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JULIEN OFFRAY DE LA METTRIE
X

*Machine Man and
Other Writings*

TRANSLATED AND EDITED BY

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Man as Plant

Note on the text

L'Homme-plante first appeared in 1748, published by C. F. Voss in Potsdam. It contained a large number of notes, consisting mainly of references, which were all removed when the text was reworked in 1750 for inclusion in La Mettrie's *Philosophical Works*. Otherwise the changes were only slight. F. L. Rougier published an edition of the work (New York, Columbia University, 1936) giving the text of 1748, which is very rare. The present translation is based on the 1750 version.

Preface

Man is here metamorphosed into a plant, but do not think this is a fiction in the style of those of Ovid. A simple analogy between the vegetable kingdom and the animal kingdom has shown me that the main parts of the one are found in the other. If my imagination sometimes plays here, it is, so to speak, on the sounding board of truth; my field of battle is that of nature, whose variations I could have hidden from view, if I had not wanted to single myself out.

Chapter I

We are beginning to glimpse the uniformity of nature; these as yet still weak rays of light are due to the study of natural history. But how far does this uniformity go?

We should be careful not to push nature too far; it is not so uniform that it does not often stray from even its most favourite laws. We should try to see only what exists, without flattering ourselves that we can see everything. Everything contains a trap or a pitfall for a vain and unwary mind.

In order to judge the analogy existing between the two main kingdoms, we must compare the parts of plants with those of man, and apply what I say about man to animals.

In our species, as in plants, there is a main root and capillary roots. One is formed by the reservoir of the lumbar region and the thoracic canal, and the other by the lacteal veins. Everywhere we see the same uses and the same functions. Food is carried by these roots throughout the whole of the organised body.

Thus man is not an upturned tree whose brain is its root, since this root is the result of the activity of abdominal vessels alone; they are the ones which are formed first, or at least they are formed before the teguments which cover them and constitute man's bark. In the plant's seed, one of the first things that one sees is its little root and then its stem; one goes downwards and the other upwards.

The lungs are our leaves, which replace this organ in vegetals, as in us the organ replaces the leaves which we lack. If the plant's lungs have branches, it is in order to multiply their extent so that as a result more air enters them; which means that vegetals, and trees in particular, breathe more comfortably. Why should we need leaves and boughs? The quantity of our vessels and pulmonary vesicles is so well proportioned to the mass of our body and its small circumference that it is enough for us. It is very enjoyable to observe these vessels and the circulation in them, particularly in amphibians!

But what could be more similar than those which have been discovered and described by the Harveys of botany! Ruysch, Boerhaave, etc. have found in man the same numerous series of vessels that Malpighi, Leeuwenhoek and van Royen

discovered in plants.¹ The heart beats in animals and swells their veins with those torrents of blood which carry feeling and life into the whole machine. Heat, that other heart of nature, that fire from the earth and the sun, which seems to have passed into the imagination of the poets who have depicted it, likewise makes the fluids circulate in the tubes of the plants, which transpire like us.² Indeed, what other cause could make everything in the universe germinate, grow, flower and multiply?

The air seems to produce in vegetals the same effects which are, with reason, attributed in man to that subtle nerve fluid whose existence has been proved by a thousand experiments.

It is this element whose excitation and elasticity sometimes make plants rise up above the water's surface and open and close, as one opens and closes one's hand. It was perhaps a consideration of this phenomenon which gave rise to the opinion of those who considered ether to be part of the animal spirits and to be mixed with them in the nerves.³

If flowers have leaves or petals, we can consider our arms and legs as similar parts. The nectarium, which is the reservoir of honey in some flowers such as the tulip, the rose, etc., is the reservoir of milk in the female plant of our species, when the male brings it on. It is double and its seat is at the lateral base of each petal, immediately on an important muscle, the greater pectoral.

We can consider the virgin, or rather non-pregnant, womb or, if one prefers, the ovary, to be like a seed which is not yet fertilised. The woman's stylus is her vagina; her vulva and her mons veneris, with the odour given off by the glands in these parts, correspond to the stigma; and these things – the womb, the vagina and the vulva – form the pistil, which is the name that modern botanists give to all the female parts of plants.

I compare the pericarp to the womb in a state of pregnancy because its function is to cover the foetus. We have our seed, like the plants, and it is sometimes very abundant.

The nectarium serves to distinguish between the sexes of our species when we are satisfied with a single glance, but the easiest research is not always the most certain. In order to have the essence of woman, we must combine the pistil and the nectarium; for the first can be found without the second, but the second is never

¹ W. Harvey discovered the circulation of the blood. F. Ruysch studied human vessels; see in particular *Curae renovatae seu Thesaurus anatomicus* (Amsterdam, 1728). On Boerhaave see Introduction, p. xiii. Malpighi turned to botany after his anatomical work, and was considered to be the founder of the microscopic study of plant anatomy, especially with his *Anatome plantarum* (London, 1675). A. van Leeuwenhoek, particularly studied micro-organisms and reproduction in plants and animals; in a note to the 1748 edition, La Mettrie refers the reader to *Arcana Naturae detecta* (Delft, 1695). A. van Royen was director of the Leiden Botanical Gardens after Boerhaave; in 1748, La Mettrie referred the reader to his *Flora de Leyde*, or *Florae Leydensis prodromus* (Leiden, 1740), which put forward a new method of plant classification.

² In the 1748 edition, La Mettrie here referred to S. Hales's *Vegetable Staticks* (London, 1727).

³ In the 1748 edition, La Mettrie here referred to Quesnay's *Essai physique sur l'économie animale*.

without the first, except in very portly men whose breasts in fact imitate those of women, even to the extent of producing milk, as Morgagni⁴ and many others recount they have observed. No unperforated woman – if one can call ‘woman’ a being without a sex, like the one I have mentioned several times⁵ – has breasts. Breasts are like the buds on a vine, particularly when it is cultivated.

I shall not discuss the calix, or rather the corolla, because it is alien to us, as I shall explain.

This is enough, as I do not wish to follow in the tracks of Cornelius Agrippa.⁶ I have described botanically the most beautiful plant of our species, by which I mean woman. If she is virtuous, although metamorphosed into a flower, she will not be any the easier to gather.

As for us men, for whom a glance is enough, sons of Priapus, spermatic animals, our stamen is, as it were, rolled up in a cylindrical tube, which is our penis, and sperm is our fertilising powder. Like those plants which have only one male, we are *monandria* and women are *monogynia*, as they have only one vagina. And the human race, in which the male is separated from the female, goes to increase the class of *dicciae*: I use the words derived from Greek and imagined by Linnaeus.⁷

I thought it was necessary to expound first of all the analogy between plants and fully formed men because it is the more evident and easier to grasp. Now here is a more subtle one which I shall draw from procreation in the two kingdoms.

Plants are male and female, and shake like man does in copulation. But in what does this important action, which renews the whole of nature, consist? Infinitely tiny globules, which come out of the grains of that dust with which the stamens of flowers are covered, are wrapped up in the shells of these grains, more or less like some eggs, according to Needham and to the truth.⁸ It seems to me that the drops of our semen correspond quite well to these grains and our little worms to their globules. Man’s animalcules are truly enclosed in two liquids, the most common of which, the prostate fluid, contains the most precious, which is the veritable semen, and on the model of each globule of vegetable powder, they probably contain a miniature version of the human plant.⁹ I do not know why Needham tried to deny what is so easy to see. How could a scrupulous physicist, one of those so-called followers of experiment alone, dare to conclude, from observations made on a single species, that the same phenomena must be found in another, which he had nevertheless not studied at all, according to his own admission? Such conclusions,

⁴ G. B. Morgagni, *Adversaria anatomica* (Pavia, 1717–19).

⁵ See *Machine Man*, p. 16 and *The System of Epicurus*, §xiv.

⁶ H. C. Agrippa von Nettesheim, *De nobilitate et praecellentia femineo sexus* (Antwerp, 1529), a work in praise of women, translated into French as *Traité de la prééminence des femmes* (Paris, 1578).

⁷ C. Linnaeus developed the system of classification of living beings, starting with plants; see *Systema naturae* (Leiden, 1735).

⁸ Needham, *An Account of Some New Microscopical Discoveries*, ch. 7, ‘The Farina Fœcundans of Vegetables’.

⁹ Here La Mettrie seems to favour the preformationist theory, although in *Machine Man* was more circumspect.

drawn to honour a hypothesis – for people hate only the word ‘hypothesis’ and regret the absence of the thing – do little honour to their author. A man of Needham’s merit had even less need of diminishing the merit of Mr Geoffroy who, as far as I can judge from his work on the structure and the principal uses of flowers, did more than speculate that plants were fertilised by the powder in their stamens.¹⁰ This is by the way.

The plant’s liquid dissolves, better than any other, the matter which is to fertilise it, so that only the most subtle part of this matter reaches its goal.

Does not the most subtle part of man’s semen likewise carry its worm or little fish into the woman’s ovary?

Needham compares the action of the fertilising globules to that of a violently heated aeolipile. It also resembles a sort of little windbag, both in nature or when it is observed, and in the image that this illustrious young English naturalist has given us of plants’ ejaculation.

If the fluid specific to each vegetal produces this action in an incomprehensible manner by acting on the grain of dust, as common water also does, do we understand any better how a sleeping man’s imagination produces wet dreams by acting on the erector and ejaculatory muscles which, even alone and without the aid of the imagination, sometimes cause the same accidents? Unless the phenomena which can be seen in both cases come from the same cause, by which I mean a principle of arousal which, after having tensed the springs, makes them relax. Thus pure water, and mainly the plant’s liquid, would act no differently on the grains of dust than the blood and spirits would on the muscles and the reserves of semen.

The ejaculation of plants lasts only a second or two, but does ours last much longer? I do not think so, although abstinence provides variations which depend on the greater or lesser amount of sperm accumulated in the seminal vesicles. As it happens while breathing out, it had to be short, otherwise prolonged pleasure would have been our grave. For lack of air or inhalation, each animal would only have given life at the expense of its own and would truly have died of pleasure.

The same ovaries, the same eggs and the same fertilising capacity; the tiniest drop of sperm containing a great number of little worms can, as we have seen, bring life into a large number of eggs.

Again, the same sterility and the same impotence on both sides; just as there are few grains which reach their goal and are truly fertile, few animalcules penetrate the female egg. But once it is implanted, it is immediately nourished like the powder globule, and both of them, in time, form a being of their own species, a man or a plant.

Eggs or plant grains, improperly called germs, never become foetuses if they are not fertilised by the dust I am discussing. Similarly, a woman will not produce any children unless the man projects, as it were, a smaller version of himself into her entrails.

¹⁰ Claude Joseph Geoffroy, ‘Sur la structure et sur l’usage des principales parties des fleurs’, a paper read to the Académie des Sciences in 1711.

Must this powder have acquired a certain degree of maturity in order to be fertile? Man's seed is no apter for procreation in his youth, perhaps because our little worm is then in the state of a nymph, as Needham's translator has speculated.¹¹ The same thing happens when one is extremely exhausted, no doubt because the undernourished animalcules die, or are at least too weak. Such seeds, whether animal or vegetable, are sown in vain; they are sterile and produce nothing. Wisdom is the mother of fecundity.

The amnios, the chorion, the umbilical cord, the womb, etc. are found in both kingdoms. The human foetus finally comes out of the maternal prison by its own efforts, and the plant's foetus – or to say it neologically, the embryonic plant – falls at the slightest movement as soon as it is ripe. That is vegetable birth.

If man is not a vegetal production, like the tree of Diana¹² and others, he is at least an insect whose roots grow into the womb, as the fertilised plant germs do in theirs. However there would be nothing surprising about the idea, since Needham observes that polyps, barnacles and other animals multiply themselves by vegetation. Again, do we not, so to speak, prune a man like a tree? A universally learned author said so before me: the forest of splendid men covering Prussia is due to the care and research of the late King.¹³ Generosity has even more effect on the mind; it spurs it on and it alone can prune it, so to speak, into trees worthy of the gardens at Marly and, what is more, into trees which although previously sterile, will bear the finest fruit. Is it therefore surprising that the arts have today chosen Prussia for their native land? And surely intelligence was justified in expecting the most enticing advantages from a Prince who has so many himself?

Among plants there are also blacks and mulattos, and marks in which the imagination plays no part, unless it is Mr Colonna's imagination.¹⁴ There are strange head-feathers, monsters, wens, goitres and monkeys' and birds' tails. And finally, what provides the greatest and most amazing analogy is the fact that the plant's foetus is fed, as Mr Monro has proved,¹⁵ by means of a mixture of the mechanisms of oviparous and viviparous animals. I have said enough on the analogy of the two kingdoms.¹⁶

¹¹ J. N. S. Allamand's translation of Needham's work was published in 1747, together with Trembley's paper on polyps, under the title of *Nouvelles découvertes faites avec le microscope* (Leiden). This remark appears in the translator's preface, as La Mettrie could have read in the *Bibliothèque raisonnée* in 1747 (vol. 39).

¹² A crystal formation made by mixing several substances together in a test-tube.

¹³ Frederick William I. See Maupertuis, *Vénus physique*, Pt. II, 'Variétés dans l'espèce humaine', ch. 3, concerning the improvement of species by selective breeding.

¹⁴ F. M. P. Colonna, *Principes de la nature ou de la génération des choses* (Paris, 1731), a work attributing to animals, vegetables and minerals a soul which was part of the universal soul. La Mettrie is also referring to the theory that the mother's imagination affects the human foetus, referred to in *Machine Man*. See p. 29 note 43.

¹⁵ A. Monro the Elder, *Essay on Comparative Anatomy* (London, 1744).

¹⁶ The first edition of 1748 included here a botanical description of the human being in Latin according to the Linnaean categories of classification.

Chapter II

I now come to the second part of this work, or to the difference between the two kingdoms.

The plant is rooted in the earth which nourishes it, it has no needs, it fertilises itself, it does not have the faculty of moving and it has been regarded as an immobile animal which however lacks intelligence and even feeling.

Although the animal is a mobile plant, it can be considered as a being of a very different species, for not only has it the power to move – and movement costs it so little that it has an influence on the healthiness of the organs on which it depends – but it can also feel, think, and satisfy the host of needs which assail it.

The reasons for these variations are to be found in the variations themselves, together with the laws I am about to describe.

The more an organised body has needs, the more means nature has given it to satisfy them; these means are the different degrees of wisdom, called instinct in animals and the soul in man.

The fewer necessities an organised body has, the less difficult it is to nourish and bring it up and the smaller is its share of intelligence.

Beings without needs are also without a mind. This is the last law, which follows from the two others.

An infant attached to its wet-nurse's nipple, which it never stops sucking, provides an accurate idea of a plant. It is the earth's suckling and it leaves its breast only when it dies. As long as life lasts, the plant is identified with the earth, their organs are one and can only be separated by force. Hence no worry, no anxiety about having enough to eat and consequently no needs in that direction.

And again, plants make love without difficulty; for either they contain within themselves the twofold instrument of procreation and are the only hermaphrodites that can impregnate themselves, or if each flower is of a single sex, it is enough for the flowers not to be too far apart from each other for them to be able to mingle. Sometimes copulation even takes place although at a distance, and even a great distance. Pontanus's palm tree is not the only example of trees being fertilised from a great distance.¹⁷ We have known for a long time that the winds, true messengers of vegetable love, carry the male sperm to female plants. It is not exposure to the wind that generally makes ours run the same risks!

The earth is not only the plants' nurse; it is also in a way their dressmaker. It is not satisfied with suckling them, but also clothes them. With the same juices that nourish them, it can spin garments to cover them. Such is the corolla I have mentioned, which is decorated with the most beautiful colours. The corolla of man, and above all woman, consists in garments and different

¹⁷ J. Pontanus, minister to the King of Naples, described a palm tree fertilised by the pollen brought on the wind by the only male, several miles away.

ornaments, during the daytime, for at night they are flowers almost without any covering.

What a difference there is between the plants of our species and those which cover the earth's surface! They rival the stars and form the bright patchwork of the meadows, but they experience neither pain nor pleasure. How evenly balanced everything is! They die as they have lived, without feeling it. It would not have been fair for those who live without pleasure to die in pain.

Not only do plants have no soul, but in addition, this substance would have been no use to them. As they have none of the necessities of animal life, no sort of anxiety, no cares, no steps to take and no desires, any trace of intelligence would have been as superfluous for them as light for a blind man. In the absence of philosophical proofs, this reason, combined with our senses, is evidence against the souls of vegetals.

Instinct has even more legitimately been denied to all bodies permanently fixed to rocks or ships, or formed in the bowels of the earth.

Perhaps minerals are formed according to the laws of attraction, so that iron never attracts gold nor gold iron, all heterogeneous parts repel each other and only homogeneous parts unite or form a single body together. But without deciding anything in the obscurity which covers all sorts of reproduction, should I, because I do not know how fossils are formed, call on, or rather suppose, a soul to explain the formation of these bodies? That would be rich (particularly after having deprived organised beings in which there are as many vessels as in man); it would, I repeat, be rich to want to give one to bodies with a simple, crude, compact structure!

They are nothing but imaginings and ancient fancies, all those souls generously distributed to all the kingdoms! And follies of the Moderns who have tried to revive them with a subtle breath! Let us leave their names and their shades in peace; Sennert, the Germans' Galen, would be too ill-treated.¹⁸

I consider everything they have said as philosophical games and trifles, whose only merit is their difficulty: 'difficult frivolities'.¹⁹ Do we need to resort to a soul to explain plants' growth, which is infinitely faster than that of stones? And in the vegetation of all bodies, from the softest to the hardest, surely everything is determined by nourishing fluids, which are more or less terrestrial and applied with differing degrees of force to more or less hard masses? From which I can indeed see that a stone must grow less in a hundred years than a plant does in a week.

But we must forgive the Ancients for their general and particular souls; for lack of experimental physics and anatomy, they were not at all versed in the structure and organisation of bodies. Everything must have been as incomprehensible to them as to children or savages seeing a watch for the first time; knowing nothing of its springs, they think it to be animate or endowed with a soul like them, while it is

¹⁸ D. Sennert. *Hypomnemata physica* (Frankfurt, 1636), attributes the formation of bodies to the soul and explains that minerals are created by spirits.

¹⁹ La Mettrie uses the expression, 'difficiles nugae', an unidentifiable quotation.

enough to glance at the artifice of this machine; it is a simple artifice which really implies, not the possession of its own soul, but the soul of an intelligent workman without whom chance would never have been able to indicate the time and the sun's passage.

As we are much more enlightened by physics, which shows us that there is no other soul of the world than God and movement, and no other soul of plants than heat; as we are more enlightened by anatomy, whose scalpel is exercised as happily on them as on us and the animals; as we are more informed by microscopic observations which have revealed to us the reproduction of plants, our eyes cannot open to the broad daylight of so many discoveries without seeing, despite the great analogy described above, that the differences between man and plant are perhaps even greater than the similarities. Man is, of all the beings hitherto known, the one which has the most soul, as if it were necessary for that to be so; and the plant is likewise the one which has, and was destined to have, the least of all, if we exclude minerals. What a splendid soul it would be, after all, paying no attention to any objects or any desires, without passions, without vices, without virtues and above all without needs, and not even entrusted with the care of providing food for its body!

After the vegetables and the minerals – bodies without a soul – come beings which begin to be animate, such as the polyp and all the animal-plants still unknown today, which other favoured Trembleys will discover in time.²⁰

The more the nature of those bodies I have mentioned is vegetable, the less instinct they will have and the less discernment will be seen in their workings.

The more animality they have, or the more their functions are like ours, the more generously they will be provided with that precious gift. These intermediate or compound beings – which I call thus because they are children of both kingdoms – will have, in short, intelligence in proportion to the quantity of movement they will have to make in order to find their subsistence.

Here, the most intelligent of animal-plants follows the lowest or meanest of animals, by which I mean the one which, of all the true beings of this species, makes the least movement or effort in order to find its food and its female, but always a little more than the highest animal-plant. This animal will have more instinct than the animal-plant, even if this surplus movement is only a hair's-breadth. It is the same for all the rest, in relation to the anxieties which torment them. For without this intelligence relative to their needs, one would not be able to stretch out its neck, another to crawl or a third to lower or lift up its head, swim, fly or walk, and all this clearly on purpose to find food. Thus, for lack of an aptitude to replace the loss incurred by even the animals which transpire the least, each individual would be unable to go on living. It would die as it was produced and, as a result, bodies would be produced in vain if God had not given them all,

²⁰ On Trembley's discovery of the freshwater polyp in 1739, see p. 12 note 19.

so to speak, that portion of himself which Virgil extols so magnificently in the Bees.²¹

Chapter III

Nothing could be more charming than this contemplation; its object is that ladder which is so imperceptibly graduated that we can see nature passing exactly through all its levels without ever missing out, so to speak, a single rung in all its different productions! What a picture is provided by the spectacle of the universe! Everything is perfectly matched, nothing is out of place; if it moves from white to black, it does so through an infinite number of tones or levels, which make the transition infinitely pleasant.

Man and plant are white and black, and the quadrupeds, birds, fish, insects and amphibians correspond to the intermediate colours which soften the striking contrast. Without these colours – without the workings of animals, all different from one another, which I refer to with this word – man, that arrogant animal, made of clay like the others, would have thought he was God on earth and would have worshipped only himself.

There is no animal, however feeble and mean in appearance, the sight of which does not diminish a philosopher's self-esteem. If chance has placed us at the top of the scale, do not forget that a trifle more or less in the brain, in which is found the soul of all men (except the Leibnizians), can immediately plunge us to the bottom, and let us not despise beings whose origin is the same as ours. They are, in truth, only on the second rung, but their position is more solid and stable.

If we look down from the cleverest man to the meanest of vegetals and even the fossils, and then back up from the lowest of these bodies to the greatest genius, thus taking in the whole circle of natural kingdoms, we admire everywhere the uniform variety of nature. Mind seems to finish here, and there we see it about to be extinguished, like a flame lacking fuel. Elsewhere it revives; it shines in us and it guides animals.

One could insert here a curious chapter of natural history to show that intelligence has been given to all animals according to their needs, but what is the point of so many examples and facts? They would overburden us without enlightening us any more and, in any case, these facts can be found in the books of those indefatigable observers whom I dare to call philosophers' labourers.

Let whoever wishes, bore us with all the wonders of nature; let one spend his life observing insects and another counting the little bones in certain fishes' hearing membranes, or even, if you want, measuring how far a flea can jump, to say nothing of so many other pathetic objects. I, who am interested only in philosophy and am troubled only at not being able to extend its bounds, will always consider active

²¹ Virgil, *Georgics*, IV., esp. ll. 49–50.

nature to be my sole viewpoint. I like seeing far, on a large scale and in general, and not the particulars or little details which, although they are necessary to a certain extent in all science, are usually the sign of a lack of genius in those who concern themselves with them. It is only thanks to this way of looking at things that we can be certain, not only that man is not entirely a plant, but also that he is not even an animal like any other. Do I need to repeat the reason why? It is because, having infinitely more needs, he had to have infinitely more mind.

Who would have believed that such a sad cause would produce such great effects? Who would have believed that such a troublesome subordination to all of life's unwelcome necessities, which remind us at every instant of the misery of our origin and condition, who would have believed, I repeat, that such a principle could be the source of our happiness and our dignity? We could go so far as to say that it is the source of our mind's sensual pleasure, which is so superior to that of our body. Certainly, if our needs are, as we cannot doubt, a necessary consequence of the structure of our organs, it is equally obvious that our soul is determined directly by our needs, which it is so vigilant in satisfying and in foreseeing that nothing takes precedence over them. Even our will must obey them. We can therefore say that our soul takes on strength and wisdom in relation to their number, like a general whose expertise and courage increases with the number of enemies he has to fight.

I know that the ape resembles man in many ways, and not only by its teeth, as comparative anatomy shows, although the teeth were enough for Linnaeus to put man in the category of quadrupeds (at its head, in fact). But however docile that animal may be, man, the most intelligent of the quadrupeds, shows a much greater aptitude for education. We are right to praise the excellence of animals' workings, and they are worthy of being compared to man's. Descartes did them an injustice and he had reasons for doing so; but whatever one may say about them and whatever prodigies are recounted, it does not diminish our soul's pre-eminence. Our soul is certainly made of the same material and in the same way, but it is not of the same quality, far from it. It is this superior quality of the human soul and this excess of enlightenment, obviously the result of our organisation, which make man the king of the animals and the only one apt for society, whose languages were invented by his work and whose laws and customs were invented by his wisdom.

All that is left for me to do is to answer in advance a possible objection. If, people will say, your principle were generally true and if the needs of bodies were the yardstick of their intelligence, why up to a certain age, when man has more needs than ever – because, the nearer he is to his origin, the more he grows – does he have so little instinct that without great permanent care he would infallibly perish? Animals, on the contrary, when they are hardly born, already show so much wisdom, they who, in your hypothesis and even in truth, have so few needs.

This argument will be disregarded if it is considered that, when animals come into the world, they have already spent a long part of their short life in the womb

and hence they are so well formed that a day-old lamb, for example, runs in the meadow and eats grass like its father and mother.

The state of man-foetus is proportionately shorter; he spends in the womb only a possible hundred and twenty-fifth of his long life; as he is not formed enough, he cannot think and his organs must have time to harden, to acquire that strength which is to produce the light of instinct, for the same reasons that a stone will not produce sparks if it is not hard. Man, born of more naked parents and himself more naked and delicate than an animal, cannot receive his intelligence as quickly; intelligence comes late in man, and it is only fair that it should be precocious in the animal. Man is all the better for his wait, as nature repays him with interest by giving him more mobile and freer organs.

To fashion discernment like ours needs more time than nature takes to construct the discernment of animals. One must go through childhood to reach reason, and one must experience the disadvantages and suffering of animality in order to acquire the advantages which characterise man.

If the instinct of animals had been given to man at birth, it would not have been enough for all the handicaps which assail him in his cradle. All the cunning of animals would be defeated in such a state. Likewise, give a child only the instinct of those animals which have the most, and he will not even be able to tie his umbilical cord, even less to find his nurse's nipple. Give animals our original disadvantages and they will all die.

I have considered the soul as forming part of the natural history of animate bodies, but I have been careful not to present the gradations from one to the next as being as new as the reasons for this gradual transition. For how many philosophers, and even theologians, have given animals a soul, so that man's soul, according to one of the latter,²² is to an animal's soul what an angel's soul is to man's and, apparently rising ever higher, what God's soul is to that of an angel.

²² D. Boullier, a Protestant theologian, *Essai philosophique sur l'âme des bêtes* (Amsterdam, 1727).

The System of Epicurus

How miserable is the origin of the proudest of animals!

Pliny¹

¹ 'Quam misera animalium superbissimi origo', Pliny the Elder, *Natural History*, Bk. VII, §43; the original quotation reads: 'quam sit frivola animalium superbissimi origo'.