

THE CAT
ZOOLOGY – ORIGINS – HISTORY – BEHAVIOUR – HABITS – RACES – ANATOMY
– ILLNESSES – JURISPRUDENCE

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Cats are the tigers of poor devils.
(Théophile Gauthier.)

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DEDICATION

To my beloved Wife, whose affection, devotion and impartiality, so well appreciated by those who know you, and whose solicitude extends also to our little brothers, the animals, whom you have protected so well, I dedicate this modest work. Animals, less forgetful than many of those whom you have loved and filled with benevolence, giving solace against human ingratitude

A. Landrin.

ZOOLOGICAL CHARACTERISTICS OF THE CAT

The Cat is a vertebrate mammal belonging to the Carnivorous order, the Carnivora family and the Digitigrades tribe; it forms the genus that Linnaeus, in his *Systema Naturae* in 1735, named *Felis*, thus preserving the name which the Latins had given to this generic group of animals.

Genus *Felis* is characterized by a rounded head and muzzle, a short, slightly arched snout, highly vaulted zygomatic arches, and short jaws. The total number of teeth is thirty: sixteen in the upper jaw, distributed as six incisors, two canines - one on each side - and eight molars - four on each side; fourteen in the lower jaw, comprising six incisors, two canines - one on each side - and six molars - three on each side. The incisors are aligned in the upper and lower jaws.

The canines are very strong. The upper molars have lobed edges; the first two are conical and rather thick, the third is very large, with three lobes, and the last is tubercular and wider than is long. The first two lower molars, on each side of the two jaws, are compressed and simple, and the last molar has two cusps.

LEGENDS ABOUT THE ORIGINS OF THE CAT

There are few animals whose origin has given rise to more legends than the Cat. We believe some of them are of interest here. In fact they testify to the interest and peculiar reverence given to this animal because of the numerous and important services it has performed by ridding our houses and our cultures of nuisances, above all of rodents.

According to the authors of Greek mythology, Apollo, wishing to frighten his sister created the Lion; Diana, to take revenge on this action, resolved to ridicule the Lion by creating, in turn, the Cat.

According to the Arabs, "When Noah brought a pair of each type of animal into the ark, his companions and family members said to him 'What security can there be for us and the animals, as long as the Lion is living with us in this narrow building?' The patriarch began to pray and implored the Lord. Immediately a fever descended from heaven and took hold of the king of beasts so that peace was restored to the inhabitants of the ark. There is no other explanation for the origin of fever in this world.

"But there was another, equally harmful, enemy in the ship: the mouse. Noah's companions pointed out to him that it would be impossible for them to keep their effects and provisions intact. After a new prayer addressed to the Almighty by the Patriarch, the Lion sneezed, and a cat flew out of his nostrils. From that moment the mouse has always been timid and has developed the habit of hiding in the holes." (Darnisei, Eighth Century Of The Hegira.)

Mulla, the minister of the Muslim religion, who accompanied the ambassador of the Porte in France, told Moncrif, author of a *History of Cats*, a strange legend about the origin of the Cat, which he reproduced in his book :

" In the first days when the animals were confined in the ark, astonished at the movement of the boat and their new dwelling, they remained in their own quarters without asking what was happening with their neighbours. The monkey was the first one who got bored of this sedentary life and he went to have some fun with a young lioness.... It was through the love of the Monkey and the Lioness that a male and female cat were born ... "

FOSSIL CATS

The discoveries of fossilised bones of cats in the caves of Germany, in those of Kent in England, as well as in those of several localities of Belgium, including those in the neighborhood of Liège; in France, particularly at Lunel-Viel, by Schmerling, Richard Orwen, Mac Emy, Marcel de Serres, Bravard-Croizet, Jobert, Dubreuil, etc., of which G. Cuvier and de Blainville have made such a remarkable study, attest to the antiquity of species of the genus *Felis*.

According to Blainville, the number of real fossil species is [ut by him at fourteen, although, according to some paleontologists, the figure may exceed twenty in ancient Europe alone.

Here is what the learned naturalist de Blainville said on this interesting subject:

"Since the time, very remote, no doubt, where the degradation of the preceding formations produced the middle tertiary lands, to the point where our soil was covered with the enormous layer of diluvium which is observed over a large part of Europe, there has always existed, in the vast forests which covered it at that time, a fairly good number of Felis species of very different sizes, from that of a pony to that of the house-cat, for there were abundant Ruminant and Pachyderm populations, just as the modern Felids of Africa, Asia, and America have the herbivores of those parts of the world. With the decline and disappearance of these, possibly determined by the forests and by partial and general flooding, those carnivore species also declined and disappeared in natural harmony; but it seems that their disappearance preceded that of the other species less eminently disposed to eat only flesh:

Most of those species were more or less analogous to those which now exist in the two great parts of the ancient continent; but they also found some which do not currently appear to exist on the surface of the earth, and which fill gaps in the zoological series. Amongst others, one of those forms possessed long, sabre-like canines in the upper jaw. Whatever determined a corresponding arrangement of the lower jaw and its front teeth seems to have been peculiar to temperate Europe. At least, up to the present time, we know of no living species of Felis, great or small great, that has anything analogous to Felis cultridens."

ORIGIN AND HISTORY OF DOMESTIC CAT

The Cat, in all likelihood, was acclimatized [adopted, domesticated] at the same time as the Horse, that is to say about 1638 BC. The cradle of its acclimatization and domestication is Egypt. Although it is not known exactly where the Egyptians got this animal from, it is quite certain that from the east of that country it passed through Europe from where it has spread to every part of the earth.

Wherever one meets it, it shows little diversity of character; i.e. a cat examined in Guinea resembles one from Holland; one observed in America has characteristics of the Spanish Cat; we see that those encountered in India or Madagascar have not undergone any notable changes.

The Egyptians gave it the names of Mau, Mai, Maau, and, on some monuments, it is called Chaou. Representations of the Cat in various forms can be found on tombs in Thebes built during the eighteenth and nineteenth dynasties, that is to say from 1638 to 1440 BC. It was used by the Egyptians, who had trained it to seek game in swamps. Numerous documents represent cats accompanying hunters in their boats.

The Egyptians counted the cat among their sacred animals the cat, calling it bubastis, probably because of the town sacred to these animals. The Egyptians' veneration of the cat rested on their belief that Isis, to avoid the fury of Typhon and the Giants, had disguised herself as a cat to hide from them. Many medals, also called bubastis or Bast, represent this goddess as a secondary form of Pasht, with a cat's head.

The cat was so revered that the Egyptians punished the killing, whether intentional or accidental, of one of these animals with the most cruel tortures. Diodorus of Sicily says, about thirty years B.C.:

"He who kills a cat in Egypt is doomed to death, whether he has committed this crime intentionally or not; the people gather and kill him. An unfortunate Roman, who had accidentally killed a cat, could not be saved by either the Egyptian king Ptolemy or by the fear which Rome might have inspired."

In fact it was necessary that this execution should be in good order so that Ptolemy could not impose his royal will, in view of his interest, at that time, in maintaining the friendship of the Romans, which he greatly desired.

In around 430 BC, Herodotus said of the cat, which he calls Ailuros: "If a fire breaks out in an Egyptian home, people pay little attention of the fire and think only of their cats. They stood around and watched and if one of them, unfortunately, escaped and threw itself into the flames, the Egyptians uttered loud

cries." He went on to say: "When a cat dies naturally, all the inhabitants of the house shave their brows in mourning. The dead cats are placed in sacred apartments, embalmed and carried to the town of Bubastis. "

Cat mummies are frequently found in the hypogea of Egyptian tombs. It was Geoffroy Saint-Hilaire, who first reconstructed and represented the complete skeleton of an Egyptian mummified cat. This skeleton was considered by Cuvier to be similar to that of our Domestic Cat. But Messrs. Chrenberg and de Blainville found that it more closely resembled *Felis maniculata*, which is still found in the wild and in the domestic state in Abyssinia. (See *Gloved Cat*, in the Chapter "Races.") Moreover, we have also found *Felis bubastis* and the *Felis chaus* in Egyptian tombs.

As can be seen, the monuments of ancient Egypt, as well as the numerous mummies in the tombs, bear witness that the cat was an object of profound veneration. In fact he was sacred and was venerated as God and, as such, was worshiped in his natural form as well as in the form of a man with a Cat's head.

Caylus, in his "Collection of Antiquities," says that the cat was regarded as the symbol of Isis or of the Moon, and that, in the number of relationships that it had with that heavenly body, it was believed that it bore as many young as there were days in a lunar month. It was added that litters were subject to a natural progression of numbers, from a singleton through to twenty-eight, that is to say, in the first litter, it bears one kitten; in the second, two; in the third, three; and so on until reaching twenty-eight. This pretty extravagance is repeated throughout, by Plutarch, who didn't have any inclination to disprove it.

As we can see, the cult of the Cats in Egypt is lost in the origin of that country; the reverence of the god Ailuros or Elurus, the transformation of Isis, is none other than Hecate, the queen of Hell, or Proserpina: Diana on earth, and Moon in heaven. She presided, in the form of Pussy, on the hearts and was invoked by lovers to obtain the favours of the person loved.

Diodorus of Sicily says that the Egyptians dedicated their the children to the Cats, and that they wore a portrait of the Cat to which they had been devoted.

The Egyptians' fear of doing any harm to a Cat was so well established that Cambyses, king of Persia, wishing to take the city of Pelusium, which was an Egyptian garrison, placed a great number of Cats at the head of the troops, and each officer and soldier carried a Cat as a shield. Through their fear of harming the Cats as well as their as their enemies, the Egyptians surrendered without a blow.

The Cat was not only a god, but also the avenger of the other gods. The king of Persia, after devastating Egypt and desecrating its temples, committed a great sacrilege in the eyes of the Egyptians, by causing the death of the sacred bull Apis, which was revered by them. He was terribly punished by the Egyptians who chopped his body into small pieces and fed it to the cats.

As already mentioned, there are many tombs where Cats dedicated to Pasht have been deposited round a small temple called the Grotto of Diana, located at Beni-Hassan.

Messrs. H. Cammas and Lefevre, who have devoted a passage to this subject in their *Valley of the Nile*, say: "The dried mummies of all the heroes of this race who were perhaps unworthy of divine honors are strewn on the ground. Their masters would have done much better to skin them first and use their furs; but they would not have thought they were paying a sufficient homage to the protectors of their granaries, to the friends of their houses. Cats are the living representation of the Penates and Lares [household gods]; they resemble the gods, for they love caresses and do not return them; there is in them something celestial and mysterious: they see at night as at day and their clear eyes seem reflections of the stars; their whole body reveals a light that appears at night when they pass their hand on their backs. Hence the law of emblems gave the head of a cat or a lioness, and phosphorescent eyes to Bubastis, the sacred name of the light which does not come from the sun, a luminous and nocturnal goddess; this is why cats are devoted to him. Thus the pontiffs shared their care between the statue of Pasht and a race of cats climbing the altars, or sleeping on the knees of the goddess. No gesture or action of these happy beasts remained unanswered: oracles were founded on their frolics and meowings, as elsewhere on the flight of the ibis or the vulture; it was the priests of Pasht who first recognized the imminence of rain, when the cats passed their paws over their ears. It may be supposed from the classification of the mummies that there was a rigorous hierarchy among the Cats.

Some were wrapped only in bandages covered with hieroglyphics in their praise; others have been embalmed in families, with several in a single wrapping. The fur, colour, age, and many other considerations undoubtedly determined the degree of honour due to them. Unfortunately, the perfumes that impregnated the mummies have not fully preserved their remains, and grave-robbers have ransacked these tomb complexes for one to restore the dignities of those which have been thrown pell-mell into subterranean galleries by the centuries or the hands of profaners. "

Spreading first into the eastern part of Egypt, the Cat very slowly penetrated into Europe. Before Herodotus, the Greek authors did not even mention the Cat; after him, the Greek historians spoke very little of it; we can say, however, that Aristotle, that peripatetic philosopher of Macedonia, and tutor of Alexander the Great, accurately described it, and it seems that his description was based actual sightings.

The Latin authors speak little of it. It did not seem to be known in Western Europe until about the tenth century. In Wales, in the middle of the tenth century, Howell Dha, or Howell the Good, introduced into that country's legal Codex a law which is a very curious part of the Cat's history. This deposition, peculiar to the animal in question, is proof that the domestic cat was considered valuable. From the point of view of the Domestic Cat's origins, it seems to provide further proof that the Domestic Cat does not descend from the [European] Wild Cat. At that time there was such a large population of wildcats in England, which could easily taken at a young age, that the legislator would not have felt the need to protect and care for the Domestic Cat, or to regulate its sale.

This particular provision of the Codex fixed the value of a Domestic Cat, and the penalties, in the form of fines, which might be imposed on those who tormented, wounded, or killed this animal. Anyone convicted of having killed or stolen a cat on the prince's estate was condemned to pay him a sheep and its lamb, or else to give him the quantity of wheat sufficient to cover the dead cat hanging by its tail with its nose touching the ground.

The price of a young cat which had not yet caught a mouse was fixed, and when he had already shown a catch, it was doubled.

From the point of view of the conclusion of the contract, the purchaser had the right to demand that the animal's claws, ears, and eyes be well formed, and that the animal possessed all the qualities of a good rodent hunter. The female must be a good mother. In the event that one of the qualities guaranteed was found lacking, the buyer was entitled to the reimbursement of one third of the purchase price.

Besides these marks of reverence and protection that rewarded the many services rendered by the Cat, we are forced to record an event that demonstrated the barbarism of the Middle Ages. They had the deplorable custom of throwing several cats at once, tied up in a sack into, the Saint John's day fires. Some authors have left us some circumstantial details about this act of savagery; one of them, in 1619, wrote, in connection with this unfortunate custom:

A cat, who, with a brief run,
Went up the fire of Saint-Jean-en-Grève;
But the fire did not spare it,
And made it jump up and down.

This custom still persisted in 1750 at Metz. It was about this time that the Marechale d'Armentieres got her husband to suppress the barbarous and stupid custom of this auto-da-fe.

Moncrif, in his "Letter on Cats," recounted this scene, which is condemnable in all respects: "Every year, in Metz, there is a ceremony that is indeed shameful to the mind. The magistrates go gravely to the public square to expose a cage of cats placed above a pyre which they set on fire with great ceremony; and the people, hearing the frightful cries which these poor beasts make, think they are causing suffering to an old sorceress who is supposed to have once metamorphosed into a Cat when they went to burn her."

EXTERNAL APPEARANCE. BEHAVIOUR AND HABITS OF CATS

Cats are the tigers of poor devils.
(Theophile Gauthier.)

The average length of the cat is 40cm; it often reaches as much as 50 cm, and sometimes even exceeds this measure a little; its tail is generally 32 – 34cm. Its height at the withers measures from 27cm to 28cm.

The colour of the cat's fur is very variable: it is often of uniform black, sometimes mixed with spots in various places. There are white Cats that are either very pure or are mixed colours; others are fawn, more or less red; there are many cats that are dark grey, grey-blue or slate grey, light grey, and others that are striped with dark grey, and finally there are tricolour cats whose coats are formed of white fawn and black, sometimes grey, markings. The most attractive are the zebra-striped cats.

We need not revisit to the general zoological characteristics already described in an earlier chapter; it would be pointless repetition. The few additional indications to external characteristics which complete our description of this interesting animal, which, even if it's no longer a god, has nevertheless remained an authority in the household.

The Cat has a round head with strong whiskers; its neck is thick; its body is long and narrow; its limbs, especially the forelimbs, are short, but relatively strong. The soles of the feet are furnished with soft elastic pads. Males are distinguished from females by their larger size and stronger, wider, more rounded head.

Scheitlin says "The cat is an animal of a lofty nature; its body structure already indicates a perfect being. It is a small Lion, a Tiger in miniature. Everything about him is symmetrical, no part is either too big or too small; so we are shocked by the slightest lack of regularity. There is nothing angular in its forms. Its head especially, as one can see from its skull, has graceful lines, and no other animal has such a beautiful head.

The forehead has a poetic curve; all of the skeleton is beautiful and denotes an extraordinary mobility and we make special mention of its undulating and graceful movements.

Its joints are not made in zigzag or acute angles; its curves are barely visible. To all appearances it is boneless and the whole body is a soft and flexible mass. Its senses are highly developed and perfectly related to the shape of its."

We have said that the Cat's fingers have long, sharp, hooked nails hidden in their sheaths. It can extend them at will when it thinks fit or when necessary to attack, to defend itself, to seize prey, and to grip so that it does not slip when climbing.

In order that the Cat, when leaping on its prey, can seize and hold on with its sharp claws, it is very necessary that the sharp tips of the claws do not wear out, and that the hooked ends can easily penetrate the flesh of its victim, like veritable grapples, at the moment he wants to seize it. Thus, as we have said in our chapter on Zoological Characteristics, the Cat has retractile claws.

These nails, when the cat is resting or walking, are pulled up and lodged in a sheath or scabbard; they are not positioned at the tip of the phalanges, as they are in all other animals, but a little to the side. The inner sides of the first two phalanges have grooves in which the third phalanx lodges by its back during rest. This causes the tip to be raised in the air so that the nail cannot touch the ground. This is then supported by the balls which occupy the middle of the foot and which correspond to the phalangeal articulations. This particular arrangement makes the Cat's paw very short.

As soon as the hunter puts his claws into action, the phalanx nail, extended by the flexor muscles of the finger, makes its nail penetrate more or less deeply according to requirements, into the prey. Retracting the claw is done without any effort from the muscles, it is due to the flexor muscles relaxing.

Under the action of the flexor muscles, the claws, as they extend, stretch three elastic ligaments - one outside, the second inward and the last at the top - that originate at the anterior extremity of the first

phalanx and are attached at the root of the third. As the flexor muscles relax, the ligaments return to their original length and pull the nail phalanx and its claw into a sheath of skin which protects the integrity of the claw-tips protecting them from the effects of external bodies.

As Dupont de Nemours has said, the ability that claws give the Cat to climb trees are a source of experiences and ideas for him, things which are denied to the Dog.

The average lifespan of the Cat is ten to twelve years, but we have numerous examples of cats reaching twenty-two and even twenty-five years. It is adult at fifteen months of age; the male has vagrant tendencies and the female is much more sedentary. In the breeding season, these animals, which usually don't have a regular relationship with each other, come closer together.

The females enter heat twice a year: in spring and autumn, and sometimes enter heat three times in the same year. We all know the concerts that precede her choice of husband who, in the moonlight, arrives to sing his invocation, his tenderness, a real troubadour. Who has not heard the answers in solo and in chorus rise from the roofs, the massifs of the gardens or the granaries of the farm?

The silence that follows this first act is soon interrupted by a new bolero, which provides a prelude to other songs in the middle of the night, depriving you of a restful sleep. Instead of sweet dreams, which you lose, your ear is pierced by wild sounds rising to a crescendo. You have no choice but to put up with the din; anything you do to try to stop your nightmare is futile.

You must even listen to the war cries of rival spouses, which begin with a plaintive sound and end with a peculiar whistling, which is the call to a battle where the motive is "increase and multiply." More than one of the suitors seeking the favours of the belles is badly mauled in these duels and tournaments of gallantry, where blows, strikes, and hideous wounds are dealt out. During the breeding season, the tomcat spreads his own very disagreeable odour.

Gestation lasts fifty-five to fifty-six days. The Cat usually has two litters a year with kitting taking place towards the end of April or in the first days of May, and again in August. Before the event, she searches for an isolated place, usually an attic, where she prepares a nest for hiding her kittens. She gives birth to five or six kittens, occasionally more.

Kittens are born with closed eyelids that are sealed by a membrane that tears when the lifting muscle of the upper eyelid is strong enough to break it. This generally occurs on the ninth or tenth day.

Until the young can go out, the mother takes all possible precautions to avoid revealing her hiding place to the tomcat, who, in many cases will kill and eat them without remorse. When she thinks her hiding place is known, she remains anxious until she finds a new shelter for her children, and she does this with all the prudence that a mother, especially a mother cat, is capable of.

She carries them away without being seen, and she communicates the need for secrecy to her kittens so that they don't cry out and reveal the secret of their flight. She approaches them gently, licks them under the neck to prepare them to be seized in that region, and then lifts them with her lips, by squeezing them just enough to prevent escape, but not enough to make them cry out.

With her investigative eyes carefully inspecting the path, she walks with her head up to avoid her precious burden touching the ground. Once she reaches her chosen retreat, she carefully deposits her child and licks him again under the neck.

Nursing lasts several weeks. In young, inexperienced and well-domesticated females it is often necessary that their masters, or a more experienced female that has already been a mother, helps show them how they should go about raising and feeding their young.

In speaking of the Spanish Cat, I mentioned the Cat Isatis, who had raised her profession of matron to a state of passion or priesthood! During the whole time that the mother is nursing her young, she leaves them only to go and find her own food and, later, to provide food for her offspring. During this time she treats them with remarkable tenderness, and when her milk is no longer enough for her growing children, if her master does not think about bringing them food, which often happens when her nest has been kept secret, she brings them mice and birds.

As soon as they can go out and begin to walk, she accompanies them everywhere, teaching them how to find their way around, to play, and to avoid dangers and enemies. She calls to them with a peculiar meow if they go too far; she is so afraid of misfortune happening to her children that the slightest noise disturbs her. If they disobey her, she scolds them, even punishes them, which nevertheless prevents any serious danger, and forgetting her own safety she will defend them with remarkable courage and fury.

What we have just said about the female cats lover for her offspring also extends to animals of different species, which have been given to her to suckle. Indeed, there are a number of examples of mother cats that have become wet-nurses for puppies, baby rabbits, leverets, baby squirrel, and even young rats and mice, and they showed these little ones the same affection that they would have shown to their own children.

Captain Marryat recounted a very curious instance of adoption, which has been cited in several collections, and which we think is interesting enough to reproduce here, since we have resolved make many different points of view about the animal that is the subject of this treatise better known. [I have used Marryat's original account in English]

"I do, however, know an instance of misplaced affection in a cat, which, although it does not add to the moral character of the race, is extremely curious for more reasons than one, and as it happened in my own family, I can vouch for its authenticity. A little black spaniel had five puppies, which were considered too many for her to bring up. As, however, the breed was much in request, her mistress was unwilling that any of them should be destroyed, and she asked the cook whether she thought it would be possible to bring a portion of them up by hand before the kitchen fire. In reply, the cook observed that the cat had that day kittened, and that, perhaps, the puppies might be substituted for her progeny. The experiment was made, two of the kittens were removed, and two puppies substituted.

The cat made no objections, took to them kindly, and gradually all the kittens were taken away, and the cat nursed the two puppies only. Now, the first curious fact was, that the two puppies nursed by the cat were, in a fortnight, as active, forward, and playful, as kittens would have been : they had the use of their legs, barked, and gambolled about; while the other three, nursed by the mother, were whining and rolling about like fat slugs. The cat gave them her tail to play with, and they were always in motion; they very soon ate meat, and long before the others they were fit to be removed. This was done, and the cat became very inconsolable. She prowled about the house, and on the second day of tribulation fell in with the little spaniel, who was nursing the other three puppies.

"O ho!" says Puss, putting up her back, "it is you who have stolen my children."

"No," replied the Spaniel, with a snarl, "they are my own flesh and blood."

"That won't do," said the cat, "I'll take my oath before any justice of peace that you have my two puppies."

Thereupon issue was joined, that is to say, there was a desperate combat, which ended in the defeat of the spaniel, and the cat walking proudly off with one of the puppies, which she took to her own bed. Having deposited this one, she returned, fought again, gained another victory, and redeemed another puppy. Now it is very singular that she should have only taken two, the exact number she had been deprived of. Does this not prove to a certain extent the power of calculating numbers in animals?

Examples of the most varied adoptions have been cited by a great number of authors: White, Brehm, etc., have related very remarkable instances. We could devote a whole chapter to this subject if we wanted to report all the known facts, but we will conclude this subject with the curious account of a mouse nursed by a cat as it appeared in 1731 in the *Mercure de France* newspaper; this is an extract of a letter dated January 19th, 1731:

"The fact that you returned several times, passing and re-passing through our town, when you frequented Normandy, which you reminded me in your last letter, with an entreaty to point out all the circumstances to you; I will give these very certain facts. In the year 1664, in the town of Evreux, a female cat gave birth to six kittens in the Dupuis house, in Rue Trienne, and Dupuis found at the same time a nest of mice in his house, which he too to Puss. She ate all of them except for one which happened to hide beneath her; this little mouse sucks the milk which drips from the kittens' mouths

when suckling from their mother. As soon as this mouse tasted the cat's milk of the Cat, she was robbed, so to speak, of her ferocity and natural antipathy, stroked the mouse and nursed it alongside her kittens. Some old men from that time testify to this as eye-witnesses; we find it written in brief in the Memoirs of the late M. Ruault, a lawyer in Evreux, the most knowledgeable, most curious, and least credulous man of our province, who left behind many memories and stories, and whose reputation and children are known to us; here is the final narrative of our illustrious compatriot finishes on this singular occurrence:

"Almost the whole town went to see the mouse that was fed by a cat; I went myself, and saw an individual take the mouse from under Puss and put it in the middle of the room. Puss then left her resting place, took the mouse in her mouth, and without harming it brought it back among her kittens and gave it some astonishing caresses."

This event, once again, which I have heard all my life, and which still has living witnesses, is set out just as I have told you in the Memoirs of a true scholar, recognized as such and incapable of misleading the public. He even makes some reflections on this subject as a natural philosopher, and especially reflects on milk, which, he says, produced this state which was contrary to the nature of those animals; but I will omit those reflections and the conclusions he derived from them in relation to mothers and wet-nurses, in order to give modern natural philosophers complete freedom to meditate and explain to themselves such an extraordinary event.

Scheitlin's description of kittens is so exact that I can do no better than reproduce his words:

"Their first voice is exceedingly sweet and quite childish. They are so restless that, even while blind, they are not afraid to venture out of the nest, and their mother, worried by their escapes, is always forced to bring them back to the nest. Scarcely have their eyes opened to the light, scarcely are they able to distinguish objects around them, than they immediately begin to play with anything that stirs, rolls, slips, or flies. Their instincts as hunters of mice and birds already begin to awaken.

They play continually with their mother's tail and with their own, as soon as it is long enough for them to be able to grasp it with their paws; they also bite it and do not notice that it is part of their body, just as our children bite their fingers, which they consider to be something foreign to them.

Kittens make the most singular leaps and the most graceful movements. Their gestures and games, which they enjoy just like children, amuse them and also amuse the people who love them, for hours at a time. As soon as their eyes are opened, they know how to distinguish the good person from the evil, the friend from the enemy. If a dog arrives in the midst of their games, whatever its size and strength, they immediately put themselves on the defensive by arching their backs. They are like little lions.

The Cat's sense cleanliness is taken to the great lengths, it cannot stand the slightest stain on its fur; we always see it lick after finishing its meal, clean its coat, smoothing its fur with its tongue as far as its mouth can reach.

It washes its head and places inaccessible to its tongue by wetting its paw with saliva, and passing this over its fur again and again until complete satisfied with its looks. No part is ignored, and all parts of its body, from the head to tail-tip, must be glossy and brilliant. This quality, so well-known to us, is expressed very well in a popular song found in the collection of Jérôme Bujeaud (Songs and Folk Songs of the West);

*Jeannette's cat is a very pretty beast;
And when he wants to make himself handsome,
He licks his muzzle with his tongue;
And he does his washing with his spittle.*

Their cleanliness extends beyond the care of their washing; in fact they have the habit of burying their excrement and carefully covering it with earth, sand, or ashes, in order to conceal it completely from sight.

"Physically as well as morally," said Scheitlin, "the cat always aims higher; he is not affected by vertigo; his nerves are proof against everything. He climbs to the tops of the tallest fir trees without worrying how

he will get down; yet fear is not unknown to him, for he sometimes gets stuck at a great height and asks for help, not daring to descend, and when he finally decides to return to the ground, he does so backwards. He always endeavours to reach the highest possible level, to perfect the art of climbing, but he is aware of the danger he runs, only the inferior animals are careless. When one tries to make him fall he clings to everything around him.

He knows how to judge distances and space, and recognizes whether a surface is vertical or oblong before he makes a perilous leap for the first time. He reflects and compares, judging his strength and skill before the attempt. Sometimes he hesitates quite a while before acting; but once he has succeeded in doing it once, he will do it a hundred times; otherwise he will practice and try again later. He has little appreciation of time, but it is clear that he knows when dinner-time is because he is always present when the table is set. But, because of his free-living tendencies on the heights, and his nocturnal eye, he needs a sense of space and places rather than a sense of time and hours.

He also has a sense of colours and sounds, because he recognises a person from their footsteps and voice, and he asks to go out if he is called out.

The cat's urine, especially that of the male, stinks, and has a persistent penetrating odour. Urination in males occurs without crouching like females and kittens. The males squirt their urine backwards; the reason for this is explained by their anatomical arrangement, which will we describe later.

Cats possess the gift of observation to the highest degree: they never go into an unfamiliar place without first making a careful and serious examination of it. Jean-Jacques Rousseau says on this subject in his "Emile":

"Watch a cat enter a room for the first time. He makes a tour of it, he smells it, he does not rest for a moment, he trusts nothing until he has having examined everything, and everything is known. Thus does a child begin to walk, entering, so to speak, into the space of the world."

The Cat is remarkable, among all the domestic animals for the lightness of his walk, which is always noiseless, even in great silence, and does not arouse attention; one understands that its paws are so well padded, its claws so completely concealed and protected in their sheaths, that its tread produces no shock capable of upsetting even the most delicate ear.

His walk is majestic, he rarely runs unless he is forced to escape from an attack, is called by a beloved master, or obeys a sudden fear which does not allow him a more leisurely retreat. In these cases he is seen to make a series of vigorous leaps which, in an instant, carry him far from the place he wants avoid.

Moreover, he quickly knows how to put himself at a safe distance, and with a kick of his back legs he has soon leapt to a height of more than two metres, and he can quickly climb a wall or a tree thanks to his strong claws. When he reaches a height where he knows he has nothing more to fear, he resumes his quietude and curiously watches the mood or disappearance of his enemy.

The most usual position of the Cat when at rest is the sitting position. It sits on its backside with its two front legs placed on the ground in front of it as a support, and its tail brought round in a circles onto its front paws. This is how almost all sacred Cats are represented in ancient Egyptian bronzes.

When the Cat wants to rest and sleep, he lies down on his side and wraps himself up with his tail over his head; at other times during his many hours of reverie and idleness, he stretches out in the sun, lying down half on his side and half on his back, coquettishly and carelessly extending his limbs, half-closing his eyes and lounging voluptuously. Always, as much as possible, he looks for a luxurious place to take his ease, he has instincts of pasha.

When he is disturbed and wants to announce his discontent or impatience, or even anger, he quickly and jerkily swishes his tail from side to side. If suddenly surprised, he raises his spine and arches his back, making himself as tall as possible on his legs, his fur bristling from his head to the tail which puffs out as he constant swishes it.

When, on the contrary, he wants to show contentment and bliss, alongside the peculiar inflection of his voice, he spreads his fingers, he raises each fore foot alternately. This habit is especially noticed when he is on the knees of a favourite person or when he is placed on a cushion or furniture with soft fabric.

When he walks in front of a person he likes, and he wants to welcome and caress him, or moves towards an object that pleases him, he carries his tail raised and almost perpendicular.

In his vertiginous leaps, when climbing out of sight, the Cat is often at risk of falling. When threatened by an accident that could injure or kill him, when he is thrown into space he turns in the air with such agility and precision that he almost always falls on his feet without the fall injuring him.

The most extraordinary thing is that, even from a small height, one cannot make a cat fall on its back, not even if one holds it with its belly in the air and drops it abruptly. He always he turns so quickly that he lands on his paws. He is a remarkable and inexplicable acrobat.

The usual cry of the Cat, which has very different modulations and inflections, is called a meow and merits the name of language. Its intonation and rhythm differ according to sex. The mother has a special cry to call her children, another to guide them, another to warn them of the danger and scold them for their misdemeanours and disobedience.

The Cat modulates his meows in very different ways to express his affection and friendship to his masters. It varies it again in order to express itself to its mate. He knows how to ask, unmistakably, for drink, food, to go out or to come back in, etc. His discontent is expressed as particular cries; he has a war-cry, a cry of contempt, and other to express: this last is a sort of whistling and it is sometimes said that he "spits at the nose of his enemy," or more commonly that he swears.

He expresses his contentment, and his satisfaction when stroked, by a peculiar noise like that of a spinning-wheel, which is called a purr. In some cases, he shows his affection, his love and his good humour by a dull and continuous murmur. Anyone who has lived with Cats and learnt to understand them knows that they always express the same sounds for the same situations. Observers, cat-lovers who are familiar with this animal, provide some very interesting dealings on this subject.

The Abbot Galiani loved Cats so much that he wrote to Madame d'Epinau in a letter which he sent to her from Naples:

"Your life in Paris is less insipid than mine in Naples, where nothing is attached to me except for the two Cats I have with me, one of which was led astray yesterday through the fault of my people. This made me mad; I dismissed everyone from me. Fortunately he was found this morning otherwise I would have hanged myself in despair."

I will mention that Abbot Galiani says he has occupied himself with a quest, regarding the language of Cats:

"Cats have been raised for centuries and yet I have found no-one who has studied them well. I have a male and a female and have prevented them from any communication with outsider cats, and I wish to follow their relationship carefully and will you believe this – in all the months of their love they never once mewed; the meow is therefore not the language of love between Cats; it is just a call for the missing.

Another sure discovery is that the male's language is quite different from that of the female, as it should be. In birds this difference is more marked; the song of the male being different from that of the female; but I do not think anyone has noticed this difference in quadrupeds.

Moreover, I am sure that there are more than twenty different inflections in the language of Cats, and their language is truly a language, for they always use the same sound to express the same thing. "

Dupont de Nemours, pushing the observation further, said: "The Cat has the advantage of a language in which it pronounces the same vowels as the Dog, and in addition it has six consonants: m, n, g, h, v and f. The result is a greater number of words."

If the language of cats is, as we have just shown, very varied, it is certain that its passions, thoughts, desires, and needs are expressed and conveyed in its features by the various movements and expressions which it can portray. Grandville, that admirable draftsman, observed on the Cat's figure, seventy-five different expressions, and he thought he could assert that those expressions could be further subdivided into many nuances.

He reproduced a number of those expressions in an interesting and remarkable collection arranged a short time ago by his congenial and learned promoter, E. Charton, in the *Magasin Pittoresque* of 1840.

[*Magasin Pittoresque* (Pictorial Shop) was an illustrated French magazine published between 1833 and 1938. Its early issues were illustrated by engravings.]

"Minet is asleep. What is he dreaming about? Dogs bark in their dreams, pursue quarry or threaten thieves. Does Minet dream of she cats? Does he dream of battles and gutters? His jaws loosen, his ears quiver, his legs stiffen, he arches his back. He awakes with no idea whether good or evil still prevails.

"With his eyes fixed on the earth, he is absorbed in his thoughts. Is he trying to pierce the veil which separates his species, like all those of inferior beings, from human perfection? Would he meditate on this axiom of a contemporary philosopher: 'Man is an essence which grows; man is an essence that does not change.' Or does he recall vague memories of the depths of the woods from which his race has come, in order to soften himself to his sweet and idle servitude? Or, finally, does he just think of his good supper the day before? But a slight noise brings him back to real life, his face lights up, his eyes become animated, it is because a fly is buzzing in front of the windows; it is because a light touch has imitated the gnawing, trotting rat; his eyes are wide open, fixed and radiant; they let themselves to be penetrated by all the light they can receive; they contemplate the sky or the birds in the sky, or the young mistress dressed for the ball in a satin dress that mirrors the candles.

"You are a scoundrel, puss; you just want a compliment, or to make mischief, or have a pretty hand stroke your fur. What a difference from your bad hours, when your eyes darken, your brows furrow, your cheeks, whiskers and lips sag with boredom! But why do you have to change your mind so suddenly, or why is the food not always full of meat?

Miss Betty crosses the yard with a sad meow. Miss Betty is hungry; her milk has not arrived; the cook is late and will be bullied with your justified and touching complaints. On the other hand, here is a little master cat whose witty spiritual face shows a deep concern. He was suddenly interrupted in the midst of his games by the sound of a kitchen basin or by a foreign voice; he is ready to run and jump.

"The gentle steam of a cup of warm, sweet milk is a voluptuous the smell to this little scrap. Doesn't he look just like one of those fond guests, who both thank you and apologise as they fill their plates to the brim? He advances slowly and sniffs with attention; his ears are raised, his eyes wide open and express desire, his impatient tongue licks his lips, stroking and tasting the desired object in advance. He walks cautiously, his neck extended. But takes possession of the balmy fluid; his lips touch it, he savours it; the object is no longer merely desired, it is claimed; the feeling of this object awakens his senses, seizes his whole being; the little cat then closes his eyes, considers himself, arches his back and trembles voluptuously; his head retires gently between his two shoulders; one feels that he is trying to forget the world, now indifferent to it.

Naïve covetousness, both curiosity and desire, is triggered by the sight of the mouse's tail or a ball of paper pulled along on the end of a string by the child of the house.

Without a doubt, it is after a hearty meal that this veritable thief lands squarely to take his nap. He blinks, his cheeks puff, nothing troubles him.

What mother caresses her son and uses the washcloth with more grace or more love, and what child, in such circumstances, is as patient as the cat's child? Attention, desire, surprise, these all compose new nuances of the expressions studied previously. What about the look of a cat before whom a closed

basket is placed. Does he suspect a mystery? Is he delighted at the surprise prepared for him? What about satisfaction and drowsiness? This delicious state of tranquility is probably caused by the softness and warmth of a good bed. This cat reminds us of the archduke of well-fed cats spoken of by La Fontaine:

*A cat living like a devout hermit,
A cat making a humble face,
A holy man of cats, well furred, large and fat.*

If you raise a hand or a stick to it, the cat, like a schoolboy under his teacher's ruler, is afraid: but sometimes he wants to resist, sometimes he submits. Perhaps he feels guilty, but of what crime? He will shed hair on the armchair or torn a curtain. We pamper, we caress, we tickle this epicurean; his eye is moist, his lips are half open showing the edge of his pink tongue; his gaiety flourishes. Now his life is sweetness and laughter! Sad or anxious thoughts are far from his mind! No doubt he has great contempt for any philosophy which is not that of pleasure, for he does not believe in misery or long suffering. Now let us imagine the most terrible accidents to explain the fright contracted by that other cat-figure. Is the unfortunate animal fascinated by the snarling mouth of a tomcat? Does the man with the hook and the hood want to make a sleeve of his skin, a stew of his flesh?"

By keeping his cat in his studio, Granville found that the emotion it expressed most often was, alas! boredom.

The Cat's most perfect sense is undoubtedly hearing. Sounds that are quite imperceptible to man and even to dogs are always heard by cats; he can detect these over great distances. Here is an example of the perfection of that sense as recounted by Lenz:

"One day I settled down to read on a bench in the shade of the trees in my yard. One of my little cats came meowing and wanted, as usual, to climb up my legs and onto my head. This was an awkward position for a reader so I gently placed my cat on a small cushion between my legs, pressed it gently, and ten minutes later he seemed to be deeply asleep. While I read quietly and birds sang around us. The head of the small animal, and consequently its ears, were directed to the south.

Suddenly the cat jumped backwards with a start. Astonished by this act, I followed him with my eyes. A little mouse ran from one bush to another, it was to the north of us and it crossed the pavement without making much noise. I measured the distance, over which the kitten had heard the mouse behind it, this measured 14 metres."

He has a very delicate sense of touch; his whiskers are extremely sensitive tactile organs. It is enough to touch one of the hairs of this adornment for it to detect the sensation and jump backwards. His legs are also very sensitive to touch, and he frequently uses them to judge objects he wants to take account of.

Its sight is also of the most developed; we know, moreover, that the Cat has the ability to see as well in darkness as in daylight. This faculty is due to the cat's ability to contract its pupil in the light and dilate it in the dark. In this way there is always sufficient light to make an impression on the visual organs so that the cat can clearly perceive images of external objects.

As for smell, which is so well developed and so delicate in the dog, it is not very sensitive in the Cat due to its peculiar anatomical arrangement which we will discuss further in the chapter devoted to its Anatomy. The inferior horn of the nose is rudimentary and reduced to three or four folds of olfactory mucous membrane. The cat's sense of smell is so blunted that it can only be awakened by very strong odours, especially that of meat.

A concealed mouse must be very close to the cat's nose for it to be detected by smell. The dish most sought after by the cat is recognized by contact with its whiskers rather than by its smell.

There is a proverb devoted to the Cat's antipathy to water, and it is indeed curious to see the infinite precautions it takes to avoid contact with water.

When after heavy rain or melting snow, a cat is forced to cross a puddle he unavoidably encounters in his path, it is amusing to see the precautions he chooses as to where he steps. We see that he constantly shakes them to get rid of the liquid which has impregnated them. His anxiety and bad mood make him grimace indescribably. Rain is extremely disagreeable to him.

One has taken advantage of this innate fear to keep the Cats in the homes or places where their presence is so necessary that they are indispensable because of the large number of rats and mice infesting the place. Their ears are cut off at the level of their heads, which prevents them from going out, so great is their fear of rain falling into their ears. In fine weather, the same result is obtained by their fear of leaves, grasses and tree branches, tickling the insides of the ear, which is real torture for them.

My late friend Henri de la Blanchere, the former General Guard, assured me that this procedure of amputating a cat's ears relieved it of any inclination to hunt birds. He regarded procedure as infallible and infallible way of preventing this indefatigable hunter from destroying birds.

Regardless of his aversion to water, the Cat can swim perfectly well and in some urgent cases he does not hesitate to throw himself into the water. Jonathan Franklin recounts in his *Life of Quadruped* that he saw a female cat swim across a small river to retrieve her kittens which were swept away by the current. She brought them back to shore one after the other, after seizing them by the neck with her teeth.

Their passion for fish often decides to get their feet wet in order to catch them, and they have sometimes even been seen to dive into the water to catch them.

In 1828, an English newspaper (*The Plymouth Journal*) inserted the following account which is very interesting from this point of view:

"There is now at the battery on the Devil's point, a cat, which is an expert catcher of the finny tribem being in the constant habit of diving into the sea, and bringing up the fish alive in her mouth, and depositing them in the guard-room, for the use of the soldiers. She is now seven years old, and has long been a useful caterer. It is supposed that her pursuit of the water-rats first taught her to venture into the water, to which it is well known puss has a natural aversion. She is as fond of the water as a Newfoundland dog, and takes her regular peregrinations along the rocks at its edge, looking out for her prey, ready to dive for them at a moment's notice."

The cat's existence and his tastes as a true disciple of Epicurus tell us in advance of the precautions he takes to protect himself from the cold in winter; he is, indeed, very sensitive to cold, but on the other hand he seeks coolness in the summer.

He sleeps very lightly, and at the least noise or least alarm, he wakes up and is on the alert, ready to either flee or defend himself if danger, or an attack, is imminent.

His doesn't lack courage, and even when flight is no longer possible or it becomes dangerous, he does not capitulate, even before something much stronger than himself. He does not even dread the attack of a Dog, but escapes from these fights with as much honour as his fellow, the Wild Cat. Victory does not make him more proud any more than defeat makes him ashamed.

Its courage (says J. Franklin in his *Life of Quadrupeds*) against dogs bigger than itself, and even against Bulldogs, is truly extraordinary, yet he has neither strength nor size on his side. As soon as he sees a dog, he arches his back in a special way. His eyes sparkle with anger, he is inflamed with courage mingled with a certain disdain; he throws fire and flames from a distance; perhaps he wants to run and save himself: indoors he climbs on a window, onto a piece of furniture, or tries to get out of the door.

If it is a female that has young, she rushes at the Dog as soon as it approaches the nest, and with one bound she jumps on its head and claws its eyes and face horribly. If, during that time, another dog attacks her, she shows her claws and does not leave her place anymore. Provided that she has her back to her nest, that is enough for her; as for her flanks, she knows how to protect them with blows from her paws, which she uses like hands. Five dogs could attack or besiege her, or pursue her while barking, but she does not flee.

A single leap would be enough to jump over her enemies, but she knew it would be her loss, for the dogs would soon reach her. When they stand without pursuing their attacks, she remains quietly seated, waiting for them again and withstands ten successive assaults without flinching.

Sometimes the Cat sees a way out and quickly climbs up some elevated object where they sit quietly: huddled with half-closed eyes, looking at their enemies with an air of mockery, well assured that the Dogs cannot climb or jump high enough to reach them. If a man tries to grab it, it climbs even higher and will run away, for they are more frightened of him.

Cats pursued by a dog in open country sometimes turn abruptly and attack their enemy head on if they feel strong enough against him. Ordinarily, the latter, frightened by such a sudden reversal, quickly flees."

The Cat is often quarrelsome; he sometimes finds some pretext to provoke or measure up to his fellow creatures; sometimes he nurses a deep hatred for Dogs, and is not afraid to initiate an unprovoked attack. He jumps on the dog's head, clings to it, and rakes its face and eyes with his formidable claws.

But, in spite of these warlike tendencies, the Cat loves to be stroked and eagerly returns the affection; he knows how to love just as much as he knows how to hate. In another chapter we will return to the subject of the Cat's friendship, which can go as far as devotion, but we will mention a few remarkable examples here.

It is often said that the Cat is more attached to the house than to the inhabitants; I think there has been some confusion about this. Just as it has been noticed that Cats carried a great distance from home in a basket or bag have returned to the house they had been torn from, there are also many examples that prove when their masters come to live in the new house with them they do not try to go back to their old house. They acquaint themselves with the new place, and when they feel certain that their masters are with them, they feel at home and they remain there without fear and without trying to escape.

We cannot conclude this chapter without mentioning the Cat's passion for valerian (*Valeriana officinalis* and *Valeriana phu*). When they encounter it, they roll in it, rub themselves on it, and seem to find incomparable delights in these actions, probably because of the smell it gives off although it is not a pleasing smell to human noses.

SOME NATURALISTS' OPINIONS ON THE CAT

The assessments of the naturalists who have considered the cat's qualities and defects are variable; we think it is a good idea to present these to our readers; we shall see in what points they differ regarding the behaviour and habits we have described in the chapter devoted to its external appearance, behaviour and habits, which we believe to be accurate. We will by reproducing the assessment made by that celebrated and eloquent writer, Buffon, who, in order to highlight the admirable qualities of the Dog, has painted the cat's portrait in wicked and gloomy colours.

We think that these beautiful pages from the elegant naturalist, though full of great exaggerations and numerous inaccuracies, should be compared with the good accounts of the same animal given by so many distinguished men:

BUFFON ASSESSMENT OF THE CAT

[Rather than re-translate, I have used an existing translation of Buffon's work]

THE cat is an unfaithful domestic, and kept only from the necessity we find of opposing him to other domestics still more incommodious, and which cannot be hunted; for we make no account of those people, who, being fond of all brutes, foolishly keep cats for their amusement. Though these animals, when young, are frolicsome [sic] and beautiful, they possess, at the same time, an innate malice, and perverse disposition, which increase as they grow up, and which education learns them to conceal, but not to subdue. From determined robbers, the best education can only covert them into flattering thieves; for they have the same address, subtlety, and desire of plunder. Like thieves, they know how to conceal their steps and their designs, to watch opportunities, to catch the proper moment for laying hold of their

prey, to fly from punishment, and to remain at a distance till solicited [sic] to return. They easily assume the habits of society, but never acquire its manners; for they have only the appearance of attachment or friendship.

This disingenuity of character is betrayed by the obliquity of their movements, and the duplicity of their eyes. They never look their best benefactor in the face; but, either from distrust or falseness, they approach him by windings, in order to procure caresses, in which they have no other pleasure than what arises from flattering those who bestow them. Very different from that faithful animal the dog, whose sentiments totally centre in the person and happiness of his master, the cat appears to have no feelings which are not interested, to have no affection that is not conditional, and to carry on no intercourse with men, but in the view of turning it to his own advantage. By these dispositions, the cat has a greater relation to man than to the dog, in whom there is not the smallest mark of insincerity or injustice.

The form and temperament of the cat's body perfectly accord with his temper and disposition, He is jolly, nimble, dexterous, cleanly, and voluptuous. He loves ease, and chooses the softest and warmest situations for repose. He is likewise extremely amorous, and, what is singular in the animal world, the female seems to be more ardent than the male. She not only invites and goes in quest of him, but announces, by loud cries, the fury of her passion, or rather the pressure of her necessities; and, when the male disdains her, or flies from her, she pursues, tears, and, though their embraces are always accompanied with the most acute pain, compels him to comply with her desires.

This passionate ardour of the female continues only nine or ten days, and it happens generally twice a-year, though often thrice, and even four times. The period of gestation is 55 or 56 days, and four or five are commonly produced at a litter. As the male has an inclination to devour the young, the female carefully conceals them; and, when apprehensive of a discovery, she takes them up, one by one, in her mouth, and hides them in holes, and in places which are inaccessible. After suckling them a few weeks, she presents them with mice, or young birds, to learn them to eat flesh. But, by an unaccountable caprice, these same careful, tender, and affectionate mothers, sometimes assume an unnatural species of cruelty, and devour their own offspring.

Young cats are gay, vivacious, and frolicsome, and, if nothing was to be apprehended from their claws, would afford excellent amusement to children. But their toying, though always light and agreeable, is never altogether innocent, and is soon converted into habitual malice. As their talents can only be exerted with advantage against small animals, they lie in wait, with great patience and perseverance, to seize birds, mice, and rats, and, without any instruction, become more expert hunters than the best trained dogs. Naturally averse to every kind of restraint, they are incapable of any system of education. It is related, however, that the Greek Monks of the island of Cyprus had trained cats to hunt and destroy serpents, with which that island was much infested [Descript. des isles de l'Archipel, par Dapper, p 51]. But this hunting must rather be ascribed to their general desire of slaughter, than to any kind of tractability or obedience; for they delight in watching, attacking, and destroying all weak animals indiscriminately, as birds, young rabbits, hares, rats, mice, bats, moles, frogs, toads, lizards, and serpents. They have not that docility and fineness of scent, for which the dog is so eminently distinguished. They hunt only by the eye: Neither do they properly pursue, but lie in wait, and attack animals by surprise; and, after sporting with them, and tormenting them for a long time, they at last kill them without any necessity, and even when well fed, purely to gratify their sanguinary appetite.

The most obvious physical cause of their watching and catching other animals by surprise, proceeds from the advantage they derive from the peculiar structure of their eyes.

In man and most other animals, the pupil is capable of a certain degree of contraction and dilation. It enlarges a little when the light is faint, and contracts when the light is too splendid. But, in cats and night birds, as the owls, etc. the contraction and dilation are so great, that the pupil, which is round in the dark, becomes, when exposed to much light, long and narrow like a line. Hence these animals see better in the night than in the day. The pupil of the cat, during the day, is perpetually contracted, and it is only by a strong effort that he can see with a strong light. But, in the twilight, the pupil resumes its natural roundness, the animal enjoys perfect vision, and takes advantage of this superiority to discover and surprise his prey.

Though cats live in our houses, they are not entirely domestic. Even the tamest cats are not under the smallest subjection, but may rather be said to enjoy perfect liberty; for they act only to please

themselves; and it is impossible to retain them a moment after they choose to go off. Besides, most cats are half wild. They know not their masters, and only frequent barns, offices, or kitchens, when pressed with hunger.

Though greater numbers of them are reared than of dogs, as they are seldom seen, their number makes less impression on us. They contract a stronger attachment to our houses than to our persons. When carried to the distance of a league or two, they return of their own accord, probably because they are acquainted with all the retreats of the mice, and all the passages and outlets of the house, and because the labour of returning is less than that which would be necessary to acquire the same knowledge in a new habitation.

They have a natural antipathy at water, cold, and bad smells. They are fond of basking in the sun, and of lying in warm places. They are also fond of perfumes, and willingly allow themselves to be taken and caressed by persons who carry aromatic substances. They are so delighted with valerian root, that it seems to throw them into a transport of pleasure. To preserve this plant in our gardens, we are under the necessity of fencing it round with a rail; for the cats smell it at a distance, collect about it in numbers, and, by frequently rubbing, and passing and re-passing over it, they soon destroy the plant.

Cats require fifteen or eighteen months before they come to their full growth. In less than a year, they are capable of procreating, and retain this faculty during life, which extends not beyond nine or ten years. They are, however, extremely hardy and vivacious, and are more nervous than other animals which live longer.

Cats eat slowly, and with difficulty: Their teeth are so short and ill placed, that they can tear, but not grind their food. Hence they always prefer the most tender victuals, as fishes, which they devour either raw or boiled. They drink frequently; their sleep is light; and they often assume the appearance of sleeping, when they are only meditating mischief. They walk softly, and without making any noise. They hide themselves and go some distance away to defecate and they cover it with earth.

As their hair is always clean and dry, it is easily electrified, and the sparks become visible when it is rubbed across with the hand in the dark. Their eyes also sparkle in the dark like diamonds, and seem to throw out, in the night, the light they imbibe during the day."

BOITARD'S ASSESSMENT

Boitard, the scholarly natural scholar, wrote a veritable plea in reply to the indictment of Buffon. Here is the main passage:

"This animal has a timid nature; he becomes savage by cowardice, suspicious by weakness, cunning by necessity, and thief by need: he is never wicked except when he is angry, and never angry except when feels his life threatened; but then he becomes dangerous because his fury is that of despair, and he fights with all the courage of a coward driven to extremity.

"Forced to live continuously in society with his cruel enemy, the Dog, his natural suspicion increases. It is probably because of this Buffon attributes it with falsehood and insidiousness; it has retained enough of its independence to secure a life in the position we have placed it, and if this position is improved, as in Paris for example, where people love animals, it will give up some of its independence in proportion to the affection given to it."

THE CAT AS AN EMBLEM AND SYMBOL. SUPERSTITIONS IT HAS GIVEN RISE TO.

The ancients placed the Cat at the feet of the statue of Liberty; this emblem was as good as the Phrygian cap, and, as Dèsherbiers said in his poem:

*They will repay you, heavenly godmother,
Your companion will be the wandering cat,
That Gaul loves with you,
And certainly that living portrait
Suits you better than the bonnet
Our artists have put on your head...!*

The Cat has nothing to envy the Dog of Saint Roch, since the legend gives the cat the same favour with Saint Yves who is always represented with a feline companion.

We have already said that the cat was worshipped in ancient Egypt. The Musée du Louvre in Paris and similar collections in other European countries possess and publicly exhibit mummies and statuettes of Egyptian cat gods or sacred cats, which show us veneration of the Cat by the Egyptians.

As Plutarch and Herodotus have told us, the Egyptians perfumed the Cats and gave them sumptuous beds to sleep in; they employed all the secrets of medicine to treat and save those who were born of a delicate constitution; they gave each female a suitable husband at an early hour, attentively observing the relations of taste, temperament and features. If a cat happened to perish in a fire, they mourned solemnly; the women forgot about beauty and smeared their faces and ran through the city, disheveled and in a state of complete desolation.

When a cat died, the magistrates came ceremoniously to seize the dead animal; they embalmed it with fragrant oil, cedar, and several other aromatics, which had preservative properties, and transported it to Bubaste for burial in a sacred house.

Pliny says that the Arabs worshiped a Golden Cat. Nowadays, the cat is still highly regarded and even highly honoured throughout the East.

It is certain that the Cat was held in highly regard in India. Here is how the origin of its position was described in a manuscript which was communicated by Freret of the Academy of Inscriptions and Belles-Lettres [a French learned society devoted to the humanities, one of the five academies of the Institut de France], and which was reproduced by Moncrif in his "Letters on Cats":

[I have used the existing translation by HC Brooke in M. Oldfield Howey's "The Cat in myth and magic" (1930)]

"The Cat, the Brahmin and the Penitent (Letter Four)

An Indian King, named Salangham, had at his court a Brahmin and a Penitent, both celebrated for their virtue, which caused a rivalry between them leading to constant disputes. In the course of one of these arguments before the King the Brahmin declared one day that his virtue was pleasing to the god Parabaravaraston, a deity of the first class, by whose aid he could at will transport himself into one of the seven heavens.

The Penitent accepted the challenge, and the King, appointed arbiter, directed the Brahmin to penetrate the Heaven of Devendiren, and to bring thence a flower of the tree Parisadam, the mere scent of which confers immortality. The Brahmin saluted the King and took his leave, the whole Court expecting him to lose his wager, the Heaven of devendiren being well known to be inaccessible to mortals. It is the dwelling-place of forty-eight million goddesses, who have for spouses twenty-four millions gods, Devendiren being the chief; and the flower, Parisadam, of which he is very jealous, is the chief delight of this Heaven. The Penitent was dilating on these difficulties, and anticipating with joy the failure of his rival, when the Brahmin reappeared with the sacred flower; he was received with homage by King and Court, but the Penitent refused this homage, saying that the King and Court were too easily pleased, and that he could, if he wished, send his Cat thither, confident that he would be received by Devendiren with distinction. Speaking thus, he summoned his Cat Patriparan, and whispering in his ear, the Cat

disappeared in the clouds to the wonder of the beholders, and entering the Heaven of Devendiren was received in the arms of the god with a thousand caresses.

So far the Penitent had succeeded admirably, but now he received a check, for the favourite goddess of Devendiren, smitten with love for Patripatan, would on no account agree to the departure of the Cat. This latter, having explained the state of things to devendiren, the god supported him, explaining how the absence of the Cat would reflect upon and affront the Penitent. The goddess refused to listen, and the Best Devendiren could do was to obtain her promise to return the Cat to earth after a few centuries.

King Salangham meanwhile awaited with impatience the return of the Cat; the Penitent alone remained unmoved, and they waited for three centuries without inconvenience beyond that of suspense, for the Penitent, by the power of his goodness prevented old age from attacking the witnesses. At the end of this period the sky suddenly became brilliant, and in the cloud of a thousand colours appeared a throne formed of the flowers of Devendiren.

The Cat was seated in majesty upon this throne, and on arriving near the King presented the Monarch with an entire branch bearing the flowers of Parisadam. The whole Court shouted 'Victory.' The Penitent was congratulated, but the Brahmin disputed his triumph, representing that the virtue of the Penitent was not to be given credit for this success, it being known how favourable were Devendiren and his favourite goddess to the Cats, so that without doubt half the credit was solely due to the Cat Patripatan. The King, on considering this argument, dared not decide between the Brahmin and the Penitent, but all united in admiration for Patripatan, and ever after this illustrious Cat was one of the chiefest ornaments of the Court, and supped every evening on the shoulder of the Monarch."

The Cat appears in coats of arms, it is even probable that the leopards which the Normans transmitted to the English may originally have been Cats. The cat was the symbol of Liberty; the Sueves, the Alains, and the Vandals all wore a sable cat against silver. In heraldic terms it is said to be Hérisonné when the hindquarters are raised higher than the head, and Effarouché when it is lowered on its paws or even crawling.

Among the ancient Germanic peoples it was taken as a symbol of adultery and at the same time a sign of independence. The Scandinavians chose the cat to signify love and they represented the goddess Freya in a chariot drawn by two Cats.

In his sermons Saint Dominic was accustomed to representing the devil in the form of a Cat.

The witches were supposed to often take the form of a Black Cat, and we know that it was this belief that gave rise to the custom, ridiculously maintained for far too long at Metz, of burning Cats in the Saint John's day fires.

This incarnation of the Black Cat makes the author of the advocates of a Parrot, a Cat and a Dog say:

"... How many women love the devil so much to be alone with a big Black Cat! ..."

One has only to rebuff the options to find legends, tales or anecdotes of Satanic or cabalistic interventions of the famous Black Cat. There are others, on the contrary, where the Cat is right about the devil and evil spirits and becomes a good devil.

In the French Book of Proverbs, by Leroux de Lincy, we find the curious legend of the Cats of Beaugency.

An architect could not build the Beaugency bridge. He had succeeded in building almost all the arches, but as soon as he finished the last arch it always fell down. This had happened three or four times and the poor architect did not know which saint to turn to. Finally, he called on the devil for help. The devil took charge of the work on condition that he could claim the soul of the first person that passed over that arch.

The architect consented, but once the arch was built he made up his mind to deceive the devil by sending a cat across the bridge. Satan became enraged and did everything he could to destroy his work; he gave it such a kick that he bent a buttress, which always rests out of balance, but he did not

succeed in destroying the bridge. For want of anything better, the devil decided to take the Cat, and the latter, as malign as they come, tore his hands and face and scratched him horribly.

Satan, notwithstanding all his courage, could not stand up to the pain and let the poor animal escape, who, at one stroke, took refuge in a division in Sologne. Because of that memorable event, that place gained the name "Chaffin" (Chat fin). A hundred paces from Chaffin is a tumulus called the mound of Moque-Barre and Moque-Souris; it is said that this last name comes from the fact that in this is where the Cat of Beaugency made a frightful rout of field mice, weasels, rats, house mice, etc. Since that time, the inhabitants of Beaugency have been called Cats.

FEEDING CATS. - USEFULNESS

In our homes the Cat accepts all the food we offer him: meat, and raw or cooked vegetable material; but he has his preferences, and he is particularly fond of milk above everything else, and also fond of fish and of sheep or ox viscera, such as lungs, liver, and heart.

We have already mentioned that in order to satisfy his taste for fish he does not shrink from water despite his repugnance forgetting wet, in order to go fishing.

I owned several Cats for whom crumbs of bread was a real treat.

If this animal has to make do so, it can manage without any food from us, and this is what makes it so valuable. It is an accomplished hunter that does an immense service by indulging in this instinctive and innate passion in the home. He is the surest agent, the most faithful guardian of our fortune, and without him, rats, house mice, field mice and all the battalions of rodents that raid our town and country houses would quickly deprive us of our supplies, our crops, our furniture, and even our clothes.

One Cat is able to destroy a prodigious number of these enemies. Lenz, who made experiments to assess how many mice a half-grown cat consumed daily, arrived at the average of twenty mice, which represents a total of 7,300 mice annually or its equivalent in rats. It seems to me that in years when, for some reason, those rodents are less abundant, a Cat consumes no fewer than 3,650.

Not only do Cats rid us of the danger presented by a whole series of rodent vermin, they also destroy reptiles, especially the most dangerous serpents like the viper and the rattlesnake. It is known that the monks of the island of Cyprus brought in Cats to hunt the serpents that infested that territory.

De Debrevés, in his *Voyage du Levant*, says in regard to this: "Near Paphos, later called Bafa, is a famous spit of land at the tip of the island of Cyprus; it is called the Cape of Cats. The legend goes like this: There was a monastery whose monks kept a certain number of Cats to wage war on the serpents that laid waste to the country. The cats were perfectly disciplined, and at the sound of a certain bell they all went to the abbey for their meal, and then returned to the country, where they continued their hunting with admirable zeal and skill."

While in Paraguay, Rengger witnessed cats pursuing reptiles and recounts one such scene as follows:

"More than once in Paraguay, I have seen cats chase rattlesnakes at places where the soil was sandy and grassless, and harass them until they were dead. They slap the reptile with instinctive skill, and throw themselves aside to avoid the enemy's strike; if the snake rolls itself up the cat waits for a long time without attacking it, walking around it until the evil reptile grows tired of turning its head in all directions to follow the cat's movements. At that moment, the cat slaps it again and springs to the side; if the snake tries to escape, the cat takes it by the tail as if to play with it. In this way, by a series of repeated paws, the cats usually succeed in killing the snake in less than an hour, but they never eat their flesh."

The Cat also destroys a large quantity of the insect pests that devastate our plants, such as beetles and grasshoppers. Various public administrations, customs posts, post offices, etc. etc., maintain a certain number of cats for which a special budget is allocated.

This is because, without the Cat, man is powerless to get rid of the devastating scourge represented by its walking dinner [trotte-menu]. This isn't surprising if recall the history, or perhaps legend, of the great fortune of Richard Whittington, to which Madame Levesque alludes in her poem "Minet," published in 1736:

*Finally, charming Minet, I'll establish your glory,
By making a memorial of the feats of your peers;
And those who applaud him will pass for the learned,
Just as did the the illustrious Lesdiguere,
The love of a Cat is a great-hearted love,
And this love carries with it heroic honors.
It was thanks to a cat that a veritable no-one,
As the English will tell you, became mayor of London.
Another man almost wound up in prison,
But his little cat's tricks paid off his ransom.*

As for the rest of the story, you can find it in Foote's comedy "The Nabob."

[Note: Landrin obviously didn't want to ruin the story for his readers. Because the play is now fairly obscure, here is the relevant passage, which is spoke by the main character, Mite:

"The point I mean to clear up, is an error crept into the life of that illustrious magistrate, the great Whittington, and his no-less-eminent Cat: And in this disquisition four material points are in question.

- 1st. Did Whittington ever exist?
- 2d. Was Whittington Lord-Mayor of London?
- 3d. Was he really possessed of a Cat?
- 4th. Was that Cat the source of his wealth?

That Whittington lived, no doubt can be made; that he was Lord-Mayor of London, is equally true; but as to his Cat, that, gentlemen, is the gordian knot to untie. And here, gentlemen, be it permitted me to define what a Cat is. A Cat is a domestic, whiskered, four-footed animal, whose employment is catching of mice; but let Puss have been ever so subtle, let Puss have been ever so successful, to what could Puss's captures amount? no tanner can curry the skin of a mouse, no family make a meal of the meat; consequently, no Cat could give Whittington his wealth. From whence then does this error proceed? be that my care to point out!

The commerce this worthy merchant carried on, was chiefly confined to our coasts; for this purpose, he constructed a vessel, which, from its agility and lightness, he aptly christened a Cat. Nay, to this our day, gentlemen, all our coals from Newcastle are imported in nothing but Cats. From thence it appears, that it was not the whiskered, four-footed, mouse-killing Cat, that was the source of the magistrate's wealth, but the coasting, sailing, coal-carrying Cat; that, gentlemen, was Whittington's Cat."

Landrin then tells the fable of Richard Whittington.]

RICHARD WHITTINGTON, THE CELEBRATED WHITTINGTON'S CAT WHO IS ASSOCIATED WITH HIS GLORY

He was the son of a poor mercer of London and had a love of maritime voyages, so he presented himself as a passenger in order to embark. He was asked, with what aid, he expected to live on the journey. He replied that he had no wealth but a Cat, and a desire to make his name. They were impressed by the noble frankness with which he exposed his situation, and accepted him and his cat, and the vessel sailed.

While they were in the Indian seas, they ran into a sudden tempest which wrecked them on the coast. The natives of that country quickly seized the men and their ship. The young Englishman, carrying his treasure in his arms, appeared, like the others, before the king; and while they were at this audience, they noticed an immense number of mice and rats roaming the palace and even gathered on the throne to the great annoyance of the monarch. Whittington recognized the voice of Fortune calling him; he had

only to let his cat loose, and suddenly there was a world of throttled mice and strangled rats, and the rest of the rodents were put to flight. The King was delighted at the prospect of soon being relieved of the rodent scourge desolating his States. He went into transports of gratitude. He embraced sometimes this feline liberator, and at other times the young Englishman; and in order to show his great gratitude he declared Whittington his favourite, and gave this unselfish Cat the title of Generalissimo of his armies.

Whittington married the king's daughter, wisely governed the kingdom for several years, and at length homesick for his country, he obtained permission to return there. The monarch, in exchange for the Cat which was left to him, gave him a ship loaded with wealth.

Hardly had the young Englishman returned to England than he was elected Lord Mayor of London, and was re-elected to this post for a third time in 1419, under the reign of Henry V.

The terror the Cat spreads among rodents is such, when the cat begins its carnage, they all beat a retreat and leave the house where they have lost both their peace and the possibility of living because they have no stratagems for coping with those losses.

Example: listen to La Fontaine and the maliciousness of Rodillard second, the Alexander of the Cats, the Attila, the scourge of the rats who made them so miserable:

*From the top of a shelf the gallant played dead,
The fell beast suspended, he hung down his head,
But he held tight with his strong back claws
To some strategically positioned cords.*

*The nation of mice believed he'd been punished,
For stealing roast meat and cheese from the dish,
That he'd scratched someone, smashed something;
And now the rascal was sentenced to swing.*

*All the mice promised quite unanimously,
To laugh at his grave and his rites funerary,
And their noses in air and their heads held high,
It was back to their nests, and then, by and by,
They took four steps out in search of some rations
When a miracle occurred in the following fashion:*

*The hanged one sprang to life to land on his feet,
Catching the slowest and laziest to eat,
Swallows them down, he says "For sure,
I know more than one trick in this endless war -
So be warned, little mice, little morsels that scurry
You will save yourselves in your caverns and burrows."*

How many defects we can and do judge against the Cat, if indeed we really acknowledge them in light of the of the immense services it renders us. To satisfy all the opinions, we repeat what Lenz said:

"If you have a cat that scratches and bites children, that constantly breaks pots and pans, steals sausages, butter and meat, that strangles chickens and small birds, but never tries to catch rats or mice, then the best thing is to drown it or give it the coup de grace one way or another. But if you have a nice kitty who is the favourite toy of children, who does not cause the slightest disorder in the house, and who keeps busy day and night hunting rats and mice, then you would do very well to take great care of him like a benefactor."

FAMOUS CAT LOVERS

A curious fact to be pointed out, which seems to honour Cats, is, that not only has he found severe and partial judges, he has a great number of celebrated, and often titled, men as friends. To quote them all, and to reproduce all of their opinions on the animal they have honored with their affection, would take far too long – we would need to devote a whole volume to the subject, and we only have room here for a chapter.

Starting with his country of origin we would have to name all the Egyptians; and among their neighbours who to whom the cat was introduced, we cannot ignore Mohammed, whose favourite Cat Muezza has remained attached to the celebrated prophet's.

*The legislator of Asia,
Happy soldier, inspired priest,
The love of his tabby cat
Was his dearest fancy.
Carrying his Cat with him,
Wherever this hero fled,
Together they founded the Hegira,
Eternal date to his empire.
In order not to disturb this friend,
Venerated, admired and currently asleep
In the silky folds of his sleeve
With a generous blade he cut away
The large part of his coat
On which she made her bed.*
Guyot Desherbiers.

[M. Guyot-Desherbiers (1748 – 1828) was a learned lawyer composed poetry as a diversion. He was chief of the legislative division of the Ministry of Justice, during the Directorate, a member of the council of the Five Hundred, and council of the Elders. He was a man of simple habits, conservative nature, singularly disinterested and had a charming wit and unfailing gaiety. He loved complex rhyming schemes. His grandchildren have preserved his only complete work, "Les Chats," in which he eloquently praised the virtues of the cat. The first canto is of three stanzas only, and subsequent cantos are devoted to the cat in Nature, in Fable and in History. He then spent ten years transcribing a second – annotated – copy that expanded to 600 folio pages and became a learned work.]

Tournefort related this account in a journey to the Levant: "Mahomet, being consulted on certain points of religion, much preferred to cut the trim of his sleeve, on which his Cat slept, when he got up and went to speak to a person waiting for him."

This same anecdote, so well known in the East, is thus told in the Cousin of Mahomet:

"Turkish women show little attachment to the law of Mahomet; they do not consider themselves obliged to do anything ordered by a man who preferred his cat over them by putting it in paradise, while excluding them. It is because they ignore or pretend to be ignorant that this venerable Cat was a virtuoso, that is to say, a holy personage. Here is a feature of his story. One day the Prophet's kitty was lying on a sleeve of its master's coat, and it meditated so deeply on a passage of the law that Mahomet, at the hour of prayer, dared not disturb its rapture and cut off his sleeve rather than disturb it. On returning from prayer, he found his Cat, who was awaking from its ecstatic asleep, and on seeing Mahomet's cut away sleeve beneath it, recognized its master's intention for him.

It stood up and bowed to him, raised its tail and arching its back to show him more respect. Mahomet, who understood perfectly what this meant, assured the holy man of Cats a place in paradise. Then, thrusting his hand three times over the cat's back, his touch gave the cat the virtue of never falling on that part; hence Cats always fall on their paws. I have often heard venerable Turks tell this tale so seriously that it would be dangerous ridicule it in their presence."

Returning to Italy, we recall Tasso, a divine poet who, in the depths of misery, life being a sad thing for this genius who lacked even a candle to write by, penned a pretty sonnet praying to his Cat to lend him the light of its eyes during the night:

*Rival of Virgil and Homer
(Someone named him the winner),
Tasso unburdened his heart
To a young Cat and its mother.
"Alas! Bitter is Fortune,
And she beats me," he told them,
"So I seek solace with you,
As a storm-beaten sailor,
Carefully navigating,
By the Great Bear and the stars
Seized the flashes of lightning
Through the clash of the clouds."
Think thoughts of pain and flattery,
In my poverty and disgrace,
With just two Cats to console poor Tasso!
Guyot Desherbiers.*

And that other god of Parnassus, Petrarch, whom I almost forgot, who retired to Argua after the death of his beloved Laure, had nothing more to charm his sad solitude than his Cat, whose skeleton is religiously preserved in the museum of Padua.

*Petrarch wrote sweet sonnets
To his connoisseur Cat.
The faithful poet implored
God to grant the divine power
To soften the heart of Laure,
And he did not implore in vain.
Whether he sang of sweet martyrdom,
Or he sighed in despair
At the death of his beloved,
He heard his favourite cat
Faithfully raise up its cry
In tune with his lyre.
In Vaucluse, when two lovers
Go to the wandering River Sorgue
In search of the languid sounds,
That echo on its banks,
Sometimes an attentive ear
Distinguishes the sad strains
Mingled with the cat's plaints.
For seven hundred winters,
The Child of the Muses visit Argua,
To kiss Petrarch's marble
And to see the remains of his dear Cat;
And all in Italy admire him -
Now immortalised in myrrh, -
The Apollo of so many beautiful verses.
The ruthless decay of the ages
Has respected the body;
His beautiful soul seems to live on
In the flame of her green eyes.
It is merely a scarecrow
To those irreligious cattle
Who would like to pen books
About this harmonious poet.*

*Thus the glorious Cat
Shares the temple with Petrarch!
Encouraged by this example,
I timidly hope that the god,
In whose honour
I sing my weak rhymes
Would grant me sublime fortune
And immortality.*
Guyot Desherbiers.

The great minister Richelieu raised the taste for Cats to mania; he was always surrounded at his rising, or when he remained in bed due to illness, by a dozen Cats with whom he played. He amused himself by seeing them jumping and gambolling. He had a cattery nearby and the care of the cats was entrusted to two attendants whose names we know. Abel and Teyssandier went out morning and evening to feed the inhabitants of the cattery with chicken breast pate. Upon his death, Richelieu left a pension for his Cats, and for Abel and Teyssandier to continue their care.

At his death, Richelieu had fourteen favourite cats whose names were Mounard le Fougueux, Soumise, Serpolet, Gazette, Ludovic the Cruel, Mimie Piaillon, Felimare, Lucifer, Lodoïska, Rubis sur l'Ongle, Pyrame, Thisbe, Raçan and Perruque. These two last got their names because they were born in a wig (perruque) belonging to Racan the Academician.

*The mitred tyrant of France,
Richelieu, who with an iron hand
Held the balance in Europe,
Found a heart of flesh
When with his miaowing brood.
In these rare and short moments
When politics tormented him
And he needed a break,
A basket of lovely kittens
Diverted His Eminence;
And in some small way
Perhaps they have, more than once,
Had revenge on their barbaric master
For the death of Montmorency.*
Guyot Desherbiers.

Colbert, the celebrated and honest minister of Louis XIV, always had a great number of young and frolicsom Cats in his cabinet. Montaigne, de Fontenelle, Bernardine of Saint-Pierre, Sieyes, Jean-Baptiste Say, the famous painter Landon, the poet Gray of Lêsdiguières, the Duchess of Maine, the Princess of Bouillon and Madame Deshoulières of Lesdiguières are also well known for the taste, affection or passion they had for the Cat.

We also know what Jean-Jacques Rousseau thought of this animal, which he loved because of his independence. Above all, we can not forget the famous historiographer of the Cats, who is entitled, more than any other, to be specially cited. We speak, of course, of Moncrif, so well known for his "History of Cats," and who, shortly after the publication of that work, was nominated as a member of the French Academy.

At a time when learned books were very rare, his "History of Cats" earned him well-deserved praises, but he also attracted a great deal of criticism from ill-intentioned and jealous individuals.

One epigram, among others, written by the satirical poet Roy, put Moncrif in such a bad mood that he gave its wicked author such an uncommon volley of blows with the flat of his blade that the bitchy poet said while receiving them, and taunting him even more, "Kitty, paw of velvet! "

When he was appointed a member of the French Academy, a song was published relating to his nomination as one of the forty:

*The beautiful minds will teach us
Who among them should have the lead:
They have rats, they have rats;
They need someone to catch them;
They will choose the author of Cats.
If you don't choose Moncrif,
Clermont will show you his claws;
But when Moncrif is received,
Apollo will show you his arse.*

His History of the Cats was also the cause of a witty response given him by the Count d'Argenson, who loved him very much. Moncrif said to this famous minister: "Monseigneur, you are master of having the licence of historiographer of France given to me." "Historiographer," replied d'Argenson, "that is impossible, let's say historiogriff." "

The poet Delille has left us some beautiful verses on the Cat which we find in "The Man of the Fields and in the Three Reigns," they are entitled "Le Chat and La Chatte." [The Cat and Kitty]

Chateaubriand loved Cats and loved to care for them. One day he said to the Comte de Marcellus:

"Do you know anyone near here who looks like a cat? I find, for my part, that our long familiarity has given me some of its looks."

On another occasion he told him:

"I love in the Cat that independent and almost ungrateful character which makes him attach himself to no one, the indifference with which he passes from the salons to his native gutters. He is caressed, he arches his back; but it is a physical pleasure which he feels, and not, like the dog, a simple-minded satisfaction in loving and being faithful to his master, who thanks him by kicking him. The Cat lives alone, he has no need of society, he obeys only when he wishes, he sleeps in order to see better, and claws everything he can scratch. Buffon mistreated the Cat; I am working on its rehabilitation, and I hope to make it an appropriately honest animal, in the fashion of the times. "

He had inherited Micetto, the cat of Leo XII, of which he said: "I have as a companion a big gray-red cat."

Who has not read the touching lines concerning the cat Moguo of Michelet, written by Mme Michelet, and contained in the book "L'Oiseau," [The Bird] by that great writer.

Among all our modern poets, we can rank among the friends of the Cat: Beaudelaire, Victor Hugo, Mérimée, Théophile Gauthier who possessed a complete and remarkable collection of these animals from the Wild Cat to the aristocratic Angora. It was he who said:

"Pachas love tigers; I love Cats; Cats are the tigers of the poor devils. Aside from Cats, I do not like anything, I only have one feeling and t'at is that I'm cold and I'm bored. "

Sainte-Beuve and Théodore Barrière were also very fond of Cats. T. Barrière pushed the friendship a long way and always had half a dozen around his legs, and gave himself happily to their games and their caresses. One day his friend Lambert Thiboust asked him why he surrounded himself with Cats, like a door curtain. "My dear fellow," he replied, "it is this way ever since I knew men."

It is said that Madame de la Sabliere, who loved dogs to the point of passion, wanted to cure herself of her great and unreasonable obsession, thought she had found a remedy for this whim, by replacing her dogs with a number of black cats, in order, she said, to have only animals whose trade does not lead further than we want. She began by enjoying their games and ended up loving them so much that they shared her intimacy with the good La Fontaine.

Zonatas related that Zoe, the wife of the Emperor of Constantinople, Constantine Monomagne, in the eleventh century, had a Cat who dined at the imperial table from golden table ware. We know,

moreover, that in Turkey Cats have always been the object of special solicitude on the part of the population.

The famous botanist of Tournefort says in his Journey to the Levant:

"In Constantinople, Cats are treated with the same respect as the children of the house. We see nothing but foundations, set up by people of the highest consideration, for the maintenance of Cats that wish to live in independence. There are open houses where they are received with politeness, and they can spend the nights there."

Paul Klotz, in an article he wrote on the Cats, in the Sun of January 2, 1866, wrote: "The city of Rome is full of Cats. Every day, at a certain hour, there are butchers going round the streets. The Cats recognise their cries perfectly and come out of their houses to receive their share, a service for which their masters are obliged to pay a small pension."

Carlin, the famous harlequin of the Italian comedy, whose real name was Charles-Antoine Bestinazzi, and who was born in Turin in 1710, had a deep affection for the Cats, whom he called his masters. In his act he executed all the movements which the Cat made with its tail. In his gestures one could recognise the movements of the Cats that always surrounded him.

FAMOUS ENEMIES OF CATS

The horror that the last crowned Valois felt for the Cats is known to everyone. It is known that Henry III fainted at the mere sight of a cat.

*A thousand woes to the mortal
Who by some natural disaster
Cats make their adversary!
Their former weighty contempt
Became the mark of anathema
To the last of the Valois,
Our penultimate Henry
Most vile of all the kings,
Their just disapproval
Became a frightening example!
See how that half-man faints
Before the majestic Cat,
Meditate on his deplorable end,
And his even more miserable life!
He took an unsteady throne
And made it a bed of vice;
Goes from the scoundrel to the chalice,
On the Night of Assassinations
Craven witness, cruel accomplice;
Without doubt the gaze of a Cat
Became his first torture.
Guyot Desherbiers.*

The cry of death resounded against the unfortunate Cat from the pen of Honore Schoefer and from that of the spiritual author of the "Spirit of the Beasts," Toussenel. On the subject of the scarcity of game, those two writers wrongly accused the Cat of all the misdeeds attributable to poachers and marauders. According to statistics quoted to support their hatred of their feline enemy, there would be in France a maximum of six million rural cats who would devour each year,

Twenty-four million rabbits and leverets;
Seventy-two million partridges;
Two billion one hundred and ninety million small edible birds, that is to say, larks, skylarks, ortolan buntings, etc.

If we admit this consumption to be correct; Toussenel asks if it is necessary to give each Cat that gets under a hunters feet, the honor of a gunshot? Must we forget the quantity of brown and black rats, mice etc, which those same cats kill, and which they rid us of with such courage and industry? Wouldn't they prevent that poaching by taking more trouble to reward the cats for the services they render us, by feeding them a little better than peasants usually do?

It seems, according to Leo-Lespes, that Nadar experienced nervous trepidation when he sees the Cats extend and retract their nails.

If forgetfulness can be regarded as a variety of enmity, astrologers and astronomers may well be added at the end of this chapter, since, as Voltaire has so well remarked, the Cat could not obtain even the smallest place in the heavens alongside the goats, crayfish, bulls, rams, eagles, lions, fish, hares and dogs.

ATTACHMENT AND DEVOTION OF CATS

If all the examples of attachment and devotion which the Cat is capable of were collected, it is likely to make a rather remarkable monograph. It would be almost as interesting as the ones written on the Dog, for which we have collected a whole real morality in action that could serve as an example to his superior brother, man.

Not to mention the well-known epic of the Cat of the Zouave, who, during the whole campaign, nurtured his companion in war, and who was put on the commands of the day, we will randomly take three or four remarkable episodes cited by worthy authors of faith.

"Madame X., a celebrated woman in the Avenue of the Empress, had too many friends have room to keep a Dog or Cat, but from time to time, on winter days, when she shut herself up in her little drawing-room, she found a gutter cat, a plebeian cat, a cat without home or hearth, which came and snuggled between the andirons and the screen. She always wanted to hase him away, but he looked at her with such intelligent large green eyes that she gave him hospitality.

"She fell ill and the Cat, which had never ventured into the bedroom, went there every day. On the first visits he was just passing through. Little by little he remained for a whole hour, and finally, he did not want to leave. On the last night, he spent whole night under the bed of the dying woman. As soon as she expired, he fled with tears. And the next morning he was seen hanging on a forked branch of a chestnut-tree. [La Presse, September 14, 1862, under the signature of the Estoile.]

We find in the Dictionnaire dy anecdotes, 1820, vol. II, page 274:

"An man was murdered in his house by a relative who wanted to enjoy the inheritance. The Justice went to the deceased's house. A big cat sprang from a wardrobe and threw himself into the midst of the crowd and onto a man whose face he clawed furiously. By a presentiment, the surgeon exclaimed: 'This is surely the murderer, please arrest him.' At those words the unfortunate man, covered with scratches and blood, tried to escape, but was arrested. Overcome by terror, he threw himself at the feet of the magistrates and publicly acknowledged his crime. The doctor was surnamed Martin-Chat."

Without dwelling on too many anecdotes on this subject, let's remember the very touching fact, pointed out by M. Desherbiers, who kept all the details of this history of eye-witnesses:

"Madame Dupin, the daughter of Samuel Bernard, wife of a common farmer, had up to twelve catts at a time, each of whom had its special role and treatment. One was admitted on her knees, another was allowed on the bed; another to the entrance of the apartment, or limited to the antechamber, or to the office, etc. All diligently guarded their posts, without letting anyone drive them out, and the most piquant thing was that their manners and characters were in conformity with the post they occupied.

Madame Dupin had a favourite Cat named Bibi, a Methusaleh among Cats, who lived twenty-five years. A centenarian like his mistress, he went to die on her grave, two days after her."

Here is another tale that proves how susceptible the Cat is to man; it is all the more interesting and striking because it seems to contradict the opinion that this animal is more loyal to its home than to its master. We give the translation of the article extracted from an English newspaper which recorded this anecdote:

"An man named Marsch Allen, residing at Willonghton, and being of delicate health, went five weeks ago to Hull to be treated by a doctor. He left his cat, which is not yet a year old, in Willonghton. Allen had been established for some time at Hull, when he thought he saw a Cat on the wall of a courtyard behind the house he was living in, 33 Osborne Street. He began to call Pussy carelessly (it was the name of his Cat). He was astonished when the animal sprang from the wall onto his shoulders, rolled against his breast, licked his face and gave him all the signs of great affection!

It was indeed his own Cat, the one he had left at Willonghton. The claws of the poor beast were completely worn out from walking*, and it seemed to be suffering from fatigue, privation, and hunger. How did it cross the Humber River and get all the way from Willonghton to Hull, about 50 miles away? That is what cannot be explained."

[*Landrin's footnote: This detail is incorrect. The cat does not walk on its claws. We have explained this elsewhere.]

But as the poet Delille said:

*As they do in man the various humours,
Change the wishes and manners of creatures;
More than one cat knows how to love and to please;
I myself have had such a character;
For a long time he shared the lot of his poet,
I celebrated his life and I mourned his death*

In conclusion, and I believe having thus proved the attachment of Cats to their masters, we reproduce a last example cited by Wood in his treatise "The Illustrated Natural History. Mammalia." (London, page 199), which is quoted in Brehm's work "Man and the Animals." [I have used Wood's original rather than re-translate Landrin's version]

"Only a short time ago, died one of the most accomplished and singular Cats that ever caught a mouse or sat on a hearth-rug. Her name was "Pret," being an abbreviation of "Prettina," a title which was given to her on account of the singular grace of her form and the beauty of her fur, which was soft as that of a chinchilla. Her colour was a very light grey tabby, and she was remarkable for an almost humanly expressive countenance, and an exceedingly long nose and tail. Her accomplishments were all self-taught, for she had never learned the usual routine of feline acquirements. "Pret" was brought when quite a kitten from the Continent, being one of a rather peculiar breed of Cats, remarkable for the length of their tails and the softness of their fur. She accompanied her mistress in rather a lengthened journey, and finally settled down in England, not very far from the metropolis. Her mistress kindly sent me the following account of "Pret's" conduct during a severe illness:-

'Three years ago I had a lovely kitten presented to me. Her fur was of a beautiful blue-grey colour, marked with glossy black stripes, according to the most approved zebra or tiger fashion. She was so very pretty that she was named 'Fret,' and was, without exception, the wisest, most loving, and dainty pussy that ever crossed my path. When Pret very young, I fell ill with a nervous fever. She missed me immediately in my accustomed place, sought for me, and placed herself at my door until she found a chance of getting into the room, which she soon accomplished, and began at once to try her little best to amuse me with her little frisky kitten tricks and pussy-cat attentions. But soon finding that I was too ill to play with her, she placed herself beside me, and at once established herself as head nurse. In this capacity few human beings could have exceeded her in watchfulness, or manifested more affectionate regard. It was truly wonderful to note how soon she learned to know the different hours at which I ought to take medicine or nourishment; and during the night, if my attendant were asleep, she would call her, and, if she could not awake her without such extreme measures, she would gently nibble the nose of the sleeper, which means never failed to produce the desired effect. Having thus achieved her purpose, Miss Pret would watch, attentively the preparation of whatever was needed, and then come and with a gentle purr-purr announce its advent to me.

The most marvellous part of the matter was, her never being five minutes wrong in her calculations of the true time, even amid the stillness and darkness of night. But who shall say by what means this little being was enabled to measure the fleeting moments, and by the aid of what power did she connect the lapse of time with the needful attentions of a nurse and her charge? Surely we have here something more than reason.'

The never-failing accuracy of this wise little Cat was the more surprising, because she was equally infallible by night or day. There was no striking clock in the house, so that she could not have been assisted by its aid; nor was it habit, for her assiduous attentions only began with the illness, and ceased with the recovery of the invalid. Instinct, popularly so called, will not account for this wonderful capability so suddenly coming into being, and so suddenly ceasing. Surely some spirit-guiding power must have animated this sympathetic little creature, and have directed her in her labour of love.

No animals seem to require human sympathy so much as cats, or to be so capable of giving sympathy in return. "Pret" knew but one fear, and had but few hates. The booming sound of thunder smote her with terror, and she most cordially hated grinding-organs and singular costumes. At the sound of a thunder-clap poor Pret would fly to her mistress for succour, trembling in every limb. If the dreaded sound occurred in the night or the early morning, Pret would leap on the bed, and creep under the clothes as far as the very foot. If the thunder-storm came on by day, Pret would jump on her mistress' knees, put her paws round her neck, and hide her face between them. She disliked music of all kinds, but bore a special antipathy to barrel organs; probably because the costume of the organ grinder was displeasing to her eyes, as his doleful sounds to her ears. But her indignation reached its highest bounds at the sight of a Greenwich pensioner, accoutred in those grotesque habiliments with which the crippled defenders of the country are forced to invest their battered frames. It was the first time that so uncouth an apparition had presented itself to her eyes, and her anger seemed only equalled by her astonishment. She got on the window-sill, and there chafed and growled with a sound resembling the miniature roar of a small lion."

At one time, while she was yet in her kittenhood, another kitten lived in the same house, and very much annoyed Pret by coming into the room and eating the meat which had been laid out for herself. However, Pret soon got over that difficulty by going to the plate as soon as it was placed in her accustomed spot, picking out all the large pieces of meat, and hiding them under a table. She then sat quietly, and placed herself as sentry over her hidden treasure, while the intruding Cat entered the room, walked up to the plate, and finished the little scraps of meat that Pret had thought fit to leave. After the obnoxious individual had left the room, Pret brought her concealed treasures from their hiding-place, and quietly consumed them. At other times she even covered the plate with paper, linen, or other similar objects.

There were several animals towards which she was extraordinarily affectionate, in particular a poor dog, a poppet and a fighter (Machetes pugnose), with whom she lived on terms of utmost intimacy. But it was always towards myself that she showed the most affection in all circumstances, and when I was present she did not want to eat except close to my person."

The friendship of the famous Arabian horse Godolphin and a Black Cat is also told everywhere. This Castor and Pollux of the animal species lived in profound intimacy. On the death of the Horse in 1753, the Cat sat on the body of his unfortunate friend and would not leave him until he was taken away. After that, he was longer seen in the places where he had lived with his companion, and was later found dead in a neighbouring barn.

INTELLIGENCE AND TRAINING OF CATS

*Ingenious in his prowess,
To triesto entertain you,
He plays dead, seeks and fetches,
Offers a paw like a dog,
And he knows how to close the door.*
(Étienne de Lafargue. -Le Chevalier Duvet.)

We have had so many occasions in the course of this work to relate curious facts to illustrate the Cat's great intelligence, that a chapter devoted to the subject might seem superfluous. However, I wish to give some interesting facts observed by others, in order not to be suspected of bias for this animal, so vilified by writers who certainly did not wish to take the trouble to observe it, and who simply obeyed their antipathy or predilection to repeat what has been said by its enemies.

Lenz has told a lot of stories that illustrate the cat's intelligence.

An inhabitant of Waltershanzen had a cat that had been accustomed to never stealing anything on the table. One day a greedy, thieving dog became his companion and committed thefts that scandalised the cat and justifiably irritated it. The cat placed himself near the table and every time the dog jumped on a chair the cat climbed onto the table and when his companion succumbed to temptation he gave the thief a well-aimed smack with a paw.

M. Ernest Menault, in his work on the Intelligence of Animals, relates the following tale: "A lady had, among her friends, a soft little cat of independent character; he was called Minet. Every evening, Minet went out for a breath of fresh air on the roofs. Then, when he had refreshed his lungs, calmed his heart, and wanted to return to the house, Minet simply jumped at the bell-pull, and the door was opened for him. His mistress reproached him, but he looked at her with a wheedling air, went to her chair and slept as soundly as the righteous. After days when he enjoyed free good meals or some other happiness, Minet returned very late at night, but no matter what hour he rang the bell, they always opened the door. 'He is so intelligent,' said his mistress, 'that you can not resist him.'

"For several years I knew a shop's Cat who, if his masters were absent up in the apartment, stood on a bench at the checkout and at the entrance of a stranger in the shop, he warned them by pulling the cord of a bell placed near his observation post.

"A remarkably intelligent Cat that lived with the forestry councillor, Salzmann, was the subject of a narrative recorded by Brehm.

"With a few threats and a few small strokes of a rod this Cat had been taught to leave the tame birds in cages hanging from the window alone. But one of her kittens, which had been left near her, soon showed a pronounced taste for those birds; he jumped on a chair, thence to the window, and was about to take a bite out of the occupants of the cage, when he received a blow to his head from a vigilant hand, which taught him a strong moral lesson, and pushed him to the ground. The old mother cat had seen everything: the perverse attempt and the correction of her child. She rushed to the distressed cries of her guilty infant and began to lick it gently to make it forget the blows. The same thing happened twice more; the rebellious Minet did not wish to restrain his instincts, and he always threw himself anew into the path of crime: the mother, seeing this, never took her eyes off him, and whenever he went towards the window she jumped on the chair and gave her rash offspring regular corrections.

"The young criminal then took another route, slipping onto a desk in the vicinity of the window, and preparing to jump on the birds, when the old mother cat, who had watched his audacious manoeuvre, was on top of the desk in a single leap, and gave the little delinquent such a scratching that from that moment on there was no longer any question of the slightest attempt at raiding."

Another very curious story contained in the same work, interested me so much that I could not resist the urge to reproduce it here:

"A Cat lived on terms of the greatest intimacy with his master's canary and allowed himself to remain peaceful when the bird jumped on his back and provoked him by all sorts of annoyances. One day his master suddenly saw him jumping rapidly and furiously onto the canary, grasping it between his teeth and climbing onto a reading desk, and then letting the bird go. The man cried out in order to save the little animal when he suddenly noticed a strange cat had accidentally slipped into the room. From then on, it was recognized that Minette had wished to protect her friend from her sister and had no intention of trusting her."

The cat is not only intelligent, but wise. We will recount a tale from the great cat-lover, M. Champfleury, the famous realist, in his book "Cats," which will demonstrate the extent of its observation and reasoning capabilities.

Every day, after breakfast, I made it a rule to throw a bit of bread into an adjoining room, as far off as I could, so as to induce my cat to run after it as it rolled away. This custom I kept up for several months, and the cat always regarded that piece of bread as the tit-bit of its dessert. Even after it had eaten meat, it would await with attentive interest the minute when it was to start in pursuit of the morsel of soft bread. One day I held the coveted scrap in my hand, and swung it about for a long time, while the cat eyed it with a kind of patient eagerness, and then, instead of throwing it into the next room I threw it behind the upper portion of a picture which was slightly inclined forwards from the wall. The surprise of the cat, who, closely following my movements, had observed the direction in which I threw the bread, and its disappearance, was extreme. The uneasy look of the animal indicated its consciousness that a material object traversing space could not be annihilated. For some time the cat considered the matter, then it started off into the next room, evidently guided by the reflection, that, the piece of bread having disappeared, it must have gone through the wall.

But the bread had not gone through the wall, and the cat returned, disappointed. The animal's logic was at fault. I again attracted its attention by my gestures, and sent a second piece of bread to join the first behind the picture. This time the cat jumped upon a divan and went straight to the hiding-place. Having inspected the frame on both sides, it began to manoeuvre so dexterously with its paw that it shifted the lower edge of the picture away from the wall, and thus got at the two pieces of bread.

"Isn't its wisdom doubled by observation and reasoning?"

M. Parpolet has told M.E. Menault the story of a Cat that, every evening, closed the inner shutters of the room where he slept, and who, when he wished to enter, threw himself onto the key and made it turn until the door opened.

The Cat's intelligence has allowed some people to completely tame its wild and independent nature. Their cats reached such a state of training that they could be exhibited in public and made to perform at fixed times each day as skilled acrobats, clown acts and tightrope walkers, attracting the applause of the crowd as well as that of their trainers.

Recently, an impresario exhibited a whole group of Cats in Paris; they performed tricks incompatible with their usual character, giving them birds, rats, and mice as companions, with whom they were a happy family.

The Rayon de Soleil [newspaper] of 1875 gives an account of a man who trained five Cats to play all kinds of tricks and to ring bells placed on a hoop hanging from the ceiling of the performance hall. He made them perform in public, and their diverse talents attracted a crowd, filled their master's pocket with small coins.

There was nothing quit so comical, as to see, when the curtain lifted, the five kitties seated in line, gravely regarding their audience. At a first given signal, they all rose; at a second signal, they advanced towards the ropes, and, standing upright, pressed their claws into the woolen fold which was there to help their act.

After a moment's waiting Noireau pulled the rope of the big bell no 1, Blanchette pulled that of the no 2 bell, Tigré rang the no 3, Griffon sounded the no 4, and Mustache made the no 5 bell ring. I don't know whether the bell-ringers of Saint-Quentin, who have so often charmed my ears, could have done better. The strange bell-ringers kept the rhythm very well, and the harmony was seldom disturbed by an untimely tug of the claw. After a few minutes, a third signal was given: the five Cats left the ropes and retired in the midst of justly deserved cheers.

After the show, my father took me to the trainer and asked him how he had obtained such remarkable results. It is through patience and perseverance, he told us, and through caresses and rewards. In order to avoid distractions, they have not been allowed to associate with any cat outside, and they are given a good fish meal whenever they exhibit satisfactory docility and application to their task. They have never heard harsh words or suffered beatings.

After all this we may well believe as truth the qualities which gave rise to the regrets expressed on the death of the Cat referred to in a book published in 1632, dedicated to Gautier Garguille, and entitled:

"Facetious And Pleasant Regrets, Funerary Sermons of M. Thomassin on ohe Deaths of Various Animals."

"The gods foreseeing that I might be melancholy if I remained alone, presented me with a handsome and lovely kitten, but the painful death of my property in a short time bothers me, to my great regret. My Cat gave me thousands upon thousands of pastimes, and for the sake of making him give me more, I had, last year, pulled his tail.

"If the roast was turning he did not dare look at it with the corner of his eye to touch it! He still held the keys to the expenses. He never injured any one, he never took anything from anyone else, he would rather die, raging hungry, or eat onions – which cats are not fond of – rather than eat something he had been given to guard.

"How many offers I refused, more mercantile than great trade, and several high-ranking barons, to possess my chubby and prettily spotted little short-haired cat."

Finally, all generations have heard of Guignol's Cat who attended all his master's performances, and which, as Leo Lespes said, "remains a silent and insensitive witness of the eternal duel between Pulcinella and the commissioner, not taking one side or the other."

CATS AND MUSIC

Cats, says Moncrif, who shares this idea with de Grever Le Clerc, are fairly well organized for music; They are able to modulate their voices to some degree and express different feelings by different tones. If this is what is called a musical organization, then most mammals are equally gifted in this respect, for many of them "express different feelings by different tones."

He adds : "Our modern music is limited to a certain division of sounds which we call tones and semitones; and we are sufficiently limited in ourselves to suppose that this same division includes everything that can be called music; hence we have the injustice of referring to those sounds whose intervals and relations, admirable perhaps in their species, escape us as roarin, meowing, neighing, etc. In all likelihood the Egyptians had studied the music of animals. They knew that a sound is neither right nor wrong in itself ... "

Without going so far, Mercier wrote: "The Cat is the most expressive of all animals. He tears the heart, while revolting the ears. The plaintive sounds in his lovesongs have a peculiar energy ... "

I do not remember who had originally thought up the idea of noting the tone and timbre of several Cats' voices then placing the Cats in boxes. These were connected to a keyboard whose keys communicated with a cord attached to the paw of each animal. Whenever the performer touched a note on the keyboard, the thread pulled the Cat's paw and the cat uttered a cry, a sound which was repeated according to the play of the hands, which produced real music. Was it really harmonious? I do not know, but it was a tune. [Note: this refers to a katzenklavier, the cries being caused by pulling or pricking the cats' tails]

Valmont de Bomarc tells us that at the Saint-Germain fair he saw some Cats performing a concert which was described by the director of the troupe as a miaulique.

The animals were placed on tables with a musical score in front of them and a solemn monkey conductor placed in the middle. At a given signal, the Cats made sad and pleasant meowing sounds."

In spite of these tales, however, it is customary to refer to the music of Cats as sharp and discordant. This does not prevent the question of how to apply the Cat's voice to music. M. Bruner cited, in *Les Fantaisies bibliographiques*, "A Memoir on the Use of Cats in Musical Art, and on the Method of Biting Their Tails in Order that they may Meow in Concert "(at Utrémifasola, year, in-4).

RACES OF CAT

Properly speakin, our Cat is the le Felis Catus de Linnaeus, which only inhabits the Old World; Cats found in America and Australia were all imported. We will begin by describing the wild species, which will naturally lead us on to the domesticated races.

WILD CAT

Felis Catus ferus

The Wild Cat only exists in Europe, and is not found in Russia, Sweden, or Norway where it is replaced by the Lynx. It is very common in Switzerland, and is abundant in the forest of Thuringia, and they are still not rare in spite of the incessant hunting which has been done to them in France and even in Great Britain. Many naturalists consider it the ancestor of our domestic cats. This idea, though far from being proved, is shared by many naturalists, and has prevailed against the theory that traces the cat's origin to the little Cat of Nubia. The differences between these two species and our Domestic Cat are equally great, and nothing can prove one opinion or the other.

Pietro della Valle wrote that a hunter brought Christopher Columbus a wild Cat just like that of Europe. He said that the Cat was of an ordinary size with grey-brown hair, and a long and very strong tail. Desmarest, who had first accepted this claim as true, later demonstrated that it was a mistake because the Anglo-Americans referred to the Lynx a Wild Cat.

Here is the zoological description Desmarais gave of the Wild Cat:

"Long and thick hair, chiefly on the cheeks; sides and upper parts of the body vary from dark gray to brown gray; whitish lower parts; the back is marked along its centre by a black longitudinal line, from which arise transverse stripes, fairly numerous, extend parallel to one another down the flanks, shoulders, and thighs; some small lines, also parallel to one another, on the forehead and the top of the head; a stripe from the external angle of the eye passes through the cheeks; corners of the mouth gray white, as well as the chest and underbelly; black lips; external face of the legs fawn; tail very thick, ringed with black, and has the same colour at its extremity, which is also the same as the fur beneath the four feet; straight, stiff ears; pupil of the eyes contracts longitudinally. "

The Wild Cat is much bigger and more vigorous than our Domestic Cat, his look is more wild, his coat more varied in colour, his teeth stronger and his whiskers more abundant. Its tail is equally thick along its length, while the tail of the Domestic Cat is much longer and is tapered towards the tip. The average length of the Wild Cat varies from 50cm to 70cm; its height, taken from the withers, is 35cm to 40cm, sometimes more; its tail measures about 30cm.

The Wild Cat lives alone in the midst of forests and woods of high forest. He often dwells in the caverns or crevices among rocks; he also selects the warrens of Foxes or the Badgers as ready-made dens. He is a remarkably agile climber of trees where he takes refuge to hide from attacks, he hides himself on the large branches, to survey his pursuers.

He chiefly hunts at night, and although he dispatches a considerable quantity of rodents that are harmful to our forests, his depredations are not without consequence; his consumption of game is considerable. Everything is fair game to him: Birds, Hares, Rabbits, young roe deer and Fawns. When this brigand attacks strong prey, he never faces it head-on, he jumps on the prey's back and slashes the carotids with his formidable lancets.

If he fails to kill it, he retreats, climbs to a look-out post and patiently and vigilantly waits for an opportunity to make a new underhand attack. If he were simply obeying the struggle of existence, he could be forgiven, but he will kill for the pleasure of killing, often without necessity.

Woe to the pheasanteries whose borders are not well defended; when he has found the means of getting inside he will quickly depopulate them!

He has a great fear of man and quickly flees from him, as long as he is not attacked. When wounded, he flies into a terrible rage, and defends his life, making his adversary pay dearly; he is no longer

calculating, but rushes at his adversary, savaging him with teeth and claws. His courage and his combat skills are unbelievable. He ferociously attacks the Dog without provocation.

"The Wild Cat," wrote Tschudi, "is so unafraid of dogs that he will voluntarily come down from the tree and attack them before the hunter arrives, resulting in a dreadful struggle. The angry cat rakes its claws into its opponent, making deep gouges, and tries to scratch its opponent's eyes. It defends itself furiously for as long as it retains a spark of life and its defence is long because few animals have such a tenacious grasp on life.

In the Jura a male wild cat, lying on his back, held his own against three dogs and came out victorious from the battle. He slipped his claws into the muzzles of two of the dogs while he held the third by squeezing its throat in his powerful jaws. This mode of defence, which demanded extraordinary courage and an inconceivable skill, was at the same time a testimony to the cat's extreme resourcefulness, for it was the only defence that could protect him from being bitten by the the dogs

In winter, when driven by hunger, in spite of its fear of man, the Wild Cat enters village dwellings and is sometimes found installed in the barns.

The gestation period of the female Wild Cat is about nine weeks, kitten occurs in April. She makes her nest in a burrow, in a rock opening or in a tree trunk, and gives birth to five or six kittens which she solicitously nurses and then feeds with rodents or birds, and yet she does not defend them against a man who takes them from her, so great is her fear of man.

On this subject Lenz relates the following account:

"In 1865 a carpenter crossed a thicket about fifty paces from my house on the southern side of the Hermnustein, where there are a great number of rabbits. He thought he heard meowing from an enlarged burrow . This discovery filled him with joy, because a few days earlier he had expressed the desire to have some wild cat kittens. He began digging out the burrow and found three kittens each about the size of a rat. He put them in his sack and was leaving when he spotted their mother lying not far away with her ears erect. However she kept her distance, and did not try to attack him.

She was the size of a large hare. The young, by their colour and short, thick tail, were easily distinguishable from domestic cat kittens. They were extremely wild, scratching, biting and screaming ferociously.

He tried all possible means of taming and caring for them, but in vain as they refused to eat or drink and fought him like devils until they died."

GLOVED CAT

Felis Catus maniculatus

This Cat has been observed in the western part of the Nile, in Nubia. It is probable, based on the mummies and figures in the monuments of Thebes, that this was the Cat that was domesticated in ancient Egypt. It was probably taken from Meroe to Egypt by the priests. From there it was introduced into Arabia, Syria, then Greece and the Roman Empire, and it then spread to the western part of Europe. From that last place it would have been transported to the other parts of the globe where it underwent changes according to the environment and living conditions it encountered. Indeed, as the immortal Cuvier said:

"Education has diversified Domestic cats infinitely, both from a physical and a moral point of view.

"If some are incorrigible rogues, others live in the midst of offices and yards, without ever being tempted to steal anything, and we see some who follow their master just as a dog would do. This high degree of domesticity of certain Cats is, unquestionably, a most remarkable example of man's power of man over animals, of the flexibility of their nature, of their resources to bend themselves to circumstances, and to modify themselves according to the circumstances acting upon them. I do not believe that, except among the Cats, our care has completely developed and almost created a new quality in our domestic animals: we have extended and perfected the qualities nature gave them, and especially those qualities

which brought them into our affection. Before being reduced to their current state, they were naturally inclined to live with their fellows, attaching themselves to one another and interacting with one another. We have become for those creature, as it were, others of their own kind; we simply imposed on these animals the dominance which the best suited of their own kind would have imposed, but to a lesser extent. Cats were naturally driven to live alone, deep suspicion followed them everywhere; nothing forced them to attach themselves to our species; they felt no germ of affection for us; yet some races are profoundly domestic, and have an extreme need for human company. Females, especially, manifest this need; and therefore I would be inclined to attribute the origin of their domesticity to their affection for their young, and observe that males are much less dependent on human company. It seems that the domesticity of the latter is not due to the same reason as their mothers, but is due only to the influence which its nature, modified by man, has exercised over theirs, and is not a deep and indestructible disposition like the Dog's sociability."

The Gloved Cat is about the same size as our Domestic Cat; about 78cm – 80cm long, the tail accounting for 24cm – 26cm of that length.

Its coat colour fawn-gray; seven or eight narrow and arched black bands are visible on its head, its tail-tip is black. A black line runs along its back; its lower parts are white, and its chest is shaded with fawn. The thighs are marked with five or six stripes, so are the outer faces of the legs, while the inner side of those parts have two black markings. The soles of the feet are black.

The type exhibited by the bronzes of ancient Egypt, of which there are many examples in the Louvre Museum, entitled Cat-gods or Sacred Cats, reproduces very well the poise and external conformation of the original Cat.

EYRA CAT

Felis Eyra

This Cat lives in the forests of Brazil and Paraguay; his body reaches 54cm long, and its tail is more bushy than that of the domestic cat and measures 29cm long. It has a light red coat. It has white whiskers and lower jaw and presents, on each side of the nose, a spot of the same colour. He is easily tamed, he is of a very gay character, and very gentle.

NEGRO CAT [CHAT NEGRE]

Felis Americana

The Negro Cat is found in South America, on the Plata and in the province of Moldonado. It is completely black and a little bigger than our Wild Cat.

SWIMMING CAT

Felis undata

This is about the size of the Domestic Cat, its coat is of a matte gray marked with small brown bands. It was described from a specimen at the Museum of Paris in 1842, by M. Boitard in the following way:

"A most extraordinary type, which I believe is almost unique in the Cat genre, is presented to me by this animal. His feet are webbed, and the membrane between the fingers extends to the extremity of the phalanges. It must be deduced, by analogy, that he inhabits water-margins and marshes, and that his habits resemble the marshland lynxes. I know only the Ocelot as having a similar peculiarity; but the membranes of Ocelot's fingers are much smaller and much less remarkable than in this cat."

It inhabits the island of Java.

JAVA CAT

Felis javanensis

About the size of *Felis Catus*, Java Cat is very similar to the Cat described above. It is found in the islands of Java and Sumatra. It is brown-grey above and white below and has four lines of brown spots on the back, a transverse band under the throat and two or three bands under the neck. It also has round markings on the flanks.

DIARD'S CAT

Felis Diardis

Diard's Cat also inhabits the island of Java; its body is 20cm long and its tail is 75cm long. It is yellowish gray with black spots on the back and neck. Its shoulders, thighs and flanks are marked with spots whose ringed edge is black and its centre gray; the limbs are marked with completely black spots, and the tail is marked with cloudy rings.

DOMESTIC CATS

As we have previously mentioned, dealing with the Wild Cat (*Felis Catus ferus*), and especially with the Gloved Cat (*Félis Catus maniculatus*), exempts us from an introduction to the study of domestic breeds and allows us to go immediately to their descriptions.

DOMESTIC TABBY CAT

Felis Catus domesticus

The Tabby Domestic Cat is similar to the Wild Cat. One would say that it is only a less carnivorous variety, but has retained the suspicious and savage habits of its ancestor, which it resembles in its external appearance. Indeed, its coat is similar to that of the Wild Cat, and like the latter, its forehead and cheeks have black stripes arranged in the same manner. The lips and soles of the feet are black. Each individual has a great diversity in the number of spots on the flanks and the rings of the tail.

If abandoned to himself, this cat readily retreats into the woods, where he, and especially his descendants, adopt the characters and behaviour of the Wild Cat; but it is always distinguishable by its smaller size.

It is this variety of cat that the cheap restaurants track and transform into gutter-rabbit for their customers, and which was consumed during the siege of Paris in 1870 by the national guards under the name of puss.

All that we have previously noted regarding the domestic cat is applicable to this race, which is the most widespread race in our towns and countryside.

SPANISH CAT

Felis Catus hispanicus

This race is the same as that which has been designated by Linnaeus and Boddaert as *Felis Catus maculatus*; it is very widespread in Europe and quite sought after in the houses where it is considered as a race for enthusiasts. The Spanish Cat is very gentle, docile, very loyal, very affectionate and intelligent. He is an ornamental cat, but also a very skilful hunter of vermin. It is about him that it is said:

*But what do we know, says Montaigne,
When with his cat from Spain
A man takes his frolics,
If the cat is not the real master
And the man is only a beast
Suitable for entertaining cats.*

Its coat is short and glossy, and is marked with irregular, tricolour patches in females, that is, bright red, dark black, and pure white, and is two coloured in males. However, it is said that in Spain and Portugal there are three-coloured males.

I had the opportunity of observing two such cats myself in France. For thirteen years, I possessed a cat of this breed, which had been given to me by my late friend Pierre Aymar-Bression. She has provided me with a considerable bloodline; she was truly remarkable for her loyalty. She followed her masters in garden walks and even into the fields, just like a well-trained dog.

At one point we were absent for a somewhat prolonged period of time, and during that time she abandoned the house to reappear only at meal-times. When we returned to the country, she guessed our arrival. She ran to meet us, expressing all her joy by various meowings and eloquent cries, accompanied by caresses and caprices, and she did not abandon the house as long as we lived. At the call of her name, Isatis, for thus she had been named by her four-year-old mistress Jeanne, she rushed at full speed.

We learned to understand from her inflections and varied voices what she was asking for and what she wanted to tell us. She was always a good mother and excellent grandmother. We often saw her taking care of the kittens of her daughters or great-grand-daughters, which she often suckled in place of their mother.

The results of her hunts were scrupulously laid before us whenever it was a rodent or a mole, but was carefully hidden if she had caught a bird as she knew that catching birds was against our wishes. In this case, she became Puss again, just as in another case where one might have said to her in the words of Beranger:

*You've woken your mistress,
Minette, with your long cries.
Is it hunger that worries you?
Can you hear some mice?
You want to run from my room,
To go I know not where.
Mia, mia-ou! What does Minette want?
Mia, mia-ou! it is a tomcat.*

ANGORA CAT

Felis Catus angorensis

This race, native of Angora in Nathalie, is the most beautiful race of cats that one can meet. The Angora is tall, its hair is very long, fine and silky, especially in the region of the neck, belly and tail; and varies in colour; it is sometimes a remarkable white, sometimes greyish, or pale fawn, but rarely mixed. The lips and soles of the feet are pink in colour.

The Angora Cat is lazy, indolent, sleeper and frivolous, but is very intelligent. It is far removed from the primitive type, and has neither the carnivorous instincts nor the liveliness of the Tabby Cat. It is seen majestically sitting on an elegant piece of furniture in the drawing-room, or in the town shops, where it seems to sit completely immobile like a magnificently successful work of art.

His position and his prolonged posture for hours, give him the appearance of a sphinx.

*They take, reflectively, the noble attitudes
Of great sphinxes lying in the depth of solitude,
Who seem to sleep in endless dreams.*

CHARTREUX CAT

Felis Catus coeruleus

The Chartreux cat is a pretty gray slate colour; it has very fine hair, a little long, but woolly. The lips and soles of the feet are black. It is a lively and alert race which, after the Tiger Cat, comes closest to the Wild Cat.

CHINESE CAT

Felis Catus sinensis

Like the Angora, the Chinese cat has long silky fur, black or yellow, but its ears are hanging. It is used to feed the inhabitants of the Celestial Empire, especially in the province of De-Chy-Ly, where it seems highly esteemed, once it has been fattened. This Cat is the subject of a great trade between the peoples of Asia and the Kiliacs. The Manchu, especially, exchange their young kittens for skins of sables from the people of Kiliaque, but they are careful not to give them females. They thus maintain a market by preventing the multiplication of their goods.

It seems that the Chinese use the Cat as a sundial. Father Hue has in fact spoken of a means which is employed in some provinces of China to ascertain the hour by examining the eye of the cat

"Our obliging neophytes," he said, "brought us three or four Cats, and explained to us how a cat could be used as a watch. They made us see that the pupil of its eye contracted gradually as noon drew near; that at noon it was like a hair, or an extremely thin line, traced perpendicularly on the eye; after midday the pupil began again to dilate. When we had attentively examined the cats in the place we concluded that it was past noon; the eyes of all presented an exactly similar appearance."

Charles Baudelaire, this scholar and delicate philosopher, this friend of the Cats, took up this subject, and wrote in the Revue Fantaisiste of 1861 some lines which we think it necessary to interest our readers:

"One day a missionary walking in the suburbs of Nanking realized that he had forgotten his watch and asked a little boy what time it was. The boy of the Celestial Empire hesitated at first, then, turning his back, he replied: 'I will tell you.' A few moments later he appeared, holding in his arms a very large cat, and, looking at the pupil of the cat's eyes, he said without hesitation: 'It is not quite midday yet.' Which was true. For me, when I take in my arms my extraordinary cat, which is at the same time the honor of its race, the pride of my heart, and the perfume of my mind, whether at night, In the full light, in the depths of her adorable eyes I always see the hour distinctly, always the same, an immense solemn hour, great as the space without division of minutes or seconds, a motionless hour which is not marked on the clocks and, however light as a sigh, quick as a glance.

And if some intruder came to disturb me while my gaze rests on the delicious dial, if some dishonest and intolerant genius came to tell me 'what are you looking at with such care?' What do you look for in the eyes of this stranger? Do you see the hour, mortal prodigal and lazy?

I would answer without hesitation: Yes. I see the hour; He is eternity! "

ISLE OF MAN CAT

This cat originates from the Isle of Man in the Irish Sea). Its black colour makes its eyes look brighter than those of light-coloured Cats. It is distinguished from all other Cats by its almost complete lack of tail, which is reduced to a simple rudiment resembling a stump.

The absence of this ornament, this most beautiful jewellery of the Cat, makes this animal a kind of caricature which leads one to think immediately of the satanic and legendary Black Cat of witches and necromancers, who at all ages have made it an essential accessory of their surroundings.

In spite of oneself, one evokes the Sabbaths of Bockoberg, and one thinks, shuddering, of the Black Cat walking in the company of the Comte de Combourgse's wooden leg on the stairs of the old manor.
[note: a ghostly wooden leg, that is!]

And while we are on the topic of sorcerous Cat, how can we not take advantage of the subject to reprint in this modest work part of the poem by Guyot Desherbiers, the maternal grandfather of the famous writer Alfred de Musset, regarding this point? This poem was inserted in a very curious and interesting collection of poems, songs, anecdotes, etc., published by M. Jean Gay, entitled "Cats." It was sent to the author by Paul de Musset.

*Often, the mere multitude
Surpasses one's instinct
In the combinations studied.
There are indistinct meanings
In the Great Book of Nature,
Which is not always without deletions
For Pliny or Buffon.
The curious mind of man
Wants everything to be straightforward;
We need this, sensible or not,
We need some sense. And that's how
The few physicist people
Created the magician Cat.
In what seems unbelievable,
He grips the claw of the devil,
If he does not see the finger of God.
The dogma of witchcraft
Introduced in due course
After that of idolatry.
Not that I pretend to make you impious
And believe in the fact of magic,
Doubtless he is a sorcerer,
And the Cat is one of his familiars.
In theology, we teach
That hell must have no orgy,
And that the Saint John sabbath
Must have Master Cat preside.
When in the Holy Office at Goa,
Was in conflagration
For our edification,
Some makers of witchcraft,
Saw the lights of an auto da fe
Monseigneur took his coffee,
We know that the devout ladies
The misbelievers saw souls -
Inasmuch as a soul can actually be seen -
Pass through the infernal manor
In the guise of a Black Cat.
From the great Baldus of Bartole who
Maintained and even increased the school,
I will tell you a sad story.
Knowing everything apart from magic,
With the greatest scientist of Cats,
He learned astrology!
One day they were in discord
(And it was Baldus who was wrong),
And to warn him his cat bit him,
And ink smeared the edge
Of his inaccurate tablature;
We do not know if the cat*

*With Belzebub had a pact,
But Baldus firmly believed it;
He saw his salvation in danger.
The supernatural criticism
Stormed his grave brain.
In the depths of his veins he felt,
With the poisons of the tooth,
The infernal aftermath,
And he became obsessed
With the spirit named Legion.
Now he reads without method
Digest, News and Code.
From this known syllogism,
Whose master was recognized,
He can no longer find the trail;
Finally, the doctor, to have
Incurred disgrace from a cat,
Lost meaning and knowledge.
Therefore the Cat, the world over,
Is sometimes god, sometimes necromancer,
Constantly able to maintain
His haughtiness of character.
One point of universal faith
(The illustrious traveller Pythia
Attested, at the seven hundredth chandelier),
It is that always the Cat that held
The seals of destiny over oneself,
That Fortune has chained itself,
To the talisman of his favour
And that by a victorious charm,
All its supporters attract
All the magnetism in the heart.
As proof that I speak without laughing,
Let us go no further, dear sister,
I find the effect on yourself
And that sweet and sacred power
That made you, by force or by will,
That heard, saw and loved you,
Can it not be said
That the knot of this supreme love
Unites us with the Cats?*

CHAZARAN OR KHORASSAN CAT

The Khorassan Cat, which is found in Persia, has long hair which is very fine and silky; it is the same colour as the Chartreux Cat.

SLATE OR BLUE-GREY CAT

Kolbe described a Cat which he says is found at the Cape of Good Hope. Like the Angora and Khorassan it has silky hair which is slate gray. It seems to be close in type, judging by its external characteristics, to the Khorassan.

RED CAT

Felis domesticus ruber

According to Kolbe and Gmelin, the Red Cat also lives at the Cape of Good Hope. It is distinguished by a red line that extends from the head to the end of the back.

ROMANIAN CAT

This cat lives in the Caucasus.

MADAGASCAR CAT OR SUSA

De Flacourt, who described the Madagascar Cat, claims it is distinguished from all other cats known by its twisted tail. It is not known if this character is very constant, or even if it is true.

RED CAT OF TOBOLSK

Gmelin indicates that this cat exists in Siberia. It is known as the Tobolsk Red Cat, and has a red coat.

PENSA CAT

Pallas cited a domestic Cat found in to Russia, he called it the Pensa Cat. This animal seems little known.

CROSS-BREEDS

Numerous crosses between all these races have given rise to an incalculable number of varieties and sub-varieties whose enumeration would be impossible because they are so numerous. An examination at this reveals to the observer that a number of them lack proper classification. One can cite the varieties with short hair that is either silky or not silky. Some are pure white without any marks, others are uniform black, and some are almost completely red.

MONGRELS OR HYBRID CATS

These days it is well known that hybrid mating can only occur between species belonging to the same genus and among closely related species. In relation to the cat, there is a case that, if proved, would seem to invalidate this law.

The following was reported by Rafinesque in the *Annales Generales des Sciences Physiques*, by Bory Saint-Vincent, Diapiez, and Van Mons (vol. VII, p. 85):

"A female cat was left in a cabin in the Kentucky woods, which was abandoned for several months. This hut was perfectly secluded and quite distant from any other dwellings and there were no Cats in the vicinity for a distance of fifteen to eighteen miles. The cabin's owner returned to the cabin, and found the Cat nursing a litter of five monsters whose bodies and fur were similar to a Cat, but the head, feet and tail were similar to those of the common American *Didelphus* known as the Opossum (*Didelphis Virginiana* to naturalists). These animals lived and were exhibited in the area as curiosities, but they died young and without reproducing.

Based on this we have conjectured that in the absence of a male of her own species, this isolated, abandoned Cat, who survived on birds, mice and moles during that interval, had pestered a male *Didelphus* during her normal period of heat and been fertilized by him. There are not even any wildcats – the so called Lynx – in Kentucky."

It is rather difficult to admit the possibility of such a crossing between two species of genus as different as the Cat and the Didelphus, and whose mode of reproduction is so opposite. [Didelphus is a marsupial, the Cat is a placental.] However, we thought it useful to include this case of alleged hybrid reproduction, for, as far as possible, we have tried to include everything concerning the Cat in this study of the animal.

ANATOMY

OSTEOLOGY

SPINE OR VERTEBRAL COLUMN

The spine or vertebral column of the Cat consists of twenty-seven vertebrae: seven cervical, thirteen dorsal and seven lumbar. As a whole, the vertebral column presents curvatures in the Cat, which are roughly similar to those seen in man. "The first two cervical vertebrae," says Chenu in his analysis of the magnificent and remarkable work of Straus-Durckheim, "form a small concave bow forward, owing to the weight of the head, so that the arc of the atlas is oblique from bottom to top and forward, so that its articular cavity adapts better to the condyles of the head. The following cervical vertebrae, with the first ridges, produce a very precipitated concave arch. The other ridges with the lumbar form, on the contrary, a single concave curve below and less strong than that of the cervical region. The relative length of the dorsal and lumbar regions is roughly equal, or rather in the proportion of 15 to 13."

Cervical vertebrae. - The cervical vertebrae of the Cat are distinguished from those of other domestic animals by their slightly excavated articulating surfaces. Their spiny processes are prominent. The atlas has no bulbs on its lower surface, nor any ligamentous imprints on the upper surface of its lower arch. A single synovial joint is common to the first two joints of the spine. The transverse processes have only one anterior and one posterior aperture; near the latter and in front of it is a notch.

Axis. - Its articular surface, which corresponds to the lateral masses of the atlas, presents the form of condyles. The odontoid process is very elongated, curved up and down, narrowed at its base, and cylindrical. Its spiny process is thin and ends in a prismatic point, reaching to the upper arch of the atlas.

The third vertebra is distinguished by its longer length and the shortness of its spiny process. The fourth vertebra has a thin spiny process, triangular in form, and terminating in a sharp point. From this vertebra, the decrease in length and in width continues progressively to the seventh vertebra.

The fifth vertebra offers the least wide spiny process, and ends, like the next two, in a bulge. The sixth vertebra has the most extensive transverse processes. Finally, the seventh cervical vertebra differs from the others in that its transverse processes are those which have the least volume, and its spiny process are the longest.

Dorsal vertebrae. The dorsal vertebrae of the Cat have very narrow spiny processes widely separated from one another. The first four, of equal length, decrease in thickness from the first to the tenth, and from the fifth to the last. At the second vertebra the spiny process terminates in a sharp point. The last three vertebrae differ from the others by the absence of posterior facets, which in the other vertebrae serve for the articulation of the ribs.

Lumbar vertebrae. The lumbar vertebrae have the apophyses directed obliquely downward and forward, and possess on the sides of their posterior contour two indentations, one of which serves to receive the margin of the articular process of the vertebra, which follows it, and the other serves to form the articulating aperture.

From the first to the sixth vertebra inclusive, the processes are increasingly oblique and gradually increase in all directions. It is the same with the spiny processes which are increasingly longer and more and more oblique, and which decrease in width. The seventh vertebra differs completely from those which precede it in that its transverse processes are slender and rounded, and its spiny process is pointed and vertical.

STERNUM

The sternum is composed of eight pieces, not fused, narrowed at their centres and swollen at their extremities. The first of these pieces forms the Trachelian extension.

RIBS

There are twenty-six ribs, thirteen on each side, nine joined to the sternum and four not joined to it. They are more curved and shorter, less flattened and thicker and with more prominent angles than in other animals. Their cartilages have no tendency to ossification and are preserved unchanged until a very advanced age.

HEAD

The head of the cat, compared to that of the man, is more elongated in front, its skull is narrower and lower; but in reality this elongation more affects the face which is more prominent. The facial angle of the Cat is 52 degrees, while it is 80 degrees in man; which is due to the elongation of the cat's muzzle and the lowering of its forehead, and to the jaw being less high and narrower in front, which increases the prominence and the pointed muzzle.

Frontal. The external surface of the front has in its middle a longitudinal depression increasing in depth with age. The orbital process is very short, and the eyebrow is completed by a ligament which often ossifies. There is no eyebrow ridge.

A furrow, intended to house the venous sinus and the cerebral falx, is found on its internal surface; this replaces the median crest of herbivores. The frontal sinuses communicate with the nasal cavities by a narrow slit placed against the partition which separates them.

Parietal. The parietal presents a parietal protuberance more prominent than other animals; but the ridges are replaced by two bony plates separating the compartments of the cranial cavity in a very marked manner.

Occipital. - The occipital in the Cat does not have tuberosities for the attachment of the cervical ligament.

The occipito-spheno-temporal hiatus is divided into two foramina, and the occipital protuberance is prismatic.

Sphenoid. As in man, the sphenoid is pierced with a hole which gives passage to the internal carotid artery.

The osseous blade which borders behind the supraphthoidal fossa is lined at its two extremities with two small apophyses which are joined by a bony tongue to two other apophyses placed at the ends of the anterior contour of this dimple. It is these processes which are known in man as clinoid apophyses. The sub-sphenoidal duct is undivided.

Ethmoid. The ethmoidal fossa, shown in comparative anatomy works has highly developed volutes in the carnivores, and these are exceptional in the Cat, where they are arranged so as to present only a small extent to the olfactory mucosa, contributing to the explanation for the poorly developed sense of smell in this animal, as we repeat it when considering the turbinates.

Temporal. In order to regulate the movements of elevation and lowering of the lower jaw, and to limit the other movements, the condyle of the temporal is represented by a glenoidal cavity on which a hook-shaped eminence rotates. The temporal fossae are very developed, and neither mastoid nor styloid processes, nor hyoid extensions, are observed. The mastoid protuberance is voluminous, and the external auditory hiatus is very broad.

Superior maxilla. - The external surface of the upper jaw is smooth and requires particular description. At its middle part is the opening of the sub-orbital canal ovoid in shape and of an expanded diameter. It corresponds to the grooves above the second molar. At the anterior part of this same face there is a very marked convexity, which is determined by the socket housing the canine.

At the upper part of this convexity we notice an eminence beyond the level of the other parts of the maxilla; it has been called the nasal process. It is flattened inwards; its external part, a little depressed, serves as an attachment to the muscles; its internal surface is rough and connects to the lateral masses of the ethmoid.

The internal surface of the maxilla is remarkable only for the lamellar mass, which, as we shall mention later in speaking of turbinates, presents a remarkable peculiarity which has not been pointed out by most authors who have occupied themselves with comparative anatomy.

The posterior or orbito-zygomatic surface presents at its anterior part the inlet of the suborbital canal, at the base of which is seen a conduit of triangular shape, which protects the vessels and nerves which go to the anterior teeth. Behind this hole is a surface inclined from front to back, and pierced with a great quantity of pores, which serve as a passage for the nervous threads and the capillary vessels proceeding to the posterior teeth.

Small supra-maxilla. - The supra-maxilla is an even bone. It is curved in an arc, it is less extensive than in other animals, it has no incisive hole.

Supra-nasal. The supra-nasal, like the preceding supra-maxilla, is an even bone. It widens from top to bottom, forming an arc with the concavity turned upside down. Its external surface is inclined downwards towards the median line, its lower extremity bears a notch forming the opening of the nasal fossae.

Lacrymal. An even bone, which differs from that of other animals by the absence of the lacrimal fossa.

Zygomatic. - An even bone, the posterior branch of which, flattened and long, supports the zygomatic apophysis of the temporal, and of which the very short anterior branch forms only a small boss, which serves as a point of attachment to the complementary ligament of the brow arch.

Palatine. - The palatins are comparatively larger than those of the herbivores, and provide a duct called the palatine, which is divided into several branches. The guttural [throat] orifice of the nasal fossae, with its inferior outline and towards its center, carries a sharp eminence which is directed backwards.

Pterygoid. The pterygoid is relatively larger than in the herbivore.

Turbinates. - The inferior turbinate in the Cat is rudimentary; it is reduced to three or four undeveloped folds; The Cat's sense of smell is not very sensitive, which detects only strong smells, but lacks the delicacy of olfaction which is found in the Dog. This sensibility is so developed in this last animal that he can easily find the trail of prey or any object that has been touched by his master.

Vomer. - This bone is short and thick, its wings are broad.

Lower maxilla. - This bone is less broad and is thicker than in other animals; the excavation of the external surface is filled by the masseter muscle. The coronoid processes are elevated, vertical and broad, and the condyles are broad and long. Inter-dental spaces are generally very short; we will discuss this in the section about teeth. The place where the two lower jaws meet, known in man as the symphysis of the chin, is never fused together.

Nasal cavities. - There is only one sinus in the cat, which is situated at the upper part of the forehead.

Os wormiens. - These are analogous to those of man [cranial sutures].

Hyoid. - This is composed of nine pieces, three of which form the body, which remain isolated in adulthood, as in man.

PELVIS

Sacrum. - The sacrum is composed of three vertebrae with spiny processes; it has the shape of a quadrangular pyramid with a truncated top. It presents, as in man, four eminences analogous to those which are called the large and small horns of the sacrum. The lateral surfaces, which must be articulated with the coxal, are turned outward and almost vertical. It has four holes, two upper and two lower on each side.

Coccyx. - The number of the vertebrae is six to eighteen. The first four resemble real vertebrae; the last, which M. Goubaux has called hypsiloid bones, are small bones in the form of a 'Y.'

Coxal.- The ilial pit is so shallow that some anatomists have incorrectly stated that it is completely missing. In general, the Cat's pelvis is narrower than that of humans and other animals, but it is more elongated from front to back.

LIMBS

FORE-LIMBS

SHOULDER

In the Cat, the shoulder is made up of two bones.

Scapulum or scapula. - The extensor cartilage is missing, it is replaced by bifurcated lip forming an epiphysis at a young age. The spine of the shoulder blade has a small tuberosity over its terminal point, which rotates on the Acromian fossa. The shoulder is completed by the clavicular bone, a styloid bone which is rudimentary and not directly connected to neighboring bones; it is united to the acromion at the sternum with ligamentous cords.

ARMS

Humerus. - The relatively long humerus is formed into an 'S' with a slight scroll. The two non-articular cavities of the lower extremity communicate by a perforation of the partition which separates them. In the lower part of the bone there is also a perforation which gives passage to an arterial branch. This last character is peculiar to the Cat and is only found in him.

FOREARM

Radius. - As in man, this bone has at its lower and outer extremity a diarthrodial facet, articulated with the ulna, and a linear track the length of its body, which serves as an insertion for the ligament which unites it to the ulna. It responds only to the condyle of the humerus.

Ulna. - This is situated on the external side of the posterior surface of the radius, with which it articulates at its extremities, and with which it is joined by an interosseous ligament.

CARPUS

The bones of the carpus, four in each row, resemble those of the human wrist. These are the scaphoid, the semilunar, the pyramidal, and the pisiform for the upper row. The trapezium, the trapezoid, the large bone or capitatum, the hooked or cuneiform bone, form the lower row.

METACARPUS

The metacarpus consists of four to five long bones, joined together according to the number of fingers. The first four terminate in condyles; the fifth, in trochlea; the smallest is the fifth; the longer ones are those of the second and third fingers.

DIGITAL REGION

First phalanx. - Long bone without ligamentous marks on its body.

Second phalanx. - This exists only in the first four fingers.

Third phalanx. - This phalanx has the form of a small cone terminating in a hook with a lower concavity, armed with a groove intended to receive the claw.

Sesamoid. - The sesamoids are two in number at each finger, but they are fused to the phalanx which corresponds to the thumb of the man. The small sesamoid does not exist, its place is taken by a fixed pulley protruding from the claw phalanx.

HIND-LIMBS

THIGH

Femur. - The femur, longer and more curved than in other animals, presents a small ridge to the external condyle. The head is very detached and higher than the trochantin, which has the form of a small boss placed on the posterior face of the bone. The crests are parallel, and there is neither third trochanter nor supracondylar fossa, and the digital fossa is very deep.

LEG

Tibia. - The tibia is relatively longer than in other animals. It has two opposing and alternate curvatures; its crest is sharp and prominent, while its spine is small. The tuberosity of each extremity carries an articular dimple which corresponds with the fibula.

Fibula. - The fibula, as long as the tibia, is curved along its length and twisted along its axis. It is articulated at its two extremities to the tibia, by articular surfaces and by its middle part, and in its lower third by an interosseous ligament. It is articulated at its lower part with the astragalus.

Patella. - This bone, ellipsoid in shape, is more flattened than in other animals.

HIND FEET

Tarsus. - This is composed of seven bones analogous to those of man. The upper row is formed by the astragalus and the calcaneus. The cuboid, the scaphoid, and the three cuneiform bones constitute the second row.

Metatarsus. - The bones of the metatarsus are analogous to those of the carpus.

Digitized region. - This region, like the preceding one, has the same arrangement of different parts as the front foot.

THE CAT'S TEETH

We find the study of the Cat's teeth to be sufficiently interesting to devote a special chapter to it, which may be useful to a certain number of our readers.

The Teeth of the Cat, like those of the Dog, are distinguished into upper and lower. The first teeth are called milk teeth, and the second set of teeth are the permanent teeth, some of which are replacements for the milk teeth.

From the second to the third week after birth, the first teeth begin to appear. There are fourteen in the upper jaw, and twelve in the lower jaw. The incisors appear first, these are followed by the canines and finally by the molars. They have all erupted around the sixth week after birth. They are shed from the seventh to the eighth month in the same order that they appeared.

The number of permanent teeth is sixteen in the upper jaw, eight on each side, and fourteen in the lower jaw, seven on each side: a total of thirty teeth. There are three upper incisors on each side; there are spaces between them and their sizes increase from the center towards the sides.

The first incisor, whose total length before it becomes worn is 0.5cm protrudes 0.3cm above the gum-line. It has the shape of a flattened corner on its sides and a conical crown; the external face is sharp and bordered with three serrations when it is freshly erupted, but after some time only the middle one remains. This bulb has a very marked transverse groove, bounded posteriorly by a bifurcated heel. It is intended to receive the crown of the corresponding tooth of the lower jaw when the animal's mouth is closed. When the jaws are closed, the upper teeth overlap the lower ones. The neck of the incisor is very accentuated; it has only a broad, flat root, the convex anterior edge being thicker than the posterior.

Second incisor. - The second incisor, the length of which is 0.6cm, protrudes 0.35 cm above the gum-line and differs from the first incisor only by its larger size.

Third incisor. - The third incisor has the appearance of a canine. Its crown is conical, crooked, broad at its base and pointed at its top. Its external surface is convex, and its internal surface has a notch intended to accommodate the crown of the lower tooth, this also facilitates the sliding of the lower canine; its neck is more pronounced on the side of the canine.

Canine. - There is a canine on each side of the upper jaw. This canine has a total length of 2.3cm and protrudes 1.2cm above the gum-line. It is curved from the inside out and separated from the lateral incisor and the first molar by a space of about 0.5cm on each side. Its general form is that of two cones united by their bases, and at an acute extremity. The crown is prismatic, convex at its external face and marked with two or three longitudinal furrows. Its edges have sharp keels which form the demarcation with the internal face, which is slightly flattened, often smooth, but sometimes furrowed. Its root resembles that of the tooth of the Dog, except that it is more rounded.

Molars. There are four molars on each side of the maxilla.

First molar. - This tooth, which has been called the false molar [pre-molar], is seen to be separated by about 0.5cm from the canine, and by about 0.2cm from the second molar. Moreover, it greatly resembles the first upper molar of the Dog. Its length is about 0.5cm and protrudes above the gum-line by about 0.2cm.

Second molar. The second molar, also called a false molar, has a length of 1cm and protrudes above the gum-line by 0.6cm; it is larger than the preceding one. It is sharp at its apex, and is divided into two bulbs, of which the anterior is the widest, and has three roots, two anterior and one posterior. It is 1 cm long and measures 0.6cm from gum-line to summit.

Third molar. The third molar, called the carnassial, is half again larger than the second. Its crown has four sharp-edged, conical bulbs, flattened at the sides; three are placed in line, and the fourth, the smallest, is situated at the internal and lateral part of the anterior bulb.

Fourth molar. This very small molar has been called the cheek molar. It is placed transversely behind the internal surface of the posterior bulb of the previous carnassial. Its crown is ovoid, its posterior bulb sits in a very marked cavity, which is observed at the posterior part of the palatine vault. This tooth has only a flattened root terminating in a cone, which often divides into two at its extremity.

Incisors of the lower jaw. The incisors of the lower jaw are smaller than those of the upper jaw, and do not have the indentations which we described in the upper incisors. We know that these indentations are intended to receive the lower incisors, which are stopped from sliding by the heels whose existence we have described in the indentations, and without which they would slide too far.

The lateral part of each incisor has three scallops. The middle one is largest and persists on the side that corresponds to the canine until an advanced age. That on the opposite side is small and hardly apparent as soon as it has crossed the gum-line; it often even disappears. The incisors of the lower jaw are close together; they increase in size from the centre to the sides. Their roots are flattened and straighter than the corresponding teeth of the upper maxilla, and are less rounded at their extremities.

The central incisor tooth is 0.4cm long, and protrudes 0.2cm above the gum-line; the next is 0.5cm long, extending 0.2cm above the gum-line; the side incisor is 0.6cm long, and protrudes 0.3cm above the gum-line.

Lower Canine. - The lower canine, slightly separated if at all from the incisor, is smaller and has a more pronounced curve than the upper canine. It is 2cm long and extends 1cm from the gum-line.

First molar. - The first molar, spaced about 0.6cm from the canine, has a sharp crown in the shape of a cone flattened from outside or from within. Its anterior margin has a perforation, and the posterior has two less distinct perforations. It is 0.9cm long, and extends 0.4cm above the gum-line.

Second molar. - The second molar, or false molar, differs from the tooth just described by its larger volume; its length is 1 cm, and extension above gum-line is 0.5 cm.

Third molar. - The third molar, or carnassial, is the largest; its length is 1.1cm, extending 0.7cm from the gum-line. Its crown is elongated, indented and depressed on laterally. It has two saw teeth of which the posterior is larger. The most noticeable indentation on the inner surface is a gouge, the external side has a marked convexity; the edges of the crown of this molar are very sharp. This tooth has two roots: the anterior alone, which is conical, occupies three quarters of the base of the crown; it is almost always furrowed along its length; these grooves correspond to projections in the tooth socket. The posterior cylindrical root is small and short.

When the cat closes its jaws, the lower teeth intersect the upper ones on their internal face, like scissor-blades, allowing them to easily slice flesh when eating. This is the type of jaw found in carnivores.

Before finishing this, let us mention that the tri-facial nerve emerges from the anterior and lateral part of the cerebral protuberance.

SYNDESMOLOGY [ANATOMY OF THE LIGAMENTS]

We shall not go into all the details of this aspect of the cat's anatomy. In general, its ligamentary system differs little from that of man. There are, however, some peculiarities it is necessary to describe, and which differ from those found in man or other domestic animals.

Intervertebral joints. - In the Cat there is no inter-cervical ligament, and the spiny ligaments are replaced by small muscular bundles.

Axoido-atloid joint. - There is no odontoid ligament. It is replaced by two lateral cords having their common origin common at apex of the odontoid process, and each inserting inwardly into the condyle of the occipital. There is, moreover, a transverse ligament which maintains the odontoid process against the lower arch of the atlas, and which attaches by its extremities to the upper surface of this arc. The slippage of the odontoid process under this ligament is facilitated by a small synovial capsule.

Atloido-occipital joint. - The synovial capsule communicates with that of the axoido-atloid joint.

Temporomandibular joint. The condyle of the maxilla fits exactly into the cavity of the temporal, which regulates the movements of elevation and depression, and limits the lateral movements. The interarticular fibro-cartilage is very thin.

Scapulo-huméral joint. - The synovial membrane forms a cul-de-sac which goes into the bicipital slide to assist in the sliding of the coraco-radial, it is thus incompletely enclosed in the fibrous capsule.

Humero-radial joint. - The very thick external lateral ligament forms in its lower half a fibro-cartilaginous cap fixed on the ulna and on the radius and which, joined to the annular ligament of the upper radio-ulnar joint, forms a fibro-osseous ring in which the upper end of the radius rotates. The internal lateral ligament is attached by two divisions on the internal side of the head of the radius and on the ulna. A third bulb, more voluminous, occupying the middle, descends between the two bones of the forearm and attaches to the posterior surface of the radius, near the insertion of the external ligament.

Radio-ulnar joint. This articulation is very interesting to study, although it is very similar to that of man, in whom the movements are more extensive. We have said, in describing the radius and ulna, that these two bones were united by diarthrosis at their extremities, and that they were united in their middle part by an interosseous ligament. We have therefore to point out a superior radio-ulnar joint and an inferior one, and finally the interosseous ligament.

The two joints are trochoids which have as means of union, an annular ligament on the upper, and an interosseous ligament on the lower, which consolidate the peripheral fibrous capsule. As for the interosseous ligament joining the two bones in their middle part, it is composed of white fibers, which attach by their extremities to the bodies of the radius and ulna, and lend themselves to the movements of the radio-ulnar joints.

These two joints have a simultaneous play aimed at the double rotatory movements of supination and pronation.

Carpal joints. - The laxity of the ligaments of these joints allows extensive lateral movements; it is the same with the intercarpal joints.

Metacarpo-phalangeal joint. - Each metacarpo-phalangeal joint has a synovial joint, an intersesamoid ligament, an inferior sesamoid ligament, two small lateral ligaments, two lateral metacarpo-phalangeal ligaments which attach to the lower part of the first phalanx, and the sesamoids and an anterior capsular ligament.

Interphalangeal joints. The joint of the first and second phalanges is remarkable for the following peculiarity: the glenoid-carenal cartilage only adheres to the first phalange with the aid of a tract of connective tissue. Its lateral ligaments extend from the lower end of the first phalanx to the upper end of the second phalanx.

In the second interphalangeal joint, the articular surface of the third phalanx is completed by a glenoidal fibro-cartilage similar to that which we have indicated at the first joint. It serves as a pulley for the return of the tendon of the claw, and fulfills the role of the small sesamoid of other animals.

Patellar joint. - In the Cat there is only one synovial for the entire joint, there is only one patellar ligament, and no patellar-patellar capsule.

Peroneo-tibial joint. - The bones of the leg are united by their extremities by arthrodia; the superior has an individual synovium; the lower part has its play facilitated by an extension of the tibio-tarsal synovium. In their middle part, the two bones are united by an interosseous ligament, which in the upper two-thirds of its extent is broad and membranous, and is formed of short fibers in its lower third.

MYOLOGY [ANATOMY OF THE MUSCLES]

UPPER OR SPINAL BACK AND LUMBAR REGION

Ilio-spinal. - This muscle is well-developed, especially in the region of the loins, as this, moreover, is found in all jumping or climbing animals. It is separated from the spiny processes by the upper sacro-coccygeum, where it begins. It transcends the transverse processes and is attached to the last four ribs by large indentations.

The thorny transverse spines are broad and less tendinous than in other animals. In the lumbar vertebrae there are muscular bundles, which extend obliquely from bottom to top and from front to back from one vertebra to the other.

LOWER OR SUB-LUMBAR REGION

The psoas of the thigh originates from the lumbar vertebrae. The pelvic psoas muscle is inserted into the boss formed by the pubis and the ilium.

The quadrilateral lumbar muscle is thicker relative to other domesticated animals, even herbivores.

UPPER CERVICAL REGION

The cervical trapezius attaches to the entire length of the acromion. The levator of the shoulder is terminated by two branches, of which one, the widest, is inserted by an aponeurosis at the mastoid crest.

The splenius, which increases in thickness from back to front, is inserted by a short aponeurosis at the mastoid crest. It is joined to the long dorsal portion of the ilio-spinal by its inferior border, and is covered by the serratus anterior to its attachment to the spiny processes of the first vertebrae. The transverse length passes over the first two cervical vertebrae without attachment, and is almost completely covered by the middle branch of the ilio-spinal.

The great complexus is thick and without divisions. The short spines attaches to the spiny processes of the axis and to the articular processes of the last six cervical vertebrae.

The small complexus - the large and the small right-hand head muscles are short and thick. These muscles are united with those on the opposite side, on the median line.

The trapezium, the levator of the shoulder, and the splenius, are also united to their analogues by means of an odd aponeurotic membrane.

LOWER CERVICAL REGION

The mastoid-humeral is composed of two portions superimposed obliquely.

The costo-hyoid and the thyroïd form a thick muscular mass which covers the trachea on its anterior surface; these muscles originate at the anterior margin of the cartilage of the first rib.

The scalenes.- Two scalene muscles are found, one upper and one lower. The former attaches to the last six cervical vertebrae and to the outer surface of the first eight ribs. The second is tethered, at its lower edge, by the blood vessels and brachial nerves.

There are two sub-dorso-atloid muscles.

AXILLARY REGION

The sterno-aponeurotic originates at the anterior part of the sternum and ends at the bone of the arm. It is redder and less extensive than in other animals. The sterno-humeral attaches to the entire length of the humerus. The pectoral major is inserted in the last sternal horn. The small pectoral ends at the trochin and is very thin.

COSTAL REGION

The costo-sub-scapular covers only the upper half of the outer surface of the ribs. The dorso-costal extends to the cervical ligament and is inserted from the third to the fourth inclusive; it is more considerable compared to any other animal. The lombo-costal has three indentations. The common intercostal ends and is inserted by a small tendon on the penultimate rib.

LOWER ABDOMINAL REGION

The external oblique has a fleshy part more developed than in other animals, and its aponeurotic expansion is, on the contrary, very short. The small oblique has the fleshy portion much larger than in other domestic animals, it attaches to the last two ribs.

The transverse portion of the abdomen has a small aponeurosis. The white line is therefore less wide than high. The abdominal tunic is rudimentary. The umbilicus is very close to the sternum.

The inguinal canal is very short, with a small rounded external orifice; it is circumscribed by the aponeurosis of the great oblique in which it seems pierced.

The diaphragm has a well-developed fleshy portion, its aponeurosis is small; the oesophageal opening exists between the two pillars.

MASTOID MUSCLES OF THE HEAD REGION

The motor muscles of the lower jaw are stronger and more powerful than in any other domestic animal. The crotaphyte [temporal] muscle flows from the temporal fossa and covers the cervical muscles.

The masseter and the internal pterygoid surrounds, on the side of their insertions, the ascending part of the posterior border of the branch of the inferior maxilla. The two pterygoids are mingled.

HYOID REGION

The small kerato-hyoides is attached by tendonous fibers to the two branches of the hyoid, and is thicker than in other animals. The large kerato-hyoid of other animals is replaced in the cat by a small muscle which has been called temporo-hyoid. The stylo-hyoid is very small.

AURICULAR [EAR] REGION

The external temporo-auricularis is more developed than in other domestic animals. It is used in conjunction with the zygomato-auricular, and attaches to the ligament of the superciliary arch and to the orbital process of the frontal, and finally unites on the median line with that on the opposite side.

The parotido-auricular is very slender. The mastoid-auricular is thicker and longer than in other animals. The external cervico-auricularis is very prominently elongated on the external ear.

FACIAL REGION

The facial muscles of the Cats are poorly developed. The zygomato-labial extends from the scituform cartilage to the corners of the lips. The lacrymo-labial is very slender, and appears to descend from the orbicular muscles of the eyelids. The supra-labial covers the side of the cheek and the upper lip.

PELVIC MUSCLES

COCCYGEAL REGION

The upper sacro-coccygeum begins with two branches; the longest attaches to the last five lumbar vertebrae, and the shortest to the supra-sacral spine.

MUSCLES OF THE THORACIC REGION

EXTERNAL SCAPULAR REGION

The long abductor of the arm is divided into two portions by a deep interstice. The supraspinatus is inserted only at the trochanter. The sub-spinous, tendinous in nature, has only one branch at its insertion.

INTERNAL SCAPULAR REGION

There is nothing special to report about muscles of this region.

ARM MUSCLES

The long flexor terminates in a tendon divided in two, the shortest of which is inserted on the radius and the longest on the ulna. The flexor digitorum of the forearm (humeral ulnar) has its tendinous insertion point towards the inner side of the ulna.

ELBOW REGION

There is no long extensor for the forearm. The small extensor begins on the epitrochleum. All the muscles in this region are relatively large.

ANTERIOR FOREARM REGION

The six muscles of the forearms are very powerful. The anterior extensor of the metacarpus ends with two tendons to the metacarpals of the third and fourth fingers. The anterior extensor of the phalanges is common to all the fingers. The lateral extensor of the phalanges starts at the radius and ends at the metacarpal phalanx of the first three fingers. The supinator begins on the external lateral ligament of the elbow joint and is inserted into the anterior surface of the radius. It is covered by the two extensors of the metacarpus and phalanges.

Pronator. - This muscle goes from the epicondyle to the internal face of the radius.

POSTERIOR FOREARM REGION

The external flexor of the metacarpus originates from the epitrochlea and the ulna. The oblique flexor of the metacarpus extends from the epicondyle to the elbow. The perforate and perforating muscles are common to all fingers.

MUSCLES OF THE ANTERIOR FOOT

The Carpo-phalangeal muscles correspond to the fourteen muscles of the human hand.

MUSCLES OF THE ABDOMINAL REGION

BUTTOCK MUSCLES

The three buttock muscles are:

The gluteus medius, located under the skin. It begins on the side of the sacrum and on the sacro-ischial ligament, and is inserted by means of a tendon near the outer extensive muscle.

The gluteus maximus is inserted at the top of the trochanter and extends to the lumbar border of the ilium.

The gluteus minimus is covered by the gluteus maximus, it is inserted in front of the latter by a tendon.

MUSCLES OF THE THIGH

ANTERIOR CRURAL REGION OF THE PATELLA

The fascia lata is formed of two joined portions; the external portion is only found in the Dog and the Cat, and extends from the external angle of the ilium to the patella, where it is inserted by an aponeurosis. The anterior right of the thigh has only one tendon at its birth. The ilio-femoral is excessively thin.

POSTERIOR CRURAL POPLITEAL REGION

The vastus longus [part of the vastus medialis] arises from the ischium and the sacro-ischial ligament and ends without dividing at the tibia without attaching to the femur.

The ischio-tibial does not extend above the ischial tuberosity. The internus ends with two branches. The upper branch is inserted into the internal condyle of the femur, and the lower branch is inserted into the internal tuberosity of the tibia.

INTERNAL SUB-PELVIC REGION

There are nine sub-pelvic muscles. The long abductor of the leg begins at the external angle of the ilium. The short abductor of the leg is less wide than in the other animals. The pectinus terminates in a tendon which attaches to the lower extremity of the femur.

The biceps of the thigh is inserted on the entire posterior surface of the femur. The right internal (gracilis muscle) attaches by a tendon to the trochanter. A muscle is attached under this tendon, which is peculiar to the Dog and the Cat, it is called the pubio-trochanterian or femoral. It is an abductor and rotator muscle.

Internal obturator muscles - The twin obturator muscles of the pelvis and the piriformis are unremarkable, they have the same arrangement as in other animals.

MUSCLES OF THE LEG

ANTERIOR LEG REGION

There are four muscles of this region. The flexor of the metatarsus arises from the anterior tuberosity of the crest of the tibia, and terminates in a tendon to the third cuneiform bone. The common extensor of the fingers originates in the femur and is inserted into the second phalanx of the first four fingers by a special tendon. It is covered by the flexor of the metatarsus. The lateral extensor (peroneo-prephalanganian) is the extensor of the first finger. The peroneo-sub-tarsal bone begins at the head of the

fibula and terminates at the upper end of the metatarsus of the first finger and the third cuneiform bone by a long tendon which slides on the posterior surface of the tarsus.

POSTERIOR OR TIBIAL REGION

The perforate is common to all fingers. The flexors of the phalanges have the same arrangement as those of the anterior limbs.

There are four lumbar muscles, ranging from the large sesamoids of the first four fingers to the insertion tendon of the flexor digitorum and the superficial flexor perforate and perforating.

The three pedal muscles arise from their common origin on the anterior surface of the cuboid at the upper extremity of the first phalanx of the second, third, and fourth fingers by a small tendon. They are in the form of three small strips. There are also four muscular portions, which arise from the posterior ligament of the tarsus, and each terminates in two branches with the great sesamoids of the first four fingers: these are the tarso-phalangeals.

SKIN MUSCLES

The fleshy particle connects to its neighbour all along the dorso-lumbar spine and merges into the aponeurosis of the insertion of the latissimus dorsi and that of the long flexor of the forearm. The two fleshy bands surrounding the umbilicus should be considered as descending from this muscle.

The subcutaneous surface of the face and the skin are in fact only a muscle covering the skull, the upper cervical region, the cheek and the parotid region. The frontal subcutaneous is rudimentary.

SPLANCHNOLOGY [VISCERAL ORGANS]

The lips are mobile, slender, and very split, and the upper has two very long brushes, formed by a collection of the hairy tentacles; these are called whiskers and there is a set on each side. We have already explained the role of whiskers as tactile organs.

The palate has, on each side, five lines formed by closely spaced bosses and wider spaced bulbs. Behind this surface are two lines formed by small projections that are rough to the touch. There is also a median bulb located behind the incisors, which has two lateral openings which are the orifices of the Jacobson's canal.

The tongue bristles with hard, horny, pointed, backward-pointing papillae which makes its surface very rough. At its base are fungiform papillae pediculate and free. The sheet of the palate is very short. On its free edge there is a small elongation which resembles the uvula in man. The isthmus of the throat is wide open.

The parotids are poorly developed. The Channel of Stenon passes over the middle of the external masseter; its buccal orifice does not protrude. The submandibular glands are reddish and more developed than the parotids. The sublingual glands are small and extend deep under the tongue. The pharynx is very broad and dilates widely.

The oesophagus passes between the two pillars of the diaphragm; its fleshy layer is red and collapses on itself, which allows the wide dilation it is capable of.

The peritoneum is thin and very irritable. The stomach is broad, dilatable and not very mobile. It is located transversely. Its shape is pyramidal; it is incurved at the top; its apex is formed by the pylorus which rises and is level with at the bottom of the oesophagus. The small curvature has a great area; the left sac is rudimentary, so that the oesophageal orifice furthest from the pylorus is at the left end of the stomach near the base of the cone which it resembles. Its mucous membrane is fine and has similar characteristics to the intestine, it secretes gastric juice over its entire surface.

The fleshy layer of the stomach is thin, except for the pylorus, which is held closed; on the other hand, it is not highly developed at the oesophageal orifice which, always being open, makes it easy for the Cat to vomit. According to Mr. Colin, the average capacity of the stomach is 30cm - 32cm.

The intestine is remarkable for its small length and its volume; it is 35cm long, and the total length of the whole intestine is about two metres. It is wrapped in a greasy epiploic capsule. The small intestine is supported by a long mesentery. The large intestine, which continues from it, has, on the contrary, a short mesentery. The caecum is rudimentary, consisting of a small twisted appendage in a spiral, the length of which does not exceed 1cm. Its mucous membrane is very folded and presents numerous follicles. In the bottom of the sac we find a true Peyer gland.

The large intestine is a little wider than the small intestine; it is short, cylindrical, and after making some convolutions, it proceeds in a straight line towards the rectum.

The walls of the cat's intestine are thick, the submucous layer is fibrous, and the mucous membrane is abundantly furnished with villi, intended to replace the folds of the mucous membrane that are made impossible by this particular conformation. The villi and glands of the digestive mucous membrane are abundant over the whole surface, and seem to compensate for the short intestinal surface. The small intestine has five to six glands of Peyer. According to Colin, the average capacity of the cat's small intestine is 0.114 liters, and that of the large intestine is 0.154 liters.

The rectum is sited near the anus and on each side there are two narrow apertures which correspond to two glands situated on either side of this part of the intestine; these glands secrete a foul-smelling, brownish liquid.

The liver is very large, reddish in colour and formed into five lobes; the principal lobe being sub-divided into two or three lobules. The gall-bladder is located in the right indentation of this lobe, the left indentation houses the umbilical vein.

The gallbladder, conical in shape with a sinuous neck, has its mouth at 3 or 4 centimeters from the physiological opening. After a path of about 12 millimeters between the fleshy layer and the mucous membrane, it opens up close to the pancreatic duct when it does not meet the latter. In this way, the bile and pancreatic fluid arrive mixed together in the duodenum.

The spleen is narrow, elongated, flattened, falciform, compressed towards its middle, and suspended from the great omentum some distance from the left sac of the stomach.

The nasal openings are narrow openings that open into the body of the nose, the wings of which are based on an extension of the nasal septum and horns.

The larynx is differentiated from that of other animals by the narrowness of the wings of the thyroid cartilage. Its arytenoids are rhomboidal, and the epiglottis is in triangular form. Two small cartilaginous pieces are seen in front, these are found only in the Cat. The dilation of the larynx is facilitated by a membranous gap which is situated between the thyroid and the cricoid.

The upper vocal cords are soft and meet at the bottom of the sub-epiglottic sinus. They form an arch against which the air breaks. There are no lateral ventricles. It is these cords and this sinus that produce the particular snoring sound that is referred to as the purr, as well as the rumbling growl of anger. The lower cords are firm and close together, especially in their anterior part; they are responsible for mewing.

The thyroid body in the Cat is odd; it atrophies and even disappears with age. The trachea presents at its lower region a gutter which corresponds to the deviation of the esophagus. The lung, divided into several lobes, resembles that of the Dog.

The kidney does not present a ridge in the pelvis; the orifices of the urinary ducts of its smooth and concave part are pierced without raised parts. The adrenal capsules are the size and shape of a bean and are yellowish in colour. The bladder walls are formed of thick muscular columns.

The urethral canal is short points backwards except in the erect state. In its pelvic portion, it is provided with a thick muscular layer intended to launch the urine and to project the sperm during mating. In the Cat, the urethral canal is longer, relative to size, than in all other domestic animals.

The testicles are located at the back, in the perineal region below the anus, they are rounded and very tight in their envelopes. There are no seminal vesicles in the Cat. As in humans and dogs, only one prostate is found. The Cowper's glands are located in the ring of the pelvis at the bulbous portion of the urethra.

Penis. – When not erect, the Cat's penis points backwards, it is very short. When erect, it points forward. Its shape is conical. Its top rests on, but is not attached to, an incomplete penis bone surrounded by a layer of erectile tissue. This unattached portion bristles with very rough backward-pointing papillae which straighten up during penile erection. It is probable, according to Duvernoy, that this conformation is adapted to the sensibility of the female organs," and he adds: "Could this be one of the causes of the preservation of pure species, and, responsible for the scarcity, albeit not complete absence, of hybrid species."

The uterus presents a short body, and its horns, or adulterium, the name given to them by Geoffroy Saint-Hilaire, are elongated. During pregnancy, they rest against each side of the lower walls of the abdomen. The clitoris has a small clitoral bone.

The six to eight breasts are distinguished as pectoral, abdominal, and inguinal.

The ears are short, straight, pointed and broadly open forward.

The only peculiarities found in the cat's eye are that the choroid is golden yellow, and the iris greenish and round when very dilated. By contracting under the influence of light it becomes elliptical from top to bottom and constrict so much that it becomes just a narrow vertical slit.

ANGIOLOGY [BLOOD CIRCULATORY SYSTEM]

The heart of the Cat is ovoid, almost globular. It is placed so obliquely that, as in man, the apex of the ventricular side faces the thoracic face of the diaphragm. The fleshy columns of the ventricles and auricles are very numerous and very slender. The ventricular cone has three furrows. The pericardium is attached to the anterior surface of the diaphragm by a fibrous plate between the plates of the posterior mediastinum.

MAIN ARTERIES

ANTERIOR AORTA

The arteries of the head and thoracic limbs originate from the aortic arch. The primitive carotids arise from the right brachial trunk, and are separated by the jugulars and a portion of the humero-sternomastoid. They furnish the thyroid and laryngeal branches, and provide a lower internal maxillary division; this branch is elongated and distributed into the tongue and pharynx.

The carotids are divided into three branches: the external carotid artery, the internal carotid artery and the occipital artery.

The external carotid artery supplies the external lower jaw, which runs along the side of the face and terminates at the lower lip; it gives blood to the upper superior external maxilla and the superior internal. The first is directed towards the forehead, and is linked by anastomosis to the lower part by a branch which runs along the anterior margin of the masseter, and provides divisions to the front of the face, the upper lip, and the wings of the nose. The second, which terminates the external carotid, passes into a sub-sphenoidal osseous canal.

The internal carotid artery enters the skull through a hole in the sphenoid. The occipital passes through the condylar hole and reunites at its termination of the vertebral and sinks into the hole of the atlas. At its exit from the axis it runs along the spinal cord and in the cranium it forms the posterior cerebral.

FORE LIMBS

The humeral passes through a duct located at the lower and inner part of the humerus accompanied by its satellite nerve.

The anterior radical provides a superficial branch which, accompanied by a nervous cord, follows the external margin of the anterior subcutaneous vein of the forearm.

The internal radical provides the interosseus, which descends between the radius and the ulna and at the internal side. After crossing the carpal arch, it is called the deep metacarpal artery and passes under the tendons of the flexors then divides into two branches called the deep palmars, which have branches sinking into the muscles around the metacarpals. These palmar branches are connected by anastomosis with the divisions of the main artery.

Below the interosseus, the radical throws off a branch, and, accompanied by the radial nerve, constitutes the main or superficial metacarpal artery which passes through the carpal sheath. It then runs along the posterior surface of the flexor tendons, provides a branch for the fifth finger, and is divided into three superficial palmar branches, the strongest – the median - being situated between the second and third metacarpals.

These three arteries arrived at the origin of the phalanges and provide the collateral arteries of the fingers. They reach the third phalanx and become divisions which reach into the plantar bulbs in a similar arrangement to that found in the human hand.

POSTERIOR AORTA

The term 'posterior aorta' is hardly justified in the Cat, for, as we have already said, the arteries of the head and thoracic limbs arise from the aortic arch.

HIND LIMBS

The saphena, or superficial femoral according to some anatomists, has a considerable volume, and has two branches. The anterior branch, accompanied by the corresponding vein and nerve, provides branches to the skin, tibia, tarsus, and metatarsus; it passes to the anterior surface of the latter two regions, and distributes branches to the surface of the toes. The posterior, a satellite of the great sciatica, follows the calcaneum cord inward and forward as far as the tarsus, where it provides ramifications on the external side of the foot, especially on the fifth toe.

A branch extending from the underside of the tarsus bisects under the flexors behind the metatarsus, and connects by anastomosis with the main artery of the metatarsus, and terminates in branches which form the superficial plantar and terminate at the plantar surface.

Anterior Tibial. - When this artery passes the peroneo-tibial arch, it descends under the muscular layer of the anterior surface of the tibia, and takes the name of peroneum, and quickly forms divisions at the level of the tarsus, proceeding to the dorsal face of the metatarsus and the fifth toe.

Below the tarsus, this artery, which becomes the main metatarsal, passes between the third and fourth bones of the metatarsal, which it gains the posterior surface, insinuates under the flexor tendons of the phalanges, and receives the anastomosis of the saphenous posterior and divides into three branches. The external branch passes between the first and second metatarsals; the middle branch between the second and the third, and the internal branch between the third and the fourth. These three deep plantar branches form, by bifurcation, the collateral arteries of the toes exactly as they do in the human foot.

PRINCIPAL VEINS

As in all animals, the jugular veins are designated as external and internal. The larger external is separated from the carotid artery, as we have already mentioned, by the deep branch of the humero-sterno-mastoid muscle. The roots of the external jugular are the facial, receiving the auriculars and parotids, as well as the lower, superior, external and internal maxillaries.

The internal follows the anterior margin of the primary carotid artery, the origin of which is provided by the muscular branches and the veins from the sinus of the rachis and the encephalon. Lower down it receives the thyroid divisions as well as the laryngeal and oesophageal branches, and it soon joins the external jugular at the entrance of a common channel.

FORE LIMBS

The veins of the anterior and posterior limbs, very numerous in the digital region, are very simple in the upper regions. Those of the feet are distinguished as anterior or dorsal, and posterior or palmar.

The six anterior veins are joined together two by two at the origin of the fingers, thus forming three anterior metacarpal veins which, converging below the carpal vein form the anterior vein of the fifth finger, which runs along the anterior surface of the forearm.

The palmar veins arise from six collateral divisions of the fingers, and from three branches situated on the posterior surface of the flexor tendons, which unite to form the internal metacarpal vein. Shortly after, from behind it receives the posterior branch proper from the fifth finger.

On the inside of the carpus and above, it receives the collateral branch of the external finger, passes beneath the supracarpal, and sinks to the posterior surface of the radius where, before its termination, it forms anastomoses with the deep veins of the forearm.

UPPER ARM AND FOREARM VEINS

The anterior subcutaneous of the forearm follows the veins of the foot, receives the internal subcutaneous, ascends into the fold of the elbow, where it comes to form the cephalic which reaches the anterior surface of the arm, and jugular.

The internal radical or deep vein is poorly developed, it forms anastomoses with the cephalic and ends at the humeral.

VEINS OF THE HIND LIMBS

The veins of the posterior limbs, like those of the anterior limbs, which are very numerous in the digital region, become more restricted in the upper region.

The veins of the posterior feet behave in the same manner as those of the anterior legs, and from the four principal fingers are formed six anterior collateral divisions of the phalanges, which join in pairs to form three branches, which merge into one rising on the inner side of the metatarsus, where it receives a branch from the fourth and fifth fingers.

From there it passes to the anterior and internal aspect of the tarsus and becomes the saphenous anterior.

There are six posterior collaterals of the phalanges, which form at the origin of the toes, an anastomosis, called the plantar arch, from which two veins, one external and the other internal, extend and join into a single vein, the external saphena (external femoral vein), and the other, the internal saphena (internal femoral vein), passing on either side of the tarsus. A branch from the fourth and fifth fingers is joined to the saphenae (femorals) in the middle of the leg.

LEG AND THIGH VEINS

The anterior saphena ascends in front of the tarsus, reaching the internal side of the leg, at the upper part of which it forms anastomoses with the saphenae. The internal saphenal vein begins with two branches, which anastomose with the anterior saphenous (femoral) vein, and then proceeds towards the posterior border of the tendon of the calcaneum, which it obliquely circumvents, and opens into the external saphenous (femoral) vein.

The external saphenous vein is situated in front and on the outer side of the calcaneal cord, and after receiving the anastomoses of the anterior saphenous vein and the internal saphena, it enters the ischio-tibial and reaches the femoral vein where it terminates .

The system of the portal vein is poorly developed in, Cat.

BRAIN

The cat's brain is triangular in shape, and covers the posterior half of the cerebellum. The olfactory layers and the mastoid lobule are highly developed. The lateral geniculate body is very apparent, and there are two maxillary bulbs.

The striated bodies, the optic layers, and the trigone (fornix) are more marked than in other domestic mammals, and they approach the arrangement to that seen in man.

The layer of gray matter is very thick, and the lower bigeminal bulbs are larger than the upper ones.

PRINCIPAL NERVES

The cranial nerves do not have any peculiarities in the cat so we shall not describe them here; we mainly want to make known only the peculiarities of interest. As we do not intend to make a complete descriptive anatomy of the Cat, we shall only describe the principal nerves. Wherever there are essential differences to highlight, we shall confine ourselves to the brachial plexus and the lumbar plexus.

BRACHIAL PLEXUS

The anterior humeral accompanies the humeral artery in the epicondylial canal. The posterior humeral sends out a superficial cord, which accompanies the anterior subcutaneous vein, descending in front of the metacarpus, where it is known as the anterior metacarpal nerve, and dividing into the dorsal branches of the foot and the anterior branches of the phalanges.

The internal radial is sometimes attached to the external branch. The inner branch follows the inner edge of the metacarpus, sending a thread to the dorsal surface of the thumb and forming the internal dorsal collateral nerve of the second finger corresponding to the index finger.

The external branch, after crossing the anterior surface of the carpus, lodges in the third interosseous space and is divided into three metacarpal branches. The external of these branches, which is very fine, is directed away and forms anastomoses between the first and second fingers with the dorsal branch of the ulnar.

The median or cubito-plantar is divided into three branches above the carpal arch after having passed through the bony canal at the lower end of the humerus. The internal branch returns to the thumb, or at least to its rudiment, as well as to the palmar edge of the neighboring finger.

The middle branch goes into the third interosseous space, providing a fibre to the thick fibro-cartilaginous ring of the leg, and divides to form the palmar collateral of the first two fingers.

The external branch is located in the second intermetacarpal space, providing the external palmar collateral of the second finger and the inside of the next finger. The terminal disposition of this nerve is analogous to that found in man. It is the same with the following nerve.

The ulna is located deeply between the posterior radial muscles. It is divided into two branches, one called the dorsal, and the other the palmar.

The dorsal branch arrives at the carpus and divides into two fibres. One forms the outer dorsal collateral of the little finger. The other, after having gained the first interosseous space and having anastomosed with a branch of the radial, provides the internal dorsal collateral of the little finger and external of the third finger.

The palmar branch which reaches the internal part of the pisiforme is divided into several nets, some of which are distributed to the muscles of the thumb and the little finger; another becomes the external palmar collateral nerve of the little finger, and follows an external margin. One last, the longest, after having positioning itself in the first intermetacarpal space, furnishes the net of the thick fibro-cartilaginous ring of the foot, and the internal palmar collateral of the little finger and the external of the third finger.

LUMBAR PLEXUS

The saphenous (femoral) nerve and the small sciatic, by distributing themselves on the anterior surface of the metatarsus and phalanges, form the dorsal divisions of the foot. The saphenous nerve, which accompanies the saphenous artery, furnishes an individual nerve to the fifth finger.

The great sciatic, which accompanies the posterior saphenous, furnishes the posterior divisions of the foot. It divides into three plantar branches, which form the six collateral divisions of the fingers, as in the foot of man.

The great sympathetic, the nervous apparatus of daily life, is little different between the cat and other animals, except that the sympathetic cervical cord is mingled with the pneumogastric, as in the Dog.

DISEASES

Due to their natural vigour in combination with their almost absolute freedom, independent character, and freedom from all constraint or forced service, cats are less often affected by disease than other domestic animals. They are, however, not immune from disease, and all their organs may be the location of certain, often life-threatening, illnesses.

We shall describe in this chapter those diseases specific to the Cat, and which are of special interest, and give detailed descriptions of these illnesses only. For the others, which are analogous or even perfectly resemble diseases of the dog, we refer the readers of this book to our "Treatise on the Dog," which we have previously mentioned elsewhere in this.

VIRULENT ILLNESSES

The term 'virulent diseases' applies to general conditions transmissible by contagion or inoculation by a 'virus' particle originating in a diseased organism and capable of reproducing, in a healthy organism, a disease similar to that which gave rise to it.

The virus is contained in a fluid of pathological or physiological origin, as demonstrated for rabies. The virulent properties of so-called virus fluids are due to the existence of infinitely small organisms generically known as microbes.

But in any case, remember that scientifically speaking, in order to confirm that a disease had a parasitic origin and was produced by the introduction into the organism of a pathogenic microbe, the following must be demonstrated:

Firstly, that the disease is inoculable;
Secondly, that a special microbe exists in the products of inoculation;
Thirdly, that this cultivated microbe, obtained a state of pure culture, and inoculated under good experimental conditions, always reproduces the specific disease.

RABIES

Rabies is a specific, virulent disease transmitted by inoculation from a diseased animal to a healthy animal and to man, characterized by a lively excitement of the sensory organs, the urge to bite, and attacks of fury.

The enraged Cat, by biting other animals and man, transmits the disease afflicting it through its saliva. Only one cause of rabies production, contagion, is recognized.

The symptoms of Cat rabies are less easy to detect than those in the Dog, because of its behaviour and the ease with which it hides itself from surveillance. At the onset of the disease it becomes agitated; its appetite is altered, depraved. It hides, tries to escape, is seen wandering about the house, and even escaping into the country; it makes unusual and exaggerated jumps.

It develops an irresistible urge to bite and scratch, and even attacks man. Its voice soon undergoes a modification that gives him a peculiar inflection. It is seen to lose weight very quickly, then all symptoms of paraplegia appear, and death occurs between the second and fourth day.

All that we have said about the dog's rage is applicable to the Cat. (See Treatise on the Dog, Rage.)

CAT SICKNESS

Cat Sickness greatly resembles a disease that affects the young dogs, and on which we have lengthily described elsewhere, from the point of view of its progress, symptoms, essentially contagious nature and treatment. (See our Treatise on the Dog.) It has been epizootic in various periods and has taken many victims.

It was observed on a large scale in Europe, particularly in France, Italy, Germany and Denmark, in 1779, where it struck all Cats. During the years 1782-1783 and 1784, Barnier relates that the farms around Chartres lost all their Cats. It was also observed about 1835, in several localities of Brie, especially in the canton of Claye, where it had been designated as epizootic. It is presently seen quite frequently in isolated or sporadic conditions in a number of cats.

This disease, which is essentially catarrhal in nature, manifests itself, as in young dogs, in the form of catarrh, pharyngitis/laryngitis, pneumonia and gastroenteritis. It is characterized by depression, despondency, nausea and cough. The diseased animal is drowsy, exhausted, and lethargic; it moves with difficulty; avoids cold and always seeks to get closer to the fireplace. It shows a deep disgust for food. One often sees mucus in the vomit.

Its eyes, lips, and cheeks swell; it looks as if the head is swelling, its hair bristles, becomes dull, its fur looks soiled. It is no longer interested in grooming itself, something it takes great care of when healthy. Sero-sanguinolent [yellowish and bloody] mucus seeps from its nostrils and his eyes. The sufferer soon assumes a repulsive appearance, becomes ugly and spreads an infectious odor. It falls into a state of complete prostration, which is followed by convulsions at intervals. It quickly grows weaker and if one does not quickly remedy this state of affairs it quickly succumbs.

The nervous phenomena which we have detailed in describing the equivalent disease in dogs do not occur in the Cat.

For what remains to be said about the nature of this disease and its treatment, we refer interested readers to the article "Dog Sickness" in our Treatise on the Dog.

CONTAGIOUS CAT TYPHUS

This disease, which we have never had the opportunity to study, has been observed in different countries of Europe. Several physicians of the Montpellier School have given a detailed description of it. Dr. Buniva of the University of Turin has also made detailed observations. All this work, reproduced from Dr. Guersent, was used by the latter in his medical history chapter on 'Contagious Typhus in the Cat Species,' in his 'Essay on Epizootics' [Essai sur les epizooties].

A few days before the onset of fever," says Dr. Guersent, "Cats that are afflicted with this disease, shun the approach of everybody, even that of their master, and drag themselves slowly; they hide themselves in the most obscure places, they neither drink nor eat; they are anxious, weak, sad, and cowardly; their claws are no longer so retractile; they are sensitive to the smells of Valerian and the most aromatic labiate plants; it is very difficult to draw electric sparks by the friction of their pelt; they then completely lose contractility and lose their well-known agility.

In the first period of the disease, the tail droops, the head leans, the neck is elongated, the ears become flabby and cold, the limbs stiffen; the animal yawns [retches] repeatedly, sometimes has nausea and may vomit; he is drowsy to the point of stupefaction. The head and extremities twitch with tremors; the voice is changes; the pulse is shallow and frequent, the skin is hot and very dry, and there is stubborn constipation.

"In the second period, the animal is insensible to the voice of its master; the eye is small and tearful, the pupil is usually narrowed, but is sometimes dilated. The tongue is dry and covered with yellowish coating; a greenish foamy mucus discharges from the mouth, and sometimes there is a similar discharge from the nose; diarrhea often occurs; breathing is short and obstructed; the animal coughs. During the third period, agitation and convulsions mingle with the preceding symptoms; the body becomes jaundiced, and the patient dies in a state of prostration, or in the midst of convulsions, from the fourth to the fifth day.

"The alterations which have been observed in corpses prove that this is a general disease affecting nearly all the mucous membranes. The nostrils, the mouth, the oesophagus, the trachea, the bronchi, and especially the intestines, are usually partly filled with a whitish, yellowish, and bloody serous mucus, lying on the surface of the inner membrane lining these bodies. There is, moreover, an appearance of bruising, or black spots, frequently referred to as gangrenous. Similar alterations have been found in the liver and lung.

"It appears that this disease, just like contagious typhus in man and other animals, is also sometimes accompanied by inflammations of parts other than the mucous membranes. Hallé found, on a cat that had died, an effusion of purulent matter at the base of the brain near the ethmoid.

"There are numerous facts that prove that this disease is rapidly communicated between cats inhabiting towns, and even the wild cats. Buniva killed several Cats that he had brought from an uninfected country, inoculating them with a lancet carrying the drool of a sick Cat. Some experiments, initially undertaken by this same physician, and continued by his pupils, seem to prove that, under certain circumstances, Cats may transmit this to cattle; but it was not possible to experimentally inoculate calves or other animals with the disease.

"Man always seems immune from it. Can Cats, in their turn, contract cattle typhus, and do they transmit this disease to cattle? This question has not yet been resolved. Buniva reports a case, according to Finazzi, that seems to suggest that such transmission could be possible. During the cattle epidemic of 1776, a person exposed skins of cattle that had died of this disease to the open air. Two Cats ate pieces of the flesh attached to these skins. A few hours later, one died in convulsions, uttering terrible screams, and when its corpse was cut open they found gangrenous spots on the viscera of its lower abdomen, and in several places the subcutaneous tissue were distended by a serous effusion.

"The second Cat suffered a similar episode; he was vomited violently and fell into a state of lethargy, but did not die.

"So far, the difficulty of administering remedies to these animals, and the poor success rate in those where cures were attempted, made Buniva propose the destruction of all cats affected with contagious

typhus. His main reason in favour of this opinion was, perhaps, the fear tht infected cats might hide in cow-sheds and transmit the disease to cattle. However, Cats are useful and necessary animals, and should be preserved in order to serve our needs. It is therefore advantageous to find ways to combat a disease which is a real loss to them."

Follow a therapeutic proposed by the doctors of Montpellier and based on the administration of emetics, bitters, mercurials, theriacs [antidotes] and the application of derivatives and excutories [artificially induced rashes] such as blisters and setons [silk threads or horsehairs, or a strip of linen etc, inserted beneath the skin to drain a fistula]." [Note: Counter-irritant treatment was based on a theory of drawing morbid fluids away from a diseased part.]

Buniva advised, after administering of emetics, the use of mucilaginous and oily herbal teas, bleeding, and internal excitations to finish the treatment after the revulsants [counter-irritants] had taken effect, in a word after the period of counter-irritation.

We believe that the best method to use should be the destruction of the miasmatic element, which would be achieved by giving quinine salts, salicylate, phenic acid, calcium sulphide. At the same time, the body should be awakened by strychnine arsenate, brucine and caffeine arsenate. Calm intestinal pain by using hyosciamine and cicutin.

PARASITIC DISEASES

Parasitic diseases are caused by plants (fungi) or by animals. Animal parasites are generally divided into epizoids or ectozoa, and entozoa. Epizoans belong to the class of Insects and Arachnids. The entozoan, or helminths, are animals which, throughout their life or at certain periods of their life, live as parasites of our domestic animals.

CRYPTOGAMIC PARASITIC DISEASES

PARASITIC ECZEMA

I have sometimes observed in Cats a parasitic affection analogous to that found in the Dog. I do not know if it is caused by the same fungus, but in all cases it is a trichophyton. I believe that it is as easily transmissible as the latter, and I suppose that Cats must get it from rats and mice, on which we often find very similar diseases to that I have treat in Cats. It is probable, moreover, that the rat contracts this disease through contact with mould when entering the sewers where they are so numerous.

This disease has always disappeared under the influence of rubbing with lotions based on mercury, iron perchloride, or iodine.

RINGWORM

I have been able to find a fairly large number of cases of feline ringworm produced by Achorion Schoenleinii. As in scabies, it is always the head that is invaded. It is recognizable by the abundance of crusts of a somewhat dark yellow. The animal is seen to frequently scratch the itching it feels. The hair falls and leaves patches more or less close together. If neglected, this disease progresses to the neck and even onto the back.

The best way to combat this disease is to apply the following preparation:

Mineral Turbith - 4 grams [Yellow-Vitriolated Quicksilver]
Vaseline - 30 grams

It is necessary to quickly kill the mushroom spores if one does not want to risk progressing to a wasting state that can lead to death. To combat this condition, it is necessary to employ a tonic and ferruginous treatment, to administer iron hypophosphite or iron arseniate, together with quassine [quassia, bitter-ash], three to six granules a day at the rate of one or two granules three times per day.

DISEASES CAUSED BY ANIMAL PARASITES

In this paragraph we will deal with diseases which animal parasites may give rise to. These diseases are more or less serious; their severity is sometimes excessive, since they can lead to death. On the other hand, there are cases in which the parasites are injurious only to the extent of causing discomfort or inconvenience.

DISEASES CAUSED BY EPIZOONS OR ECTOZOONS

Among the epizoite parasites which can bother a Cat, we can only cite the blood-sucker known as the flea. The flea forms its own order, that of the Ophaniptera, as they were de Geer calls them, under the name of Suckers, and by Latreille as syphonapteres.

The characteristics of the flea (pulex) are: a cylindrical horn formed by the union of two articulated blades containing a three-piece sucker; two small, round, simple eyes, and no wings. The female lays her eggs in the hair of the host animal. A cylindrical, elongated, legless larva emerges from the egg. The larvae are fed by their mother who brings them curdled blood. They then transform into a nymph, similar in shape to the parents, and after a few days transform into their final adult form. This transformation shows itself in the power of the leap which characterizes this insect.

The cat flea, *Pulex felis*, was reported and described by Bouche; it is very similar to the dog flea and is very irritating to the cat when they have a large number, it especially irritates kittens.

These parasites can be eliminated by pyrethrum powder, lotions of decoction of *staphysaigra* [larkspur], oil of turpentine or petroleum, and finally by rubbing with Helmerich ointment or calcium sulphide lotions. The treatment ends with one or two good hot water soaps.

We must mention the particulars of a class of ectozoa that causes a more serious serious disease known as scabies. This disease, which lasted about two years in Westphalia and, according to the Ephemera of the Natural Curiosities, almost entirely destroyed the feline race over an area of several miles.

SCABIES [MANGE]

Scabies is a skin condition that frequently attacks the cat and always takes the sarcoptic form. It has long been considered the result of a special and general condition of the affected subjects; the whole of theory of humours was invoked to explain the appearance of this disease, which, poorly known and ill-treated, caused rapid exhaustion in patients and often ended in their death.

As M. Colin wrote, have we not seen the acarus mite of killing the most formidable carnivore, the lion, and one of the largest herbivores, the dromedary?

In fact, it is produced by an animalcule belonging to the class of arachnids, the order of the mites, the family of sarcoptes. It took a long time to get to that obvious fact, and the doctors were not convinced of the fact until after the discoveries and work of Bonomo, Cestoni, Linnaeus, Winchmann, Walz, Gohier, Delafond, Bourguignon, Gerlach, Huker, etc.

These parasitic mites undergo several moults before being able to reproduce; females undergo four moults, males undergo three. Their fecundity is really frightening. Gerlach made observations and calculations on the sarcoptic mite, and he estimated that in three months a male and female produced approximately one million five hundred thousand descendents.

When we reflect upon this rapid multiplication of this insect, which is the sole and real cause of the disease in question, and we consider the intolerable itching caused by its presence, we can readily explain the fatal outcomes mentioned above. At times the pain is such that it can be compared to the

burning of hot coals. In this case we can recall what Wilfrid de Fonvielle said in the form of a law: "The size of the external parasite is inversely proportional to the square of the pain it inflicts on us?"

The lifestyle and diet of the mites varies according to which genus they belong to.

The sarcoptic mite, that affects the Cat as just described, creates tunnels in the epidermal layers; these tunnels have very variable directions: sometimes straight, sometimes crooked, sometimes undulating. It resembles a real mole digging tunnels in the earth, the difference being that the sarcoptic mite's food is the substrate it lives in, indeed the epidermal cells constitute all its nourishment.

The mite's mouthparts show very well that he is not a blood-sucker. Hence we see him always moving away quickly from any exudates, even from those which he himself causes, causing blisters to form.

The sarcoptic mite lives singly, either as a larva, or as an adult; he knows, according to his needs, to enlarge his tunnels. It is in these tunnels that he moults, feeds, mates, lays eggs and finally dies. Like all mites, it can only live on living animals and soon perishes when removed from the host or when the host dies.

Lowering the temperature has a great influence, not only on the adult mites, but also on the eggs, retarding their hatching. For this reason the disease appears to stop or be cured during the long cold period; but as soon as the temperature rises, the parasite wakes up to torment its host more than ever.

If the temperature is raised to 50 degrees Reaumur, the sarcoptic mite cannot survive than an hour; if removed from his tunnel he dies in less than a fortnight.

[The Reaumur scale is a temperature scale where water freezes at 0 degrees and boils at 80 degrees. It was proposed by René Antoine Ferchault de Reaumur in 1730 and was in common use in Europe, particularly in France, Germany and Russia. By the 1790s, France adopted the Celsius scale, but the Reaumur scale remained common in parts of Europe and Russia until the early 20th century. It is still used in Italian and Swiss factories for measuring milk temperature during cheese production, and in the Netherlands for measuring temperature when cooking sugar syrup for desserts and sweets.]

Cat mange is caused by *Sarcoptes minor* [minor mange mite] according to Furstemberg's nomenclature, which is called *Sarcoptes cati* [cat mange mite] by Hering, and *Sarcoptes cuniculi* [rabbit mange mite] by Gerlach. It is distinguished by its back lined with cutaneous spikes, some claw-like, other not, placed in rows corresponding to the furrows of the skin. They have twelve dorsal spines.

When sarcoptic mites are placed on a Cat they always go towards the head; no matter what part of the body they were deposited on they quickly head for that area, but not without leaving traces of their presence at the point of departure. The disease produced by this parasite is noticeable on the head, particular on the ears, and more rarely on the neck. The hair becomes matted and falls out; the skin thickens and wrinkles; it is covered with thick scurf. Violent itching forces the animals to scratch and as hair loss increases the skin scales become more numerous or thicker, they serve as hiding places for the mite.

If the disease is not promptly remedied, it will spread over the neck, back, and even the limbs. The poor animals are constantly scratching and become depressed, their usual vivacity disappears and they become unusually lethargic in their movements. If the conjunctiva are injected, the eyelids swell. All the symptoms of a severe wasting disease appear, and death soon puts an end to the intolerable suffering endured by the host.

Cat mange is transmissible to humans, but even without treatment the rash disappears after five to six weeks. The *Acarus* mite of the Cat, if deposited on the skin of a Horse or Dog causes an itching that lasts only a few days. Transmission experiments on cattle and sheep gave completely negative results.

To cure this hideous disease, it is necessary to first clean the skin everywhere that itching is observed, to use soap or alkaline lotions, and to apply different acaricides.

We have always used the following with success, depending on the approximate stage of the disease, or its extent, rubs or unctions, Helmerich ointment, calcium sulphide, creosote glycerol, turpentine,

phenolic acid, salicylic acid, tincture of iodine, benzine, petroleum and perchloride of iron. Always wash the patient with soap before renewing the rubs or medicated unctions.

At the same time, we administer 3 to 4 granules of calcium sulphide per centigramme per day, 1 granule at a time. When the disease is already old, and there is weight loss, it is advisable to administer 3 to 4 granules of arsenious acid or arsenate of soda. When wasting appears, it is advisable to use iron arsenate, to which quassine is added, 3 to 4 granules per day.

DISEASES CAUSED BY INTERNAL PARASITES

The general name of entozoa or helminths is given to animals forming the last class of the sub-branch of the worms, the branch of the annelids. Despite their importance in causing disease, the study of these parasites has been neglected for a long time.

The ancients had very erroneous knowledge of the natural history of entozoa, which they believed to be the result of spontaneous generation. It was not until the seventeenth century that this scientific question began to be studied, which was, in turn, the subject of a special study by Dallas, O.-J. Millier, Fabricius, Bloch, Goeze, Rudolphi. The modern naturalists, who have shed the most light upon this interesting part of zoology, are: de Blainville, Dujardin, MM. of Quatrefages, Müller, Milne Edwards, Van Beneden, Ph. Gervais, Delafond, Gruby, Davaine, Leuckart, Colin, etc.

Cuvier divided the intestines into two orders:

Firstly, the intestinal cavities;
Secondly, the parenchymatous intestines [functional intestines].

Rudolphi defined five categories of entozoa: (1) nematoids; (2) acanthcephala; (3) Trematodes; (4) cestoids (5) cystics.

Milne Edwards divided them into six orders: (1) Planaria; (2) Nematoids; (3) Acanthcephala; (4) trematodes; (5) tenioids; (6) Cystoids.

Van Beneden puts the helminths in the branch of the allocotyles, which he divided into two classes: (1) the nematoids, in which, with Blanchard, he unites them with the acantocephals; (2) the cotylids, comprising the helminths affecting our domestic animals, and the trematodes and cestoids.

A parasite that was formerly classified among the helminths - linguatula or pentastoma - is omitted from this discussion: Van Beneden and Leuckart have shown that this animal is not a worm; they proved that it belonged to the arachnids and that it approached the lernaeans (anchorworms) or acarid mites.

Some helminths are not parasites all their lives; others spend part of their life in one species and part in another depending on their stage of life. Their presence may cause very different diseases, depending on their stage of life and the organ parasitised, for, in changing hosts, they always undergo a somewhat pronounced metamorphosis.

On this subject I do not think I can do better than borrow this picturesque description from M. van Beneden: "A certain number of parasites are established in a first animal, which serves as a creche, and then in a second host, which is their maternity home. This passage from one animal to another is referred to as transmigration. In general, the whole nursery, with its infants, passes into the maternity home. The creche is always within an animal with a vegetable diet, which is destined to be prey for a carnivore; the maternity home is within the latter animal. The mouse is the nursery that passes all its clientele parasites into the cat that eats it.

"If we were talking about plants, we would say that in the latter host they bloom. The plant, like this creature, is non-reproductive as long as the flower or sexual organs have not appeared. Generally the creature that transmigrates undergoes a complete change from one host to another; it is non-reproductive in the first subject, that is to say, sex-less, swaddled and its head covered with a cap like an infant; however, in the definitive host it bears all its sexual attributes.

"In the nursery the parasite is a traveller, it is an apprentice called a xenosite, and the parasite which reaches the maternity home is at the end of its journey, it is home and we shall call it a nostosite, as opposed to that which inhabits its host only temporarily. Finally, note that the same animal can lodge different parasites at both stage of life. Thus, the rabbit harbors in his gut apprentices who reach home only in the dog, and, independently of those apprentices, and strangers to them, a sexually mature tenoid worm lives in the rabbit's intestines. The first is, therefore, a xenosite, the second a nostosite.

"The mouse also houses apprentices under the name of a cysticercus which are destined to become tapeworm in the Cat. We readily call the rabbit and mouse who harbor these worms in transit 'the coach', all the more so because we see them from time to time, and those who miss it become lost on their journey. The coach is the intermediate host, the *zwischenwirtz* [alternate host] of the German helminthologist; it is always an animal with a vegetable diet; the definitive host is usually a carnivore; it is through an animal with a vegetable, rodent or herbivorous diet that the parasitic foreigner is introduced.

"As a result, whenever a carnivore consumes the alternate host, he also receives all of its parasitic furniture, and the walls of the carnivore's digestive canal form the soil in which all the worms implant themselves and can take root. The tissues of the prey are crushed and digested, but the worms contained in the tissues escape the action of the gastric juice, and are set free in the stomach.

"The carnivore's stomach is a net by which millions of parasites are often introduced at each meal, and the fishes live in constantly changing stomachs. Their whole life is spent in transmigration; they are travelers who live in the railway cars and who do not leave by the railway stations. Indeed, every stomach is a station, often filled with goods which disappear with the station itself inside a new train. Blessed are those who are in a wagon on the rails to its destination. Many are called and few are chosen. Some apprentices have to make many trips before finding their host!

"It is often very interesting to open a fish that has made a good catch; its intestines contain first the ordinary worms; the partly digested prey, which contains prey in its turn; it is not uncommon to find the parasites of the one swallowed with its host. Generally, an animal is infected in the young age with the parasites it harbours throughout its.

"To understand the furniture of several fishes, one must visit them shortly after they hatch. In the crèche, the parasite occupies a closed organ, without communication with the exterior; he inhabits the garret of his first host; but within his last host, which represents the maternity home, it occupies the largest apartments and is always in contact with the outside. Thus, in the first animal, it is often completely motionless, and in a form called the scolex; in the latter it moves freely, and carries, moreover, organs peculiar to this state, which we call the pro-glottis. Thus these parasites undergo metamorphoses. "

There are numerous worm diseases of the Cat; we will mention those we consider interesting to share.

CAT TRICHINOSIS

Trichinosis is a worm-induced muscular disorder caused by the presence of a particular helminth named *Trichina spiralis* by Owen. Davaine has proposed the name *Pseudalius trichina*, placing it nearer to the tribe of strongylians.

During its lifespan, *Trichinia spiralis* has two distinct phases and two very different states. It lives encysted in the muscles during the asexual larval phase and it only progresses to the sexual adult phase by changing its host.

The cysts are consumed with the muscle in which they are confined, and are dissolved by the gastric juices. The worm is freed in the middle of the intestine and, in a few days, becomes a reproductive adult with separate and distinct sexes. The females are ovoviviparous [produces young by means of eggs that hatch within her own body] and extremely fecund. According to many helminthologists, each female can give birth to more than three hundred embryos. Leuckart asserts that, without exaggeration, the number of embryos may be up to a thousand. It is at this time that the worm deserves the name of intestinal trichinae. As soon as the males have fertilised the females and the females have produced their eggs, these worms are expelled with the faeces.

The young embryos develop and pass through the intestinal walls and soon reach the skeletal muscles (striated muscles), where they finish their journey by rolling up and becoming cysts. The encysted trichinae wait to be eaten with the muscles in which they are established, and to arrive in the intestines, to develop sexually and reproduce as previously described. If, on the other hand, the animal in which they are encysted lives long enough without being eaten, the cyst, transparent at first, becomes opaque, then calcareous, and finally the nematoid perishes.

A fairly large number of experiments have been made on the Cat in order to study the transmission of trichinosis in this animal. To elaborate on this, some Cats were fed with flesh infected with trichinae. After a while the trichinae developed in the intestine to the point of causing intestinal disease that killed several experimental subjects. It was found, moreover, that a certain number of trichinae carried out their encystment in the muscles.

We also know that muscular trichinae are frequently found in Brown Rats, Black Rats, Mice, Moles, Hedgehogs, Guinea Pigs, Rabbits, and even in Frogs and Toads. This frequency explains how easily cats can contract trichinosis; many of those animals forming the main part of its diet.

WORM DISEASES OF THE STOMACH AND INTESTINE

A quite considerable number of helminths inhabit the stomach and intestine of the cat. The presence of these parasites is always troublesome, sometimes causing ailments, the severity of which depends on the number, genus, species and variety of the helminth. In some cases, these intestinal worms can even cause to epileptiform attacks and they frequently lead to weight loss, lethargy and even the death of the host.

We will say a few words about the main helminths that can be found in the Cat's digestive tract.

CHEIRACANTHUS ROBUSTUS

This nematoid worm has been reported on various occasions in the Cat's stomach. It was named by M. Diesing, who discovered it inserted in the membranes of a Wild Cat's stomach.

This helminth is 1.1cm to 1.3 cm long with a cylindrical body, and the anterior part of its integument is covered with small palmate thorns with one or four teeth, its head is globose and bristles with small spines. The tail of the male is rolled into a spiral and has a single spicule.

FELINE ASCARID WORM

Ascaris mystax according to Rudolphi

This nematoid inhabits the small intestine of the Cat and is sometimes also found in the stomach.

Its eggs are globular with a diameter of 0.063mm – 0.076mm. Their shell is thin, with a folded membrane and less distinct than those of the other two species. Their yolk is relatively more conspicuous, and the embryo is bulkier and appears cramped inside the egg, making its movements more difficult than in other species. They are expelled in faeces and remain in humid soil or in water. If the temperature is favourable the embryo can be seen after a period of thirty to forty days. Cold temperatures are adverse to its development, which will stop completely.

This embryo, which can be seen flapping about in its envelope, is cylindroid with a thick, blunt head and a tail that is thinner, but does not taper. At this stage the valves of its mouth are not apparent. The embryo can live in this state in its envelope for up to ten years. In order for it to hatch and reach the adult phase, the eggs must be swallowed by a cat.

M. Baillet, however, has seen *Ascaris mystax* embryos hatch in the water, but this is probably an accidental hatching as they live for only a few hours. Here are the distinctive characteristics of the feline *Ascaris* worm, as they have been followed by M. Baillet, whose description we borrow:

"Whitish body. Wide head 0.18mm - 0.28mm, often bent almost at right angles to the part of the body following it. Valves small, oblong, whole, each carrying a prominent papilla. Head and anterior part of the body furnished on the sides with two membranous wings narrow at their origin, imperceptibly enlarging almost to their termination, transparent on the edges, and somewhat opaque in the rest of their extent. Strips of the integument separated from 0.014mm – 0.027mm. Oesophagus is almost cylindrical, terminating in a small, nearly cylindrical dilation, scarcely marked, which constitutes a ventricle. Male is 3cm – 6cm, 0.6mm – 1.14mm wide, often having both ends more or less rolled up. Posterior part with two slightly protruding membranous wings supported by two rows of ventral papillae. Tail abruptly shrunken, testis originate a short distance behind the head after twice folding on itself, then winding into a corkscrew and finally ending in a vas deferens with a diameter larger than his own body. Two spicules curved in arcs and 1.2mm – 1.3mm long; spermatozoa have a diameter of 0.009mm – 0.013mm. Female is 4cm to 10 cm long, 0.8mm – 2.0mm broad, with the anterior part often rolled up like the male, but the posterior part always straight or nearly straight; conical tail, a little blunted and terminated by a small tubercle which looks like an add-on. Anus almost at the end of the body, vulva is located 13 or 15 millimeters from the head, ovaries both originate in the posterior part of the body, at first very slender, very sinuous, greatly folded upon themselves, advancing to a short distance from the vulva, then descending to 2.5cm to 3 cm of the tail, where each ovary terminates in a uterus that ascends parallel to its twin, with which it soon merges, after producing two unequal bulges, giving rise to a single common oviduct, which, after several dilations and constrictions, finally opens into the vulva.

The nearly globular eggs have a diameter of 0.063mm - 0.076mm with shells coated with reticulated or honeycomb thickening like a thimble."

DOCHMIUS WORM [STRONGYLID WORM]

Dochmius tubaeformis (Dujardin)

Ophiostoma tubaeformis (Paul Gervais, Van Beneden)

Strongylus tubaeformis (Rudolphi)

This worm, discovered by Zeder in the duodenum of the Domestic Cat, has been observed by a great number of naturalists and veterinarians in *Felis Catus* and in the intestines of other animals in genus *Felis*.

Dochmius eggs are segmented before spawning. When found in the uterus of the female worms and placed in water at a temperature of 15 to 20 degrees, young *dochmiae* are observed to hatch after four to eight days.

They are cylindrical, their head is rather blunted, their tail conical, attenuating to a very sharp point and lacks filaments; it also has a short filiform spine. Their length is of 0.24mm to 0.32mm; they can live in water without growing for several days.

It is probable that when swallowed in drinking water they must behave in the same way as sclerostomes, that is to say, they are absorbed, they encyst for a period of time and that to complete their development they must go into the intestines, where they complete their growth, develop sex organs, mate and reproduce.

It may nevertheless happen that the *dochmius* proceeds directly into the intestine with the water, and grows to adulthood; we have not yet ascertained this point.

The *dochmius* is greyish in colour, cylindrical and slender, thinner at the front. Its head is very oblique, and its mouth opens beneath it like that of a snake, presenting on each side one, two or three points. The male is 0.6cm – 0.7cm long and bears two spicules 0.5mm long and a caudal pouch spread into a wing. The female is 0.6cm to 0.9cm long and her vulva is located 0.1cm in front of the anus.

FELINE TAENIA WORMS [TAPEWORMS]

The Cat harbours several species of tapeworms in its intestine. These helminths, as their name suggests, are flat, ribbed, sexed, and formed by a greater or lesser number of segments articulated together, one after the other. Their anterior part is long and tapered and carries the head, which is generally globular and small in diameter, but is nevertheless larger than that of the body segment to which it is attached.

This head, slightly depressed on four sides, has a somewhat tetragonal form; it has, corresponding to each of the angles formed, expandable suction cups which are consequently four in number. Between these cups and in the middle of the head is a convex elongation, slightly protruding and retractile, called a trunk. The surface of the trunk has a double crown of hooks, the shape and size of which vary according to species. These hooks allow the parasite to attach itself to the intestinal mucosa.

The tapeworm segments gradually increase in length and breadth as they are further away from the head until they have reached the dimensions appropriate to the species. Almost always the last segment of a complete tapeworm has an indentation on its terminal border. Siebold calls this the terminal scar. It is the trace of the repair that was made between the tapeworm and the vesicle in which it was formed.

When tapeworms are fully developed, they have sexual organs. The male and female organs can be observed on each segment from a certain place only, since the first segments don't have sexual organs. Each segment in the adult animal has genitalia independent of those of its neighbors.

The development of the sexual organs is shown by the presence of a bulb situated sometimes on one side, sometimes on the other, there being no fixed pattern to the alternation of these bulbs. This prominent bump has an orifice at its centre which connects the sexual organs to the exterior. In some cases a certain number of unisexual rings can be observed in some species.

For a long time it was unknown how tapeworms reached the intestines of animals or man. Van Beneden, Küchen and Haubner have given a most complete answer to this question. They have demonstrated in numerous experiments that human tapeworm larvae, commonly called the solitary worm, *Taenia solium*, is the *Cysticercus ladrique* [ladrique's vesicle] found in pigs.

This first form of the *Taenia solium* is that of a pea-sized vesicle which is found in the subcutaneous cellular tissue, connective tissue of the muscles, the liver, heart, spleen, or eye of the pig, and which produces the porcine leprosy ["ladrerie"].

The cysticercus is therefore only the larva, or rather the 'pro-scolex' [six-hooked embryo or first larval stage] of the tapeworm; it may, once introduced into the intestine of man, give rise to a *Taenia solium*, which is the sexual or final state of this scolex [suckered end of a tapeworm]. Indeed, it develops rapidly and soon produces a strobilus [segmented worm], measuring up to several metres in length and composed of a numerous proglottids [sexual segments]. Each proglottid acts as a sexually developed animal capable of producing eggs.

These eggs, in their turn, must enter the body of a pig, to repeat the series of journeys and metamorphoses which bring it to the adult state and constitute, by the addition of the proglottids, a complete or strobilous tapeworm.

An embryo with six hooks or stylets emerges from the egg. Two of these hooks are slender, located on the median line and move backwards and forwards reciprocally, scratching and piercing the membranous tissues of the intestine and other organs. The other four, placed in pairs, on the right and left, act like limbs; they allow the embryo to move until it reaches the muscle or tissue where it will settle. At this point, the stylets wilt and the embryo surrounds itself with a sheath or envelope, and a crown of hooks, which will attach it to the intestinal mucosa when it is ingested by man, appears at one of its extremities.

The vesicle containing the larva is elliptical in shape, 12 to 20 millimeters long, and about 5 to 10 millimeters wide. It is enclosed in a cyst to which it does not adhere. The inside-out scolex is located at the middle of one of the long sides.

The lifecycle of the cat tapeworm is the same except that the *Cysticercus* that produces the tapeworm is found in the livers of rats and mice.

TAENIA CRASSICOLLIS

Taenia crassicolis

This tapeworm is very common in the small intestine of the cat. Its scolex is the *Cysticercus fasciolaris* described by Rudolphi, which occurs rolled up in the cyst it triggers in the liver of mice and rats and in all members of the genus *Mus* or its cousins. There is rarely more than one *Cysticercus* in the liver of one of these rodents.

In a series of experiments performed around 1844, Siebold, without guessing the migrations and metamorphoses of *Cysticercus fasciolaris*, had noticed that this *Cysticercus* lost its vesicle in the intestine of the Cat and was transformed into *Taenia crassicolis*.

This worm reaches a length varying from 20cm – 60cm, with a somewhat large head, bearing a double crown of forty-eight to fifty-two hooks, although some naturalists say that they have counted twenty-six to thirty-six hooks.

The first segments, even those right behind the head, are wider and thicker than in the other tapeworms.

TAENIA ELLIPTICA

Taenia elliptica (Batsch), also named *Taenia canina felis* by Werner

This tapeworm, which is also found, albeit less frequently than the preceding one, in the small intestine of the Domestic Cat, never reaches more than 10cm – 30cm long, and never more than 3mm in width. It is not yet known what its scolex form [larval form and host] is.

TAENIA PSEUDO-ELLIPTICA

Taenia pseudo-elliptica (Nobis)

This tapeworm, also found in the small intestine of the Domestic Cat, is very similar in its characteristics to the tapeworm commonly found in the intestine of the dog, which is called *Taenia faux cucumérin* [*Taenia pseudocucumerina*]. However it is shorter than the latter, and its segments are shorter and narrower.

BOTRIOCEPHALUS

Botriocephalus decipiens (Diesing)

Botriocephalus Felis (Creplin)

Sometimes we find a helminth in the intestine of the Cat, which is very similar to those of the tapeworm genus. It is the *Botriocephalus*, which is called *Botriocephalus decipiens* by Diesing, and *Botriocephalus Felis*, by Creplin. It measures more than 1.5 metres.

The reproduction of these animals, according to a certain number of observations, would be analogous to that of the distomatous [two-suckered] trematodes which we have spoken of elsewhere. (Refer to *Dosimetric Therapeutic Treatment*, Volume, page 273, "Jaundice and Wasting Resulting from Worms" [Cachexia icterico-vermineuse].)

The eggs of this parasite, expelled in faeces or found in the remnants of proglottids expressed into in water, hatch in that medium after several months. At that moment, a rounded embryo hatches; it is covered with vibrating cilia [small hairs] which allow it to swim around and live in complete freedom.

It is, as van Beneden has said, with regard to the microscopic infusoria [unicellular aquatic animal] which undergoes a succession of metamorphoses to become the hepatic distomata, "a youth thrown full-tilt into the middle of an ocean, without assistance or guidance; if he encounters an island in his path, that

is to say, the body of an aquatic insect larva or a mollusc (we shall add, for the present case, a fish) he deposits his fruit and disappears: his goal is fulfilled. If he does not encounter an island or continent, he breaks up and perishes, for he does not carry provisions with him; he has no organ that allows him to graze during his journey. "

Inside this ciliated embryo is another, rounded, creature with six hooks. This must be consumed by a fish in which it lives and develops. When it has stayed long enough in this host, it becomes able to transform itself within the Cat that eats the fish, or eats the portion of it that contains the botriocephalus. Here are the characteristic of the parasite as described by Davain:

"Oval head, oblong; lateral cups, open behind and closed for the greater part of their length as a result of the closeness to the lips; neck long, thin; front parts like parallelograms, middle parts very long, the hind ones almost square, and the last ones rounded; the head is 0.3cm long and 0.1cm wide; the middle segments are 0.9cm; the hind ones 0.4cm; total length is 1.6 metres. In shape and colour, the adult looks very much like a large botriocephalus."

TREATMENT OF GASTRIC AND INTESTINAL WORM DISEASES

Prophylactic treatment of gastric and intestinal worms depends on the origin, migrations, and metamorphoses of the helminth causing the disease. Many helminths, as we have just said, are consumed in drinking water or in food. It is easy to understand how difficult it is to prevent them from being picked up in this way, especially in the case of the Cat which mostly finds its own food, and which would lose its purpose and usefulness.

It is not the same with curative treatment. In treating all worm diseases there are two goals to be fulfilled: (1) kill the parasite; (2) expel it.

Administer santonin [from *Artemisia cina*], koussin [from the *Hagenia abyssinica* tree], pelletierin [from the root bark of the pomegranate], one or two granules, half-hourly, for a day or two. Deworming decoctions are difficult to administer to Cats. Therefore, we believe that from all points of view it is better to give them the granular form of the medicines.

After the administering the above treatment, give the patient podophyllin [extract from the roots of *Podophyllum peltatum*]. This last substance is administered as the dose of one or two granules to the centigramme, it is effective in causing the emptying of the intestine and, moreover, it has anthelmintic properties.

In the case of epileptiform fits, use of picrotoxin [aka cocculin, from *Anamirta cocculus*], a one granule at a time, four or six times during the day, is found to be helpful.

DISEASE CAUSED BY PARASITIC INFECTION OF BILIARY CHANNELS

In the autopsy of Cats, which had died after becoming depressed and feeble, and showing signs of somewhat pronounced wasting, their biliary ducts were sometimes found to contain trematode worms of the genus *Distoma*. Siebold found, according to Rudolphi, the *Distoma lanceolatum* (Mehlis). Mr. Creplin was the first to discover and describe the Cone distoma (*Distoma conus*), called *Amphistoma truncatum* by Rudolphi.

It is not rigorously known how these helminths reach the Cat's liver. However, the metamorphoses of distomas or flukes are generally well known and we believe that what happens for sheep and herbivores is also true of the particular case in which we are concerned.

The egg of the distoma gives rise to a small being, a true microscopic infusoria, enveloped in a ciliated membrane, which moves with great vivacity in the water into which it is freed. The ciliated coat of the embryo disappears, and, following this transformation, which is a simple moult, becomes a sac-like worm, the sporocyst, which for a long time was considered to be a separate creature.

Hundreds of new independent creatures emerge from the sporocyst, resembling tadpoles with a mobile and deciduous tail. Before their origin was known, these tadpoles were given their own name: Cercariae. The Cercariae find a host, from which they feed until their tail is well-developed. Once they reach that state, they abandon their host to live like the tadpole of the frog.

When tired of this vagabond existence, they seek a new shelter, lose their tail, encyst and may wait for years in this chrysalis state, for their new host to be eaten. Once eaten, they arrive in the stomach of the new host, where they will transform into the adult or sexual state, their envelope is dissolved by the gastric juice, and they go into the channels where they will develop.

"The time of celibacy has passed, and a large legacy, in the form of eggs, is being prepared. In this state they perform their last mission, and if their mother, the sporocyst, has known only the joys of asexual reproduction, the cercaria, now suddenly a distoma, enjoys all the sweetness of sexual motherhood." (Van Beneden)

The eggs laid by the distomas are expelled in faeces by the host, and the ciliated embryos, whose life stages we have just discussed, are soon released.

According to M. Willems Suhm, the hepatic fluke (*Distoma hepaticum*) is introduced into the sheep by means of a small slug (*Limax agrestis*) that this ruminant swallows with the plants it eats. It is probable that *Distoma lanceolatum* enters the gut of the same mollusc or that of a neighboring genus which may be the prey of frogs which in turn are devoured by the Cat. The Cat may even directly consume the mollusc in drinking water or in some other way.

If we suspect a Cat is harbouring these liver parasites, we may use the same treatment already described for tackling gastric and intestinal worms. If the patient is weakened and the appetite poor, we must add arseniate of iron and quassine [from the quassia tree]; if there is pronounced weakening, brucine [from the *Strychnos nux-vomica* tree] can be used.

CONSUMPTIVE WORM DISEASE

Under the name of the phthisis [consumptive] worm disease of the Cat, M. Colin describes a worm-induced respiratory disease characterized by yellowish tubercles whose volume varies from that of a grain of millet to that of a grain of hemp. When excised, these tumors were found to have a creamy pulp. When he examined these under the microscope, he found small threadlike helminths and some of their eggs at different stages of development in the middle of the thin tuberculous matter.

These transparent-bodied helminths are nematoids, and we reproduce here the description as given by M. Colin:

"Transparent body with terminal mouth, club-shaped oesophagus, straight intestine and tapered tail. They have the appearance of young strongylid worms that live in the airways of sheep, pigs and beef. Their movements are not very marked in the tuberculous mass; but they become more extensive and rapid once the worms are set free. It can then be seen to alternately roll itself into a spiral, a crook, an S-shape, or to undulate like a snake.

"The eggs, which are round and regular, and have a diaphanous membrane, are dispersed in large numbers in the lung tissue; they play a large part in the formation of small tumors. Some have finely granulated yolk set apart from the membranes; others contain a fully-formed but still-opaque embryo; many contain the living embryo which is translucent and makes very obvious circular movements."

In spite of his researches, M. Colin was unable to discover any females or any trace of a female alongside the eggs and young nematodes. He was able to ascertain that these helminths were vigorous, that they were resistant to low temperatures, and that they lived in clear water just like the asexual larvae of the strongylids of ruminants. This experimenter kept them alive, for more than a week, in putrefying lungs.

What is this strongylid? where does it come from? where does it live in its adult or sexual state? We believe these issues have not been resolved.

We think that this disease must be quite common in Cats, and responsible for certain diseases of the respiratory tract that rapidly cause lethargy and death, where no other cause can be found.

In our opinion, a treatment which has some chance of curing this phthisis would consist of administering iodoform and calcium sulphide (six granules a day, one of each at a time). At the same time a granule of arsenious acid or arsenate of soda should be given morning and evening.

Finally, in cases where fever needs to be controlled, defervescent [febrifuges], aconitine [from monkshood], veratrine [from lilies], digitalis [from foxglove], should be administered to the point of sedation. During convalescence, iron arsenate and quassine, a granule three times a day, should be prescribed. In the case of pronounced malnutrition, the arsenate of iron may be replaced by arsenate of caffeine, or even given in addition, if there are two symptoms to address.

As to the preventive measures, these can scarcely be indicated due to the current lack of information, at least for us, regarding the origin of the parasite and the manner in which these helminths arrive at the cat.

CASTRATION

When a Male Cat is destined to be purely a household pet, when it will be deprived of any excursion outdoors, it may be emasculated by performing the castration operation. Once deprived of its genital organs, it becomes sedentary, affectionate and lazy. All his bellicose instincts disappear. He becomes contemplative, willingly spending hours in a state of complete torpor, and he seeks warmth and comfort.

Contrary to what some authors suggest, he does not lose his hunting instincts; he still gets satisfaction from lying in wait for rats and mice, things that are habitual, but he is less passionate about this sort of exercise. His body becomes larger and tends towards obesity. His fur becomes thicker and silkier. He is more friendly with people and becomes remarkably sweet-natured. He is more readily obedient – in short, he became more domesticated. His urine and faeces lose the disagreeable and persistent odour that is peculiar to tomcats.

When the operation is performed before adulthood, the heads of the castrated animals become less voluminous, their whiskers are less strong, and their claws remain less well-developed. We can see the effects of the modifications on physique and behaviour; the voice is also modified.

In order to perform the operation, care must first be taken to avoid injury from the teeth and claws of the patient. The head and forelegs are placed into a bag, or enveloped in a canvas, but so that the patient can still breathe. The two hind legs must be held by one or two assistants, an incision is made with a scalpel on each side of the scrotum. The testicles emerge and with the aid of the fingers the testicular cords are twisted and the testicles are thus torn off. One could slo do the section with scissors without fear of haemorrhage.

The operator must protect his assistants and pay attention to himself in order to avoid the jet of urine that the patient never fails to launch during this operation.

Healing takes place in a few days without causing any obvious traumatic fever.

CATS AND THE LAW [JURISPRUDENCE]

In regard to unfortunate cats that are victims of hatred of neighbours, can the principles set out by Schoefer and Toussenet give their owners legal recourse against the perpetrators of the attacks on these animals? On this subject, there are two contradictory judgments rendered in a case known as the *Affaire des Chats*

A proprietor of Fontainebleau, M.L., seeing his property invaded by neighbourhood Cats, unsuccessfully tried all possible means to remove them. Finally he spoke to a forest guard whose traps took fifteen

victims in just a few days. Complaints were made to the police commissar by the owners whose Cats had fallen victim to the forest guard's traps.

Minutes were drawn up, and M. L., and the forest guard, the two guilty men, were summoned to the police court of Fontainebleau, in front of M. Richard, Justice of the Peace. Here is a transcript of the sentence pronounced by the magistrate on 15th May, 1865:

"The Tribunal,

"Herewith the parties in their words, behaviours and conclusions;

"With regard to article 479 of the Penal Code and article 1385 of the Napoleonic Code;

"On the existence of contraventions:

"Whereas science and jurisprudence recognize several species of Cats, notably the Wild Cat, a nuisance animal for whose destruction a bounty is granted, and the Domestic Cat, a household pet like the Dog, in the eyes of the legislator;

"Whereas the domestic cat is not *res nullius* [an unowned thing], but is the property of a master, who has the duty, as far as possible, to supervise, and at the same time the right to protect the animal which belongs to him;

"Whereas the Cat, by its nature and instincts, escapes full-time surveillance; such that it is impossible in this respect to assimilate it to other domestic animals, docile to the bit and to the yoke, or easily deprived of the liberty of going or coming;

"Whereas the Cat, notwithstanding the little sympathy which it inspires, on account of his character and the inconveniences to which his presence exposes us, is none the less of unquestionable utility, destined to purge not only the dwellings, but also the adjoining lands, of dangerous and inconvenient rodents; that the services rendered do not stop at the residence of his master, and that it is therefore very equitable to have leniency for an animal tolerated by the law and useful to all, either directly or indirectly;

"Whereas the Cat, even a domestic, is in some sort of a mixed nature, that is to say, an animal that is always a little wild, and having to remain so by reason of its very purpose, so that he can render the services expected of him;

"Then for this reason the greatest discretion should be left to the judge in the assessment of alleged faults, which, more often than not, are attributable only to the carelessness or even negligence of those who complain. Man has his reasoning and experience to protect himself, if not against any damage, at least against the larcenies of the Cat,;

"Whereas the house of Mr. E is closed by a doorway of iron, the bars of which are spaced 9cm apart with a base of only 55cm;

"That this door thus offers an easy passage, and perhaps only during the night, in the neighborhood, to any cat continuing along the street, and that failing to repress the murders and mutilations of Cats, under the circumstances in which they were produced, could result in undesirable consequences in more than one way;

"Whereas the law does not want us to do justice ourselves;

"That article 1585 of the Napoleonic Code grants an action for damages to the injured party so that he may sue through the courts for compensation for the damage he has suffered;

"That, finally, if the law of 1791, Title XI, Article 12, permits, in effect, the killing of birds, the attempt to put the cat in the same category as poultry is not correct since poultry are destined to be killed sooner or later, and in the main they are held *sub custodia* in a restricted and completely closed place, while the

same cannot be said of the Cat, no can he be kept under lock and key if he is to obey the law of his nature;

"Moreover, the law of September 28th, 1791, requires a concurrence of conditions which are lacking in the present case, in particular the flagrante delicto [caught in the act], and that, finally, this being strictly criminal law, it is impossible to reason by analogy and to apply to the urban police, as a result of a benevolent but dangerous interpretation of the provisions of a law entitled the Rural Code of 1791;

"Whereas, if the defence holds that the Cat-killing took place in consequence of an imperious necessity, this obligation has yet to be proved, for neither larceny, damage, flagrante delicto, nor anything that would constitute a case of self-defence or force majeure, with respect to a particular Cat, has been established all;

"Whereas arguments based on common sense, fairness or necessity must never lead the judge to lose sight of the fact that in any litigation, no matter how small, its sole task is to state the law and apply it, especially in the presence of the clear and formal text of article 479 of the Criminal Code;

"Whereas the arguments drawn from the observations of the Council of Cambaceres at the Council of State, notwithstanding the great authority which always attaches to such a celebrated name, are never the expression of individual opinion, albiet a very respectable opinion, but an opinion without force of law;

"That, besides, the alleged right to kill, in certain cases, the Dog, an animal dangerous and quick to attack without provocation, cannot, by consequence, give one the right to kill the Cat, an animal quick to act and one which is certainly not of a nature to cause fear;

"Whereas evidence of any alleged damage is incumbent on the complainant, and despite of the difficulty of proving such matters, and quite separate from the injury caused, nothing in law allowed the accused to lay down traps, especially after the fact, in such a manner as to attract, by the confession of the accused, innocent cats from the whole neighbourhood as much as guilty Cats;

"Whereas, at last, no one ought to do something to another's property that he would not wish done to his own property; that all the goods, according to Article 516 of the Napoleonic Code, being either movable or immovable, the result is that the Cat, in accordance with Article 528 of the same Code, is undoubtedly a piece of furniture protected by this law and others, and that consequently the facts complained of fall directly under the application of Article 479, sub-section 1, of the Penal Code, which punishes those who have voluntarily caused damage to the property of others;

"As for Ranger G ...:

"Whereas G acknowledged having participated in the destruction of the Cats, in executing, he said, an order of M. Inspector of Forests; but, since the proof of this assertion has not been made; and that, besides, even if he had proved it, a subordinate is not bound to blindly obey an order given outside of authority, especially when this order does not have, and evidently cannot have, the authority of a council;

"Whereas, finally, in the matter of contravention, the law does not recognize any complicity, and therefore the accused G is solely responsible to answer for his acts and gestures;

"Whereas G ... further stated at the first hearing that he had set traps in Mr. E's garden ... for the purpose of taking Cats, traps which he said had cut off their legs and muzzles in order to claim a bounty, in view of the impossibility of being able to distinguish whether the legs of the animal thus mutilated came from a Domestic Cat or a Wild Cat;

"As regards the accused, female B ..., a domestic servant:

"If obedience is the first duty of a subordinate, it is none the less true that a servant, whatever he may be, is not a completely passive being, who must inevitably submit to any comman that it please his master to give him, whether right or wrong;

"Whereas it is impossible to argue that, by slaying with a hammer the Cats caught in the traps, the accused B obeyed a force majeure which she could not resist;

"That guilt is aggravated by the plurality of executions of this kind;

"Regarding the accused woman E ...:

"Whereas it appears from the circumstances of the case that it has not acted ab irato [in anger], but on the contrary has taken a direct part in the destruction of the Cats with a rigour which has not been the effect of a single instant;

"With regard to the accused E ...:

"Whereas he acknowledged at the first hearing, that his house being gravely inconvenienced by the Cats, one had the right to act as they had done;

"Whereas today he even admits to having taken a direct part in the destruction of the Cats, six in number, while the ranger G. only recognizes three contraventions to his charge, while the servant B. declared that he had killed seven Cats, and that the Public Prosecution recorded fifteen contraventions of the same kind;

"Whereas the contraventions attributable to G ... are six, according to the very statement of Mr. E ... and that seven contraventions, with respect to the other three indictees, remain alone perfectly established by the very statement of the accused B ...;

"As for B, the husband of the accused:

"Whereas under section 7 (II) of the Act of 6 October 1791 the husband is civilly liable for the offenses committed by his wife, this provision is special to the rural police and, in consequence, does not apply by extension to the urban police;

"Whereas, moreover, if the husband is not, as a general rule, civilly liable for the offenses and quasi-offenses of his wife, not being presumed to have given her a mandate to delinquency, the same rule must certainly apply to contraventions committed by the wife, apart from any pecuniary interest appreciable for the husband, and moreover without his fault and without his knowledge;

"With respect to cumulation of penalties:

"Whereas the system of cumulation of penalties, as regards contraventions, is accepted by the legal system; that this system is rational and equitable; that it is also inscribed in the law of 22 March 1841, article 12, and in that of 17 March 1850, article 8;

"But, whereasm after all, that the public prosecutor was the first to insist on the admission of extenuating circumstances on the part of the judge, in accordance with the provisions of Article 483, in brief, and 463 the Criminal Code;

"Whereas, finally, the unsuccessful party must be condemned to bear the expense of the proceedings;

"For these reasons,

"Judging in the presence of all parties involved, and as a last resort,

"Dismisses B ..., husband of accused B ..., of the prosecution against him, as civilly liable, and relieves the four accused in question of eight contraventions out of fifteen; but detains them for seven, where they were the co-authors of the contraventions, with the exception of a single offense against the discharge of the accused G, who did not take part in it,

"And condemns the defendants not jointly and severally, but by body (articles 56 and 467 of the Penal Code), namely:

"Firstly, the forest ranger G ..., with a fine of 1 franc for each contravention, to a number of six;

"Secondly, the servant B ..., with a fine of 1 franc for each contravention to the number of seven;

"Thirdly, the accused husband and wife E ..., with a fine of 1 franc each for each violation, seven in number;

"Fourthly, and finally, all the accused, jointly and severally, for all costs of the proceedings. "

This case of Cats gave rise to an appeal against the sentence of the police court, as we find mentioned in the newspaper "Le Droit," which gave an account of the hearing of 25 August 1865. Here are the terms in which he relates in his columns the reversal of the judgment:

"Our readers have not forgotten the sentence of May 15, by which the Justice of the Peace of Fontainebleau condemned four persons of that city to fines for the murder of seven Cats.

"This judgment was appealed by the convicted parties.

"Georges Lechevalier, of the Paris Bar, their lawyer, after paying tribute to the learned Justice of the Peace, who, with regard to a question which appeared to be of little importance, found means of recalling all the great principles of law and social order, recounted the facts on which the trial took place.

"At the beginning of this year, M. and Mme. Escalonne saw their garden become the rendezvous of all the neighboring Cats. One day one of them carried away the thigh of a roe deer; the next day an ornamental tree was broken; and finally every night became an infernal din, and M. Escalonne could say, like Boileau:

And what an annoying demon, the whole nights through,
Gathers together cats from all the gutters in this place.

"What to do? The neighbors were informed, those to whom ownership of the devastating animals was ascribed, by asking them to keep the night-prowlers at home a bit more; but the visits of those indefatigable dissolutes continued.

"It is necessary to advise: some traps were placed; six or seven Cats were taken or killed. Right away there was a public stir, a general hue and cry of M. Escalonne's neighbours against this murderer of the companions of their solitary old age:

And the number of Cats, in the retelling,
Grew from mouth to mouth,
And before the end of the day,
It was more than a hundred.

"It was in these circumstances that the prosecutor of the police commission and the sentence of the Justice of the Peace intervened.

"The attorney read this judgment and found that never, without even the exception of 'The History of Cats' by Sieur Moncrif of the French Academy, has the legal position and the social importance of these interesting animals been so compendiously exposed. "

"In entering into the discussion, the lawyer says that if the Justice of the Peace had not so scornfully rejected in a judgment 'arguments drawn from common sense,' he would have merely recalled what, in a similar process, Racine causes his Little Jen of the Litigants to say:

*As for me I don't know how to do so much
As to say that a mastiff has just taken a capon.
There is nothing your dog does not take;
And here he has eaten a fat capon of Maine;
And the first time I catch him doing it,
His trial is finished, and I'll knock him out!*

"But, to the Justice of the Peace, common sense being of no value to resolve this question, it was necessary to examine it more closely.

"Escalonne evidently had the right to defend his property against these destructive agents. What could he do? In the past he might have put the animals themselves on trial, and might appeal to use to spiritual weapons against them, as did the inhabitants of the bishopric of Autun in 1522, according to the president of Thou, when they solicited and obtained a sentence of excommunication against all the rats. But this is no longer possible, and history does not tell us whether it is effective.

"What could they do? Pursue lawsuit to the owners of the Cats, as the Justice of the Peace indicates? But they would have to know who the owners were, and first of all would have to establish the identity of the Cats. Now, according to the proverb, at night all cats are grey, making identification a difficult matter. Therefore, there remained only the means employed.

"But is the cat, 'that unfaithful servant,' as Buffon calls it, really worthy of all the interest shown by the Justice of the Peace? According to Toussenet, it seems that Cats do not fulfill their social mission very scrupulously; the spiritual writer tells us that he attended the spectacle 'of a group of Cats and Rats on friendly terms, fraternizing at the expense of man, and shamelessly sharing the entrails of young pigeons and cabbage-eating rabbits.'

"And M. Toussenet added that for his part, 'he never encountered a marauding Cat in the woods or in the plain, without doing the honour of shooting it.' Well! M. Escalonne has only surrendered himself to that destruction of Cats, in which M. Toussenet gloried to contribute as much as possible, but M. Escalonne was constrained by necessity and therefore he can not be condemned.

"Imperial Procurator Delapalme referred to the wisdom of the Tribunal, which ruled as follows:

«The Tribunal,

"Whereas it is an established fact that Escalonne tasked Grossac with placing traps in his garden;

"And besides, it is certain that several Cats were caught in those traps and killed;

"But whereas the witness Berger, a gardener who maintains Escalonne's garden, testified before the trial judge, as is apparent from the notes of the hearing, that he had found damage to the garden plants and flowers, damage caused by the Cats, and he finally added that ornamental trees in the garden were damaged by these animals;

"That from then on Escalonne found it necessary to take measures to defend his property;

"Moreover, Article 479 of the Penal Code punishes only those who have wilfully damaged the movable property of others, and that, consequently, there is nothing to established who owned the animals destroyed, or even if they were owned by someone, so it follows that that article cannot be applicable;

"I pronounce that he was misjudged, his appeal is valid, and I annul the verdict on appeal;

"Sentence quashed:

"Appellants are discharged from all convictions against them."

MAMMALS AUXILIARY TO THE CAT

In the preceding chapters we have given a long list of the immense services the Cat renders to us by destroying rodents and reptiles. We can easily support all the good things we have said of this interesting animal. It is easy to understand, too, that we have tried to indicate how to keep it in good health, and to provide for its welfare as far as possible.

Man has the duty of exchanging good practices with the animals which are useful to him; we must never forget this.

We do not want to finish this treatise without mentioning certain auxiliaries of the Cat, the other animals that have received the mission of fighting the terrible enemies of man who suffers greatly from the attacks of reptiles and the depredations of rodents such as Black Rats, Brown Rats, Mice etc.

We will not mention the Dog here, we have dealt with him in another of our works. (See our Treatise on the Dog.) We shall only mention, from this point of view, certain carnivores, who deserve a special mention in this work.

It is good that everyone should know how much gratitude we owe to certain animals which, out of ignorance, we are quick to condemn as unpleasant, and often wrongly believe to be harmful, and unjustly believe to be unintelligent. If some of them appear to be considered enemies because of a few faults, we can at least account for the evil they do due to our lack of precautions, and in balance we present here the services they give us daily, and the balance sheet often rests in their favour.

These auxiliaries of the Cat belong, we have said, to the Carnassier class of mammals. We will first deal with those ranked by naturalists in the first tribe, called the Mustelids (Mustelii), whose second subgenus, *Mustela*, contains the species that concern us here.

We shall pass in succession in review: the Polecat, the Ferret, the Weasel, the Stoat or Ermine.

La Fontaine said:

*The nation of weasels,
No less than that of cats,
Wishes no good to rats.*

POLECAT

Mustela Putorius

The foul Polecat, commonly known as the Stinking Beast, an epithet it deserves because of the putrid odour it spreads when angry, an smell so penetrating that it even disgusts the dogs most eager to chase it.

The Putois has the appearance of being a bit heavy. Its body is 40cm long and its tail is 16cm long. Its coat is generally brown and is composed of two kinds of hair: the longer hairs are dark brown, firm and shining; the others are short, woolly, and yellowish white. The back is dark, the belly is lighter and, moreover, is striped by a brown red band. The fur round the mouth, on the forehead, and the tip of the ears is white; the space between the mouth, the corner of the ear, and the forehead is the same colour, mixed with brown. Legs and tail are black.

The Polecat is found throughout temperate Europe, as well as in Asia, where it even found on the shores of the Caspian Sea on one hand, and as far as the Kamtschatka region in the north. He lives everywhere, but prefers the neighborhood of dwellings.

The breeding takes place around March and young are born two months later, in May. The mother gives birth to four to six pups and she displays great tenderness towards them and great courage to defend them. At the end of two months, she begins to train them to hunt. By the age of three months they reach full size.

The Polecat is a very courageous animal, easily stirred to anger, but very slender, very cunning, cautious and even suspicious. He has all the qualities that make an excellent hunter. He is agile, an exceptional climber, swims and dives if he needs to do so; it makes great leaps and creeps like a snake.

Though it is true that the Polecat does not spare the pigeons, hen-houses and rabbit warrens, we must do him justice, if the owner of those animal dwellings knows how to guard his inhabitants, the Polecat becomes a powerful servant who will rid him of the Rats, Mice and Snakes that threaten his residence.

He devours rodents and reptiles. Viper bites are not deadly to him, so he crunches them without worrying about the venom. Lenz's experiments leave no doubt in this respect.

We shall therefore conclude, as many naturalists and observers have done, that there will always be interest let the Polecat roam free in places where snakes and rodents swarm, after taking every precaution to protect the barnyard, and to profit from his services.

FERRET

Mustela Furo

The Ferret, a native of Barbarie, was introduced, according to Strabo, into Spain, whence it was imported into France. Moreover, according to the opinion of many authors, it was only an albino variety of the Polecat. He can only live with us in a state, if not purely domestic, at least of captivity to be used for hunting rabbits. In reality, it is only found in the domestic state.

Aristotle described it by the name of *Ictis*, and Pliny called it *Viverra*. From the earliest antiquity, it was used destroying rabbits. The Emperor Augustus sent them to the Balearic Islands to free them from that rodent. Like the Marten they were termed African Cats.

Albert the Great tells us that the Arabs, when they arrived in Spain, found the domestic Ferret, known as *Furo*, in that country. It was used for killing the Rats, Mice and Rabbits that caused such great damage before introduction of the Cat.

The Ferret is a little smaller than the Polecat, but its anatomical characteristics are the same, as is its behaviour, although it is less lively, as is true of all albinos. Its coat is yellowish with two kinds of hair: longer white hairs and shorter, yellow, woolly hairs. Its eyes are pink; its head is less broad, and more elongated than the Polecat.

The female is smaller than the male, and produces two litters a year. Her pregnancy lasts six weeks, and she gives birth to five or six, and sometimes as many as eight or nine, pups and takes the greatest care of them.

These days, the Ferret is used in England for hunting rats. We will borrow this description from Rodwold regarding a battle of big rats with a famous Ferret:

"The Rats were enclosed in a square box of 3 meters to 3.5 metres in diameter, and 1 metre tall. The Ferret was thrown in the middle, and the battle began. Some of the biggest Rats surrendered defencelessly, as real cowards; others, who were not yet quite adults, fought like devils.

"The Ferret received several very strong bites, which only increased his rage. His eyes shining with anger, he seized one of his adversaries by the back of his neck, it uttered a cry and it was all over. Sometimes he held them on the ground with his paws, seemingly amused at their efforts to hurt him. Then he struck like lightning, sinking his teeth in the throat of one of them; its cry of anguish was heard, and another victim was added to the previous ones. In the middle of the battle, an experienced old Rat approached the Ferret; indignant at the carnage committed and wanting to avenge it. The Ferret had seized a new Rat, and slaughtered it, when this other rushed forward and bit him deeply on the head, causing squirt blood; the Ferret bit the Rat more fiercely, and received a second wound; he then saw his adversary and rushed at it full of rage. It was an indescribable tumult. Nothing could be seen but black forms, in the midst of which flashed the lighter coat of the Ferret; you could hear her grunts, the cries of the Rats, many looking for an escape, but their corpses piled up more and more; an hour had not yet passed, but more than fifty corpses strewed the ground."

When angry, the Ferret emits a strong odour, reminiscent, albeit to a lesser degree, of that of the Polecat. He is more sensitive to cold, more gentle, and more easily tamed than the Polecat. This may very well be the result of his albinism and constitute rather a pathological case than a generic characteristic.

The Ferret fights reptiles very well, such as the grass-snake and the slow-worm, but seems to reluctant to engage the viper in battle; although the viper's bite does not kill him, he seems to foresee that it will make him unwell.

WEASEL

Mustela vulgaris

The Weasel, which is found in Europe and Asia, is also very common. It lived as a domestic servant to the Ancients in their houses, just like our Cats.

It was named 'Gale' by Pallas and 'Mustela' by the Romans under the name of Mustela; they used it to combat on rodents until the end of the first century of the Christian era. Indeed, she is very easy to tame by taking her when young and treating her gently.

The Weasel's coat is reddish brown on the upper part of the body and white underneath. The body is 16cm long, and the tail never exceeds 5cm. One notices on the corner of her mouth a small round brown spot, and some spots of the same colour are also seen on the belly. In the northern countries it becomes brownish-white during the winter season, but it never has the black tail-tip which we will mention when discussing the Stoat.

The Weasel is very slender, her long body seems to mingle with her neck, which makes her look even longer than she really is. Her muzzle is blunt, and her nose is divided by a longitudinal furrow, her ears are broad and round, her eyes are oblique, small and brilliant. Her short legs are tipped with in claws that are powerful for her size, her paws have hairy soles. Her tail is thin at its tip.

She chooses to live in any retreat that appears safe: rat-holes, mole-holes, piles of stone, barns, stables or walls. Nevertheless, she prefers to live close to dwellings, especially in winter. Man's presence scarcely seems to frighten her, and contrary to what Buffon has said, she can be seen hunting in broad daylight.

Her courage is unbelievable for such a small animal. One would never imagine such boldness and bravery from one so blessed with agility; she climbs, jumps, crawls, and turns as if by magic; she pushes into the smallest holes, even those of mice, and plunges into water to catch rats and fish. We see her walking curiously with her head raised and neck stretched, using all of her senses to explore the area.

Weasels usually live in couples, in families, and it is even believed that they unite into considerable troops, sometimes even attacking man, or so it is said.

In his "Life of Quadrupeds" John Franklin wrote [I have used Franklin's original text]: "One fine summer's evening, about forty years ago, as a Mr. Brown was returning from Gilmerton, near Edinburgh, by the Dalkeith-road, he observed a man, who was leaping about, and endeavouring to defend himself from the assaults of fifteen or twenty weasels; and which he was tearing from him, and trying to keep from his throat, to which they seemed to direct their course. Mr. Brown joined in the combat, and, having a stick, contrived to hit and kill several of them. Seeing this, the others became intimidated, and speedily disappeared in the fissures of an adjacent rock. The man was nearly overcome with fatigue and exhaustion, having been engaged in his struggle with the weasels, as well as he could guess, for above twenty minutes; and, but for the timely assistance of Mr. Brown, he said, he must have inevitably fallen a victim to their fury, as he found himself quickly losing strength from the violence of his exertions. He had squeezed two to death, while tearing them from him. His hands were much bitten, and were streaming with blood. The account he gave of the beginning of the affray was, that he was walking slowly through the park, when he perceived a weasel; he ran at it, and made several unsuccessful attempts to strike it; on coming near the rock above mentioned, he got betwixt it and the animal, and so cut off its retreat; the

weasel squeaked aloud, when an instantaneous sortie was made by the whole colony, and the attack commenced upon him."

Weasels sometimes meet to hunt together.

Weasels mate around the month of March. After five weeks, the female gives birth to three to eight cubs, which she deposits in a good nest. She nurses them for a long time and then for several months she feeds them with mice that she captures alive. She is an excellent mother and brings a remarkable solicitude to protect her nest from any attack.

If she finds it is discovered and believes it is in danger, she quickly moves her children to another hiding-place, carrying them in her mouth. This has probably given rise to the belief, which is still widespread among the ignorant population, that the Weasel gives birth to her young through her mouth. Woe to anyone who tries to attack her children, she knows how to defend them with a valour disproportionate to her small size and apparent strength.

The weasel has long been accused of producing severe ulcerating wounds and even dangerous diseases through its bite. It is still very difficult to uproot this idea in several localities among country folk, who also accuse the Shrew, without any reason, of producing similar dangers by its bite.

In summary, in spite of the larceny of which we can rightly accuse this graceful animal we have just described, we shall conclude, as Brehm did in his Wonders of Nature:

"Weasels render us incontestable services, and they should be protected, instead of trying to destroy them. No animal is more suited to hunting small rodents. It can only cause damage in poorly closed poultry houses or pigeon houses, and this damage cannot be compared to the services it renders. But it is difficult to eradicate old prejudices, prejudices, to combat stupidity and habit."

Let us add to this that the Weasel frequently destroys dangerous reptiles, which deserves to be counted; she is not afraid of attacking vipers, although she does not enjoy complete immunity against her venom, as do her fellows.****

STOAT (ERMINE)

Mustela herminea

The Ermine, which is called the Stoat when she wears her summer coat, has all the external characteristics of the Weasel, however, it is more elongated and stronger. Its body is 26cm long, and its tail is 9cm long.

On the upper part of the body, its coat is a chestnut brown slightly dusky, and on the lower parts it is a uniform white tinged with light yellow. The extremities of the legs, as well as the edges of the ears, are a very clear white, and the extremity of the tail ends in a bunch of black hairs.

In winter, it changes fur colour. It becomes a brilliant white colour, at least in the first years of life, for as it gets older it has a somewhat yellowish tinge, except for the tip of its tail which remains black. It is then called the Ermine. This name, according to Cange, comes from the Greek 'ermina', because it was widespread by the Armenians.

The Ermine is very common in Europe where it is found from the Pyrenees to the Balkans. It is also prevalent in Asia; it is even said to be found in the Himalayas.

All that we have said of the Weasel is also applicable to the Ermine: it shares the Weasel's grace, agility and courage. It is a good swimmer knows how to hunt prey in the water.

"It is interesting," says Brehm, "to see an Ermine hunt one of her favourite prey, an amphibious Vole, for example. It pursues the rodent on land and in water, and succeeds in taking its prey. It first smells the holes. It knows that one of them is inhabited; the Vole flees and throws itself into the water, which cannot save him. His enemy follows him, swimming like a Dog and pursuing him with all the agility of the Otter. The Vole is lost unless a stroke of good luck saves it. He tries to climb, and to hide, but to no

avail, the Ermine is on his track, and its teeth are stronger than the rodent's incisors. The battle sometimes takes place in the water, and the Ermine then gains the bank, holding its prey in its mouth."

Just like the Weasel, Ermine mate in March. In May and June the female gives birth to five to eight young, which she deposits in a hidden nest or even in a molehill.

Everything we have said about the maternal tenderness of the Cat is applicable to the Ermine. She gives her young the same care in suckling, training and entertainment. She defends them from danger with rare courage. To keep them safe from searching enemies she transports them to a safer place, and if necessary will not hesitate to cross the rivers to ensure their safety.

M. Moynet in his account of his voyage "The Volga" (1858), was published in the 'Tour du Monde,' and spoke thus of the Ermine, which he met in great numbers in the whole region near Sarepta:

"... It is also a very courageous animal. He attacks and pursues enormous rats into their holes; therefore the farmer, instead of chasing him, protect him as much as they can. An Ermine shut in an attic kills, thanks to its agility, all the mice, without exception, even if there were a thousand."

It eats all the snakes and reptiles she encounters in her travels.

MONGOOSE

The part which is currently being played in the Anitilles by an animal celebrated in antiquity, one which is overcoming an invasion of rodents, of monstrous rats, which were causing ruin and desolation in that rich country, forces us to discuss it her, we are referring to the Mongoose.

This animal belongs to the second subgenus of the third genus of the second Carnassier tribe (Viveniens), which is formed by the true mongooses. We will only deal with one species, the ordinary Mongoose or Egyptian Mongoose (Herpeste Pharaonis or Ichneumon Pharaonis).

This animal, known to the ancients under the name of Ichneumon (Ichnevmon), and also known by the name of Pharaoh's Rat, was one of the animals worshipped by the Egyptians. According to Herodotus, in all the cities of Egypt, it was embalmed and preserved with veneration. He received the honour of a burial place. He was, as Strabo indicates, considered the destroyer of reptiles, which were numerous in that country.

Pliny relates that the Ichneumon enters the crocodile's mouth and, after having devoured its main organs, comes out alive and triumphant over the victim he has sacrificed. It goes without saying that this narration is completely inaccurate and must be reduced to a fable. But what is true is that the Mongoose is very harmful to crocodiles by destroying their eggs, for which it has a very pronounced taste, which tackles the evil at its root.

The size of the Mongoose is a little greater than that of the Cat. Its body is 50cm long, and its tail is nearly the same length and terminates in a brush. The legs are short and web-footed. The eyes are small, prominent, with very bright round pupils. Its ears are broad, short and rounded. Its coat is dark brown mixed with dirty white; the fur is harsh and brittle, longer on the flanks and shorter on the head, and the hind limbs are darker in colour than the rest of the body; the belly being lighter.

The Mongoose actively hunts rats and reptiles, though it must be confessed that it does not spare the birds which fall under its claws. Though it has a taste for the eggs of ground-nesting birds, it also seeks reptile eggs, especially crocodile eggs which it considers a particular feast.

It slips through the grasses and rushes of the Nile, towards the place where the giant Saurian deposited its eggs, and in a few moments destroys the progeny of monster so dreaded by the population. It fights snakes, and makes a carnage of them, with admirable bravery.

We owed her a special mention for these particular cases, and for the services she is rendering at this moment in America. M. Fulbert Dumonteil was correct in saying of this animal, in an article he dedicated to it in 'La France':

God said of him, "Thou shalt be the beneficent scourge of wicked creatures, of invading races, of dreaded monsters. To you the role of limiting their impure domain, to stop their menacing progress! "

We shall end the description of the Cat's auxiliary mammals by giving the Hedgehog his deserved mention.

HEDGEHOGS

The Hedgehogs belong to the second family of the Carnassiers, that of the Insectivores. They are ranked in the sixth tribe called the Erinaceidae, of which they form the first genus, Hedgehog (*Erinaceus*). Their name indicates their most distinctive characteristic; their skin is covered with spines or, to put it better, it is bristling with spines.

They have thirty-four carnassial teeth: six incisors on each jaw; two canines, also on each jaw, one on each side; ten molars on the upper jaw, five on each side, and eight on the lower, four on each side. Their bodies are thick, their limbs short and their tail short or sometimes absent. Their ears are very well-developed. Their muzzle is somewhat elongated into a trunk, and they usually have five fingers on each paw.

Their gait is cumbersome and slow. They would easily have become the prey of other carnivores were it not for their covering, the spiny armour we have just mentioned, which makes it harder for their enemies to attack them. This armor is nothing more than a large shield formed by the skin, the hair of which is transformed into very sharp conical spines, white or sometimes yellowish in colour, intersected in two-thirds of their length by a black or less blackish brown ring.

These spines cover the top of the head, the back, the shoulders, the rump and each side of the body. They are absent from the forehead, the sides of the head, under the neck, chest, belly and legs, where they are replaced by silky, tough, brown or whitish hair, at the bottom of which there is a thick pouch.

The skin colour varies according to whether it supports prickles or hairs. It is black in the first case, and of a reddish white in the second case. On the muzzle, ears and fingers, it is purplish-brown. The muzzle, the rims of the eyes, the ears, the upper surface of the fingers and the lips, except the upper one which has short whiskers, are hairless. The tail is hairless and black.

When the Hedgehog is not troubled or frightened, its prickles are laid back, and its body, revealing only its muzzle and the extremity of its four legs, looks like a convex, oblong lump. "But," said E. Beudement, in his description of this animal, "if it is frightened by some noise, or one tries to grab or to touch it, or it is threatened by some carnivorous animal, it immediately squats down and tucks its head and feet under its belly. Instead of an animal we see only a kind of ball bristling in all directions with spikes, it can not be seized from any side, and the audacity of the attacker is thwarted as it dare not rip his mouth or paws on this menacing bundle.

The ease with which this animal can raise its prickles at will, and to curl into a ball, is due to the considerable development and particular layout of its skin muscles.

The most widespread species is the Common or European Hedgehog.

COMMON OR EUROPEAN HEDGEHOG

Erinaceus europaeus

This species, which is found everywhere in Europe, except for very cold countries, is also found in Asia. This Hedgehog measures from 20cm to 38cm in length, 19cm in height; its tail scarcely measures more than 2-3cm. This general description applies to the whole species and we do not need to repeat it.

There are two generally recognised races of Common Hedgehog, although some naturalists consider them two separate species. The first bears the name of Dog Hedgehog (*Erinaceus Caninus*) because its muzzle resembles that of the. The second is called the Porcine Hedgehog Pig (*Erinaceus suillus*)

because its muzzle resembles the snout of the Pig. The existence of these two races, contested by many naturalists, has been affirmed by a scholar of great value and too good an observer to for us to dismiss it out of hand as it is the opinion of Etienne Geoffroy Saint-Hilaire.

The Hedgehog begins to be active only at twilight; he hunts during the night and sleeps during the day. He is unsociable and lives alone, he allows no-one to join him except his mate. He usually lives in a burrow or hole lined with straw, hay and leaves. The burrow is about 30 centimeters deep and has two openings, one to the north and the other to the south. He is often satisfied with the shelter provided by tall grass, a bush, or a pile of twigs.

In quiet places he sometimes ventures out and walks during the day, sniffing everything he finds like a Dog. At the least noise, the slightest alert, or slightest threat, he quickly runs away if he thinks he has time, otherwise he curls into a ball, waiting patiently for the perceived threat to disappear.

During the breeding season, which lasts from the end of March to the beginning of June, the male becomes very excited; he plays with his female and growls constantly, anxious to retain a pair bond that is often threatened by pursuit from his rivals.

At the end of seven weeks, the female gives birth to three to eight young in a carefully prepared and very cozy nest. The young are born white and generally without spines according to Lenz, who has observed hedgehogs born at his home. Towards the autumn, the young, whose mother has taken the greatest care of them, can provide for their own needs, and when they reached two years of age, they are ready to reproduce; they never mate before that age. In winter, the couples separate at the first cold spell and everyone goes into his hole and falls into a deep slumber until the month of March.

The Hedgehog provides a great service by destroying field-mice, voles and mice, and displaying great courage to fight serpents; it is the destroyer par excellence of the viper.

Brehm writes, "It is a good, brave and honest comrade, though somewhat stupid, which walks through life innocently, and cannot understand that man is so ungrateful as to pay for the services it renders, not only by contempt, but also by pursuing and killing it as a simple pastime."

To which we shall add that this is not only ingratitude, but stupidity on the part of man, who, in doing so, fights his own interests. As the great poet Victor Hugo frankly put it,

The beasts belong to the good God;
But beastliness belongs to man.

Mr. Cherblanc, in support of what we have just said, declares the Hedgehog the greatest destroyer of vipers and other reptiles, and says:

"If anyone doubts what I am saying, let a Hedgehog and a Viper be procured, let them be shut up together; soon we shall see the battle begin, and the Viper will soon succumb. The Hedgehog raises up his spiky helmet, jumps on the reptile, and with his sharp teeth breaks his the reptile's spine and cuts off his head."

What is very curious, as is evident from the many experiments made by Professor H.-O. Lenz of Schnepfenthal, is not only the courage with which the Hedgehog attacks, fights and vanquishes the viper, but that the bites of the latter have no detrimental effect on him. The Hedgehog never suffers the ill-effects of the venom which is powerful enough to kill an animal thirty times its weight.

This curious servant has other surprises: it appears that he can cantharides [blister beetle, Spanish fly] with impunity, without feeling the least inconvenience of absorbing it. Pallas claimed that a hedgehog can absorb a hundred cantharides without experiencing any ill effect. It would be very interesting to perform serious multiple experiments to establish the exactitude of this immunity. Cantharidin, the active ingredient in cantharides, is, as everyone knows, a potent toxin to carnivores.

I promise myself, on my own account, to perform a series of experiments to illuminate this point of toxicology and special physiology. To confirm the claim and to find the reason for it would be a double solution which would have a great interest. In a second edition of this book, should such an edition be

of interest to my readers, I will report on this study. I find nothing so regrettable as to repeat what other authors have written one after another without personally confirming the facts. This is how I have always sought to avoid this pitfall in this sort of study. (See my Studies on alkaloids, glucosides and other well-defined substances). Without such re-examination, many errors and scientific prejudices would be passed down through centuries despite lacking any foundation.

In some localities Hedgehogs are raised in the home like Cats, whose role they completely fulfil. This seems to be common at Astrakhan and on the banks of the Tanais. In addition, they are also remarkable destroyers of insects. They create real carnage among crickets. In gardens and in the country, they have a prodigious appetite for terrestrial molluscs. In particular we must add to their list of good points the service they render in destroying snails.

LONG-EARED HEDGEHOG

Erinaceus auritis

This species of Hedgehog, which is mainly found in the province of Astrakhan, and the whole of the lower part of the Urals and Volga, and which has even been encountered towards Egypt, is smaller than the preceding one. Its snout is short, and its ears large, reaching at least half the height of the head.

His nostrils are serrated like a crest of a cock; his legs are thinner and longer than those of the common hedgehog; its quills are fluted by twenty or twenty-two furrows lined with small bulbs.

The Long-Eared Hedgehog ear also differs anatomically, in particular in having only six lumbar vertebrae, while the preceding one has seven, and his clavicle is less curved. Apart from this, his behaviour is, according to all observations made, similar in all respects to the European Hedgehog.

