Pliny the Elder
Rampant Credulist, Rational Skeptic, or Both?

Pliny the Elder's Natural History *was the premier source of information about the natural world for fifteen hundred years. Yet it contains blatant absurdities. What does that tell us about Pliny, and, perhaps, ourselves?*

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New biological adaptations such as hemoglobin, feathers, placenta, or eyes are not produced by natural selection *de novo.* It is likely that good evolutionary reasons, which increased the biological fitness of our ancestors, resulted in the human brain's ability to consider, weigh, and decide. It seems too that the easy acceptance of superstition may have served the species in some way, or magical thinking would not have arisen and survived. The battle between magical and more scientific thinking did not begin yesterday. Imagine yourself eavesdropping by a Paleolithic campfire:

Lagen, torch in hand, rises: "Well, time to get back in the cave and paint another bison."

Murd, shaking his head: "I don't know why you bother. . . ."

Lagen: "You want to eat, don't you? It's by capturing the spirit-power of the buffalo that they allow us to kill them."

Murd: "What a silly idea. You'd be better off spending your time down by the river, studying the herd."

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That conversation continued ten millenia ago, when of the five million or so of us on earth only a few were just beginning to farm and keep animals. Without the rational thinking and the empirical method it is likely no crops or cattle would have been domesticated, no advances made in metallurgy or pottery; yet cave-paintings, grave-sites, and other artifacts are evidence of a world-view saturated with magical thinking.

Until 495 B.C. the city of Miletus was the greatest of the Greek cities when, after an unsuccessful revolt against the Persian tyrants who controlled it, the city was destroyed. In the Western philosophical tradition, it was in Miletus that the first clearly recognizable steps toward rational empiricism took place. There Thales provided carefully thought-out natural rather than supernatural explanations for phenomena such as eclipses. From our perspective his conclusions might seem quaint (e.g., that the fundamental element of the universe is water, and that Earth is floating in a great cosmic sea). But it was the methodology of rational inquiry which set Thales, Anaximander, Empedocles, Leucippos, and Anaximenes apart from their colleagues.

Alongside the Milesians there remained a strong school of mysticism and other-worldliness, derivative of Orphism and represented in the philosophical tradition by the great mathematician Pythagoras (whose religion, Bertrand Russell says in his *History of Western Philosophy*, was based on two principles: first the transmigration of souls and secondly the sinfulness of eating beans). The contrast between the rational and mystical aspects of life is often epitomized as the conflict between the Apollonian and the Dionysian. Like a vestigial organ which once served a purpose, the Dionysian remains and is likely to remain so long as the species exists. Intuition and magical thinking have long been used to explain or control those phenomena beyond the ken of the empirical method. As science has come to explain more and more of the natural world, the utility of magical thinking, though perhaps not its ubiquity, has declined. Some would say there are aspects of the Dionysian we may need, to be healthy humans. But whether superstition and the primitive will-to-power can be destructive or not is no longer open to debate, given our history of religious fanaticism, Inquisitions, tribal nationalisms and more recently, New Age credulity.

In their study of the natural world Aristotle and his student Theophrastus provided the fundament of Roman natural philosophy. In 22 A.D. Gaius Plinius Secundus, usually referred to as Pliny the Elder to differentiate him from his nephew Pliny the Younger, was born into a Roman culture with one foot still deeply implanted in the cult of magic and supernaturalism and the other resting more timidly in the landscape of Thale's and Aristotle's rational empiricism. Pliny was a dyed-in-the-wool Stoic. The early Stoic Chrysippus, who some say was a better logician than Aristotle himself, described philosophy as an orchard, with logic its walls, natural philosophy (later called science) its trees, and ethics its fruit. The primary purpose of a Stoic life is to live virtuously. This means to live according to natural law (to "follow nature"), and to understand natural law one needs to study and understand the world. Stoic ethics, in other words, is informed by and grows naturally out of science (Becker 1998).

Pliny's *Natural History*, an encyclopedic compendium of Roman knowledge, was called by Cuvier "one of the most precious monuments that has come down to us from ancient times" (Cuvier 1854). Though from his work comes the modern usage of the word "encyclopedia," Pliny did not invent the genre. Compendia of Roman knowledge were quite popular at and around his time, when we have Seneca's *Natural Quaestiones*, Celsus's *Artes*, Varro's *Disciplinae*, Columella's *De Re Rustica*, and Dioscorides's medical encyclopedia. But Pliny took the genre to the extreme. In his introduction he claims to cite 100 authors of some 2,000 books, from which he claims to discuss 20,000 topics. He is one of the first authors to provide citations at the end of each chapter, and to organize his work with a table of contents.

Though there may be 20,000 topics in his *Natural History*, the simple fact is that far too many of the "facts" Pliny provides us are not facts at all, but unverified anecdotes reported as facts. If we were to swing an imaginary "B.S." detector over Pliny's book, the meter would read off-scale. What do we make of this? How does it affect our judgment of poor Gaius Plinius? Is he a rampant credulist, rational skeptic, or both?

The evidence he leaves in his *Natural History* suggests that Pliny was no different from most of us. His belief system and the structure by which he explained the world grew naturally out of the culture in which he was raised and lived, and though he might now and then reach beyond that culture, unlike either Thales or Aristotle, Pliny was neither genius nor pioneer.

Yet Pliny stood at a significant decision point of Western history, when one pathway to the future could have followed Stoic ethics towards the close study of nature and our role in it. Instead, within a few centuries of his death the dark barbarity

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of the Church fell over Europe, arresting the nascent rationality of pagan philosophy. The evidence we have, as we read his *Natural History*, suggests Pliny was a conflicted man, with a deep belief in skepticism and rational inquiry, yet unable to rise out of the magical thinking endemic around him.

What follows is evidence first of Pliny's gullibility, then of his skepticism, and then of that boggy ground in which Pliny wavers between the two. If space allowed, it would be possible to expand these examples many times over. Book and chapter citations to Pliny's *Natural History* are provided.

Pliny the Credulist

That the water sheep and cattle drink turn them black, white, or red. (2.106)

That the human body weighs more after death or when asleep. (7.18)

That in Ethiopia one can find winged horses with horns, called pegasi, the mantichora, with the face of a man, body of a lion, and tail of a scorpion, and the catoblepas, a look into the eyes of which causes the looker to fall dead. (8.30)

The porcupine can shoot its quills. (8.53)

If a shrew runs across a wheel-rut, it dies. (8.83)

Frogs melt away into slime in the fall and come back together as frogs in the spring, by some "hidden operation of nature." (9.74)

A fish called the *anthiae*, which rescue their hooked companions by cutting the fish-line with their fin. (9.85)

Plagues of flies in Egypt are killed by sacrifices to Isis. (10.40) (Pliny, like many Romans, appears especially gullible to Egyptian religious rituals; but that may simply represent his desire to please his patron, the emperor Titus, who was very taken with things Egyptian.)

Thunder addles eggs, the cry of a hawk spoils them. (10.75)

After covering, the mare runs north if she's just conceived a mare colt, south if a stallion colt. (10.83)

In India there are three-foot locusts, which people dry the bodies of and use the legs for saws. (11.35) (Here, Pliny hedges his bets, prefacing this report with "it is said that. . . .")

In Cyprus there lives an insect like a fly that lives in fire, which dies if it leaves the fire. (11.42)

There are trees which have spoken and have marched across a highway. (17.38)

To protect apples from insect attack, have a menstruating woman walk around the orchard naked. (17.38)

When wheat gets diseased, it turns into oats. (18.44)

Diamonds can be shattered with male goats' blood. (20.1)

If a pregnant woman wants a child with black eyes, she should eat a rat. (30.46)

If you've hit or thrown something at someone, and regret it, merely spit in the palm of the hand which did the deed, and all resentment on the part of the other will disappear. (28.7) (Before reporting this, Pliny says: "It is surprising, but easily tested. . . .")

Pliny meets his demise at Mt. Vesuvius

Pliny the Skeptic

Regarding astrology, he notes that people may be born the same moment but have entirely different fates. (7.50)

About the afterlife: We do not breathe differently from the other animals, and there are some which live longer than us, so why do we not assume they, too are immortal? And, if the soul does not have substance, how can it think, or hear, see or touch? Where are all the souls of the countless dead? . . . "These are fictions of childish absurdity. . . ." (7.56)

He quotes the Greek author Euanthes, who describes a werewolf. Pliny then adds: "It is really wonderful to what a length the credulity of the Greeks will go! There is no falsehood, if ever so barefaced, to which some of them cannot be found to bear testimony." (8.34)

Some say the reason no one has ever seen a vulture's nest is because they nest in the opposite hemisphere; but in fact it is because they nest high up in mountains. (10.7)

Regarding a bird called the *sangualis*, while some say it has not been seen in Rome since the time of Mucius, "for my part I think it much more likely that in the general slackness that prevails they have not been recognized." (10.8) (Pliny is warning here that when interest in knowledge wanes, false inferences are more common; a topical observation?)

He says "I know for a fact" that owls landing on roofs are not portents of evil. (10.16)

"A story is told about the mournful song of swans at their death—a false story as I judge on the strength of a certain number of experiences." (10.32)

While soothsayers claim the settling of a swarm of bees is an evil omen, a swarm settled in Drusus's camp when he had a victory at Arbalo. (11.18)

"And I think that the story about screech-owls, that they drop milk from their teats into the mouths of babies, is a fabrication." (11.95)

"For my part I am surprised that Aristotle not only believed but published his belief that our bodies contain premonitory signs of our career. . . ." (11.114)

Timaeus says that leaves fall from trees when the sun is in Scorpio because at that time of year a venom falls on them from out of the sky; "but then we may justly wonder why the

same influence is not operative against all these trees. Most trees shed their leaves in autumn, but some lose them later. . . ." (16.34)

When discussing Asclepiades, who Pliny considers a fraudulent doctor, he states that the knowledge of remedies is best acquired by personal examination and actual experience. (26.7)

He will not, he says, mention love-philtres or abortives, "unless it be by way of warning or denunciation, especially as I have utterly condemned all faith in such practices." (25.7)

"For my part I am surprised that Aristotle not only believed but published his belief that our bodies contain premonitory signs of our career. . . ."

The plant *vervain* is used by some for telling the future, "but it is the magicians that give utterance to such ridiculous follies. . . ." (25.59)

He calls statements Theophrastus has made about an aphrodisiac "fabulous," a plant which is supposed to allow a man to make love seventy times in a row—then Pliny notes (with regret?) that Theophrastus has failed to name the plant. (26.63)

With respect to the peony [plant], and the need to pull it up at night, and likelihood of being attacked by the woodpecker of Mars while doing so and of getting hemorrhoids: "I hold to be a fundamental lie, calculated to exaggerate the facts." (27.60)

"Shameless beyond belief is the treatment prescribed by very famous authorities" which suggests that human semen cures the scorpion sting. (28.13)

Examples of Pliny's disdain for magicians include: "Such is the clever cunning of the Magi in wrapping up their frauds..." (29.12) "But all these are nothing compared with a mixture that the lying Magi assert makes men invincible . . ." (29.19); "Here moreover we have quite the most blatant instance of effrontery on the part of the Magi..." (37.60)

He doubts that owl egg really helps grow hair, "Who in any case could have tried it, particularly on the hair?" (29.26)

Pliny the Uncertain

About snake charming . . . "insomuch as experience has not decided whether it is true or false..." (8.19)

He argues that air must be soluble in water, for fish respire as we do, and air is required for the senses of hearing and smell, which fish clearly possess. But then he adds: ". . . it is open to every person to form whatever opinion about these matters he pleases." (9.6)

About the opinion that sea-stars give off so much heat they scorch everything they come into contact with, (9.86) he says: "I cannot readily say by what experiments this has been ascertained, and I should consider a fact that there is daily opportunity of experiencing to be much more worth recording."

Regarding the phoenix he says "though perhaps it is fabulous. . . ." (10.2)

Regarding dreams: "Here an important topic invites us and one fully supplied with arguments on both side—whether there are certain cases of foreknowledge present in the mind during repose, and what causes them, or whether it is a matter of chance like most things." (10.98) (Here he seems to recognize the human need to assign meaning to random events.)

That eating rabbit makes you beautiful is just a play on words, "lepos" meaning graceful and "lepus" meaning a hare; "but [this is] so strong a belief that it must have some justification." (28.79)

Reading Pliny's work one can't help but remark his blatant inconsistency, on the one hand accepting patent absurdities while skeptically questioning others. To Stoics like Pliny nature was God, and one view is that though he might deny God omnipotence—God cannot kill himself, make mortals immortal, change the past, or make two times ten equal anything but twenty (*NH* 2.5)—Pliny was using these *mirabilia* as evidence of God's ability to overstep natural law, which the divinity was sometimes required to do in order to punish human hubris.

Beagon (1992) suggests that Roman explorers who were traveling beyond the boundaries of the empire toadied to the need of their readers by reporting as fact the most sensational anecdotes they heard in their travels. There is, she shows, a strong culture of *paradoxography* in the first and second centuries, an obsession with the strange and unusual, which would have tainted Pliny's primary sources.

Pliny dedicates his work to his friend Titus, son of the emperor Vespasian, to whom he was also a close confidante. Vespasian rose out of the middle class to become emperor, and may have needed all the *auctoritas* he could garner to convince the Roman public of his right to rule (Scott 1975.) There were said to be omens predicting Vespasian's emperorship; and though Pliny denigrates the ubiquitous belief in Fortune, skepticism of all omens and *mirabilia* may not have been politically wise. But perhaps Pliny is in being both credulist and skeptic merely covering his bases, appealing to as many readers as possible in order to increase subscription to his book.

Nearly two thousand years later, like Pliny we retain a neuroanatomy that is surprisingly adept at accepting both the latest science and oldest superstition. Newspapers commonly feature articles about the cloning of humans or photos made by the Hubble Space Telescope alongside daily horoscopes or a description of an apparition of the Virgin Mary or Christ. Not long ago a local paper featured an article on Jasmuheen, a "Breatharian" who claimed never to have to eat, reported as fact. Perhaps we ought to give Pliny the last word here: "Among all things, this alone is certain—that nothing is certain, and that there is nothing more proud or more wretched than man." (2.5)

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