

**Franciscus Sylvius.**

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# Franciscus Sylvius

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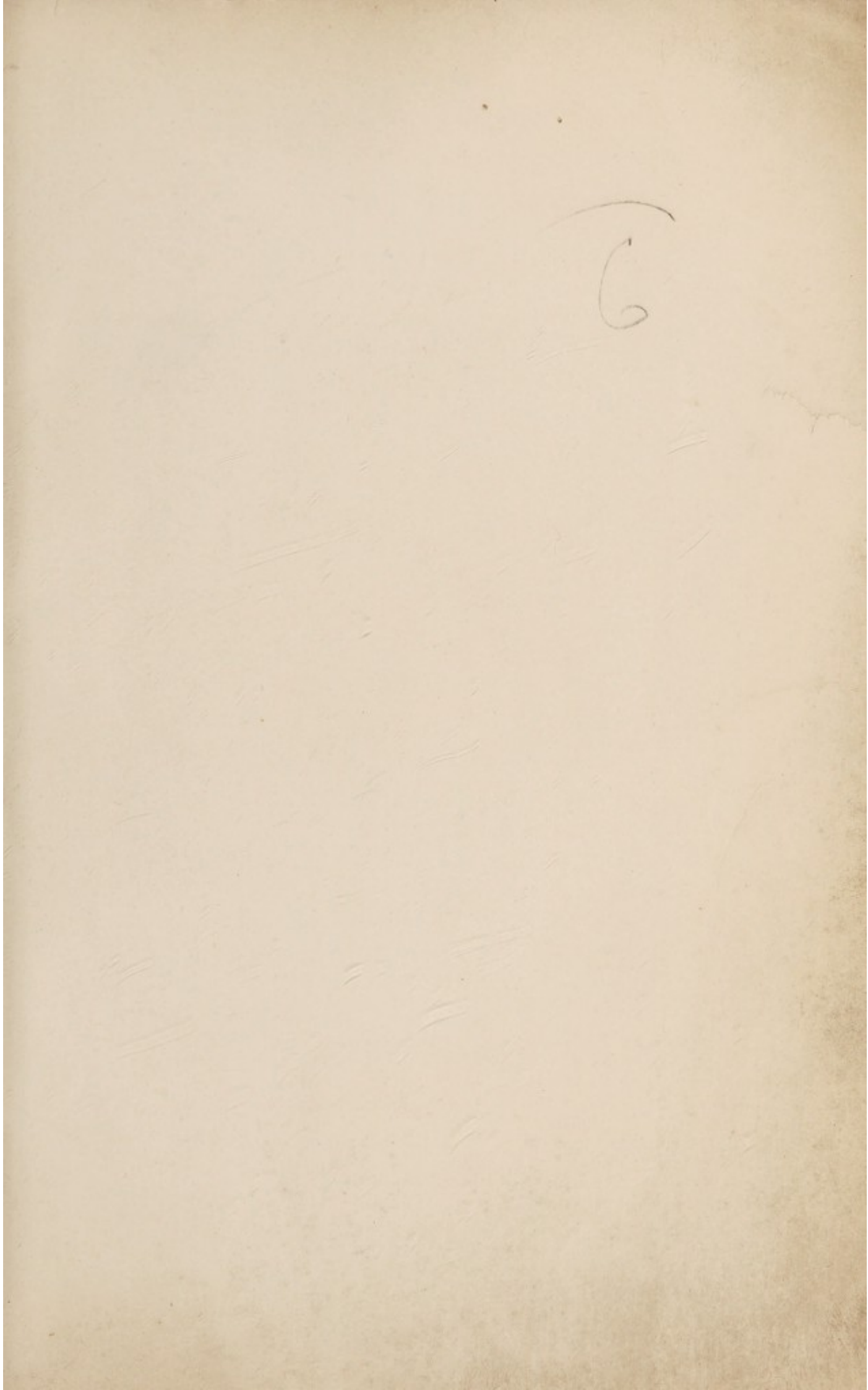
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FRANCISCUS DELEBOE SYLVIVS








birth of Franciscus (compare Baker, l.c.). Ziehen has called attention to the fact that Morgagni, in his "Epist. anatom.," 1762, protests against the use of the word Sylvian Aqueduct because of these earlier descriptions. The early French anatomist (Winslow, 1669-1760) termed it the "canal mitoyen." In fact, the passage from the third to the fourth ventricle is mentioned by Galen (Daremborg edition), Oribasius (id.), Berengarius and by Vesalius. As Baker has said, Jacopus in describing it never calls it an aqueduct.

As to the fissure, there is little doubt. Vicq. d'Azyr, in his "Planches Anatomiques" (Paris, 1786, Part III, p. 57), in explanation of Plate XIX (here reproduced), says in describing the external branch of the carotid, 21, 21: "Its volume is a little more than that of the anterior branch. I have given it the name of the Sylvian artery, because it runs into the fossa of that name. The Sylvian artery divides, usually, into three principal branches, 22, 23, 24, of which the middle, 23, is placed at the bottom of the fissure that *Sylvius de le Boë* has described. It is this artery, says Vieussens, that separates the anterior from the posterior lobes of the brain." These arteries, we learn from the same source, have borne the names Rami posteriores carotidum Halleri (Willis-Cheselden); and Bonhomme, who published correct drawings (Heuerman, Table VIII), has represented them correctly in the fissure of Sylvius. Fallopius, Guido Guidi, Wepfer and Haller had seen them.

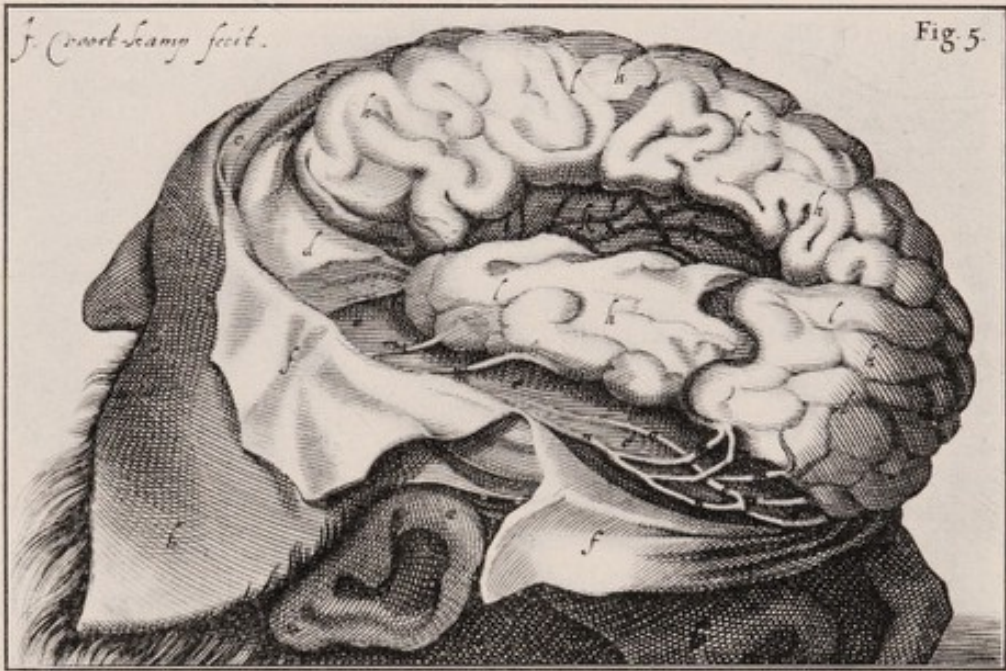
Thus, if we accept the statement of Vicq d'Azyr, one of the authoritative brain anatomists, we find that he himself named the Sylvian artery, and that



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FIRST ILLUSTRATION OF FISSURE OF SYLVIVS

Franciscus Sylvius is responsible for the naming of the fissure.

Tracing the matter further back, we find that Haller, writing in 1774, 12 years previously, says in his "Bibliotheca Anatomica," Vol I, p. 389: "Franciscus de le Boë described the fissure which bears the name of its discoverer."

Going back to Bartholinus, practically a contemporary of Franciscus Sylvius, we find in his *Anatomy*\* the following:

*"Anfractuosa cerebri fissura.* Anfractus si diligentius examinaveris, quod nos primus docuit Franciscus Sylvius, anatomicus magnus, eos satis profunde descendere comperies, cerebrum que hiscere utrinque praeter divisionem illam mediam a falce factam per anfractuosam fissuram quae in parte circa radicem oculorum principium suum habet, unde secundum temporis ossa retro supra spinalis medullae radicem procedit ac cerebri partem superiorem ab inferiore dividit ne unius partis laesio alteri statim communicetur, forsam etiam ad faciliorem motum. Subinde tamen fissura illa magna reperiri vix potest."

\* *"The winding fissure of the brain.* If you will examine the fissures somewhat carefully you will find, as Francis Sylvius, the great anatomist, first showed us, that they dip in rather deeply, and that the cerebrum is divided deeply on both sides beyond the middle division made by the falx by the winding fissure which has its beginning in part near the root of the eye, whence it proceeds along the temporal bones back above the root of the spinal medulla and divides the upper part from the lower, lest a lesion of one part should immediately be communicated to the other and



perhaps also for the sake of more easy movement. Lower down, however, that large fissure can scarcely be found."—Tr. by Dr. James J. Walsh.

This passage as given by Baker is worth quoting :

"F. S. Anfractus quod in fig. 5. factitatum, si diligentius examinaveris, eo satis profunde descendere comperies, cerebrumque hiscere utrinque per anfractuosam fissuram, quae in parte antica circa radicem oculorum principium suum habet, unde secundum temporis ossa retro supra spinalis medullae radicem procedit, ac cerebri partem superiorem ab inferiore dividit.

"Arteriarum carotidum rami hic plurimi feruntur, tum in superficie, tum in fundo, quibus molesta illa in capitis doloribus circa temporum regionem pulsatio accepta videtur referenda."\*

Baker mentions the fact, however, that this is practically a translation of a note on page 262 of the *Institutiones Anatomicae* of Caspar Bartholinus, father of Thomas, which was published in 1641, *i.e.*, practically during Sylvius' lifetime. Baker says that it is the first mention in literature of the fissure and artery of Sylvius.

In 1663 Sylvius himself, in his *Disputationes Medicarum* (1663), makes mention of it as follows :

"The whole surface of the cerebrum is everywhere quite deeply marked by gyri similar to the convolutions of the small intestines, and especially by a notable *fissure* or *hiatus*, beginning at the root of the eyes (optic tracts), passing backwards along the temples above, not further than the roots of the medulla (*crura cerebri*), and dividing the cerebrum on either hand into

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\*The accompanying figure is Fig. 5 mentioned by Bartholinus and is the first known illustration of the Sylvian Fissure.



an upper, much larger part, and a lower, smaller one ; with gyri occurring the whole length and depth of the fissure—I may even say with the beginnings of lesser gyri at the very upper part of the root.”

This is enough evidence to fully satisfy us as to the fissure of Sylvius being described by and named for François de le Boë.

The Dubois family, or, in the more musical pronunciation of the Languedoc, the de le Boë family, was ancient and honorable. Seven hundred years at least could the pedigree of our François be traced to a brave Laurent of the tenth century, who fought heroically for his prince. Other brave names there were in the family annals ; but when religious persecution of the Reformed Church began to make itself felt, François, the grandfather of this physician, who had been deprived of most of his means by means of the wars, decided to expatriate himself.

The Inquisition reigned in Spain, and the Protestants in the North were spied upon and tortured as much as in the South. Germany was, however, beginning to settle down after the Hundred Years War, and François de le Boë decided to betake himself to the Land of Luther in search of peace and prosperity. Accordingly he settled in the little town of Hanau, with his wife and nine children. His two sons were piously named Isaac and Jacob. Isaac, the only son who lived, married Anne de la Vignette, a woman of an important family of Cambrai, probably also in exile. Of this union, François de le Boë, somewhat of whose life I wish to tell you, was born in 1614, the same year that the University of Gröningen was founded.



He was described as a strong, fine child, of great bodily vigor and spirit, with a mind as fine as his face was beautiful. His father hoped that by giving him the best possible education he might make up for his lack of means and place his son in the rank of his ancestors. So, at an early age, François was sent to Sedan, a French Protestant town on the German border. Sedan was one of those cities of refuge where the Huguenots were tolerated, and its academy, which was under the protection of one of the most powerful families interested in the Reformation, was presided over by a faculty of men who were not only very learned but very religious.

After having gained his preliminary education the young François was invited to a family council in his native town and given his choice of several careers,—business, the military life, or letters, which of course included the sciences. To the great delight of his father, he chose the latter, with a special desire to study medicine. Accordingly, he was immediately sent back to Sedan to begin these studies.

He greatly outdistanced all his fellows, and then announced his desire to travel, fearing, as he explained, that he would acquire errors and prejudices from which it would be difficult to extricate himself later, if he studied in one place only. Therefore he set forth to visit the principal academies of the Continent.

In the absence of all literary intercommunication between countries the quickest and surest way of knowing a man's work was to go to him and sit under his teaching. François went first to Paris, then to the Netherlands, and finally to Germany, pushing his enquiries in every university along the lines of chem-



istry and anatomy. He considered these the fundamental subjects of the science, but he did not confine himself to these studies alone, but threw himself with great zeal into physics, botany and zoölogy. Finally he went to Basel and presented himself to the Faculty of Medicine as a candidate for a degree. This was in 1637, when he was twenty-three, and so valiantly did he discuss, and so victoriously did he answer all arguments, that he was judged worthy to be crowned with the laurel of Apollo, and with this triumph received the signs of his profession, the cap and ring and book, and, having received the kiss of peace, was admitted into the medical fraternity.

From this time on he was considered sufficiently wise to bear a Latin name, and instead of being François de la Boë, or what in English would be plain Francis Wood, he was Franciscus Sylvius.

With becoming modesty the young François stayed at Basel to learn what he could and justify his laurels; but his father sent for him and wished him to begin his practice in Hanover, to which he obediently acquiesced.

Although he was the son of a refugee, the German city conferred every distinction upon him. The field, however, was too narrow, and in a couple of years he went again to Paris, with the intention of studying with one whom he wrote of as a great philosopher, a physician, a chemist and an anatomist. He never mentioned the name of his ideal, but it may have been Descartes, whom he often met later in Amsterdam when Descartes, for lack of orthodox views, was obliged to go to Holland.

Finally, attracted by the professors of the Leyden



University, he arrived in that city with his honors and his knowledge still fresh upon him, and settled down to the practice of medicine. He began to give a course of lectures in anatomy, which became so famous that hundreds of students flocked to him. Among them came Swammerdam and Jean Van Horne. Soon no one was considered to have any knowledge of anatomy unless he had studied with Sylvius, and Leyden was overrun with students.

The novelty of his instruction explains in part the cause of the extraordinary impression which he made. Sylvius was the first in Holland to demonstrate the circulation of the blood according to Harvey, and since he demonstrated it well, and with spirit, he convinced the most incredulous—so well, that that which passed as an ingenious and amusing paradox at Paris was well recognized as true in Leyden.

The anatomical lessons of Sylvius, of which one finds fragments in the collection of his writings, were made towards the end of 1640 and the commencement of 1641.

It was not long, however, before he was invited to go to Amsterdam. He hesitated, but his friends insisted, and finally he went. On his arrival the deacons of the Wallonian Church confided the care of the sick poor to him. This charge, without pay, gave him the public confidence, and at the same time facilitated his clinical researches. He was now about twenty-seven or twenty-eight. He took the city of Amsterdam by storm. The inhabitants acted as though an Apollo had descended from Olympus to cure them. They besieged his door, and there was not a serious case in the town that he was not called in in



consultation. It is recorded of him, by an admiring biographer, that his zeal was indefatigable, that he showed the greatest consideration and sympathy for his patients, especially for the poor, and that he was polite and affable to everyone without losing his dignity. In short, Sylvius earned and deserved his title of the Oracle of Amsterdam. His earnest and admiring biographer, Lucas Schacht, indulges in panegyrics over a virtue apparently in small vogue in those days. He states that Sylvius had never been seen intoxicated. Now it was a light jest in those days in Amsterdam that when you wanted a physician you must look for him in his cups; so Sylvius in his sobriety passed as holy.

In 1650 he married Anna de Ligne, but in seven years she and their two infant sons had died.

In 1658, on the death of Kyper, Sylvius was called to the University of Leyden, to fill the chair of the practice of medicine; but, with all the scruples of the ethical man, he fell a prey to indecision. A professor, he held, was placed in the equivocal position of being supposed to know things of which he really was ignorant. He was in danger of becoming querulous and superficial, he feared, and he hated the idea of the endless controversies in which he would be involved by the jealous and envious. With his time so occupied with his clientele, and with the duties of his chair, where would he have any time for thought or personal liberty.

Finally, his friends and his father-in-law argued him into an appreciation of his opportunities. Amsterdam went into mourning and Leyden gave vent to its joy, and Sylvius journeyed to the latter city to



become her model professor—a handsome, well-built, elegant man, clear and concise in his speech and polite and good and sincere in his manner. His appreciative biographer can hardly find adjectives enough to describe his personal and moral charms.

In 1658, in solemn assembly, he delivered his inaugural address in Leyden. His subject, "The Knowledge of Self," has a modern flavor. One notes therein the very right thought that the fundamental principles of civil society have not as they should have the character of absolute certainty. Neither theology nor jurisprudence nor medicine are in possession of the truth, plain and entire, such as the spirit conceives and desires,—of such a nature that the three essential virtues, pity, justice and temperament, have no certain laws. This *rapprochement* can only lead to this conclusion, that medicine is an art and not a science, and that progress is only possible by the unison of experience and reason. Therefore, opinion should be free and when there is any doubt, it is necessary to invoke, not authority, which often consecrates error, but reality. This discourse, which at a first reading seemed mild and moderate, was in reality a very clever presentation of a programme of independent innovation.

His philosophy and his oratory so pleased his audience that whenever he was to lecture the auditorium was crowded. Students came to hear him from Hungary, Muscovy, Poland, Germany, Denmark, Sweden, Switzerland, France and England, and then returned home to spread his fame. Among his pupils and disciples may be mentioned in particular, De Graaf, of the follicles, Stenson, Swammerdam, Van



Horne, and finally Willis, who was to carry out his work on the anatomy of the brain.

Not only did the University grow from day to day, but the City of Leyden enjoyed unheard-of prosperity, which was due largely to the greatness of Sylvius.

The calumnies which attend the successful man were not wanting in the case of Sylvius, but were liberally supplied by the neighboring University of Gröningen, whose elderly professors were pained to see such a young man at the head of Holland's medical schools. Under pretext of discussing scientific questions, they maligned him and slandered him, and gave him all the gratuitous advertising that proceeds from such a rivalry. Through it all Sylvius evidently seems to have kept his temper, as well he might, for the students of the rival university went over bodily to him.

His life at this period was happy, until in 1669 he lost his second wife, to whom he had been married two years previously. His infant daughter died also. The disease, which ravaged the entire town of Leyden at this time, and which Sylvius described in detail, seemed to bear some analogy to typhoid fever. Sylvius himself was attacked during the epidemic, but recovered. Two years later, however, in 1672, that fatal year for the Republic of Holland, when Jean and Cornelius de Witt were assassinated, Sylvius, though only 58 years of age, succumbed to what apparently was typhoid fever. To his friend Lucas Schacht, who afterwards delivered his funeral oration, he said: "I know as well as you the seriousness of the disease from which I escaped three years ago. This time I shall die."



With forethought of his latter end, Sylvius had prepared a tomb for himself in the choir of St. Peter's of Leyden, and there he was interred in the presence of all the magistrates of the city, the professors and students of the University, who had gathered to pay homage to their most illustrious professor.

This circumstance, says his pious biographer, would seem to contradict the opinion of those who would make Sylvius a materialist. If he had been a disbeliever, there is a great probability that he would never have had the great faith reposed in him in a state where the reformed religion was so dominant. He was a descendant of a family of religious refugees. He never discussed those dark questions which one is pleased to call the great problems of human destiny. It is certain that he believed in Providence, since he attributed the pest and the epidemics to Divine wrath, and that on the occasion of the epidemic of which he himself felt the effects he seriously counselled the people to amend their ways and do penance in order to make the remedies more efficacious. Homer did not profess any other belief for the origin of epidemics. We might add that Sylvius loved to moralize, and that he frequently interrupted his demonstrations or dogmatic expositions to preach. He conjured his enemies to be more charitable, and in actively replying to them he called on God to witness the purity of his intentions. In his discourse on the curse of the pest, delivered scarcely two years before his death, he spoke only of the distress and the pain of his co-religionists; as to the other sects, he expressly declares that he will not make mention of them.

That which merits note is that Sylvius, who ad-



mitted a soul distinct from the body, believed it susceptible of pathological lesions. It is true that to attack the maladies of the soul he knew no other remedies than good words and remonstrances. We may add that the soul, which he did not separate from the brain, without daring at the same time to assign it a place in the ventricles, as Galen, the Arabs and the Scholastics, nor even in the pineal gland, as Descartes, could not, according to him, pass with the animal spirits, and that the animal spirits were secretions; they were the real expression of the entire encephalon, for they never separated the cerebrum from the cerebellum. One sees that Sylvius was very near finding the famous metaphor of Cabanis, which one has wished to make the formula of materialism absolute.

It is frequently stated that Franciscus Sylvius was the first to give bedside clinics. This is not so. Gerster has told us in his life on Van Swieten how modern bedside teaching began in Italy in 1558 in Padua by Bottoni and Oddo, how later the custom became extended in Padua and Genoa, and how it fell into comparative disuse, being given at Leyden only in a desultory manner in the Collegium Practicum in the early years of the seventeenth century. The competition set up by the new University of Utrecht forced Heurnius to organize his 12-bed-clinic, where demonstrations were held bi-weekly, at first to listless audiences, and later, under Kyper and Sylvius, to steadily increasing numbers with waxing enthusiasm. Bildoo kept them alive, and Boerhaave set his stamp on them forever.

At these early clinics in Leyden, in our mind's eye we can see the future practitioners of New Amsterdam.



How many sat under Sylvius it is difficult to say, but there were possibly a few, for in 1658, when Sylvius came to the chair in Leyden, there were four more years of Dutch colonization in New Amsterdam, the English occupation occurring in 1664. The first hospital in North America was founded the year that Sylvius took his chair. It was on Manhattan Island, and, as the Old Hospital, stood for at least 102 years. The first coroner's inquest was also held the same year. Sylvius' zeal for autopsies had gone with his countrymen to foreign lands.

His methods of teaching are perhaps worth quoting from Schacht's description :

"When he came with his pupils to the patient and began to teach, he appeared completely in the dark as to the cause or the nature of the affection the patient was suffering from and at first expressed no opinion upon the case. He then began by questions put to different members of his audience to fish out everything, and finally united the facts discovered in this manner into a complete picture of the disease in such a way that the students received the impression that they themselves made the diagnosis and not learned it from him."

Sylvius' closest affinity with the present day was in his belief that the secret of health and disease lay in chemical reactions. His ideas were incorporated in a system of therapeutics based on the chemical reactions of certain drugs, such as nitrate of soda, mercury, and especially antimony. His rivals said that his system killed more men than the Thirty Years' War; but though he, as a practitioner, was counted most successful, his system, founded on imperfect knowledge, was



too vague and incomplete to live long. Yet the idea for which he was groping has become the lode-stone of medicine to-day, and we owe it to Sylvius and his one-time teacher, Paracelsus.











