

The art of medicine

The theriac in antiquity

In Greek mythology, Panacea, the goddess of healing was said to have a potion that healed every sickness. The search for the cure-all remedy would continue throughout antiquity as physicians and healers tried out various cures in the regular care of their patients, especially in desperate situations. In the ancient world, poisonings were fairly common and the pursuit of a compound that was capable of protecting a person against any kind of toxin led to the popularity of what was thought to be a universal antidote: the theriac.

The name theriac comes from the Greek term *theria*, which refers to wild beasts, and it was given to a preparation that served initially as an antidote and later as an all-purpose drug. According to Pliny the Elder (23–79 AD) and Galen of Pergamon (131–201 AD), one of the earliest formulations for a theriac against the bites of venomous animals was inscribed on a stone in the Temple of Asclepius on the island of Kos, and it contained thyme, opoponax (sweet myrrh), aniseed, fennel, and parsley. Another early reference to

theriacs can be found in the didactic poems *Theriaca et Alexipharmaca*, from the second century BC, by the Greek grammarian, poet, and physician Nicander of Colophon who described a variety of poisons from animal bites and their antidotes.

The idea of a theriac seems to have gained greater prominence during the reign of Mithridates VI (132–63 BC), King of Pontus in Asia Minor. Mithridates VI lived in a constant fear of being poisoned and not only tested poisonous substances on criminals and slaves but also regularly ingested poisons and their antidotes himself. His personal physician Crateuas concocted an antidote known as Mithridatum, which contained about 40 ingredients and was thought to be protect against scorpions, vipers, sea-slugs, as well as other toxins. Mithridates appears to have become so accustomed to various poisons that he attempted suicide by self-poisoning when he was captured by Pompey. Yet as Dio Cassius wrote “the poison, although deadly, did not prevail over him, since he had inured his constitution to it, taking precautionary antidotes in large doses every day”. Some histories describe that having failed in this attempt, Mithridates ordered one of his soldiers to kill him with a sword. Among the papers of the defeated king, Pompey found the receipt for Mithridatum and translated it into Latin.

Different kinds of theriacs were subsequently produced in antiquity but the most celebrated was perhaps the one invented by Andromachus, physician to the Roman Emperor Nero, in the first century AD. Andromachus came from the island of Crete where “botanical men” in the service of the Emperor collected herbs and placed them in knitted vases, which were sent not only to Rome but also to other nations. Andromachus’ vast knowledge of botany helped him “to provide the mankind with the necessary medicines”. He claimed that his formula for his Galeni Theriaca (tranquillity theriac) was an improvement on that of Mithridates because it contained 64 ingredients and was enriched with the flesh of viper with a much greater quantity of opium. According to Andromachus, his theriac would not only counteract all poisons and bites of venomous animals, but would also diminish pain, weakness of the stomach, and help treat asthma, colic, dropsy, inflammation, and even the plague. Indeed, Andromachus’ theriac raised him to the dignity of Archiater (chief-physician) and the preparation enjoyed a great reputation for centuries.

In the next century, the Greek physician Galen formulated a theriac that would, he intended, eclipse all others in its fame and popularity. Moreover, he experimented with his theriac, intent on proving its therapeutic effect. Galen is, of course, one of the leading figures in classical medicine. He wrote



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a great number of treatises on medical and philosophical subjects and his doctrines dominated medical thought until the 16th century. Born in Pergamum, part of Asia Minor, Galen's father Nicon, a wealthy architect, oversaw his education. Initially, Galen studied medicine in his home city, then in Corinth, and finally in Alexandria. Returning to Pergamum, he was appointed as a city physician to the School of Gladiators but gained such a reputation that he soon became the court physician of the Roman Emperors Marcus Aurelius and Lucius Verus.

Following Hippocrates' humoral theory, Galen believed that the four humours of the body (phlegm, blood, black bile, and yellow bile) were responsible for health or illness. Going further, he classified all personalities into four types: phlegmatic, sanguine, choleric, and melancholic. Imbalances in these humours would lead to the disease and could be corrected not only by adding herbal extracts of similar origin but also other extracts with opposite properties. Galen believed more than one medicine has to be administered in order to have a therapeutical effect, and favoured mixing several agents to optimise their absorption. In the royal court, Galen prepared his theriac and wrote about various theriac compounds in his books *De Antidotis I*, *De Antidotis II*, and *De Theriaca ad Pisonem*. The basic formula consisted of viper's flesh, opium, honey, wine, cinnamon, and more than 70 ingredients. The final product was supposed to mature for years and was administered orally as a potion or topically in plasters. Galen claimed that his theriac drew out poisons like a cupping glass and could divide the tissue of an abscess more quickly than a scalpel. The preparation was taken daily by the Emperor Marcus Aurelius to protect against poisons and to aid in ensuring good general health.

But Galen did not just administer his theriac, he also writes about experimenting with it on animals. In *De theriaca ad Pisonem* he describes how he took roosters and divided them in two groups: in one group he gave the theriac and in the other group he did not. Then he brought both groups into contact with snakes; Galen observed that the roosters who had not been given the theriac died immediately after being bitten, whereas those who has been given the theriac survived. Moreover, he points out that this experiment could be used in cases where someone wants to make sure whether a theriac is in its natural form or has been adulterated.

Alongside this work, Galen also wrote about the effect of his theriac on individual patients. In one passage in *De Theriaca ad Pisonem*, his gives an illuminating account of treating jaundice caused by snake bite with theriac.

One of the slaves of the Emperor whose duty it was to drive away snakes, having been bitten, took for some time draughts of ordinary medicines, but as his skin changed so as to assume the colour of a leek, he came to me and narrated his accident; after having drunk theriac he recovered quickly his natural colour. Physicians seek to find out if there are signs peculiar to poisoning, because they often see, without

the administration of any deadly poison, that the body



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presents a corruption of the humours similar to that which is produced by poisons; it is not at all surprising, therefore, that there sometimes supervenes a change in the humours, so that the whole body is affected with jaundice.

Galen called his preparation Theriac of Andromachus and for as long as Galenic medicine held sway, so did the appeal of the theriac—not just as an antidote for snake bites but gradually it came to be regarded as a universal cure-all. Stored in ornate porcelain jars, often illustrated with scenes from the life of Mithridate, it survived into medieval Europe in the trade that developed in theriacs, most notably in Italy, which became known as the Venice Treacle, an official preparation that carried the republic's seal. Its legacy is even apparent in French and German pharmacopeias of the 19th century. Whether as a universal panacea or just an addictive preparation thanks to opium, the theriac's history seems to have lasted more than 2000 years.

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Further reading:

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