwenhoek believed that the moving elements of the semen might be germs which enter the egg and become embryos. Opponents to this theory called them parasites, a view which is responsible for a part of their name.

It was not until after the death of Voltaire that Spallanzani proved by ingenious experiments that the spermatozoa were necessary for fertilization. So Voltaire was not the only one at sea when, in 1777, he devoted the ninth dialogue of *Evhémère* to this topic. *Evhémère* represents a philosopher of Syracuse, and *Callicrate* serves him as interlocutor, or "end man."

Callicrate — I have always been astounded that Hippocrates, Plato and Aristotle, all of whom had children, did not agree as to how Nature worked this

perpetual miracle. They all say that the two sexes coöperated in that each furnished some fluid; but Plato, putting theology ahead of nature, of course, considers nothing but the harmony of the number three, the engender, the engendered, and the female in whom the generation takes place. That constitutes a harmonious proportion for Plato, even if the accoucheur fails to grasp it. Aristotle limits himself to saying that the female produces the material of the embryo and the male determines its form. That does not help us much. Tell me, has no one seen Nature at work, as sculptors are seen making figures from clay or from marble or from wood?

Evbémère—The sculptor works in the open but Nature in the dark. All that we knew up till now was that the fluid is always spent by the male when he copulates, but that it is sometimes missing in women. But now a great English physician, aided by certain Italians, has substituted eggs for the two generating fluids. This great dissector, Harvey, is more credible from the fact that he has seen the blood circulate; something which Hippocrates never saw and Aristotle never suspected. He dissected over one thousand quadruped mothers who had received the male fluid—but when he had examined hen's eggs, he conceived the idea that everything originates in an egg; the difference between birds and other species



MADAME DU CHATELET, mathematician and friend of Voltaire.

being that the former set and the latter do not. A woman is a white hen in Europe, and a black one in Africa.

Callicrate—Then the mystery is cleared up!

Evbémère—Not at all. Recently all has been changed again. We do not come from an egg after all. It seems that a Batavian (Leeuwenhoek) has, with the microscope, seen in the seminal fluid of men a race of little beings, fully formed and running about with great activity. Many curious men and women have since tried the same experiment and become persuaded that the question of generation is solved. They thought they saw little men in the semen of their fathers. But unfortunately, the very activity with which the little men swam has discredited them. How could men who ran about so actively in a drop of liquid be expected to remain for nine months almost motionless in their mother's womb?

Voltaire was forced to leave the question here.

"All theories," he said in a letter to Thiériot, "as to how we come into the world have been overthrown. The only thing that has proved changeless is the way people make love."

He was no slower than the rest of us, for two centuries, less two years, elapsed between the discovery of the spermatozoa, in 1677, and Hertwig's (1849-) demonstration in 1875, that fertilization is effected by the entrance of one spermatozoön into

the egg and the union of its nucleus with the egg nucleus.

In Voltaire's time, smallpox was still a terrible scourge. "Of one hundred people," he states, "at least sixty get smallpox; of these sixty, ten die and ten retain the marks. Thus this malady kills or disfigures one-fifth of mankind."

Voltaire had this disease when a young man and wrote his views as to the treatment of it. Personal experience may have stimulated his interest in the subject, but, as far as inoculation was concerned, his interest was un-

selfish, as he was firmly of the opinion that smallpox

never came twice to the same person. As he was

the first continental to

write of the new physics from England, so

was he also the first real sponsor in Europe

(1727) for variolation for smallpox, although

Dr. La Coste had composed a brief note concerning it before any

writings of Voltaire's on the subject saw the light and although

the subject had been taken as an inaugural

thesis by J. B. N. Boyer (1693-1768) of

Montpellier in 1717. La Coste probably

received the idea from reports to the Royal Society in 1714-16 by physicians

who had visited Constantinople. The adoption of the practice in England was due

to Lady Mary Wortley Montagu, who learned it from the Turks and who practiced

it on her children in 1718, while her husband was Ambassador at Constantinople.

This courageous action of hers preceded by eighty years Jenner's transference of the

cow-pox from the milkmaid to James Phipps.



CATHERINE II, royal sponsor for inoculation in Russia.

Lady Mary Wortley Montagu combined determination with charm, but, as Voltaire said, she wrote for all peoples who wished to learn. In one of her letters from Constantinople, she said, "I would write our London doctors if I believed them big enough to sacrifice their own interest to those of humanity. But I fear their resentment, if I should undertake to lessen the revenue that smallpox brings them. But on returning to London I shall perhaps have zeal enough to open the war."

She did, and succeeded, and Voltaire reports that the doctors instead of opposing inoculation, took it up and were better recompensed by royalty for their inoculations than they would have been had they brought the dead to life.

Dr. Richard Mead, one of the wealthy possessors of the Gold Headed Cane, first practiced inoculation in England in 1721. Royalty came to the support of the cause, especially Queen Caroline of England, a woman whom Voltaire admired immensely. The Duc

d'Orleans, King of Denmark, King of Sweden, and Queen of Hungary all had it done in their families.

Catherine II, Empress of Russia, wrote Voltaire in 1768, saying that Dr. Thomas Dimsdale (1711-1800) of England had come to Russia. He had inoculated 6000, with only one death, and that death a child of three. Catherine was inoculated and had no ill effects from the operation. She did not go to bed and saw company every day. Dr. Dimsdale made inoculations in Petersburg

in schools and in specially constructed hospitals, receiving as his fee £10,000 down and an annuity of £500.

It is interesting to note that at about the time that inoculation, or "buying the smallpox" as it was called, was gaining in England, an epidemic visited Boston, for the first time in sixteen years. The impassioned Cotton Mather, who had studied medicine for a time and who was the first American elected to the Royal Society (1713), aroused by the reports of the new method which he received from England, sent copies of them to the Boston practitioners, and Dr. Zabdiel Boylston (1679-1766) also a member of the Royal Society, first introduced (as is recorded on his tombstone in Boston), the practice into America. Within six months he had inoculated 244 persons. But several of his patients died and the Selectmen of Boston, with true Puritan insight, forbade its further practice, saying "that the operation tends to spread and continue the infection in a place longer than otherwise it might be." This fact of the contagiousness of inoculated smallpox was late in attracting the observation of Europeans. Voltaire does not speak of it. It was a feature of more importance in America than in Europe, in which latter continent the ravages of smallpox were so continuous and so widespread.

Inoculation was probably a folk custom originally and was prevalent in many primitive people and is still practiced in certain African tribes. But Voltaire's letter about it is no less interesting.

"It was an immemorial custom," he says, "for Circassian women to give smallpox to their children at the age of six months, by making an incision on the arm and by inserting in this incision a pustule from the body of another child. The inoculated child served as source of supply of pustules for other children.

Maternal instinct and tenderness introduced this custom in Circassia. The Cir-

cassians are poor and their children are very pretty and it is with the daughters that their chief trade lies. They supply the beauties of the harems of kings and of others rich enough to buy and maintain such valuable merchandise. They bring up the girls to caress men, to dance and to excite, by the most voluptuous artifices, the taste of the supercilious masters for whom they are destined. Every day the little girls rehearse their lessons with their mothers, like children who learn the catechism without understanding anything about it. But smallpox would make futile all these pains.

A commercial nation is always alert for its interests and neglects no information which might foster its trade. The Circassians observed that smallpox practically never came twice to the same person. They perceived, further, that benign smallpox leaves no mark and concluded that if a child of six months or one year had benign smallpox it would neither die nor be pockmarked, but would be rid of the disease for the rest of its life. So they treated their children in this way. The Turks adopted this custom and it became practically universal in Turkey. Of all those inoculated in Turkey or England, none die, except the very feeble, none are pockmarked, and none acquire the disease again."

He reproaches Louis XV, who died of smallpox, with not having profited by the examples of others and with not having been inoculated. But this reproach is hardly justified, as he states elsewhere that this monarch had had the smallpox as a boy of fourteen.

Years afterwards, in 1763, when inoculation, though current, was meeting with opposition, the Parliament of Paris ordered that the question as to its value should be referred to the faculties of theology and medicine. In a sarcastic pamphlet, Voltaire

says, "You gentlemen, who are the best theologians and the best physicians in Europe, you should issue an injunction against smallpox, just as you have against Aristotle's categories, against the circulation of the blood, against emetics and quinine."

Inoculation did not become general in France until 1756, and Voltaire was an old man when he addressed the following verses to that medical friend of his who had done most to make the practice accepted by the French, and who had 20,000 successful operations to his credit. This was Théodore Tronchin (1709–81), of Geneva, the same one who demonstrated that the "Colica Pictonum" was caused by lead used to sweeten wine, and who was the first to show that plumbism might result from water drawn through lead pipes. The verses were written on the occasion of Tronchin cutting short a visit to Voltaire to go to inoculate the king's grandsons.

A. M. TRONCHIN

Since your departure yesterday,
Renewed is all my suffering,
But I can bear it and be gay
Because I know you went away
To save the grandsons of the king.

Some prejudices serve an end,
But others grow like noxious weeds;
To triumph over these, one needs
A sage, a man of valiant deeds.
Your clever hands their aid did lend
When, long ago, I told my nation
(And youth, perhaps, was my excuse)
About *inoculation*.

Which—thanks to you in common use—
Was thought imagination
And met with foul abuse
Like Newton's *gravitation*.
I saw the truth, but could not then
The world of that same truth convince;
Nor was I hailed, before or since,
A prophet by my countrymen.

"How can we," people said, "believe
Truths made in England? How suppose
That any one can good receive
From those who are our foes?"

Ah, France, it was at last your fate
To ask of England all she knew,
Nor need we blush to imitate
Those whom we fairly overthrew.
For equally in all men's sight
The sun performs its daily race,

And Truth, impartial, sheds her light
In every age, in every place;
Let us—not asking whence they come,
Nor whose the honor and the praise—
Receive with joy her blessed rays,
And may the whole world be her home!

Besides these subjects, he wrote on fistula, which killed Richelieu. It was for fistula that Louis XIV paid the son of the elder Félix (d. 1703) in a property worth 50,000 écus,⁴ in return for the skillful operation he performed on him. Voltaire also wrote on the stone and on leprosy. He had the vagueness of view regarding gonorrhœa which lasted till the time of Ricord (1799–1899). Of gout he made the remark that "it confounds the pretended art of medicine." He was very enthusiastic about the first veterinary school founded in France, in 1672, which was the beginning of veterinary medicine in Europe. He wrote its founder and director, Claude B. Bourgelat of Lyons (b. 1712) author of "Elements de l'art Vétérinaire" (Lyons, 1765–69),—"You are not like those physicians who without hesitation take the place of God and create a world with a word. You have opened a new career by the way of experience."

In his "Century of Louis XIV," Voltaire states that surgery, "the most useful of all the arts," attained its highest supremacy in France during Louis' reign. People flocked there from everywhere to avail themselves of the skill of the surgeons and to obtain the instruments which there attained the highest degree of perfection.⁵

⁴ The écu did not have a constant value, being worth between 3 and 6 livres, a livre being the equivalent of the franc. The purchasing power of the franc then and now is put at 1–10.

⁵ It was John Hunter who transferred surgical supremacy to England.

Voltaire's varied activities with the stage, with court life, with the wise investment of money, with agriculture, and with practically all the questions of his day, left him time to acquire a discriminating interest in the history and trend of the medical art, to fix his belief in its ideals and to make him jealous of its good name. But the fact that his writings on medical subjects represent so very small a portion of his works, makes surprising the accuracy of his knowledge of medical subjects, his free and correct use of medical terms, including those of anatomy, and his perception of medicine's final promise.

It would be interesting to know whether his observations and criticisms covering the theories of Newton and Descartes, his views of Locke and Spinoza and Helvetius and other philosophers, his statements in history, his opinions on law and on bees and lawyers and actors and authors and dancers came as near to the truth as his medical opinions. He is said to have failed to appreciate Shakespeare; but he seems to have

had a good line on Aristotle, and I for one am inclined to accord him the compliment of believing that he was right oftener than most men from the very fact that he was so often right in matters I happen to know about, but which were side issues to him.

His views of crime and punishment have not been improved much since his day. "Whoever gives himself a master," he says, "was born to have one." He saw dementia in all great crimes, and notes the religious fanaticism associated with so many of them.

"Bibles, not Virgils," he says, "are found in the pockets of regicides." In illustration of this he cites the case of Jean Chatel, who attempted to assassinate Henry IV. The young man had conceived the idea from Jesuit priests that he was damned. He wanted to die, and contemplated a bestial crime in public, with the idea that he would be killed at once. He changed this plan to that of assassinating the king, and stabbed him in the mouth. The Protestant d'Aubigné wrote to Henry IV about this, saying, "You have denied God with your mouth and he has struck your mouth; take care that you never deny him with your heart."

As to capital punishment, Voltaire asks if it is reasonable to suppose that men can be taught to hate homicide when the magistrates are homicides themselves and kill a man with a great show. Should not the criminal make good the damage he has done his country by working for it—death makes nothing good."

To-day the great problem in education is that of selection, the organization of the

means to find out the faculties of the individual and to adapt education to the perfecting them. We find Voltaire realizing this already and saying that education in colleges and convents is bad, for the reason that there the same things are taught to a hundred pupils, all with different talents; and he makes Candide say, at the end of his varied and exciting experiences, that the thing for each one to do is, after all, to cultivate his own garden.

Regarding the importance of youthful



TRONCHIN, most prominent French inoculator.

impressions in forming character, he puts in the mouth of Zaïre, the Christian captive in Jerusalem, reared in ignorance of her faith and country, and beloved by the Mohammedan ruler of the region:

— the love that encircles and nurtures our youth
Molds our feelings and conduct and grasp of the truth.

A slave to false gods, I had been as sincere
As a Christian; in Paris; or Mussulman here.

The hands of our parents, their training, tho' brief,
Engrave in our heart every early belief
Which example and custom so often
retrace

And which, it may be, only God
can efface. II, 560.

In Charlot he brings out the Socratic doctrine, overthrown by Aristotle and revived in our days by Freud, that knowledge and virtue are the same thing. Le Marquis, an overbearing and spoiled young man, excuses himself to his mother by saying: "Je suis fort naturel," to which his mother, the countess, replies:

Oui, mais soyez
aimable—

Cette pure nature est fort
insupportable.

Vos pareils sont polis; pour quoi? c'est qu'ils ont eu
Cette education qui tient lieu de vertu;
Leur âme en est empreinte; et si cet avantage
N'est pas la vertu même, il est sa noble image
Dompter cette humeur brusque, ou le penchant vous
livre,

Pour vivre heureux, mon fils, que faut il?

Savoir vivre.

A balance runs through his opinions which is truly remarkable for a man who took such personal prejudices as he did. He hated war, and relative to a hand-book of tactics by

Guibert, which was used by the French officers in this country during our Revolution, and which was later highly prized by Napoleon, he wrote:

Fevers, gout and catarrh and a hundred worse ills
With a hundred learned charlatans working their
wills—

You might think the world evil enough as things are,
Without man's inventing the great art of war.⁶

But feeling in this way did not prevent him from realizing that "the nation best provided with steel will always subjugate the one which has more gold and less courage."

Dr. John Moore, a practitioner of London, whose letters about his travels gained him some literary reputation, while tutor of the young Duke of Hamilton visited Voltaire at Ferney in the last year of Voltaire's life (1778). He has left a lively picture which seems to have escaped the great Frenchman's English biographers.

"This skeleton," he writes, "has a keener and brighter glance of the eye than any human being, with

the vigor of maturity and all the advantages of the most bubbling youth. In his face may be read his genius, his penetration, and his extreme sensibility. He maintains a systematic correspondence with the whole of Europe, and from it he gets the news of all noteworthy events and all literary productions as soon as they appear. The greater part of his time he

⁶ For this and the preceding renditions of the French into English verse the writer is indebted to Mrs. Alice Duer Miller.



BOURGELAT, founder of first veterinary school in France.

spends in his study, reading or being read to, and always with his pen in his hand with which to make notes or comments."

He must have passed his whole life in the way Dr. John Moore describes his last days. With a pen in his hand and with his mind turning from his immediate surroundings to rove to the uttermost parts of the earth, keen for material and critical for the drawing of far-reaching conclusions. Every fact, familiar or alien, served him for thinking. When William Cheselden (1688-1752), the English surgeon, and physician to Sir Isaac Newton, made an artificial pupil on a patient congenitally blind, thereby supplying him with vision, Voltaire was greatly excited at the discovery that it took the patient some time to acquire the idea of distance. Apropos of this, he said, "It is impossible to be unhappy through the deprivation of things of which one has no idea."

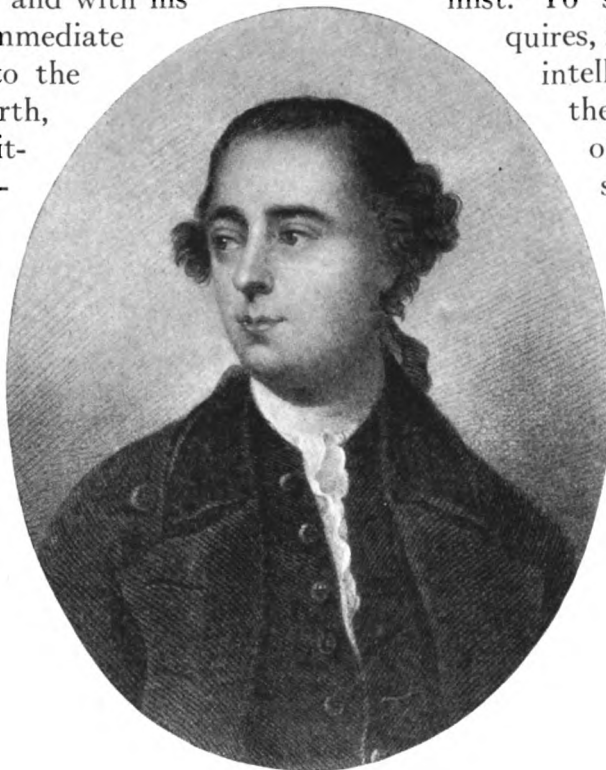
He possessed, perhaps better than any one, the capacity to look things in the face and, in spite of what he saw there, to maintain with humility the high level of his

constructive mental energy. It would be hard to find a more exacting test of intellect and courage than that—than to contemplate correctly the verities, and still show undimmed the feelings and actions of an optimist. To stand such a test requires, in addition to the purely intellectual critical qualities, the kind of understanding of humanity which is inseparable from the love of it.

Medicine, as well as other branches of learning, owes its chief debt to men like Voltaire, who were at once brave, knowing and humble. Voltaire used to say that his desire was to try and sow broadcast what he perceived so clearly himself. He complained that the fields were ungrateful, not realizing, perhaps, that only men of fiber like his own can grasp

truth firmly and hold it. Judged by the events which have had a bearing on the conclusions that he drew, he made singularly few errors in principle. He seems to have illustrated his own saying:

Le gout conduit pour le génie ne fait jamais de fautes grossières.



DR. JOHN MOORE, who left a lively account of Voltaire's activity during the last year of his life.