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la Bipédie Initiale

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**MAN, AS AN
ANCESTRAL
VERTEBRATE**

(part 1)

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Résumé :

The text presented below is the English version of a lecture which was given by the author in September 1989 in Nice (France), during a convention organized by the UTP (Université du Temps Présent). The exposé which follows provides a clear and concise résumé of the essentials of the Initial Bipedalism Theory.

Première publication : mars 1990, et mis en ligne le vendredi 20 juin 2003

As strange as it may seem, it was through my works on fish (I am, in fact, since 1968, date of my first publication in Zoology, a specialist in Fish Research) that I came to reconsider the evolutionary history of *all* Vertebrates, and finally to assign to man (*Homo*) a position, which may be surprising at first glance, as an ancestral vertebrate. That is to say that all the other vertebrates, known to this day, have derived from the *human* (or *pre-human*) form and morphology.

Classical zoology, indeed, accepts the following order of appearance among Vertebrates : first came the fish, then the amphibians (frogs and newts), then the reptiles (they are lizards and snakes, and also - according to current beliefs- the big saurians now extinct), the birds, and 'above all them', the mammals, *with man 'at the end of the line'...*

This old traditional *cliché* has been carried on for more than two centuries : in fact, such an order dated back to the classification proposed in 1758 by Swedish naturalist Carl von LINNE. It was simply forgotten, at the time when DARWIN's ideas triumphed, roughly one century after, that Linné in his time arranged the Animals according to criteria of *increasing complexification* [hence this series going from fish to mammal] simply for own need in classifying animals in a book... In fact, Linné didn't give a slightest thought to any notion of succession or evolution of the groups. He didn't believe that amphibians and reptiles once developed from fish, or that mammals evolved from reptiles !

A zoologist, like Ernst HAECKEL, who was a fervent admirer of Darwin and often more enthusiastic than his master, merely took again the old Linnean classification which, as we remember, was a 'static' one, and he claimed that these forms of living beings that were already catalogued, were in this order due to be links of descent, *in relation to each other*. In this way, the fish surely gave birth to the amphibians, and so on... HAECKEL, in his well-known phylogenetic trees, introduced also names of *hypothetical* animals in the intersections between different groups, called for instance : 'mother-form of the reptiles' at the junction between amphibians and reptiles. Haeckel thought, it was up to the palaeontologists, now, to find their bones one day in some sedimentary strata...

This has been the 'frozen' state in which our Zoology manuals have stayed for more than a century, with a 'natural' classification that was quite arbitrary, as far as the vertebrates and other *phyla* were concerned. This has done much to 'falsify' all the facts dealing with problems of evolution, mainly all facts concerning the *emergence of humans*.

And yet, certain researchers, zoologists or anatomists, intended to disturb, going against the mainstream dogma, and to propose phylogenetical models where they especially insisted on the fact that man, as a result of his *archaic* anatomical structure [we'll come back to this point in details], could not be considered as resulting from a 'recent' evolution within the mammals - or even the vertebrates in general -, but represented an *ancient* [bipedal] type, which appeared first at the dawn of the geological ages...

This assumption fits in with the teaching of what may be called '*Tradition*'. In fact, the story of "*man descending from apes*" is a completely new scientific invention, which has been dictated largely for materialistic reasons, and is based on erroneous extrapolations from fossils that were discovered during the XIXth Century. We are going to make clear all the way throughout this lecture, that in fact the today 'simian' interpretation of our origins *is not based on real biological facts*. On the contrary, everything shows us [and the more recent research in Physiology and Genetics proves this even better, day after day] that the emergence of man is surely *prior* to that of current apes, and also of other living or fossil primates, of all quadrupedal mammals, and even of the vertebrate line, in general.

Earlier I spoke about naturalists who tried to deny the fact that man had a simian ascendancy. I usually quote 4 names in principal : Pr. Max WESTENHÖFER, German anatomist and main instigator of the *Initial Bipedalism* Theory since ; Pr. Klaas de SNOO, Dutch obstetrician ; Dr. Serge FRECHKOP, Belgian mammalogist of Russian origin ; and the French/Belgian Dr. Bernard HEUVELMANS, still active [1990] in a scientific field, and well-known by the general public, since the publication of a big series of books about very rare, or hidden animals unknown to science.

I would express here my gratitude to Bernard Heuvelmans and thank him for having initiated me in the theory of Initial Bipedalism.

Finally, I could also quote many other eminent searchers from the beginning of the XXth Century, whose ideas on man's origin did not correspond to the mainstream science : paleontologists, like Albert Gaudry, Henry Osborn or Edgar Dacqué ; biologists, like Kollmann or Bolk, and naturalists, like Eugen Kolisko or Hermann Poppelbaum, who belonged to the Anthroposophical School of the Austrian philosopher Rudolf Steiner.

The evolutionary history of man, as told today by the learned people in University, is but a gigantic farce, based on erroneous observations and old prejudices which are hard to kill off. There has been, for instance, a lot of talk in the mediae recently about certain anthropological events, such as the discovery of the female *Australopithecus* called 'Lucy', who is about 3 million years old. She has been presented as the 'Mother of Humanity'... It is all very well, especially when general public is concerned, to arrange *chosen* fossils of primates in the desired order, and to witness their gradual straightening up [as we can see in certain drawings...], as well as the development of the size of skull and encephalon. Paleoanthropologists fail to add that some fossils, duly dated, *don't correspond* to their thesis... In that way, American Donald JOHANSON discovered in East Africa a hominian fossil, named very prosaically OH 62, that is approximately 1.8 million years old [a lot younger than 'Lucy'] whose special feature is the possession of *very long arms*, much longer than those of 'Lucy' [who was of similar stature]. This is not the best way to develop into modern man... On the contrary, this discovery confirms what I hold to be true (in accordance with Dr. Heuvelmans whom I quoted above), namely that the Australopithecines are in reality forms which once developed from the genus *Homo* : they have kept, as the fossils show, a 'relic' bipedalism, indeed, and have evolved (as proved by the lengthening of the arms) several times during the last geologic periods (Plio-Pleistocene) *towards the stage of anthropomorphic apes*, especially when these hominans have left the savannah to go and to live in forests, where they completely mastered the art of tree-climbing !

The classical theories concerning the evolution of the Vertebrates also 'get round' the problem of the *emergence* from the water of first land vertebrates, by admitting that this event was done by a curious '*fish with growing legs*', related to today Coelacanth. In the Primary Era, this fish was allegedly capable of setting about the impossible task of mastering the difficulties of a life on *dry land*. The question I would like to ask is : "*Did such a fish really want to leave the water ?*". We will come back to this point later.

For the moment, let us stick to the subject of **man**. There are, currently, 3 scientific theories more or less which try to explain man's emergence on this planet. I'd like to add a fourth theory, too : *Initial Bipedalism*...

The first well-known theory is called the *African Savannah Theory*. According to it, apes are supposed to have left the forest, about 17 million years ago, somewhere in West Africa, as a result of a change in climate and tectonic upheavals in this region, and then they went into the savannah. These apes consequently developed straight body, as many books explain... I quote : "in order to

see better over the high grass in the savannah !". It is this theory that is still kept in big esteem by anthropologists today. Only some scientists are brave enough to express a certain doubt : even the least talented would admit that the whole story doesn't stand up to close examination, not more than those famous apes who supposedly have learnt to stand on 2 feet...

The second theory which is less known by general public is the *Foetalisation Theory*, developed by Dutch biologist L. BOLK, and recently re-examined and presented by scientists like Desmond MORRIS (author of "*The Naked Ape*") or Stephen J. GOULD (author of a big number of popular-scientific treatises). According to this theory, man would be an *ape's foetus* which had become sexually mature... The theory explains human appearance by a phenomenon known as *neoteny* : this means that an animal conserves throughout its entire existence the features that characterize its 'larv' or foetus during early development. A well-known example in Animal world is of certain newts that keep external gills during all their lives ; in this way they are able to reproduce in water without ever coming up onto land. Obviously, the facial characteristics of an *adult* chimpanzee don't have a lot in common with a human face, whereas when the animal is *young*, the outline of his skull is still harmoniously curved and the facial features do not stick out, as they do in the adult. The 'canine' aspect of the shape of the adult's head appears very progressively, after the milk teeth have been replaced by the definitive teeth. Certain searchers have used this statement to explain that man was but an offspring of the Great Apes because he retained many youthful features in his anatomy [and by the way, there was no need for a fossil to provide the 'missing link', because the latter was in fact a *foetus* !]. Apart from this roundness of the skull form, scientists also noted typical *human* characteristics in apes' embryos, such as the fact that the teeth are set vertically in the gums, the genital female organs are more towards the front than later on (we can also observe the presence of a *hymen* and of outer lips), the central position of the *foramen magnum* (which is the place where the spinal column enters the skull), as well as the relative nudity of the body. Nevertheless, rather than considering man as an 'ape's foetus which has grown up', a fact not very plausible from a zoological point of view, I think we should maintain here that it is the humain being himself *who remained at this stage of development*. It is the ape which has reached a 'more advanced stage' in morphology, by continuing the anatomical and genetical development *beyond the point* where human development ceased ! Here is the fundamental difference between the *neotenic* explanation (*Foetalisation Theory*) and the *Initial Bipedalism Theory*.

The third theory regarding man's origins that I'm going to evoke is the theory of the "*Aquatic Ape*", which was suggested by British biologist Alister HARDY. In France, this theory is known to general public by the diver Jacques MAYOL, who told about it in his famous book '*Homo Delphinus*' that inspired the film '*Le Grand Bleu*'. Alister HARDY offered the idea that we may have descended from a sea-ape, which belonged between the quadrupedal *Ramapithecus* [existing around 10 millions years ago] and the more recent bipedal *Australopithecus*. This would account for our naked skin [it would be more precise to say : *with our 'not so hairy' skin* !], our large flat hands with traces of the times when they were palmed, the lay of fat beneath the skin that characterizes our species among all the other primates, as well as the permanent feature of our bipedalism. Indeed, there is a lot of things that are true in this theory, but I think that the *aquatic stage* through which modern man's ancestors really went through was very more ancient, and cannot be dated from only a few million years. As far as *Initial Bipedalism Theory* is concerned, it is not a question of a 'return' to the aquatic element, but it was rather the very '*emergence*' from the sea-water of the creature which once *engendered the human form*. We will later come back to this point.

In the three theories we have just evoked, as you may have noticed, the ape [or another simian form] is considered as man's direct ascendant. On the contrary, the *Initial Bipedalism Theory*

moves away from the common denominator of other theories by claiming that *it's the ape which descends from man...* Moreover man is implicitly recognized [by his anatomical and morphological structures] as the more *archaistic* of all current mammals ! As the title of this lecture indicated, man is truly the *ancestral vertebrate*, i.e. he remained from a morphological point of view *closer* to the original type of the first vertebrate that once came out of the water, and was in fact a *bipedal* mammal, with round skull and big brain !

Our demonstration is based on scientific facts, as we can find in Embryology and Comparative Anatomy. Paleontology, as an incomplete science, will not provide us with the direct proof of man's past existence during the great geological eras preceding Quaternary, but it will, however, bring us some interesting clues concerning the evolution of the main groups of vertebrates.

Let us first deal with the embryological facts. Embryology is the science which studies the development of organisms from the fertilized egg up to hatching or to birth. Another term, *ontogenesis*, gives an account on the individual development from the conception until the adult age. What we call *phylogenesis* is the science that deals with the evolutionary history of the whole species. The study of the development of animals in eggs or *in utero* shows that certain embryonic or foetal forms would seem to reproduce *ancient* stages of the phylogenetical evolution of these animals : in other words, the 'past' of a particular species. This is why it is often told that ontogenesis *recapitulates* phylogenesis.

This is the famous *fundamental biogenetic law* stated in 1866 by German zoologist Ernst HAECKEL. It has been used, in accordance with DARWIN's views, to claim that man, during his embryonic stages, passes through a 'fish' stage [because of the branchial slits which in fact exist in the embryo], then through a 'reptile' stage, through an 'inferior mammal' stage, then a 'ape' stage [because of the soft woolly hair that is called : *lanugo*], before becoming finally *human...*

What is the real state of affairs ? The branchial slits can, indeed, be explained by an *aquatic* stage preceding the completion of the human form... but such an aquatic stage has nothing to do with a 'fish' stage ! We shall come back later to this point. As far as the foetal *hair* is concerned, we can talk of a downy layer of hair which sometimes lingers on the skin of newborn babies after birth, producing 'hairy babies' [in adults, we speak of *hypertrichosis*]. But this has nothing to do with *animal* hairs : it's entirely *human* hair. In reality, and it is very visible in the newborn apes (chimpanzees or gorillas), the specific hairs of the animal *grow onto* the first layer of human-type hairs. We are aware of an evolutionary new hair-coat : this clearly proves that apes have evolved *beyond* humans.

Embryonic stages of Man, Dog (*above*)
Bird and Tortoise (*below*)

[after HAECKEL 1868]

Let us look carefully at the stages of development of diverse vertebrate embryos which are comparable [*s. above*], first we have a human embryo (4 and 8 weeks old) and the embryo of a dog. What is most surprising is that we hardly can differentiate them from one another, except for the tail, which is longer in the 6 weeks old dog embryo. The other illustration shows us, in a similar way, a chicken embryo and a tortoise embryo. Here, starting from a stage [8 days for chicken, 6 weeks for tortoise] a few differences can be observed, which correspond to the general development in their own lineages : notably, the development of the tortoise shell. But the bird hasn't yet developed its wings. These drawings put our attention to the fact [that is without doubt the more important] in this comparison of series of embryos : namely, the *astounding similarity* of those, and especially the

fact that they all have kept an '*extra-large head*'. The early skull outlines are *round* and *voluminous*, even in the tortoise which is a reptile... The human embryo will conserve this characteristic up to the adult stage, and then clearly appears as *the one who has remained closest to the original type from which they all have developed!*

Moreover, it is remarkable that the representation of quadrupedal animals, like the dog in the picture above, *in a vertical position* [i.e., 'standing'], seems perfectly natural to us : that would even not be the case if we imagine it 'lying', i.e. in the normal position of the future quadruped the dog would in fact be going to become... As professor Max WESTENHÖFER [a main investigator of the *Initial Bipedalism Theory*] already wrote in the 1930's, this phenomenon of an upright position in embryos is directly linked to the level of their eyes, and to the direction they are naturally facing : in harmony with the *globular shape* of their skulls.

Man preserves this disposition all his life, whereas animals gradually *modify* the original inclination, when they lift up their heads in order to position their vision *in front of them* : in this way, their eyes are on the same level as the (horizontal) body axis ! Actually, if they would keep eyes in early embryo position, when becoming quadrupeds, their eyes would be now facing the ground !

This is why, in the course of development *in utero*, the animal has to throw back its skull structure in order to see ahead... Such a development is balanced by the lengthening of jaws that serve as a 'counterweight' : this is the formation of the animal *snout*, and at the same time it necessitates a relative compression of the *brain* in a skull-box that is deformed to a more oblong shape.

Coming back now to the round configuration of the embryo head, we can observe in the diverse quadrupeds that the process of development of skull and brain *always goes across a stage which corresponds to the stage we find in man*. In animals, it is altered... The *forced* changes in position of the eyes *automatically* govern a new head carriage, which in turn decides on the necessary modifications concerning the insertion of the *spinal column* into the skull. Thus, the *foramen magnum* get displaced backwards !

In the embryos of all mammals, we observe what we call an *original bending* of the skull base, i.e. the osseous surface on which brain lies.

The curved form of the skull base, which is conserved almost unchanged in adult man [angle of 120°], is actually the more primitive disposition. The human anatomy maintains an *archaic* feature throughout the course of ontogeny. In animals, we get a more and more *horizontal* skull base [140° in apes, up to 180°, *wide angle*, in full quadrupedal mammals]. So we can emphasize that quadrupedalism is a *derived* grade of locomotion in mammals. In this way, equipped with a flat skull base, animals can see without problem when they move.

Bending of the skull base

[after BOLK, 1926]

above : in all mammal embryos

left : adult man

right : dog's horizontal deck

In bipedal man, the volume and the 'weight' of the brain **'lock'** the spinal column in an anatomical disposition, that was the original embryo disposition, too. By the way, the *foramen magnum* remains in a low position under the cranium. This allows us to maintain an upright posture when walking. There are evident links between the volume of brain, the position of head and our bipedal gait...

The globular form of the embryo brain determines the curve of the spinal tube that subsequently leads to the natural angle of the skull base in humans !

We already spoke of the consequence of such an anatomical feature regarding erect posture. This disposition is therefore *original* in mammals [and in other vertebrates], since their skulls are invariably rounder in the embryos than in the adults. *Then, bipedal posture must be the more ancient feature.*

A derived position during ontogeny brings the spinal column into a horizontal plane [parallel to earth] and causes the lengthening of the jaws : the animal brain is now trapped and compressed between a stretched back skull and a protruding face...

In this way, animals go during ontogenesis through an early stage *that would allow them to attain the stage of a biped and a considerable développement of cerebral capacities.* But they don't... With opting for quadrupedalism, they relinquish the capableness of real psychic emancipation !

An objective study of human morphogenesis indeed, contrary to what happens at our times, should logically start up from the very beginning of the evolutive phase when the first aquatic vertebrates developed. It is at this moment, as we will see it later on, *and at this moment only*, that a structural characteristic like the *original roundness* of the skull was able to take shape, ***in the water***, at the top of an erect spinal column... and this development was due purely to mechanical reasons ! We'll soon come back to this point.

Let us now talk a little about Comparative Anatomy. In the outline of our today lecture, we shall restrict ourselves with a study of the limbs, but we could also make investigations on the entire skeleton, as well on the inner organs. It would lead us to believe that bipedal man, indeed, represents the original *prototype* of the vertebrates...

The human hand is an extremity which is normally used for touching and grasping objects, whereas in other mammals, the hand is *also* [or *exclusively*] used to support the body weight and to provide a means of locomotion.

Apes have kept hands which are anatomically very similar to man's, but they often employ them in quadrupedal gait (*knuckle-walking*). Many herbivores only walk on their fingers (on *one* finger in the case of horse) after the formation of a hoof that developed out of the nails.

We can affirm that the human hand has remained the more primitive, and we can state that it has *never* been used for locomotion. Just as the upright body position was acquired at the very moment of the emergence from water of the pre-hominids, the archaic shape of the human hand developed

from the *homonculus'* natatory palette [a very ancient feature in the phylogenesis of the vertebrates, identical to the *derived* forms of the fish or cetacean flipper].

Consequently, the human hand shape has served as a 'starting point' for numerous evolutive transformations, like the hoof of herbivores, for instance. The whole arm can also transform into either a wing [birds, bats] or into a pectoral fin, like in the case of fish, cetaceans or sea-reptiles.

The human foot, used exclusively to provide a means of locomotion [the whole of which, as a *plantigrade* foot, is in contact with the ground], also comes directly *from the lower natatory paddle* of the marine animalcule that is the ancestor of all vertebrates. This explains the foot form in the human embryo at the age of 30 days. About 2 weeks later, the foot has the *aspect* of a hand : the middle toe is the longest, and the future big toe is short... Actually, this feature has nothing to do with the 'posterior hand' of an ape, as sometimes claimed ! We also observe that the foot is *palmed* : it's the same kind of foot which characterized the archaic pre-hominid before leaving the ocean, about 600 million years ago ! Adaptation to walking on ground consequently modulated the foot architecture : a big toe as we know it, and the sole, formed by the angles that are made by the tarsal, metatarsal bones and those of the phalanges.

Foot of Macaque (left)
and Man (right)
in similar states of development

[after SCHULTZ, 1957]

When walking, and especially running, the body weight of man is firstly lying on his big toe : this staggering development of the first toe is one of the particularities of the human foot. This is obviously connected with early bipedal gait. On the contrary, the evolution of the foot in tree-dwelling primates is orientated towards a *prehensile* structure, where the big toe becomes *opposable* to the other toes... which inevitably causes its *reduction* in size, and even, in long term, provokes its *complete disappearing*... Actually, the evolution of man's foot *never* passed throughout a stage similar to that of tree-dwelling apes or monkeys ! Man's natural aptitude must have been a flat-footed bipedal walking, *since the very beginning of the human lineage*...