

THE CONFLUENCY OF THE PITCHFORK: THE MONSTER, SCIENCE AND LITERATURE

ttps://doi.org/10.56238/arev7n2-089

Date of submission: 10/01/2025 Date of publication: 10/02/2025

Christian Fausto Moraes dos Santos¹, Raiza Aparecida da Silva Favaro² and Anelisa Mota Gregoleti³

ABSTRACT

Analogy knows no limits; it is the richest of the semantic threads that connect humans to things. Analogy radiates through every possible space and crevice, enveloping humans on all sides. Yet, just as it envelops, it is also enveloped, transmitting the similarities it receives from the world. Humans are the genesis of the archetype, where all relations converge, are born, and die. Our hypostatizations, our relationships with things, animals, or people, are in constant flux. However, some semiotic relationships with the distorted reflection of reality seem to persist, as in the case of what we academics often call myths and legends. A legend, for instance, only becomes a legend when it ceases to function as a fact within our culture. The monster, for example, only becomes mythical when it stops lurking around our homes and sucking our goats' blood, to then appear in some dictionary of Myths and Legends. Theories make us laugh at similarities today, but what do theories do today? Above all, they justify themselves rather than justifying things.

Keywords: Semiotics. History of Science. Figures of Speech.

REVISTA ARACÊ, São José dos Pinhais, v.7, n.2, p.6031-6046, 2025

¹ PhD in History of Health Sciences, FIOCRUZ

² Master's in History, Universidade de Maringá (UEM)

³ PhD in History, Universidade de Maringá (UEM)



INTRODUCTION

What is this hybrid creature called a monster, constantly present in human culture? What roles does it sometimes occupy throughout History, Science, Literature, or Popular Culture? From a Western medieval perspective, the monster takes on its most prominent role. For the medieval world, the monster was an integral part of creation, classified within the same boundaries as natural beings whether plants, animals, a hybrid of the two, or their bastard sibling.

Let us understand that, until the beginning of the modern era, whether in a chapel, a palace, or even on a map or in a travelogue, the entity called a monster would appear. Whether its imagery was art, delirium, or reality matters little; what matters are the ways in which it figures: how, where, and in what manner. For no matter how autonomous its existence may seem, the monster is still a human invention—something conceived to fulfill a need, a semiotic convention through which humans projected and engaged with their significant anxieties about the world.

Even today, the universe arranges itself in a geometry that establishes a semantic dialogue within itself, governed by a hierarchy of values that dictates that every thing, element, or being must occupy its proper place. The order of order demanded that everything be cataloged. At this point, we encounter, for example, medieval encyclopedias as icons of this necessity, where "everything" is presented in a generic unfolding of things. If minerals and plants reflect and respond to the organization of the universe, the animal kingdom and humankind—occupying superior positions in this hierarchy—serve as even richer and more intriguing mirrors of the world's order.

METHODOLOGY

The methodology employed in this research is explanatory and interpretive in nature, with a focus on analyzing the relationships of similarities, represented by the forces of sympathy and antipathy, throughout history. The main aim is to understand, particularly in the fields of science, culture, and language. The text is based on a philosophical and historical perspective through a literature review, with observations on the analogies between forms and their scientific and cultural implications serving as the central point for understanding the practices of similarity.



THE MONSTER, SCIENCE AND LITERATURE

However, there is a hybrid, a grotesque element in the history of Natural History, or at least in what we observe, that seems to unsettle it. To speak is, at times, to decipher. To speak of a flower or the entrails of a corpse stolen from a cemetery in the 17th century is to establish a relationship with enigmas that act as mirrors of the world. Every human being has a heart on the left side of their chest; all blood is red. These are small reflections which, though small, still mirror the Whole. These mirrors are seductive and immensely rich in their constituents, which we believe to be information. For

The world is covered with signs that must be deciphered, and these signs, which reveal similarities and affinities, are themselves nothing more than forms of similitude. To know, then, is to interpret: to move from the visible mark to what is expressed through it—something that, without it, would remain a mute word, dormant within things (Foucault, 1988, p. 48).

But the enigma and its infinite multiplicity—the very thing that compels us to seek knowledge—is doubled by its surreal counterpart, which can either confuse the clues leading to the former or aid in deciphering it. This counterpart would be the enigma presented by creatures that are displayed, represented, or conceived as living enigmas: lost links discovered or created, contradictory "by nature," and long referred to as monsters. They were, and sporadically still are, constituents of the natural world from which we cannot escape. A nature that belongs to a world where everything is normal, where everything finds its place—the bird on the branch, the horn on the cow, the blood in the vein. Our relationship with space and geometry is always logical, infused with a strong sense of order. Knowledge is that which, over time, we aim to become more intimate with—or at least plan to. It is the act of feeling, acting, and reasoning within an aesthetic framework, where even the will is classified as good or bad, beautiful or ugly. Yet, the antithesis of the monster arises to subvert all this beauty in order, which is so profoundly human.

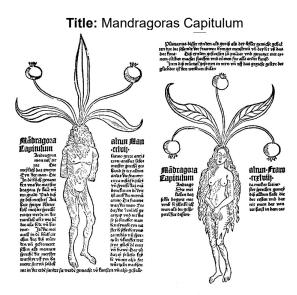
The monster's antithetical nature proposes a subversion. It is mystery, mystification, mythology, and biology; it is the archetype of all these. It unsettles, constrains, and ridicules, but it also reveals—reveals a being previously uncontacted, a super-reality, or simply the history of the objects of Natural Science. After all, seeing, seeking, and knowing are human acts—fallible yet intense, intense in the desperate urgency with which we attempt them. Paracelsus, the controversial 16th-century physician, asserted that



We, men, discover everything hidden within the mountains through external signs and correspondences; and it is in this way that we uncover all the properties of herbs and everything within stones. There is nothing in the depths of the seas, nothing in the heights of the firmament, that man is not capable of discovering. No mountain is vast enough to hide from man's sight what lies within it; this is revealed to him through corresponding signs (Paracelsus, 1913: 21-23).

In our semantic relationships with the world, we also encounter the figure of divination. However, divination is not a form that competes with knowledge; instead, it becomes incorporated into it. The signs we interpret as belonging to the occult are designated as such only insofar as they resemble it, and these signs will not act upon the occult without also acting upon what they (the signs) secretly indicate. Herein lies the meaning behind cures. This is why, in the 15th and 16th centuries (and in some cultures even today), plants resembling an eye, a heart, or a penis were believed to have efficacy over those respective organs.

In this context, we find a semiotic intertwining between the human and plant realms, with a small semantic touch of divination: the mandrake root. Its roots always take a human form, either masculine or feminine. This belief emerged in the 15th century, as the mandrake was highly valued for its aphrodisiac properties and was therefore often perceived as taking the shape of a man or a woman. In the illustrations by Johannes de Cuba (1485) in his Hortus Sanitatis, we find an example of how mandrake roots (one masculine and one feminine) were viewed by 16th-century Europeans. Thus, whenever a mandrake was unearthed, its roots would inevitably be interpreted as having one of the two forms described below.



Source: ODORICO. Hortus sanitatis. Gravuras de Johannes de Cuba. 1485.



Many words and terms still used today have linguistic origins far less sophisticated than we might imagine. This is the case with Paracelsus' inquiry regarding the origin of the word "serpent" in Europe: "Tell me then," he questions,

why does the serpent in Helvetia, in the Argolid, in Sweden, comprehend the Greek words Osy, Osya, Osy... In which academies did they learn, since, upon hearing the word, they would see in its second sound their tail, in order not to hear it again? Despite their nature and spirit, it is enough for them to hear the word to remain motionless and not poison anyone with their venomous bite. (Paracelsus apud Foucault, 1909, p.21).

Let us note that the phrase Osy, Osya, Osy, which correspond to the word "serpent" in different countries of Europe, closely resemble the hissing sound of a snake. In other words, the "accent" of the serpent gave rise to its own name.

Until the end of the 16th century, resemblance played a fundamental role in the construction of Western knowledge. It was resemblance that guided exegesis, the interpretation of texts, and as we have already stated, the description of the unknown (as mentioned previously) became the semantic link of creatures, or what is portrayed as their relationship to the world. It was analogy that organized the entire game of symbols, allowed us to establish knowledge with both visible and invisible things, and guided the art of interpreting them. We are speaking of Similitude. Its life as a figure of speech, constructing knowledge, will extend until the early 17th century. The Similitude still holds within it four essential figures that compose it: convenientia, aemulatio, analogia, and sympathia.

Convenientia is a resemblance that links to space in the form of a gradual approximation. Based on this, it can be stated that convenientia belongs less to the things themselves than to the world in which they find themselves. The world itself is the universal "convenience" of things; thus, we will find it even in the Creator's spirit, for He was the one who conceived the relationship of plurality that things and beings should have with places. We then have the intertwining of resemblance and space: the bird in the sky, the fish in the water, the monster in the unknown. The force of convenience brings together what is similar and assimilates what is near; the world is constructed from a chain that establishes itself with itself. This is how, for example, the constitution of what biology calls families in its modern taxonomy occurs.

Where there is a point of contact between one and the other, a circumference begins and ends, a link that resembles the preceding one, which in turn resembles the following one, like a chain: and so the similitudes follow, from circle to circle, retaining the extremes in



their distance. It is in this flawless chain, in this inventory of the verb to describe, of meaning and convenience, that Porta in 1650 proclaims in a text from his Natural Magic:

Regarding its vegetation, the plant corresponds to the brute beast, and by feeling, the brutal animal corresponds to man, who conforms to the rest of the stars through his intelligence; this connection is so close that it seems like a rope stretched from the first cause to the lowest and most insignificant things, through a reciprocal and continuous link; so that the superior virtue, expanding its rays, will reach such a point that, if we touch one end, it will tremble and move the rest (Porta, 1650: 22).

Now, aemulatio is a form of convenience. It is as if spatial convenience has been broken, and the links of its chain, once undone, still reproduce their circles far from one another. It would be a similarity in which there is no contact. In emulation, we find something that forms the reflection and the mirror. Through emulation, things that are scattered across the world are able to correspond. Just as the intellectuality of man roughly reflects the wisdom of God, through this relationship (of emulation), things can, distantly, imitate one another without any chaining or proximity; it is the reduplication of the mirror. However, from this reflection of the reflection, which originates from which? This is a difficult question; it is hard to say who originates from whom, as emulation arises from a kind of duplication of being. Paracelsus illustrates this duplication of the world with two twins 'who resemble each other perfectly, with no one being able to say which one brought its similarity to the other (Paracelsus apud, Foucault, 1913, p. 3).

However, let us not think that emulation leaves both opposing parts inert in relation to each other. It may happen that one is more passive or weaker than the other, and then becomes the peaceful mirror of the one exerting a stronger influence.

In the doxa it manufactures, man, who always considered himself a superior being, looks at the ape as an imitation of himself. Thus, man originated from the ape, yet he always sees the ape as an imitation of man, the superior primate. Crollius, a thinker of the 17th century, affirms that the lights contained in the herb reproduce, to a great extent, the pure form of the sky

The stars are the matrix of all herbs, and each star in the sky is nothing more than the spiritual prefiguration of an herb as it represents it, and just as each herb or plant is a terrestrial star looking at the sky, so also each star is a celestial plant in spiritual form, which is only different from the terrestrial ones by matter (...), the celestial plants and herbs are turned towards the earth and look directly at the herbs they have procreated, infusing them with some particular virtue (Crollius, 1624: 18).



But it may also happen that the dispute remains fierce and the mirror reflects nothing more than the endless struggle between two equally strong figures. The similitude then becomes a combat of one form against another, that is, the clash of a form separated from itself by matter or distance; as in the case of the man that Paracelsus refers to: he is like the firmament, he is constellated with stars, but he is not connected like the cricket in the grass, the fish to the fisherman, the hunt to the hunter, for the firmament of man belongs to be free, to have power, not to submit or be ruled by any creature.

Those who are emulation do not intertwine like in a chain, they do not form a sequence, as commonly seen in the elements of convenience. Emulation forms concentric circles, which reflect and rival each other.

The third form of Similitude is represented in analogy. In analogy, convenience and emulation are superimposed. Its power is fantastic, for the similitudes it operates are not physical, visible ones; for such an event to occur, it is enough for them to be the most subtle relationships. Thus, it can, starting from the same point, create an infinite number of kinships. Just as we have the sky where the stars shine, living beings with the planet they inhabit, a hoarse voice with an illness that develops in the throat. An analogy can even turn against itself, without being contested or contradicted. To this day, we still have the old analogy between plant and animal? The plant would be an animal with roots anchored to the earth, which sustains itself upside down, with its mouth (the roots) embedded in the soil. There is also the carnal conjunction, when neither the plant is an animal nor the animal is a plant, but one is so intimate with the other that both can be father and son, creature and creator. One of the most famous European examples is that of the vegetable lambs in the 16th and 17th centuries. Many travelers, when not referring to it, end up describing it, and two of these travelers, Odoric and Mandeville, frequently talk about this subject in their reports. Odoric begins his description by saying, "It is a great wonder I heard tell of and affirmed by people worthy of faith, but I did not see it. In the "Caspian" mountains,

wonderfully large acorns (melons, pumpkins) grow. When they are ripe, they are opened, and inside one finds a small living animal, like a little lamb, and these acorns and animals are eaten. (Odoric apud Kaooler, 1993: 186).

Below, we see the visual description of a small plant lamb, which accompanies the written document. The lambs then appear as fruits that, when ripening, begin to emerge



from their vegetal placenta. Caption: It is the analogy that grounds the genesis of one of the many origins a lamb could have in the 16th century.

Title: Image of a plant with lambs

Source: KAPPLER, H. Hortus sanitatis. Gravuras de Johannes de Cuba. 1485. Apud KAPPLER, 1993, p.186.

Such a plant/animal, as described above, would captivate the interest of many European travelers until the 17th century. Baron Sigmund von Herberstein, who traveled to Russia between 1511 and 1526, left a Latin account on the subject. Similarly, the traveler Olearius documented the phenomenon in his Voyage de Moscovie, published in 1636.

The legend of this plant, endowed with the gift of producing animal life, has an analogical—or analogical—connection that is far less fantastical than one might assume. This Tartar lamb, or Agnus Scythicus, known as Barometz or Borametz in Russian (a term meaning "lamb"), corresponds to a plant later classified by botany as part of the Polypodiaceae family. However, since we are still within the 17th century, let us rely on Olearius' account, which, in turn, draws on the descriptions provided by local inhabitants to construct his narrative:

We were told that near Samara, between the Volga and the Don, there is a type of melon, or rather, a pumpkin, in the shape of a lamb, whose limbs this fruit fully represents, being connected to the ground by a stem that serves as its navel. As it grows, it moves from place to place as far as the stem allows, drying the grass in all the spots it turns toward. The Muscovites call this grazing and add that, when it ripens, the stem dries out, and the fruit becomes covered with a furry skin that can be processed and used as a substitute for fur. They call this fruit Boranez, which means lamb (...). Julius Scaliger mentions it in his Exercit. 181 and states that this fruit continues to grow until the grass is depleted, and it dies from lack of nourishment. He adds that no animal is attracted to it except the wolf, and that this



fruit is used to capture them, which is also confirmed by the Muscovites (Olearius in Kappler, 1993: 187-188).

Although the plant remains a plant, the similarity to the animal persists, as evidenced by the use of the verbs "to graze" and "to pasture." However, the signifier of the pumpkin surpassed its own sign (that of being a plant), and the use of animal imagery to describe the vegetable became imperative. The shape of the fruit, the pumpkin itself, resembles the form of a lamb, and from this point, the description gains such autonomy that the entire morphology of the plant begins to emulate the anatomy of an animal.

All the limbs that a lamb might possess are ascribed to the fruit. The small stem connecting the plant to the fruit is likened to a navel, an umbilical cord through which the mother nourishes her unborn offspring. This stem, in turn, dries up all the grass around it, and when the grass is gone, the plant dies—a clear interpretation that this vegetative creature feeds on grass, just as a lamb grazes in the pastures.

Indeed, creeping plants that produce fruits such as watermelons, pumpkins, and melons, as they spread across the ground, often end up killing grasses or other smaller-leafed or smaller-fruited plants. It is well known that where a pumpkin ripens and reaches maturity, all the grass beneath will perish, whether due to lack of sunlight or simply lack of space. In contemporary popular language, one might say that one plant "suffocated" the other. However, considering this as a 17th-century Boranez plant, it is not entirely illogical to imagine a plant whose fruits "graze" on other plants for nourishment.

Moreover, we observe (as with kiwi fruits) the "hairs" that cover the entire surface of the fruit—a kind of "furry skin," resembling the wool of a lamb. Finally, Olearius adds that no animal has a taste for it, except the wolf, and that this is why the Boranez fruit is used to capture such a beast. Here, the convenientia becomes an active agent. Never has there been talk of a wolf with vegetarian eating habits, yet this serves as a reminder of the deeprooted Western tradition of portraying the eternal pursuit of the lamb by the wolf. This tradition stretches from the oral histories of medieval Europe to the folktales of North American settlers—a subtle aemulatio amidst so much convenientia.

Our hypostatizations—our relationships with things, animals, or people—are in constant flux. However, some semiotic relationships with the distorted reflection of reality seem to persist, as in the case of what we academics often call myths and legends. A legend, for instance, only becomes a legend when it ceases to operate in our culture as fact. The monster, for example, only becomes mythical when it stops circling our homes and



ISSN: 2358-2472

sucking the blood of our goats, instead finding its place in some dictionary of Myths and Legends. Reality is something deeply particular; while we academics amuse ourselves with the escapades of a monster "made in Mexico," our rural neighbors lock themselves inside their homes, fearful of the terrifying vampire of goats.

To better illustrate this temporal ephemerality of myth and legend, we encounter the following account:

A monster described as a curious and terrifying mix of lion, leopard, and dog has been terrorizing the inhabitants of the Bungoma region, 480 kilometers west of Nairobi, Kenya, for four months. The fear caused by the 'Bungoma Monster' has led to the mobilization of forest rangers in an agricultural area spanning 130 square kilometers. According to the villagers, hundreds of goats, sheep, calves, and dogs have been attacked by the creature. Based on the villagers' accounts, the animal possesses the claws and ferocity of a lion; the teeth, neck, and head of a tiger; the yellow and black spots of a leopard; and the sense of smell of a dog (Kappler, 1993: 203).

Such an article was extracted from a regional journal dated February 18, 1974. Here, myth and legend still give way to the real existence of the monster. A legend ceases to be a legend when rooted in reality. This was the case with Saci Pererê a few centuries ago a reality, an elemental spirit of nature dwelling in the bamboo groves of plantations.

Returning to analogy, we notice that its polyvalence grants it an almost universal field of application. Through analogy, all things in the world can be drawn closer and made to resemble one another. This is the analogy of the gods with humans, commonly known as the mask. Masks exemplify the externalization of something real that materializes only in representation.

The human face is the most refined mirror of will: the eyes speak, the mouth expresses, and the face reflects. It is through the face that most of our actions are judged. Therefore, it is the face that hosts the mask. We lend our head, our face, to the materialization that takes place in ritual. In the mask, the face of the god appears, but this is secondary because the gods are not what we are—they are what we wish to be. They are not ambiguous, and if they are, they compensate for this ambiguity with superhuman powers. The mask is the embodied absence of ambiguity, a lack, a perfection we construct while we aspire to it. This constitutes the ritual meaning of the mask in certain ethnic groups.

Masks are thus channels of analogy that we establish between form and will. They are significant examples of conduct, damnation, protection (such as the carrancas used by



fishermen on the Solimões River), or threat (as seen in the masks worn by warriors from African tribes).

Analogy knows no limits; it is the richest semantic thread that connects humanity to things. The same analogy that underpins the use and profound ritual/social meaning of tribal masks is the one Pierre Belon employed in 1555 to draft the first comparative table of the human skeleton and that of birds, where we observe:

the tip of the wing, called the appendix, which is proportionate to the wing, to the thumb, to the hand; the extremity of the wingtip, which is like our fingers (...); the bone, considered legs for birds, corresponding to our heel; just as we have four small toes on our feet, so too do birds have four toes, of which the one in the back is proportionate to the big toe on our foot (Belon, 1555: 37).

From anatomy to cultural and religious manifestations, these are the boundaries of analogy, all we need to do is observe and we will find the same semiological principle. Just as the wings of a bat are like our hands with long fingers and membranes, the mask is the unbearable lightness of being that for a few moments becomes sustainable; we are human, but when we wear the mask, which represents one of the Gods of the forest we inhabit, we are, analogically, the Gods.

In this way, the human body is always half an atlas. However, this description only constitutes a comparative anatomy for the nineteenth century. In the sixteenth century, the positive knowledge that Belon was able to construct does not differ in almost any way (in terms of scientificity) from an observation made by one of his contemporaries, the thinker Crollius. To explain the symptoms of apoplexy, he compares it to a storm:

(...) the storm begins when the air becomes heavy and agitated, the crisis occurs when thoughts become heavy; then the clouds gather, the abdomen swells, thunder roars, and the bladder ruptures; lightning strikes while the eyes shine with a terrible brilliance, rain falls, the mouth foams, the lightning strikes while only spirits cause the skin to burst; but behold, the sky clears, and reason is restored in the patient (Crollius, 1624: 34).

Analogy radiates through all spaces and cracks, from every direction the human being is thus enveloped, but just as he is enveloped, he also envelops, transmitting the similarities he receives from the world. He is the genesis of the archetype, where all relations converge, are born, and die.

According to Foucault, sympathies would be the fourth form of similarity. They would operate freely in the things of the world, covering in an instant the most distant recesses,



emerging from a mere contact between two things that had never met before. In a single touch, like the "funeral roses that will be used in a funeral," which, upon drawing near to death, make anyone who inhales their scent "sad and agonizing" (Porta, in Foucault, 1985, p.72). Sympathies incite unusual associations; it is they who make roots search for water and cause the large sunflower to follow the sun through its entire course.

It is sympathy that makes a crab in the sixteenth century be identified as a dish, a typical food of tropical countries, or as a constellation, which, resembling the shape of a crab, is then called Cancer. The disease, in turn, borrowed its name from the crab because the Greeks believed the pathology should be called cancer due to how the disease moves through the body, just like a small crab walking sideways on the beach and leaving the marks of its little legs. The power of sympathy is so strong that it is not enough for it to be one of the forms of the similar; it has the lethal power of assimilating, absorbing, and inhibiting any individuality, making things synthetically become identical, and in the end, merge.

Fortunately, its power is limited by being counterbalanced, because if this were not the case, the whole world would have the same smell, the same form, and the same conceptions. The whole world would then become a great homogeneous mass, a large and unique figure of the Same.

What happens then is that sympathy has a counterbalance in its twin sister: antipathy. It is she who keeps things isolated and prevents them from being assimilated, locking each species, animal or plant, in its deepest difference, because, as was often said in the 17th century, it is antipathy that ensures the purity of the species.

(...) it is well known that plants have hatred toward each other... it is said that the olive tree and the vine hate the cabbage; the cucumber flees from the olive tree... Knowing that their growth depends on the warmth of the sun and the moisture of the earth, it is necessary that every opaque and thick tree—just like one that has multiple roots—be harmful to others (Cardan, 1656: 154).

Thus, we will see that over time, creatures on earth will always have a reason to hate one another. Antipathy would be one of the main factors that allow us to pronounce the word "species" in the plural. It is through this game of antipathy that species then disperse, but it is also through antipathy that they attract each other to engage in combat. Antipathy makes them mortal enemies and forces them to expose themselves. What happens is that thanks to this, all the things (animals and plants) we know in the world remain as they are,



and what today's biology calls "food chains" or "ecological systems" are nothing more than a sophisticated form of antipathy, which in a few years may seem as "ridiculous" as the hatred the olive tree has for the cabbage in Cardan's text.

The figure of the eternal twins, sympathy-antipathy, is responsible for all the dispersion that in turn elects all the similarities we know. All the volume we see in the world, whether it is the neighborhood promoted by convenience, the echoes of emulation, the chains of analogy—each of them has as its "background" sympathy and antipathy. It is in this game that the world remains the same, identical in its sympathies, different in its antipathies. Sympathy and antipathy, while being constituents in themselves, include convenience, emulation, and analogy. Together, they were the similitudes that reigned absolutely in the construction of scientific literature, novels, stories, conversations, and the descriptions of travelers. The world was seen in this way, where all things converged in a "confluence of the fork."

Today, modes of signification have changed; the ancient games of similarity are no longer enough. With the Renaissance (17th century), similarities and signs began to break their old alliance. Similitudes disappoint, lead to delirium; however, everything that makes up the world (things) ironically remains in its identity, that is, it is no more than what it is. As for words, well, words no longer have similarities to fill them with meaning. Theories today make us laugh at similitudes, but what do theories do today? Above all, they justify themselves, not things.

The signs of scientific language (whether it be exact, human, or biological) no longer resemble things; their concern now is to represent them, just as they do with reality. Today, the monster for academia is folklore or genetic mutation, but far beyond the campus limits, it still roams, lurks, and attacks those who still use the figures of similarity to compose the world.



DOCUMENTARY SOURCES

BELON, P. Histoire de la nature des oiseaux. Paris, 1555.

CARDAN, J. De la subtilité. Trad. Francesa, 1656.

CROLLIUS. Traité des signatures. Trad Francesa. Lião, 1624.

PORTA, G. Magie Naturelle. Trad. Francesa. Rouen, 1650.



REFERENCES

BALTRUSAITIS, Jurgis. *Aberrações: ensaio sobre a lenda das formas.* Rio de Janeiro: Editora UFRJ. 1999.

BOORSTIN, Daniel J. Os Descobridores. De como o homem procurou conhecer-se a si mesmo e ao mundo. Rio de Janeiro: Ed. Civilização Brasileira, 1989.

BLUND, Wilfrid. *El Naturalista. Vida, obra e viajes de Carl von Linné (1707-1778)*. Barcelona: Ediciones del Serbal. 1982.

CHALMERS, Alan. *A Fabricação da Ciência*. São Paulo: Ed. da Universidade Estadual Paulista, 1994.

CHEVALIER, Jean, GHEERBRANT, Alain. *Dicionário de Símbolos*. São Paulo: Ed. José Olympio, 1996,

ECO, Umberto. As Formas do Conteúdo. S. Paulo: Ed. Perspectiva, 1974.

FOUCAULT, Michel. As palavras e as Coisas. São Paulo: Martins Fontes Ed. 1991

HALL, A. Rupert. A Revolução na Ciência 1500-1750. Lisboa, Portugal: Edições 70, 1983.

HUIIZINGA, Johan. Outono da Idade Média. São Paulo: Edusp, 1993.

KAPPLER, Claude. *Monstros, Demônios e Encantamentos no Fim da Idade Média.* São Paulo: Martins Fontes, 1993.

MAYR, Ernst. O Desenvolvimento do Pensamento Biológico: diversidade, evolução e herança. Brasília, DF: 1998.

PAPAVERO, Nelson; TEIXEIRA, Dante Martins; BOUSQUETS, Jorge Llorente. *História da Biogegrafia no Período Pré-Evolutivo*, São Paulo: Ed. Plêiade, 1997.

PAPAVERO, Nelson; TEIXEIRA, Dante Martins; RAMOS, Maurício de Carvalho. *A Protogaea de G. W. Leibniz (1749). Uma teoria sobre a evolução da terra e a origem dos fósseis.* São Paulo: Ed. Plêiade, 1997.

PEIRCE, Charles Sanders. *Semiótica e Filosofia*. Textos Escolhidos de Charles Sanders Peirce. S. Paulo: Ed. Cultrix,1985.

PEIRCE, Charles Sanders. Os Pensadores, S Paulo: Abril Cultural, 1983.

PEIRCE, Charles Sanders. Semiótica. 2ª Ed. S. Paulo. Coleção Estudos. Nº 46.

RICHARDS, Jeffrey. Sexo, desvio e danação: as minorias na Idade Média. Rio de Janeiro: Jorge Zahar Editor, 1993.



RONAN, Colin A. *História Ilustrada da Ciência. Vol. II Oriente, Roma e Idade Média.* São Paulo: Jorge Zahar Editor, 1987.