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# History of Different Therapeutics of Venereal Disease Before the Discovery of Penicillin

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## 1. Introduction

Venereal diseases are nearly as old as the history of mankind. The infections spread in exactly the same way. However, the types of diseases, our knowledge about them, and the therapies based on these have varied through the different historical periods. Nowadays we know of more than 20 types of venereal diseases, but their recognition and identification, as well as distinguishing one from the others (differential diagnosis), requires a degree of scientific knowledge that became only available as a result of the technical-scientific advances of the 20<sup>th</sup> century. Venereal diseases were known under the umbrella terms of infectious malady, pox, Venus illness, lecherous sickness and syphilis. The various names originate from the observations, scientific knowledge, and moral judgement of the given epochs.

The ancient cultures treated venereal infections as a variation of “leprosy universalis”, the most widespread illness of the period. There was a reasonable amount of knowledge about how it spread and its symptoms.

The Summary of Sushruta enshrines the ancient Indian medicinal knowledge about venereal disease and its treatment. We can gain detailed information about individual illnesses, for example, about the endemic inflammation of the genitals, the stenosis of foreskin, orchiocele, or the various other chancrous changes of the genital organs. Among the recommended cures the texts mention the use of mercurial salves, a treatment known even in those early days. According to the observations, the way the “infectious malady” was transmitted could be clearly linked to the sexual act, and we can find its symptoms under the in-depth description of leprosy.

The first work summarising medicine in ancient China is the Huang-Ti Nei-Ching, *The Yellow Emperor's Classic of Internal Medicine*. In this textbook two chapters deal with venereal diseases and their treatments. Since these illnesses are transmitted through sexual intercourse and overturn the balance of the body, their treatment thus consisted of the restoration of the unity of Yin and Yang with the help of acupuncture and acupressure, along with moxa and herbs (1. picture).

From documents surviving from the period of the Egyptian Empire we know that the ancient Egyptians were excellent observers; they provided meticulous descriptions about venereal diseases and purulent discharges. The Ebers Papyrus (2. pict.) gives important formulae for the treatment of gynaecological disease, for maintaining a high level of venereal hygiene and body cult including lavage, censing, salves, the use of scents.



Fig. 1. Picture: Yin Yang



Fig. 2. Picture Ebers papyrus

Common components used for the treatment of discharges resulting from infections were garlic, acanthus resin, cow horn, the grist of vegetable seeds combined with oil, put on a sponge and placed into the vagina. In the case of men, circumcision was used to prevent venereal diseases and keep the genitals clean. In an Egyptian drawing the condom is depicted like a badge; presumably they used it as protection against venereal or tropical diseases, or maybe against flies and mosquitoes.

In the Assyrian-Babylonian culture, the Mylitta cult, in which sacred prostitution and sexuality were raised to the level of religion, put venereal diseases in the centre of attention. People tried to frighten away the “demons” with a high level of hygiene, as well as the use of herbs and amulets.

The ancient Jewish sexual practices were laid down in a religious law that became compulsory. During the Babylonian and later Egyptian Exile, relentless strictness and severe punishment were the only way to alter the customs of the neighbouring lands. Laws protected against promiscuity, prostitution, onanism, sodomy, and fornication outside marriage. The practice of circumcision and frequent bathing attest to a high level of sexual hygiene. Syphilitic infections were considered to be the retribution for fornication and the curse of Baal Peor.<sup>1</sup>

In Greek-Roman culture sexuality played a central role in everyday life. In 594 BC Solon founded the first state brothel, the profit of which increased the income of the city-state of Athens. Male and female sexual services existed side by side. The worship of several well-known mythological Gods and Goddesses on various holy days included placing offerings on the altar of love (Aphrodite, Venus, Dionysus, Bacchus, Phallus, Priapus, Eros, etc.)

Under the reign of Traianus (98-117 AD) the number of prostitutes in the Roman Empire exceeded 32,000. Detailed records were kept about their income and activities. Signs indicated the name of the girl working in the small cell; “occupied” and “free” notices told the patrons whether they could enter the small room filled with the smoke and scent of incense. The signboard of the brothel depicted a huge phallus.



Fig. 3. Picture: 32.000 prostitute

The multi-volume works collected by Hippocrates, Galenus and Celsus mention venereal diseases and infectious maladies in several places, and clearly state their origin in the sexual act.

Women practised frequent vaginal lavage, whereas men used the contents of a small oil bottle after visiting a brothel. Pliny is a good example for one method of preventing venereal diseases. Supposedly he carried a sheep appendix or fish bladder – the predecessor of the condom – in a fold of all his togas in order to prevent infections. For Roman soldiers these aids were absolutely necessary since they were frequent visitors to the brothels – the so-called Lupanars.

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<sup>1</sup> The Book of Moses, 25. 1-19





Fig. 4. Picture Lupanar in Pompei

The increasing number of brothels in Europe played an important role in the life of towns in the Middle Ages. These institutions were managed by towns, kings, princes and people holding high public offices. The prostitutes were ordered to visit on feast days and councils. When princes or nobles arrived, the inhabitants of the “house” were put at the disposal of the guests. The court of Pope Innocent IV visited Lyon between 1241 and 1251. When the court of the pope left the town, one of the cardinals said to a citizen: *“My friends, you owe us a great debt of gratitude. When we arrived in the town, we found only three brothels, and now as we leave, only one remains, but that reaches all the way from the eastern to the western gate”*.

Pope Sixtus IV (1478-79) built an elegant brothel.<sup>2</sup> Almost every town had one such establishment, which were called bordel by the French, bordello by the Italians and bordély by the Hungarians. In Hungary the first reference to brothels is about a house in Pozsony (today Bratislava, Slovakia) in 1373, which was later – in 1434 – taken into the management of the town in order to achieve greater profit. Similarly brothels were established in Eperjes (Prešov) in 1478, and in Lőcse (Levoča) and Brassó (Braşov) in 1522.

In the brothels, the hygienic laws had to be followed and cleanliness maintained in accordance with the regulations. Midwives, the proprietresses and later the town executioners were charged with the physical examination of the prostitutes, to recognize and prevent the spread of the infectious maladies.

In the 1490s Europe suffered from a deadly plague transmitted through sexual intercourse which raged in several countries. According to Lajos Nékám, a Hungarian accomplished dermatologist,<sup>3</sup> the emergence of diseases correspond to different eras: “Every century had its characteristic diseases, like leprosy in the 13<sup>th</sup> century, the plague in 14<sup>th</sup> century, syphilis and sudor anglicus (sweating sickness) in the 15<sup>th</sup> and 16<sup>th</sup> centuries, and these diseases had an effect on families as well as the state, just like tuberculosis and maybe cancer does nowadays.”

The disease which erupted with incomparable ferocity at the end of the 15<sup>th</sup> century was considered “genius epidemicus” until the 18<sup>th</sup> century. The physicians brought up in the tradition of the Galenic school were at a loss when faced with this new epidemic and, because their master’s book had no description about the disease, how it spread or ways to cure it, they were unable to help those who sought their assistance.

<sup>2</sup> Romea nobile admodum lupanar extruxit etiam Romana scorta is singulas hebdomadas Julium pendent Pontifici, qui census annus nonnuquam viginti milla ducatus excredit. The income of this brothel was 20,000 ducats, when a monastery paid 60 gold annually Linzbauer: Codex Sanitario Medicinalis I., II. k. 641. 1852-61, 535. Linzbauer, ibid., VI. k, 22. Linzbauer, ibid. III. lectio I. 424.

<sup>3</sup> Nékám, L.: From Memories of Hungarian Dermatology. Budapest, 1908. p. 54.

Since they had no other means of protection against the disease, they saw the only way of defence was the separation of the prostitutes and outsiders who were spreading it. The French king Charles VIII ordered every outsider with syphilis to leave Paris within 24 hours on pain of death in his decree published first in 1495 and again in 1498. As a result of other settlements following the lead of Paris, the roads from Besançon to Nuremberg, and from Strasbourg to Vienna became filled with persecuted and miserable wretches spreading the disease.

## 2. What causes this disease, where does it come from, and where did it get its name?

According to the scientists of the 16<sup>th</sup> century: Fracastorius, Fallopius, Fernelius and Girtanner<sup>4</sup> the causative agents were brought back to Europe by the ships of Columbus.

Others claim that in Italy and Denmark, syphilis was already raging in 1483. According to Petrus Oleus, a Danish chronicler, a contagious disease was spreading in Denmark in 1483 “which was noted under the name morbus gallicus”.

Sudhoff also confirms that the disease could already be found in Europe before the time of Columbus and that it had even caused small endemics. Parrot<sup>5</sup>, the great syphilis expert of the nineteenth century, professed the same theory. During his studies, he believed he had found syphilitic deformations on bones from French grave findings from the 11<sup>th</sup> century. It was only later that paleopathological observations confirmed the said deformations were actually caused by other diseases (osteoporosis or rachitis).

There were some who claimed that syphilis, or lues, was taken to America on Columbus's ship, and then spread among the native American Indian population that had been free from the disease until then.<sup>6</sup>

Another opinion held that syphilis developed as a variation of well-known tropical diseases causing raspberry-like rashes like yaws, framboesia, pian, buba, pinta, polypapilloma tropicum and Goundou, and resulting from climatic differences. Which are these diseases? Until Fritz Schaudin discovered the causative agent of syphilis in 1905, the *Treponema pallida* bacterium, it was impossible to find a cure. The “wet and dry” varieties of syphilis are in fact different members of a pathogen family that produce the same symptoms with minor

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<sup>4</sup> Fracastorius, G.: Syphilis seu Morbuws Gallicus. Verona, 1530. exu.: Josephus Cominus, Patavii. – Fallopius G.: De morbo Gallico, posthumus 1564. – Fernel, J.: Medicamentorum facile... Francofurti 1581. Wecheleus. – C. Girtanner: Abhandlung Über die Venerische Krankheit. Gottingen, 1788.

<sup>5</sup> Fracastorius, G.: Syphilis seu Morbuws Gallicus. Verona, 1530. exu.: Josephus Cominus, Patavii. – Fallopius G.: De morbo Gallico, posthumus 1564. – Fernel, J.: Medicamentorum facile... Francofurti 1581. Wecheleus. – C. Girtanner: Abhandlung Über die Venerische Krankheit. Gottingen, 1788.

<sup>6</sup> This seems to be confirmed by the letter of Petrus Martyr written in Andalusia on April 5th 1488 to Anglerius, and written in Salamanca to Lusitanus, in which he expresses his regret that Lusitanus suffers from ‘bubas’ as it is called in Spanish. Torella writes that syphilis was already raging in Auvergne in the year 1493. In fact a French parliamentary decree from 1496 prescribes the relocation of sick women to designated areas, and governmental health provision. According to a priest called Delicado in 1488 syphilis was already widespread in Rapallo. From there the infection was carried to Spain, then by ship to America and from there it returned to the continent. P. M. A. Ario Lusitano, Graecas Littera Salamanticae in Pellier: Les origines la Syphilis, Toulouse, Paris, 1908. Ruy Diaz de Isla in Bloch: Der Ursprung der Syphilis, Jena, 1901. Torella, G.: Tractus, cum consiliis contra morbum gallicum cui adjicitur in fine, Rome, 1497.

variations due to the climate. According to recent genetic research<sup>7</sup> syphilis, which terrorised Europe for almost five centuries, was imported from the Americas by the crew of Christopher Columbus, who presumably carried the pathogen on their skins instead of sexually. A molecular genetic family tree analysis of the disease by US researchers has shown that *Treponema pallida*, the infectious agent causing syphilis (lues), is most closely related to *Treponema pertenue* which is responsible for a serious tropical skin disease called framboesia. Researcher Kristin Harper says, “Some people think it is a really ancient disease that our earliest human ancestors would have had. Other people think it came from the New World. What we found is that syphilis or a progenitor came from the New World to the Old World and this happened pretty recently in human history,” she added<sup>8</sup>.

Researchers in Chicago examined numerous bone remains from both the Old and the New World as the presence of syphilis is attested by breaks in the bones so characteristic of it. Harper’s group examined the evolution of the pathogens: they scrutinized the evolutionary links of 26 strains of the *Treponema* bacteria, including two *Spirochaeta* species never examined before genetically that cause framboesia in some remote areas of Guyana and South America. Genetic data showed framboesia to be an ancient disease while syphilis, spread through sexual contact, proved to be relatively recent. However, of all tropical species, this is the only one that remains active in the cooler climate of Europe. This is an important step forward in the evolution of the species - however, the way this occurred remains obscure.

There is credible genetic evidence that the syphilis which terrorized Europe for nearly five centuries was “imported” by Christopher Columbus’s sailors returning from America. However, the virus probably travelled on the skin of the sailors and not in a venereal way. American genetic family-tree research proved that the nearest “cousin” of the lues pathogen (the *Treponema pallida* bacterium) is the serious tropical skin disease framboesia which is caused by *Treponema pertenue*. According to the researcher Kristin Harper, “Some people think it is a really ancient disease that our earliest human ancestors would have had. Other people think it came from the New World. What we found is that syphilis or a progenitor came from the New World to the Old World and this happened pretty recently in human history,” she added.

Still others say that the disease arrived from eastern India, Persia and the Far East. This claim was supported by the research of Adachi<sup>9</sup> who believed he had found the signs of syphilis on bones from the Neolithic Age in Japan. The scientific analysis of pre-Columbian discoveries on the American continent came into the focus of attention at the end of the nineteenth century. The scientists believed that, if they were unable to find syphilitic deformations on the bones, then Columbus’s soldiers could not have been infected with the disease. Farquhason (1875), Jones (1876), Morgan (1892), Ashmead (1895), Moore (1897), Lamb (1898), etc. confirmed the pre-Columbian existence of syphilis when they announced

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<sup>7</sup> Harper KN, Liu H, Ocampo PS, Steiner BM, Martin A, Levert K, Wang D, Sutton M, Armelagos GJ.: The sequence of the acidic repeat protein (arp) gene differentiates venereal from nonvenereal *Treponema pallidum* subspecies, and the gene has evolved under strong positive selection in the subspecies that causes syphilis. FEMS Immunol Med Microbiol. 2008 Aug; 53(3):322-32. Epub 28 June 2008

<sup>8</sup> Kristin Harper: On the Origins of Syphilis. PLoS Neglected Tropical Diseases. 16 January 2008

<sup>9</sup> Adachi, B.: Syphilis in der Steinzeit in Japan. Arch. Dermat. u. Syphilis 54. 1. 1901. Regöly-Gy. Mérei: Systematic pathology of the palaeonthropic and later remains, Budapest, 1962.

their findings. Recent immunological research<sup>10</sup> also confirms that the disease arrived in America from Mongolia through the Bering Strait nearly 40,000 years ago.

From all of these facts it can be concluded that we have no exact knowledge about the origin of syphilis.

This cruel epidemic broke out in different countries at the same time in the 16<sup>th</sup> century – with deadly consequences. In the early period those who diagnosed it and distinguished it from other already known diseases gave it new names, usually after different regions or countries. It is quite probable that the names reflect the course of the disease, which means that the route of the pandemic can be followed in this way.

Sibbens in Scotland (Button Scurvy); Radesynge (rada- bad, synge epidemic) in Sweden and Norway; Juttlanian disease in Juttlania; Dittmarsian or Holsteinian disease in Holstein. In Spain: La bubas, Postillas, Curiale (court disease), Patursa passio turpis Saturnia; in France: Grosse verole, La gorre Morbus Neapolitanus, Scor, Scorra; in England: Grandor, Mala Franzos, Morbus Burdigalensis; in Germany: Böse Krätze, Mala Franzos; in Italy: La Clavela, Morbus Galli. But other associations also played a part in the naming process. (5. picture)

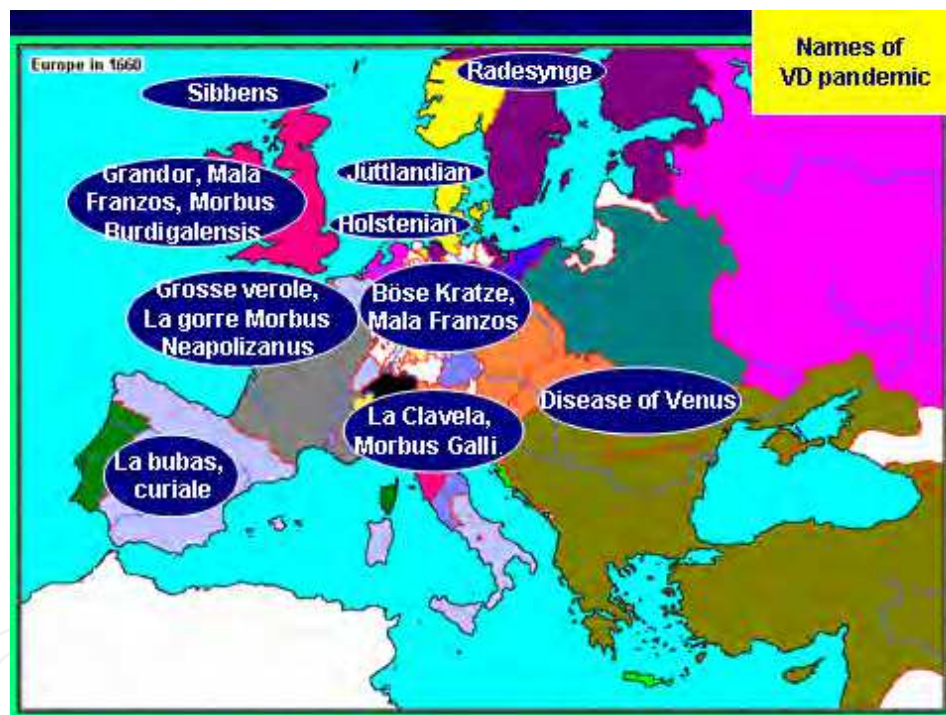


Fig. 5. Picture Names of European VD epidemic

In the 16<sup>th</sup> century Fernelius, a Parisian teacher (6. picture), called it lues, while the Italian Fracastorius (7. picture) named it syphilis. Fracastorius<sup>11</sup> took the name from the Greek mythology. We can read about syphilis in the Iliad (XXIV. 585-621). Niobe (a daughter of Tantalus) had seven sons and seven daughters. The name of one of the sons was Sipylus, which is identical with the name of the city founded by his grandfather and the mountain standing nearby. Niobe was so proud of her children that she demanded the Gods worship

<sup>10</sup> Ruffié J., Sournia, Ch.: Die Seuchen in der Geschichte der Menschheit, Stuttgart, 1987. Klett-Cotta.

<sup>11</sup> Mythological Encyclopaedia I.II. ed.: Sz. A. Tokarev. Gondolat. Budapest, 1988.



her above Apollo and Artemis, the children of Leto. The two children of Leto shot all fourteen children with arrows to avenge their humiliation. The Gods were moved by the pain of Niobe, and they brought her and her children to Mount Sipylus and turned them to stone.



Fig. 6. Picture Jean Fernelius



Fig. 7. Picture Hieronimus Fracastorius

Fracastorius changes this tale to the following: Syphilus, the shepherd of King Alchitous, suffering from the rays of the sun, curses the Gods and says that their flock cannot rival that of Alchitous in either beauty or in size, and thus the king deserves to be worshipped as a God. Apollo observes as the shepherd builds an altar to the new God. In his rage, he curses the shepherd with a hideous, gluey, infectious disease that is called syphilis after its first victim.

The Greek expression 'siflos' means empty, in vain, formless, cripple, disease, incomplete in a figurative sense, handicapped, or shameful. According to another etymological explanation it is a compound consisting of the words 'sys': pig and 'filia': friendship, meaning that the disease originates from an unclean, infectious love. Still another explanation states that Fracastorius coined it from the Arabic words Sifl or Sufl, which mean below, inferior and which could refer to the place or manner of the infection.



Fig. 8. Picture Girolamo Fallopius

The epidemic expansion of the disease took its toll among all classes and both sexes. Even royalty had its own interest in fighting it. The "great" kings Charles VIII and Francis I of France, Holy Roman Emperor Maximilian I, Pope Alexander VI (Borgia) and his whole family, Tamás Bakócz (1442-1521) Hungarian cardinal and heir apparent to the papal throne, and George IV of England all suffered and died of lues.

Due to the similarity to the medieval disease leprosy, in the beginning the therapy consisted of the same remedies such as sulphuric water, violet oil, minium. Later, based on the Eastern example, they used mercury for the first time as a remedy for syphilis in Europe.

Fallopius (8. picture) (1523-1562) in his work titled *Sive Morbus Gallicus* discusses the results of 5-8 autopsies conducted during a single year, the subjects of which all died from

the Gallic disease. He was curiously investigating the causes of the deformations and was surprised to observe that the “solution continui”, which was present in almost every organ in the body of a syphilis victim, spared only the liver. The first written report about a modern condom originates from Fallopius who, in 1564, attributed great importance to the apparatus made from a small piece of linen in the fight against syphilis. He states (De Morbo Gallico) that he conducted his experiment with 1100 people who thanks to the condom avoided infection with the illness which in that period usually led to death in a very short time.

However, he frankly admits in his recommendation that the disease cannot be defeated. Therefore, according to the fashion of the time, he recommends the use of guaiac tree and Sarsaparilla.<sup>12</sup>

The guaiac (9. picture) is a holy tree (*Guaiacum officinale*, *lignum sanctum*) which arrived in Europe around 1508 from the torrid zone of America: South Florida, Bahamas, Cuba, San Domingo. In 1578 Péter Mélius wrote a detailed report<sup>13</sup> about de Ligni guaiaco also known as French tree and guaiac tree. Its active constituents can be found in its resin which has an acrid taste and consists of resin, volatile oil, guaiaguttin, rubber, vanillin and saponin. It has a diaphoretic and laxative effect. Its use was recommended by several other authorities, including Ulrich von Hutten who wrote a separate paper about this excellent drug.



Fig. 9. Picture Guaiac tree

<sup>12</sup> "Quauis similia ista diuersa habeant partes, tamen Sarsaparilia, Guaiacum, argentum vivum uniformia sunt."

<sup>13</sup> P. Melius: 1578 Herbárium About the uses, names and growths of trees and grasses 1578. Kolozsvár, repr. Bukarest, 1979

Another important element of the fight against syphilis was the herbal decoction of sarsaparilla (10. picture), a plant with American origins. Its name came from the Mexican sarsaparilla, China root. They used it for its blood cleansing and appetizer properties. In a high dose it causes diarrhoea, salivary secretion, perspiration and a high urinary output. Therefore, in accordance with the ideas of the period, it was an excellent means of purging the body.



Fig. 10. Ábra Sarsaparilla

The third important herb, Sassafras (11. picture), is also of American origin and has been known in Europe only since the 16<sup>th</sup> century. *Sassafras officinalis*, which belongs to the Lauraceae family, is endemic to Canada. Its root, wood and bark are each used as medicine. According to Wittstein the origin of the word goes back to “sal safras” meaning shattered stone. Its active constituent can be found in the volatile oil. Its effects are also diaphoretic and increase the metabolism. Sassafras was first described in 1574 by Nicolaus Monardes, a Sevillian physician.<sup>14</sup>

Since the origin of syphilis was believed to be strongly connected with the discovery of America, it was only natural to assume that the cure for the disease could also be accomplished by using drugs and herbs from the New World. The herbs used had a purging effect, causing perspiration, diarrhoea and a high urinal output. The theory was that

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<sup>14</sup> Kazay E.: Apothecary Lexicon. Nagybánya, 1900.



consuming a high dose of these herbs would result in the purging of the body and “cleansing” of the blood. Beside the use of American cures in Europe, one of the most important economic considerations was the dramatic increase in drugs imported – a major part of commerce – as had already been mentioned by Paracelsus. According to him, there was a linear connection between the guaiac cure and the profit making aspirations of Fugger House (12. picture).<sup>15</sup>



Fig. 11. Picture Sassafras

Finally we have to consider the psychological factors as well. The patients were willing to do anything in order to be cured – even to make huge financial sacrifices, especially where a new and expensive medicine from another continent was concerned. However, despite these excellent remedies, the fury of syphilis did not show any sign of weakening. The herbs imported from America were not as effective as they had first seemed.

The Eastern cure, mercury, was used carefully since they considered it a potent poison based on Greek and Roman tradition. According to Aristotle it can kill a rat in even a very small dose. Pliny<sup>16</sup> stated that it corrodes everything except gold, and therefore recommended that it was not to be used internally, only externally as a salve. The salve cure was based on lard, cock’s fat, butter, oil, turpentine or the saliva of a hungry man. Its active constituent was quicksilver which, when combined with the base, loses its fluidity, “undergoes mortification”, and disintegrates into smaller parts which enables it to enter the body more easily.

The deadly disease was also affecting the Turkish sailors. Barbarossa, the admiral of Suleiman I’s (12. picture) navy and also king of Algiers, was the first to give a mercurial pill to his infected soldiers, and the medicine was later named after him. This so-called Barbarossa pill turned out to be effective. The court physician of Francis I also mentions its good effects. The Barbarossa pill contained mercury combined with perfume essence and fruit flour, and then doused in lemon juice. The recipe, once thought long lost, can be found in the book of Astruc published in 1788.<sup>17</sup> This means that the merit of the first mercuric medicine administered through the mouth (internally) belongs to Arabic medicine and not to Paracelsus.

<sup>15</sup> Paracelsus: Paragranum. Gyomaendrőd, 1989. Helikon, p. 111.

<sup>16</sup> Plinius sec. *Historiae Naturalis Libri XXXIII., XXXII.*, Biponti 1984., p. 2000

<sup>17</sup> Astruc, J.: *De morbis veneris Libri sex.* Paris, 1788. Guillelmun Cavelier 167. p.



Fig. 12. Picture Fugger and Suleiman I.

The identification of the disease is not unambiguous. Fallopius speaks about gonorrhoea gallica, that is gonorrhoea caused by syphilis, while Fernellius believes that urethral discharge (a symptom of gonorrhoea) is a form of syphilis. Clearly they merge the two diseases, and that is how the basis of theory of unity developed.

In the 17<sup>th</sup> century one of the eminent figures of the iatrochemical school, Étienne Blanchard,<sup>18</sup> wrote a summary work about the treatment of syphilis. According to his ideas, which were based on chemical principles, syphilis emerges from the combination of certain acids and blood. He calls this phenomenon acrimony. The primary cause of the infection is the coitus act with an unclean person. The infection enters the healthy blood from the infected blood through the genital organs. The other method of infection is breast-feeding, through the nipples. Therefore the disease spreads not *causa epidemica*, but from one person to the other (*causa particularis et singularis*).

Since the origin of the disease was explained based on the iatrochemical school, it seems understandable that the combination of the blood and the infection creates another discharge, compound, an acidic or alkaline acrimony, and therefore the aim of the cure is to neutralize these substances. The process of the cure: first the bowels have to be cleared with medicaments consisting of Venetian turpentine, extractum rhei, cremo tartan, extr. catholoco, mercurius dulcis, mercurius precipatus albus. After that, diuretics are used (Alkanna root, tea, Peruvian balm, myrrh). This is followed by purging (decoctions, drops and pills) and later by antacid and tempering medicines: China root, Sarsaparilla, Sassafras, mastic, coral, etc.)

Strong emphasis is placed on the washing of the body, and fluid intake: the consumption of sweet milk, tea and coffee. Drinking wine and smoking is prohibited. There are different procedures for sweating. The patient has to be seated on a stool, a rug placed beneath his

<sup>18</sup> Etienne Blanchard: *Traite de la Verole*. Paris, 1688.

feet, his whole body covered by blankets like a tent. Then a heat source has to be set in front of the stool inside the blankets. A hot brick can also be used as a heat source. According to the ideas of the period, the use of surgical plasters was also recommended.

The use of condoms (13. picture) was one of the means for the defence against the disease. In the case of this important and handy aid, again both the name and origin can vary quite dramatically; it is known as fireman's syringe, rubbers, Port Said Garter and Venus glove. The English call it French letter, the French Capote Anglaise (English hood). However, most commonly it is referred to as condom.



Fig. 13. Ábra Fracastorius, condom

According to some sources this name comes from the Latin word 'condere', meaning 'protect'; others trace it back to the idiom Cum Domino. There are others who claim it got its name from the French town of Condom. According to some the physician of Charles II (Stuart), Quondom, offered the "assurance cap" to his king, in order to help decide the question of inheritance and prevent the birth of illegitimate offspring. Another version states that a colonel by this name serving in Cromwell's army ordered his soldiers to use this important protection. The remains of five condoms were found in a bottle during excavations in the castle.

According to contemporary records, the Venus glove was already known in Paris by 1655. In a letter written by Madame de Sévigné to her daughter in 1671, she refers to it as the 'French glove' and recommends its use in order to avoid that certain danger. Marquis De Sade and Casanova (14. picture) used it not only as a contraceptive, but also against the spreading of venereal diseases. According to the advice of Casanova, the best way to ensure the condom is without fault is to inflate it before use.

In 1701 there was already a shop selling condoms in England. Information about the product was recorded and circulated in the form of poems:

To protect you from fear and shame  
there are no faulty ones here to blame  
Don't let your Venus passion be quenched.  
Do as nature bids you and shield your health.





Fig. 14. Ábra Casanova and condom test

Mrs Philips and Mrs Perkins's factory became the biggest condom supplier of London in the 18<sup>th</sup> century. They manufactured for the wholesale market, as well as for envoys, foreigners, lords and ship captains. Orders came from Spain, Italy and, of course, France. However, just as in the case of other new and profitable businesses, this one too had its opponents who tried to scientifically prove that this special "assurance cap" was popular not for the protection it provided against infection but for what it represented, namely prostitution and immorality. With this they defined and stigmatised it for centuries to come: the place of the condom in a hypocritical world.

In medical circles the hesitation towards the condom was caused by the lack of evidence for its effectiveness on the one hand, and the unrestrained sexuality and the inability to check marital fidelity they said it enabled on the other. Most of the records mention the condom as an object of prostitution that the prostitutes themselves sold.

Naturally the notions about venereal diseases defined the way they were cured. Venereal disease, which was regarded as a single disease for centuries after the medieval pandemic of syphilis, actually covered many different illnesses. This caused a plethora of misunderstandings and mistakes in the identification, isolation and treatment of venereal infections.

The isolation of three venereal diseases, chancroid, gonorrhoea and syphilis, was achieved only in the 19<sup>th</sup> century. Cockburne (1715) was the first to treat syphilis and gonorrhoeal



discharge as separate diseases. Later Balfour, Ellis and Tode vigorously denied that these diseases were the same, until the failed experiment of John Hunter (1728-1793) (15. picture). As is well known, he injected the gonorrhoeal discharge of a patient into the foreskin of a healthy person. Unfortunately, however, Hunter did not know that the patient had syphilis as well as gonorrhoea. That is why the experiment, which clearly proved that syphilis emerges from gonorrhoea, set back the differential diagnosis of these two diseases for many decades.

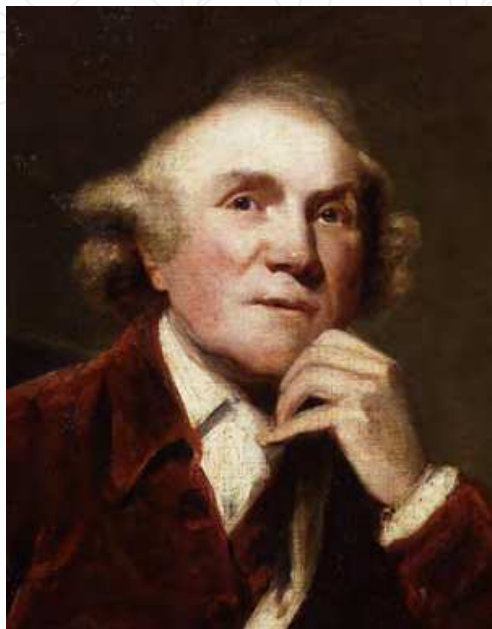


Fig. 15. Picture John Hunter



Fig. 16. Picture Philippe Ricord

As we have seen, the theory of uniformity dominated perceptions about venereal diseases until Bell (1793), Frank (1797) and Hernandez (1812) tried to prove that the two diseases

differ from one another. In 1831 Ricord (16. picture) conducted more than 667 gonorrhoeal and 1500 syphilitic inoculations, which clearly confirmed the fact that gonorrhoea can only emerge from a gonorrhoeal infection, and syphilis from a syphilitic infection. Based on Ricord, syphilis was separated into three stages: primary, second ulcerous stage, and the final so-called late state.

Concerning the treatment, physicians were divided into two groups. One group argued for mercury treatment, the other for non-mercurial therapies. Mercury poisoning occurring as a result of the uncertain amount of administered mercury made the condition of the patient deteriorate even further in addition to the uncured or recurring syphilis. According to Poór's statistical records, 60% of the patients treated with mercury returned with recurring syphilis and additional mercury poisoning. Therefore the iodine<sup>19</sup> recommended by Wallace (1835) was applied in the form of mineral water. Its harmlessness was regarded as its greatest advantage and use since, in contrast to mercury iodine, it is not poisonous. Gonorrhoea, also known as the clap, is an infectious disease localized on the mucous membranes; its causative agent was discovered by Neisser (17. picture) in 1879.



Fig. 17. Picture Albert Ludwig Sigismund Neisser

<sup>19</sup> Melly-Doros: The issue of venereal diseases in Budapest. Budapest, 1930. p. 27.

The Gram-negative *Neisseria gonorrhoeae* bacterium was named after him. In fact, gonorrhoea was considered the most widespread infectious venereal disease at the beginning of the 20<sup>th</sup> century. According to contemporaneous German statistics 80-100% of the men suffered from this disease. Our only information about the number of infected women comes from the women arrested during police raids (80% suffered from syphilis). Ricord stated the following concerning the complications of the purulent infections: "When gonorrhoea starts only God knows when it is going to end."<sup>20</sup> It can result in urethral, prostatic inflammation epididymitis, and even infertility in women. In its later stages it can cause arthritis through the bloodstream, and eye infection during childbirth.



Fig. 18. Picture Ferdinand von Hebra

The experiment series which proved that syphilis and gonorrhoea are different diseases did not change the attitude of physicians in one fell swoop, since it was still impossible to separate chancroid and syphilis from one another.<sup>21</sup> That is how the two sides emerged: the side of the theory of unity, according to whom chancroid and syphilis were in fact the same disease. Representatives included Ricord, Zeissl, Sigmund, Kaposi, Auspitz and Schwimmer. And the side proclaiming duality considering them to be two separate diseases. Representatives included Bassereau, Laroyenne, Fournier, Diday, Mauriac, and Poór.<sup>22</sup>

<sup>20</sup> Ivan Bloch: The sexual life of our period. Budapest. Dante. 1907. p. 334.

<sup>21</sup> Sámuel Róna: The sexual or venereal diseases. Budapest. Hungarian Medical Book Publication Group. 1893.

<sup>22</sup> Melly-Doros: The issue of venereal diseases in Budapest. Budapest, 1930. p.27.

Hebra (18. picture) and Sigmund were excellent dermatologists at the second medical school in Vienna. At the University of Vienna patients were treated according to the best knowledge of the period. The syphilis ward of the General State Hospital had been providing care since 1869.<sup>23</sup> It offered diet, body hygiene, bathing, injection and irrigational therapies, as well as cures using patches and bandages. Of course, they also recommended washes, dusting powders, medicine injections, anointments, inhalation treatments, censing and the use of suppositories in order to cure syphilis.<sup>24</sup>

The embrocating procedure on five areas of the body was regarded as a new treatment: on the shins, thighs, chest, stomach and upper arm.<sup>25</sup> The evening was considered the best time for the treatment; these time recommendations are suggestive of traditional medicine. In Pest-Buda Poór was the first docent habilitated in dermatology and syphiligraphy in 1858-59. He studied the field in Vienna, and later worked in the dermatology ward<sup>26</sup> of the St Rókus hospital, where half of the patient suffered from syphilis.<sup>27</sup> Poór worked on syphilisation. Using experiments based on the Jenner's vaccination technique physicians all over Europe tried to discover a vaccine against syphilis. The vaccination experiments failed everywhere however, not just in Paris.<sup>28</sup>



Fig. 19. Picture Calomel

In order to avoid the toxic effect of mercury, they found that the injection beneath the skin of the patient was the only method which could avoid the symptoms of poisoning caused by the high dose of mercury. **Sublimate** was used by Hunter and Hebra for the first time in an amount of 25 (SMER); it did not cause any salivation. The other treatment called **Calomel**

<sup>23</sup> Sigmund K. Receipt samples from the infirmary of the University of Vienna. Pest. Heckenast. 1871. p. 3.

<sup>24</sup> Ibid. pp. 4 -15.

<sup>25</sup> Sigmund K.: The embrocation treatment for the cure of syphilis types. The book press of the Hungarian Royal University. 1868. p. 12.

<sup>26</sup> Schwimmer E.: The actual state of the treatments of syphilis. Khor and Wien. 1880. p. 3, 7.

<sup>27</sup> I. Poór: Iodine, the sure and harmless cure of syphilis. Gyógyászat. 37. 9 Sept 1888. p. 435.

<sup>28</sup> I. Poór: The value of the Bujaev-vaccination (syphidisation) concerning the cure of syphilis. Gyógyászat. 34. 29 Aug. 1858. 560.p.



(19. picture) was first used by Scarenzi; it often caused abscess at the point of injection, and salivation could also occur.<sup>29</sup>

The other docent in Budapest dealing with syphilis was Ernő Schwimmer who habilitated in 1871. Since there was no dermatology ward, he was appointed physician of the virulent exanthema ward of the barrack hospital in 1857. He was the first to use antiseptics for the treatment of variolar processes. He established a dermatology and syphidology ward and department in Kolozsvár (today Cluj Napoca, Romania) in 1874, the first in Hungary. In 1880 Schwimmer, who had already received the title of professor extraordinary, gained permission to move his public dispensary from the polyclinic to the clinic. In 1885 he established a dermatology and syphilis ward with 130 beds in the St Stephen hospital. Finally the dermatology and syphidology department was established in 1892, headed by Schwimmer.

His treatment procedure clearly shows – similarly to all the contemporaneous treatments – a wide scale of possible but unsuccessful cures. These treatments were the following:

1. Mercury treatment
  - a. internal mercury treatment with the help of different pills, Dzsoni, Hufeland, Dupuytren, Mauriac, etc., van Swieten, Sigmund types. Calomel, iodine mercury preparations e.g. the Ricord type,
  - b. external mercury treatment in the form of: 1. censing, 2. bath, 3 embrocation, 4. injection beneath the skin
2. Iodine treatment with different iodine preparations in the form of: potassium iodine, sodium iodine, fermium iodine and iodoform
3. The use of herbs in the form of decoctions: sassafras, guaiac tree, sarsaparilla, burdock root, China bark, e.g. Zittman type decoction, other herbs like tayuya, pilocarpin, etc.
4. Various minerals: gold, silver, platinum
5. Water cure: warm water – thermal springs containing sulphur and iodine; cold water – the Priessnitz methods
6. Various other methods: - syphidisation (vaccination) / failed experiments - dietetics

The last quarter of the 19<sup>th</sup> century was the period of great discoveries in experimental medicine. The development of the chemical industry, experiments with dyes and compounds, and bacterial discoveries all opened new avenues to cure infectious diseases. In 1905 Schaudin and Hoffman discovered the causative agent of syphilis, *Treponema pallida*, Wasserman composed the method which was named after him that made it possible to detect the disease in blood plasma. The new serum diagnostics made the explicit identification of the disease possible.<sup>30</sup> This method meant that not only the already infected patients could be diagnosed but the latent cases as well.

The new dyeing methods created the base for chemotherapy. They tried to treat malaria cases with methylene blue, and later tried malaria remedies on lues patients in accordance with the fashionable ideas of the period. In the Kolozsvár dermatology clinic patients were treated with atoxyl. In 1909 Ehrlich, with Hata's help, discovered Salvarsan after 606 experiments.

The domestic and international response to the effective, pinpoint accurate “magical balls” was unambiguous. Unfortunately it later transpired that Salvarsan ( 20. picture) needed to

<sup>29</sup> Schwimmer E.: The actual state of the treatments of syphilis. Khor and Wien. 1880. p. 3, 7.

<sup>30</sup> Marschalkó T.: Weekly Medical . 1909. p. 788.

be improved, and the new type was placed on market under the name Neosalvarsan. A regulation provided for the use of Salvarsan in hospitals to be financed by the national treasury, meaning that the state bore the costs of the treatment. It was penicillin, discovered by Fleming in 1942, that finally provided the solution to syphilis which had existed for so many decades.



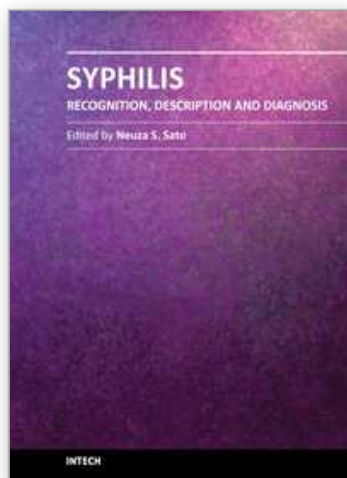
Fig. 20. Picture Salvarsan

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## **Syphilis - Recognition, Description and Diagnosis**

Edited by Dr. Neuza Satomi Sato

ISBN 978-953-307-554-9

Hard cover, 130 pages

**Publisher** InTech

**Published online** 21, November, 2011

**Published in print edition** November, 2011

Syphilis, a sexually transmitted disease was first described in 15th century, is caused by *Treponema pallidum* subsp. *pallidum* and occurs worldwide. This book is a collection of chapters presenting the novel knowledge about the *T. pallidum* and some historical and up to date information about venereal disease and syphilis. The collection of articles includes: immunological aspects recognition of *T. pallidum* by the pattern recognition receptors of the innate immune; the whole genome analysis of treponemes and new targets for its molecular diagnosis; some historical aspects of venereal diseases treatment; natural history of syphilis including clinical manifestation and epidemiology; a clinical aspects dealing with psychiatric manifestations of neurosyphilis; spatial and temporal patterns of primary syphilis and secondary syphilis described by the spatial and space-time scan statistics; a commonly used methods for laboratorial diagnosis, the serological response to treatment of syphilis and safety in blood transfusion. I hope this book will be useful for students and research fellows as well for the wide audience.

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Judit Forrai (2011). History of Different Therapeutics of Venereal Disease Before the Discovery of Penicillin, *Syphilis - Recognition, Description and Diagnosis*, Dr. Neuza Satomi Sato (Ed.), ISBN: 978-953-307-554-9, InTech, Available from: <http://www.intechopen.com/books/syphilis-recognition-description-and-diagnosis/history-of-different-therapeutics-of-venereal-disease-before-the-discovery-of-penicillin>

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