

M V S E

VOLUMES TWENTY-NINE & THIRTY

1995-1996



Annual of the
Museum of Art and Archaeology

UNIVERSITY OF MISSOURI—COLUMBIA



Fig. 1 A package of teriaca purchased in Venice in 1961. The ingredient opium (opio) is crossed out.

THERIAC: A PANACEA FOR ALL PERIODS

Cathy Callaway

With advances in medical science and with the development of so many new medicines over the centuries, it is astonishing to find one medicine that was taken for more than two thousand years—from the third century B.C.E. to at least the early twentieth century.¹ This medicine is *theriac*. The name is derived from the Greek word *therion*, meaning “a wild beast.”² Originally, theriac was the name given to an antidote used to counteract the bites of venomous creatures. In time, theriac acquired many ingredients and became a cure for everything—the ultimate panacea (Fig. 1).

Evidence for the existence of theriaca is twofold: 1) various medical and historical texts, and 2) a number of lead caps for medicine bottles.³ The latter are identified by inscriptions that mention where the medicine was made and its name. A considerable number of these lead disks were found during excavations at ancient Corinth. There were four types of these disks or bottle tops, each distinguished by the emblems upon them, and they have been described in *Corinth XII*.⁴ Since that publication, ten more of these lead caps have been discovered in Corinth. Isolated examples of these disks have been found elsewhere,⁵ including sixteen specimens that belong to the Museum of Art and Archaeology at the University of Missouri–Columbia. These lead caps were picked up on the beach in Istanbul by the late George Zacos, who donated them to the Museum in 1974.

The circular lead seals vary slightly in size and have vertical flanges.⁶ Each one bears a central design surrounded by an inscription, both of which are in relief. The inscriptions are in Italian and include three elements: the name of the medicine, the name of the design depicted and the place of manufacture—Venice in every case. Venice was the most esteemed center for the manufacture of theriac. Other locations include the Italian cities of Florence, Bologna and Genoa, as well as more remote places such as Constantinople and Cairo.⁷

Actual safeguards for the manufacture of theriac were not seen until the



Fig. 2 Lead bottle tops with an eagle in profile, number 1 or acc. no. 74.29, and number 2 or acc. no. 74.30.

seventeenth century when regulations were imposed on apothecaries, and public production was instituted. This occurred first in France at Montpellier in 1606.⁸ According to G. W. Corner:

The fame of theriac was so great that the drug passed out of the hands of legitimate physicians and became an article of commerce among the people. To that rascally mediaeval army of peripatetic mountebanks, palmers, medicant friars and pardoners, was added a troop of *triacleurs* who wandered from place to place selling their nostrum to the rustics... In self-defense, therefore, in the seventeenth century the regular profession began to hedge about the preparation and sale of theriac with diverse laws and customs tending toward uniformity. The drug was often compounded in public by reputable men in order that the populace might know that everything was done in proper manner.⁹

Gladys D. Weinberg suggests three possibilities for the appearance of the bottle caps in Corinth: 1) the medicine was made before such regulations were in force, 2) the manufacturers received special permission to make the drug, or 3) the medicine was an illicit product. Rebecca Robinson, an excavator of the Temple Hill area in Corinth, concludes that the second

assumption is probably the correct one and doubts that the lead caps in Corinth can be dated before 1606. Robinson notes that the bottle caps from Temple Hill were found in eighteenth- to nineteenth-century lots and should be dated accordingly.¹⁰ Theriac's use in Corinth probably coincided with the appearance of Venetian imports in Greece and continued throughout the following centuries, as in the rest of Europe.

The sixteen caps in Missouri consist of five distinct types. The most common type (numbers 1–9) has an eagle standing with its head in profile and its body facing the viewer (Fig. 2). The eagle is crowned, its wings are spread, and its tail is visible between its legs. These examples are made from several different molds.¹¹ All have a border of letters between two raised lines; many of the inscriptions are difficult to read. The best preserved is on number one, which reads as follows:

TERIACA • F(INA) ALL • A QVILA NERA VEN •
 “Fine theriac. At [the sign of] the Black Eagle. Venice.”

In the Missouri collection, three examples depict the second type (numbers 10–12): a male bust with a laurel crown appears in right profile on these disks.¹² Two of these caps show the bust of a handsome young man in profile; the third representation (number 12) is more crude. To the right is a small, winged lion of St. Mark, the symbol of Venice; tails of the wreath's



Fig. 3 Lead bottle top with crowned male bust (and inscription showing TESTA D'ORO), number 12 or acc. no. 74.24.



Fig. 4 Lead bottle top with ostrich and snake, small winged lion and DORO, number 13 or acc. no. 74.26.



Fig. 5 Lead bottle top with two-headed eagle on citron. Courtesy of Temple Hill Excavations, Corinth, Greece MF 78-79.

ribbons flow to the left (Fig. 3). Each of these examples is from a different mold. The inscription seen in the encircling border of two raised lines reads:

TERIACA FINA ALLA TESTA DORO IN VENEZIA•

“Fine theriac at [the sign of] the Golden Head in Venice.”



Fig. 6 Lead bottle top with pilgrim, number 16 or acc. no. 74. 39.

There are two examples in the Missouri collection of the third type—an ostrich (numbers 13–14)—and each is from an entirely different mold. On both caps an ostrich faces left and holds a snake in its mouth (Fig. 4). On one of these (number 14), the ostrich is depicted with short legs and an ungainly neck.¹³ In the left field is a small winged lion, similar in appearance to the lions depicted on the caps with crowned male busts (numbers 10 and 12). In the upper left field behind the ostrich’s head are the letters DO, followed by RO on the upper right. Like the other types of caps in the Missouri collection, an inscription appears on the outer edge of the top between raised borders. Neither inscription is perfectly legible, but they may be tentatively restored by referring to an example found in Corinth (*Corinth XII* No. 2837), which bears a similar image:

[THERIACA] FINA AL STRUZZO [IN VEN].

“Fine theriac at [the sign of] the Ostrich in Venice.”

The fourth type of cap in the Missouri collection (number 15) shows a two-headed eagle perched on the top of a large citron.¹⁴ There is a lion of St. Mark to the right, and on the left is another unidentifiable winged beast. Thanks to a Corinth example (Fig. 5), the semi-legible inscription can be restored to read:

[TERI]ACA [F •AL •CEDRO•IM]PERIALE•VEN*

“Fine theriac at [the sign of] the Imperial Citron.Venice.”

To date, the final lead bottle cap in the Missouri collection (number 16) is unique. On it appears a bust of a bearded male in frontal view, with a hat in relief.¹⁵ To the left of the male is a staff, which is topped by two spools with a piece of cloth attached to the upper spool (Fig. 6). The figure's hat is two-cornered, and again, the figure is framed by an inscription between raised borders:

TERIACA...AL PEL[LEGR]INO•IN•VENET.
 “Theriac at [the sign of] the Pilgrim in Venice.”

The various emblems on the seals, 1) the eagle, 2) the wreathed male bust, 3) the ostrich, 4) the citron with the two-headed eagle and 5) the pilgrim, along with their descriptive inscriptions, probably represent private trademarks. The existence of the Farmacia Testa d'Oro (or the Pharmacy of the Golden Head), which used the laureate male bust as a trademark, can be traced to as late as 1961 (Fig. 7). The use of these trademarks, signifying the private pharmacy that produced the contents, along with the statement of origin, might illustrate the attempt of the manufacturers to distinguish their product from a counterfeit one. Perhaps they were prompted by a regulation that demanded the identification of the origin of the product. The inferior design of number twelve might well represent an attempt to imitate a known trademark while passing off an inferior product¹⁶ (Fig. 8).

The symbols have an iconographical importance of their own. For example, the winged lion is the attribute of St. Mark and another reference to the city of Venice. The eagle, when seen on Roman coins, is an emblem of imperial power, while the two-headed eagle is related to the Janus symbol.¹⁷ These symbols were either adopted by specific pharmacies, or else the pharmacy in question



Fig. 7 Sign on door of the Pharmacy of the Golden Head, under the Rialto Bridge, Venice, 1961. Courtesy Gladys Weinberg.



Fig. 8 Lead bottle top with crowned male bust, number 10 or acc. no. 74. 25.

created its own, as in the case of the laureate male bust for the Pharmacy of the Golden Head. Some of the symbols on the lead bottle caps, in addition to representing the pharmacy of origin, may reflect the exotic provenance of some of the ingredients. Just as the orders and reports of the Byzantine Empire were sealed with embossed lead, the lead caps on the theriac containers also served to protect and certify the authenticity of their contents.

Different theriacs could be made from herbs or from a combination of herbs, minerals and animal substances. The main purpose of theriacs was originally to counteract the venom of wild animals, while antidotes were conceived for poisons. Both theriacs and antidotes probably originated at the beginning of the third century B.C.E., perhaps in Alexandria.¹⁸ The celebrated medical writer Galen (129–200 C.E.), personal physician to several emperors including Marcus Aurelius, ascribed his earliest prescription of a theriac to an Apollodorus.¹⁹ One of the latter's prescriptions for the medicine contains six herbal elements and opium,²⁰ which appears frequently in later recipes for theriac.

The “scientific” beginnings of theriaca are attributed to Mithridates, a king of Pontus, who ruled after 115 B.C.E. and was more concerned about being poisoned by enemies than being bitten by a wild beast. Mithridates reportedly tested simple drugs on condemned criminals and then combined them into one antidote for protection against all poisons. This antidote was called eponymously “mithridatium” (Galen *Anti.* 1.1/XIV 2 K). According to Pliny the Elder, the notes of Mithridates, including the recipe for theriac, were retrieved by Pompey the Great after the king's death in 63 B.C.E. and brought to Rome.²¹ There is some confusion as to the designation “theriac.” A number of remedies claimed the name before it was applied to a remedy that contained viper flesh, which is said to have been concocted by Andromachus, the physician to the Emperor Nero in the first century C.E.²² According to Galen, Andromachus removed some ingredients from mithridatium and added others, such as the viper's flesh. Thus he created a theriac, which he called “Galene” or “tranquility.”²³ In time, this became the recipe that completely appropriated the name theriac.

The most documented period in theriac history ranges from the first to second centuries C.E. Not until the Emperor Marcus Aurelius, however, is there testimony of the regular use of theriac by a specific person.²⁴ According to Dio Cassius:

It was not his custom to eat during the day except for the drug called theriac. This drug he took not so much because he feared anything as because his stomach and chest were in bad condition. And it is related that this practice enabled him to endure the disease as well as other hardships.

(*Roman History* 72)

Of the emperor's use of theriac Galen reports thus:

And when it happened that he got very sleepy during his daily duties, he removed the poppy-juice. Thereupon, it happened that because of his former mixture... he spent a greater part of each night sleepless. It was due to this, then, that he was compelled to add the poppy-juice again, since this had already become a habit.

(*Antidotes* 1.1/XIV 3-4 K)

Marcus Aurelius does not appear to be taking the medicine to counteract possible threats on his life. Instead, the Emperor, famous stoic and author of *The Meditations*, took it to deal with what was perhaps chronic pain. Both Dio and Galen prompt one to conclude that the Emperor was an opium addict.²⁵

Andromachus gave his prescription for theriaca in verse, a fact that was praised by Galen because in that form it was easier to remember and fewer alterations were likely to be made. The poem, consisting of 176 verses in Greek, is addressed to Nero and recounts the ingredients of Galene and the dangers it prevents (*Anti.*1.6/XIV 32-42 K). A hundred years later, Galen cites the poem, discusses the drug and gives its dosages.²⁶ Galen believed that Andromachus secured the right to the name theriac not just because it protected against the bite or sting of a wild beast, but because it actually contained the flesh of a wild beast (*Ther.*5/XIV 232 K).

The main ingredients of theriaca were squills, viper's flesh and hedychrom—all of which were formed into lozenges.²⁷ Squill is a Mediterranean bulbous herb used as a stimulant, and hedychrom is a compound of herbs meant to overcome any nasty flavor or smell of other ingredients. Fifty-five herbs, each of which had a different and complicated preparation,



Fig. 9 *St. Jerome in his Study* circa 1435 by Jan van Eyck, courtesy the Detroit Institute of Arts. A jar on the shelf is labeled *theriac*, which was an aid in composition.

were mixed with the prescribed amount of the squill, viper, hedychrom, honey, poppy-juice, cinnamon and other exotic ingredients. This mixture was then matured for the proper period. Twelve years was preferred, but Marcus Aurelius used it within two months (*Anti.*1.13/XIV 65 K; *Ther.*14/XIV 268–269 K).

In one of his works (*Ther.*12/XIV 259–269 K) Galen lists sixty-four ingredients with their amounts, including honey and wine, for Andromachus' recipe. Ingredients were dictated not only by prescription, but by fashion, supply and demand. One can imagine that the preparation of theriac could be modified in order to satisfy any client. Physicians each prescribed their own recipes for theriac, and no doubt the ingredients for theriac were carefully guarded. In Rome, Galen sought out the *marsi*—the *theriodeiktai* or “displayers of wild

animals”—snake-hunters, charmers and druggists in order that he might obtain advice about poisons, as well as about which snakes to include in his antidotes.²⁸ Drugs and spices were brought from Arabia and India, while root-cutters from Crete sent herbs, roots and all, sealed with a special seal in wicker baskets to be reserved in the royal storerooms at Rome.²⁹ As the demand for more exotic and even aged ingredients increased, some supplies became depleted. While theriac was in vogue in Marcus Aurelius' lifetime, many of the hard-to-obtain ingredients were omitted. After his death, the drug fell out of fashion and rarer ingredients were reintroduced.³⁰ Surely some of the ingredients found in the theriac taken by Marcus Aurelius were

required in later recipes. The importance of their purity and quality is reflected in the twentieth-century instructions included with the drug,³¹ as well as in the inscriptions on the lead bottle caps. The F(INA) especially conveys the guarantee of a certain grade of theriac and vouches for its method of preparation.

Galen recommended that theriac be taken with water or wine. The dosage was given as the size of an Egyptian bean, or an Avellan nut, depending on the last time the patient had eaten. Theriac should never be taken after a heavy meal or in a hot climate and should never be given to children (*Ther.17/XIV* 284–287 K). Galen might have been surprised to see theriac taken in India and regularly dispensed to children in the seventeenth and eighteenth centuries.

Information about theriaca in the third to fifth centuries of the common era is scarce, but we have several references to it in the sixth and seventh centuries. Both Aëtius and Paul of Aegina mention theriaca.³² There is a later record of it having been sent to King Alfred the Great, who died in 901 C.E., by the Patriarch of Jerusalem. Theriac also appears at the court of Louis IV of France (936–954 C.E.). After this period there is another lacuna in our knowledge of theriac until the medical writings of the Greeks and Romans, which had been translated into Arabic, came west again, along with the works of Muslim physicians.³³ In the twelfth century, theriac was manufactured in Venice, the home of the most celebrated product and the most important place for this study.³⁴ After the twelfth century there are any number of references to its use (Fig. 9). For example, in 1348, the Medical Faculty of Paris recommended theriac. King Henry V of England (1413–1422) had a treacle box. Reportedly, theriac was prepared in the town hall of Lyons in 1592. During the sixteenth century, celebrations honored the preparation of theriac in Germany. In 1603 the pharmacy in Venice near the Rialto Bridge began to make theriac (Fig. 7).³⁵

Pharmacopoeias, authoritative publications issued with a list and description of drugs and medicinal products, together with the standards established under law for their production,



Fig. 10 French pharmacy jar owned by Gladys Weinberg and purchased in 1972 in Athens, Greece.

dispensation and use, are useful references with which to chart the appearance of theriaca. The drug was mentioned in the 1625 *Pharmacopœia* in London. During Louis XIV's reign (1643–1714) theriac was produced on a huge scale. The last issue of the *Pharmacopœia* in England in which Galene (theriac) was mentioned appeared in 1746. Theriac, however, appeared in the German *Pharmacopœia* in 1862 and in the French *Pharmacopœia* in 1884. Sonnini, who visited the Aegean during the last quarter of the eighteenth century, found it commonly used in the islands—especially on children: “Scarcely a day passes without a little child swallowing some of this drug...so that it may be asserted that, in the ARCHIPELAGO, a child consumes more of this treacle during its first two years than the man of our countries, the greatest admirer of this composition [drug], during his whole life.”³⁶ Travelers in the mid-1800s found it in India (tiriak) and Arabia (tiryâk).³⁷ Finally, theriac could be purchased in Venice as recently as 1961, though without some of the ingredients it once contained (Fig. 1).

Lead bottle caps, such as those in the University of Missouri collection, and other physical evidence such as paintings (Fig. 9), pharmacy jars (Fig. 10) and modern labels (Fig. 1), give a welcome glimpse into the history of this once popular medicine. The early origins of theriaca are confirmed by literary evidence that dates as early as the third century B.C.E. Perhaps even more extraordinary is the fact that theriac could still be purchased in this century. The lead bottle caps appear to be just one method of protecting the consumer from imitations, copies or fraud of this valuable medicine. This panacea or wonder drug was used by emperors, kings, ordinary citizens and children. It was prescribed to combat poisons and venoms but was also found useful in the treatment of various ailments brought on by a range of conditions. Whether one suffered from lack of sleep, nerves, stomach illness or the plague, theriaca was considered the appropriate treatment. M
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CATHY CALLAWAY is Adjunct Assistant Professor of Classical Studies at the University of Missouri–Columbia. She earned her Ph.D. in Classics from the University of Washington in 1990. Her current research involves the poetry of Homer, Archilochus and Ovid.

NOTES

1. Gladys Davidson Weinberg was instrumental in both the inception and continuation of this project. Since her monumental work, *Corinth XII: The Minor Finds* (Princeton 1952), she has pursued different leads for theriaca and graciously handed over all the information she had accrued over the years. I also wish to thank Lawrence Bliquez, David Jordan, Nancy Bookidis, Charles K. Williams II and Rebecca Robinson for their contributions.

2. “Theriac” is the anglicized form of the Greek adjective *theriake*. The adjectival form usually appears alone, the noun *antidosis* (“antidote”) being implied, although sometimes it is expressed. The Latin form is *theriaca*. The Greek neuter plural *Theriaka* is the title of certain works on animals and their bites. The Latin form is identical. G. Watson, *Theriac and Mithridatium* (London 1966) p. 4, discusses the term and also cites “treacle,” as an English derivative from “theriac,” which had the same meaning until the end of the seventeenth century (Oxford English Dictionary [1693] s.v. “The chief use of vipers is for the making of treacle.”) “Treacle” might be most familiar to readers of Lewis Carroll’s *Alice in Wonderland*. During the Mad Hatter’s Tea-Party, the Dormouse begins a story about three little girls who lived in the bottom of a well and survived on treacle (Fig. 11). Three explanations for its appearance here are: 1) that the treacle referred to by the Dormouse is molasses, 2) that it is water drawn from a well and thought to have a medicinal value, expressed by the name given to theriaca at that period in history, or 3) that this actually refers to a compound of theriaca. See *The Annotated Alice* ed. Marvin Gardner (New York 1960) p. 100.



Fig. 11 John Tenniel drawing from *The Annotated Alice*, p. 103. The Mad Hatter and the March Hare try to put the Dormouse into the teapot.

3. There are a variety of methods for closing up the contents of bottles and jars. For example, the albarelli, or drug pots, found in Frankish Corinth were capped either with parchment and a string or with clay stoppers; the latter were locally made and unglazed. C.K. Williams II and O.H. Zervos, “Frankish Corinth: 1993,” *Hesperia* 63 (1994) pp. 16–17, 19.

4. The group found at Corinth before 1952 can be seen in *Corinth XII*, pp. 315–316 and 329, nos. 2833–2839, plate 134. Most of the lead seals bear a similar impression of two “Moors” facing each other with an inscription that reads, according to the author:

THERIACA•FINA•ALI•DVE•MORI•VEN•:

“Fine theriac. At the sign of the Two Moors. Venice.”

Other types include a profile bust of a laureate male head, an ostrich holding a snake in its mouth and an apple. These types will be referred to again.

5. For isolated caps, see numbers 144 and 145 in A.W. Dunn’s *A Handlist of the Byzantine Seals and Tokens in the Barber Institute* (The Barber Institute of Fine Arts, Birmingham, England 1983). Both have male laureate busts facing right, with a circular inscription between concentric lines that mentions the medicine theriaca. The latter has also been published by V. Laurent, “Capsules Métalliques de thériaque Vénitienne à la Testa d’oro,” *Bulletin des Sciences Historiques de l’Académie Roumaine* 28 (1947) pp. 205–207. In addition, see T. Gerassimov, “Capsules en Plomb de Flacons a Theriaque Vénitienne,” *Izvestiia* 26 (1963) pp. 277–280, Russian with French summary.

6. Usually 0.023 m to 0.025 m in diameter, but *Corinth XII* no. 2836 is a curious exception, measuring 0.042 m in diameter.

7. C.J.S. Thompson, *The Mystery and Art of the Apothecary* (London 1929) p. 62 and pp. 214–215. “Since Venice, with its great fleet, had the most direct trade with the Mediterranean lands whence most of the ingredients came, its product was considered the best,” G.W. Corner, “Mithridatium and Theriac, the Most Famous Remedies of Old Medicine,” *Johns Hopkins Hospital Bulletin* 26 (1915) p. 224.

8. *Corinth XII* p. 316.

9. Corner, pp. 224–225.

10. Ms. Rebecca Robinson graciously shared the draft of her work on the

Temple Hill excavations and allowed the publication of one of the bottle caps from that area (inv. no. MF 78–74) as a parallel for one in the collection at the University of Missouri–Columbia. She notes that Dr. Weinberg had already revised her dating of the bottle caps, which appeared in *Corinth XII* along these same lines.

11. Numbers 1–9 (acc. nos. 74.29–74.37): nine circular lead bottle caps of distinct types. DIAMS (all measurements use the metric system): no. 1 (acc. no. 74.29) = 0.025×0.007 ; no. 2 (acc. no. 74.30) = 0.0245×0.006 ; no. 3 (acc. no. 74.31) = 0.023×0.005 ; nos. 4 and 5 (acc. nos. 74.32 and 74.33) = 0.024×0.005 ; no. 6 (acc. no. 74.34) is difficult to see, DIAM: 0.025×0.005 ; no. 7 (acc. no. 74.35) = 0.0245×0.006 ; no. 8 (acc. no. 74.36) = 0.0235×0.006 ; no. 9 (acc. no. 74.37) = 0.025×0.004 (flattened). All have the impression of an eagle crowned in profile, with its body shown in a frontal position, wings spread and tail down between its legs. One type of eagle has uplifted wings delineated with feathers.

12. Number 10 (acc. no. 74.25) lead bottle seal, DIAM: 0.038, flattened, thickest end 0.003. The circular bottle seal bears a stamp on the upper surface of a wreathed male bust in profile to the right. The features are florid; the eye unusually large. Numbers 11 and 12 (acc. nos. 74.23 and 74.24) are two bottle caps of roughly the same size, DIAM: 0.038 and 0.0375, both flattened. Each has a wreathed male bust in profile to the right with heads and features smaller and finer than number 10. A small winged lion of St. Mark is apparent to the right. Each has an inscription encircling the head; number 11 is nearly obliterated. Compare to *Corinth XII* no. 2836 with perhaps a different inscription.

13. Numbers 13 and 14 (acc. nos. 74.26 and 74.27) are two inscribed lead bottle tops, DIAM. 0.023×0.0025 ; 0.025×0.004 . These are circular with their impression in relief. An ostrich faces left holding a snake in its mouth. Number 14 is badly preserved, but the snake is more visible due to the flattened state of the lead seal itself. The inscription on number 13 is somewhat easier to read: FINA AL STRUZ is legible.

14. Number 15 (acc. no. 74.28) DIAM: 0.025×0.006 . A circular bottle cap

with two-headed eagle on citron and inscription in relief. A parallel was found in Corinth in the Temple Hill excavations of 1978 (inv. no. MF 78–74), which provides a perfectly legible inscription:

TERIACA•F•AL•CEDRO•IMPERIALE•VEN★

15. Number 16 (acc. no. 74.39) DIAM: 0.028 x 0.007. A bearded male with hat, frontal view.

16. See *Corinth XII* p. 316 and no. 2835 for another example of this.

17. See G.G. Sill, *A Handbook of Symbols in Christian Art* (New York 1975) and J.E. Cirlot, *A Dictionary of Symbols* (New York 1962), under specific symbols. For the eagle, see T.G.H. Drance, “The eagle: an antique obstetrical amulet,” *Bulletin of the History of Medicine* 8 (1940) pp. 128–132.

18. According to Watson, p. 70, although fragments of poetry referring to the drug date as far back as the fourth or third century B.C.E.

19. *Anti.* 2.14/XIV 181 & 184 K. The bulk of Galen’s writings on theriaca can be found in three works. The titles and abbreviations for these are as follows: *De antidotis* in two books (*Anti.* 1 or 2); *De theriaca ad Pisonem* (*Ther.*); and third *De theriaca ad Pamphilium* (*Ad Pamp.*), a short work and perhaps not by Galen. The texts of Galen referred to are those in C.G. Kühn, *Claudii Galeni Opera Omnia*, in twenty volumes; the above works are contained in vol. XIV (Leipzig 1827; repr. 1965). “K” denotes the volume and page in Kühn.

20. The history of opium is complex and perhaps best left to other studies. Opium is found in Crete as early as Late Minoan III (1550 B.C.), see P.G. Kritikos, “Der Mohn, das Opium und ihr Gebrauch im Spatminoicum III,” *Praktika* 35 (1960) pp. 56ff, esp. p. 71. In Egypt, opium was used at least in the eighteenth dynasty (1500 B.C.E.), see Kritikos pp. 60ff, and R.S. Merrillees, “Opium Trade in the Bronze Age Levant,” *Antiquity* 36 (1962) pp. 287–292. See also G. Majno, *The Healing Hand* (Cambridge, MA 1975) pp. 109–111 and pp. 144–146.

21. Pliny the Elder (23–79 C.E.) *Natural History* (*N. H.*) 23.149; 25.5–25.7. Also see *N. H.* 29.24–29.25 for a description of the antidote mithridatium.

22. Pliny does not help solve the confusion; at one point he talks of viper lozenges, which the “Greeks” called “theriaci” (*N. H.* 29.24 and 69). Pliny (*N. H.* 20.264) and Galen (*Anti.* 2.14/XIV 183 K) cite a “theriac” (their term) as early as Antiochus III (223–187 B.C.E.), which was created to protect users from the bites of serpents.

23. *Ther.* 5/XIV 232–233 K; *Anti.* 1.1 and 6/XIV 2–3 and 32 K; *Ad Pamp.* XIV 307 K. The name might reflect the fact that Andromachus increased the opium content (according to Majno, p. 415).

24. Watson p. 87.

25. There are humorous references in Lucian to the Emperor’s addiction to mandragora, another narcotic plant. See E.C. Witke, “Marcus Aurelius and Mandragora,” *Classical Philology* 60 (1965) pp. 23–24. As Watson states on page 89, however, “If antidotes and theriacs enabled him to find the strength to write his *Meditations*, even for this service alone the world owes them lasting gratitude.”

26. Galen cites Andromachus’ poem in its entirety in two of his works (*Anti.* 1.6/XIV 32–42 K and *Ther.* 6/XIV 233 K). The formula for the theriac of Nicander of Colophon (second century B.C.E.) was reported by Pliny and Galen to be inscribed in verse on stone in the temple of Asclepius on the island of Cos. See C.H. La Wall, *Four Thousand Years of Pharmacy* (Philadelphia 1927) p. 71.

27. A description of hedychroum can be found in *Anti.* 1.10/XIV 51–54 and *Ther.* 13/XIV 262–263 K, where Galen also gives instructions on how to form these lozenges from the different ingredients. Pliny the Elder supplies details on how the lozenges of viper flesh are formed (*N. H.* 29.21). For preparation in general, see *Anti.* 1.15/XIV 82–99 K; *Ther.* 13–14/XIV 262–270 K; and *Ad Pamp.*(end)/XIV 306–310 K. See also Watson pp. 48–49.

28. See V. Nutton, "The Drug Trade in Antiquity," in *From Democedes to Harvey: Studies in the History of Medicine* (London 1988) pp. 138–145, esp. p. 139, on the *marsi*. The activities of these *marsi* include cutting off the heads and tails of the snakes, skinning and gutting them, and then washing the flesh.

29. Some of these, according to Galen, would remain untouched for years. See *Anti.* 1.13/XIV 62–67 K for Galen's description of his own problems with cinnamon. After the death of Marcus Aurelius, his son and successor, the Emperor Commodus showed no interest in theriac. When the Emperor Severus (193–211 C.E.) requested some, Galen had lost his suppliers. See also Watson p. 50 and Nutton p. 142.

30. Nutton p. 142.

31. A partial translation of the Italian on the package label, and the instructions for using its contents follows: (See Fig. 1).

USE: for intestinal trouble, nerves, parasites, and pain of the stomach.

DOSAGE: a teaspoon for an adult, from one third to a half a teaspoon for a child two years old, twice a day.

RENOWNED MAKER OF FINE THERIACA

of the pharmacy of the GOLDEN HEAD

of the heirs of G. B. SILVESTRINI

VENICE—THE RIALTO BRIDGE—VENICE

Theriaca of the elder Andromachus

A DIVINE INVENTION

The THERIACA (fina = refined) is a most useful medicine in the care of the nervous and wormy intestines—against the ache of the belly—and in so many other troubles that for the sake of brevity they will not be enumerated; a medicine famous due to all the effectiveness of the famous THERIACA of the Pharmacy of the Golden Head of VENICE.

IN ORDER TO AVOID therefore the purchase of Teriaca of no efficacy and also of questionable safety, always ask for TERIACA of the PHARMACY of the Golden Head of Venice.

Only then can you be secure that you have a certified TERIACA.

DEMAND that each pot be sealed with a label—and carries the trademark HEAD OF GOLD—VENICE.

Protect yourself against imitations and copies—to avoid frauds ask for “Teriaca of the Pharmacy of the Golden Head—Venice.”

32. Aëtius (sixth century) and Paul of Aegina (seventh century), the latter of whom was the last of the Byzantine physicians at Alexandria before it was captured in 642 A.D. by the Arabs (Watson pp. 95–97). According to Corner, p. 223, most of the ingredients of theriaka belong to the class Paul of Aegina called “desiccative and heating.” In short, the theriac of Andromachus was “an opiated sudorific.”

33. Watson pp. 96–98. This information was much needed by the Italians, he maintains, because they were ready and resourceful poisoners.

34. Watson pp. 98, 104. The following survey was culled from Watson, pp. 98–150.

35. See Jan Morris, *Venice* (London 1960; repr. 1974) pp. 91–92, who comments on the marks made by caldrons of theriaca, which are still visible, and H.V. Morton, *A Traveller in Italy* (London 1964) pp. 388–392, who informs his readers that one can still buy theriaca.

36. C.S. Sonnini, *Travels in Greece and Turkey* (London 1801) pp. 347–348.

37. Henry Beveridge, *History of India* (Calcutta 1858–1886) II; V p. 108, and Charles Montagu Doughty, *Travels in Arabia Deserta* (London 1888) II p. 13.