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WARNING

The following class contains information that is not sanctioned by any crown. Additionally, no one should use anything they learn in this class to poison people in real life.

First Reason: Hospital and emergency facilities are much enhanced compared to even the first half of the 20 century. Killing someone with a medieval-style poison is nearly impossible in this day and age.

Second Reason: Thanks to modern technology, getting away with it with today's forensics capabilities ain't happening.

Don't Do This.

The Historical Uses of Poisons

by Lady Maggie Rue

Alle Dinge sind Gift und nichts ist ohne Gift; allein die Dosis macht, dass ein Ding kein Gift ist

(All things are poison and nothing is without poison; only the dose makes a thing not a poison)
— Paracelsus (1493–1541)

There are three types of known natural substances that can kill: Plants, Rocks, and Animals. Of those substances, a limited amount of them were used to purposely poison a human victim for gain or revenge. Battles, even countries, have been won and lost on toxins.

Chemical warfare has been around for thousands of years. A Sumerian tablet dated to 2500 BC, found in the 1850s, documents the use of poisons as a clandestine way of ridding oneself of an enemy. They have also found cuneiforms confirming the Sumerians worshipped a deity known as Gula, who was not only the goddess of healing and "Mistress of Charms and spells," but the "Controller of Noxious Poisons".

Chinese writings as far back as 1000 BC have recipes for making irritating smokes for use in war. The earliest records of Egypt indicate that the Pharaoh Menes studied toxic plants and venoms. Both Indian texts, the *Mahabharata* and the *Ramayana*, have discourses on using poison weapons, and the *Manusmriti* forbids them as "unjust."

However, around 600 BC, an Indian surgeon and sage named Sushruta defined the stages of slow poisoning and suggested antidotes in the *Sushruta Samhita*. Instructions for detecting poisons were given in the *Veda* because, and I quote: "the enemies of the Raja, bad women, and ungrateful servants sometimes mix poison with the food."

Chanakya (c. 350–283 BC), believed to also be the author Kautilya, was advisor to the first Mauryan Emperor Chandragupta and in his treatise, *Arthashastra*, he suggested using seduction, secret weapons, and poison for political gain. He produced elaborate methods for detecting poisons and discussed many possible methods for assassinations, including the Vish kanya, who were young women reportedly used as assassins, often against powerful enemies, during the Mauryan Empire. Although the legend goes that their blood was purportedly poisonous to other humans, it was more likely that these women were simply employed to distract a gentleman while poisoning their drink.

The legend goes that Chanakya fed his emperor small amounts of poisons to make him immune as well, but in a shared meal with his very pregnant wife the women was killed and the emperor's child was removed from the dying woman and survived. In the end, Chanakya felt guilt for the death of the Queen and starved himself in the Jain tradition. The concept of making oneself immune to poison has cropped up in folklore and fiction stories ever sense, but has merit: snake handlers gain immunity to snake venom by tattooing themselves with the poison, and certain naturally occurring toxins in nature are successfully defeated in this practice, called mithridatism after another royal practitioner.

Nicander of Colophon, personal attendant to Attalus III, King of Pergamum, wrote two poems: *Theriaca* and *Alexipharmica*, in the second century BC, and both were about poisons. *Theriaca* was 1000 lines about poisonous animals, plants, and remedies. *Alexipharmica* was 600 lines about generic poisons, cures, and antidotes. His preferred antidote was developed from viper parts seasoned with aromatic herbs and fruits.

And then there's Rome….

It wasn't until the Mediterranean cultures started to rise to prominence that the act of poisoning your enemies became an art. The people of the "civilized" society learned how to introduce poisons for execution, assassinations, suicide, and murder. As early as 550 BCE, rivals from every class were commonly executing one another with poisoned food and drink. Between the fourth century BC and the third century CE, the amount of deaths caused by poisoning was so great is was practically a meme.

There were several incidences of poisonings in earlier times that coincided with epidemics and wars in the region. Examples include the Battle of Capua in 211 BC where 27 Capuan senators gathered for a final feast before the Romans breeched the city gate, as well as the death of the Numidian Queen Sophonisba in 203 BC; she was a Carthiginian princess whose husband, fearing that she would be imprisoned by the Romans, sent her a draught of poison as her "only escape". Then at the time of the Julio-Claudian emperors, there is a real fashion to be involved with poisons; three women poisoners are mentioned by various writers—Canidia, Martina, and Locusta.

For assassinations the Romans focused mainly on plant toxins in early times, such as belladonna henbane, datura, deadly nightshade, mandrake, aconitum, hemlock, hellebore, autumn crocuses, yew extract, and opium. Animal poisons were not well studied or often used in homicides in ancient Rome due to their chancy use and unguaranteed success, but the citizens knew about cantharadine extracts as well as poisonous insects, snakes, spiders, fish, and scorpions. Mineral poisons, e.g. salts of lead, mercury, copper, arsenic and antimony, were identified but they hadn't been fine-tuned to specific poisonings and were more often seen in grand-scale war tactics. Fumes in lead, silver, and gold mines were recognized as toxic.

Very rarely are specific poisons ever mentioned but there are some cases: Canidia used hemlock in honey, and Seneca is believed to have consumed hemlock; Ovid called aconite the "mother-in-law's poison," the British king, Catuvolcus, committed suicide with yew extract, and Claudius died after eating poisoned mushrooms—likely aconite was used.

The situation got so out of control that the *Lex Cornelia* was established in 82 BC, This was the first law against poisons, written by Lucius Cornelius Sulla.

Writing the Recipes Down

Early records are lost to time; there is very little documentation of early poisonings, but there are some examples that paint a larger picture as to the use of poisons in prehistory. The Egyptians understood well enough about toxins and believed that none could withstand them: legends say that Ra succumbed to the effects of snakebite and Horus suffered death from the sting of a scorpion. The *Ebers Papyrus* (1550 BC) is an Egyptian treatise on medicine and describes several well-known toxins, although a generic cause-and-effect regarding poisonous substances seemed to be missing. The Egyptians recognized murder by toxins—the Ebers papyrus mentions the "penalty of the peach", which involved forcing criminals to ingest the distillate from the pits of peaches, containing cyanide compounds. If the victim died, he was presumed guilty. This concept of justice continued on to Greek and Roman cultures.

Philon of Athens, an architect of the 4th century BC, created the Philonium Romanorum antidote, which consisted of several herbs like spikenard, henbane, and pyrethrum, among others. Diocles of Carystus (375 to 300 BC) was a student of Aristotle and wrote *Rhizotomikon*, considered to be the first work on botany. The third book dealt exclusively with toxins from plants.

Zopyrus of Alexandria, in the first century BC, invented an antidote for poison consisting of 30 to 50 ingredients. He was a surgeon and recommended the formula to both the Ptolemies and Mithridates.

Mithridates VI, Eupator of Pontus, King of Tim (an ancient Hellenistic state of northern Anatolia) from around 114 to 63 BC, lived in constant fear of being assassinated via poison. His father had been poisoned, likely by his mother. It is said he consumed non-lethal levels of various poisons to build up immunity, so much so that when he attempted suicide, he could not poison himself. In his position of power, he tested a number of poisons on criminals facing execution, checking to see if there was a possible antidote. He discovered a formula that combined small portions of dozens of the best-known herbal remedies of the time and called it Mithradatium. His antidote prescriptions and notes were taken by the Romans after his defeat by Pompey.

Once translated into Latin, Pliny the Elder in the first century included it in his published works along with descriptions of over 7000 different poisons, adding in his own recipe for Mithridatium using the blood of a duck. He had this to say, however, in his *Natural History*, XXIX.24-25, ca. AD 77: "The Mithridatic antidote is composed of fifty-four ingredients, no two of them having the same weight, while of some is prescribed one sixtieth part of one denarius. Which of the gods, in the name of Truth, fixed these absurd proportions? No human brain could have been sharp enough. It is plainly a showy parade of the art."

Aulus Cornelius Celsus provides a version of the antidote in De Medicina (c. AD 30); the ingredients were ground up, mixed with honey, and distributed in almond-sized amounts in wine when needed.

costmary, 1-66 grams

sweet flag, 20 grams

hypericum, 8 grams

natural gum, 8 grams

sagapenum,[11] 8 grams

acacia juice, 8 grams

Illyrian iris (I. germanica), 8 grams

cardamom, 8 grams

anise, 12 grams

Gallic nard (Valeriana italica), 16 grams

gentian root, 16 grams

dried rose leaves, 16 grams

poppy-tears (Papaver rhoeas), 17 grams

parsley, 17 grams

casia, 20-66 grams

saxifrage, 20-66 grams

darnel, 20-66 grams

long pepper, 20-66 grams

storax, 21 grams

castoreum, 24 grams

frankincense, 24 grams

hypocistis juice, 24 grams

myrrh, 24 grams

opopanax, 24 grams

malabathrum leaves, 24 grams

flower of round rush, 24-66 grams

turpentine-resin, 24-66 grams

galbanum, 24-66 grams

Cretan carrot seeds, 24-66 grams

nard, 25 grams

opobalsam, 25 grams

shepherd's purse, 25 grams

rhubarb root, 28 grams

saffron, 29 grams

ginger, 29 grams

cinnamon, 29 grams

There were others who discussed poisons and antidotes. Dioscorides (40–90 AD) classified poisons in his Materia Medica. He wrote, "Poison prophylaxis is difficult because those who work secretly with poisons make sure that even the most experienced are deceived." Galen, a Greek in the Roman Empire from 129 to about 200 AD also made an antidote called Nut Theriac, which consisted of plant parts and salt mixed into porridge.

The *Anepigraphos*, today a fragment of a 3rd century treatise, contains information about an earlier late Roman Egypt alchemist named Agathodaimon who developed a "fiery poison" likely made from arsenic trioxide. His discoveries regarding the poison were referred to later in records of poisoning and murder.

In the Middle East, a compound poison of minced ingredients was most effectively administered in the highly spiced food of the region. The following are recipes taken from *The Book on Poisons* of ibn Wahshiya, written in the ninth century.

Recipe 1: Using one part minum (white lead) one part litharge (peroxide of lead), one tenth part oleander leaf, and one-tenth part black hellebore. Cook the ingredients with sesame oil and rosewater. This mixture is fatal in about one day.

Recipe 2: Using one mouse stung to death by scorpions, pulverized euphorbium, spunge and its leaf, hellebore, oppoponax, and mustard, combine all ingredients in a lead crucible, cover tightly and bury in a dungheap for two weeks. Then grind all ingredients well, being certain to reduce the mouse bones to a fine powder. Add a little saffron. This is supposed to kill in a day or two.

Recipe 3: Again, using a mouse stung to death by scorpions, combine with 10 dirhams each of opium, black hellebore, hemlock seed and extract, one dirham of eel brains, prepared similarly to the previous recipe in that it's buried in a dungheap and then pulverized. Also said to be fatal in a day.

In the Middle Ages, the works of ancient scholars formed the basis for most knowledge of poisonous plants, including *The Book of Venoms* written by Magister Santes de Ardoynis in 1424. Such treatises were comprehensive but often confusing due to the use of so many different names for the same plants, a problem that still exists to this day, since many plants share the same common names.

In Italy, poisoning became so prominent in the 16th century that schools were established in Venice and Rome. In 1589, the *Neopoliani Magioe Naturalis* was published, written by Giovanni Battista Porta. In it was described several methods of poisoning, particularly via wine. Porta offered his own recipe called Veninum lupinum, which contained aconite, yew seeds, caustic lime, arsenic, bitter almonds, and powdered glass. Mixed with honey, it was formed into pills the size of walnuts.

Chemical Warfare

Poisons were just as often used for the group and not the individual. Several civilizations learned how to create poisonous gases and irritants to bring enemies down low. Four thousand years ago, Indian dynasties were using smokescreens, toxic sleep-inducing fumes, and incendiary devices in battle. The Chinese were famous for using chemicals to make poisonous smoke. Chinese writings from 1000 BC discussed poisonous, noxious, and irritating vapors for war, including arsenic vapors called "soul-hunting fog". They would pump smoke into tunnels to reach their enemies.

A search of early records reveals that pepper has been used at various times during the past 2,500 years as a weapon. The Chinese used what were called "stinkpots." They consisted of pepper burned in oil causing irritating and suffocating smoke. Chinese also developed stink bombs of poisonous smoke and shrapnel, along with a chemical mortar that fired cast-iron "stink" shells. The Indian schools of martial arts, such as Kalaripayat, Vajramushti, Marman, and Kara-hatse (forefather of Karate), are also among those who applied forms of pepper as a combative tool. The Japanese used finely ground pepper that was put in thin rice paper pouches and thrown at the faces of their adversities to temporarily blind them.

During the Peloponnesian War at the siege of Plataea in 428 BC Sparta burned wood soaked in pitch and sulfur under the walls to create a toxic panic-inducing smoke. They did it again at Delium in 424 BC. Around 200 BC, inhabitants of Ambracia in Epirus used toxic smoke to successfully deter the Romans from breaching their walls.

The Romans had formations of attack dogs that would carry pots of burning sulfur and resin into battle. In what could be considered a chemical attack (or biological warfare), the Romans were known for catapulting bees at their enemies and Hannibal of Carthage took this a step further during the Punic War and hurled pots of snakes at the Roman ships during a sea battle in 184 BC. Between 82 and 72 BC Romans used a toxic smoke that caused blindness and choking to defeat the Spanish Charakitanes in only two days.

Greek Fire is said to have been invented by Kallinikos or Callinus, who arrived in Constantinople in 668 AD fleeing Syria: Ingredients could include resin, pitch, sulfur, naphtha or petroleum, quicklime, and saltpeter. The Byzantines were already siphoning naphtha through water pistols and pumps, but Callinus pumped the pressurized fuel through bronze cannons and ignited the Muslim ships.

During the 15th century the Christians used arsenic smokes against invading Turks at the siege of Delium. A writer at the time who witnessed the results commented that such a murderous weapon should never be used by Christians against each other, but on the heretics, it was okay.

Leonardo da Vinci proposed a machine in the 15th century that fired shells containing powdered sulfur, arsenic, and verdigris (copper acetate). Aimed at ships, the poisons would attack the lungs of anyone in the vicinity.

1600s: incendiary shells filled with sulfur, tallow, rosin, turpentine, saltpeter, and antimony were used to start fired in sieges. Toxic smoke projectiles were seen in the Thirty Years' War (1618–1648)

During the attack on Groningen in 1672, the Bishop of Munster, Christoph Bernhard van Galen, tried several types of devices containing belladonna alkaloids, which led to the first signed agreement to suspend attacks of chemical devices.

Nonlethal Attacks

Not all uses of toxins in historic times were designed to be lethal. Toxins were used to knock out or otherwise incapacitate enemies long enough to subdue them. This could be in the form of poisoning a food or water source, or even sharing narcotic or digestive toxins with a group in good faith, and then slaughtering them all once they were rendered harmless.

In the First Sacred War of 590 BC Greece prepared to lay siege to the fortified city of Kirrha, and Solon of Athens poisoned the city's water supply with hellebore roots to give them diarrhea. The Carthaginians left mandrake to rot in the wine to knock out their enemies in 200 BC. Mithridates VI of Pontius (132 to 63 BC) was pressed to war against the Roman leader Pompey, so he retreated past the shores of the Black Sea, where he purchased large pots of locally made honey and left them where they could be found by the Roman soldiers. Three squadrons became violently ill; the local honey was often contaminated by pollen from rhododendrons, which is toxic. The following morning, Mithridates' armies annihilated the sick troops.

About 4500 years ago, the Koyak and Wiros tribes of the Central Russian steppes conducted what may be the first experiments in stimulating violence through the intentional application of drugs. They derived from the *Amanita muscaria* mushroom a drug that reduced the warrior's anxiety and fear while increasing strength, stamina, mental acuity, and ability to withstand pain. The shamans hit upon the unique method of increasing potency: the mushroom was first fed to reindeer and the soldiers drank the animal's urine on the eve of battle. They weren't the only ones; the Vikings also ingested chemical stimulants via deer urine and until 1800 AD some Scandinavian historians believed that Viking berserkers ingested *Amanita muscaria* before going into battle, and the Icelandic name for Fly Agaric contains the word "berserk" in it.

Poison Arrows

Poison arrows have been used since antiquity in nearly every continent with the possible exception of Australia and New Zealand. The oldest evidence comes from ancient Egypt, as far back as 2181 BC. Aristotle mentioned the Scythians used arrow poison, starting with a venomous snake that had been left to rot. Poison arrows are also mentioned in the Book of Job.

Poison arrows are divided here into three major groups—African arrows, American arrows, and Eurasian arrows. Despite the differences in species, there are some similarities in style. Generally the poison was never smeared on the tip but placed behind the tip so penetration through skin or fur wouldn't wipe off the poison. Sometimes the poison was inserted in a hollow shaft.

African arrow poisons are mostly made up of cardiac poisons. Most techniques here utilize more than one component. About 250 different species have been used in Africa. The cacti *Euphorbium* was consistently used as a glue to hold the poison in the shaft. Only the bushmen of the Kalahari desert use animal extracts, like venom, exclusively. Other bushmen mix venom with plants or use plants alone.

Plants include Acokanthera, Parquetina, Adenium speciosum, Strophanthus, Tabernanthe, Adenium mansonia, Calotropis, Cassia, Crotolaria retusa, Securidaea lonquependuculata,

Tephrosia vogelii, Pergularia, Corchorus, and Erythrophleum, Euphorbia, Gnidia, Strychnos, and Jatropha. By the early 20th century, arsenic was often used, but during the mid-century, cyanide became quite popular.

In South America, the toxins are almost all respiratory paralyzers are known as curare. Each tribe has their own curare recipe, but most implement the bark of the Moonseed family members mixed with other unspecified substances, sometimes up to 30. Tube curare from the western Amazonia is stored in bamboo tubes and made from the plant *Chondrodendron tomentosum*. From eastern Amazonia is Calabash curare, stored in small gourds, and lastly there is pot curare stored in clay pots. Both calabash and pot curares use *Strychnos guianensis*.

When it comes to the respiratory-paralyzing effects of *Chondrodendron*, it can take up to 15 darts to take down a human. The strength of a batch of curare can be tested a number of ways, like counting how many times a frog can jump after being pricked, or how many trees a monkey can leap to after being hit. One-tree curare is very potent; three-tree curare can be used to take down live animals for captivity.

In North America the principal ingredient for creating poison stone tip arrows is the yellow lichen Evernia, which grows on pine and fir trees in the mountains. The arrow points were embedded in masses of wet lichen and allowed to remain there for up to a year. Rattlesnake venom was sometimes added. Machineel, used in Central America and the Caribbean, was used by the Caribs as an arrow poison, watering hole poison, and to tie criminals to overnight as a way of torture. The leaves of the shrub called the pallid hoptree were made into an arrow poison by the Havasupai tribe.

The third region of arrow poisons is made up of Asia and Europe and they used cardiac poisons with tetanic side-effects (spasms). The most well-known is aconite, also called monkshood or wolfsbane. This toxin is even found in arrow and spear poisons of the Alaskan Peninsula, likely from their Asiatic ancestors, and was used to hunt sea lions and whales.

Known Assassins

In 82 BCE the first law against poisoning was established in Rome. Called "*Lex Cornelia de secariis et veneficis*" (concerning assassins and sorcerers) it not only condemned poisoning, but also added provisions for those who made, sold, bought, possessed, or gave poisons for the act of poisoning. For obvious reasons, many of the assassins of the past are cloaked in obscurity. Most did not make contract killing their chosen career; there are a few, however, that have made history as being poisoners.

Medea, sorceress and priestess of Hecate and wife of Jason in the Greek mythos, was said to use meadow saffron, *Colchicum autumnale* as a poison. She not only knew poisons but other potions that helped her husband get to the golden fleece. Her aunt, Circe, used poisons and potions as well and Odysseus is warned to use the holy herb "moly" as an antidote to Circe "pig-transformation spell".

Bagoas was a eunuch in Persia around 330 BC who manipulated his way to becoming Chief Minister to Artaxerxes III. He ended up killing the king and his entire family except for the weakest son, Arses, who he then elevated as the new king. When Arses attempted to remove Bagoas, the eunuch poisoned him as well and manipulated the cousin of Arses to move on to the throne as Darius III. Darius was smarter than his predecessors and when Bagoas tried to assassinate him Darius forced Bagoas to drink the poison himself. Bagoas may have organized other killings; according to Plutarch, Darius received an angry letter from Alexander the Great accusing Bagoas of organizing the death of Alexander's father, Philip II.

Locusta was a notorious poisoner, possibly hired by Agrippina the Younger in 54 AD to poison Claudius. He was killed eating mushrooms that were poisoned with another substance, likely aconitum. Even if she was not responsible for his death, there is evidence that poisoning was her profession; in 55 AD she was convicted of a different assassination, but Nero bailed her out and used her to kill Britannicus. The emperor paid her with estates and Locusta is documented as having students and teaching others the art of toxicology, according to later biographies. She also had the state's permission to investigate other poisonings and report on them. She was condemned to die by the emperor Galba around 69 AD.

Two other women of this same age were also considered poisoners by profession, Canidia, discussed by Horace as preferring a hemlock and honey mixture, and Martina, about which less is said.

Cleopatra was said to be an expert mixer of poisons. In her brews she drew upon ancient tradition, which described the effectiveness of various poisons in great detail. Cleopatra regularly tested poisons on slaves and Mark Antony feared her so much that unless a taster was present he would not eat with her. Cleopatra regarded Antony's caution as an insult. At a banquet she plucked a flower from the garland that was in her hair, threw it into Mark Antony's wine cup, and asked him to drink the wine as a sign of his love.

Antony knew a taster had already drunk from it, so he started to drink but Cleopatra seized the cup from Antony, gave a prisoner the cup to drink, and the criminal dropped dead. She turned to Mark Antony and said, "I poisoned the blossoms. I only wanted to show you that if I wanted to, I could kill you despite your taster."

The Borgias have become synonymous with treachery and assassinations. In The Prince, Machiavelli uses Cesare Borgia to describe the dangers of acquiring a principality by virtue of another. It is said that the Borgias were adept Poisoners, particularly Lucretia, and the stories surrounding their exploits have become legendary. Cesare (1476–1507) and Lucretia (1480–1519) were the illegitimate children of the man who became Pope Alexander VI in 1492. They were believed to dispatch many of their enemies with a poison called "La Canterella," which is supposed to be made of copper, arsenic, and phosphorus, following the trends of that time. The poor quality of records makes the actual assassin questionable, but Cesare is the most likely suspect. New information has suggested the Lucretia, although strong-willed and sexually passionate, never actually murdered anyone.

In Venice during the 1500s, there existed a group of alchemists called the Council of Ten and they met regularly to arrange poisons for the state. Their preserved written records prove they would plan, vote on, and carry out the execution of any person for a significant sum of money. Their list of poisons included corrosive sublimate, white arsenic, arsenic trisulfide, and arsenic trichloride. In 1543 a mercenary assassin named John of Ragusa approached the council with a boast that he could remove any person from society. Whether they hired him is unknown.

Catherine de Medici, Queen of France, used her position of power to test toxins on the poor and the sick, documenting her findings. In 17th century England, there were several failed attempts to poison Queen Elizabeth, one with opium (*Papaver somniferum*). Elizabeth, whose mother Anne Boleyn had once tried to poison her father (Henry VIII), took action against possible poisonings by having her food tasted, her clothing checked for poisons, and by being mithridatized.

Giulia Tofana was a professional Italian poisoner in the mid-1600s who invented Aqua Tofana—a colorless, tasteless liquid containing mostly arsenic, lead, and possibly belladonna, and easily mixed with water or wine. It is unknown whether she learned her craft from her mother or from the numerous apothecaries she frequented, but she developed her own poisons for her profession. Under torture she confessed to killing 600 men with her poisons in Rome alone, between 1633 and 1651. She often sold her poison to women trapped in difficult marriages. She was executed in 1659 with her daughter and several lovers.

Exili was an Italian chemist and poisoner in the 1600s, and may have been salaried at Rome for Olympia Maidalchina, sister-in-law to Pope Innocent X. He also frequented the courts of Queen Christina of Sweden. He was imprisoned in the Bastille for a time where Godin de Sainte-Croix claimed to have met him. It is said he passed the recipe of Aqua Tofana from the Italian to his lover, Madam de Brinvilliers.

The Marquise de Brinvilliers (1630–1676) was a poisoner who worked with Sainte-Croix to poison a myriad of people, including her father, two brothers, and a sister for the inheritance. She attempted to poison her children's tutor who was intelligent enough to save himself and several other targets. She poisoned her own daughter for "being stupid" but ended up changing her mind and providing an antidote of milk. Sainte-Croix betrayed her at his death and after a run through England and the Netherlands she was captured and put to death.

It is believed in her confessions she broke open what is now called "The Poison Affair," although it may be that these were near-simultaneous incidences. Catherine Deshayes, known as *La Voison*, along with nearly 600 other people, were implicated in involvement with a secret society of poisoners in France, all fortune tellers, working for the aristocracy. King Louis XIV himself was a target, albeit unsuccessful, by his own mistress.

A Who's Who in Poisons

So the following are individual substances that have been used for poisoning in known cases in history.

In a documented case of assassination by animal toxin, the fourth Greek Cyrenean king Arcesilaus II was assassinated in 550 BC by his advisor, Learchus, who slipped a sea hare in the king's drink (sea hares, incidentally, are not poisonous). Later the advisor had to sneak into the king's bedroom and strangle him.

As for rocks and minerals, hematite, a form of iron oxide, has been mined for millennia, coming in black, red, brown, steel, or silver-gray. In the red form it was the pigment known as ochre. Just recently Egyptians discovered that ancient Egyptians recognized and utilized the sharp irritant properties of its dust, using it to booby-trap a sarcophagus.

Arsenic

The elemental derivatives were a murder weapon in China, Persia, Greek, and Rome, and particularly among the ruling classes of Renaissance Italy. Because the symptoms are similar to those of cholera, which was common at the time, arsenic poisoning often went undetected. As a means of eliminating "unwanted" persons in the Middle Ages, the precipitation technique was popular. One of the easiest methods was to soak a candle wick in arsenic. When the candle was lit, the vapours would be deadly. Both Pope Clement VII in 1534 and Emperor Leopold I of Austria in 1705 are said to have been murdered by this method.

Although information is spotty, it is know that during the Borgias' lifetime an interesting church law took effect: The property of a victim of untimely death could be confiscated by the Church. Pope Alexander would invite wealthy cardinals to his house and, after their

untimely deaths, confiscated their property. By the 1800s, arsenic had acquired the nickname "inheritance powder." Emerald Green, a pigment frequently used by Impressionist painters, is based on arsenic.

Alexander and Cesare suffered poisoning themselves, although the younger Borgia lived while his father did not. The description of the Pope's body seemed to indicate what many guessed at in this passage from Burckard: "(he looked) like a very black negro—the mouth was wide open, the nose heavily swollen, the tongue split in two, the parts hanging over the lips… all of which was so horrible that no one would ever have believed it was the same man. The ambassador of Venice stated, "It was the most loathsome and the most monstrous and frightful corpse that had ever been seen. It had neither the form nor the aspect of a human being."

The acute minimum lethal dose of arsenic is estimated to be between 70 and 200 mg per dose, or 1 mg per kg in a day. Most reported arsenic poisonings are not caused by elemental arsenic, but by one of the arsenic compounds, especially arsenic trioxide, which is approximately 500 times more toxic than the nonlethal pure arsenic. Therefore pure arsenic would have to be altered, and legends abound how Cesare Borgia would slaughter and disembowel a pig, then take the entrails and sprinkle them liberally with pure arsenic. The poison checked but did not entirely arrest the ensuing process of putrefaction. After allowing a certain time to elapse, the semi-putrid matter was squeezed out. The juice thus obtained became far more deadly than arsenic in its pure form but continued to be just as tasteless. All now depended on the size of the doses, the manner of mixing it, and the best way of administering.

Aconite: *Aconitum napellus* and other species. Also called Monkshood, the plant was known as far back as Ango-Saxon times when it was called "thung." Thung became the word used for any very poisonous plant. Many cultures used it as a weapon by coating their spears and arrowheads with its strong poison. The plant was used for killing panthers, wolves, and other carnivores. The Greeks called it "lycotonum" or Wolfsbane, and believed it was the first poison created, made by Hecate from the foam of Cerberus. Aconite was used as an arrow poison in primitive Europe, Alaska, and Asia. On the Greek island of Chios, aconite was used for euthanasia of old and infirm men.

It was often used for criminal purposes; Claudius I, Emperor of Rome was poisoned by mushrooms likely laced with aconitum. It was so often used for political assassinations that Trajon banned its cultivation all together. Anyone caught gardening these flowers risked the penalty of death. Gerard, an herbalist in Queen Elizabeth's time, wrote: "There hath been little theretofore set down concerning the virtues of aconite, but much might be said of the hurts that have come thereby." When Hamlet faced Laertes in a duel, Laertes covered his blade with the juices of the monkshood. In a series of recent trials infamous in Japan, three women and one man were proven to have collected millions in yen with their murder-for-insurance ring; the women prepared sweet buns laced with monkshood for their husbands. The trials ended in 2002 and all received long prison terms.

Aconite's symptoms include cold and pain; death occurs in ten minutes to a few hours, and consciousness often continues until the very end.

Akocanthera: *Akocanthera schimperi* is a small tree known as Puncture Vine and has been used as an arrow poison among local tribes for hunting and warfare. Called Wa-bah-in, the poison was identified in the third century BCE by Theophrast as the substance Ethiopians smeared on their arrow poisons. The Portuguese found out about it firsthand in 1505 when they stormed Mombasa.

It's prepared by building an underground fire pit and keeping the cooking below ground level so as to not let the vapors escape. The fire is kept going for three or four days, after which the lid is removed. After a day the precipitate deposited on the bottom is moved to a wooden or leather container with a tight lid. None of the containers can be used in the house again, and cannot even be burned. The bark can also be soaked in water to extract the poison.

Death can result in 30 minutes after the entry of poison into the bloodstream and a lethal injected dose is a little over 2 mg per kilogram. Snake venom or an elephant shrew is sometimes added for that extra kick. The poison causes the hair and nails to fall off. The only treatment is to immediately excise the flesh around the wound. The seeds are used as homicidal weapons in southern Africa; murderers smear sharp objects with the poisonous juice of *Acokanthera venenata* and put them where victims are likely to step. The maned rat will spread this poison on its fur to make itself poisonous.

Belladonna: *Atropa belladonna*. Atropos was a Greek Fate, and held a magical blade from which she cut the threads of life when a person moved into realms of death. Thus she gave her name to the belladonna or deadly nightshade. According to old legends, the plant belongs to the devil who goes about trimming and tending it in his leisure, and can only be diverted from its care on one night in the year, that is on Walpurgis, when he is preparing for the witches' sabbath. The apples of Sodom are held to be related to this plant, and the name Belladonna is said to record an old superstition that at certain times it takes the form of an enchantress of exceeding loveliness, whom it is dangerous to look upon, though a more generally accepted view is that the name was bestowed on it because its juice was used by the Italian ladies to give their eyes greater brilliancy, the smallest quantity having the effect of dilating the pupils of the eye.

It was supposedly the plant that poisoned the troops of Marcus Antonius during the Parthian Wars. Deadly nightshade was used in Europe regularly in poisonings. Five to ten berries will kill a human. It was used by primitive people as an arrow poison and was common in Rome—Livia and Agrippina both killed off rivals with it. The Romans used the plant as a type of "weapon" to contaminate their enemies' food reserves. In 184 BCE, Hannibal's army used belladonna to induce disorientation in adversaries.

According to Buchanan's History of Scotland, when Duncan 1 was King of Scotland, Macbeth's soldiers poisoned a whole army of Danes with a liquor treated by an infusion of "Dwale" supplies to them during a truce. The invaders were later easily overpowered and murdered in their sleep by the Scots. Cesare Borgia was said to have a fondness for belladonna. Belladonna was the infamous "truth serum" feared as a method of brainwashing.

Minimum lethal dose of an adult human is about 100 mg atropine. A child only takes a few milligrams. An oral dose of 10 mg of hyoscyamine will take out an adult.

Cyanide: *Prunus*, *Malus* spp. Easily obtained from bitter almonds, the pits of plums, apricots, and cherries, and the seeds from apples. It is more famous for the stories written about it as opposed to reality. The pigment Prussian Blue was only developed in the early 1700s, and there is little evidence of poisoning via cyanide in medieval times It is clear the Egyptians did understand that the peach pits were the focus of some poison, using them as a method for determining justice, and it is likely the Romans picked up on this even if they did not understand the mechanism.

Datura: The generic name, Datura, is from the Hindoo Dhatura, derived from the Sanskrit, D'hustúra, applied to the Indian species , well known to the mediaeval Arabian physicians under the name of Tatorea. Extracts of datura were used by the Central American empires for infanticide and murder. Popular in both European and American herbals in the 16th century, datura poisonings saw an upsurge in the 1990s and 2000s as kids try to find ways to become high. Unfortunately, datura is more likely to cause psychosis and self-mutilation, meaning this plant is not to be messed with.

Its other name, Jimsonweed, comes from Jamestown, Virginia. Several variants of the legend exist, but essentially British soldiers sent to quell Bacon's Rebellion accidentally ate the mushrooms. They spent the next near-dozen days incapacitated with hallucinations. Amnesia followed. Datura was also named part of the Haitian zombie mixture in *The Serpent and the Rainbow*.

Ergot: It was first called Holy Fire. "Fire" because of the burning sensations in the extremities experienced by the victims of ergotism. It was called "Holy" because of the belief that this was a punishment from God as the victims' toes, fingers, arms, and legs often became blackened and dropped off as a result of gangrene, eventually causing death from infection.

In 944 AD, in southern France, 40,000 people died of ergotism and it was not until 1670 that a French physician, Dr. Thuillier, put forth the concept that it was not an infectious disease, but due to the consumption of mold-infected rye. It's been said the ancient empires of Assyria and Persia poisoned the water supply of their enemies with the use of rye ergot, but it is likely this never happened because of the established lack of knowledge.

However, even accidental poisonings have their place in warfare and in 1722, ergotism struck down the cavalry of Czar Peter the Great on the eve of a battle for the conquest of Turkey, and thus changed the course of history.

Hellebore: *Helleborus niger*. Mythology states that a poor shepherd was travelling to Bethlehem. He did not have a present for the Christ child and could not find any flowers on his travels because it was winter. The shepherd was sad and he wept. As his tears touched the ground flowers as beautiful as roses sprung from the ground. The shepherd took these Christmas Roses and brought them to the Christ child as his present. That pretty Christmas Rose plant now found in most nurseries and garden centers will kill you in a few hours if you plan it right.

It was used in medicine as a purgative and by religious folk to drive out evil spirits because it caused sneezing. Given that its major symptom is "blistering effects on the mucus membranes", this probably was not a pretty result and likely resulted in several deaths on its own. Some historians believe a lethal overdose of hellebore ended the life of Alexander the Great. Solon's soldiers threw hellebore roots into streams supplying drinking water to enemy troops, causing diarrhea. Supposedly, Melampus of Pylos used the milk of goats fed hellebore to save the daughter s of the king of Argos, who had all been driven to a hysterical madness by Dionysus. In ancient texts, hellebore is sometimes referred to as Melampode.

Hemlock: *Conium maculatum* or *Cicuta maculata*; of the two closely related plant, Water Hemlock is considered deadlier. Nero reportedly poisoned his brother Britannicus after testing it on a goat (or he used Locusta; stories are mixed). Often hemlock was mixed with opium to kill the condemned. It was the State Poison of Athens and the death decreed for Socrates, according the accounts by Plato. Despite being such a highly fatal plant it seems that there is little documentation of its use in assassinations any time after ancient Rome and almost all poisonings outside of the above two examples have been accidental.

Henbane: Hyoscyamus spp. Albertus Magnus attributed the effects of henbane to the influence of the planet Jupiter and named it Acharonis. Warriors in Greece and Gaul would poison their javelins with the juice of henbane. The dead in Hades were supposedly crowned with henbane and the ghost from Hamlet (I, 5, 69–70) was killed by having henbane poured into his ear. It is said the scent of the plant produces giddiness and it was often included in rituals to create hallucinations. In most cases even the most severe poisonings were recovered from, although effects can take weeks to dissipate and short-term memory loss is one of the key symptoms. Therefore it is believed that Shakespeare meant another plant when he wrote "With juice of cursed hebenon". In 1881, members of a railway surveying expedition crossing Tuareg territory in North Africa ate dried dates that the tribesmen deliberately contaminated with a relative.

Mandrake: Mandragora. Related to Belladonna but found further south in Europe and along the Levant, the mandragora is considered one of the oldest narcotics. Among the Anglo-saxons it was used against demons. The plant was fabled to grow under the gallows of murderers, and it was believed to be death to dig up the root, said to utter such a shriek and terrible groans that none might hear and live. It was held, therefore, that one should tie a dog to it for that purpose, who drawing it out would certainly perish, as the man would have done, had he attempted to dig it up in the ordinary manner.

In terms of deliberate misuse, a legend holds that it was mandrake used to poison Marcus Antonius' troops. Maharbal (200 BCE) left several amphoras of wine laced with mandrake for his enemies to find. When the enemy was immobilized he returned with his men and killed them. Use as a mass poisoning tool seems less likely in later years as a mandrake roots became a sacred item and was even passed down from generation to generation as a family talisman.

Oleander: *Nerium* spp. It has been recorded that many of Alexander the Great's soldiers died after using oleander twigs to barbecue meat. The plant is so bitter that its use in assassinations and executions were minimal, thankfully, considering that this is considered one of the most deadly plants in the world and poisonings still occur with alarming frequency to this day.

Opium: *Papaver somniferum*. The ancient Greeks portrayed the divinities Hypnos (Sleep), Nyx (Night), and Thanatos (Death) wreathed with poppies or carrying poppies in their hands. Often used as a carrier for far more dangerous drugs, there is a story that an assassination attempt was made on Queen Elizabeth where opium was smeared on the pommel of her saddle. In adults most opium deaths are motivated by suicide, beginning in the Aegean Islands as a form of euthanasia with hemlock for a painless death. Opium was most often used as a narcotic knock-out drug to facilitate other crimes, like robbery or rape. Between 1837 and 1838, of 543 cases of poisoning in England and Wales, at least 200 involved opium or opium-derivatives. A fifth of these cases involved the overdose of children by parents or nursemaids.

Rosary Peas: *Abrus precatorius*. The plant known in the scientific communities as Abrus precatorius has been sold as jewelry beads through the world as jequirity beans or Rosary

peas. However this plant is so poisonous that the sharpened seeds are used as murder weapons in India. Jewelry makers have died accidentally pricking their finger when trying to string them together. Its poison is abrin, which is chemically similar to robin… or ricin. Needles poisoned in the plants were used by assassins, according to a document written in 1875. The Centers for Disease Control in the United States have put together a treatment plan, in the event that someone develops a way to use it as a biological weapon.

Yew: *Taxus* spp. Artemis was said to dip her arrows in the juice of yew foliage to execute wayward humans and nymphs. The ancient Celts used extracts of yew from bark and needles as arrow and spear poison. As most archers know, yew is the choice wood for a longbow and has been associated with Europeans for thousands of years. They can live that long too and are often found in cemeteries. Wine from hip-flasks made of yew wood was said by Pliny to poison travelers. Yew was used as a poison by 200 BCE; also used for suicide although it was a nasty death—the Celtic Chieftain Cautvolcus (53 BCE) used it to avoid becoming a Roman slave.

In your service,

Lady Maggie Rue

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