

THE BIOLOGICAL PLAN

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Ladies and Gentlemen,

Though the main motifs of my work can easily be shown, such an account is quite insufficient to convey the importance of the new factors, and we must consider the details. Here our difficulties begin. Details are so numerous that the student can be submerged by them, and ignore or neglect the main trends of the work. Such is the defect of my books. I have therefore decided to address you as follows: first to declare the main motifs, and then to give some examples which I hope will be sufficiently explanatory.

Existing biological knowledge is the result of tremendous work, but biology still lacks synthesis. In physics we recognize energy as the fundamental unity, and in chemistry, matter as the fundamental unity. In biology we must recognize fundamental unity in *forms*. Specialists are not yet aware of this because they are still imprisoned within the narrow boundaries of their researches. It is up to you, Ladies and Gentlemen, to impose the vast biological synthesis on them.

Science has reduced everything to movement, and—to be more precise—this movement is vibration. This conception is still vaguely expressed and understood and we can make it more fruitful. A simple example of vibration is the pendulum which has two fundamental movements: one which throws the pendulum to the outside, and which I call a *movement of exteriorization*, and one of attraction to the centre, which I call *movement of interiorization*.

These new names seem, at first hearing, to have no great importance, and yet they give us the first key to the mystery. Look widely around you: everywhere you will find these two movements—in the molecule and in the cosmos. The movement of interiorization is in contraction, solidification, cold,

in planetary attraction, and in centripetal electric currents etc. . . . That of exteriorization is in evaporation, dilatation, heat, the centrifugal force of planets, etc. . . . Exteriorization and interiorization are the two great forces of nature which the Chinese already called the Ying and the Yang, and the Hebrews Yonah and Hares.

All this becomes even more important when we turn to biology. We see immediately that living beings separate into two great groups:

animals: where interiorization is dominant.

plants: where exteriorization is dominant.

This is no mere appearance, as you may see in my book "Pourquoi la mort!" but is true in all details, and especially clear in structure and formation; linear in plants, and through gastrulation in animals, where successive interiorizations of embryonic layers (endoderm and mesoderm) can be observed which are utterly unknown to plants.

The very shape of trees which fling into space their tapering branches proclaims to the philosopher the force of exteriorization which masters them. While the gradual evolution of animals reveals a progressive interiorization (the skeleton and the nervous system, for instance), and the progressive disappearance of all appendages.

Of course, we never find the unmixed force, but always a balance, harmony, and also the struggle between these two forces which are constantly together. We only observe alternation or predominance.

I have said that the animal is dominated by interiorization. This is strictly true, but the animal (for example, the crocodile) has two poles: the head, the interiorizing pole, and the tail, the exteriorizing pole. We know that interiorization is the keynote of animal life, and can therefore at the very top of the biological tree foresee the almost complete disappearance of the tail.

This is not all. The two forces are, as I have said, the key to the mystery: they enable you to understand the significance of the sexes. The male sex lives under the impulsion

of the exteriorizing force, whereas the female sex is dominated by interiorization.

The male, noble and generous, gives himself entirely; he is the element of expenditure and of this the symbol is the minute and mobile spermatozoon. The female, passive and heavy, is the element of economy, whose symbol is the relatively large and motionless ovum.

To sum up: the female is the devouring being, and the male is the devoured. This is literally true with certain insects. You doubtless know the interesting observations of Fabre, the great French entomologist, but now, instead of being stupefied as he was, you will find it natural that sometimes the wife (the praying mantis, for instance) devours her tender husband.

We find the two forces in all living activities. To live is to breathe in, to eat, to hear, to see, to feel, etc.—in short, to interiorize. But to live is also to breathe out, to secrete, to speak, to walk—in short to exteriorize. These two movements are universal.

The curious point to which I rapidly draw your attention (the details are in my books) is that in their first stages all functions are locomotor. For example, the amœba's method of feeling, its sensitivity . . . (tropisms, tactisms, etc.).

To sum up: All vital phenomena are reducible to movement, but to movement in two opposite senses, and the whole of life presents itself as ceaseless movement in interiorization and exteriorization.

Here is something still more important: the two forces, represented in their functions, work in the formation of beings. It is not only, as Lamarck said, that *function* creates the organ, but it also *creates the organism*, and from this comes the tremendous discovery which I must now explain to you. The organisms in space and the organs of our body are not separate and different notes, but are the same notes differently adapted.

This is obviously not clear, but I will repeat myself in other words: *There is a total, absolute and essential correspondence between the separate living beings in space and the organs of our body.* We can even say that they are the same

and that the enormous differences which increase as we ascend the biological tree are only of a secondary order, apparent rather than real, and due on the one hand to adaptation to free exterior life, and on the other to adaptation to life in colonies. The organs are prisoners within the colony.

If, for instance, you imagine that there is a bird in our body, you should understand that this bird will have no feet, no digestive tract, no eyes, etc., since it is integrated in an organism which walks, eats and sees for it. I assure you that this bird exists, and I hope that you have begun to understand how to seek it.

The fundamental being of our body, the simplest cell, is the leukocyte, the white blood cell. As we could foresee, it is hardly different from its correspondent in space, the simplest being, the amœba. This is so clear that certain writers have quite correctly named the white blood cell the *amoebocyte*.

I have called my philosophy a verifiable philosophy. The very exposition of my thesis holds within itself the proof of my discoveries, so great is their certainty.

Not only is the parallelism between the amœba and the leukocyte obvious, but, however strange this may seem, their evolution is the same.

Indeed, if we start ascending the biological tree, we find the amœbas uniting in different forms of colonies, and especially the fungi Myxomycetes, which are highly sensitive to changes in the moisture of the atmosphere. Myxomycetes present the characteristic of being encysted. The same happens in the human body where the connective tissue, an amœbic mass, becomes cartilaginous when its cells are encysted. To put it another way, cartilage, a colonial cyst, is produced when the amœbic cells are encysted and become spores. These cells form the embryonic connective tissue in its jelly-like state.

To sum up, cartilage is a genuine colony of encysted cells with the same structure as that of the spores of the Myxomycetes. I want you to know this curious fact: that the twinges and pains which affect us with the changes of moisture in the atmosphere should not be surprising since they are merely the

repetition of the stretching undergone by the cystic covering of the Myxomycetes in the forest.

Parallelisms can be traced further.

As we ascend the biological tree, we find the Radiolaria and the Heliozoa (sun animalcules). The Heliozoa have the star-shape of the bone cells, and this becomes clearer if we study a particular Radiolarium known as the Collozoon. This Protozoon has not only the structure of the bony tissue, but also that of the bone itself, with its Haversian canals. Where in the organism we find red blood corpuscles, in the Radiolarium we find yellow seaweeds with the same function. They are looked upon as parasites, but they are indispensable to the animal, are always there, and become encysted with it.

You see, Ladies and Gentlemen, as soon as we go into details my lecture becomes somewhat arduous and threatens to make you lose the full sense of unity of what I have to tell you.

We should really proceed in this manner, but there is no need for me to repeat to you my book on the "Biological Tree", republished under the title "Après Darwin". I only hope that what I have said is sufficient to make you grasp the parallelism.

This parallelism is maintained throughout the biological tree, as I will try to show.

After the Protozoa we find, at the base of the biological tree, the plant-animals. The first of these are polyps, hollow tubes into which the sea-water passes freely. In the human organism we find them as arteries, veins, and lymph vessels. In both cases regeneration is extremely easy.

Just as polyps give rise to the medusa jellyfish, so the vessels of the organism transform themselves into the heart. I cannot go into technical details now: I merely state the facts. The heart-muscle is a formation added to the original cardiac tube.

Contrary to what happens in the polyps and in the blood and lymph vessels, the medusa, like the heart, cannot regenerate itself, and in both cases we find the significant number four within their cavities.

The second plant-animals are the sponges. No great proof

is needed of their absolute correspondence with the glands of the body, whose spongy structure is obvious: the liquids circulating in sponges and those in the glands of our organism follow identical laws. Certain writers, such as Ranvier and Langer, have shown how the lymphatic system of a frog is a true lymphatic sponge.

The last plant-animals, the Echinoderms, already show us how the polyps and sponges find their place within the organism. If we look at the Cucumaria, a beautiful sea-crcumber with branching tentacles in polyp-form, we will realize how the polyp-structure is maintained in the Echinoderms. The madreporite filter (so-called because of its resemblance to madre-pores) also maintains the polyp-structure, and in its turn is identified with sponges. This structure is found in the spongy tissue of our organisms.

In these studies, Ladies and Gentlemen, which I am tremendously compressing, there is no room for imaginative work. I am bringing you careful and precise observations which may be slightly boring, but whose truth is undeniably.

What else do the Echinoderms give us? First of all the appearance of articulation. But there is more than that. The bony plates in the arms of the starfish are so arranged that Tidemann has referred to them as vertebrae. We find there a nervous groove and, although they are not genuine vertebrae, we would call them "milk-vertebrae" as in the case of milk-teeth. In the evolutionary process they will vanish, but when they re-appear in fish you must think of them not as a new form but as the perfected system of the sketch of the vertebral column found in the arms of the starfish.

In the evolution of the Echinoderms we pass from star-shapes to globular shapes. Delage has clearly shown how the star becomes a globe where the vertebrae are no longer apparent. The same happens in our organism: the vertebral column passes into the skull. We know how much discussion there has been in past centuries over the theory of the vertebral skull. According to Dumeril, the head was one whole vertebra; three and a half, according to Oken; four, according to Owen; six

according to Goethe and Carus; and seven according to Geoffroy St. Hilaire.

The Echinoderms clearly reveal the vertebral structure of the sea-urchin. The appearance of the skull in fish is not a primitive sign, but a reappearance.

As you see, all this is becoming more and more interesting, but I do not wish to leave the plant-animals without drawing attention to the progressive interiorization of sea-water in these animals. Sea-water which ultimately appears as lymph and then again as blood. You may know the valuable work of the French scientist Quinton, who has shown how our body is a genuine sea-aquarium. We come from the polyps, where the sea-water flows freely, to the sponges where it stagnates. In the starfish, we already find a lymphatico-marine liquid, where the sea-water is only intermittently interiorized from the sea-urchine and the holothurians, or sea-cucumbers, with their progressive interiorization, we come to the madreporite with its definite interiorization and the constitution of the inner lymph-blood liquid.

I must thank you, my friends, for the patience with which you have listened to me. Despite all my efforts to be simple and clear, what I have told you is hard to follow. I can well understand the difficulty experienced by those who are not familiar with such studies, but this explanation is absolutely necessary to show you the seriousness of my work which leaves no place for phantasy.

As we ascend the biological tree, we reach an easier study: if many of you have never seen a Radiolarium or a sea-cucumber, oysters and leeches are known to you all. We shall now undertake the study of worms and molluscs.

This study is far pleasanter, but it is also more delicate. I have already told you that the function creates not only the organs but also the organisms. This is rigorously true, and you should now be able to guess the function which has created and which dominates each animal group. That of the worms is obvious. What could be the dominating function of an organism where all is sacrificed to reproduction! In some, in the *Taenia* or tapeworm, there is no circulatory system, no

respiratory or digestive organs, no sensory organs; the testicles occupy the whole of the body, and in some (the Diplozoa) the mating act lasts the whole of their lives.

In the Echiuroids, locomotion is carried out by alternative movements of invagination and of de-vagination of the trunk, a backwards and forwards movement as in coition. Others, the Acantocephala, individualize the ejaculation in which the whole body takes part. In the Medina worm, the male penetrates the body of the female while coupling. The Chaetognatha have a complete prepuce with its frenum, and the Balanoglossus has an actual glans. The leech advances with a complete locomotive erection. We have yet to mention the Phymosoma and the Phallosoma, etc., but these examples are surely sufficient.

In this group let us admire the graceful sessile worm which constantly lives within tubes which it secretes or makes—hence its name Tubicoles (angercherish); they cherish the tube, the sheath.

The serpulids (Spirorbis) have their sheath twisted in a spiral, which shape roughly suggests the outlines of the mollusc.

In the peacock-worms (Sabella) or the elegant Spirographs the sheath is still membranous; only their branchia are in spiral form. As we see this animal which is hardly a worm any longer, but which is not yet a mollusc, *enter and come out of its sheath*, accomplishing a constant movement of interiorization and exteriorization, we cannot help marvelling at the greatness and variation of nature, with its underlying simplicity, which will draw the mollusc type from the sheath within which the worm is moving.

The mollusc group corresponds to the female reproductive function.

Some scientists might object that the characteristic simplification of these animals is due to their parasitic mode of life. To this I answer that parasitism—apart from its genital characteristics—could never alone explain morphology as we have studied it and as we shall still study it. Certain features still remain to be explained. When we study the reproductive function we must hear in mind the fundamental karyokinetic bi-

polar emigration those elements which are not at the bottom—the suckers of worms, for instance—are to be found at the top, the mouth-sucker. The modifications of the hair on the face prove the relationship confirmed by experimental castration of the upper sexual characteristics.

The shape of the octopus is that of the uterus and of its appendages. We need not stop to consider the Venus and Lucina octopus, where the correspondence is obvious, but let us note the modesty of the Argonaut. Emotion makes this graceful animal blush and go pale, and by *polar reaction* it is the upper part of the body which reproduces the same trouble, especially in women.

By the same law we have in our mouth that row of pearls which are our teeth; mother-of-pearl with the same histological structure is only to be found in molluscs.

We should also turn our attention to ear-shaped shells, such as Haliotic and Stomatides, whose resemblance to ears has struck many writers. The gills of the Lamellidae are recognizable in the Eustachian tubes, and in the inner ear the cochlea and the spiral canals show us that the mollusc element remains in evidence.

The formation of the ovum has a quite particular characteristic during the cell division which creates the final ovum, small abortive cells are produced, called the polar bodies. The final ovum therefore contains only half the nuclear structure of the normal cell. It is strange to find a similar atrophy of half the body in certain molluscs, which is shown in their coil-formation. The origin of the vertebrate is not a worm turned upside down, but a worm twisted in a spiral. This twist is maintained higher up in the biological tree, but is interiorized. In the human embryo it occurs in the third month, and thrusts the liver to the right and the heart to the left, turning the limbs so that the head faces to the front, while the buttocks are at the back, with the limbs folding in the opposite direction.

I am forced to tell you all this at great speed, for time is passing. I have already been far too long, and will finish rapidly.

When you eat fish, be very careful, for its function may

cause you some inconvenience. It is a skeleton served by organs: it individualizes the bony functions. One hundred and fifty years ago Oken was already calling them the Osseous creatures.

The Batrachia are dominated by the cutaneous, skin, functions. The whole physiology of the frog shows it to be a skin, served by organs, and you can be certain that sun baths give it more pleasure than they could ever give you.

Much could be said on the group of reptiles dominated by the digestive function. Look at the boa: here we have the apotheosis of digestion. The poison and the morphology of serpents are so characteristic that we might be tempted to believe that we have an actual reptile coiled up within our abdomen.

I believe you have also perceived the creative function of the bird group, but I would like you to realize that this is no matter of appearance or of approximation. The respiratory function truly governs bird life, more than you would ever suspect. Without going into details, I can just tell you this: that the prolongations of the lungs in the bird are so great that they practically fill its whole body.

In man the respiratory function, the interiorized bird function, begins with the nostrils, and descends to the alveoli of the lungs. A median cut through the body would reveal from the nose to the diaphragm the rough shape of a bird: the beak corresponding to the nose, and the skull of the bird being in the nasal cavities.

The physiology of the lobster shows with staggering clarity how the function of the limbs dominates the crustaceans. It is not for nothing that you can admire at the fishmonger's those enormous claws which really represent the whole of the crustacean's life.

In mammals we must chiefly seek psychic functions, those creative of order. Spiders and insects are created by the sympathetic nervous functions, and in my book "Après Darwin" examples can be found, explaining the identity between the amazing life of bees and of butterflies, and our inner cellular metabolism.

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of manifestations of chronic diseases which can be traced to venereal diseases, as distinguished from *Itch* and *Leprosy*.

Whatever might have been asserted by the Master (and in Science no last word can be said by any Master), we are strongly of the opinion, from the experience of the various dependable Homœopathic authorities as well as our humble clinical experience, that diseases like Leprosy, Tuberculosis, Cancer etc. are not possible without a background of intimate combination of at least two or more often all the three classical miasms of Psora, Sycosis and Syphilis, and the sources may have to be traced to a few generations back. It is an irrefutable fact that diseases of this order cannot be treated without taking the back ground in careful view.

But, after all, these are inferential evidences. Further objective proof of all these facts require prolonged research in the line. That is one thing, but asserting that Leprosy and even Itch are venereal diseases seems to be making too easy generalisation, leading to various fallacies including temptation of specifics.

J. N. K.

THE BIOLOGICAL PLAN

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Ladies and Gentlemen, I hope that I have made clear to you the Biological Plan. You cannot question its importance and utility, not only philosophically and religiously, but also practically and medically. One of my life's dreams is to have a zootherapeutical laboratory for studying the use of certain animals in the curing of certain diseases. I have made a slight beginning with the blood of certain birds which has enabled me to cure certain lung illnesses.

To sum up: life appears as an infinity of melodies, constantly played both in space and deeply within our own bodies. But these melodies all have the same rhythm, and are part of one marvellous harmony, one immense sympathy, which unite in a single, unique and divine note. . . .

—*The Brit. Homœo. Journl., Oct. '59.*