# The Form Gestures of Animals

We live at a time when we have available more facts and details of living things than ever before. Yet busy within their fields of specialization, scientists no longer ask the fundamental question: What is life? This essay is an extension of the gestures of plants discussed in biodynamics; it is exploration of the life-gesture observed in the forms of animals and covering three chapters.




The inspiration and primary source is Wolfgang Shad, Man and Mammals, Toward a Biology of Form, 1977, ISBN 0-914614-10-X. He follows Steiner's approach based on Goethe's nature observations, a training into not only careful observations and clear concepts but an interweaving of both. We have a new tool not available to Shad – that of DNA analysis, Biologists have revised some ideas about evolution. Recent findings regarding the ancestry of animals are found at Tree of Life, http://tolweb.org/tree/phylogeny.html. Important insight into the animal sheaths is contained in Dr. Karl König, "On the Sheath of the Preparation", 1947,

# *Chapter 1. The Threefold Form*

**Introduction**

Imagine that you are walking through the woods and startle a deer. Watch as if leaps up, runs for a moment and then turns back, head erect, to watch you. We cannot help but feel a kinship to the deer; the animal, feeling joy or fear, is closer to us than the trees and forest. We share a close relationship to other mammals through the similarity of emotions. We see them less often than we do birds, the other warm blooded creatures; the wild animals tend to hide or be inconspicuous during the day. Although a bird's song is beautiful in rhythm and melody, it is impersonal and mechanical in form. But the voices of mammals convey an inner life, a sense of a soul that separates itself from the environment and takes joy in living. These creatures are the partners in farming activities and the source of biodynamic preparation materials.

Mammals are considered the most highly developed animal group. They are the only animals whose skin has specialized hair, sweat and milk glands. Milk is a unique food substance that provides a transition between prenatal nourishment and food from the external world. Unlike meat that has an astral energy, milk, like plant foods, has only an etheric energy. Milk provides bodily nourishment for etheric growth during childhood, as well as emotional comfort. Through suckling, the young maintains an emotional contact to the mother even after birth. The name of mammals comes from this primary characteristic, but there are other distinctions as well. Mammals have:

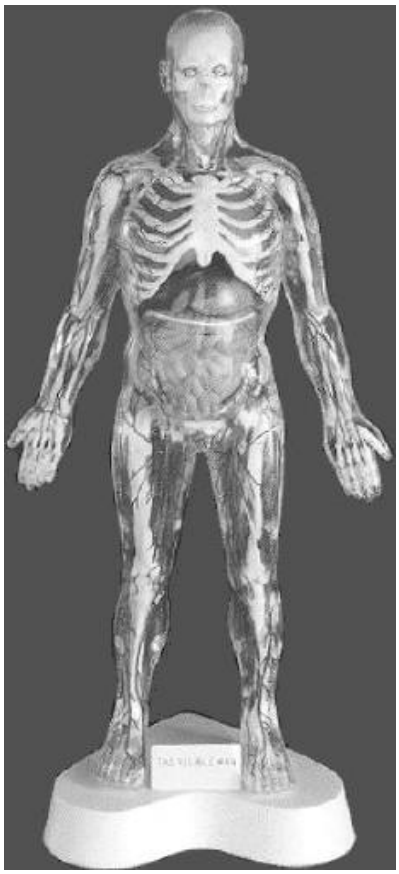
- Milk secretions to feed their young;
- Two sets of teeth;
- External ears with three ossicle bones in the middle ear and the cochlea in the inner ear;
- Lower jaw formed from one pair of bones;
- Single intestinal cecum (the appendix);
- Separate bladder and rectum;
- Un-nucleated red blood cells.

In addition, most mammals develop the placenta, a special organ to nourish the embryo from the mother's blood stream. Exceptions are the marsupials and the oviparous monotremes.

Mankind falls within the mammals – together with the closely related apes, we place ourselves within the "first" or Primate group. Our own body is less

specialized than other animals – five fingered limbs, simple stomach and intestine, rounded head are more similar to the embryonic stage. In contrast, the animals we will discuss are more developed physically. They may have more sensitive sense organs, quicker reactions, greater mobility, highly developed metabolism, or specialized claws, teeth or limbs. Each specialized animal is supported by a specific environmental niche. Only man is different, having developed independence of the environment in direct connection to our lack of specialization. Even so the human body's distinctly different systems form a unified whole. Steiner's concepts of the threefold differentiation of our physical organization is the basis for discussing animals.

When we observe the human body, we see the trunk, the head and the limbs. But Steiner classified also according to functions – he describes the nerve-sense, the rhythmic and the metabolic-limb systems. The head is solidified and has little mobility. It has gathered many of the sense organs (sight, hearing, taste, balance). Thought the senses and nervous system, the organism perceives and adjusts itself to the outside world.



The limbs and abdominal organs demonstrate strong activity both in movement and the metabolism. These organs take "foreign" food and transform it into the body's own substance. The abdomen is the least protected by bones; any hardening is a sign of illness. In contrast to the shell-like skull, the bones of limbs are on the inside, surrounded by fleshy muscle. Limbs are equipped with many branching digits and joints to make possible independent movement in the environment.

Between the immobile nerve-sense and highly active limb system, stand the rhythmic organs of the upper chest. Their alternating nature is apparent in the fact that they are paired. The lungs open through the trachea in the head region and fill up the chest as if poured in. In keeping with this head-like passivity, the lungs do not move themselves but are operated by the diaphragm. Their movement is slower – a ratio of

1:4 compared to the heart pulse rate. The heart is lower in the chest and moves on its own. The heart-center unifies blood circulation; the largest artery, the aorta, turns downward toward the metabolic organs. Only through this circulation do the lings have access to metabolism, while only through the lungs does the blood have access to the air. The rhythmic system builds from the harmonious cooperation of breathing and heartbeat. The thorax shows the alternating sequence of ossifying and dissolving processes in the alternation of ribs and intercostal spaces. The rib cage is more ossified at the head; it expands and disappears lower down where there is more mobility. Thus the thorax mediates between the head and the metabolic organization.

When we apply the concept of the three-fold human to animals, we find it a useful way to categorize mammals. The cow, with highly developed digestive processes and hoofed limbs, is an example of ungulates that emphasize metabolism. Mice, nervous and sensitive, demonstrate that rodents can be considered sense animals. And carnivores, such as dogs and lions, emphasize respiration and blood circulation, the rhythmic functions.

| 3-fold system | **Nerve-sense** | **Rhythmic** | **Metabolic-limb** |
|---|---|---|---|
| Nutrition Source | Rich foods, fats, starch | Body substance, protein | Difficult to assimilate, cellulose |
| Teeth | Incisors | Canines | Molars |
| Body Size | Small | Medium | Large |
| Coloration | Contrasting, dark above, light below | Transitional, stripes and spots | Inverted, light above, dark below |
| Example | Rodent<br>Mouse | Carnivore<br>Dog, cat | Ungulate<br>Cow, horse |

Because these animals are one-sided compared to man, they must operate in a delicate balance. Only in an undisturbed ecological equilibrium do they have a balanced relationship together.

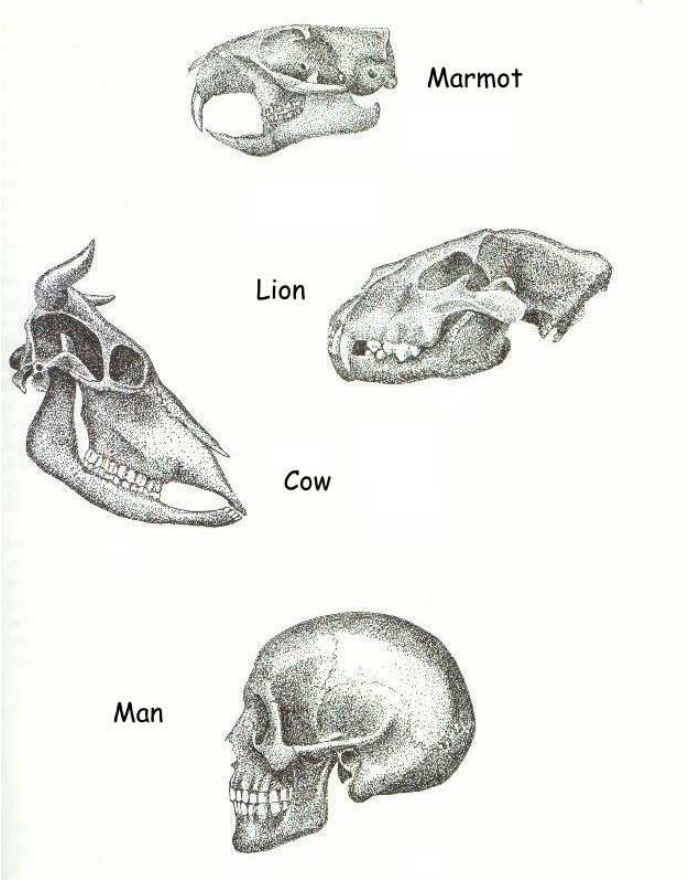
The limbs of hoofed animals have regressed to a few strongly formed bones, topped with the hard hoof. The limbs of horses and cattle support the large bodies, full of power, ready to stamp and gallop. The rodents hardly deviate

from the original five-fingered form; fingers and toes are narrow and clawed, adept at grasping and feeling in a sensory way. Long sensory hairs cover the whole body, even sometimes inside the mouth. Agile and quick, the rodent lives in constant agitation. Rodents must sleep often since the waking state is so exhausting.

Hoofed animals, in contrast, require little sleep. While the cow is ruminating, she turns inward and devotes herself almost entirely to her food. Their eyesight is weaker, lacking the macula luta, the part of the retina with clearest sight. They experience more fully smell and taste, the senses of metabolism. The digestive tract is highly developed, especially in the ruminants with a large, four-part stomach and long intestine. The food of ungulates is cellulose that can only be digested with the help of microorganisms in their stomach. Not only do our domestic animals transform this difficult food for their own powerful bodies, but they build a surplus of nourishment for others. Even their dung is valuable fertilizer.

Meanwhile, the rodent requires easily digestible food high in energy. They like the concentrated fats of nuts and seeds as well as carbohydrate sources. Nutrition is hastily extracted from the intestines; the impoverished droppings provide little manure. Carnivores take in protein as the meat of their prey. This food requires a powerful digestion but it lies closer to the animal's own body than does cellulose. Note the inverse relationship between food quality and bodily size. Although mice eat the most nutritious seeds, their body has almost no fat reserves. Ungulates take in difficult foodstuff but develop fatty storage deposits. Unconsciously, they gather plant substance and enrich the energy. The nervous body breaks down substance and the metabolic one rebuilds. Carnivores, in the middle change proteins without really altering their energy level.

The connection to nutrition forms the type of teeth for each animal. In the human mouth, the lips and tip of tongue in front are the most sensitive. Here food is touched and examined, then bitten off with the incisors. Then it is chewed and tasted in a process that becomes less subject to voluntary control. The chewed, ensalivated food is moved to the back of the mouth and swallowed into the unconscious digestive process. Thus, the three parts of the oral cavity correspond to nerve-sense, rhythmic chewing and unconscious metabolic system. The incisors are thin and slender, with narrow cutting edges. The molars are broad grinding surfaces. The canines take their place between the other two types.

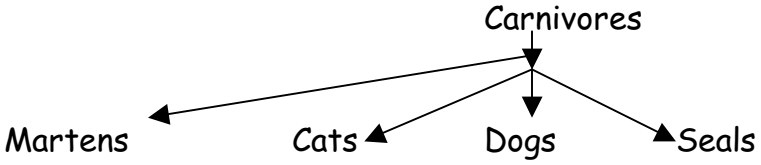



The rodents show specialized development of the anterior incisors, lack canines and have few molars. In carnivores, the canines are long, incisors are small and often shaped like canines, and even molars have pointed crowns for tearing. In ungulates, the molars are well developed being large and numerous. The cow, for example, has no incisors or canines at all! Rodents and ungulates have a large gap in the space that canines would occupy. Finally, we notice that man has a harmonious set of teeth, progressive modified in a continuous sequence of all three types.

*Teeth of the three major types, the human is balanced and not specialized. Source: Shad.*

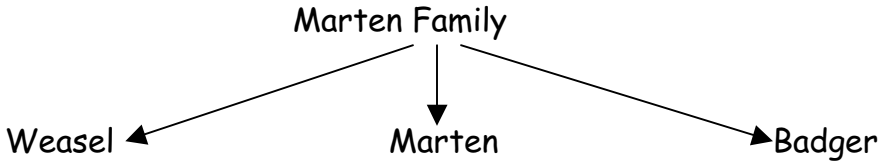
**Carnivores**

Let's first consider the different families of carnivores.



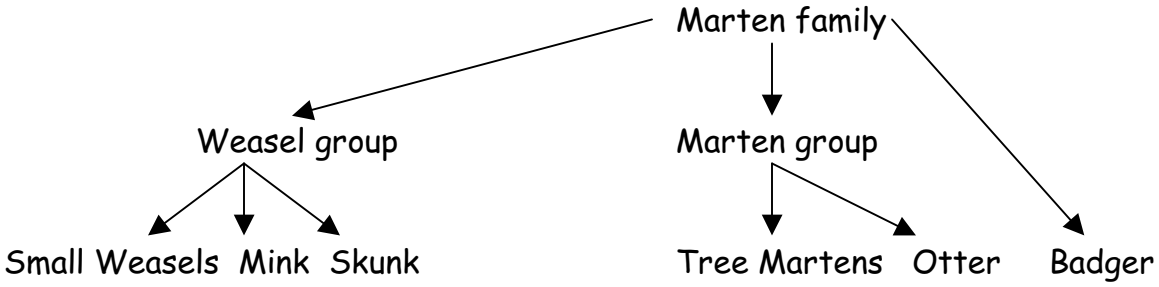

We have already described the carnivores as being an intermediate, rhythm-oriented group. But even within the group, there is a continuum of the three-fold structure. Taking the cat as an example, one observes that the senses of sight and sound are well developed. The long whiskers and eyebrows show delicate sensitivity. In contrast, the dog has highly developed smell, one of the more metabolic senses. The cat has sensitive paws, with retractile claws, while the dog has solid paws better suited to running. Dogs are not strictly carnivorous but cats will only eat meat. The cat hunts with its senses,

prowling steadily until it can pounce on its prey. The dog hunts with its limbs and powerful muscles. Even when domesticated, the cat remains an aloof individual while the community-minded dog bonds to its family. Thus, we can see that the cat is more nerve-sense and the dog is more rhythm oriented. Of course, within each family there are gradations. The lynx is a large cat with powerful limbs and a hunting method approaching the dog family. The fox is a small dog member with characteristics approaching feline. The animal's size indicates the degree of sensory orientation within the continuum of each family.



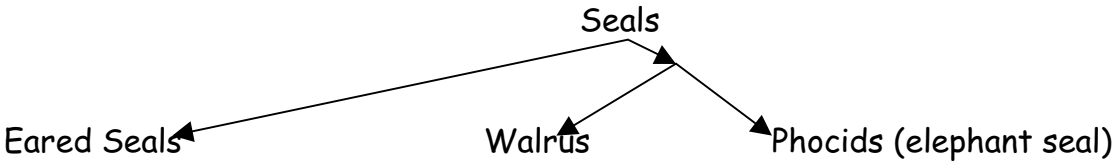

Looking at the marten family, we see the weasel as sense-active, nervous and restless. It requires constant freedom of movement and a diet high in the blood of its prey. The smallest weasels are very aggressive. In contrast, the badger is the largest member of the family and the least nervous. It consumes plant food, roots and berries, in addition to insects, grubs and the occasional small animal. Because of its diminished activity, it is able to build fat reserves and hibernate. In its deep sleep, one can see the turning to an inner metabolism. Martens are in the middle position. The small pine martens are agile, tree-dwelling athletes. The largest marten, the otter, is strong with a wary repose. Its diet of fish and shellfish is more dissimilar to its own body substance. One can also observe a characteristic color arrangement. Sense oriented animals have strongly contrasting color, dark dorsal and light ventral, as seen in the tree martens. Metabolically oriented animals tend to uniformly dark coloration, as seen in the otter. The badger goes to the extreme, inverting the normal colors to a black underside and a gray upper surface.

Expanding the arrangement of these animals, one sees the following:



Within each division, there is a repeated continuum of the three-fold types, with more diversity than the diagram might suggest. Thus, weasels are the most sense-oriented group in the family. But the skunk is the most metabolic member of the weasel group, perhaps even overlapping the badger in its characteristics. Within the marten group, martens are more sense oriented, almost as much as weasels, although otters are more metabolic. Badgers are more metabolic than the other groups.

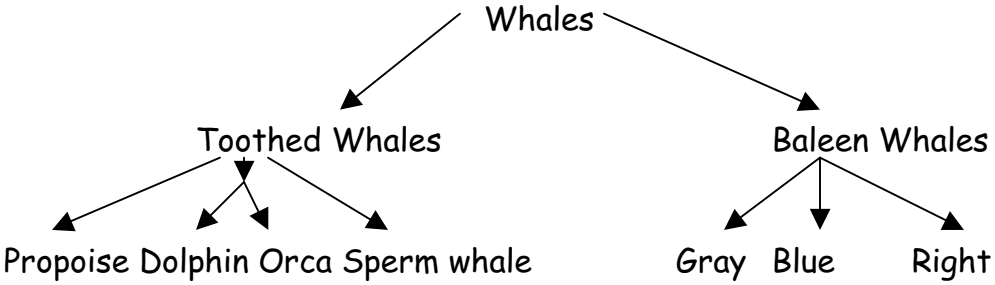
At the other end of the carnivore spectrum, we have seals:




Seals include even the large elephant seals; all have thick layers of fat. Despite their bulk and aquatic habits, these animals are carnivores. Canines dominate their teeth. They have similar wrist bones and placentas to terrestrial carnivores. In the water, their movements are powerful showing specialized limbs. Their choice of an aquatic habitat has intensified the limb-metabolism system. The more complete the transition, the smaller are the external ears. Nostrils close and respiration is retained under water showing how the rhythmic system is restrained. The teeth also change with incisors decreasing according to the degree of aquatic adoption.

Eared seals are the small ones seen in harbors. Their limbs have not grown so deeply into the body so they still have some mobility on land. Walruses have lost external ears. The walrus has transformed canines into tusks with which they "graze" shellfish beds, swallowing shells and all. The phocids are the largest seals and include elephant seals. They lack external ears entirely and have little mobility on land.

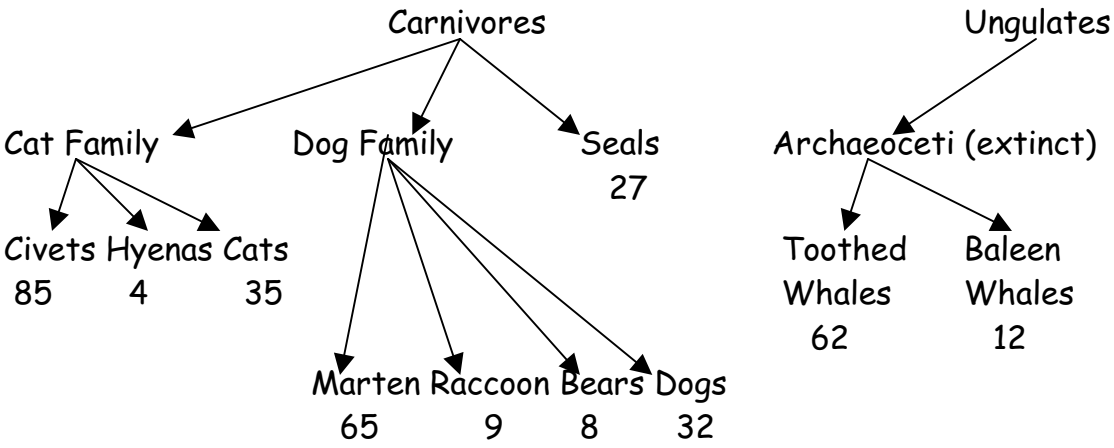
The aquatic adaptation of seals is exceeded only by whales. Here the hind limbs have been lost entirely and the forelimbs are restricted to small fins. The body is adapted into a tail that is the primary means of motion.



Here we observe a range of types. The orca develops a strong rhythm nature and is a fierce predator. Dolphins are known to be friendly, playful and teachable. However, in the giant whales the soul life appears to be locked deep within their massive body. The whales can control respiration while they dive for as much as 40 minutes. The baleen whales "graze" the ocean, living on a diet of small plankton. In the large whales, the head is packed with fat and oil; senses are greatly reduced. (The blue whale has little vision and the Ganges whale is blind.) The sense of touch and hearing are still present. The large whales have teeth only during the embryonic stage. Dolphins and porpoises have numerous teeth but they cannot be distinguished; they are all cone shaped like canines. The porpoise, smallest and most sense oriented, has a set of forward teeth that come the closest to resembling incisors.

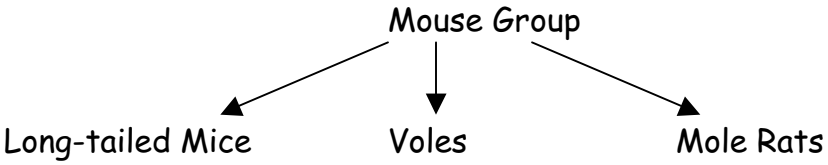
The placenta is similar to that of horses and pigs; the blood serum is similar to camels and cattle. As a result the ancestry of whales has been in dispute. Shad located them as a branch of the carnivores. However, recent DNA studies and new fossils have proved that the whales evolved from ungulates. A fossil transitional animal even had hooves! So whales are a case of a grazing animal that turned to a carnivorous diet. The dolphins had to recreate suitable teeth after losing their canines. The aquatic adaptation shows up in other families. The otter is the most aquatic weasel; seals are the most aquatic of the central carnivores. One can generalize that, when a rhythmic animal turns toward the metabolic, it prefers a water habitat.

Finally, let us bring together the whole family of carnivores. We add another family – that of bears. The bear is a carnivore with a well-developed metabolism such that it can be completely vegetarian. Contrary to our expectations of such metabolic focus, bears are not particularly attached to a water habitat. Schad suggests that this is because bears are closer to the marten family. Despite their large size, bears are born very small and underdeveloped. This is similar to weasel and martens. Polar bears in particular arrest embryonic development. Mating takes place as spring begins but the embryo rests until fall before developing. This "pre-gestation" period also occurs in the weasel family. The bear, like a big baby, lacks specialized limbs – its feeding habits are generalized. So that it is a small carnivore grown large. Raccoons are an intermediate family similar to bears. An unrelated group, the civets and hyenas, are included for completeness. With these additions, here is a chart of the carnivores.

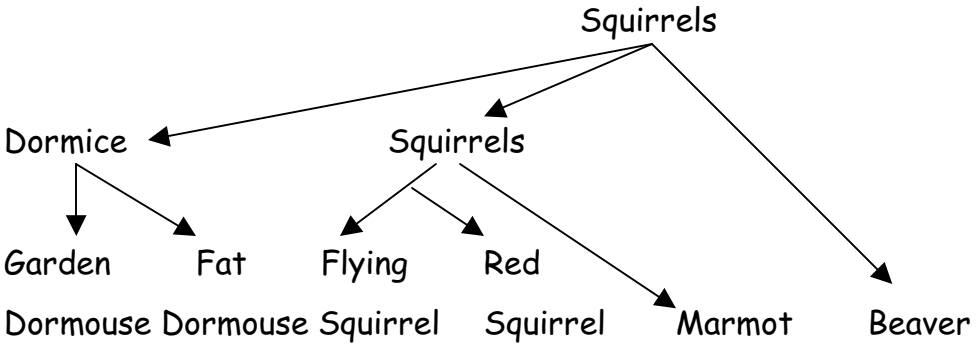



**Rodents**

We have already discussed how rodents represent a nerve-sense animal. They are all remarkably small with unspecialized limbs. The skeletal structure of the limbs is usually not modified. However, the head is highly specialized. Canines are missing; molars have become rootless prisms. The long-tailed mice have molars covered with hard enamel. In this case, they achieve through hardening what metabolic species achieve through continuous nourishment and re-growth of the teeth. Incisors are so well developed that they dominate both jaws and even extend into the bony structure of the mouth. Digestion is not well developed and they need rich foods. Their hasty digestive process connects to their often destructive feeding practices.



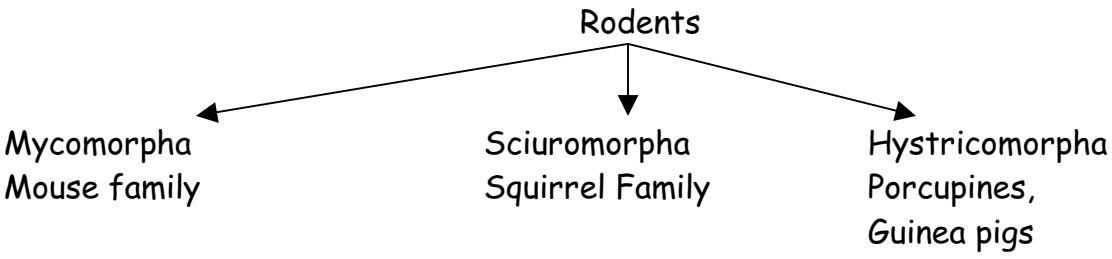

If we look at the mouse family, we see that even within this family there is a continuum of the three-fold organization. The mole rats are larger and metabolically oriented. They live deep underground in complicated burrow systems, feeding on roots. Unlike true moles, they dig with large, protruding incisors. The head has become a tool for digging and has given up some of its sense functions; the eyes have shrunk to tiny vestiges. Voles are a central type. They burrow little, living close to the surface or even above ground. Their diet includes insects and even small birds. One species, the water vole, lives near water and is more metabolic. Indeed, the muskrat is a member of this group; it is adapted to water and is a larger, more metabolic creature.




Squirrels are a family to which we feel more connected. Although still a nervous creature, squirrels share a feeling of joyful playfulness. Their limbs are strong and agile. They feed on rich seeds and nuts as well as insects and even bird eggs. They are a more rhythmic, central group of the rodents.

The largest member is the beaver. Its tail has become a flat, scaly plate. Coloration is a uniform brown. Food consists of high-cellulose twigs and bark and the beaver's digestion has to match. In keeping with a turn toward the metabolic, it has a water habitat. Within the central group of squirrels, the marmot is the most metabolic. The underside coloring is yellow, veering toward brown. Not aquatic, it is very shy and relatively sedate. The flying squirrel is the most nerve-sense of the group. It is small, with highly developed nocturnal vision and distinct upper and lower colors. The "fat dormouse" is a somewhat similar creature in Europe. Although they cannot "fly", their habitat is the trees at night. Europeans say they are snappish, quarrelsome "loner" creatures. The smaller garden dormouse lives where there is fruit and is friendly and mouse-like. Like squirrels, it builds a ball-shaped nest but lower in the bushes. The central nature of squirrels is seen in their teeth. Squirrels are the only rodents to have canines, although that is only in the milk teeth. The molars of beavers are rootless and grow throughout life as with metabolic animals.

Now we can consider the larger family of rodents:



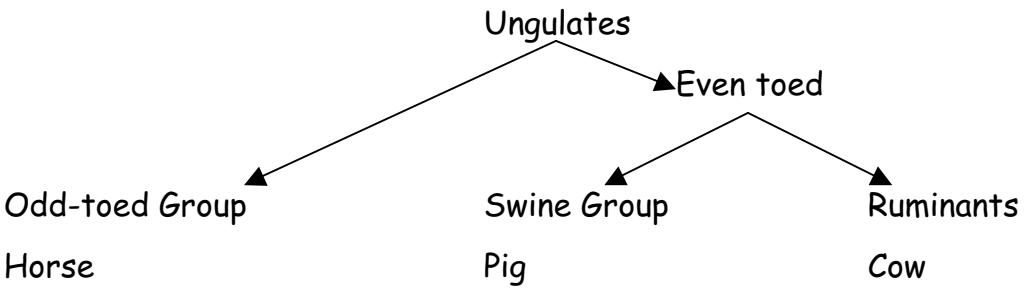

At the metabolic end is the porcupine, an animal so clumsy and ponderous that it seems like a pig. Coloring is inverted with light colored hairs on its

upper back; a number of these hairs have hardened to form quills. The quills are a gesture against the outer environment, to emphasize an obstinate self-direction. Relatives include the carpinchos (water hogs) and agoutis, large rodents in South America. Guinea pigs and chinchilla may be more familiar; these are the more sense oriented members of the family. They are jerky little animals as if the sense and metabolic systems pull in different directions without any mediating process.

In reviewing the rodents, one observes that the front part of the body is less built-up compared to the posterior. Some rodents (such as the kangaroo mouse) have, in fact, emphasized the back part of their body so that they can jump a long distance. In general, a long, sensitive tail is connected with a sense orientation – mice are long tailed; voles are medium and hamsters are short. Some of the metabolic animals, like the beaver, have a tail but it is fat and broad, not at all sense active. The same is true for carnivores. Although the most metabolic, the seals and whales, have developed large tails but these have taken on the limb functions. The opposite is the case for the brain. Rodents tend to have a brain that is little developed and unconvoluted. The more metabolic members, such as the porcupine group among rodents or whales among carnivores, have convolutions. Development of the brain is associated with a metabolism organization.

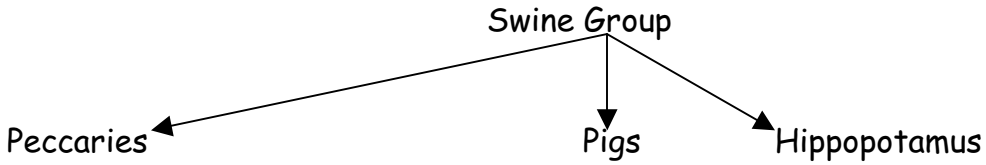
**Ungulates**

As polar opposites, the metabolic ungulates show forms that emphasize the front part of the body. As we have mentioned, these are large creatures with a powerful digestion since they feed on cellulose plant material. Ruminates with a highly specialized digestion chew food a second time and develop horns or antlers on their heads. Non-ruminants, such as the horse, instead develop specialized limbs for running, enabling a sense-alert life-style open to the outside world.

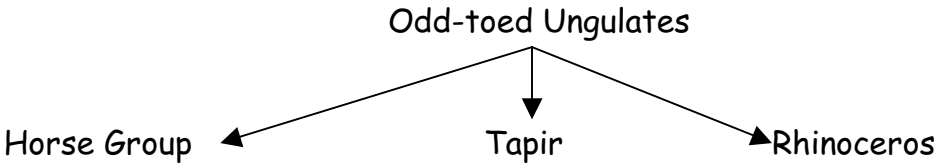



The sense-active, limb-orientation of the horse shows in its shape. The anterior part of the body is not exaggerated; unlike the cow, the horse is

well able to jump. As ungulates, the horse family has broad molars and small canines. In the front, however, there are strong incisors similar to rodents. The pig also has a simple digestive tract but is even-toed and closer to the ruminant group. As central, rhythmic members, the swine are omnivorous, eating meat if they can get it. But compared to other omnivores, such as bears, there is a different reason. Bears are metabolic oriented carnivores; pigs are carnivorous ungulates.



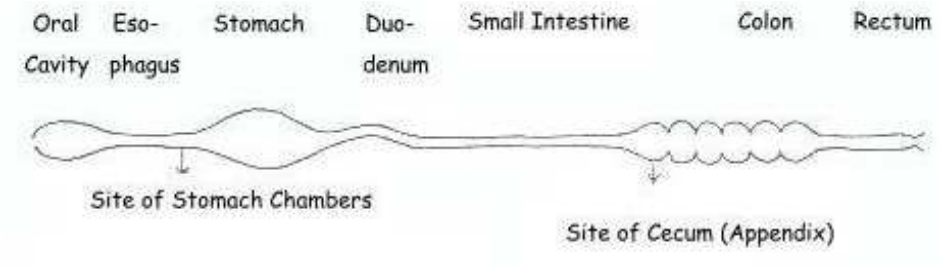

The swine group is further differentiated. The South American peccaries are slender hunters and the hippopotamus a more massive herbivore. In fact, the hippo has developed intestinal sacs serving as additional fermentation chambers. As metabolic oriented, hippos adapt an aquatic life-style just like seals and whales (metabolic carnivores) or the beaver (metabolic rodent). Swine have a complete set of teeth, with large canines indicating their central position. Similarly there is more emphasis on the anterior part of the body. The African wart hog, for example, has a massive chest, exaggerated canines, and developed head – and it is primarily herbivorous, losing incisors in adulthood. The peccaries keep a complete set of teeth including incisors.

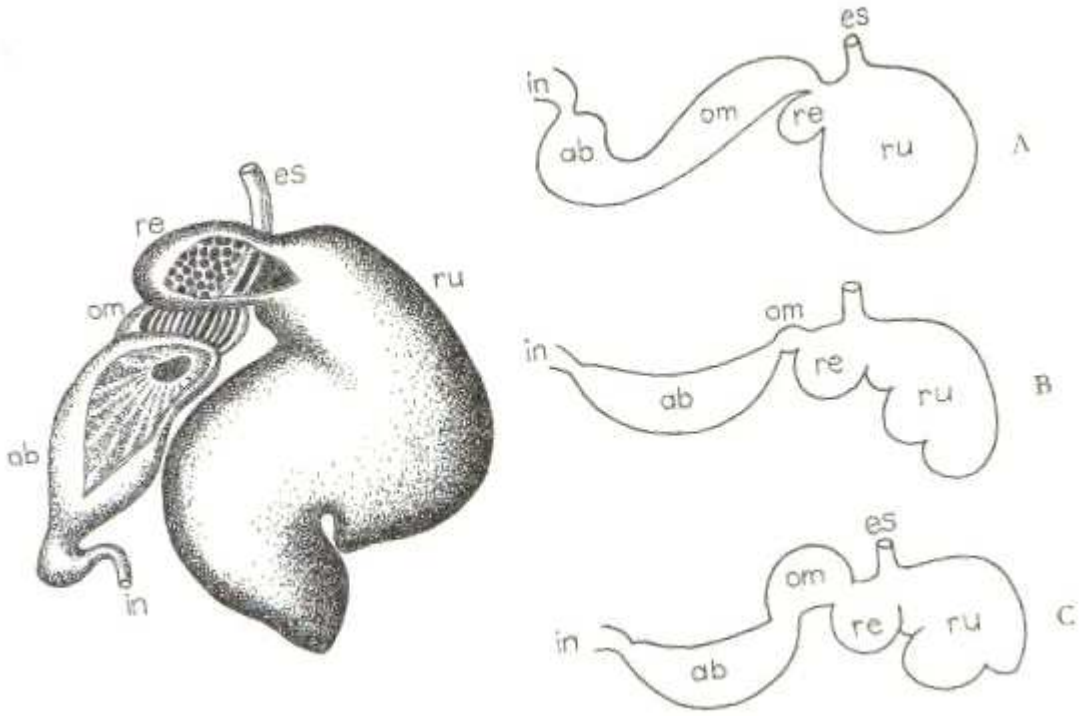



In the horse group, the tapir has the central position. They resemble large pigs and live in a marshy habitat. They lack any horns but have accentuated canines. Thus, they can be seen as rhythmic oriented. The ungainly rhino hardly seems related to the graceful horse. However, they share a simple stomach, the absence of canines and the presence of incisors. However, the rhino is a solitary creature, focused more on itself than alert to the environment. In keeping with a metabolic focus, the rhino has developed the front part of the body by growing horns. Unlike other horned animals, however, the rhino's horns are not paired, but grow along the centerline of its face.

The ruminants are distinguished by a specialized digestive tract, with extra chambers developed at the front end. (By way of contrast, in cellulose-

digesting rodents, a fermentation chamber, the cecum or appendix, develops at the posterior end.)

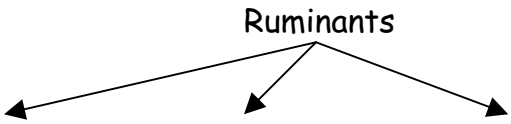


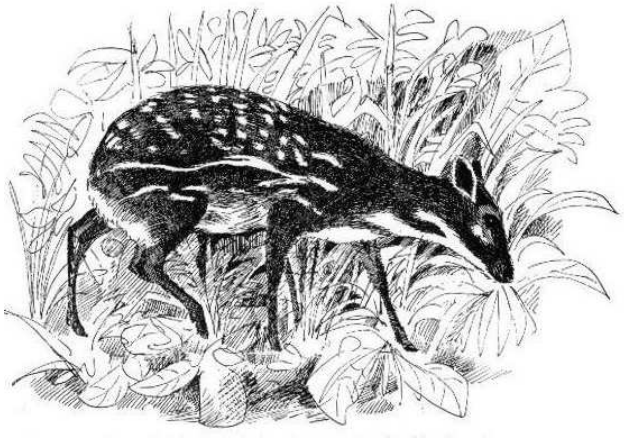

*On the right, schematic presentations of the stomach of a camel, chervrotain and ruminant. On the left, a sheep's stomach. Labels are ESophagus, RUmen, REticulum, OMssum, ABomasum, INtestine. Source: Schad.*

The cow, for example, first gathers grass in the rumen where it is attacked by digestive juices and bacteria and kneaded back and forth. Later, small lumps, the cuds, are chewed again. When rumination is finally completed, the stomach contents are passed through the rest of the tract. All the powerful breakdown occurs in the forepart of the gut where symbiotic bacteria help to break down much of the cellulose. The remainder of the digestive tract

absorbs food substances. At the end, the food residue is still rich in humus-building nutrition for plants. This special digestive capability is expressed by the emphasis on the anterior part of the body, by the extra chambers in the anterior digestive tract and even by the presence of extra outgrowths at the front of the body. All these characteristics correlate together with the degree of emphasis on the metabolic functions.




Consider first the camel family which lacks outgrowths on the head. Although they have a metabolic body, a sense-active head rises above. Smaller members of the family, such as the lama, have incisors reminiscent of rodents. The most metabolic members, the camel and dromedary, have humps that accentuate the anterior body but without leading to head appendages.



The chevrotains, known as musk deer or mouse deer, are tiny forest dwellers the size of rabbits. Their limbs resemble those of deer or cattle but the rumen is not so well developed. In keeping with their central position, incisors have partially disappeared and canines are emphasized. In addition to their vegetarian diet, they will readily eat insects or small animals.

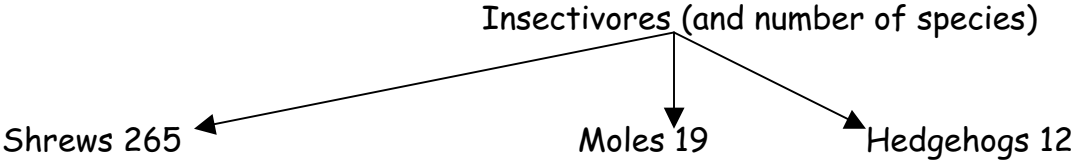
*African water chevrotain. Source: Shad.*

For the moment, we will postpone discussing the remaining ruminants, those with horns and antlers. These animals supply the sheaths of the preparations.

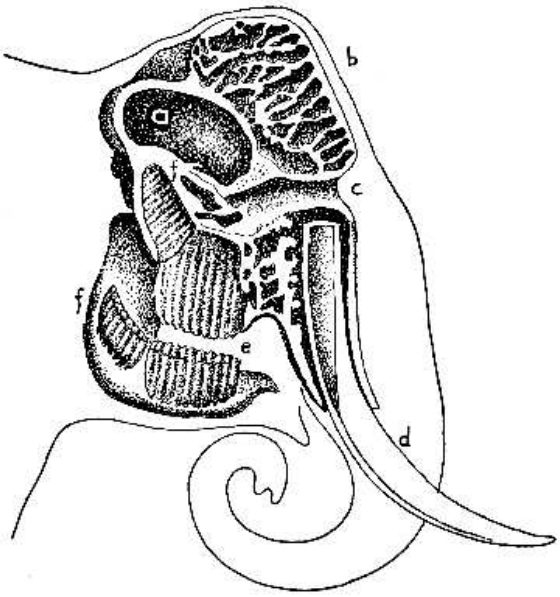
**Additional Mammals**

Another group of small animals are the insectivores. They are very active and sense dominated but very carnivorous. With small body and large metabolism, shrews are very focused on finding sufficient food to eat. The ease of forming species is a measure of their openness to the outside world.

The hedgehog is the most metabolic member of the family. Like the metabolic porcupine, it develops quills as a defense measure and barrier against the outside world. Both can be viewed as cases where a sensory animal has to find a way to close itself off from the world. Moles are in a central position and show the habits of burrowing; some are also aquatic.




Insectivores are of interest because they are the most primitive mammals, that is, they are the ancestral form from which the other mammals developed. As such, they are their organization is more a balanced combination of the threefold forms. Furthermore, insectivores are connected to the beginnings of the primate family. They are linked to tree shrews then to lemurs and finally to monkeys and apes. Once again, the primates have not developed the separation of the threefold systems; their bodies retain a more integrated, less specialized form.




Another example of an integrated form is the elephant. These herbivores are close to ungulates yet have important differences. They have not developed hoofs but retain five-toed feet. Yet at the end of the limbs, the damming processes have fused the toes to form a "club foot". The elephant has no rumen but ferments the food in an enlarged cecum.

*Cross-section of the elephant's skull. a) cranial cavity b) pneumatic cavities c) nasal passages d) incisor elongated into tusk e) developing molars, Source: Shad.*

The elephant grows long tusks but they come from the second set of incisors, there are no canines. Large grinding molars prepare the food; these

wear down with time but, unlike any other animal, the elephant grows six sets of molars during its lifetime. The elephant's head recapitulates the whole body. Opposite the rigid cranium, the lower jaw has limb-like mobility. The high-domed head is filled with, not only a large brain, but also pneumatic cavities. The long trunk certainly seems like a sensory organ but it is also a limb and even participates in the start of the eating process. With such complexity, the threefold organization breaks down. The elephant approaches man in the balanced interpretations of the different organs. Steiner pointed out when a child changes teeth it is an indication of readiness for learning. The elephant is continually teething and can be trained at any part of its life.

With this chapter, the discussion has emphasized Steiner's concept of the threefold form. The more developed mammals often organize their bodies with emphasis on the nerve-sense, rhythmic or limb-metabolic pole. Man is exceptional in having a balanced complement of the three without being over-specialized in any direction.