

The Solanaceae II: The mandrake (*Mandragora officinarum*); in league with the Devil

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ABSTRACT In this second article on the plant family, the Solanaceae (the mandrake) is discussed. This plant (*Mandragora officinarum*) was well known to the ancients, including the Greeks, the Romans, the Arabs and Hebrews. Regarded by them all as having magical powers, it was thought to be possessed by a Satanic spirit. In order to gather it safely, a number of elaborate rituals were developed by these different ethnic groups. It was also thought to be propagated at scenes of execution where the body of the felon released urine and semen. In later medieval times, these superstitious beliefs were rejected but the mandrake was still highly valued as a powerful anaesthetic and had considerable use as one constituent of the soporific surgical sponge. Eventually, nitrous oxide, ether and chloroform consigned the mandrake to obscurity. Nevertheless, its story remains one of the most fascinating in the history of medicine.

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INTRODUCTION

Of all the members of the Solanaceae family, the mandrake has the most bizarre history. The unusual name of the plant probably derives from the Middle English or Middle Dutch (mandrage) and has a twofold meaning; first, the root looks like a man, and second, 'drake' is derived from 'dragon', alluding to its magical powers. The Latin form *Mandragora officinarum* has been established at least since the days of Shakespeare, who refers to the mandrake in *Othello* and more particularly in *Romeo and Juliet* (Act IV) where he mentions the shrieking of the mandrake when uprooted from the ground and that 'living mortals hearing them run mad.'¹ In other words, the plant can make you lose your mind!

The mandrake is a perennial herb originating in the Southern Mediterranean.² It has a large taproot, simple basal leaves and solitary five-lobed bell shaped flowers (see Figure 1). Its fruits are yellow, aromatic and poisonous. They are sometimes known as Devil's apples. The story of the mandrake is a long and turbulent one and involves the Hebrews, the Greeks and other ancient civilisations.

THE HEBREWS

One of the oldest stories in the Bible, from around 4000 BC comes in the book of Genesis (30:14–19).³ Here, so the story tells, the boy Reuben goes into the field and gathers a plant with yellow berries. He took some of these berries back to his mother Leah. Leah had a sister



FIGURE 1 The mandrake *Atropa Mandragora*, also known as *Mandragora officinarum*. From Woodville's *Medical Botany*, 1794. Courtesy of the Library of the Royal College of Physicians of Edinburgh.

called Rachel and she, recognising the fruit as that of the mandrake, requested some saying, in the words of the King James version of the Bible, 'Give me I pray of thy son's mandrakes.'

Rachel was barren and she sought to correct the ancient severe stigma of childlessness with the mandrake. Leah struck a bargain with Rachel that if she should give her some of the mandrake berries (or fruits) then Leah's husband must sleep with Leah first before sleeping with Rachel. Both women became pregnant; Leah bore her fifth son Issachar and some time later Rachel gave birth to Joseph who was to play an illustrious part in Jewish history.⁴

Interestingly, the emphasis amongst the Jews was on the power of the plant to aid the procreation of offspring and there is no mention of its narcotic power. The ancient Greeks sometimes referred to the fruit as the 'apples of love' whereas the Arabs, by contrast, called them the 'Devil's apples' from their capacity to inflame the passions. In the neighbourhood of Mount Lebanon, some of the Arab tribes called the plant 'Baid-ul-Jinn' or literally 'the eggs of the Genii' and this is one of the first references to its so called 'magical' powers.

THE GREEKS AND ROMANS

The Greeks came to the mandrake from a different direction.⁵ For as long as they had records of the plant, it was known to have narcotic properties. Hippocrates, the Father of Medicine, asserted around 400 BC that 'a small dose in wine, less than would occasion delirium, will relieve the deepest depression and anxiety.' Aristotle describes the mandrake as a valuable soporific, together with other plants such as the poppy (*Papaver* species) and the darnel (tares; *Lolium temulentum*).

Theophrastus wrote the first Greek treatise on plants in or around 230 BC. In agreement with the polypharmacy of the time, he recommended the mandrake as a sovereign remedy for gout, erysipelas, sleeplessness and, interestingly, in relation to the Hebraic tradition, as a love potion. He also refers to the fact that the taproot of the plant resembles a diminutive man, and it was from such early observations that the bizarre rites and ceremonies surrounding the plant were to emerge in the centuries that followed.

As far as the love potion is concerned, the Greeks also associated the plant with two important mythological figures, Circe and Aphrodite. Circe was reputed to have attempted to bewitch Odysseus with the mandrake although fortunately he had taken a preventive antidote that could have been the snowdrop (*Galanthus*). Similarly, Aphrodite the goddess of love was sometimes known as Mandragoritis or 'She of the Mandrake'.

In Theophrastus' treatise, we have the first clear description of the procedure that must be followed by the

plant gatherer in order that he should not be bewitched by the mandrake. The operator should draw three circles around the plant with his sword. Then, facing the west to avoid evil spells, he should slice portions off the taproot. At the cutting of the second piece, he must dance around the plant and mutter incantations concerning the mystery of love. Drawing the three circles around the plant protects the operative from the plant and the sword used should be a 'magic' one made of virgin iron and only ever used for the purpose of mandrake gathering. Similar magical rites were recommended for gathering other herbs, such as the Belladonna and All Heal (see Figure 2).

The next important authority who was to pay particular attention to the mandrake was the man who became known as the Father of Pharmacy, Pedanius Dioscorides of Anazaba. Born in Silesia, he travelled extensively through the whole of Southern Europe for a period of almost fifty years, starting about AD 40. He investigated more than six hundred herbs and recorded his results in a manuscript entitled the *Anicia*, a copy of which is preserved in the Imperial Library at Vienna. In the book are two full page miniatures devoted to the plant. In the first Euresis, the goddess of discovery offers the author Dioscorides a specimen of the mandrake root. Also seen in the picture is a dog that has succumbed to the evil effects of the plant. In the second miniature, he is shown drawing the root of the mandrake.

Dioscorides mentions a number of other names that have been used for the herb but suggests firmly that Mandragora should be adopted. He also notes that there are 'male' and 'female' forms but it is not clear what he means by this. Moreover, he confirms the views of Theophrastus that the root and fruit (berries) are useful for a wide variety of illnesses and perhaps as a love potion or fertility drug.

THE ROMAN TRADITION

From 500 BC onwards physicians and philosophers migrated from Greece to Rome and took with them the knowledge that they had acquired from the early disciples of Asklepios (including Theophrastus and Dioscorides).

The first Roman author to take up the mandrake appears to be Pliny the Elder.⁶ Writing in the first century AD, he commends it for all the usual ailments cited above. He adds the additional indication that it is useful for the condition of inflammation of the eyes. He also concluded that there are two varieties of the mandrake, *vernalis* (flowering in the spring) and *autumnalis* (flowering in the autumn) but this has not been confirmed by modern studies.

The Romans also believed that the plant might be used for military as well as medicinal purposes. Two stories circulated widely amongst the Roman high command. The

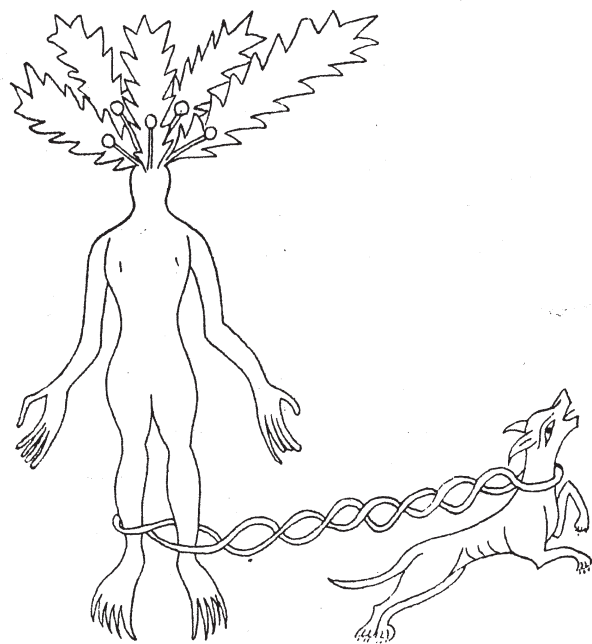


FIGURE 2 Dog Uprooting a mandrake. Reproduced from a fourteenth century manuscript.

first related to the Carthaginian general Hannibal who, when his army was fighting African rebels, pretended to retreat. He then left behind on the battlefield a number of jars of wine which had been fortified with mandrake. The rebels drank the wine, became sleepy, or even stuporose, and were easily defeated. It was also said that Julius Caesar, when he was captured by Sicilian pirates, employed a similar stratagem to gain his release.

THE MANDRAKE GAINS ENTRY TO BRITAIN

After the fall of the Roman Empire and the so-called Dark Ages, little is heard of the mandrake in Europe (or Britain) until the Anglo-Saxon period.⁷ Then, at the end of the first millennium, Apuleius produced his famous *Herbarium Platonicus* and this was translated into Anglo-Saxon. In the native language, the mandrake is described as 'mickle' (very) beneficial for all sorts of ailments. He notes that at night, the leaves shine together like a lamp, and that this signifies supernatural possession. The Greek's previous instructions in regard to harvesting were modified in two important ways. Firstly, instead of the man digging up the root(s) himself, a dog should be used to jerk it from the ground (see Figure 2). Secondly, an ivory staff should be used to loosen them (ivory was protected from evil). As with the Greeks, an iron sword was then used to cut them into manageable portions. All this was, as far as possible, to avoid the contamination of the gatherer by the malign evil spirit that lived in the plant. However, if the plant was pulled from the ground at certain holy seasons, the evil spirit would appear to the gatherer and do his bidding. This is very reminiscent of the Arab belief, referred to in an earlier section, that

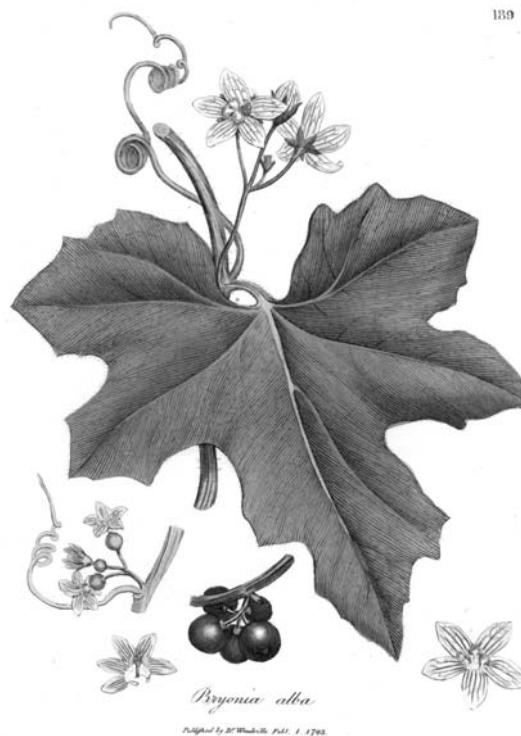


FIGURE 3 *Bryonia Alba*: the White Briony is one of the 'false' mandrakes. From Woodville's *Medical Botany*, 1794. Courtesy of the Royal College of Physicians of Edinburgh.

the plant was occupied by djinns (spirits) who could work for good or evil.

The mandrake was not indigenous to Britain. Consequently, its dried roots had to be imported, often at great expense. The root in its native form (or as a carved manikin or homunculus) became a prized family heirloom and was often bequeathed specifically in wills. As a result of the rarity and value of Mandragora, a search was made for native plants that could act, or indeed be passed off, as a poor man's substitute. The plants that the medieval herbalists came up with were the black and white brionies (see Figure 3).⁸ The roots of both these plants resemble those of the mandrake. They can be carved as a homunculus and both contain narcotic poisons. (see Figure 3). All this illustrates that between the period 1200 to 1600 there was a very considerable trade in Britain (and Europe) in the mandrake and ersatz substitutes.

CEREMONIES THAT SURROUND THE GATHERING OF THE MANDRAKE AND SIMILAR MAGICAL PLANTS

Curious and mysterious ceremonies surround the gathering of the mandrake. Why did the mandrake generate such a love/hate relationship with the local peasants? On the one hand, they were desperate to get hold of the root because it gave them power, influence and indeed wealth. On the other hand, they were scared

witless that in the course of harvesting (or handling) the root they would be struck down dead, or alternatively, possessed by an evil Satanic spirit that would force them to commit unspeakable sins, condemning them to hellfire and damnation.

Therefore magic must be met by more powerful magic. First came the ritual of the Greeks who drew special circles around the plant while facing west to placate the Chthonic gods. Then in the Christian era came the dog. This acted as a classical scapegoat and it was hoped that the evil spirit would pass into the unfortunate animal as the root was harvested.

The dog would be fasted for several days to get it in the right state of mind (extreme hunger)! It was then tied by strong cords to the stem of the plant. Pieces of meat were thrown just out of its reach. In its agitation to get something to eat the dog would haul the dreaded plant out of the ground. The dog died (or may have been put to death) at the spot where the mandrake was unearthed. Then, with the appropriate incantations, the evil spirit passes back from the dog into the ground. As time went on various modifications (and amplifications) were introduced, described by Aelian in his book *De Natura Animalium*.

For example, it is stated that the diggers must only go out on the day of Venus (Friday). Also because the mandrake may emit wild terrifying shrieks which could send the gatherers mad they must plug their ears with pitch (or wax). A crucifix was affixed to the plant before it was disturbed in order to subdue the evil spirit.

The day, the hour and the season of the year were all important to the diggers, both to ensure the efficacy of the root extracted and the safety of gatherers. The hour preferred was before sunrise because at that time the plant was said to be most active in producing its magical principles and the evil spirit guarding them was likely to be asleep. Mandrake was needed both as a love potion and a means of ensuring fertility.

Certain seasons of the year were more successful than others for the gathering of the plant including in particular Midsummer Day (or the following night). This was the day traditionally dedicated to St John the Baptist (25 June) and as Lee has pointed out was also the preferred time for harvesting *Hypericum perforatum* (St John's Wort) another sacred plant.⁹

It should be made clear that many magical and medicinal plants had similar ceremonies associated with their gathering but without the dog. Apart from St John's Wort, they included Valerian, Selago and the Peony. Common rites included the reciting of the *Pater Noster*, *Ave Maria*, the Apostles' Creed and selected portions of St John's Gospel.

The historic instructions conclude with showing due reverence to the root. First, it should be placed in a running stream for a day and a night to take away the taint (or stain) of the Devil. Then it should be wrapped in a clean white linen cloth and stored with care. It should be placed in a secure wooden box and when brought out for the administration of spells appropriate prayers should always be said. In some ways, the handling of mandrake resembles the treatment of the relics of the Saints.

THE MANDRAKE AND THE GALLOWS

As if these superstitions and practices were not enough, another myth grew up and became established between the fifteenth and eighteenth centuries.¹⁰ This story became particularly widespread in Germany and Austria where they believed that if a criminal had been buried or hanged at a particular spot, then there would the mandrake grow and flourish. Schmidel, in 1751, described the situation as follows: 'At the foot of the gallows on which a man has been hanged and where urine has been voided at the time of death, there springs up a plant with broad leaves and a yellow flower. The root of the plant exactly represents the human form, from the hair of his head to the sexual organs.' These roots were highly prized in Germany and changed hands at inflated prices. They were known to the populace as the *Galgemannlein*, or the 'little gallows man' and represented the congealed urine and semen of the executed criminal!

The German instructions for the care of the 'little gallows man' were very specific. 'Wash him clean in red wine and then wrap him in layers of white and red silk. Lay him in a casket and do not forget firstly to bathe him every Friday (the day of Venus again) and secondly and most importantly at the new moon to clothe him in a clean white shirt.'

If treated and respected in this way the gallows man ensures that you will be rich and fertile. Moreover he will answer any questions that you address to him (compare the genie of the Devil's Apple). When the owner of this precious heirloom died, the homunculus should be passed on, not to the eldest but to the youngest son.

The myth of the mandrake sprouting at the site of the gibbet watered and fertilized by urine and semen has many parallels in other cultures. The first comes in Greek mythology when the flesh eating eagle spills the blood of Prometheus on the ground. From the area where the blood had spilt a plant emerged which was identified later as the Corycian crocus. Similar stories have also emerged in relation to the dead bodies of Mexicans and the marigold; and also Danish soldiers and the Dane weed. Finally in modern times we remember the red poppies that flourished on the battlefields of Waterloo and Flanders that have come to assume semi-mythological status.

THE MANDRAKE IN ENGLISH LITERATURE

In the light of the long, ancient and bizarre history of the mandrake, it is no surprise that the plant should have been taken up by poets, dramatists and romantic novelists. There is only space here to refer to a few striking examples. For a more extensive coverage the reader is referred to Thompson's excellent treatise.¹¹

By the time of Shakespeare, the root was imported widely and also cheaper alternatives, such as the white and black briony were available. The Bard of Avon makes a number of references to the root. Falstaff alludes twice to its effects on sexual performance in *Henry IV Part II* – first he addresses his page as 'Thou whoresom mandrake' and then condemns Justice Swallow as 'the very genius of famine; yet lecherous as a monkey and the whores call him mandrake' (Act I, Scene 2, and Act III, Scene 2 respectively). One of the most celebrated references to the plant is that in *Othello* (Act III, Scene 8) where Iago referring to its narcotic qualities says 'Not poppy nor mandragora; nor all the drowsy syrups of the world; shall ever medicine thee to that sweet sleep which thou owdst yesterday.'

The mandrake's shrieking on extraction is referred to in *Henry VI* (Act III, Scene 2) where Suffolk says:

'Would curses kill as doth the mandrake's groan
I would invent as bitter searching terms
As curst, as harsh and horrible to hear.'

Other authors took up the mysterious herb including Marlowe and Drayton. In his popular play, *The Jew of Malta*, Marlowe causes Barabas to explain how he escaped from prison by saying:

'I drank poppy and cold mandrake juice;
and being asleep belike they thought me dead
And threw me over the walls.'

This emphasises the prolonged sleep that mandrake can bring on in which the individual can appear insensible to pain and almost 'dead'.

Michael Drayton, the Elizabethan poet was also well aware of the many properties of mandrake and in his work the Polyolbian refers to its association with the mistletoe, a plant sacred to the Druids. He may here have been confusing it with the false mandrakes; the white or black briony. Plants growing under the mistletoe like 'mandrake', such as cyclamen, purslane and valerian were all believed to inspire love.

During the eighteenth and nineteenth century, references to the mandrake decline steadily and by 1850 have all but disappeared. Perhaps the final quotation I should make is

that from the Irish poet Thomas Moore (1779–1852) who in his epic poem *Lalla Rookh* says:

'Such rank and deadly lustre dwells
As in these hellish fires that light
The mandrake's charnel leaves at night.'

Also known as the Devil's candle to the Arabs, why the mandrake's leaves should glow at night has remained a mystery. Once thought to be demonic possession a more prosaic explanation is that its scent attracted glowworms in the hot Eastern climes.

THE SCEPTICAL HERBALISTS 1500 TO 1800

As time went on into the sixteenth and seventeenth centuries there came in turn the New Age of Herbalism; the era of rationalism and the Enlightenment.¹² Mandrake gathering and its usage was submitted to questioning and analysis. Superstitions were jettisoned but therapeutic use maintained.

One of the most interesting early accounts in this period is that by William Turner, Dean of Wells Cathedral and Doctor of Physick, printed in 1551. He describes the male and female forms of the roots but condemns the fact that manikins (male) and puppettes (the female forms) are carved from the plants and sold to the credulous common people. 'They are thus deprived both of their wits and their money!' He also condemns the legend relating to the gallows man as superstitious nonsense!

However he does not abandon the mandrake completely, recommending it particularly as a soporific, painkiller and to dull the agony of 'burning' and 'cutting'. He also noted that taken into the mouth it could cause numbness of the oral cavity and tongue (see Richardson later.)

The next important account was that of John Gerarde (in his famous *Herbal* of 1597) in which he also castigates the prevalent folk tales as being propagated by 'old wives, runagate surgeons or physickmongers!' He describes the tales of the gallows man and the rites practised in digging up the mandrake as 'doltish errors.' He also attacks the use of Brione (brionies in the modern parlance) as practised by 'idle drones' who carve out mannikins from these plants and then pass these off to superstitious people as the true mandrake.

The next influential authority to rail against the mandrake was John Parkinson, by Royal Appointment Herbalist to the Court of Charles the First. He discusses the plant in some detail in his book *A Garden of Pleasant Flowers* (1629). He blamed the chief magistrates of the City of London for tolerating the sale of mandrake mannikins. He urged them to prosecute the vendors of such 'toys which are the ridiculous products of man's invention.'

It should be noted here that the herbalists while describing the harvesting rites (and the mannikins) as superstitious nonsense still accepted that the mandrake was sedative and anaesthetic. Moreover it could be used externally with benefit in such conditions as erysipelas, eye infections and scrofulous tumours. Moreover any undesirable effects could be reversed by wormwood, rue, origanum or castor oil.

MANDRAKE AND THE HISTORY OF ANAESTHESIA

The soporific and anaesthetic properties of the mandrake had been described by the classical authors over many centuries.¹³ Such authorities included Socrates, Demosthenes, Macrobius and Theodoretus.

In particular, Dioscorides outlines the process by which strips of mandrake bark were allowed to be steeped in sweet wine for months. This wine contained the narcotic principle and became known in Roman times as the death wine or 'morion'. It was given to the victims of torture or crucifixion. Sometimes another bitter anaesthetic was added to the mandrake to potentiate its effects for example myrrh (*Commiphora myrrha*).

The next important step in development was that of the 'sleeping sponge' or *spongia somnifera*. Hugo de Lucca was the chief of a school of surgeons in Tuscany in the fifteenth century. In 1490, he devised this sponge, soaked in a mixture of herbs, which could be used as an inhalational anaesthetic. The preparation contained an infusion of the following plants: opium, mulberry, henbane, hemlock, mandrake and the seeds of lettuce, dock and water hemlock. In other words, at the very least it contained morphine, hyoscyne, and the alkaloids of mandrake (see below). Not surprisingly, sleep could last for up to four hours (or even longer). This narcotic sponge was used over several centuries with good effect.

One of the most dramatic stories of the use of such a sponge (containing mandrake) was in 1782 when Doctor Weiss, Court Surgeon to Augustus, King of Poland, administered such an inhalation to his patron rendering him insensible. He then cut off part of his mortifying foot and the King made a good recovery!

However, the soporific sponge could prove unpredictable in its effects. Sometimes it did not work well at all and had to be supplemented by alcoholic spirits such as brandy (or whisky) and sometimes it worked too well and the patient never regained consciousness. Many surgeons, in the period 1750 to 1840, relied on physical restraint of the patient and lightning fast technique and the poppy was the only drug used for post-operative pain.

WHY WAS MANDRAKE ABANDONED IN THE NINETEENTH CENTURY?

As the nineteenth century dawned, many doctors (and surgeons) were very dissatisfied with restraint, alcohol and the soporific sponge, and began to investigate the possibilities of new inhalational anaesthetics.¹⁴

The movement started with the great chemist Joseph Priestley in 1775 and his six volume series entitled *Experiments and Observations on Different Kinds of Air*. He was the first to isolate nitrous oxide (laughing gas) and this stimulated interest eventually in diethyl ether (sulphuric ether) and chloroform. These three volatile anaesthetics proved to be much more reliable and definitely safer than those that had gone before. There is no space here to discuss in detail the early development of effective inhalational anaesthetics, but the reader is referred to the excellent monograph by Stratmann on *Chloroform (The Quest for Oblivion)*.¹⁴

Suffice it to say that by 1850 these new exciting agents had wiped away the soporific sponge (and mandrake) and they had become largely objects of historical curiosity. There is one necessary footnote to the history of mandrake. It had been replaced by ether and chloroform for inhalational anaesthesia but what of its other uses, as an oral analgesic for example?

In 1888, Benjamin Ward Richardson began a series of investigations on the plant.¹⁵ He procured a supply of the mandragora root from its native Greece and made a tincture in an alcohol/water mixture for four weeks, thus reproducing the ancient recipe of Dioscorides. He found that this tincture would sedate and anaesthetise animals particularly cats and dogs. He also noted that the pupils dilated and concluded that the extract must contain an alkaloid (or alkaloids) similar to hyoscyne or atropine (most probably the former). He found also to his surprise that pigeons were much more sensitive to the infusion than rabbits. We now know that rabbit gut (and liver) contain an enzyme called atropinase which can destroy solanaceous alkaloids and allow this lagomorph to feed on nightshade (*Atropa*) and henbane (*Hyoscyamus*) and presumably also the mandrake with relative impunity.

Finally, Richardson tried small doses of the mandrake infusion on himself and noted the following: numbness of the tongue; dryness of the mouth; confused vision; restlessness and exaggerated sensitivity to sounds. On the basis of these findings he concluded that if the alkaloid could be identified and extracted it might be used as an anaesthetic or possibly supercede atropine as a mydriatic. He also foresaw its use in strychnine poisoning and lock-jaw (tetanus). Richardson's work was the first to apply proper scientific procedures to the mandrake and at the time provoked a great deal of interest.

In 1889, Ahrens isolated an alkaloid from *Mandragora* which he called 'mandragorine'. However, in 1901 Thoms and Weinzell demonstrated that Ahren's compound was in fact a mixture of hyoscyamine and hyoscyne together with a small amount of a third alkaloid for which they retained the name mandragorine. Despite this flurry of interest in the chemical constituents of mandrake, it was too late for the development of the plant. As we shall see in the next two articles in this series, hyoscyne and atropine were already characterised chemically by 1900 and coming into therapeutic use. Indeed they would be employed in murder and attempted murder.

FINAL THOUGHTS

'The phantom shapes – oh touch not them –
That appals the maiden's sight,
Lurk in the fleshy mandrake's stem,
That shrieks when plucked at night!'

Lalla Rookh

by Thomas Moore (1779–1852)

The history of the mandrake as we have seen, is intriguing, curious and exotic. From the mists of antiquity its association with magic, demons and fertility ensured that it was regarded with fear, loathing and fascination.

How did this come about? A plant that could produce deep sleep (and sometimes delirium and hallucinations) and which also glowed in the dark was obviously very special. As madness in the Christian tradition was often ascribed to possession of the mind by an evil spirit, so the mandrake was the 'home' of a similar malevolent being, fiend or genie. Moreover, the power of the myth was strengthened by the fact that the roots, either naturally, or after carving, resembled closely the appearance of a man (or a woman).

The scene was thus set for an illiterate credulous people to invest the mandrake with all sorts of magical powers both evil and beneficial, and to develop complex rituals in order to harvest the plant without harming themselves or interfering with its potency. Indeed the plant became so valuable that, in Europe, a shortage resulted and this led on to other roots being used such as the black and white brionies. These were passed off on the unsuspecting public as the genuine article. Mandrake became so prized as a precious heirloom that specific

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arrangements were made as to its inheritance. Around 1600, the situation changed materially when the up and coming herbalists poured scorn on the old beliefs whilst still recommending the root for certain specific problems. Finally, the advent of nitrous oxide, ether and chloroform put paid to its use in anaesthesia. Further, the isolation of atropine and hyoscyne from other sources ended any other possible therapeutic uses.

Of the four members of the Solanaceae to be described in this short series of articles, the other three have found a use either as a foodstuff (the potato) or as a source of medicinal substances (henbane and deadly nightshade). Nevertheless the mandrake should be remembered as a powerful example of how gullible the general public can be when presented with phenomena that seem inexplicable at the time.

In closing we should perhaps remember the words of John Ray, the great 17th century botanist, who wrote:

'If I am to be quite honest there are many points on these subjects still open to doubt; questions can be raised which I confess I am not competent to solve or disentangle; this is not because they have not got definite natural explanations but because I am ignorant of them.'

In the twenty first century the man in the street is still credulous, as is illustrated by the rapid growth of alternative therapies such as colonic lavage, reflexology and crystal treatment. Neither can the medical profession be altogether excluded from this besetting continuing frailty of the human condition.

ACKNOWLEDGEMENTS

It is a pleasure to recommend the book on the *Mystic Mandrake* written by Thompson in 1934 who was, at that time, Honorary Curator of the Historical Collection of the Museum of the Royal College of Surgeons of England in London. This volume is an essential source for anyone interested in the mandrake (Reference 5).

I would also like to thank the library at the Royal College of Physicians in Edinburgh, in particular Mr John Dallas, for help with the figures. My thanks are also due to my indefatigable secretary Mrs May Gibb for her continuing help over the years.

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PAST PRESIDENTS

Dr Andrew Duncan (1744–1828)

Born near St Andrews in Fife, Duncan went to St Andrews University before matriculating at Edinburgh University to study medicine where his teachers included Cullen, Gregory, Monro secundus and Black. As a student, he was five times elected president of the student medical society for which, years later, he was instrumental in obtaining a Royal Charter – The Royal Medical Society.

In 1768, he sailed to China as a ship's surgeon with the East India Company, then returning to St Andrews to graduate MD, in the following year becoming a licentiate

of the Royal College of Physicians of Edinburgh. Early in his career, in 1778, he had the harrowing experience of seeing the 24-year-old poet Robert Fergusson die, strapped to his bed in Edinburgh's Bedlam where at that time Edinburgh's mentally ill patients were incarcerated in appalling, squalid conditions. Bedlam had been built on the site of the equally notorious Covenanters' Prison yard of Greyfriars Church where, a century before, many died or were taken for execution. Like its London counterpart, Bedlam was a favourite place where Edinburgh citizens could go on Sunday afternoons to stare at and torment the inmates, before strolling in the nearby parkland known as The Meadows.

Duncan campaigned long and hard for more enlightened treatment for such patients, presumably with added authority after his appointment as a university professor and President of the RCPE in 1790. In 1813, he saw a new mental hospital built in Morningside, Edinburgh – not Scotland's first, but a much-needed replacement for Bedlam. In the twentieth century, a part of the Royal Edinburgh Hospital (for which Duncan had obtained a Royal Charter in 1805), as it had come to be called, was renamed

the Andrew Duncan Clinic in honour of the pioneer. Interestingly, Bedlam was bought by the Royal College of Physicians in 1895 and, for several years, used as its laboratories.

In 1773, when only 29, he was appointed editor of one of Scotland's first scientific journals, *The Medical and Philosophical Commentaries*, in which were published many of the papers of the Monro dynasty and other physicians of the Edinburgh enlightenment, including several of his teachers.

Yet another royal charter negotiated by Duncan was for the Royal Horticultural Society but the Edinburgh Medico-Chirurgical Society, the Harveian Society and the Aesculapian Club, as well as the Royal Dispensary in Richmond Street, all owe much to him.

On the death of Professor John Gregory he unsuccessfully applied for the chair of the Institutes of Medicine. After fifteen years charismatic teaching in the Extra-Mural School of Medicine he again applied for the chair, this time successfully. In 1818, ten years before he died, the City showed how much they appreciated him by making him a Freeman.

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