

A BRIEF RÉSUMÉ OF THE LIFE AND WORK OF AMBROISE PARÉ.

With Biographical Notes on Men of His Time.

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A BRIEF RÉSUMÉ OF THE LIFE AND WORK OF AMBROISE PARÉ.

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IN order to understand the works of Ambroise Paré his life and character should be known, and in order to appreciate his teachings and writings we should consider the epoch at which they appear. At this time French surgery did not truly exist. In the various occidental countries the preceding centuries had progressively seen a series of ephemeral triumphs in biological science as well as in the practice of the healing art, which fought painfully in the midst of scholastic subtilities between the Arabian doctrines, barbarous superstitions and misty souvenirs of a badly-known antiquity. It was, if not night, at least a thick haze which was only penetrated by a few rays of light of sleeping scientific thought.

Then the awakening came. The treasures of Grecian antiquity leaving Byzance were in the first place spread throughout Italy, and then over civilized Europe, just at the time when printing was invented. Letters and art made rapid progress, and the sciences were soon to enter into their glory. For the time being the writings of the ancient physicians, which were published and rendered generally accessible, gave a stimulus for new researches. From contact with the writings in which were transmitted the teachings of the Arabian physicians, which underwent unceasing modifications, and from the development of a

spirit of observation, a medical Renaissance was about to come, certainly far less complete and brilliant than that of art and letters, but the importance of which it is impossible to undervalue. Ambroise Paré was one of the first workers.

No matter how incomplete the result of their efforts may have been, it would, however, be most unjust to pass over in silence the names of the illustrious men who preceded the advent of Paré. In the thirteenth century surgery was brilliantly practised at Plaisance by William of Salicet, and later by his pupil Lanfranc, who afterwards came to Paris, where he settled and lectured on surgery. Then at the commencement of the fourteenth century appeared Henri de Mondeville and his successors, Guy de Chauliac and Pierre Franco.

Guy de Chauliac, who was almost a contemporary of de Mondeville, made the school of Montpellier famous in the fourteenth century, and was the last eminent representative of the Arabian school. After him there is hardly any one to be mentioned other than two Italian surgeons; namely, Bertapaglia and Gatenaria de Vercelli, the latter being the inventor of the syringe.

It was at the beginning of the fifteenth century that the Greek manuscripts commenced being introduced into Italy, and then it was that their translations were begun; fifty years later they were printed. The impulsion had been given, and with the immediate predecessors of Ambroise Paré, both medicine and surgery advanced rapidly. Surgery was especially cultivated, particularly in Italy, by Antoinio Benivieni of Florence (1440-1502), Jean de Vigo (1460-1520?) and his pupil Marianus Sanctus (1489-1510), then Berengarius de Carpi (1470-1550?), to whom the medical world owes particular gratitude for his work on fractures of the skull which, considering the time

at which it was published, is a remarkable production.

At about the same time, from 1493 to 1541, there lived a man who excited the greatest irrational enthusiasm and the most violent anger. A man of genius for some, a badly-balanced brain, and a dangerous revolutionist according to others. Paracelsus was all this. He was born at Einsiedeln, a town not far from Zurich, and after his medical studies he traveled all over Europe, questioning everybody of the medical profession in order to ascertain on what basis the reigning medical doctrines of this time were supported. He interrogated physicians, surgeons, the clergy and alchemists, asking all, as he states in his "Grande Chirurgie," "quels estoient les meilleurs et les plus excellents remèdes desquels ils usoyent et avoyent usé pour guérir les maladies."

After he had traveled for a long time and in all directions, he came to the conclusion that the profession of his time only knew theories and routine, and he rejected everything that they taught and everything that the ancients had written, being persuaded that it was not in their teachings that the source of truth was to be found. He announced, in quality of Professor of Medicine at the University of Bale, where he spoke in German to the great indignation of his colleagues whose lectures were delivered in Latin, that medicine should be founded on experience and reason, and not on authority. The observation of cases, pushed as far as possible, with the help of the laboratory — that is to say, chemistry — should be the only guide of the physician.

All these teachings were very fine, but unfortunately the work left us by Paracelsus does not in any way correspond to them. He was certainly ingenious, but with a too-absolute mind he was

superficial in his conclusions, vain from his personal experience, and could not tolerate any criticism. He allowed himself to be misled by his pronounced taste for alchemy, and, although he has the great merit of inaugurating chemical medicine, he wrongly believed that the rudimentary notions of chemistry which were possessed in his day, were quite sufficient to explain all biological phenomena. He had come upon the scene at too early a day for his ideas to give a lasting result, for he did not have the necessary instruments nor the knowledge of the technique for finer work. It must not be forgotten, however, that Paracelsus introduced a number of new and useful drugs into the practice of medicine, among them we would especially mention antimony and mercury; and above all he gave the example of independence of doctrines and a passionate desire for the truth. With a very different character, infinitely less antagonistic and better judgment, Ambroise Paré had similar qualities to those possessed by Paracelsus.

It is hardly possible to imagine the very low condition into which French surgery had fallen in the fifteenth century. In the first place there was no surgical teaching, properly speaking. It is true that Lanfranc had formerly created a chair treating of this art in the Faculty of Medicine at Paris, but on account of the incessant quarrels between the members of the Faculty, the surgeons of Saint-Côme and the barbers, the chair of surgery had fallen into the most complete disrepute.

Some few courses on surgery were given, but they simply consisted in commentaries on Guy de Chauliac or Lanfranc. Personal ideas, experiments and operations there were none, and, what is most peculiar, the professor of surgery was a physician more preoccupied by the theory and

practice of medicine, which at that time was in a most flourishing condition on account of the discovery of the ancient treatises, than of the science that he should teach.

The assistant to the chair of surgery was a simple barber, clothed in the pompous title of professor, and if, as sometimes happened, the text of the lecture necessitated a forced invasion in the domain of practice, the barber alone was allowed to do it. The least progress, as can be seen, could not be realized under these conditions.

If now we consider the true professionals, we shall assist at a truly surprising spectacle. Here and there, as if regretfully established, a few specialists were to be found whose work was limited to cutting for stone, the removal of cataracts, or the treatment of hernia. It would have been imprudent to ask them about any part of medicine outside their own specialty. We next have the surgeons of the College of Saint-Côme taught by no one knows who, or how; then we have the barbers who simply performed the very trifling operations of minor surgery, and lastly a large conglomeration of quacks and bone-setters, especially disseminated in the provinces, where they alone exercised the art of surgery.

It may be supposed that the title of Surgeon of the College of Saint-Côme implied that its possessor had received a certain amount of scientific instruction, but such was not the case. As far as knowledge went, they had more especially, and above all, that of their prerogatives and traditions, incessantly attempting to separate themselves from their rivals and inferiors, the barbers, and endeavoring to become part of the university from which they were excluded.

The first half of the sixteenth century was filled with efforts directed almost exclusively to realize

this end, and consequently there arose a bitter series of quarrels which were carried before the courts, from which the confrères of Saint-Côme did not always withdraw unscathed. This condition of affairs later on became the cause of a tremendous surgical movement at the end of the sixteenth century and, as can be understood, was not calculated to give a very high idea of the exercise of the surgical art.

If we now consider the surgical world in the sixteenth century, we will find that the professors of surgery, who were ignorant and jealous, did not wish to be considered as confrères of the surgeons of Saint-Côme. The latter body considered themselves the only possessors of surgical science, and tried with all their might to be admitted into the Faculty of Medicine, employing for this end their power of traditions and royal briefs, and always with the same idea, struggling with energy against the barbers, from whom they wished to be removed, looking upon them as their inferiors and simple executors of their prescriptions.

The barbers in their turn, more numerous, possessing, thanks to empirism, to tradition and a more frequent practice, a certain amount of knowledge, desirous of elevating themselves to the degree of true surgeons, went out of their domain every time the occasion presented itself to visit the patients in the practice of authorized surgeons. From this there resulted incessant struggles, lawsuits and trials for the illegal practice of surgery, and as a consequence there arose a fearful exhibition of the deepest quackery, that competition, malice and persecution were forced to put in play.

An art as noble as surgery could not reasonably profit from this condition of things, and for this reason it fell into the most complete disrepute. The physicians, not wishing to step below their

dignity in mixing themselves in the slightest by the most trifling intervention, called a barber surgeon, when the circumstances demanded it, to operate under their eyes and under their pretended direction, the client they were treating.

If the surgical world of Paris offered this spectacle, what can be said of that body in the provinces? As I have already said, the barbers alone did all the surgery outside of Paris. Possessing the knowledge that had been handed down from generation to generation, devoid of the slightest intellectual culture, they exercised a profession that had been taught them by a father or a patron without ever adding the smallest personal idea, and without suspecting that other methods could also be employed. I would only mention in this respect the very large number of bone-setters, apothecaries and apothecaresses (when the occasion demanded it); a sect always friends of the vulgar, which by no means have disappeared in our time in spite of the law, to gull the public which, for that matter, takes in a great deal and never fails to pay very largely for it, when they refuse a well-educated physician his modest fee.

If jealousy and the love of gain should be considered as the causes of such a deplorable condition, we should also recall two facts which prevented surgery from coming out of the shadows. In the first place there was no instruction given in surgery, on account of the difficulty of finding teachers, and also of the complete ignorance of anatomy, which was impossible to study at this time, because the dissection of dead bodies was not permitted; secondly, the knowledge of Latin, which was reserved to a few, was totally wanting among the majority of barbers, and as all the works were written in this language, they were consequently barred from all scientific instruction. But as

every battle must have a conqueror, so it happened here, and this conqueror came from the corps of barbers. He was the first to have the courage to protest against the reigning conditions by performing new operations and publishing the result of his experience. This was Ambroise Paré.

The exact date of the birth of Ambroise Paré has never been exactly known, but it is probable that he was born in 1509. This is the date given by the greater number of medical historians that I have consulted, although once or twice 1517 has been the year given. He was born in a small villa called Bourg-Hersent, which was near Laval. His father was an honest box-maker. He had four children. Jehan, the oldest child, became a barber surgeon at Vitré in Brittany; the second, Paul, went to Paris to follow the business of his father; Anne became later the wife of Claude Viart, a surgeon at Paris; and lastly, Ambroise.

Although the oldest son became, as we shall see later on, the first master of young Ambroise, he was never known in science, although he was a very cool and skilful surgeon, according to the statement of his younger brother. If a person is born a poet or a musician, and willing to work for the development of his natural qualities, it is also quite just to say that a man is born a physician or a surgeon, and daily experience demonstrates this fact. This gift, this taste for surgery, this spirit of sacrifice and kindness, so necessary to every medical practitioner, appeared at a very early day in the life of the subject of this paper, and at the same time there developed in him the most happy disposition for everything that was spiritual.

His father noticed these qualities and resolved to cultivate them, so he confided Ambroise to an

old professor of his villa, in order that he might learn the principles of reading and writing, and later those of grammar and mathematics. Ambroise made rapid progress, which, as he says himself in a private writing, "estonnaient fort ses maitres," and consequently he only remained here a short time, as it became a too incomplete centre of learning.

Before using a bistoury, a lancet, or even a syringe, it was necessary at this time to know Latin especially, so that Paré's father was obliged to find a Latin teacher at Laval for his son. This person was a good old priest by the name of d'Orsay.

It would be most interesting to have some details of the time passed in this city by the illustrious surgeon, but he did not take the trouble to leave any remarks of his life here. The only thing which gives us a clue as to the profoundness of his Latin studies was the haste of the good old priest to confide his mule to Ambroise in order that he might exercise it, as well as his shovel and rake to clean up the garden walks. The difficulties that he must have often found in the study of Latin, and the hours that he passed later on to cover over the deficiencies of his early teaching which was a little bit too varied, probably never left a loving impression in his mind of this part of his life. It is probable that he remained some little time with the priest, because it was only in about 1523 that he commenced to study surgery.

His brother, Jehan, who was a barber surgeon at Vitré, shared with Vialot of Laval, also a barber, the responsibilities of being the first masters of the future father of French surgery. In both these towns Ambroise learned how to bleed, to place leeches, do dressings, and practice what we call "operations ministrantes," in comparison of

which the minor surgery of our days would seem of considerable magnitude.

When he had time, Paré studied the old authors, especially Galen, whom he no doubt thought much of, because in his writings he quotes him frequently. He makes no mention of Vialot, probably because this surgeon was not particularly kind to him, but the name of his brother Jehan occurs often in his writings, and he considers him as a very able and cool surgeon possessed of great judgment. Twice Ambroise was present at operations where, on account of the sagacity of his brother, the latter cured his patient. The nature of these operations is unknown, and all that we learn is that Ambroise was very much impressed by their success.

After a time Paré left Laval and went to Angers to study under a barber surgeon of greater fame, but on account of the knowledge he had already acquired, and from his intelligence, the young apprentice soon found out that he could learn nothing here, and that it was necessary to go to Paris to find new thoughts and the illustrious representatives of the art of surgery. So in company with his second brother he left for Paris in the year 1530.

For every barber surgeon who desired later to practise his profession it was necessary to remain as an apprentice for some time with a master barber, and with this end in view Paré entered as a simple apprentice with one of these masters. The knowledge that a pupil could acquire under these circumstances was far from considerable. According to Malgaigne the apprentice learned to cut beards, to dress hair and manufacture lancets. He assisted his patron in the dressing of simple wounds and ulcers.

The life of these poor apprentices did not pos-

sess any particular charm, because hardly had the cock crowed when the apprentice was obliged to get up to open and sweep out the store, so that the earliest workman could have his hair and beard attended to. From this early morning rising until two o'clock in the afternoon he was obliged to go to about fifty private houses to comb the wigs, put hair up in papers, etc. Towards night, if the apprentice was a young man desirous of learning, he could study with his books, but usually he was so tired that sleep would come upon him.

The master surgeons exacted more respect from their apprentices than from their servants, and the food they gave them consisted principally of bread and water. Other than the one afternoon a week which was given them as a holiday, they could not go to the public lectures, and it is for this reason that physicians, out of charity, delivered lectures on surgery at four o'clock in the morning, so that these poor young men might attend.

It is consequently not surprising that Paré is absolutely silent on this part of his life at Paris. The names of his masters and that of the master barber under whom he worked are not mentioned.

In this modest situation, Ambroise Paré did not become discouraged. To the inferior masters that he could have, he substituted a solitary study of the ancient writers, such as Galen, Lanfranc, and Guy de Chauliac, and soon he added to his library the French translation of the surgical works of Jehan de Vigo. As an ardent and persevering student he carefully read their writings, taking them as his only guide and soon had mastered them completely. Guided by a strong mind for observation, and a surprising power of deduction, he could extract from these authors all

that was good, and he soon discovered that a longer sojourn with the master barber would be without profit to him, so he left in order to enter the Hotel-Dieu of Paris, where he was appointed interne.

The appointment to such an honorary position, which was greatly sought after, is at least most surprising, and a few details are here necessary in order to understand this part of his life. The Hotel-Dieu was founded by a bishop by the name of Landry in 660, and was considerably increased under the patronage of Saint Louis in 1227, and after his time it was always the object of favor and generosity of the monarchs who succeeded to the French throne. The medical and surgical service of this hospital was confided to priests and sisters of charity who gave themselves up to the care of poor patients. The priests looked after the scientific part, but the sisters did not limit themselves to the simple function of nurses, but gave medical care to the patient as well. Under Charles le Bel in 1327, a royal ordinance ordered the visits to be made by the two surgeons of the Chatelet. As assistants, a certain number of apprentice barbers and surgeons were allotted to them, and who, according to their respective merits, fulfilled the functions of externes and internes. The latter were placed far above their comrades, because they were chosen from those who had distinguished themselves by their work, intelligence and scientific knowledge.

It is not known how Paré was able to acquire this title, when we consider the rules and regulations which were then in vogue. It may possibly be that his masters, being struck by the intelligence and love of work exhibited by the young man, may have suspected that he would be an able candidate for the position, and if this is the

case they may be congratulated. But we shall have to leave these speculations, for want of documents, to Paré himself. He talks considerably on his time spent at the Hotel-Dieu, and speaks with affection of all that took place there during the three years that he was interne. The work he accomplished there was probably not of the ordinary kind, because he tells us that during a severe winter he performed himself amputation of the nose of four patients who had this organ frozen. And better than any historian Paré tells us himself what he accomplished in this hospital, as follows: "Faut scavoir que par l'espace de trois ans i'ay reside en l'Hostel-Dieu de Paris, ou i'ay eu le moyen de veoir et connoistre (eu esgard a la grande diversite de malades y gisans ordinairement) tout ce qui peut estre d'alteration et maladie au corps humain; et ensemble y apprendre sur une infinite de corps morts, tout ce qui se peut dire et considerer sur l'anatomie, ainsi que souvent i'en ai fait preuve tres suffisante et cela publiquement a Paris aux escholes de medicine." Few students could have boasted of having employed their time so well during their studies, and for this reason it is not astonishing that our hero speaks of this part of his life with some complaisance.

We would also mention another incident pertaining to the same part of his life. There came to Paris a physician from Milan who was greatly enchanted with the knowledge of the young man that he had met and spoke of it to many of his friends, and Paré replied, not without some feeling of pride, that "le bonhomme ne scavoit pas que i'avois demeure trois ans a l'Hostel-Dieu de Paris pour y traicter les malades."

After his term of service had expired, Paré left the hospital and received the diploma of "master

barber surgeon," and from this time we come to that part of the life of this great man where he began to practice on his own account and was thus enabled to progress in science and in surgery. It is quite certain that the first years of his practice in his store did not see Paré with the razor often in his hand, because his books, notes and observations that he had been able to make occupied him far more, and the friendship he had formed with certain personages of position, whose names we unfortunately do not know was also a great help to him.

The war, which for an instant had been interrupted, was about to break out again with greater fury than ever before between Francois I and Charles V. At this time there was no military surgery, and the ambulance service was, to say the least, in an embryonal condition. The king and his officers of high rank started off to war with a carefully chosen surgeon attached to their suite. A few assistants usually accompanied the surgeon, and with the soldiers that could be employed in case of need, they formed the entire corps of military surgeons. On account of his friendly relations with one of his compatriots, Marechal de Monte-Jan, colonel-general of the French Infantry, Paré was rendered prominent and was appointed to the post of personal surgeon to the marshal, who took him with him in 1536 to the war against Charles V.

It would be interesting to follow the new surgeon through his interesting developments and to write all the incidents occurring during his numerous campaigns, but this would carry us much too far, and we would only call attention to his first campaign, because it was marked by a most glorious reform in surgery and was the prelude to the successive reforms which took place in the

healing art both in France and other countries. Although the position was a high one, if one considers the youth of Ambroise Paré, he nevertheless resolved to support it with vigor. Never having before been to battle, and only knowing the numerous forms of wounds from what he had read in the works of de Vigo, he decided from the beginning to follow the principle of examining and watching with great care the methods of the other army surgeons. The rapidity of his well-balanced judgment quickly led him to adopt all their methods of practice with great address in many cases of diseased or wounded soldiers. On the battlefields of Provence and of Italy he had the opportunity and the great merit of combating and ruining a universally admitted doctrine, which was upheld by the greatest surgeons of the time.

On the battlefield Paré soon became an expert surgeon, although still a very young man. There was one thing which troubled him greatly, especially when he was personally obliged to operate upon a wounded man, and that was the manner in which they treated bleeding wounds and amputation stumps. At this time there was a general belief among the surgeons that all the serious complications which were produced by gunshot wounds were due to a poison and to the combustion of powder, and this opinion was not only admitted by the surgeons of the French army but by those of other nations as well. Consequently, as soon as a soldier was wounded he was obliged to undergo the following cruel operation. Boiling oil was poured on the bleeding parts by means of an instrument made for this purpose, and after this the parts were simply covered by a piece of linen.

Paré, who had a broad mind and endowed with

great intelligence, came to believe that the reigning theory and treatment of this class of cases was entirely wrong and, although still constrained to use boiling oil because there was no other remedy at that time, he reflected and studied his cases and had no peace of mind, until it finally occurred to him that another treatment was applicable.

It was after the battle of Pas-de-Suze, where a large number of wounded were brought to the care of Paré, that he found that he was unable to employ the oil on account of its scarcity. Much annoyed he had to content himself with simply washing the wounds and then applying a mixture composed of the yolk of eggs, turpentine and rose oil. When night came he was unable to sleep on account of his anxiety as to the result of this new treatment, but when morning came and he made his visit, what was his joy to find that in all his patients there reigned the most perfect calm, and all the wounds so treated in the most excellent condition; the others, on the contrary, whose wounds had been treated with boiling oil, had a high fever, and were in intense agony, while the wounds showed a hideous black swelling around their borders (Note 1).

Paré was only nineteen years old at this time, but the rapidity and the certainty of his judgment had demonstrated to him a most grave error, which was upheld by the greatest surgical authorities of his time. What was the most dominating point in his character was his ever-present desire to learn, and nothing is more significant in this respect than the anecdote which he himself relates as follows: "Lors que nous entrâmes a Thurin, il se trouva un Chirurgien qui avait le bruit par dessus tout de bien medicamenter les harquebusades: en la grace duquel trouvoy moyen m'insinuer, et luy fis la court pres de

deus ans et demy, auparavant qu'il me voulust declarer son remede, qu'il appelloit son baume."

At Milan he was able to study genito-urinary surgery, and while at Turin he obtained from an old woman a sovereign remedy for burns. At

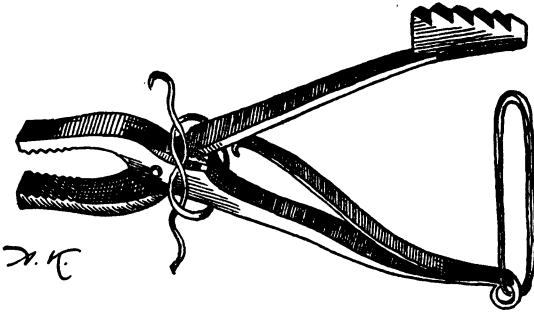


FIG. 1.—Paré's clamp artery forceps. Copied from "The Surgery of Fabricius von Hilden," published in 1682, in the possession of the writer.

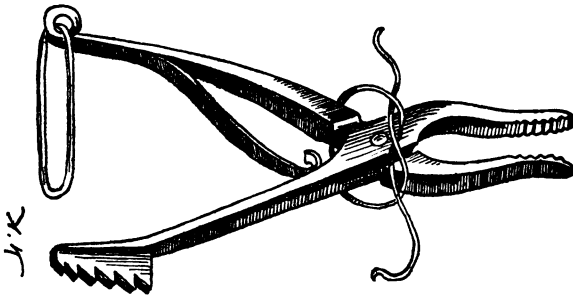


FIG. 2.—Paré's clamp artery forceps. Copied from "The Surgery of Fabricius von Hilden," published in 1682, in the possession of the writer.

this time he performed the operation of disarticulation of the elbow successfully.

Some time later Paré made his great discovery in the use of artery forceps and ligatures in am-

putation and other cases requiring the ligation of blood vessels. He advised including some of the surrounding tissues in the ligature rather than to tie the vessel by itself, because he says it will consolidate better under these circumstances. But if the ligature should drop off or fail to occlude the vessel, he then recommends ligating it with a needle and thread. The needle he employed for this purpose was straight, and for this reason he was obliged to pass it through the skin in the part of the stump nearest to the vessel to be secured; but what is most remarkable he recommends the use of a curved needle for sewing up deep wounds (Figs. 1 and 2).

His invention of ligating with the needle he imputes to the favor of Providence, for he says that he never saw it practised by others nor had ever heard of it, except that in a passage from Galen he had read that there was no speedier manner for arresting hemorrhage in fresh wounds than to tie up the vessels at their roots, which doctrine he considered applicable to vessels severed in amputation.

It has been said by Goelickium and other historians of medicine that Paré did not know Latin, and this is very probably true, because otherwise I think he could not but have read in Celsus a very positive recommendation for the use of the ligature, for Celsus speaks so frequently of this method that it would lead one to suppose that its use was common in those days. Curiously enough I cannot discover in the works of so great a surgeon as Fabricius ab Aquapendente any indication of the use of the needle for ligating, though he alludes to the artery forceps and ligature and argues against their use in the following quotation from Galen (Lib. xiv. Meth.): "Quod si laqueis tentes arterias ligare, sympa-

theiae aboriuntur, id est, affectiones per consensum."

In 1549, nine years after his first campaign, Paré published his first work, entitled, "*La methode de traicter les playes par les hacquebutes et aultres bastons a feu, et de celles qui sont faictes par fleches, dardz et semblables; aussi des combustions specialement faictes par la pouldre a canon* : composée par Ambroise Paré, maister barbier chirurgien à Paris, 1545." It was the anatomist Sylvius (Note 2), one of the greatest lights of the Faculty of Paris at this time, who advised Paré to publish his cases and the results of his experience and give them to the medical public. This was a most excellent piece of advice, both for the readers who, appreciating the value of the book, made its success, and also for the author, whose name was suddenly made prominent (Fig. 3).

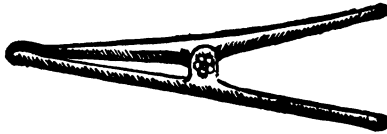


FIG 3.—Paré's sinus dilator. Copied from his "*Opera Chirurgica*," 1612.
This instrument very closely resembles Dr. Bigelow's sinus dilator.

An unforeseen misfortune interrupted the progress of his campaigns in the year 1539. His protector, Colonel-General de Monte-Jan, died. Paré returned to Paris with the marshal and was married in that city in 1541 to the daughter of the Valet chauffe—ciré de la Chancellerie de France.

In 1542 war was again declared, and Paré became attached to the personal suite of Monsieur de Rohan and was obliged to leave in all haste to

join the army at Lyons. Here, as in Italy, we find him as careful, as skilful and as prudent in his military surgery. In this war another event brought the name of Paré still more to the front. The army surgeons having been unable to discover and extract a ball which entered behind the right scapula of the Duke de Brissac, the young surgeon was called to attend him, and when he had examined the wound he ordered the patient to take the position that he was in when the ball struck him, with the result that the missile immediately projected under the skin and was then extracted with great ease. The following year Paré left for Landrecies, where he remained for some time, and then returned to Paris to take up his civil practice, as was always his custom when he returned from his campaigns.

As the art of printing had become universal, Paré's work on wounds was rapidly diffused throughout the country and naturally was a great help in bringing its author into prominence. The surgeons, finding that one of their corps had entered into the domain of reformation that ignorance or fear had prevented them from entering, did not conceal their joy. The first movement on the part of Paré gave rise without doubt to a perfectly natural stupefaction after their surprise had ceased, when they found themselves face to face with a practice that completely annihilated those that had been used and consecrated by the authority of time. But as the facts spoke for themselves, the surgeons found it necessary to abandon their old theories and to recognize the scientific basis of the practice of the young surgeon, since by reason and experience they were able to demonstrate the truth of his teachings.

They had no longer any use for the cautery in cases of hemorrhage, for in its place they now

tied the bleeding vessels, and after hemostasis was complete the wound was covered with an ointment that even modern surgery could not condemn as being devoid of antiseptic properties.

The professors and doctors of the Faculty of Medicine were also obliged to bow down before the evidence of the demonstration, but they nevertheless retained at heart a most bitter feeling against the reformer who had broken away from ancient teachings and dared to allow the publication in French of his new theories. The members of the medical faculty retained a jealous care over their traditions, and no master had ever written upon medical subjects in anything but Latin. From this there ensued an interminable quarrel between the men of letters who, wishing to hold their prerogatives, shut themselves up in a kind of sanctuary which was forbidden to the profane and those men without literary education. Finally, surgeons of other nations, who had also been surprised by the new discoveries of Paré, commenced to arouse themselves, and in their turn became engaged in the reform of surgical art, following the road traced out for them by Paré. The stimulus given by Paré was magnificent. For the sleeping surgery of this epoch a man was wanted who would be capable of arousing the profession from their torpor and trace for them an end to be attained. Our hero dared to break away from tradition, and he stood as a torch lighting science.

Paré, who was naturally active, but nevertheless loved retirement and long work in the silence of his library, again started for the war in 1546, being still attached to the suite of Monsieur de Rohan. At the siege of Bologna the Duc de Guise received a wound on the head from a lance, which transfixed the skull so that the point came

through and out at the other side. The king's surgeon refused all intervention in this case, because he feared that the patient's eye would be forced out in withdrawing the lance, and he inferred that it would have been much better for the duke had he been killed outright. Paré was called to the bedside of the duke, and after examining the wound took a pair of heavy forceps and, asking his august patient if he would allow him to place his foot on his head, so that he might have a point of fixation, withdrew the lance with such skill that not a single fibre of the muscles of the eye was injured. I would add that the patient made an uninterrupted recovery.

The hostilities ended very suddenly, and Paré returned to Paris to enjoy several years of peace. This time he gave himself up particularly to the study of anatomy under the direction of Sylvius and his friend, Thierry de Hery, whom he had known from infancy. He became the prosector of Sylvius, and I believe was the first to found a chair of anatomy, opening the era of public dissections; and in a treatise published in 1550, which for many years remained a classic, he relates all that a surgeon should know for the treatment of the various ailments to which the human body is heir. The science of obstetrics smiled upon him, and he annexed to his work on anatomy, already alluded to, a small treatise having for title *La manière d'extraire les enfants tant morts que vivans du ventre de la mere, lorsque nature de soy, ne peut venir à cet effet.*

The success of this new publication encouraged him to publish a second edition, dedicating it to the king, who had heard the greatest good said of Paré from all sides, and which decided his majesty to employ him as one of his household surgeons.

The reputation and fortune of Paré had placed him in the ranks of the high functionaries of the court. He had hardly been nominated surgeon to the king when Charles V besieged Metz, which was defended by the Duc de Guise. The garrison had become extremely reduced by the enemy's attacks, while the extreme cold, want of food, and disease had produced a constant and increasing loss of men. Medicines were lacking, and the barber surgeons of the city who were called upon to care for the wounded could not attend to all their patients, while their ignorance made another element of danger.

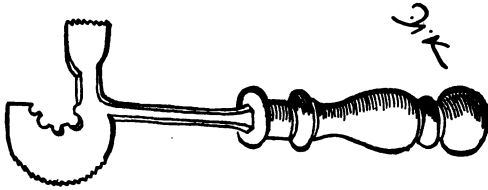


FIG. 4.—Saw used in Paré's time for operations on the skull. Copied from "The Surgery of Fabricius von Hilden." About 250 years later Mr. Hay of Leeds, England, produced a saw which still bears his name, almost identical to the one here figured.

The Duc de Guise sent one of his captains to the king to describe to him the condition of the city and especially the lack of medical care. Paré was sent to Metz and, being able to pass through the enemy's lines, entered the besieged city on Dec. 8, 1552. The siege had lasted for a month and a half, and the arrival of Paré was received with the greatest transports of enthusiasm by the soldiers.

A day or two after his arrival he trephined Monsieur de Bugueno, a gentleman in the duke's suite, who had been struck on the head by a bursting stone and had been unconscious for a fortnight. He was cured by the operation, and this

success, so extraordinary for the time at which it occurred, again raised Paré in the esteem of the chiefs of the army (Fig. 4).

As to the troops, there was no need of marvelous operations and unexpected recoveries to keep their confidence in Paré's science and ability, and for their respect and love for him. At all hours of day and night he was found with the wounded, examining and caring for all those who came to him, with the conscientiousness and solicitude that were always present in him throughout life.

History, painting and engraving have made popular Paré's stay in besieged Metz, and many believe that it was the greatest episode of his life. In reality it is quite sufficient to examine his writings and works which have been written on the subject, to find all necessary proof that his noble conduct at the siege of Metz was not at all exceptional for him.

He had become one of the greatest lights in his profession, and from circumstances was one of the men upon whom the salvation of the besieged city and the honor of the royal arms depended, and it is perfectly natural that his heroism was heralded in all parts. But those who praised him most had probably forgotten that for the 16 years preceding this event Paré had given his aid to wounded soldiers, excepting during the periods of peace, and had unceasingly endeavored both in his mind and heart to discover all possible methods for alleviating their suffering.

It is evident that Paré was not often placed under such adverse conditions, nor was his duty always so difficult or as absorbing as it was at the siege of Metz. War has never been an easy thing for either conqueror or conquered, but no matter how atrocious our modern battles may be, I hardly think that one can form an idea of the

suffering that existed on the battlefield in Paré's time. At this epoch man fought man to man, as in the golden age of chivalry, which was already a time of the past; and still more, firearms had become in current use, and even if they could not send the projectiles very far, their calibre was quite sufficient to produce most frightful wounds, so that their murderous effect was added to those of the steel implements of war, with the result that fighting distant from the centre of the action did not, as in our days, diminish the chances of death. After each encounter the wounded were many on both sides, and if they were of low birth, unless they had some protection, they ran considerable risk of being abandoned to a miserable death on the field. Then occasionally out of pity, and in order to avoid their being thrown half alive into a ditch or tortured by their adversaries, the wounded men were often killed by their companions-at-arms.

If, on the other hand, they were cared for, it was always by such means that the most insufficient surgery of modern armies would find rudimentary. The surgeons were few and ignorant; dressings or cauterizations, as I have already said, played the principal part and were usually only the occasion for new torture and suffering to the poor soldier. Ambroise Paré brought into their midst, not only the most cultivated surgical science of his time and a great manual dexterity, but also rigorous principles of conduct, a firm conscience and the delicate sentiments of humanity. Those of rank remembered his services and appreciated him, while the humble also remembered them and loved him.

The French army having at last defeated the enemy, the troops returned to Paris, and the king having been informed of the great and many

merits of his surgeon, liberally recompensed him, and promised him that in the future he should want for nothing. Then suddenly Picardy was in arms, and Paré was obliged to leave in haste for Hesdin at the order of the king.

In this campaign the enemy came out victorious, putting the French army to route and killing a great number, as well as taking many prisoners, among whom was Paré. The adventures through which he passed are most curious, and fearing that if his name were known to his captors a large ransom would be demanded for his release, or, on the other hand, to be put to death if he were considered a simple soldier, he tried to turn the difficulties but without success. Almost in a state of discouragement, he borrowed an old cloak and breeches from a poor soldier, and in this disguise he endeavored to cross through the enemy's lines.

This subterfuge did not, however, deceive the enemy on the value of their prisoner, because among them, as well as among the soldiers of the French army, Paré had several times had the opportunity of astonishing the most clever surgeons of Charles V's army. He would have in all probability remained a captive for a long time but for a happy circumstance occurred which gave him his liberty. One of the generals, who had been afflicted with an ulcer on the leg for many years, begged the Duke of Savoy to allow him to have Paré, who arrived in the camp of this officer, and was immediately asked to cure him. Although he greatly feared the result, he commenced his treatment and had the fortune to cure the duke completely, and on account of this his august patient rendered him his liberty.

Henry II was extremely large in his favors to his surgeon, so that the College de Saint-Côme, to

which Paré did not belong, as will be remembered, on account of an insufficiency of classical studies, seized this occasion to create him one of its patrons. In spite of the fact that the statutes of the college exacted a knowledge of Latin on the part of the candidate, and in spite of the necessity to make him undergo his examination in Latin, everything was understood and arranged in advance; and still more,—a most unheard of thing, perhaps,—the college paid him the honors of a gratuitous reception.

In consequence of all this Paré demanded to be admitted to the examinations on Aug. 18, 1554, being nominated bachelor on the 23d of August, licentiate on the 8th of October, while on the 18th of December of the same year he took the bonnet of master. The ceremony took place in the church of the Mathurins. The rector of the university was present, as well as the representatives of the faculty, and according to the position or the celebrity of the candidate the building would be filled with bishops, magistrates and nobility, and the reception of Paré was not one of the least brilliant, but it occasioned many smiles on the part of those present.

More than 20 years later, in a new campaign between the faculty and the surgeons of Saint-Côme, the famous Riolan (Note 3) recalled this circumstance in the following words: “Entre les chirurgiens qui excellent aux oeuvres de l’art, il en est (chacun sait de qui je veux parler, sans qu’il soit besoin que je les nomme) il en est qui ne savent pas décliner leur propre nom. Nous les avons vus appelés de la boutique du barbier à la maîtrise chirurgicale, et recus gratis contre le coutume, de peur que les barbiers reconnus plus habiles que les chirurgiens ne fissent honte à leur college; nous les avons entendus débitant de la manière

la plus plaisante du monde le latin qu'on leur avait soufflé, et ne comprenant pas plus ce qu'ils disaient que ces enfants à qui, dans les colleges, les professeurs font repeter des harangues grecques."

As soon as the new master had become installed, he immediately gave himself up to his functions with that delicacy and talent that was so characteristic of him. Beside his lectures on surgery he soon gave to the medical public a new edition of his "Universal Anatomy." At his request dead bodies were sent in large numbers to the college. He dissected with great care, going over all the parts that he had already studied, and controlling all that had been published by other anatomists.

The story is told that on one occasion, when the body of a hanged criminal had been sent to him, he divided it directly through the middle; on the right side he made his dissections, while the left side of the body was left intact, so that when he might wish to make an incision on a patient he could beforehand compare the two. Surgical anatomy was first given to the medical profession by Paré, and as the dissection of the cadaver already alluded to remained for 27 years without any trace of decomposition, it would seem to show that Paré was not unacquainted with some process of embalming.

It has been said that Paré copied Vesalius, who was the father of descriptive anatomy; but it would appear to me that the years are too few which separate these two great men for such a reproach to be justified. They lived nearly at the same epoch, and, if occasionally a few paragraphs are borrowed here or there by one or the other in their respective works, these extracts are plainly owned up to by each, and their publications ap-

peared each one in its own manner and in too great rapidity and too near together for one to be a complete copy of the other, as has been implied. Another thing which we should recollect is the fact that Sylvius, who was Paré's master, was also the teacher of Vesalius, and consequently there is nothing astonishing in the fact that we find a certain similarity in the ideas of both these great men, since the study of anatomy was made by them under the same master, who himself was most learned in this branch of science.

Henri II, who died in 1559 under the well-known tragic circumstances,—having been hit in the eye by a lance during a tournament,—Paré, who had been called to attend him, retained his position as surgeon-in-ordinary to Francois II. Eighteen months later this king died in a most mysterious fashion, according to the story of his contemporaries, but in reality probably died from cerebral complications produced by an otitis media.

Paré did not escape the ridiculous suspicion of having poisoned the king by pouring poison into his ear, but this calumny did not affect his character, because in 1563, at the time the civil war commenced, he was made first surgeon to the king. A year after this appeared the third edition of his surgical works, entitled, *Dix livres de chirurgie*. Many additions had been made in the preceding edition, particularly three books which were completely new; namely: *Des chaudes-pisses, des pierres et des retentions d'urine*. The first of these works he derived entirely from the book his friend, Thierry de Hery (Note 4), had published in 1552 on syphilis, and he admits this most frankly himself.

During the interval between the death of Francois II and his nomination to the position

of surgeon-in-ordinary to the king, Paré published a work on wounds of the head.

The new edition of his surgical works had hardly been completed than he was obliged to leave Paris to accompany the king and the court on a trip through the provinces, which lasted two years. He went over the east of France and then the south, where he remained several months, and wherever he went he made it his business to consult all the well-known physicians and surgeons on their various treatments and their techniques, allowing no opportunity for anything to escape him in his search for instruction.

The winter of 1564 was very severe, and a great misery reigned throughout the country. In the spring epidemics broke out, which found among the debilitated people a most favorable soil for their development. The plague came first, and rapidly extended over nearly all France. Paré took it, and had a large bubo in the axilla and a still larger one on the abdomen, which left him with a cicatrix the size of the palm of the hand. When he returned to Paris, the plague had disappeared, but in its place smallpox and measles were raging. The number of physicians was not sufficient to care for all the patients, so that the surgeons and barbers were called upon to help them.

This circumstance gave Paré the opportunity of becoming a physician once more, and from the material he gathered he wrote a book entitled, *Traite de la peste, de la petite-verole et rougeole, avec une description de la lèpre*, which appeared in 1568, and which did not cause much comment on the part of the faculty. But although the faculty, that Paré considered with a most respectful deference in his writings, did not attack this purely medical work, it did not allow the praise that Paré gave to antimony to pass by unmolested.

When speaking of Paracelsus in the beginning of this paper, I mentioned the introduction of this new agent into therapeutics, but its introduction into France gave rise to much opposition and revolt on the part of the physicians. In 1560 Riolan expressed himself in the following terms against antimony, for which both he and that most charming and sarcastic physician of Paris, Gui Patin, were so warm in denunciation of its use: "Alchymistes s'estans establis dans Paris, distribuans leurs drogues empoisonnées et donnant à tout le monde de l'antimoine qui entroit en vogue et recommande par les escrits d'un medecin de Montpellier nomme Delaunay, ils avoient esté par censure de l'Eschole condamnez et par arrest de la cour l'usage de l'antimonine interdit d'en vendre."

A physician, even of the Faculty of Montpellier, was at that time in the eyes of the Faculty of Paris far above a surgeon, even although it was Paré. It could not tolerate from this great man anything that it denounced, and consequently it went to court about it. But the affair did not last long, because Paré was not quarrelsome; and besides, the effective and moral authority of the faculty was such that a fight would have been most serious, so the great surgeon retired silently. But when he again published his treatise on smallpox the passage relating to antimony had disappeared, and in its place we may read the following: "Quelques-uns approuvent et recommandent fort l'antimoine, alleguans plusieurs experiences qu'ils en ont veu. Toutefois parceque l'usage d'iceluy est reprouve par messieurs de la Faculte de medecine, je ne me departiray d'en rien escrire en ce lieu."

The following years brought new success to Paré, especially during his voyage in Flanders,

where, on account of his fame, he was called to attend several personages of rank who had been wounded. But the difficulties and combats that he had escaped up to that time were now about to commence. These difficulties arose under the following circumstances, and he himself was partially the cause of them :

In those parts of surgery that he had not up to that time written on were to be found tumors, which at his epoch were considered as diseases pertaining more to the care of the physician than to the surgeon. Now, in 1571, a surgeon of the College of Saint-Côme, by name Malezieu, had made a French translation of the *Synopsis Chirurgiæ*, written by a physician by the name of Gourmelen (Note 5), who had published this book in 1566. This work of Gourmelen's was the most complete treatise that had been published up to that time as far as tumors went.

In the beginning of the year 1572 Paré published a new work almost immediately after Malezieu's translation, entitled *Cinq livres de chirurgie*, in which he treated among other things tumors in general and in particular, as well as wounds and dislocations. Malgaigne has said that the effect of the work was so great that neither the original Latin nor the French translation of Gourmelen's publication came to a second edition, and this so infuriated its author that he lost no opportunity to revenge himself upon Ambroise Paré. Directly or indirectly Gourmelen was the author or the conspirer of all the attacks directed against Paré.

In 1569 another member of the Faculty of Paris, Lepaulmier by name, had published a small work on the nature and treatment of pistol wounds. He copied both Paré and Maggi (Note 6) without giving credit to either of them, but when he came

to the question of treatment he most severely criticised the practice that Paré advised. The latter replied by publishing with his *Cinq livres de chirurgie*, an *Apologie touchant les playes faites par harquebuses*.

Lepaulmier replied, mixing his arguments with the grossest insults, but all in vain. Paré was in the right, and Lepaulmier fell into disrepute.

Shortly after the publication of his new work Paré found himself again in the midst of a civil war, in that great tragedy of the world's history, the Massacre of St. Bartholomew, through the terrors of which he passed unscathed. Much has been said in history of Paré in this direful event, and it has been supposed by some that he was a Protestant, and that his life was only saved by the protection of his patron, Charles IX, but on this point we will not insist.

In 1573 he published two works, one on generation, the other on monsters. He had been a widower for some little time when he again married, and Charles IX being dead, he continued his functions with Henry III, who appointed him a councillor and his valet de chambre. In 1575 he published his complete works in one very magnificent volume.

Now it happened that Gourmelen had just been elected dean of the faculty, and he seized upon this occasion to bring into effect a law which had been issued in 1535, prohibiting the publication of any medical work without first submitting it to the approbation of the Faculty of Medicine of Paris, and he tried to oppose the sale of Paré's work. The pretext that he put forward was that Paré had touched upon the high points of philosophy and medicine; as, for example, questions relating to the elements, humors, faculties, the spirits, etc. He was also reproached for his work

on generation, which treated questions which were essentially medical. The affair went as far as Parliament, but it got no further, because Paré was far too well thought of by the king, and finally the work was put on sale without opposition. Gourmelen was defeated, but he intended to take his revenge later. This he expected would be an easy thing for him, because just then the faculty was again commencing a conflict with the surgeons of Saint-Côme, but Paré took no part whatever in these quarrels and gave himself up to the correction and editing of the second edition of his complete works, which appeared in 1579.

Three years later Paré published another new work which furnished new arms to his adversaries. It was entitled *Le livre de la licorne* (Note 7), and contained a very judicious and courageous criticism of a superstition of this epoch which was deeply rooted in the minds of the people; namely, their belief in the virtues of the horn of the unicorn. This substance was sold at a higher price than gold, and it was customary to dip a piece of the horn into the king's cup as an antidote for every poison. In 1583, a few months after the appearance of this book, an anonymous author, upon the strength of the approbation of Grangier, dean of the faculty, attacked Paré's work in terms a little less than indecent.

All had not ended; Gourmelen again entered upon the scene by publishing in Latin three new books on surgery, in which Paré was directly attacked regarding the application of his ligature of vessels sectioned during amputations. It was a most unfortunate idea for his adversary, because Paré had no difficulty in replying to him and to give the last blow to Gourmelen.

This was his last writing. Gourmelen's attack had excited the zeal of the most obscure adversa-

ries, and the pamphlets multiplied in number. Paré did not reply to any of them, and in 1582 a Latin

IN EFFIGIEM AMBROSII PARÆI.



FIG. 5.— Reproduced from Paré's "Opera Chirurgica," published in 1612, in possession of the writer.

translation of his complete works appeared. He counted it as his third edition, and the following,

which was published in French in 1585, was the fourth.

Years were overtaking Paré, and when Henry III left the capital, which later on he returned to besiege, he did not take his head surgeon with him because he was not sufficiently strong to undergo the fatigue of the campaign.

Shortly after that Henry III was killed by the dagger of Jacques Clément. Paris, where the league caused terror to reign, was again attacked by Henry IV, and this siege was the cause of all the horrors of famine and misery. Ambroise Paré who did not fear to publicly oppose the orders of the league, died 4 months after the siege had been raised, and it is in the following terms that a contemporary, by name Pierre de l'Estoile, announced the death of the famous surgeon.

“Le jeudi, 20 de décembre 1590, mourut à Paris en sa maison, maitre Ambrois Paré, chirurgien du roy, agé de quartrevings ans, homme docte, et des premiers de son art; qui nonobstant les temps, avoit tousiours parlé et parloit librement pour la paix et le bien du peuple, ce qui le faisoit autant aimer des bons, comme mal vouloit et hair des meschans, le nombre desquels surpassait de beaucoup l'autre, principalement à Paris, ou les mutins avoient toute l'autorité: nonobstant lesquels ce bonhomme, se fiant possible à ses vieux ans comme Solon, ne laissoit à dire la verité.”

I have been unable to ascertain upon what authority Dezeimeris fixes Paré's death on April 25, 1592, and believe that this must be erroneous.

NOTE 1.

The following passages from the writings of Ambroise Paré relating to this particular circumstance are well worth quoting:

“J'étois en ce temps-la bien doux de sel, parce que je n'avois encore veu traiter les playes faites par harque-

buses; il est vrai que j'avois leu en Jean de Vigo, livre premier des *Playes in general*, chapitre 8, que les playes faites par bastions à feu participent de venenosité, à cause de la poudre: et pour leur curation commande les cauteriser avec huile de sambuc, en laquelle soit meslé un peu de theriaque. Et, pour ne faillir, paravant qu'user de ladite huile fervente, scachant que telle chose pourroit apporter au malade extreme douleur je voulus sçavoir, premièrement que d'en appliquer, comme les autres chirurgiens faisoient pour le premier appareil, qui estoit d'appliquer ladite huile la plus bouillante qu'il leur estoit possible dedans les playes, avec tentes et setons, dont je prins hardiesse de faire comme eux.

“ En fin mon huile me manqua, et fus contraint d'appliquer en son lieu un digestif fait de jaune d'œuf, huile rosat et terebenthine. La nuit je ne peu bien dormir à mon aise, pensant que par faute d'avoir cauterisé, je trouvasse les blessés ou j'avois failli à mettre de ladite huile, morts empoisonnés: qui me fit lever de grand matin pour les visiter, ou, outre mon esperance, trouvay ceux auxquels j'avois mis le medicament digestif, sentir peu de douleur à leur playes, sans inflammation et tumeur, ayans assez bien reposé la nuit: les autres ou l'on avoit appliqué ladite huile, les trouvay febricitans, avec grande douleur, tumeur et inflammation aux environs de leurs playes. Adonc je me delibéray de ne jamais plus brusler ainsi cruellement les pauvres blessés de harquebusades.”

C. G. C.

NOTE 2.

Jean Sylvius (who must not be confounded with Sylvius de le Boe) was born at Amiens in Picardy in 1478; went through a course of classical learning under his elder brother, Francis Sylvius, who was principal of the college of Tournay at Paris, and was a great promoter of letters in that age of barbarism. There he learned the Latin tongue in much greater purity than it had been taught for a long time; and hence it was that his writings are distinguished to such advantage by the elegance of the style. He acquired a perfect mastery of the Latin and Greek tongues, and some little knowledge of the Hebrew; and applied himself also to mathematics and mechanics so successfully as to invent machines which deserve public notice. When the time was come of giving himself entirely up to

physic, to which study his inclination had always led him, he traced it to its sources, and engaged so deeply in the reading of Hippocrates and Galen, that he scarcely did anything but examine and translate those two authors. He discovered from these the importance of anatomy, and applied himself to it so ardently, that he became as great a master as that age would permit. He studied pharmacy with no less care, and took several journeys to see upon the place the medicines which different countries produce. Upon his return to Paris he read lectures, and explained in two years a course of physick from Hippocrates and Galen, which spread his reputation so extensively that scholars from all parts of Europe resorted to him.

But before he became so famous, he met with great opposition from the physicians of Paris, who were extremely displeased that a man who had nowhere taken a degree in physick, should presume to teach that science in the metropolis of the kingdom. These murmurs induced him to go to Montpellier in 1520, to take his degrees there; but he returned without them, his avarice, of which we shall speak by and by, not permitting him to be at the necessary expense. He endeavored at his return to reconcile the physicians to him, and was admitted bachelor of physick in June, 1531. In 1535 he taught in the College of Tricquet, while Fernelius taught in that of Cornouaille; but the latter had few scholars, while the former had a great number. The reason of this difference was, that Sylvius dissected bodies, and read lectures upon botany and the preparation of medicines, which Fernelius did not. The professorship of physick in the royal college becoming vacant in 1548, Sylvius was pitched upon to fill it, which he did, after hesitating about it two years. He continued in it till his death, which happened in 1555.

He was never married, and showed even an aversion to women. His behavior was rude and barbarous. He seldom jested or departed from his gravity; and when he was inclined to become more sociable he did it awkwardly. The only merry saying related to him is, that "he had parted with three beasts,—his cat, his mule and his maid." His avarice was extreme, and he lived in the most sordid manner; he allowed his servant nothing but dry bread, and had no fire all winter. Two things served him as a remedy against cold; he played at football, and carried a great log upon his shoulders; he said that the heat which he

gained by this exercise was more beneficial to his health than that of a fire. In short, this passion for money obscured the lustre of all his great qualities.

He was upon very ill terms with Vesalius, who occasioned him the greatest vexation he ever suffered. Sylvius's excellency lay in anatomy, and he prepared a work upon that subject, which he considered as a masterpiece. Upon this, Vesalius published his "Opus Anatomicum," which was so well written, and illustrated with so many beautiful plates, that it was universally admired. Two circumstances aggravated this grievance; Vesalius had been Sylvius's pupil, and he attacked Galen, whom Sylvius had defended even to his errors. The works of Sylvius have gone through many editions.

C. G. C.

NOTE 3.

Jean Riolan, one of the most celebrated anatomists that France has ever produced, was born at Paris in 1577. His father was a well-known physician and the author of a number of works which had a great reputation in his time but are now forgotten. He studied in the French capital and was received doctor in medicine in 1604.

From the time that he received his baccalaureate, he rose in the esteem of the faculty on account of his work, and the latter body promoted him to the position of demonstrator, which position he fulfilled in the most distinguished manner. On account of his many merits, and the services that his father had rendered, the faculty gave back to him part of the money received for his reception into that body.

Riolan was physician in ordinary to Henry IV and Louis XIII. He became physician in ordinary to the queen mother, whom he followed when she was exiled and in disgrace.

A new royal chair of anatomy, botany and pharmacy having been created, Riolan was given this professorship upon the request of Andre Du Laurens. His teaching, which sparkled with a vast amount of knowledge, always drew a large number of pupils, and he understood the necessity of uniting anatomy to practical medicine and was the first who united the most essential notions of pathological anatomy with descriptive anatomy. He was an enthusiastic partisan of the glory of the ancients, or perhaps envious of that of moderns, he fought with ardor against the great discoveries of

his time, such as the circulation of the blood by Harvey, and that of Pecquet on the lymphatic system. He was an ardent defender of the Faculty of Medicine and defended zealously its privileges against the invasion of Renaudot and the Royal Chamber.

In his old age he suffered severely from vesical calculus and underwent an operation in 1641, but during the extraction the stone was broken, and a portion remained which formed another, so that a year later cystotomy was again performed. Riolan died on Feb. 19, 1657, from a retention of urine, at the age of 77.

C. G. C.

NOTE 4.

Thierry de Hery was a barber surgeon and studied at Paris, where he was born, under Jacques Houllier and Antoine Saillard (who were physicians of the Faculty of Paris) because at this time the barber surgeons were obliged, according to their statutes, to take a four years' course in surgery in the faculty before they received their degree of master. He followed the army into Italy in 1537. He visited Rome, as is proven by the mention that he makes of the Hospital for Incurables, in which there was a large number of patients afflicted with the various forms of syphilis. It is not known just at what time he returned to France, but it must have been considerably before 1552, if one may be able to judge by his work on syphilis. The copy of this rare work that I have in my library has the following title: *La Methode curatoire de la maladie venerienney vulgairement appellee grosse vairolle, et de la diversite, de ses symptomes, compose par Thierry de Hery, lieutenant general du premier barber Chirurgien du Roy, a Paris. Chez Gilles Goubin demeurant devant le college de Cambray rue S. Jean de Latran à l'enseigne de l'Esperance. 1569.* The first edition of his work was published by Matthieu David in 1552.

The theories advanced in this work are really remarkable, considering the time at which it was published, and some of his observations regarding the diagnosis of syphilis are most judicious and show in him the qualities of a shrewd diagnostician. He upheld that the disease could only be cured by mercury, either in the form of ointment or plasters, and by the use of fumigations.

De Hery died at an advanced age in 1599.

It is said on good authority that he had a very large and very lucrative practice in this particular branch of

medicine, and a very good anecdote which bears the stamp of authenticity is told of him. He went one day to Saint-Denis, where he knelt before the statue of Charles VIII, but a monk having told him that he had made a mistake and that he was not kneeling before the statue of a saint, de Hery replied, "Keep still, my father: I know very well what I am doing; and he is a saint for me, because he has been the means of my making thirty thousand pounds in income by bringing the pox into France."

C. G. C.

NOTE 5.

Etienne Gourmelen was born in Brittany and went through his early studies with success. The progress that he made in physics, and perhaps still more his natural inclination, caused him to choose the study of medicine in spite of the desire of his parents, who were not well to do, to do otherwise.

He came to Paris and studied with great perseverance and determination the best ancient and modern works on medicine, and he was received bachelor on April 2, 1558. He was received doctor of medicine on March 5, 1561, and was made dean of the Faculty of Medicine in 1574 and was renominated in 1575. In 1567 and 1568 he was made professor and explained the works of Galen and Hippocrates; his disciples were numerous and enthusiastic.

The large number of students who came to his lectures and his reputation followed Gourmelen to the Royal College, when in 1558 he was appointed professor of surgery by Henry III. The manner in which he distinguished himself in this post caused him to be considered one of the greatest professors of his century. He died on Aug. 12, 1593, having given his life principally to the study of surgery, having published several works.

C. G. C.

NOTE 6.

Bartholomew Maggi of Bologna was a physician, philosopher and professor of surgery in his native city. He was one of the most celebrated practitioners of his day and was an intimate friend of Jean Marie del Monte, who was cardinal and then pope under the name of Julius III. When the latter had attained this dignity, he immediately appointed Maggi his physician and ordered him to come to Rome, where he received him with all possible marks of confidence and esteem. Maggi is to be particularly remembered for establishing

the true principles of treating wounds by firearms and combating the reigning opinion of the poisonousness of these wounds. He was one of the first to establish the practice of amputating in healthy tissue when removing a limb for gangrene. In 1550 he published a small work on syphilis and venereal disease which was for a long time unknown, but the work which made his reputation is the following: *De sclopetorum et bombardarum vulnerum curatione liber*, the first edition of which was published at Bologna in 1552.

C. G. C.

NOTE 7.

Throughout antiquity it was believed that there existed an animal having a fabulous shape and bearing a horn of enormous size, growing from the centre of its forehead. Aristotle and Pliny give most learned and grave descriptions of this animal, although they admit that they had never seen it. During the middle age this belief became more and more rooted in the minds of the people, and was the pretext for the performance of a great many superstitious practices. The unicorn was considered the emblem of purity; all writers on animals of the epoch pretended that this animal, that was regarded as invincible, could only be conquered by a virgin. As soon as this animal saw one, he came and reposed his head upon her breast and then lost all his ferociousness.

The horn of the unicorn was used as a proof against poisoned foods and drink, because it was believed that it not only preserved human beings from malice of others, but also when put in contact with toxic substances it immediately annihilated the poison, and the horn of this animal was employed as an antidote during the fourteenth, fifteenth and sixteenth centuries.

Now, since the unicorn is quite as unknown as many other fabulous beings, and since no one ever captured the beast who, Petrarch believed, drew the chariot of chastity, how was it that the human race came in possession of its much-looked-for horn? It may be that this beautiful animal made a present of it to the virgins that it had the happiness of meeting (?), but this is only an hypothesis of my own, that I will not further investigate.

It has been thought that the horn employed under the name of that of the unicorn might have been procured from the rhinoceros, but in a very interesting

zoological and paleontological study on the Cetacea by Raoul Guerin it is stated that the so-called horn of the unicorn was nothing less than the tooth of the monodonmonoceros. It seems, however, a little difficult to conciliate this creature with the unicorn, because the former has the shape of a fish while the latter that of a horse, and I here extract a sentence describing this charming beast taken from the Roman d'Alexandre published in 1512: "La licorne est grant et grosse comme un cheval, mais plus courte de jambes; elle est de couleur tannée. Il est trois manieres de ces bestes ci-nommées licornes. Aucunes ont corps de cheval et teste de cerf et queus de sanglier, et si ont cornes noires plus brunes que les autres. Ceux-ci ont la corne de deux coudées de long. Aulcuns ne nomment pas ces licornes, dont nous venons de parler, licornes, mais monoceros et monoceron. L'autre manière de licorne est appelée églisseron, qui est à dire, chievre cornus. Ceste cy est grant et haulte comme un grand cheval et semblable a ung chevreuil et a sa grand corne très aguhe. L'autre manière de licorne est semblable a ung bœuf et tachée de taches blanches. Ceste cy a sa corne entre noire et brune, comme la première manière de licorne dont nous avons parlé. Ceste cy es furieuse comme un thoreau quant elle voit son ennemy."

But whether this creature was a horse or a cetacea, it is none the less true that its horn was greatly sought after and entered into the most reputed pharmaceutic compositions of the time. It was sold by various merchants at an astonishingly high price and even to the seventeenth century. Water in which a maceration of bits of this horn had been made was sold to the public for its curative virtues. As both singular and instructive I here append a prescription from an apothecary for the Abbess de Jouarre in 1530, and which was known under the title of the "*electuaire de Madame*."

Powdered pearls, 1 oz.
 Powdered unicorn's horn, 8 gr.
 Powdered coral, 1 scruple.
 Stag's heart, 2 gr.
 The whole to be gilded with fine gold.

This singular medicine, which was intended to *mineralize* and *polytify* the body of the Abbess, cost four pounds. The great commercial value of the horn of the unicorn has been spoken of by many ancient writers whose names I will not mention, but I will insert a passage translated from Paul Gove relating to the uni-

corn: "Barthelemy d'Alviano, capitaine de la faction des Orsini, prit Viterbe et ruina la faction des Gatteschi en faveur des Maganzesi, en distant que ceux-la etaient le poison pestilentiel de la ville. Et leur chef Jean Gatto ete tue, d'Alviano fit mettre sur son etendard l'animal appele licorne, la propriete duquel est contraire a tout poison, representant une source entouree d'aspics, de crapauds ou de serpents qui etaient venus y boire, et la licorne avant d'y boire aussi plongeait sa corne pour la purifier du poison, comme c'est son habitude; et elle avait au cou la legende *Venena pello*."

From this time the unicorn has remained the emblem of the city of Viterbe, and it has the same significance on the mosaic pavement at the cathedral of Sienna.

C. G. C.