

# CREATIVE EVOLUTION

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From this point of view, the general considerations we have presented concerning the evolution of life will be cleared up and completed. We will distinguish more sharply what is accidental from what is essential in this evolution.

The impetus of life, of which we are speaking, consists in a need of creation. It cannot create absolutely, because it is confronted with matter, that is to say with the movement that is the inverse of its own. But it seizes upon this matter, which is necessity itself, and strives to introduce into it the largest possible amount of indetermination and liberty. How does it go to work?

An animal high in the scale may be represented in a general way, we said, as a sensori-motor nervous system imposed on digestive, respiratory, circulatory systems, etc. The function of these latter is to cleanse, repair and protect the nervous system, to make it as independent as possible of external circumstances, but, above all, to furnish it with energy to be expended in movements. The increasing complexity of the organism is therefore due theoretically (in spite of innumerable exceptions due to accidents of evolution) to the necessity of complexity in the nervous system. No doubt, each complication of any part of the organism involves many others in addition, because this part itself must live, and every change

in one point of the body reverberates, as it were, throughout. The complication may therefore go on to infinity in all directions; but it is the complication of the nervous system which conditions the others in right, if not always in fact. Now, in what does the progress of the nervous system itself consist? In a simultaneous development of automatic activity and of voluntary activity, the first furnishing the second with an appropriate instrument. Thus, in an organism such as ours, a considerable number of motor mechanisms are set up in the medulla and in the spinal cord, awaiting only a signal to release the corresponding act: the will is employed, in some cases, in setting up the mechanism itself, and in the others in choosing the mechanisms to be released, the manner of combining them and the moment of releasing them. The will of an animal is the more effective and the more intense, the greater the number of the mechanisms it can choose from, the more complicated the switchboard on which all the motor paths cross, or, in other words, the more developed its brain. Thus, the progress of the nervous system assures to the act increasing precision, increasing variety, increasing efficiency and independence. The organism behaves more and more like a machine for action, which reconstructs itself entirely for every new act, as if it were made of india-rubber and could, at any moment, change the shape of all its parts. But, prior to the nervous system, prior even to the organism properly so called, already in the undifferentiated mass of the amoeba, this essential property of animal life is found. The amoeba deforms itself in varying directions; its entire mass does what the differentiation of parts will localize in a sensorimotor system in the developed animal. Doing it only in a rudimentary manner, it is dispensed from the complexity of the higher organisms; there is no need here of

the auxiliary elements that pass on to motor elements the energy to expend; the animal moves as a whole, and, as a whole also, procures energy by means of the organic substances it assimilates. Thus, whether low or high in the animal scale, we always find that animal life consists (1) in procuring a provision of energy; (2) in expending it, by means of a matter as supple as possible, in directions variable and unforeseen.

Now, whence comes the energy? From the ingested food, for food is a kind of explosive, which needs only the spark to discharge the energy it stores. Who has made this explosive? The food may be the flesh of an animal nourished on animals and so on; but, in the end it is to the vegetable we always come back. Vegetables alone gather in the solar energy, and the animals do but borrow it from them, either directly or by some passing it on to others. How then has the plant stored up this energy? Chiefly by the chlorophyllian function, a chemicism *sui generis* of which we do not possess the key, and which is probably unlike that of our laboratories. The process consists in using solar energy to fix the carbon of carbonic acid, and thereby to store this energy as we should store that of a water-carrier by employing him to fill an elevated reservoir: the water, once brought up, can set in motion a mill or a turbine, as we will and when we will. Each atom of carbon fixed represents something like the elevation of the weight of water, or like the stretching of an elastic thread uniting the carbon to the oxygen in the carbonic acid. The elastic is relaxed, the weight falls back again, in short the energy held in reserve is restored, when, by a simple release, the carbon is permitted to rejoin its oxygen.

So that all life, animal and vegetable, seems in its essence like an effort to accumulate energy and then to let it



flow into flexible channels, changeable in shape, at the end of which it will accomplish infinitely varied kinds of work. That is what the *vital impetus*, passing through matter, would fain do all at once. It would succeed, no doubt, if its power were unlimited, or if some reinforcement could come to it from without. But the impetus is finite, and it has been given once for all. It cannot overcome all obstacles. The movement it starts is sometimes turned aside, sometimes divided, always opposed; and the evolution of the organized world is the unrolling of this conflict. The first great scission that had to be effected was that of the two kingdoms, vegetable and animal, which thus happen to be mutually complementary, without, however, any agreement having been made between them. It is not for the animal that the plant accumulates energy, it is for its own consumption; but its expenditure on itself is less discontinuous, and less concentrated, and therefore less efficacious, than was required by the initial impetus of life, essentially directed toward free actions: the same organism could not with equal force sustain the two functions at once, of gradual storage and sudden use. Of themselves, therefore, and without any external intervention, simply by the effect of the duality of the tendency involved in the original impetus and of the resistance opposed by matter to this impetus, the organisms leaned some in the first direction, others in the second. To this scission there succeeded many others. Hence the diverging lines of evolution, at least what is essential in them. But we must take into account retrogressions, arrests, accidents of every kind. And we must remember, above all, that each species behaves as if the general movement of life stopped at it instead of passing through it. It thinks only of itself, it lives only for itself. Hence the numberless struggles

that we behold in nature. Hence a discord, striking and terrible, but for which the original principle of life must not be held responsible.

The part played by contingency in evolution is therefore great. Contingent, generally, are the forms adopted, or rather invented. Contingent, relative to the obstacles encountered in a given place and at a given moment, is the dissociation of the primordial tendency into such and such complementary tendencies which create divergent lines of evolution. Contingent the arrests and set-backs; contingent, in large measure, the adaptations. Two things only are necessary: (1) a gradual accumulation of energy; (2) an elastic canalization of this energy in variable and indeterminable directions, at the end of which are free acts.

This twofold result has been obtained in a particular way on our planet. But it might have been obtained by entirely different means. It was not necessary that life should fix its choice mainly upon the carbon of carbonic acid. What was essential for it was to store solar energy; but, instead of asking the sun to separate, for instance, atoms of oxygen and carbon, it might (theoretically at least, and, apart from practical difficulties possibly insurmountable) have put forth other chemical elements, which would then have had to be associated or dissociated by entirely different physical means. And if the element characteristic of the substances that supply energy to the organism had been other than carbon, the element characteristic of the plastic substances would probably have been other than nitrogen, and the chemistry of living bodies would then have been radically different from what it is. The result would have been living forms without any analogy to those we know, whose anatomy would have been different, whose physiology also would have been

different. Alone, the sensori-motor function would have been preserved, if not in its mechanism, at least in its effects. It is therefore probable that life goes on in other planets, in other solar systems also, under forms of which we have no idea, in physical conditions to which it seems to us, from the point of view of our physiology, to be absolutely opposed. If its essential aim is to catch up usable energy in order to expend it in explosive actions, it probably chooses, in each solar system and on each planet, as it does on the earth, the fittest means to get this result in the circumstances with which it is confronted. That is at least what reasoning by analogy leads to, and we use analogy the wrong way when we declare life to be impossible wherever the circumstances with which it is confronted are other than those on the earth. The truth is that life is possible wherever energy descends the incline indicated by Carnot's law and where a cause of inverse direction can retard the descent—that is to say, probably, in all the worlds suspended from all the stars. We go further: it is not even necessary that life should be concentrated and determined in organisms properly so called, that is, in definite bodies presenting to the flow of energy ready-made though elastic canals. It can be conceived (although it can hardly be imagined) that energy might be saved up, and then expended on varying lines running across a matter not yet solidified. Every essential of life would still be there, since there would still be slow accumulation of energy and sudden release. There would hardly be more difference between this vitality, vague and formless, and the definite vitality we know, than there is, in our psychical life, between the state of dream and the state of waking. Such may have been the condition of life in our nebula before the condensation of matter was complete, if it be true that life springs forward

at the very moment when, as the effect of an inverse movement, the nebular matter appears.

It is therefore conceivable that life might have assumed a totally different outward appearance and designed forms very different from those we know. With another chemical substratum, in other physical conditions, the impulsion would have remained the same, but it would have split up very differently in course of progress; and the whole would have traveled another road—whether shorter or longer who can tell? In any case, in the entire series of living beings no term would have been what it now is. Now, was it necessary that there should be a series, or terms? Why should not the unique impetus have been impressed on a unique body, which might have gone on evolving?

This question arises, no doubt, from the comparison of life to an impetus. And it must be compared to an impetus, because no image borrowed from the physical world can give more nearly the idea of it. But it is only an image. In reality, life is of the psychological order, and it is of the essence of the psychical to enfold a confused plurality of interpenetrating terms. In space, and in space only, is distinct multiplicity possible: a point is absolutely external to another point. But pure and empty unity, also, is met with only in space; it is that of a mathematical point. Abstract unity and abstract multiplicity are determinations of space or categories of the understanding, whichever we will, spatiality and intellectuality being molded on each other. But what is of psychical nature cannot entirely correspond with space, nor enter perfectly into the categories of the understanding. Is my own person, at a given moment, one or manifold? If I declare it one, inner voices arise and protest—those of the sensations, feelings, ideas, among which my in-



dividuality is distributed. But, if I make it distinctly manifold, my consciousness rebels quite as strongly; it affirms that my sensations, my feelings, my thoughts are abstractions which I effect on myself, and that each of my states implies all the others. I am then (we must adopt the language of the understanding, since only the understanding has a language) a unity that is multiple and a multiplicity that is one;<sup>1</sup> but unity and multiplicity are only views of my personality taken by an understanding that directs its categories at me; I enter neither into one nor into the other nor into both at once, although both, united, may give a fair imitation of the mutual interpenetration and continuity that I find at the base of my own self. Such is my inner life, and such also is life in general. While, in its contact with matter, life is comparable to an impulsion or an impetus, regarded in itself it is an immensity of potentiality, a mutual encroachment of thousands and thousands of tendencies which nevertheless are "thousands and thousands" only when once regarded as outside of each other, that is, when spatialized. Contact with matter is what determines this dissociation. Matter divides actually what was but potentially manifold; and, in this sense, individuation is in part the work of matter, in part the result of life's own inclination. Thus, a poetic sentiment, which bursts into distinct verses, lines and words, may be said to have already contained this multiplicity of individuated elements, and yet, in fact, it is the materiality of language that creates it.

But through the words, lines and verses runs the simple inspiration which is the whole poem. So, among the

<sup>1</sup> We have dwelt on this point in an article entitled "Introduction à la métaphysique" (*Revue de métaphysique et de morale*, January, 1903, pp. 1-25).

dissociated individuals, one life goes on moving: everywhere the tendency to individualize is opposed and at the same time completed by an antagonistic and complementary tendency to associate, as if the manifold unity of life, drawn in the direction of multiplicity, made so much the more effort to withdraw itself on to itself. A part is no sooner detached than it tends to reunite itself, if not to all the rest, at least to what is nearest to it. Hence, throughout the whole realm of life, a balancing between individuation and association. Individuals join together into a society; but the society, as soon as formed, tends to melt the associated individuals into a new organism, so as to become itself an individual, able in its turn to be part and parcel of a new association. At the lowest degree of the scale of organisms we already find veritable associations, microbial colonies, and in these associations, according to a recent work, a tendency to individuate by the constitution of a nucleus.<sup>1</sup> The same tendency is met with again at a higher stage, in the protophytes, which, once having quitted the parent cell by way of division, remain united to each other by the gelatinous substance that surrounds them—also in those protozoa which begin by mingling their pseudopodia and end by welding themselves together. The "colonial" theory of the genesis of higher organisms is well known. The protozoa, consisting of one single cell, are supposed to have formed, by assemblage, aggregates which, relating themselves together in their turn, have given rise to aggregates of aggregates; so organisms more and more complicated, and also more and more differentiated, are born of the association of organisms barely differentiated and elementary.<sup>2</sup> In this extreme form, the

<sup>1</sup> Cf. a paper written (in Russian) by Serkovski, and reviewed in the *Année biologique*, 1898, p. 317.

<sup>2</sup> Ed. Perrier, *Les Colonies animales*, Paris, 1897 (2nd edition).

theory is open to grave objections: more and more the idea seems to be gaining ground, that polyzoism is an exceptional and abnormal fact.<sup>1</sup> But it is none the less true that things happen *as if* every higher organism was born of an association of cells that have subdivided the work between them. Very probably it is not the cells that have made the individual by means of association; it is rather the individual that has made the cells by means of dissociation.<sup>2</sup> But this itself reveals to us, in the genesis of the individual, a haunting of the social form, as if the individual could develop only on the condition that its substance should be split up into elements having themselves an appearance of individuality and united among themselves by an appearance of sociality. There are numerous cases in which nature seems to hesitate between the two forms, and to ask herself if she shall make a society or an individual. The slightest push is enough, then, to make the balance weigh on one side or the other. If we take an infusorian sufficiently large, such as the Stentor, and cut it into two halves each containing a part of the nucleus, each of the two halves will generate an independent Stentor; but if we divide it incompletely, so that a protoplasmic communication is left between the two halves, we shall see them execute, each from its side, corresponding movements: so that in this case it is enough that a thread should be maintained or cut in order that life should affect the social or the individual form. Thus, in rudimentary organisms consisting of a single cell, we already find that the apparent individuality of the whole

<sup>1</sup> Delage, *L'Hérédité*, 2nd edition, Paris, 1903, p. 97. Cf. by the same author, "La Conception polyzoïque des êtres" (*Revue scientifique*, 1896, pp. 641-653).

<sup>2</sup> This is the theory maintained by Kunstler, Delage, Sedgwick, Labbé, etc. Its development, with bibliographical references, will be found in the work of Busquet, *Les êtres vivants*, Paris, 1899.

is the composition of an *undefined* number of potential individualities potentially associated. But, from top to bottom of the series of living beings, the same law is manifested. And it is this that we express when we say that unity and multiplicity are categories of inert matter, that the vital impetus is neither pure unity nor pure multiplicity, and that if the matter to which it communicates itself compels it to choose one of the two, its choice will never be definitive: it will leap from one to the other indefinitely. The evolution of life in the double direction of individuality and association has therefore nothing accidental about it: it is due to the very nature of life.

Essential also is the progress to reflexion. If our analysis is correct, it is consciousness, or rather supra-consciousness, that is at the origin of life. Consciousness, or supra-consciousness, is the name for the rocket whose extinguished fragments fall back as matter; consciousness, again, is the name for that which subsists of the rocket itself, passing through the fragments and lighting them up into organisms. But this consciousness, which is a *need of creation*, is made manifest to itself only where creation is possible. It lies dormant when life is condemned to automatism; it awakens as soon as the possibility of a choice is restored. That is why, in organisms unprovided with a nervous system, it varies according to the power of locomotion and of deformation of which the organism disposes. And in animals with a nervous system, it is proportional to the complexity of the switch-board on which the paths called sensory and the paths called motor intersect—that is, of the brain. How must this solidarity between the organism and consciousness be understood?

We will not dwell here on a point that we have dealt with in former works. Let us merely recall that a theory



such as that according to which consciousness is attached to certain neurons, and is thrown off from their work like a phosphorescence, may be accepted by the scientist for the detail of analysis; it is a convenient mode of expression. But it is nothing else. In reality, a living being is a centre of action. It represents a certain sum of contingency entering into the world, that is to say, a certain quantity of possible action—a quantity variable with individuals and especially with species. The nervous system of an animal marks out the flexible lines on which its action will run (although the potential energy is accumulated in the muscles rather than in the nervous system itself); its nervous centres indicate, by their development and their configuration, the more or less extended choice it will have among more or less numerous and complicated actions. Now, since the awakening of consciousness in a living creature is the more complete, the greater the latitude of choice allowed to it and the larger the amount of action bestowed upon it, it is clear that the development of consciousness will appear to be dependent on that of the nervous centres. On the other hand, every state of consciousness being, in one aspect of it, a question put to the motor activity and even the beginning of a reply, there is no psychical event that does not imply the entry into play of the cortical mechanisms. Everything seems, therefore, to happen *as if* consciousness sprang from the brain, and *as if* the detail of conscious activity were modeled on that of the cerebral activity. In reality, consciousness does not spring from the brain; but brain and consciousness correspond because equally they measure, the one by the complexity of its structure and the other by the intensity of its awareness, the quantity of *choice* that the living being has at its disposal.

It is precisely because a cerebral state expresses simply

what there is of nascent action in the corresponding psychical state, that the psychical state tells us more than the cerebral state. The consciousness of a living being, as we have tried to prove elsewhere, is inseparable from its brain in the sense in which a sharp knife is inseparable from its edge: the brain is the sharp edge by which consciousness cuts into the compact tissue of events, but the brain is no more coextensive with consciousness than the edge is with the knife. Thus, from the fact that two brains, like that of the ape and that of the man, are very much alike, we cannot conclude that the corresponding consciousnesses are comparable or commensurable.

But the two brains may perhaps be less alike than we suppose. How can we help being struck by the fact that, while man is capable of learning any sort of exercise, of constructing any sort of object, in short of acquiring any kind of motor habit whatsoever, the faculty of combining new movements is strictly limited in the best-endowed animal, even in the ape? The cerebral characteristic of man is there. The human brain is made, like every brain, to set up motor mechanisms and to enable us to choose among them, at any instant, the one we shall put in motion by the pull of a trigger. But it differs from other brains in this, that the number of mechanisms it can set up, and consequently the choice that it gives as to which among them shall be released, is unlimited. Now, from the limited to the unlimited there is all the distance between the closed and the open. It is not a difference of degree, but of kind.

Radical therefore, also, is the difference between animal consciousness, even the most intelligent, and human consciousness. For consciousness corresponds exactly to the living being's power of choice; it is co-extensive with the fringe of possible action that surrounds the real action:

consciousness is synonymous with invention and with freedom. Now, in the animal, invention is never anything but a variation on the theme of routine. Shut up in the habits of the species, it succeeds, no doubt, in enlarging them by its individual initiative; but it escapes automatism only for an instant, for just the time to create a new automatism. The gates of its prison close as soon as they are opened; by pulling at its chain it succeeds only in stretching it. With man, consciousness breaks the chain. In man, and in man alone, it sets itself free. The whole history of life until man has been that of the effort of consciousness to raise matter, and of the more or less complete overwhelming of consciousness by the matter which has fallen back on it. The enterprise was paradoxical, if, indeed, we may speak here otherwise than by metaphor of enterprise and of effort. It was to create with matter, which is necessity itself, an instrument of freedom, to make a machine which should triumph over mechanism, and to use the determinism of nature to pass through the meshes of the net which this very determinism had spread. But, everywhere except in man, consciousness has let itself be caught in the net whose meshes it tried to pass through: it has remained the captive of the mechanisms it has set up. Automatism, which it tries to draw in the direction of freedom, winds about it and drags it down. It has not the power to escape, because the energy it has provided for acts is almost all employed in maintaining the infinitely subtle and essentially unstable equilibrium into which it has brought matter. But man not only maintains his machine, he succeeds in using it as he pleases. Doubtless he owes this to the superiority of his brain, which enables him to build an unlimited number of motor mechanisms, to oppose new habits to the old ones unceasingly, and, by dividing automatism against

itself, to rule it. He owes it to his language, which furnishes consciousness with an immaterial body in which to incarnate itself and thus exempts it from dwelling exclusively on material bodies, whose flux would soon drag it along and finally swallow it up. He owes it to social life, which stores and preserves efforts as language stores thought, fixes thereby a mean level to which individuals must raise themselves at the outset, and by this initial stimulation prevents the average man from slumbering and drives the superior man to mount still higher. But our brain, our society, and our language are only the external and various signs of one and the same internal superiority. They tell, each after its manner, the unique, exceptional success which life has won at a given moment of its evolution. They express the difference of kind, and not only of degree, which separates man from the rest of the animal world. They let us guess that, while at the end of the vast spring-board from which life has taken its leap, all the others have stepped down, finding the cord stretched too high, man alone has cleared the obstacle.

It is in this quite special sense that man is the "term" and the "end" of evolution. Life, we have said, transcends finality as it transcends the other categories. It is essentially a current sent through matter, drawing from it what it can. There has not, therefore, properly speaking, been any project or plan. On the other hand, it is abundantly evident that the rest of nature is not for the sake of man: we struggle like the other species, we have struggled against other species. Moreover, if the evolution of life had encountered other accidents in its course, if, thereby, the current of life had been otherwise divided, we should have been, physically and morally, far different from what we are. For these various reasons it would be wrong to regard humanity, such as we have it before our eyes, as



pre-figured in the evolutionary movement. It cannot even be said to be the outcome of the whole of evolution, for evolution has been accomplished on several divergent lines, and while the human species is at the end of one of them, other lines have been followed with other species at their end. It is in a quite different sense that we hold humanity to be the ground of evolution.

From our point of view, life appears in its entirety as an immense wave which, starting from a centre, spreads outwards, and which on almost the whole of its circumference is stopped and converted into oscillation: at one single point the obstacle has been forced, the impulsion has passed freely. It is this freedom that the human form registers. Everywhere but in man, consciousness has had to come to a stand; in man alone it has kept on its way. Man, then, continues the vital movement indefinitely, although he does not draw along with him all that life carries in itself. On other lines of evolution there have traveled other tendencies which life implied, and of which, since everything interpenetrates, man has, doubtless, kept something, but of which he has kept only very little. *It is as if a vague and formless being, whom we may call, as we will, man or superman, had sought to realize himself, and had succeeded only by abandoning a part of himself on the way.* The losses are represented by the rest of the animal world, and even by the vegetable world, at least in what these have that is positive and above the accidents of evolution.

From this point of view, the discordances of which nature offers us the spectacle are singularly weakened. The organized world as a whole becomes as the soil on which was to grow either man himself or a being who morally must resemble him. The animals, however distant they may be from our species, however hostile

to it, have none the less been useful traveling companions, on whom consciousness has unloaded whatever encumbrances it was dragging along, and who have enabled it to rise, in man, to heights from which it sees an unlimited horizon open again before it.

It is true that it has not only abandoned cumbersome baggage on the way; it has also had to give up valuable goods. Consciousness, in man, is pre-eminently intellect. It might have been, it ought, so it seems, to have been also intuition. Intuition and intellect represent two opposite directions of the work of consciousness: intuition goes in the very direction of life, intellect goes in the inverse direction, and thus finds itself naturally in accordance with the movement of matter. A complete and perfect humanity would be that in which these two forms of conscious activity should attain their full development. And, between this humanity and ours, we may conceive any number of possible stages, corresponding to all the degrees imaginable of intelligence and of intuition. In this lies the part of contingency in the mental structure of our species. A different evolution might have led to a humanity either more intellectual still or more intuitive. In the humanity of which we are a part, intuition is, in fact, almost completely sacrificed to intellect. It seems that to conquer matter, and to reconquer its own self, consciousness has had to exhaust the best part of its power. This conquest, in the particular conditions in which it has been accomplished, has required that consciousness should adapt itself to the habits of matter and concentrate all its attention on them, in fact determine itself more especially as intellect. Intuition is there, however, but vague and above all discontinuous. It is a lamp almost extinguished, which only glimmers now and then, for a few moments at most. But it glimmers wherever a vital

interest is at stake. On our personality, on our liberty, on the place we occupy in the whole of nature, on our origin and perhaps also on our destiny, it throws a light feeble and vacillating, but which none the less pierces the darkness of the night in which the intellect leaves us.

These fleeting intuitions, which light up their object only at distant intervals, philosophy ought to seize, first to sustain them, then to expand them and so unite them together. The more it advances in this work, the more will it perceive that intuition is mind itself, and, in a certain sense, life itself: the intellect has been cut out of it by a process resembling that which has generated matter. Thus is revealed the unity of the spiritual life. We recognize it only when we place ourselves in intuition in order to go from intuition to the intellect, for from the intellect we shall never pass to intuition.

Philosophy introduces us thus into the spiritual life. And it shows us at the same time the relation of the life of the spirit to that of the body. The great error of the doctrines on the spirit has been the idea that by isolating the spiritual life from all the rest, by suspending it in space as high as possible above the earth, they were placing it beyond attack, as if they were not thereby simply exposing it to be taken as an effect of mirage! Certainly they are right to listen to conscience when conscience affirms human freedom; but the intellect is there, which says that the cause determines its effect, that like conditions like, that all is repeated and that all is given. They are right to believe in the absolute reality of the person and in his independence toward matter; but science is there, which shows the interdependence of conscious life and cerebral activity. They are right to attribute to man a privileged place in nature, to hold that the distance is infinite between the animal and man; but the history of life is there,

which makes us witness the genesis of species by gradual transformation, and seems thus to reintegrate man in animality. When a strong instinct assures the probability of personal survival, they are right not to close their ears to its voice; but if there exist "souls" capable of an independent life, whence do they come? When, how and why do they enter into this body which we see arise, quite naturally, from a mixed cell derived from the bodies of its two parents? All these questions will remain unanswered, a philosophy of intuition will be a negation of science, will be sooner or later swept away by science, if it does not resolve to see the life of the body just where it really is, on the road that leads to the life of the spirit. But it will then no longer have to do with definite living beings. Life as a whole, from the initial impulsion that thrust it into the world, will appear as a wave which rises, and which is opposed by the descending movement of matter. On the greater part of its surface, at different heights, the current is converted by matter into a vortex. At one point alone it passes freely, dragging with it the obstacle which will weigh on its progress but will not stop it. At this point is humanity; it is our privileged situation. On the other hand, this rising wave is consciousness, and, like all consciousness, it includes potentialities without number which interpenetrate and to which consequently neither the category of unity nor that of multiplicity is appropriate, made as they both are for inert matter. The matter that it bears along with it, and in the interstices of which it inserts itself, alone can divide it into distinct individualities. On flows the current, running through human generations, subdividing itself into individuals. This subdivision was vaguely indicated in it, but could not have been made clear without matter. Thus souls are continually being created, which, never-



theless, in a certain sense pre-existed. They are nothing else than the little rills into which the great river of life divides itself, flowing through the body of humanity. The movement of the stream is distinct from the river bed, although it must adopt its winding course. Consciousness is distinct from the organism it animates, although it must undergo its vicissitudes. As the possible actions which a state of consciousness indicates are at every instant beginning to be carried out in the nervous centres, the brain underlies at every instant the motor indications of the state of consciousness; but the interdependency of consciousness and brain is limited to this; the destiny of consciousness is not bound up on that account with the destiny of cerebral matter. Finally, consciousness is essentially free; it is freedom itself; but it cannot pass through matter without settling on it, without adapting itself to it: this adaptation is what we call intellectuality; and the intellect, turning itself back toward active, that is to say free, consciousness, naturally makes it enter into the conceptual forms into which it is accustomed to see matter fit. It will therefore always perceive freedom in the form of necessity; it will always neglect the part of novelty or of creation inherent in the free act; it will always substitute for action itself an imitation artificial, approximative, obtained by compounding the old with the old and the same with the same. Thus, to the eyes of a philosophy that attempts to reabsorb intellect in intuition, many difficulties vanish or become light. But such a doctrine does not only facilitate speculation; it gives us also more power to act and to live. For, with it, we feel ourselves no longer isolated in humanity, humanity no longer seems isolated in the nature that it dominates. As the smallest grain of dust is bound up with our entire solar system, drawn along with it in that undivided move-

ment of descent which is materiality itself, so all organized beings, from the humblest to the highest, from the first origins of life to the time in which we are, and in all places as in all times, do but evidence a single impulsion, the inverse of the movement of matter, and in itself indivisible. All the living hold together, and all yield to the same tremendous push. The animal takes its stand on the plant, man bestrides animality, and the whole of humanity, in space and in time, is one immense army galloping beside and before and behind each of us in an overwhelming charge able to beat down every resistance and clear the most formidable obstacles, perhaps even death.