

Dr. Guthrie was led to prepare chloroform by his peculiar process from noting a passage in Professor Silliman's "Elements of Chemistry," which refer to the chlorine ether of the Dutch chemists as being a grateful diffusible stimulant when properly diluted. He supposed that he had fallen upon a cheap and easy process for obtaining this long-known ether without being aware that in reality he had obtained a new compound. The "U. S. Dispensatory" (1845) gives its medical properties in the following: "It acts as a diffusible soothing stimulus in the same manner as sulphuric ether but with this decided advantage, that when sufficiently diluted it possesses a bland sweet taste which renders its administration easy even to children. It has been used with advantage in asthma, spasmodic cough, the sore throat of scarlet fever, atonic quinsy and other diseases in which a grateful and composing medicine is indicated. Professor Ives and Dr. N. B. Ives of New Haven speak favorably of its effects. The dose for an adult is a teaspoonful diluted with water. In affections characterized by different respirations it may be used by inhalation. It is employed for medicinal purposes in alcoholic solution."

Samuel Guthrie was born at Brimfield, Mass., in 1782, where he studied medicine with his father, and also, later, in New York and Philadelphia. In 1803 he emigrated to Smyrna, N. Y., where he began the practice of his profession and also established a laboratory for the manufacture of explosives, supplying the Government with them. He was surgeon in the U. S. Army during the War of 1812, and invented the punchlock, replacing the flintlock musket. He died at Sacketts Harbor, October 18, 1848, aged sixty-six years.

PHARMACY IN CLASSICAL ANTIQUITY.*

BY LEO SUPPAN.

Pharmacy, in its origins, was associated with the idea of evil—an example of the passing of the connotation of a word into its opposite, for the pharmacist is now recognized as a member of society whose aim is the public good, and that not only in cooperation with the physician.

The very name "pharmacy" is suggestive of the original association, for the word *φάρμακον* always meant for the ancients "poison," and it was not until later, by a process of generalization that it became applied to drugs possessed of beneficial properties.

That poison should in the earlier periods of man's history be associated with the practices of magic and religion is but natural. Everything exerting power, be it in a great or in a minor measure, calls forth, in the primitive consciousness, fear. It may, and does become, therefore, a powerful weapon in the hands of the priest. We see this in the employment of ordeal poisons among the primitive tribes of Africa. In instances of this kind the use of poisons serves an ethical purpose and its use must, in the minds of simple people, be justified as in the end promoting some good, remote as that end may be.

But what can be used to promote good may also be turned to evil, and in this latter application the results may be so formidable and startling as to overshadow

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quite, in popular opinion, the other aspect. Beside the priest stand the sorcerer, the wizard, the witch, and these birds of ill omen are credited with possessing an intimate knowledge of poisonous substances, particularly poisonous plants. The *materia medica* falls under suspicion.

In the traditions of classical antiquity two names of women skilled in poisons are especially famous—Circe and Medea, and both are intimately associated with the sinister “goddess of three forms,” Hecate. Circe, daughter of Helios by the Oceanid Perse, is familiar to all readers of the *Odyssey*. Medea is by some logographers called daughter of Aetes, King of Colchis and the Oceanide Idyia, while others make Hecate her mother. Aetes was also brother of Circe, so that both Circe and Medea are connected with Hecate. Temples to Hecate dotted the region from Colchis to Paphlagonia, and these districts, but Colchis notably so, were noted as the habitat of poisonous plants of various kinds and flourishing in marvelous abundance. Medea became a great favorite in the classic imagination, almost an incarnation of evil, although Euripides has given her a more sympathetic touch, probably feeling that her dreadful acts as described in his tragedy were more or less justified by the brutal treatment that she had received at the hands of her faithless husband, Jason.

Medea appears to be a creation of Post-Homeric times, for she is mentioned neither in the *Iliad* nor *Odyssey*, unless she is to be identified, as she has by some scholars, with Agamede, daughter of Augeas.

ἡ τόσα φάρμακα ἦδη, ὅσα τρέφει ευρεφία χθών. (1)

The best known exploit of Medea, as a sorceress, is that which she performed in connection with Jason's expedition to Colchis in search of the Golden Fleece. The skin of the ram which had borne Phryxos safely to Colchis had by him been nailed to a tree as a votive offering in gratitude for his safe transit, and was guarded by an ever watchful dragon. It was necessary to divert the attention of this monster, which Medea accomplished by preparing a decoction of magic herbs; this she sprinkled upon his eyes by means of a branch of juniper, whereupon he sank into a deep sleep.

When Jason returned with the fleece he was denied the reward which King Pelias had promised him. For this Medea plotted revenge, and she decided to strike the old man indirectly through his own daughters. To this end she selected an old ram from among the flocks of Pelias, cut him into small fragments, and, having boiled these together with certain plants, finally brought the animal out of the cauldron in the form of a vigorous lamb. The daughters of Pelias were naturally astonished at this phenomenon, and it was easy for Medea to convince their credulity that their aged father could in like manner be restored to youth. Persuaded, the maidens dismembered him and threw the portions into the cauldron. Medea pretended that the success of the enterprise depended upon an invocation to the moon. She mounted to the roof in order to pronounce it, and there gave the fire signal which had been agreed on to summon Jason and his Argonauts into the town.

Whatever plants of a powerful toxic character were employed in those early times, medicinally or for nefarious purposes, were evidently derived from various localities, and it is probable that at some dim, remote period this circumstance

gave rise to the legends associating certain persons skilled in drugs with those regions. Thus Medea was a Colchian, as Colchis was noted for its poisonous plants. It was reported that the Colchian rulers had established a kind of medicinal plant garden on the banks of the Phasis, which imagination embellished with fit appointments. The garden was believed to be surrounded by a wall more than fifty feet in height, and was pierced by triple iron doors guarded by Artemis—undoubtedly in her form of Hecate—and her fire-eyed dogs. In an adjacent enclosure were grown drugs of an alexipharmic character. Iberia and Thessaly were as famous for their poisonous plants as was Colchis. The Thessalian witches are known to every school boy. Horace alludes to them frequently, embodying their character and practices in the infamous Canidia.

“Tu donec cinis (2)

Iniuriosis aridus ventis ferar,
Cales venenis officina Colchicis.”

he cries out in one of his odes; and in another having heard his neighbor at the banqueting table confess his passion for a notorious coquette, he exclaims:

“Quae saga, quis te solvere Thessalis (3)
Magus venenis, quis poterit deus?”

At a later period Claudian alludes to them:

“sed castra secutas
Barbara Thessalidas patriis lunare venenis
Incestare jubar” (4).

Lucan, too, tells that Thessaly produced on its rocky slopes poisons that were dangerous even for the gods:

“Thessalia quin etiam tellus herbasque nocentis
Rupibus ingenuit, sensuraque saxa canentis
Arcanum ferale Magos, Ibi plurima surgunt,
Vim factura deis.”

In the time of Augustus, Rome was full of sorcerers and poisoners, and their presence was a source of offense to men of sense, and of indignation to satirists. Later emperors issued edicts against the practices of this vicious element of society, but they were of little effect. Horace expressed his feelings in a vigorous ode:

“Cum mihi non tantum furesque feraeque suetae (5)
Hunc vexare locum, curae sunt atque labori,
Quantum, carminibus, quae versant atque venenis
Humanos animos.”

The most famous professional poisoner of antiquity was unquestionably the Roman woman, Locusta. It was she whom the infamous Agrippina called in when meditating the death of Emperor Claudius. Tacitus has left us a graphic account of this crime in his *Annals*. He says: “In the midst of these distractions, Claudius was attacked by a fit of illness. For the recovery of his health he set out for Sinnessa to try the effect of a milder air and the salubrious water of the place. Agrippina thought she had now an opportunity to execute the black design which she had long since harbored in her breast. Instruments of guilt were ready at her

beck, but the choice of the poison was still to be considered: if quick and sudden in its operation, the treachery would be manifest; a slow corrosive would bring on a lingering death. In that case, the danger was that the conspiracy might, in the interval, be detected, or in the weakness and decay of nature, the affections of a father might return and plead in favor of Britannicus. She resolved to try a compound of new and exquisite ingredients, such as would make directly to the brain, yet not bring on an immediate dissolution. A person of well-known skill in the trade of poisoning was chosen for the business. This was the famous Locusta, a woman lately condemned as a dealer in clandestine practices, but reserved among the instruments of state to serve the purposes of dark ambition. By this tool of iniquity the mixture was prepared. The hand to administer it was that of Halotus, the eunuch, whose business it was to serve the Emperor's table and taste the viands for his master.

"The particulars of this black conspiracy transpired some time after, and found their way into the memoirs of the age. We are told by the writer of that day that a palatable dish of mushrooms was the vehicle of the poison. The effect was not soon perceived. Through excess of wine or the stupidity of his nature, perhaps the strength of his constitution, Claudius remained insensible. An effort of nature followed, and gave him some relief. Agrippina trembled for herself; to dare boldly was now her best expedient. Regardless of her fame and all that report could spread abroad, she had recourse to Xenophon, the physician, whom she had seduced to her interest. Under pretense of assisting Claudius to unload his stomach this man, it is said, made use of a feather tinged with the most subtle poison, and with this instrument probed the Emperor's throat. With the true spirit of an assassin he knew that, in atrocious deeds, a feeble attempt serves only to confound the guilty, while the deed executed with courage consummates all, and insures to earn the wages of iniquity."

How did this army of poisoners obtain its drugs? The poets, as a rule, represent them as attending themselves to the collecting; but there can be no doubt that so far as the large towns are concerned, much of the material consumed came through regular channels of trade, for there was a demand for legitimate medicinal drugs as well. Horace's Canidia, whoever she was,¹ and her colleagues probably obtained their "magic herbs" from dealers in drugs who were plentiful in Rome. These women might be compared to the modern distributors of narcotics, purveyors to the underworld. The drug dealers of Rome may fairly be suspected of catering to their class.

It must be remembered that both Greeks and Romans looked upon trade of any kind as beneath the dignity of a free citizen, and so the distribution of any kind of produce was left to the lowest orders of the population, in many cases slaves. This contempt extended even to the practice of medicine. Of course there were, in Greece and Rome, physicians of great ability and of high social standing; but the generality of the medical men was undoubtedly of shady character. There was, besides, a horde of irregular practitioners who catered to the ignorant and vulgar, practicing upon their credulity and reaping a rich reward. Of these were various classes: the rhizotomes, the pharmacopoles, the pharmacotides, the pharmakoi; many mid-wives, too, carried on an irregular practice. In a state where the prac-

¹ Her real name is said to have been Gratidia, and she was for a time Horace's mistress; deserting him, she became the object of his wrath, and he revenged himself by clothing her with the character of a class, and giving the name of Canidia. A caddish performance! But all this is merely conjecture.

tice of medicine is not regulated by specific statutes such conditions must necessarily prevail and the quack finds a profitable seedfield.

The rhizotomes were, as the name indicates, originally rootcutters or diggers, that is, collectors of crude drugs, which they furnished the physicians upon order. The precise relation which they held to the physicians is not known, but it is certain that they held a considerably lower rank, for Galen places them in the same class with barbers, cuppers, setters of leeches and the like. Many of the rhizotomes, however, aside from their legitimate connection, picked up business among the lower herd and enforced it by a hocus-pocus which gained them considerable credit from those that liked that sort of thing. These quacks must not be confounded with men of a profession called the "medical rhizotomes" who were really the medical scientists of those days and the first pharmacologists. We may regard them as the founders of medical botany.

The pharmacopoles were druggists of a *louche* type. In their shops, or rather booths, were sold drugs of inferior quality and doubtful efficacy. These dealers exhibited, besides, an assortment of "side lines," such as magical rings, burning-glasses, amulets and cosmetics; abortifacients, secret mixtures for venereal diseases, and frankly, poisons were a regular stock in trade. We have indications that they acted as "matrimonial agents," a term covering a multitude of possibilities. Remembering what the Roman satirists tell us of the practice among Roman ladies of secretly removing objectionable husbands, it may be surmised that the pharmacopoles in many cases furnished them with the weapon.

The mixing and dispensing of drugs and poisons was the occupation of the *pharmakoi*, whose customers were the *pharmakides*, the latter a class of go-betweens of the *pharmakoi* and the ultimate consumers.

This classification of drug dealers as they existed among the Greeks and Romans must not be insisted on too sharply; only the salient points regarding the individual trades are here considered. There was probably considerable overlapping in practice. In neither Greece nor Rome, however, was there a profession corresponding to the later apothecaries; the Roman *tabernæ* have been stated to be shops owned by Greek physicians who had emigrated to Rome in considerable numbers. These physicians cannot have held an exalted rank in their profession, for they sold their services for what they could get and they dispensed their medicines in the *tabernæ*, which were actually shops where all kinds of things were sold, many of them, for illicit purposes. Two shops supposed to have been *tabernæ* were unearthed among other buildings at Pompeii; they bore on the outside a figure of the serpent of Aesculapius and a pine cone. Berendes holds, however, that these images were not the symbols of the drug merchants but of the physicians. The shops at Pompeii, and possibly throughout the extent of the Roman world, were open in front and were closed at night by means of wooden shutters, resembling in this respect our market stalls. Travelers will recall that many shops of this kind are still to be seen in southern Europe.

In Rome we find a more extensive ramification of the functions exercised by the dealers in drugs than was the case in Greece. The Pharmacopoles sold all kinds of wares besides drugs and medicines, of which they disposed by peddling. The *pharmacotritæ*, were, as the name indicates, "rubbers" or powderers and mixers of drugs; they were assistants to the *medicamentarii* or herbalists, dealers in medi-

nal plants. Many Greek and Egyptian physicians came to Rome, and they brought with them the knowledge of many exotic drugs which they had used in their own countries. There necessarily arose a commerce in these articles, and it is probable that the *medicamentarii* came to act as middlemen between the producers and physicians. Instead, however, of devoting their attention to the legitimate end of their business they, in the course of time, became guilty of unprofessional practices, for, in the code of Theodosius, they are roundly denounced as worthless rogues; indeed, their name became synonymous with that for traders in poisons. The *pharmacopæius* is mentioned in Roman documents. The name would indicate that he was a maker of poisons or of medicines; it may be that his profession only represented the worse class of *medicamentarii*.

The *pigmentarii* were originally dealers in such drugs as were used in coloring and dyeing, but they appear to have developed into dispensers of medicines on the prescriptions of physicians, thus attaining to a professional or, at least, semi-professional rank. This, however, did not serve, it appears, to improve their social standing, for we read that the emperor Claudius excluded them from all public offices.

The *seplesarii* were a class whose business has been a matter of considerable discussion among historians. The *seplesarii* was the name of a street in the town of Capua, and this thoroughfare was occupied almost entirely by perfumers and pomade and ointment makers, and the name was, toward the end of the Republic, transferred to Rome and applied to persons of this trade. Some modern writers hold that the *seplesarii* sold drugs and medicaments to physicians only, being thus purveyors to the dispensing doctor. Later they appear to have freed themselves from this dependence upon the physicians and to have sold to the public.

In the city of Rome the various trades were segregated, a result either of custom or tradition. The quarter at the foot of the Capitoline hill was a "shopping district" and was known as the *Vicus unguentarius*, the ointment-makers' quarter. It must have been a busy and crowded place, and the great fire which destroyed a great part of Rome in the reign of Nero must have found it a rich prey.

All the drug merchants mentioned were derived by Wootton from the Greek herbalists. In his "Chronicles of Pharmacy" he says:

"The earlier Greek and Roman physicians were in the habit of themselves preparing the medicines they prescribed for their patients. But, naturally, they did not gather their own herbs, and as many of those used for medicines were exotics, it is obvious that they could not have done so if they had wished. The herbalists who undertook this duty (*botanologoi*), in Greek developed into the *seplasarii*, *pharmacopoloi* and *pigmentarii* already mentioned. Beckmann says that they competed with the regular physicians, having acquired a knowledge of the healing virtues of the commodities they sold and the method of compounding them. This could not help happening, but it ought to be remembered that the physicians of all countries have themselves developed from herbalists—that is, if we abandon the theories of miraculous instructions which are found among the legends of Egypt, Assyria, India and Greece."

Pharmacy as an art could not rise above the conditions in which it grew up. Had the Greeks had the scientific mind as they possessed in so eminent a degree the philosophical, the ancient dealers in and preparers of medicine would have furnished us with a picture more pleasant to contemplate. It was only when science was liberated from superstition that progress became possible in the arts, for efficient

practice rests upon scientific principles. To be sure, antiquity presents a few glorious names in medical science; the men who bore them sought to interpret facts in the light of reason, and thus they arrived at a number of general truths; but they stood isolated from the mass, and it was only by a few enlightened princes that their abilities were recognized. Unfortunately, the character of a period takes its color from the general mass of mankind rather than from the small number of choice spirits that shine as stars of the first magnitude. If we are to seek for those beginnings from which modern pharmacy traces its lineal descent, we must go to the period of the first Renaissance, the thirteenth century, the time of the greatest of all the Hohenstaufens, the emperor Frederick the Second. This was the era that prepared for the greater intellectual awakening of the fifteenth century, when science became a social factor, and medicine and pharmacy assumed the positions they have maintained ever since. What better motto could the pharmacist of to-day adopt than the words which an ancient writer put into the mouth of Apollo:

Opiferque per orbem dicor (6).

TRANSLATIONS OF QUOTATIONS IN THE TEXT.

- (1) "Who knew all the poisons that the wide earth nourishes."
- (2) "You, a workshop of Colchian poisons, are always working against me until I, burned to ashes, shall become the sport of the saucy winds."
- (3) "What sorceress, what enchantress with Thessalian drugs, what god can release you?"
- (4) "Thessalian witches follow the camp and with their native poisons pollute the light of the moon."
- (5) "Thieves and vultures disturb me less than those knaves who, by means of incantations and poisonous potions, lead astray the human mind."
- (6) "Throughout the world I am spoken of as a helper."

O. HENRY.

The origin of the pen name "O. Henry" is not definitely known, at least not generally; it has been said that he adopted this name from a text reference relating to Hydrocyanic Acid in the U. S. Dispensatory; others state that he picked the name from New Orleans papers. The late H. L. Carleton, for many years manager of Morley Brothers, Austin, Texas, said he did not know until years after that William S. Porter and O. Henry were the same individual. It is desired to bring in a few lines from a letter of the latter to his mother-in-law, Mrs. Roach, because they confirm this writer's belief in the innocence of the former of that charge.



O. HENRY.

"I feel very deeply the forbearance and long suffering kindness shown by your note, and thank you much for sending the things. Right here I want to state solemnly to you that in spite of the jury's verdict I am absolutely innocent of wrong doing in that bank matter, except so far as foolishly keeping a position that I could not successfully fill."

Dr. George W. Willard, of the penitentiary in which O. Henry served blame-