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Cherokee Snakebite Remedies

David Cozzo

At first, serpents were not poison. No roots were poison, and man would have lived forever, but the sun passing over, perceived that the earth was not large enough to support all, in immortality, that would be born. Poison was inserted in the tooth of the snake, in the root of the wild parsnip, etc. And one of the first family was soon bitten by a snake and died. All possible means were used to bring the life but in vain. —John Howard Payne¹

The tale above was related to missionary Daniel Butrick and transferred to playwright John Howard Payne early in the nineteenth century to explain why snakes carried such deadly poison and why a chance encounter with a snake, especially if it appears to be a poisonous one, instills mortal fear in the stoutest of hearts. It should come as no surprise that the rich tradition of Cherokee storytelling should contain an explanatory tale of the origin of snake poison, or that their vast pharmacopoeia would contain a wide array of remedies to treat one bitten by a snake. Here I will examine the historical record about these remedies and, through comparison with the findings of later researchers, attempt to clarify and identify the main remedies used by the Cherokee to treat snakebites.

Two poisonous snakes are encountered in the Southern Appalachian region: timber rattlesnakes (*Crotalus horridus*) and copperheads (*Agkistrodon contortrix*). The Cherokee have historically had ambivalent relationships with the rattlesnakes and a loathing for the

copperheads. The rattlesnake was known as *u-tsa-na-ti* or “he has a bell” because of the alarm sounded by its rattle (Mooney 1900, 295). Rattlesnakes were approached with both a reverence for their power and a fear of their bite, as well as their association with the Thunder spirit. When Lightning, the youngest son of Thunder, was required by his father to play a stick ball match against his two older brothers, he chose for his adornment bracelets of copperheads and a necklace of a great rattlesnake to make himself appear fierce (Mooney 1900, 311). Mooney found that rattlesnakes were referred to as “the Thunder’s necklace” and “to kill one is to destroy one of the most prized ornaments of the thunder god” (1900, 295). Rattlesnakes were considered the leaders of the snakes, and they epitomized the relationship of all snakes to the underworld (Fradkin 1990, 333). Olbrechts may have best captured the Cherokee attitude toward rattlesnakes:

The Cherokee, like other Indians, has a great reverence for snakes in general, but for rattlesnakes in particular, and is careful never to offend one, even by word. In accordance with the principle often applied in the formulas of belittling a serious ailment, it is customary, when a man has been bitten by a snake, to announce that he has “been scratched by a briar.” (Mooney and Olbrechts 1932, 177)

It was considered a foolish act to kill a rattlesnake because they were believed to have clan affiliations (Mooney 1900, 305). As with the blood law of the Cherokee, killing a member of a clan had to be avenged by the departed one’s clan member. The balance had to be restored by taking the life of a member of equal value to the clan that had perpetrated the killing of one’s affiliate. Therefore, if one killed a rattlesnake, the snake’s clan would have to seek revenge on a member of the killer’s clan. This rule was not limited to snake/

human interactions. It was said that snakes, ginseng, and deer were allies, all having exceptional powers, and that an action against one of them would be avenged by all of them (Mooney 1900, 294). Copperheads, on the other hand, were viewed as solitary creatures. They were generally despised and, since they had no comparable clan affiliations, they could be killed with impunity. The copperhead was known simply as *wo-di-ge a-sko-li*, or “brown head,” an apt description that provided its common English name (Mooney 1900, 296).

The general therapy for treatment of snakebites consisted of both internal and external applications of a medicinal plant decoction. A portion of the decoction was imbibed, and the remainder was either blown or rubbed on the bite. The external application, whether blown or rubbed, was always performed in a counterclockwise direction, symbolizing the uncoiling of the serpent and the undoing of its intent. Dreams of snakebite were treated as an actual bite due to concern that, if untreated, inflammation and the symptoms of an actual bite would set in at the location of the dream-bite (Mooney 1891, 352).

James Adair was one of the earliest commentators on the range and efficacy of Cherokee snakebite remedies:

I do not remember to have seen or heard of an Indian dying by the bite of a snake, when out at war, or a hunting; although they are then often bitten by the most dangerous of snakes—every one carries in his shot-pouch, a piece of the best snake-root, such as the *Seneeka*, or fern-snake-root,—or the wild hore-hound, wild plantain, St. Andrew’s cross, and a variety of other herbs and roots, which are plenty, and well known to those who range the American woods, and are exposed to such dangers, and will effect a thorough and speedy cure if timely applied. When an Indian perceives he is struck by a snake,

he immediately chews some of the root, and having swallowed a sufficient quantity of it, he applies some to the wound; which he repeats as occasion requires, and in proportion to the poison the snake has infused into the wound. For a short space of time, there is a terrible conflict throughout all the body, by the jarring qualities of the burning poison, and the strong antidote; but the poison is soon repelled through the same channels it entered, and the patient is cured. (1974, 247-248)

Some of the plants mentioned by Adair are easily identified by their common names. Others were vernacular names for plants that were later identified by other researchers as Cherokee snakebite remedies. The Seneeka is Seneca snakeroot, *Polygala senega*, which has its function indicated in its common name. The reference to the Seneca tribe in both the common and botanical names would also indicate an association with northern Iroquoian peoples, but documentation of this is not evident (Moerman 1998; Herrick 1995). Mooney claimed that the Cherokee did not use *P. senega* for snakebite, but for other unspecified illnesses and as a source of income in the commercial botanicals market (Cozzo 2004, 302). A later source that appears to cite it as a viable remedy may be referencing Adair, but it is not clear from the text (Hamel and Chiltoskey 1975, 55). Perhaps Mahoney's rendition of Cherokee physician Richard Foreman's relationship to *P. senega* can shed some light on the ambiguity associated with its use for snakebite:

Much has been written with regard to its virtue in the cure of the bite of the snake; we never used it for this purpose, believing that the remedies prescribed for the treatment of animal poisons are superior to this root; but should a case occur where this root was at hand, and the remedies prescribed under that head could not be

obtained, we would give it a fair trial; the mode of using it internally in tea or decoction, and externally, to the wound. (1857, 245)

The fern snake root mentioned by Adair appears to be *Botrychium virginianum*, the rattlesnake fern. While the vernacular name “rattlesnake fern” could be attributed to an association with the rattle of a rattlesnake because of the erect nature of its fertile frond, Olbrechts claimed that it was the primary remedy for a dream-snakebite. The Cherokee had an elaborate system of disease diagnosis associated with the dream world (Mooney and Olbrechts 1932, 35-37), and a dream of being bitten by a snake was treated as an actual bite. If the dream-bite was left untreated, the victim would eventually develop swelling and ulcers on the spot, just as if it were an actual bite (Mooney 1900, 295; Mooney and Olbrechts 1932, 176). Rattlesnake fern was applied to both a dream-bite and, in the absence of a superior remedy, was an acceptable remedy for an actual bite (Mooney and Olbrechts 1932, 177; Cozzo 2004, 337).

Wild horehound may be more difficult to identify than other remedies mentioned by Adair. Mahoney says that wild “hoarhound” is *Eupatorium pilosum* and that it is “too well known to need description” (Mahoney 1857, 227), but he makes no mention of it being used as a snakebite remedy. However, it is very closely related to and bears a close resemblance to the species *Ageratina altissima* (formerly *Eupatorium rugosum*), a common species in the North Carolina mountains, which is one of several plants known as white snakeroot. Banks identified *Lycopus virginicus* by the common name “water horehound,” which the Cherokee boiled in milk and gave to a dog that had been bitten by a snake (2004, 94). One local man in the mountains of North Carolina identified *L. virginicus*, also known as bugleweed, as “meadow horehound,” and his description of its use

matched that described by Banks (personal communication, June 15, 2005). Mooney also mentioned that *L. virginicus* was used for snakebites, but he gave no indication of its application (Cozzo 2004, 206). Such evidence would suggest that *L. virginicus* is the most likely candidate for the remedy described by Adair as “wild horehound.”

Adair’s wild plantain was most likely *Cacalia atriplicifolia*, the pale Indian plantain. While not specifically mentioned for use as a snakebite remedy, Mooney (1891, 326) did tout its virtues as a poultice for drawing toxins out of wounds: “...held in great repute as a poultice for cuts, bruises, and cancer, to draw out poisonous matter. The bruised leaf is bound over the spot and frequently removed.” St. Andrews cross, the last of the plants specifically named by Adair, is the common name for *Hypericum hypericoides*, so named because the four-parted flowers resemble an x-shaped cross. The legend of St. Andrew suggests that, when he was crucified, he asked that it be done on a cross of a different shape from that of Jesus. This x-shaped cross is also the basis for the crossed bars on the Confederate flag. No other researchers mentioned this plant for snakebite; however, Banks did find that it was used for its ability to reduce fevers, a function that would be beneficial for systemic inflammation caused by snakebite (2004, 78). Two other species of *Hypericum* are used in traditional Chinese medicine as remedies for snakebite (Houghton and Osibogun 1993), suggesting that the genus may have some inherent efficacy. While Adair does not mention their names, he does indicate that, “a variety of other herbs and roots, which are plenty” could be applied to a snakebite. Such a statement would indicate that he would find no flaw with the reports of later researchers who added many more plants to his list.

The next treatment of Cherokee remedies appears to have come from the French botanist Palisot de Beauvois, sent to the Southeast in 1796 to reestablish the fur trade among the Creeks and Cherokees.

De Beauvois recorded the following information in his notes in what he called a “table of snakebite remedies,” although not really a table in a contemporary sense:

Table of Remedies and Plants Employed by the Cherokees
Against Snakebite

In the first moment of the bite they use three kinds of remedies: the suction which is always the most effective when it is possible to employ, or chewed tobacco applied to the wound or cannon powder to which one sets afire.

Once at home they use three plants.

One, a kind of helianthus which I have not yet well determined.

The very milky root of the *prenanthes alba* or its varieties as well as all lactuca. The bark root of tulipier; in the most serious cases all of the plants are employed in infusion.

In the course of the treatment they use the root of *Spiraea trifoliata*. Therein they find the double advantage of being strongly purged and of abundant vomiting.

It is good which in general they make use of in all sicknesses the plants of the family composita and of the bark of several trees and plants found in large numbers in North America. (Anderson 1984)

The tobacco mentioned by de Beauvois was most likely *Nicotiana rustica*, the “old tobacco” of the Cherokee and the primary tobacco used in ritual and medicine (Cozzo 2004). Mooney had the following to say about *N. rustica*:

Tobacco was used as a sacred incense or as the guarantee of a solemn oath in nearly every important function—in

binding the warrior to take up the hatchet against the enemy, in ratifying the treaty of peace, in confirming sales or other engagements, in seeking omens for the hunter, in driving away witches or evil spirits, and in regular medical practice. It was either smoked or sprinkled on the fire, never rolled into cigarettes, as among the tribes of the Southwest, neither was it ever smoked for the mere pleasure of the sensation. (Mooney 1900, 424)

Nicotiana rustica is a much stronger tobacco, possessing as much as eight times the nicotine content of the introduced *N. tobacum*, the species prevalent in the commercial trade (Haley, Gardner, and Whitney 1924; Idris et al. 1998). Besides applying tobacco to the bite, the person treating the bite would also hold tobacco in his mouth to counteract the poison sucked out of a bite (Mooney and Olbrechts 1932, 241).

The *Helianthus* mentioned by de Beauvois could have been one of a number of native sunflowers or sunflower-like plants. I take exception with Anderson's informant who dismissed its potential out-of-hand (Anderson 1984). There are as many as sixteen species of *Helianthus* and numerous species of related yellow-flowered members of the family *Asteraceae* growing in the Southern Appalachian Mountains (Smith 1998, 190-192). The edible sunflower, *Helianthus annuus*, has been recorded as a snakebite remedy in the Southwest, being employed by the White Mountain Apache and Zuni (Moerman 1998, 257). This would indicate some degree of efficacy for that particular species, not to mention other members of the genus. Mooney recorded that a decoction of the roots of *Rudbeckia fulgida*, a type of black-eyed Susan that resembles a small sunflower, was used as a wash on snakebites (Mooney 1891, 327). Perhaps this plant, or a closely-related one, was the unknown *Helianthus* observed by de Beauvois.

In keeping with his praise of the medicinal qualities of the family Asteraceae (he refers to it as *composita*), de Beauvois highlighted *Prenanthes alba* and the genus *Lactuca*. Several species of *Prenanthes* are common to the Southern Appalachians, some more common than *P. alba*, which is found only in a few counties in western North Carolina (Radford, Ahles, and Bell 1968, 1020). However, de Beauvois did indicate that the “varieties” of *P. alba* were suitable substitutes. No other researchers corroborated the use of either *Prenanthes* or *Lactuca* for snakebite, but the common name of “rattlesnake root” applied to *P. alba* and some related species of *Prenanthes* would indicate a reputation for some degree of efficacy. In the Cherokee ethnobotanical classification system, *P. alba* is considered a small folk species of the folk genus *da ye wa*, or “it sews itself up.” The large folk species of this genus is *Cacalia atriplicifolia*, mentioned above as a potential snakebite remedy.

The root bark of the tulip poplar, *Liriodendron tulipifera*, got a passing mention by de Beauvois (as *tulipier*), but was highly touted for a range of conditions and wound-healing capacity by both Olbrechts and Banks (Cozzo 2004, 78). One of Olbrechts’ many claims included its use as a suitable substitute for the rattlesnake fern, *Botrychium virginianum*, in cases of snakebite. A decoction of the root bark was blown over the patient and rubbed directly on the site of the bite (Mooney and Olbrechts 1932, 177). Mahoney applied tulip poplar specifically for the bite of a copperhead:

I have known the bite of the copperhead cured in the following manner: Immediately apply to the wound, tobacco, which has been perfectly wet in vinegar, and, as soon as it can be prepared give a strong decoction of the yellow-poplar root bark, and bathe the wound frequently with the same. (1857, 99)

The *Spiraea trifoliata* mentioned by de Beauvois is an old name for *Porttheranthus trifoliata*, also known as Indian Physic or American Ipecacuanha. The common names refer to its strong purging and emetic qualities. Again I take exception with Anderson's informant who suggests that *P. trifoliata* was used as "a calming or soothing agent." Mooney found mixed responses to the use of this plant, some claiming that it was useful for severe bowel complaints, others claiming that it was too toxic to take internally (1891, 326). As mentioned above, de Beauvois found that those who partook of this medication were "strongly purged and of abundant vomiting," neither of which should be considered calming or soothing. However, it is reported to be a safe and efficient emetic (PDR 2004, 460) and would have served the purpose ascribed to it by de Beauvois.

Emesis was an important aspect of Cherokee snakebite therapy, especially in cases of a dream-snakebite. Dreaming of snakes causes the dreamer's saliva to become *spoiled*, a serious medical condition among Southeastern Indians. Saliva was considered to be associated with the primary soul, located in the head, in the Cherokee humoral system (Witthoft 1984; Fogelson 1982; Cozzo 2007). Natural or intentional disturbance in the state of saliva had to be addressed, usually in the form of an emetic. The Swimmer manuscript (Mooney and Olbrechts 1932, 198) contains an elaborate formula for such an emetic. It included a decoction of two types of rush, the soft-stemmed bulrush (*Schoenoplectus tabernaemontani*) and the soft rush (*Juncus effusus*), wood vetch (*Vicia caroliniana*), and poison ivy (*Rhus radicans*) found growing on the east side of a poplar tree. Another species mentioned in the formula, *Coronilla varia*, or crown vetch, may have been a misidentification. According to some sources, it was not introduced to this country from Asia until the 1950s (<http://www.wvdnr.gov/Wildlife/DirtyDozen.shtm>), making it an unlikely candidate for inclusion in a Cherokee formula, much less having been

ascribed a Cherokee name. There are, however, local populations in the North Carolina mountains near present-day Cherokee, so if there was a much earlier introduction, it may have been included in the Cherokee pharmacopoeia.

The myth of the origin of snake poison was not the only mention of snakebite in the Payne/Butrick papers. The papers also contained a clear description of how to treat a bite that included some Cherokee names for the plant remedies:

They (Thunders) were directed to a weed in the woods the top of which is a rattle like that of a rattlesnake and take the root. It must be dug in the winter when the top is dry. Also to another root the blossom of which has something rising out of it like a rattlesnake's tooth. The third the top smells like a snake. The fourth has one round slim stem grows up high and a branching flower at the top. The fifth is called Senica snake root called the first snakes tail (*I nv tv ka to ki*) . . . second owl's head (*u gu gu sko*), third (*A yv ta wi gi*) 'some round thing mashed'. Fourth (*kv ne li ta*), anything with young. Fifth (*u nv ste tsv sti ki*), senica snake root.

All pounded together some of the compound is taken in the mouth, and with it in the mouth the place is sucked which was bitten. Snake doctors always kept this compound by them. (Payne, n.d. Vol. 3, 82)

Snake's tail (*I nv tv ka to ki*) most likely refers to *Prunella vulgaris*, also commonly known as heal-all or self-heal. The Cherokee name refers to the dried flower head, which does indeed resemble the erect tail of a rattlesnake. Mooney recorded two names for *P. vulgaris* (Cozzo 2004, 237): *inatu gataga* ("snake tail") and *inatu wa-sitsu* ("snake rattle"). Both names provide evidence that the species

referred to by Butrick is, indeed, *P. vulgaris*. *Prunella vulgaris* is considered a panacea by both Chinese and Native American herbal practitioners, and current research shows it to be the highest known source of rosmarinic acid, a powerful antioxidant (Duke 1992, 158). Mooney identified owl's head (*u gu gu sko*) as *Pedicularis canadensis*, commonly known as lousewort. The name, which Mooney recorded as *ugukuska*, stems from *uguku* ("the hooting owl") and ("head") and refers to the appearance of the flowering head (Cozzo 2004, 283). The observation that "the blossom of which has something rising out of it like a rattlesnake's tooth" refers to the individual flowers, which are curved in a manner resembling a snake's fang.

The plant whose "top smells like a snake" had been a mystery to me before finding this reference. Olbrechts recorded a plant that he glossed as "the (plant) which is called: snake's odor"; however, he was unable to provide a botanical species to coincide with this distinctive name (Cozzo 2004, 237). But Butrick's supplying the Cherokee name *a yv ta wi gi* ("some round thing mashed") may solve this mystery. Mooney recorded the name *ayutawigi* for *Thalictrum dioicum*, commonly known as early meadow rue, and glossed it as "it bursts" due to the tendency of the stalk to burst when pressure was applied (Cozzo 2004, 217). This coincides nicely with Butrick's gloss of "some round thing mashed." It was common for Cherokee plants to have more than one name depending on consensus or lack of consensus by the informants. In this instance, there may have been more than one salient feature that determined the name(s) for *T. dioicum*. My own experience suggests that the members of the genus *Thalictrum* do have a musky odor, but comparing that smell to a poisonous serpent will have to wait until there is an opportunity for proper confinement of the serpent.

The reference to *kv ne li ta*, ("anything with young") is, again, very similar to the name of a plant recorded by Mooney as *ganelita*

("pregnant"). This was one of the Cherokee names for *Angelica venenosa* or hairy angelica (Cozzo 2004, 231). The reference to pregnancy or having young may be descriptive of the swollen leaf nodes common to members of the family Apiaceae, which are especially prominent on *A. venenosa*.

Butrick's fifth, and last, plant in this formula may have been misidentified. He refers to it as "Seneca snake root," the common name applied the *Polygala senega* or the "Seneeka" mentioned by Adair. However, the Cherokee name supplied by Butrick (*u nv ste tsv sti ki*) bears no resemblance to the name recorded by Mooney for *P. senega* (*uyugili*), but it is very close to *unastetstiya* ("very small root"), the name Mooney recorded for *Aristolochia serpentaria* or Virginia snakeroot (Cozzo 2004, 290). Olbrechts claimed that *A. serpentaria* was a viable substitute for rattlesnake fern (*Botrychium virginianum*) or tulip poplar (*Liriodendron tulipifera*) when treating a snakebite that occurred in a dream (Mooney and Olbrechts 1932, 177). As both the common name and specific epithet suggest, *A. serpentaria* had a reputation as a snakebite remedy and would most likely have been included in the Cherokee repertoire on the occasion of an actual snakebite.

I am ambivalent about including James Mahoney's *The Cherokee Physician*; or, *Indian Guide to Health* (1857) in this work as it gives no background on the Cherokee practitioner, Richard Foreman, nor does it really discuss Cherokee ethnomedicine. However, it does use the Cherokee names for some illnesses and remedies, indicating some familiarity with Cherokee language and concepts. But even these are placed in a framework of mid-nineteenth-century, western-biomedical understanding of medicine and physiology. So while I include excerpts from Mahoney's work here, I urge the reader to view the authenticity of his portrayal of Cherokee ethnomedical practices with a healthy dose of skepticism.

Mahoney's first protocol for snakebite was to purge the patient with a powerful emetic, preferably *lobelia* (most likely *Lobelia inflata* or Indian tobacco, the preferred emetic of nineteenth century Thomsonian physicians). This treatment was followed by liberal doses of an infusion of the root of "rattle-snake's master," which he claimed could be harmlessly imbibed in large doses. This treatment would "cure the bite of the copper-head or rattle-snake, or any other poisonous reptile" (1857, 98). The plant commonly known as rattlesnake master is *Eryngium yuccafolium*, and Mahoney's description suggests that this is the case. He also claimed that "it is the most powerful and certain remedies for snake-bite now known" (1857, 267). It should be noted that Mooney claimed that starry campion, *Silene stellata*, was locally known in the Southern Appalachian region as rattle-snake's master, and he recorded the Cherokee name for *Eryngium yuccafolium* as *selikwaya*, or "green snake," because of the appearance of the leaves. However, Mahoney's description is more suited to *E. yuccafolium* than *S. stellata*, and in this case, I am confident that his reference is to the former.

Mahoney's alternative treatment was a bit more elaborate:

Apply the ligature or bandage and administer the emetic above as directed, and after the operation of the emetic, give a tea of piny-weed root freely. For an external application to the wound, make a plaster to the wound of equal quantities of salt, tobacco, indigo, and hog's-lard; pulverize the tobacco, indigo, and salt, then mix all the articles together and apply it in the form of a poultice. A free usage of spirits, such as whisky, brandy, etc., will be found of great benefit in all cases of bites or stings. I have ascertained from personal observation, that a person when intoxicated, cannot be poisoned by the bite of a snake. Many lives have been saved by the free use

of whisky and red pepper; indeed, I believe that whisky alone will save life in many instances, when the bite would prove fatal if an active remedy was not resorted to immediately. (1857, 98-99)

The “piny-weed” referred to in this protocol was most likely *Hypericum gentioides*, commonly known as pineweed due to its resemblance to a small pine tree. Mooney identified pineweed as such and commented that the Cherokee name, *natsiyusti* (“like a pine tree”), was based on the same observable quality (Cozzo 2004, 170). Mahoney recorded an almost identical Cherokee name (*no-tse-e-yau-ste*) in *The Cherokee Physician* and claimed that it “will cure the bite of a copper-head, or rattle-snake” (1857, 267). This is a close relative of the St. Andrew’s cross (*Hypericum hypericoides*) mentioned by Adair and could very well have a similar biochemical profile that would prove effective against snakebites. Whisky would have been an adopted remedy, but its remedial potential was well known to the Cherokee by the mid-nineteenth century.

Other herbal snakebite remedies mentioned by Mahoney include striped blood-wort, Indian *sanide* (sanicle?), mountain dittany, and the common green plantain (1857, 99). Stripped blood-wort may be stripped gentian (*Gentiana villosa*), blood-wort being a common name for closely related members of the Gentian family in the British Isles used to purify the blood (Allen and Hatfield 2004, 194). One of the North American common names is *Sampson snakeroot* (Crellyn and Philpott 1990, 378). Mahoney suggests applying the bruised leaves to the bite and taking a tablespoon of the juice of the plant every few minutes. Mahoney’s mention of Indian *sanide* may be a misprint by the publisher. Sanicle would easily be misread as *sanide* if the “c” and “l” were combined as one letter. This would make more sense, as North American members of the genus *Sanicula* are commonly

referred to as black snakeroot (Crellin and Philpott 1990, 99) and both Mooney (Cozzo 2004, 182) and Banks (2004, 83) make mention of *Sanicula canadensis* as a species of sanicle known to the Cherokee. However, neither mentions *S. canadensis* as a snakebite remedy. But it is also possible that this plant is not in the genus *Sanicula* at all. Indian sanicle is one of many common names for *Ageratina altissima*, also known as white snakeroot or white sanicle (Panter and James 1990). Mountain dittany is the common name for *Cunila origanoides*, a member of the mint family that fits Mahoney's description. He claimed, "It is very good for snake bite. In this case, the tea should be drunk freely, and the bruised leaves applied to the wound." A 1687 account of the tribes of Virginia referred to this plant as not a true dittany, but "mountain calamint," and claimed it would not only cure the bite of a rattlesnake but that the very smell of this plant would cause the snake to die (Hoffman 1964). The common green plantain, *Plantago major*, is a well-known wound healer, and Banks (1953, 101) claimed it was used as a Cherokee remedy for bee stings. According to Mahoney, "Bruise the herb and root and apply it to the wound, and at the same time take the expressed juice or tea freely." (1857, 99)

James Mooney, for all his writing on Cherokee culture, provided surprisingly little information about snakebite remedies. His primary discussion on the topic concerned *Silene stellata*, commonly known as starry campion or, locally in Southern Appalachia, rattlesnake's master (Mooney 1900, 295). He claimed that "the juice is held to be a sovereign remedy for snakebites, and it is believed that even the deadliest snake will flee from one who carries a small portion of the root in his mouth." The dried root was beaten and made into a poultice or chewed and applied to the bite. This application would cure the bite if applied within twenty-four hours, even if yellow liquid was seeping from the puncture.

In his field notes, Franz Olbrechts claimed it was another member of the *Silene* genus that was a primary snakebite remedy: *Silene virginica* or fire pink (Cozzo 2004, 150). As with Mooney's description of the use of *Silene stellata*, Olbrechts claimed that chewing on a piece of the root would ward off snakes. In case of an actual bite, the juice produced by chewing the root would be blown on the site in a counterclockwise direction. It is highly unlikely that these two species were confused by Mooney and Olbrechts. Even though they are classified in the same genus, the starry campion has white, fringed flowers, and the fire pink has red, showy flowers, making them easily distinguishable from each other, even to the untrained eye. However, their close botanical relationship would indicate that they may share biochemical similarities and were both efficacious against snakebites.

The other snakebite remedy discussed by Mooney was basswood (*Tilia americana*), the bark of which was chewed and placed on the site of a bite. He surmised that its usefulness might come from its association with the Thunder spirit and the fact that the basswood had a reputation of being immune from lightning strikes (Mooney 1900, 295). Banks added that a cold tea of the bark was drunk and applied externally when a dog was bitten by a snake (2004, 77).

Banks mentioned two new species not encountered by earlier ethnographers. The roots of hog peanut (*Amphicarpa bracteata*) could be used in place of chewing tobacco as a general snakebite remedy (2004, 67), and the roots of cocklebur (*Xanthium strumarium*) were chewed for a rattlesnake bite (2004, 113). In the case of *A. bracteata*, the root was brewed and blown on the bite accompanied by a song and a prayer. Cocklebur has a reputation in the Appalachian region as a snakebite remedy, but the part used was primarily the leaves instead of the roots (Crellin and Philpott 1990, 163-164).

Two other plants, hepatica or liverleaf (*Hepatica acutiloba*) and walking fern (*Asplenium rhizophyllum*) were combined in a decoction and used as an emetic for dreams of snakes (Banks 2004, 20), but it is not clear from the source if this was used to treat a dream snakebite or just for disturbing dreams of snakes. *Asplenium rhizophyllum* was known as *inatu ganka*, or “snake’s tongue” in Cherokee, because of the resemblance of this small fern to a serpent’s tongue (Cozzo 2004, 335).

In the opening epigraph, it was said that when poison was inserted into the tooth of the serpent, it was also placed in the wild parsnip. The wild parsnip mentioned here is not the feral relative of the European parsnip, *Pastinaca sativa*, but *Cicuta maculata*, also known as water hemlock or spotted cowbane. This is the most toxic plant in the Northern temperate zone, with the roots being the most toxic portion (Westbrooks and Preacher 1986, 128). It was used by the Cherokee primarily for conjuring, poisoning, and suicide, but there is also a reason it should be included in an article on snakebite remedies. According to Mooney, “Before starting on a journey, a small piece of the root is sometimes chewed and blown upon the body to prevent sickness, but the remedy is almost as bad as the disease, for the snakes are said to resent the offensive smell by biting one who carries it” (1900, 425). So, in this instance, one who used *Cicuta maculata* for the prevention of disease would also be well served to carry at least one of the roots reputed to repel snakes, thus avoiding two potential maladies on their journey. Or the traveler could rely on the method mentioned in the Payne/Butrick (n.d., Vol. 1, 21) papers: “Hunters, also, would wave their leggings and moccasins over fire, to secure protection from snakes.”

Historical ethnobotany is rarely an exact science. The earliest ethnographers had limited knowledge of native languages or indigenous botanical classification systems, and their botanical sophistication

would have applied to European species at best (Merrill and Feest 1975). Unless voucher specimens were collected and have been examined, it is impossible to verify the identity of plants described in historical works to the precise botanical species. However, the Cherokee were visited and written about by so many ethnographers, that speculation on the botanical species under consideration can be promoted with a high degree of certainty. What makes the Cherokee case unique is the linguistic evidence incorporated with botanical descriptions or species identification. The Cherokee names provided by Butrick or Mahoney can be cross-referenced with the linguistic materials collected by Mooney. Most of the plant specimens that he collected were identified to species by his colleagues at the Smithsonian Institution, some of the most capable botanists of his day. Olbrechts, also working under the aegis of the Smithsonian Institution, would have the same botanical support system as Mooney. Banks approached his research from both a botanical and ethnographic perspective, providing scientific, common, and Cherokee names. Such a treasure trove of ethnobotanical knowledge allows the descriptions of the past to be examined in a new light.

This paper clearly demonstrates that, as Adair noted, the Cherokee employed quite a number of remedies to deter and cure snakebites, many containing some reference to a snake in their common English names. Indeed, if some of the obscure references are counted, those referenced in this article are impressive: Seneca snake-root (*Polygala senega*), rattlesnake fern (*Botrychium virginianum*), rattlesnake root (*Prenanthes alba*), Virginia snakeroot (*Aristolochia serpentaria*), rattlesnake master (*Eryngium yuccafolium* and *Silene stellata*), black snakeroot (*Sanicula canadensis*), Sampson snakeroot (*Gentiana villosa*) and white snakeroot (*Ageratina altissima*). This would indicate the endurance of indigenous knowledge as it was transmitted to their Euro-American neighbors.

Several remedies also exemplify the homeopathic principle (“like cures like”) known to Western herbalists as the “doctrine of signatures.” According to this doctrine, an observable quality in a medicinal remedy is indicative of which symptoms it will alleviate. Typically, the feature under consideration is morphological in character, but it may also be the color, aroma, or habitat that indicates a remedy’s usefulness.

Mooney relates the concept to the Cherokee ethnomedical system in this manner:

Cherokee medicine is an empiric development of the fetish idea. For a disease caused by a rabbit the antidote must be a plant called “rabbit’s food,” “rabbit’s ear,” or “rabbit’s tail;” for snake dreams the plant used is “snake’s tooth;” for worms a plant resembling a worm in appearance, and for inflamed eyes a flower having the appearance and name of “deer’s eye.” A yellow root must be good when a patient vomits yellow bile, and a black one when dark circles come about his eyes, and in each case the disease and the plant alike are named from the color. A decoction of burs must be a cure for forgetfulness, for there is nothing that will stick like a bur; and a decoction of the wiry roots of the “devil’s shoestring” must be an efficacious wash to toughen the ballplayer’s muscles, for they are almost strong enough to stop the plowshare in the furrow. (1900, 329)

In the case of the Cherokee snakebite remedies, *Prunella vulgaris*, *Botrychium virginianum*, and *Polygala senega* all have portions that are held erect and resemble the rattle of the rattlesnake. Also, as mentioned above, the flower of *Pedicularis canadensis* resembles the fang of a rattlesnake, *Thalictrum dioicum* has an odor like that of a snake, and *Asplenium rhizophyllum* resembles the tongue of a snake. But,

from the small ratio of “signature” plants in relation to the whole, it appears unlikely that this would indicate selection criteria for determining snakebite remedies. While such a “signature” would serve as a potent mnemonic device for transmitting and retaining valuable cultural knowledge, stating, as Mooney does, that such an identifying feature must be present does not hold up when the whole range of potential remedies are considered.

Perhaps it should not be surprising that the Cherokee have so many remedies for snakebites. Snake venom is a complex cocktail of modified digestive proteins that have a direct effect on blood coagulation, the nervous system, the heart, and skeletal muscles (Koh, Armugam, and Jeyaseelan 2006). The Southern Appalachian homeland of the Cherokee is one of the most botanically diverse temperate bioregions on the planet. The combination of the seriousness of a snake’s bite and the wide range of available potential medicines would, in Adair’s words, lend itself to the knowledge of, “a variety of herbs and roots, which are plenty, and well known to those who range the American woods.”

Note

1. John Howard Payne Papers, Vol. 3, 82. n.d. Housed at the Newberry Library, Chicago, Illinois.

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