DOI: https://doi.org/10.4312/clotho.5.2.33-54

Pliny the Elder and Nicholas of Poland on Snake Products and Their Medical Applications

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One knows quite a lot about the significance of the snake itself in the culture of antiquity and later times, starting with the mythological story of Asclepius,[1] through stories connected with historical figures such as Cleopatra, to ancient treatises on medicine which described on the one hand how snake bites should be avoided and cured,[2] and on the other the use of snakes in medical procedures and pharmacology, such as for anesthesia and the treatment of various ailments. One can find references to snakes and their symbolic significance in Christian treatises,[3] not to mention many later works by different *medici* and scholars. In terms of the use of various medicines, one can distinguish two trends in medieval times, in the 13th and 14th centuries in Europe and specifically Poland, both, from our perspective, fantastic. However, as we shall see, the two trends are fantastic to various extents: there is a strictly medical trend, as well as a non-medical trend, which expands the framework for using various "magic" or folkloristic remedies. In this paper, I propose to focus on the extent to which one of the well-known representatives of medieval physicians in the Polish territory, Nicholas of Poland, reproduced both the fantastic and the more "medical" information on the use of snakes and vipers in the treatment of humans that appeared in the text of Pliny the Elder, author of the monumental

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1 See Luigi Bragazzi et al., "Asclepius and Epidaurus."

2 Voort, "Ancient Herpetology 1."

3 Libera, "Motyw lekarza i lekarstwa," Fondriest, "Animali d'Oriente," Wołoszyn, "Zrzuciłem duży kamień."

Historia Naturalis,[4] especially in the books 29 and 30 of this work.[5] This article aims to show the correlations and interrelationships between these texts, abstracting from earlier and later ancient accounts on the subject and the sources of Pliny the Elder himself and his continuators, which themselves will be discussed in another work.

Pliny the Elder, the encyclopedist who lived in the first century AD, and the physician Nicholas of Poland are separated by thirteen centuries, during which various fields of knowledge and science, including medical science, developed. By the beginning of the 14th century, several universities founded to teach medicine still drew profusely on ancient traditions: the Aristotelian and the Galenic. In Poland, the first Faculty of Medicine was not established until 1364 with the foundation of the Cracow Academy.[6] Nicholas of Poland, therefore, had to be educated outside the country, like a significant part of Polish scientists of that time.[7] Nicholas of Poland (also known as Nicholas of Montpellier), whose references to ancient medical concepts collected by Pliny the Elder are the subject of this article, was born about 1235 in Silesia and died in Cracow ca. 1316. He was a medieval Polish-German

4 Pliny the Elder undertook to describe the whole world as he knew it, all the manifestations of nature, however insignificant. He set out to do something new that none of the earlier authors had ever attempted. He wrote not to have his work read for entertainment but to be a mine of knowledge, a compendium in which to find all the information concerning the natural world and the benefits derived from it. He relied on the works he had read and on his own observation. His frequent mistakes can sometimes be explained by him taking notes by ear, incorrectly noting down certain facts, or simply misunderstanding a Greek phrase. Pliny was unquestionably a scientist – a man more concerned with passing on the knowledge and verifying it than with the applauding of his audience; a man deeply fascinated by the world around him and the uniqueness of nature, yet also recording superstitions, fairy tales, magical recipes, and even spells. See Migdał, "Nauka i magia."

5 These products were not only used to treat humans, but also animals. See, e.g., Plin., *HN* 30.148.

6 In 1950, it was separated from the Jagiellonian University and formed into an independent university, the Medical Academy in Cracow, later the Nicolaus Copernicus Medical Academy in Cracow.

7 The second half of the 12th century saw the establishment of universities in Montpellier, in Languedoc, in the south of France, and in Paris. In Italy, Salerno was in operation, although it soon lost ground to Parma and especially Bologna: both centers established medical schools particularly competent in surgery. This was soon followed by the center in Padua, to become the main hub of medical education in Europe in the centuries to follow. For more on Polish medicine treatises see Grzelak-Krzymianowska, "A Short Review."

friar and healer of Silesian origin.[8] As a member of the Dominican Order around 1250, he moved to Montpellier,[9] where he became a teacher in the Dominican school. Around 1270, he returned to Silesia and entered the Dominican convent at Cracow, where he, as an already famous and charismatic *medicus*, provided medical and spiritual care to ordinary people.[10] Nicholas represented an alternative medical movement that flourished in Upper Silesia in the late 13th century.[11] He was also a favorite doctor in the court of Leszek II the Black (Lestko Nigritius), the Duke of Sieradz, and his wife Griffine, and they both followed his medical advice.[12] Nicholas was educated at Montpellier when scholastic medicine was highly developed. However, Nicholas appears to have rejected the academic medical tradition, opting for an "empirical" medical system.[13] His drugs were based upon the principle that God had conferred "marvelous" virtues on the most common things like serpents and toads. Nicholas urged for the return to natural, anti-intellectual, and anti-scholastic methods of healing,[14] which corresponds perfectly with the ideas reported by Pliny the Elder. He was

8 According to Ganszyniec, Nicholas was probably *gente Germanus, natione Polonus*; see *Brata Mikołaja z Polski pisma,* 5.

9 He probably went there around 1250 for the *studium generale*, founded in 1248 by the Dominicans at the university. Montpellier was already famous for its medical science, with the university founded in 1180 and France's first faculty of medicine in 1221. So far, there is no documentary evidence that Nicholas graduated in medicine. For more, see Maciąg-Fiedler, "Medycyna cudowna."

10 For a comprehensive biography, see Ganszyniec, *Brata Mikołaja z Polski pisma*, 5–13; Eamon and Keil, "*Plebs amat empirica*."

11 Nicholas is often confused with his namesake, a physician who, like him, studied in France (or Italy) and was active in Greater Poland at the same time. There are many documents from the 13th and early 14th centuries in which *Nicolaus medicus* is mentioned, appearing at various princely courts. In some cases, in the absence of more precise information, it is difficult to determine unequivocally which Nicholas is being referred to. See Maciąg-Fiedler, "Medycyna cudowna," 159.

12 See Bielowski, "Rocznik Traski."

13 Eamon and Keil, "*Plebs amat empirica*," 180–96.

14 For this reason, among others, it is worth examining the relationship between the text of Pliny the Elder, who did not shy away from magical tales, and Nicholas, who, as it were, continued this way of thinking about healing. Except that Pliny was a historian and Nicholas had a medical education, hence one would expect a different, more methodical and scientific approach to the issues presented. He was not the only one who practiced in this vein, as a number of even more fantastic beliefs appear in the Pauline texts included in the codices – although it is difficult to judge how seriously this text can be taken.

the author of three works on medicine, two of them survived in Latin, *Antipocras* (*Liber empiricorum*),[15] *Experimenta* (authorship uncertain), and one in German, *Cyrurgia*.[16] In *Experimenta* (*de animalibus*),[17] in which information on the use of snakes for medical purposes appears, Nicholas provided patients with various natural animal remedies to be served in the forms of powders, drinks, pills, ointments, and oils.

Experimenta are a collection of prescriptions, so it is not easy to sketch a table of contents, although the text may be organized by animal: chapter 1 toads (with snakes and bears), chapter 2 green frogs, chapter 3 water frogs, chapters 4 and 5 vipers and snakes.[18] In one of the BDS2 manuscripts, there are two more chapters on the oil of philosophers, which are not considered in this article. Nothing is known about the original text. Numerous manuscripts examined by Ganszyniec are only to be found in Western Europe, so it may be assumed that it was probably written there, perhaps in Montpellier, which at the time was a center where many important scholars were gathered. The *Experimenta* is one of the texts very widespread in Eu-

15 In his polemical work *Antipocras*, Nicholas advocates for the empirical method of practice against "Hippocratic" physicians who offered nothing but lies hidden behind fraudulent words and authority. Nicholas wrote: "Pungat et artet eos, ut apud Cristum Phariseos / Fama carens laude maculataque pratica fraude, / Que non curare soleat, sed multiplicare / Morbos est solita re sordida, voce polita" (*Antip*. 336–39).

16 See Ganszyniec, *Brata Mikołaja z Polski pisma,* 14. The treatise is probably a later compilation.

17 On the title and the manuscripts, see Ganszyniec, *Brata Mikołaja z Polski pisma*, 127–35. The title *Experimenta* corresponds to the Greek word ἐμπειρικά, later *recepta*. Frequently encountered as a title in the 13th century and later, the word is not peculiar only to medical texts, but appears wherever knowledge and research rely on experience. Only in one manuscript (B) does the work bear the title *Experimenta de animalibus*, probably not authentic.

18 In one of the editions of the text of the *Experimenta* of Nicholas of Poland (L3 of the late 15th century), the parts on snakes, i.e. chapters 4 and 5, are assigned to *Experimenta XII Johannis Paulini*, published in 1913 by John W. S. Johnsson in *Bulletin de la Société française d'histoire de la médecine,* 257–67. *Experimenta Paulini* can almost always be encountered in connection with the text of Nicholas. Paulinus is quite unknown; he probably lived in the second half of the 13th century and probably around where Nicholas was. He may have been associated with Montpellier. Some kind of relationship existed between the two *medici*, but it is not known what kind. It is noteworthy that Paulinus gives not only the medical uses of snake powder but also its more mystical uses, which Nicholas, in turn, fought against in his work *Antipocras*. See Ganszyniec, *Brata Mikołaja z Polski pisma*, 128.

rope and is undoubtedly related to other texts that originated in this medical environment. Nicholas of Poland is given as the author of the text, but it is proved that chapters 6 and 7, and probably also 1–5, were not penned by him. As Ganszyniec suggests, it can be concluded that this is a text written according to the instructions or perhaps the recollections of some physician. It was likely collated and published under the name of Nicholas, a well-known and respected figure of the time, although probably without his knowledge.[19]

I want to take a closer look at the relationship between *Experimenta* and Pliny's monumental text. This is an intriguing issue, as on the one hand, one can focus on the first-century text in 37 books in which Pliny the Elder, passionate about science, cites the achievements of knowledge as well as the various ideas and beliefs of the ancients about the world as they knew it,[20] and on the other, there is Nicholas of Poland, a Montpellier-educated physician who, during his studies, must have become familiar with the achievements and concepts of antiquity, as well as the various medical ideas and visions circulating in his time.

The first mention of snakes appears in *Experimenta* after a short introduction, which is, as it were, a praise of Nicholas of Poland himself.[21] The author begins the text by describing how to produce an efficacious powder (*pulvus*) of a toad, which can also be made from other animals such as snakes or scorpions (*simili modo fac pulverem de serpentibus et de scorpionibus*).[22]

19 Ganszyniec, *Brata Mikołaja z Polski pisma*, 128.

20 The ideas about plant and folk remedies appear in Stannard, "Medicinal Plants."

21 "Incipiunt Experimenta Fratris Nicolai, medici de Polonia, qui fuit in Monte Pessulano xx annis, qui tante fuerat experientie, quod ante ipsum non creditor similis ei fuisse, nec speratur de future: sicut patet in miris operibus suis, in diversis provinciis et regionibus curas magnas et subita faciendo." (And here begin the tried and tested cures of Brother Nicholas, a Polish physician who had been in Montpellier for 20 years, and was so experienced that it is said that no one was his equal, nor will be, as is evident from his miraculous activity, as he performed great and prompt cures in various districts and neighborhoods.) (*Exp.* 1–5) All the quotations from Nicholas of Poland's work follow Ganszyniec, *Brata Mikołaja z Polski pisma*. All English translation by the author.

22 The same method can be used to prepare powder from any animal; a toad and a frog (attested also in Pliny, *HN* 32.67, 32.121; Pedanius Dioscorides 2.26; Galen 12.362), a hare (Marcellus Empiricus 26.109), a goat (ME 26. 94), or a scorpion (Rhazes, *Ad Mansorem* 9.73). "Nota quod isto modo pulverizabis: recipe tres buffones vel quattuor, et pone in olla recenti, et obturabis cum argilla ita quod non possit evaporare; et tunc pone iuxta ignem ita distanter quod non comburantur intus, sed solum desiccentur. Et per scitum, quando concucies ollam, percipies quando sunt bene siccati ita quod possint pulverizari: tunc depone de olla. Si

It is not a new method or an extraordinary recipe. This kind of treatment was already examined and prescribed in ancient times. Descriptions of the animal powder production are found in Pliny 29.98 (*oportet autem comburi omnia eodem modo ut semel dicamus, in vase fictile novo argilla circumlito atque ita in furnum indito; idem et in potione proficit*)[23] and in 30.119, where he mentions that the animals should be burned alive (*vivas quoque cremare*; *viperam vivam in fictili novo comburare*). The viper or snake powder[24] and its use is mentioned several times; ash made of viper's head mixed with cypress oil was supposed to effectively treat hard lumps in the sinews (*nervorum nodis capitis viperini cinis in oleo cyprino,* 30.110). The same body part, dried and then burned and served with vinegar (*viperae caput aridum adservatum et combustum, dein ex aceto inpositum,* 30.106), helps with the condition known as erysipelas. The medicine prepared from the incinerated head of a viper, known as *echeon*, was also supposed to help with eye diseases and dysfunctions such as cataracts or dimness of vision (*viperam vivam in fictili novo comburare addito feniculi suco ad cyathum unum et turis manna una, atque ita suffusiones oculorum et caligines inunguere utilissimum est; id echeon vocatur* – 29.119). Elsewhere in his work, the author of *Natural History* mentions that ash obtained from an adder burned with salt applied to the tip of the tongue not only improves eyesight but is also good for the stomach and other unhealthy parts of the human body (*et uritur in olla cum sale quem lingendo claritaem oculorum consecuntur et stomachi totiusque corporis tempestivitates,* 29.120; *effectum ostendit et per se capitis*

autem nondum sunt desiccate, perfecte desicca in vento ad umbram; et postea contere minutissime in mortario. Et poste repone in vase vitreo bene obturato ita quod non possit evaporare." (*Exp.* 1.3) (The main steps we need to follow to prepare it are the following. We should take three or four toads. One shall put animals in a new pot and seal it with clay to avoid evaporation. Next the pot should be placed near the fire to make the animals dry out, but it must be done carefully not to burn them. To check if the animals are ready to be pulverized, one should shake the pot and decide whether they are already dried out and suitable for powdering. Then the burnt animal must be removed from the pot, dried in the wind and shade if necessary, then pulverized in a mortar. Finally one shall place the powder in a glass container and seal it tightly.)

23 All the quotations follow Jones, *Pliny.*

24 In the case of Pliny's text, there are descriptions of the use of both different species of snakes and vipers. Pliny the Elder himself states that the viper is only one kind of snake, one that hides underground (*HN* 8.59). He mentions different species of snakes and their uses. In this article they are treated all together. For more on the species of snakes in Pliny the Elder, see Böhme and Koppetsch, "Snake Names."

viperini cinis; utilissime eo oculos inunguit … 30.121). Pliny also cites that a remedy made of salt burned in a new clay pot with an adder and rose oil sprinkled into an infected ear cures all diseases, and that this kind of concoction also helps the gums and facilitates tooth loss (*serpentis cum sale in olla exustae cinis cum rosaceo in contrariam aurem infusus … eadem cavis indita ut sine molestia cadant praestat,* 30.25). With powdered viper mixed with bull's tallow, or powder from an incinerated snake served in oil or wax, cases of scrofulosis, a form of tuberculosis that attacks the lymph nodes in the neck, were also treated (*item cinis aspidum cum sebo taurino inponitur, anguinus adeps mixtus oleo, item anguium cinis ex oleo inlitus vel cum cera*, 30.37). In this case, drinking powder from a snake was also supposed to help, especially from a reptile that had died in wheel ruts (*edisse quoque eos medios abscissis utrimque extremis partibus adversus strumas prodest, vel cinerem bibisse in novo fictili crematorum, efficacius multo inter duas orbitas occisorum*, 30.37). In addition, ash obtained from viper's skin was used to combat alopecia, i.e., hair loss (*pellium viperinarum cinis alopecias celerrime explet,* 29.109). Viperine ashes were also included in ointments for the treatment of various wounds such as snakebites or viper bites (*viperae caput inpositum, vel alterius quam quae percusserit, sin fine prodest, item si quis ipsam eam in vapore baculo sustinat, aiunt enim recanere, item si quis exustae eiusdem cinere inlinat*, 29.69).

In *Experimenta*, less elaborate mechanisms for using snake powder are described. Nicholas of Poland writes that by adding it to wine and drinking it in the morning and the evening, we can cure stones in any body part, e.g., in the kidneys or bladder, which seems a much more palatable solution than mixing it with vinegar, as suggested by Pliny.[25]

> Ad calculum frangendum in quocumque loco fuerit, sive in renibus, sive in vesica – Recipe pulverem serpentis et pone in vino modicum, et da pacienti bibere mane et sero. (*Exp.* 1.1)
>
> To remove stones anywhere possible, whether in the kidneys or bladder, take a little powder from a snake, add a little to the wine, and give the patient to drink morning and evening.

Like Pliny the Elder, the author of the *Experimenta* finds powder effective in treating various types of wounds. Still, the form of this

25 According to the old Polish tradition, it was believed that roasted reptiles, lizards and snakes in the form of ashes should be drunk, as this potion protects people from being bitten by a snake. See Majewski, *Wąż w mowie*, 348.

treatment of Nicholas differs significantly from the one described by the Roman writer. According to Nicholas, the wound should be sprinkled with the powder once a day in winter, twice in summer, and wrapped in a linen sheet. The procedure should be repeated until the wound is healed (*Exp.* 1.4). This type of powder heals various types of wounds (*vulnera*), ulcers (*ulcera*, *apostemata*) and inflammations (*inflaturae*), as well as toothaches (*dolor dentium*). It can be moistened with saliva and applied to a wound or placed on a sore tooth. The *medicus* writes:

> Ad omnia etiam ista valet pulvis serpentis, maxime ad apostemata et ad dolorem dentium, si intus de ipso ponatur; et vulnera, si cum sputo linita circumligetur super apostemata vel vulnus, cito curat. (*Exp.* 1.6)
>
> Snake powder is helpful for all these problems, especially for abscesses and toothache if applied internally; it will also quickly heal wounds if mixed with saliva and applied around the wound or abscess.

Other uses of snake powder not mentioned by Pliny the Elder include its use during childbirth. Simply attaching it to the abdomen of a woman in labor could speed up delivery.

> Valet etiam predictus pulvis serpentis mulieri laboranti in partu: ligetur predictus pulvis super nudum ventrem et statim parit. (*Exp.* 1.7)
>
> The aforementioned snake powder also helps the woman in labor; attach this powder to the bare abdomen, and the woman will then give birth immediately.

The skin of the serpent eaten cooked or tied to the abdomen of the parturient will also have a similar effect.

> Pellis etiam serpentis mulieri laboranti in partu ligata super ventrem, mulierem statim parere facit. Pellis cocta et comesta idem facit quod et sepens. (*Exp.* 4.11)
>
> The skin of the snake attached to the abdomen of the woman in labor makes the woman give birth immediately. The skin cooked and eaten brings the same as the snake.

For this purpose, however, Pliny encourages using a snake slough placed in the lumbar region. He writes that it facilitates childbirth but should be removed immediately afterward. However, when drunk with

wine and mixed with frankincense, it causes miscarriage (*anguium senectus adalligata lumbis faciliorem partus facit, protinus a puerperio removenda; dant et in vino bibendam cum tuere, aliter sumpta abortum facit,* 30.129). A serpent's slough, as the Magi claim according to Pliny, attached to the patient's body in a piece of bull skin prevents spasms (*serpentinum senectus in pelle taurina adalligata spasmos fieri prohibet,* 30.110). In his *Naturalis Historia*, the author cites the use of snake's slough for treatment very frequently, much more so than the skin itself. According to Pliny, snake slough applied to the skin immediately after bathing together with bitumen and lamb tallow cures, as does snake ash with vinegar, the affliction of erysipelas (*senectus serpentinum ex aqua inlita a balneo cum bitumine et sebo agnino,* 30.106). Snake slough in vinegar mixed with turtle bile, the alleged treatment for a great many conditions, was considered an effective remedy for purulent discharges from the ears (*idem [fel testudinum] cum vernatione anguium aceto admixto unice purulentis auribus prodest; quidam bubulum fel admiscent decoctarum carnium testudinis suco, addita atque vernatione anguium; sed vino testudinem excocunt*, 32.37). Snake slough heated in oil and pine resin used in torches and applied to each ear would supposedly also help with ear pain and other problems (*vernationis membrana cum oleo taedaeque resina calefacta et auri alterutri infusa,* 30.24–26); similarly, a concoction made of old snake slough and vinegar, wrapped in a strip of wool, would help with hearing disorders. Snake slough boiled in wine was seen as effective in treating scars, but also leprosy (*cicatrices ad colorem educit … vernatio anguium ex vino decocta … item vitiligines albas, vitiliginem et cantharides cum rutae foliorum duabus partibus*, 30.120). Slough was also used to treat all types of warts (*verrucas omnium generum … membrana senectutis anguium,* 30.81). In pulverized form or mixed with vinegar, honey, and resin, it was used for the treatment of ulcers and other anal region diseases (*sedis vitiis efficacissima sunt … senecta serpentis ex aceto,* 30.69). A cooked slough in a tin pot with rose oil would presumably help with dysentery and painful constipation (*senectus anguium dysinteriae et tenesmis in stagneo vase decoquitur cum rosaceo, vel si in alio, cum stagno inlinitur,* 30.60). The slough dropped from a snake was understood to have the power to cure lice in three days if put in a drink (*phthiriasim et totius corporis pota membrana senectutis anguium triduo necat, serum exempto caseo potum cum exiguo sale*, 30.144). In addition, snake slough would also be used to treat epilepsy *([comitialibus morbis][26] praedicatur et iocur*

26 In Rome, epilepsy was known as *morbus comitialis* ("disease of the chamber"), a curse sent by the gods. See "epilepsja" in Zieliński, *Słownik pochodzenia nazw.*

milvi devoratum et senectus serpentium, 30.93). Viperine skin or slough obtained in spring and mixed with fat would be rubbed on eyes to improve vision (*iumentorum oculis membrana aspidis quam exui vere, cum adipe eiusdem claritatem inunctis facit*, 29.121); rubbed with a male crab in wine, it was supposed to help with the bite of a rabid dog and, if placed in chests of drawers, it was attributed the power to kill moths (*[in canis rabidi morsu tuetur a pavore aquae] membrana sive senectus anguium vernatione exuta cum cancro masculo ex vino trita, [nam hac etiam per se reposita in arcis armariisque tineas necant]*, 29.108).

Nicholas of Poland did not forget the skin of a viper or snake – no part of the snake was to be wasted. He found it to have numerous uses in alleviating various ailments. Similarly to Pliny, he wrote that the inside part of a snakeskin, dried and placed on a tooth, would reduce pain.

> Pellis autem serpentis exsiccata a parte interior, que est circa carnem, si ponatur supra dentes, omnino dolorem mitigate, maxime ex calida causa. (*Exp.* 4.8)

> Snakeskin dried from the side against the meat and placed on the tooth reduces pain, especially one caused by a warm thing.

Snakeskin, like in the case of Pliny's slough or snake powder, when applied to any ulcer or cancer on the face or even a difficult-to-heal wound, would supposedly heal it quickly and soothe the pain. In addition, it would ensure that no trace of the treatment remains. Nicholas' snake powder was deemed to have a similar effect.

> Pellis autem serpentis cum sputo linita ex parte carnis et super omne apostema et noli me tangere posita, cito frangit et dolorem, leniter putrescere facit, et quasi nullam cicatricem dimittit. Et hoc probavi. (*Exp.* 4.9)

> Pellis enim serpentis linita ut prius, apposite ad omnia vulnera quantumcunque gravia, dolorem mitigate, leniter putrescere facit, et quasi nullam cicatricem dimittit. Et hoc probavi. (*Exp.* 4.10)

> In turn, the snakeskin, anointed with saliva from the flesh side and placed on any ulcer or cancer of the face, quickly opens it, soothes the pain, makes them rot gently, and leaves almost no scar. And this I have tried out.

> The skin of the snake, anointed as before, laid on any wounds, though severe, soothes the pain and makes them decay gently, leaving almost no scar. This I have also tried out.

Another use of reptiles, clearly present in Pliny the Elder and later in Nicholas, is the consumption of either a whole snake or one of its parts, prepared appropriately. This should come as no surprise. The consumption of snakes itself in ancient times came into use through the customs of certain peoples, notably, the Italic Marsi, whose country the Romans considered to be the home of witchcraft (Hor. *Sat.* 1.9.29; *Ep.* 17.28), and their main deity Angitia, a goddess of healing, especially skilled in curing serpent bites by charms and the herbs of the Marsian woods.[27] However, it is worth mentioning at the outset how one would go about preparing a reptile for consumption. Pliny the Elder mentions several times in his encyclopedic work the need to prepare the animal properly before it can be consumed. First of all, as the author notes, a good plan according to some is to eat the middle of the snake, but first cut off its marginal parts (*edisse quoque eos medios abscissis utrimque extremis partibus adversus strumas prodest, vel cinerem bibisse*, 30.37). After killing a viper, it is essential to put salt in its mouth and let it dissolve, then cut off the front and back of the reptile to the length of four fingers,[28] remove the entrails,[29] and cook the rest in water with olive oil, salt and dill (*primum omnium occisae statim salem in os addi iubent donec liquescat, mox quattuor digitorum mensura utrimque praecisa exemptisque interaneis discoquunt in aqua, oleo, sale, aneto, et aut statim vescuntur aut pane colligunt, ut saepius utantur,* 29.121). Adders prepared in this way can be eaten immediately or mashed into a loaf and eaten from time to time. A broth can also be prepared, as it has the property of cleansing the body of lice

27 Here one can still point to pseudo-Democritus (Plin., *HN* 10.137; 29.72); "Democritus tradit nominando avis quarum confuso sanguine serpens gignatur, quem quisquis ederit, intellecturus sit avium colloquia." Descriptions of snake-eating appear also in Galen, and later in Dioscorides, Aetius, and Paul Aegineta. For more on snake bites and various tribes, see Voort, "About Snake Bites."

28 Even in antiquity, nobody really knew why the tail should be cut off; probably, they found it meatless and skinny, ἄσαρκον (Dioscorides 2.16). Perhaps it was believed that these parts were poisonous. As for the head, this is also not entirely clear; we know they believed in the magical powers of the snake's tongue. It was supposed to be an amulet against misfortune, according to Pliny (*HN* 30.98).

29 The *viscera* were not used because they were believed to contain venom, especially bile (Plin., *HN* 11.163, 19.122); but sometimes they were also used to cure (Plin., *HN* 29.22).

and removing itching (*ius praeter supra dicta pediculos e toto corpore expellit pruritusque etiam summae cutis,* 29.121). To prepare the tablets, one would cut the viper's body three fingers from the head and tail, removing the intestines and the blue vein adjacent to the spine, then boil it in a shallow pot in water with dill, the bones removed, wheat flour added, forming the tablets and drying them in the shade (*fiunt ex vipera pastilli qui theriaci vocantur a Graecis, ternis digitis mensura utrimque amputatis exemptisque interaneis et livore spinae adhaerente, reliquo corpore in patina ex aqua et aneto discocto spinisque exemptis et addita similagine atque ita in umbra siccatis pastillis quibus ad multa medicamenta utuntur,* 29.70). Such tablets had many medical uses.

In *Experimenta,* one can also find information regarding preparing theriac, a remedy known well since antiquity, although the word's meaning has not been fully clarified yet. For Nicholas, theriac was made of green frogs (*ranae virides*, 2.1., 138), while Pliny insisted that it should only be made from a viper (29.70).

Nicholas of Poland also gives other valuable advice on eating snake meat in chapter 4 of his work *Experimenta*. He states after ancient authors, including Pliny, that first, the snake must be killed, and then its tail and head must be cut off to the length of four fingers. Then, its blood must be squeezed out and stored in a glass container. The snake is flayed, the skin dried, and then hidden in a safe place. He writes as follows:

> Accipe serpentem et interface; et post abscinde totam caudam per locum per quem stercorizat, et deinde caput ad longitudinem quattuor digitorum et plus. Postea accipe residuum, et sanguinem exprime in aliquo vase, et conserva in vitro diligenter. Postea excoria ad modum anguille, incipiendo a parte grossiori et pellem pone super lignum, et exsicca; et post scinde per medium et conserva diligenter. Omnia enim ista sunt multum necessaria, sicut inferius patebit. (*Exp.* 4.1)

> Take a snake and kill it, then cut off the whole tail from the anus and the head up to the length of four fingers. Then, take the rest, squeeze the blood into some vessel, and hide it carefully in glass. Then skin it like an eel, beginning with the thicker part, and lay the skin on a tree and dry it; then cut it open in the middle and hide it carefully, for all this is very necessary, as I shall show below.

Viper or snake meat, according to Pliny the Elder, had many applications and could be prepared in various ways. It could be used to

make soup, as mentioned above. In addition, Pliny mentions the use of its individual parts. For example, powder from empty snail shells, mixed with wax, was supposed to prevent rectal prolapse, but only when mixed with a substance extracted from the brain of a viper when its head is pricked. The same brain wrapped in a piece of skin attached to a baby's body would facilitate teething, as would snake teeth (*cerebrum viperae inligatum pellicula dentitiones adiuvat. Idem valent et grandissimi dentes serpentium*, 30.137). A snake's brain would presumably work in a similar way, as would a stone pulled from the head of a boa constrictor, which the snake was supposed to spit out when it feared death. The snake needed to be startled and killed, the stone pulled out, and then placed around the child's neck. Boiled viper in three semsisextarii of oil after draining was used as a depilatory for excessive or unwanted hair (*quidam in tribus heminis olei discoctunt viperam, exemptisque ossibus psilotri vice utuntur evolsis prius pilis quos renasci nolunt,* 30.133). The consumption of viperine meat after an unsuccessful ulcer operation was recommended by the physician Antonius, as it was supposed to quickly help (*Antonius quidem medicus cum incidisset insanabilia ulcera, viperas edendas dabat miraque celeritate persanabat*, 30.117). Pliny writes that eating cooked viper's liver once prevents all snake attacks and bites (*horum [hydri] iecur servatum adversus percussos ab his auxilium est,* 29.72). On the other hand, consuming the liver of a water snake or hydrus, crushed and added to a drink, was purportedly helpful for urinary tract stones. Allegedly, snake bones applied with the rennet of any four-legged animal within two days healed a wound after an arrow, other sharpened weapon, or foreign substance that had been pulled out of it (*harundines et tela quaeque alia extrahenda sunt … cum leporis coagulo efficacissime ossa anguium*, 30.122). Snake teeth cured toothaches (*dens anguium adalligatus dolores mitigat,* 30.26), and a snake heart, extracted from a live animal with the left hand, used as an amulet, helped with fever and paroxysms within three days. The heart of a snake would be consumed or carried on the body to aid teething in children. And wearing the right eye of a snake as an amulet was ostensibly effective for defluxions of the eyes, provided the snake was released afterwards (*serpentis oculum dextrum adalligatum contra epiphoras prodesse, si serpens viva dimittatur,* 29.131). Pliny the Elder furthermore mentions the use of snake entrails as an effective treatment for wounds when applied directly (*praeterea constat contra omnium ictus quamvis insanabiles ipsarum serpentium exta inposita auxiliari*, 29.71). However, the entrails were generally

removed because they were believed to contain poison; snake bile was believed to be particularly harmful.[30]

In the text of Nicholas of Poland, there is also a great deal of information on the use of snake meat. First, it is worth mentioning that he discusses the possibilities of its preparation in much greater detail. While in Pliny one had to do with raw meat, boiled or dried, according to his medieval Polish counterpart, snake meat could be boiled or fried. Nicholas tells precisely how snake meat should be prepared. First, one must wash the snake well and put it in a good wine with salt for an hour.[31] Then, it should be cut into pieces, put in a bowl, and cooked in wine with spices.[32] The snake could also be roasted.[33] One was supposed to roast it until the bones were visible, but one had to be careful not to burn it. However, Nicholas wrote that not every snake is suitable for consumption.[34] As explained in *Experimenta*, eating snake meat seemingly had many health-promoting properties. Nicholas devotes an entire section of his text to snakes, in which he not only encourages everyone to eat a snake from time to time,[35] but also lists what that can help with:

> Serpens enim comestus ab omni lepra futura preservat et presentem palliat, iuventutem et bonum colorem suoer omnes medicinas conservat, ab omni canicie custodit, oculos clarificat, a caduco morbo

30 Snake bile, however, had positive properties. The gall of the boa was highly vaunted for the cure of albugo and cataracts upon the eyes (Plin., *HN* 29.38).

31 Pliny also refers to the storage and preparation of snakes in wine and salt. It is interesting to note that, according to the author of *Naturalis Historia*, the very salt in which the snake was stored or prepared has medicinal properties and helps, for example, in the treatment of ulcers (Plin., *HN* 30.39).

32 "Postea incide frustratim, et pone in poto, et decoquas in duabus partibus vini; et postquam bene coctum fuerit, condias brodium cum bonis speciebus et sic comedes et aliis dabis" (*Exp.* 4.1).

33 "Vel si vis assare, assa tantum, quod ossa incipient apparere, non tamen comburendo, et tunc poteris comedere. Vel si vis, assa tantum, quod possis in mortario pulverizari." (*Exp.* 4.2). Nicholas recommends that this dish, prepared this way, be served at every meal, especially to kings, leaders, and other nobles because of their merit and horror (*propter honorem vel horrorem*).

34 According to Nicholas of Poland, only mountain snakes, pet snakes, and those with a white belly and black back can be eaten. One should not eat snakes that are blind (the blindworm was believed to be the most venomous of all snakes), have a lot of tails, and dragons, which is also linked to tradition (*Exp.* 4.4).

35 "Et breviter secundum doctrinam Fratris Nicolai omni homini, in quocunque statu sit, expedit, ut serpentem, quocunque tempore habere possit, comedat" (*Exp.* 4.3).

> future preservat, caput purgat, ab omni infirmitate gravi et longa custodit, morpheas et scabies et omnes infirmitates similes supradicto modo comestus expellit. (*Exp.* 4.3)
>
> For the consumption of the serpent, if it is consumed in the manner described above, protects from all future leprosy and expels the present one, preserves youth and a good complexion better than any medicine, insures against all gray hair, removes the clouding of eyes, protects from future epilepsy, cleanses the head, saves from all severe and prolonged illnesses, expels leprosy and scab and all similar diseases.

In addition, consumption or indirect ingestion of snake meat was supposed to help with deafness (*a surditate liberat, Exp.* 4.5), which is why people should feed snakes to hens or geese (*pullos et anseres,* Exp. 4.6). The consumption of storks (*ciconie, Exp.* 4.7) was described as having a similar effect, as these feed on toads and snakes.[36]

Pliny the Elder also cites the ancients' beliefs about the health--promoting properties of fat extracted from vipers and snakes. Presumedly, snake fat could effectively treat burns (*ambustis … medetur … adips viperinus,* 30.109), and when massaged into the feet, it would help with gout (*sale quidam cum vipera crematus in olla nova saepius sumpto aiunt podagra liberari, utile esse et adipe viperino pedes perungui,* 30.77). Snake fat mixed with oil or wax, added to drink, or eaten was allegedly an excellent treatment for ulcerated scrofula (*cocleae cum testa sua tusae inlinuntur, maxime quae frutectis adhaerent, item cinis aspidum cum sebo taurino inponitur, anguinus adeps mixtus oleos, iem anguium cinis ex oleo inlitus vel cum cera*, 30.37). Viper fat and snake fat were used as an eye ointment (cf. 29.119). Viper's fat boiled with one sextarius of olive oil and added to a person's body would seemingly repel all kinds of harmful animals (*quidam purgatae ut supra dictum est adipem cum olei sextario decocunt ad dimidias. ex eo, cum opus sit, ternis stillis additis in oleum perunguntur ut omnes bestiae fugiant eos,* 29.70). Dragon's fat dried in the sun would conceivably also help with ulcers (*draconum quoque adeps siccatus in sole magnopere prodest,* 30.117), and rubbing oneself morning and evening – as Pliny writes about the magical beliefs of some healers – with a dragon's tongue, eyes, bile, and intestines cooked in oil and cooled outside at night was supposed to help with delirium and nightmares (*rursus Magi tradunt … eos vero qui a nocturnis diis Faunisque agitentur draconis lingua*

36 Cf. also Plin., *HN* 29.105, 10.62.

et oculis et felle intestinisque in vino et oleo decoctis ac sub diu nocte refrigeratis perunetionibus matutinis vesperitinisque liberari, 30.84).

Nicholas of Poland, similarly to Pliny the Elder, stated that if fat was rubbed around the eyelids, it would cure flushing and blotchiness and all disease, and remove cloudy eyes.

> Arvina vero serpentis omnem rubedinem recentem et maculam et omnes infirmitates oculorum cito curatl iuncta circ palpebras oculos etiam supra modum clarificat. (*Exp*. 4.13)

> And the serpentine fat cures all erythema and spots and all diseases of the eyes quickly if it is rubbed near the eyelids, and it removes the clouding of the eyes in an extraordinary way.

In Chapter 5 of the *Experimenta*, a way to prepare snakeskin ointment is given, and there is a description of its applications. To prepare it, one was supposed to take two, three, or four live snakes, put them in a new clay[37] pot on the bottom, and fill the pot with butter, made in May. One would then cover it with a lid and seal it with strong batter so that nothing could evaporate. Only a small hole at the front could be left uncovered. Then, the pot would be placed over heat and cooked for half a day. The butter would be strained through a linseed sheet and what was left of the snakes would be crushed in a mortar, strained again, and mixed. Finally, the mixture would be cooled and stored in silver, gold, or glass boxes so that it would not evaporate. The longer one aged the ointment, all the way up to 40 years, the more valuable it would become (*Exp*. 5). The properties of a mixture thus prepared were supposed to be many. First, it presumably helped treat rheumatism and paralysis in the area where it was rubbed.

> De isto unguento infirmus, paciens guttam vel paralysim in quocunque loco, ungat ad ignem frequenter et evadet absquae dubio. (*Exp*. 5)

> If you suffer from rheumatism or paralysis in any part of your body, use this ointment to rub yourself frequently by the fire, and you will undoubtedly be cured.

In Pliny the Elder, remedies from vipers and snakes also appear in the form of ointments prepared from fat (cf. 29.119) or from reptile ashes mixed with oil (cf. 29.121). A gripping passage in *Historia Naturalis*

37 A new earthenware vessel is also used in Pliny (*HN* 30.12).

describes how to prepare a cure for eye diseases. According to Pliny, one was supposed to leave the adder in an earthenware vessel until it rotted and then mash it with saffron and with the worms that had nested in it (*viperam vivam in fictili novo comburere addito feniculi suco ad eyathum unum et turis manna una, atque ita suffusiones oculorum et caligines inunguere utilissimum est*, 29.119). An ointment containing snake powder was also seen as effective in treating wounds (cf. 29.70). In Pliny's work, a use of snake products appears which is not found in *Experimenta*, namely fumigation with dried snake, which is likely to have an emmenagogue effect (*anguis inveterati suffitu menstrua adiuvant*, 30.128). In *Experimenta* attributed to Nicholas of Poland, snake blood still appears as essential for women and beauty. Snake's blood was used to rub the face like a lotion, professedly letting the skin remain beautiful with no spots. It also allegedly removed the unpleasant odor of teeth and gums.

> Sanguis autem serpentis plus valet quam balsamum: quia labia linita ex eo domicelle rubicunda facit valde. Facies etiam linita hoc sanguine nullam maculam recipit, faciem pulcram, rubicundam et serenam reddit, omnem scabiem non solum in facie, verum etiam in toto corpore, ubicunque linitum fuerit, (aufert); tollit et fetorem dentibus et gingivis, ubi cum inunxeris. Ista omnia domine multum diligent, et sunt vera sicut probavi. (*Exp*. 4.12)

> And the blood of a snake is worth more than a lotion because the lips of a maiden anointed with it redden very much. A face anointed with this blood does not receive any stains; it gives the face frothiness, redness, and cheerfulness, banishes any scab not only from the face but also from the whole body, wherever it is rubbed, and abolishes the unpleasant smell of teeth and gums if only you rub them with it. All this the ladies like very much, and it is true, as I have tried it out.

As one can imagine, Nicholas of Poland's text must have provoked various emotions; the methods of treatment and healing he promoted among the people of Lesser Poland, might not have been entirely new and original, but they were nevertheless controversial. Although his method *fuit abhominabilis omni populo,* even "Lord Leszek, the duke of Sieradz, along with his wife Griffine … began to eat serpents, lizards and frogs, because … they were efficacious medicaments."[38]

38 Bielowski, "Rocznik Traski" (*dominus eciam Lestco dux Syradie cum uxore sua Griphina … cepit comedere serpentes, lacertas et ranas*).

Despite the development of medical thought and knowledge in the centuries separating them, both Pliny and Nicholas of Poland present remarkably similar medicines derived from snakes and vipers. Both described how to prepare serpent powders, how to prepare serpent meat for consumption, how to make serpent ointments, pills, and compresses from serpent powder or fat. All parts of these reptiles, their guts, skin, organs, slough, fat, teeth, or blood, were used in pharmacology. Both Pliny and Nicholas of Poland even seem to have had similar aims in describing the different types of serpent medicines. Pliny clearly states that he aims to benefit humans:

> Quid ergo? dixerimus herbas et florum imagines ac pleraque inventu rara ac difficilia, iidem tacebimus quid in ipso homine prosit homini ceteraque genera remediorum inter nos viventia, cum praesertim nisi carenti doloribus morbisque vita ipsa poena fiat? minime vero, omnemque insumemus operam, licet fastidii periculum urgeat, quando ita decretum est, minorem gratiae quam utilitatium vitae respectum habere. (Plin., *HN* 28.1)

> Well then, shall I, who have described plants and forms of flowers, including many rare things that are difficult to find, say nothing about the benefits to man that are to be found in man himself, nothing about the other kinds of remedies that live among us, especially as life itself becomes a punishment for those who are not free from pains and diseases? Indeed, I must, and I shall devote all my care to the task, although I realize the risk of causing disgust since it is my fixed determination to have less regard for popularity than for benefiting human life.

Nicholas, on the other hand, wanted to develop an extraordinary medical art that could work miracles and help relieve all ailments. He asserted that by treating diseases among various nations, he was doing admirable things and performing miracles (*in pluribus nationibus morbos curando mira ac stupenda gessi*).[39] Thus, both authors showed remedies that were supposedly useful in everything from aiding childbirth to inducing bleeding and that would ostensibly cure a myriad of illnesses, ailments, and defects, including eye diseases, ear problems, deafness, all skin lesions and wounds, lice, burns, dental or hair problems, gastric problems, ulcers, stones, diseases of the anus, rheumatism, paralysis, gout, and epilepsy. As magical medicine was

39 *Antipocras* in Ganszyniec, *Brata Mikołaja z Polski Pisma*, 44, v. 10.

quite popular in Rome, it is not surprising that it is found in various forms in the texts of Pliny the Elder; however, this article has shown that similar recipes and advice were recorded under the name of Nicholas of Poland centuries later. This way of magical thinking would survive for centuries to follow and would appear in Polish folk beliefs and medical recipes for snake snacks.[40]

40 Majewski, *Wąż w mowie*, 76–84; Wołoszyn, "Zrzuciłem duży kamień," 375–87; Bartmiński, *Dlaczego wąż nie ma nóg?*

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ABSTRACT

The paper aims to show how Pliny the Elder, in his *Historia Naturalis*, and Nicholas of Poland, in *Experimenta*, the medical treatise attributed to him, presented and described ways of preparing snakes for medical purposes. The paper explores the connections and relationships between these texts, primarily in terms of the instructions conveyed regarding the use of specific snake and viper products and the effects of their use on human health, including the many diseases known since antiquity that plagued Nicholas' contemporaries.

KEYWORDS: Pliny the Elder, Nicholas of Poland, snakes, medicine, Dominicans, Silesia

Plinij Starejši in Nikolaj Poljski o pripravkih iz kač in njihovi uporabi v medicini

IZVLEČEK

Članek se osredotoča na to, kako sta Plinij Starejši v svojem delu *Historia Naturalis* in Nikolaj Poljski v njemu pripisanem medicinskem traktatu *Experimenta* predstavila in opisala načine za pripravo kač v medicinske namene. Razprava razišče povezave in stične točke med obema besediloma, predvsem v smislu njunih navodil za uporabo pripravkov iz kač ter učinkov njihove rabe na zdravje ljudi, ter obravnava vrsto bolezni, znanih že v antiki, ki so pestile tudi Nikolajeve sodobnike.

KLJUČNE BESEDE: Plinij Starejši, Nikolaj Poljski, kače, medicina, dominikanci, Šlezija