DUAL EVOLUTION

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BEING OUTLINES IN A THEORY WHICH IS THOUGHT TO RECONCILE IDEALISM AND REALISM FROM THE VIEW-POINT OF HUMANISM

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LONDON

G. BELL AND SONS, LTD.

1921

Philosophy - Alumnus.

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DUAL EVOLUTION

BOOK I

INTRODUCTION

CHAPTER I

THE ACTIVITIES OF PHILOSOPHY ARE IMPLICIT IN THAT WHOLE WE CALL REALITY

As the attempt to give form and expression to a theory of things, philosophy is essentially concerned with practical life. As a search for general principles which may be expressed and co-ordinated, it is compelled, no doubt, to shape its activities on lines that seem to have little contact with ordinary life; but if it is to be effective—if it is one day to claim the general interest and to deserve recognition as a real part in that life of which it is an effort—the aloofness must be confined to manner at the most. Its terms must stand for real things which may be estimated, valued, and deferred to, and its general conclusions must not be such as life may disregard. Just as chemical theory must recognisably infuse, explain, and to a large extent guide the activities of the chemist in his concrete work, so must philosophical theory, if it is to justify itself, intimately and directly inform practical life. For, while chemical theory concerns itself with a specialised human activity, philosophy cannot be divorced from a transforming contact with human activity as a whole.

The husbandman and the mechanic—their daily toil directed to proximate end and purpose—must be a concern of philosophy. Nor can the husbandman and the mechanic, even though they may have neither conception of nor interest in Idealism, Realism, Empiricism, Pragmatism, or any of the rival schools, be really unconcerned with philosophy.

Man, at least, has some dim formula he places below the things that were, that happen, and that impend; and under some form—religion or the generalisations of common sense—he has a theory of things. Accepting it, and living it rather than expressing it, he may, unless he can be forced into definition and expression, deny the possession of anything so fanciful as a general theory. It is there, nevertheless; and however close it may be to implicit acquiescence in a particular social view-point, it has its little marginal stresses and eccentricities. If not moving towards the explicit, it is recognisably so poised as to admit, under due stimulus, of movement into every activity of thought and analysis that interests philosophy. The philosopher is not a bearded lady. He is latent in the field, the workshop, and the market-place; and the less he is, as a particular man, divorced from these common gathering-grounds of humanity, the less are his theories likely to be manipulations of what never was nor ever can be outside the realms of pure fancy.

It does not follow that the husbandman or the mechanic can be moved to take an explicit interest in philosophy. These men, in the now of each—in their present intimate and personal relations to the world and life—are in each case the moving edge of a particular history. Their interests, their purposes, their thoughts, and their concrete efforts, have a definite orientation; and this orientation resists change as stubbornly as that of the philosopher. It does follow, however, that philosophy is implicit in the husbandman and the mechanic, that it is always a possible activity, and that it is, by inclusion, implicit in that wholeness of reality of which they are a part. On the adequate recognition of this fact the present effort justifies itself; and, indeed, bases its appeal for consideration.

Practical life is a term any man may use, but the recognitions it describes vary from man to man and mood to mood. As used above, the choice has been to expand its limits to the utmost they may hold—and there is no effort of the living necessarily outside its boundaries—and thus to

emphasise it as implying a unity in the real which centres wherever there is life. Nothing in the common heritage and effort of the human race, as it seeks to know itself in art or life, through any channel of expression, through any particularity of emotion or intellect, ought to be outside the perspective from which it is sought to understand and explain; and to understand and explain is always an interest of practical life. It is the supreme interest of philosophy. It is, in fact, the definition of philosophy, provided it be supplemented by some delimitation of the "what" which it is intended to understand and explain; and this delimitation is best furnished by this term "practical life" so extended. The province of philosophy is thus life in itself and in all its contacts up to those marginal pressures whose ebb and flow barely touch the distinguishable. It cannot, therefore, admit info its effort any device of intellect which hides the poverty of expression as posed against the full background of what we seek to express, nor any symbol which stands for a fancy or an unreality. Devices of intellect are legitimate where they help us to understand or explain. Practical life is rarely concerned in testing the symbols they furnish by any test other than proved utility. Philosophy, however, is by its aims forced to measure these symbols by the exactness of their correspondence with the real.

From this point of view there is a natural criticism of philosophic effort. Wherever that effort reduces to an illusion, outside its full consideration, anything recognisably in the perspective of practical life, the development must be criticised as one which, in following the autonomous and the self-created, has moved into a by-way, and so, however intellectually defensible and consistent in itself, abandoned reality and that implicit philosophy which moves through life towards the explicit. A system elaborated on a basis of the purely imaginary may be admirable in itself and may simulate philosophy; but manifestly philosophy, as the understanding and explanation whose perspective is in practical life, must base itself always on the demon-

strably real. Philosophy must, therefore, beware of the expression which fails to coincide with something that is recognisably a part or aspect of the real, or resists being pressed back into organic union through the recognisable it represents with the complex out of which it has arisen. It must also beware of the mental inertia that, involved in a system of symbolisation, refuses to consider the recognisable which evades its habits of expression.

All contact with the real is accepted from an individual point of view and involves two recognitions—a wholeness uniting all experience, and particularities which distinguish and emphasise the wholeness. The particularity which we call a self is the particularity that is interested in philosophy; and this very interest implies the wholeness which, with its particularities, interests, and the particularity which is interested. This implication is a fact which constrains acceptance. No analysis of intellect is necessary to its justification nor effective in its dissolution. In experience we have a fullness which we cannot escape. There is always the background against which the experience is posed and from which, recognisably, it is but imperfectly isolated. We cannot, while we seek for ultimates, escape this inexhaustible background, nor fail to recognise its capacity to yield us innumerable particularities, each of which may be pressed towards a more and more detailed rendering of its distinguishable elements. In other words, there is a natural process of analysis in which we move from vague acceptance to definite separable recognitions culminating, under social pressure and need, in expression. But, demonstrably, expression is symbolically rather than exhaustively descriptive. In relation to thought it has a degree of inadequacy corresponding to the relation of thought to the recognition, of the recognition to the particularity, and of the particularity to the wholeness out of which it has arisen. In practical life there are limits to this inadequacy defined by utility and purpose; and efficiency often demands that its existence should be forgotten. Philosophy, aiming at a utility that is ultimate, and holding to its purpose of an understanding

that reaches to the irreducible, must always spur its efforts by an ever-present sense of this inadequacy. Only thus can it escape the snares of an intellect whose natural trend is to revolve in unreal complexities which symbolise, but neither describe nor explain anything that is real.

Expression, where intellect shapes and judges it, is seldom used with an appreciation of this inadequacy. It is accepted as a thing organic and complete in itself rather than as a symbol serving the social utility of suggestion and the individual utility of recall. This may not matter even in science, as it certainly does not matter where the proximate ends of ordinary life dealing with the material are concerned, but it is necessarily of the utmost moment where we aim at understanding reality in its wholeness or in the fullness of any of its particularities. To ignore it here makes possible conclusions which, although reached by paths that are rigidly logical, are yet ridiculous in the light of facts which cannot be denied. In Zeno's paradox, Achilles cannot overtake the tortoise!

The painter is a particularity. In his picture he aims at the expression of a singularity of seeing that is individual, and is, in its individuality, suffused by emotional appeal. His activity aiming at expression is the now of a particular history, and behind it is the functional constraint of all that history has brought to definiteness in himself. His technical skill; his sensory equipment as modified by use and purpose; his memories as organised behind prevision and action; the system of values in relation to which he forms his instinctive judgments; his aptitudes of emotion; his habits and aptitudes of thought where it is the thought and reflection that is in unity with life; his habits and aptitudes of intellect where it abstracts, constructs imaginaries, and manipulates them into conceptions that have a reality apart from experience and life; the concrete facts of his personal history; his felt philosophy and, if any, his expressed philosophy—all are operative in the conception of what he desires to paint, and effective to varying degrees in individualising the picture he paints. The painter, in his

fullness as a particularity, cannot be set apart from the problems of philosophy. To formulate general principles which explain his emergence out of a past that knew him not, and show it to be an event possible and in accordance with the natural progressions of reality, is one way of posing the whole purpose of philosophy. The purpose so posed, so made to centre on a definite, recognisable, and irreducible particularity, constrains the method. The painter is a result of natural activities—a result, a thing built, or made, or produced, or yielded—not a resultant necessarily, for to name him this would be to assume the mechanism which makes all things present the eternal consequent of all things antecedent. Explanation is also a thing which emerges, and emerges out of contacts between selves and that which it is sought to explain. It invites failure whenever the contact wanders into the irrelevant. Philosophy, as explanation, should therefore cling stubbornly to realities, ever testing its efforts by the measures of the actual.

If, then, a philosophy is educed which tells us that the now of this painter is merely the division between an infinity of equivalences on one side and an infinity of equivalences on the other side, and that these infinities are so related as to form a continuity of discernible progressions which the intellect, in its last analysis, can pursue in either direction with equal understanding and equally acceptable descriptions, we can ask it to face a simple test. Is the now of this painter nothing but the recognition of a possible rearrangement out of an infinity of rearrangements of which it is one? Refusing to quit that standpoint which is one with life, do we not know, with a knowledge which no efforts of intellect can really reduce to illusion, that this now is not the equivalent of that now and the other now between which it is poised? Do we not know, further, that this now has on one side of it a now poorer in content, and on the other side a now richer in content than itself. Have we not, therefore, implicit in ourselves the possibility of a natural activity of thought which, concerning itself directly with a simple aspect of our everyday realities, is capable of

at once discerning that, while this philosophy may be an ingenious phantasy, it can afford us no adequate explanation of reality? Reason, which is another name for that common sense which in practical life is ever ready to drag intellect back into contact with realities, knows that this progression out of which we accept the now, is, in the particular case of the painter, a progression of realities wherein the thing that concerns philosophy is not the dynamical equivalences of the material world, but that germ of transcendence the living past always so clearly holds.

We may cause oxygen and hydrogen in definite proportions to combine and form water. This resulting water we may break up, and obtain the original and separate oxygen and hydrogen. We may again combine this oxygen and hydrogen and obtain water, and repeat, theoretically, the processes of association and dissociation indefinitely. If intellect interprets these progressions as equivalences which may be followed and described in either direction with equal interest, reason need not object. It may even sympathise with intellect as it strives for an extended progression in which it may trace, and control, and pursue with observation in either direction the movement of submensurable elements through electron, atom, molecule, and colloid to the organised organic and back again to submensurable elements. At most it may force intellect to note some marginal fluidity where it is too eager to assume the entirely definite; but it is ready to acknowledge the validity of the ideal which intellect has constructed, and to accept it as an aid, an interpretation, a principle of construction, and a guarantee of fruitful effort in all the contacts of life with the particularity we call matter. It has never yet, however, accepted any of the dynamical ideals of intellect as a full explanation of reality as a whole. The reason has continually forced the intellect, when surest of the final co-ordinating principle, to return to fact and face the unexhausted residuum. Face to face with realities like the now of the painter, reason has shown the steady scorn of ultimate rejection for all and every intellectual

theory which deprived these recognitions of reality or content.

In the face of reality viewed from any standpoint within itself—that is, viewed from any real standpoint; for the standpoint of the purely logical intellect is indifferent to all reality outside the "reality" existent in the logical mirage which intellect constructs—indifferent mathematical time, with its infinite series of nows that have no duration, must give place to a conception that is a real generalisation. Duration that is real must displace time which the intellectual fancy has elaborated in realms of its own contriving. Duration is a succession of nows which hold events. Time is a succession of unrealities which may be symbolically expressed as instantaneous moments; but such moments, incapable of being a part of any concrete duration, and indifferent to all happenings, are manifestly constructions of a fancy that ignores the possible as well as the existent. Any philosophy, accepting this mathematical view of time as one of its logical counters in the effort to impose on life the fiction that its progression of nows that really matter is an illusion, is directly met by the denial of concrete fact. Life knows that there is a duration in which a particularity such as the painter accumulates, holds, develops, and becomes fuller and fuller of recognisable elements which no more admit of condensation into the pre-existing than his picture, which is a thousand pictures to a thousand observers, and a thousand to each in a thousand of their real nows, admits of exhaustive analysis in terms of mensurable units, as do his canvas and pigments. It may be conceded, with some slight reservation, that there could be such an analysis of his canvas and pigments. It is intellectually conceivable, and reason need pause only on its practicability. But the intellectual conception of such an analysis applied to the picture is seen to be impossible by that reason which will not quit or ignore the actual. The square of painted canvas is in itself a particularity of the inorganic world, but a square of painted canvas is not the picture. The picture is the canvas and the observer;

and the observer is a particularity momentarily to be distinguished from the innumerables of the living and the dead with whom he is in some connection, however tenuous. In the light of to-day there is the old picture, as to-morrow there will be the new picture. Each is, historically, in an unbroken progression from that now of the painter in which he first conceived it. Life knows, therefore, that it ever faces the new; that it functions through the now of the past that underlies the now of the present; and that no juggling of intellect with abstractions can reduce to illusion the concrete duration of events that progress to a future dependent on a past. Knowing this, it knows that the philosophy which is essentially a description and explanation of reality is a thing inherent in that reality, and can move therefrom only when and where the thought behind the philosophy is part of a true historical progression from the implicit through the recognisable to the explicit.

CHAPTER II

THE CLASSES OF SYMBOLS WHICH PHILOSOPHY, MOVING NATURALLY, MUST VALUE AND USE

In the last chapter it was suggested that we have a natural criticism of philosophy: so long as we refuse to abandon reality for abstractions which do not represent reality, or any definitely distinguishable aspect of, or particularity in reality, we are bound to see the radical defect in philosophies such as those which deny the facts of concrete duration by substituting therefor an ideal of the fancy.

Now, what exactly is this radical defect? The answer is clear while we refuse to quit our natural immersion in the real. In so refusing, we inevitably decline to accept an intellectual abstraction as actually existent because it seems logically an irreducible. In practical life we may accept its aid, but where that practical life seeks the ultimate explanation we inevitably test it by that natural movement wherein the reason, in dealing with any problem, clings to the actualities with which the problem is concerned. We may accept it if we are satisfied that it is really a separable in the body of reality, or a condensation holding fully all it should have carried with it of content and possibility in the effort to abstract. We accept it on real grounds, not because it is the solution, or one of the solutions, to a logical equation. Life has taught us that an abstraction easily glides into an unreality, and a condensation into a selection that excludes, and in addition, perhaps, imposes an illusion of rigidity where there is never more than an ideal limit serving to make more understandable and describable the ebb and flow of what is essentially fluidity. So long, therefore, as we cling to the natural habits of life in contact with the real, we refuse to divorce expression from that which we seek to express; and in matters ultimate, as well as in matters proximate, we are in a position to

dissolve the illusions with which intellect seeks to bemuse reason. We recognise, consequently, that the radical defect is an exaltation of intellect from the position of servant to that of master.

Intellect is a particularity which, in its natural activities, moves into a world of symbols. This does not in itself involve incapacity where philosophy is concerned, for there are symbols. Social life has bred the necessity in reply to which they have been formulated and used. Rose stands for all the roses that ever were or ever can be. It stands for an ideal rose imaginatively developed from concrete memories, or for an actual rose as seen by an actual man. Yet it stands for nothing permanent or separable. The rose of this moment is not, to an exhaustive analysis, the rose of the moment before, still less is it a definite singularity as seen by a hundred people from a hundred points of view in a hundred moments that are in nowise mathematical identities, and that represent functioning points in a hundred distinct historical developments of sense-capacity and conscious acceptance. It is, therefore, a symbol—that is, a name—for a class which is a class of human acceptances, not of intellectually definable identities, and it serves the social utility of recalling in some degree to any man a fact that is parallel to innumerable facts of the same order. Its failure to represent an absolute interferes in no way with its utility in ordinary life. The gardener, the rose-lover, the botanist, the chemist, the biologist, find it sufficient to its purpose. Where the philosopher clings to his purpose in its fullness, it is even sufficient for him; and, moreover, where his thought is really living, is really a part of life, it aids by keeping in his consciousness an associated conception of not alone the dynamical progressions which yield unending roses, but even the play of fancy which builds on historical singularities of conscious acceptance and æsthetical judgment the rose that is imaginary, or that is a prevision of the rose-grower. Were he, however, to insist on attaching to this symbol the rigid and absolute universality the mathematician sometimes believes

to attach to circle, he would be importing a falsehood into his facts of reality; and once philosophy fails to distinguish between the symbol that stands for the imaginary and the unreal and the symbol that represents some aspect of reality, or some particularity in reality, it may, by activities of language which are purely logical, attain to such diametrically opposite conceptions of reality as those of Plato, Leibnitz, or (to name a dwarf with giants) Haeckel.

Rose is not a symbol of the imaginary. It does not represent a fiction. Reality always clings to it because it can always be applied to a particularity that actually exists. It formulates an outline which reality can fill—a here around which realities can be gathered—a position for a perspective in which all the problems of philosophy may be grouped. Philosophy can ignore neither the symbol nor the particularity that its application may distinguish or describe.

Contrast this symbol with the mathematical symbol called a point. A point is a conception that by its hypothetical nature can be unrelated, and it neither is nor can be anywhere in reality. From our standpoint it is, therefore, a pseudo-abstraction—an abstraction carried so far that it is no longer an abstraction; the process has imperceptibly dropped all traces of the minute reality from which it started. It is manifestly a fiction—an unreality—and the geometry built on its imaginary movements into lines, and of these lines into surfaces, and of these surfaces into solids, can represent no ultimate reality, however useful its contributions and deductions may prove in certain aspects of practical life. As a symbol, it is a counter of limited application in the analysis even of material reality. On such symbols intellectualist philosophies place their main reliance, taking as things fixed, definite, and eternal, things which never were, even in the mind that by a trick of one of its own activities accepted them. In so doing they cannot escape the fascinating, if for ever unprofitable, effort of simulating the concrete by verbally assembling and combining nothings.

There is another class of symbols which calls for consideration—symbols such as Benedetto Croce calls pure concepts. Such a symbol as beauty is applicable to all and every particularity of the reality in which we are immersed. We cannot conceive of its elimination; and, moreover, it has a truly universal application which rose has not, for there may be men who have never seen a rose, as there were geological ages in which it did not exist. We have "rose" a symbol of large applicability; we have "red rose" a symbol of relatively restricted applicability; we have "red" a symbol far more widely applicable than either; we have in "beautiful rose" a symbol of varying applicability according to individual standards of beauty; and in "beauty" we have a symbol which, in presence or defect, is applicable to concrete reality in itself and in all its particularities. We have moved, under pressure of the experiences of human life and the necessities of social intercourse, through symbols of more or less generality to a symbol of true universality.

Can we not say that the movement to purely mathematical or logical symbols is equally natural and valid? Equally natural, certainly, since we have made such a movement. Equally valid, so long as the results serve purpose, but in the light of purpose and efficiency entirely invalid, should we accept them as in the real where they are only in a self-created realm of the purely fanciful. Let us take a concrete case—"circle," for example. Now, "circle" applied to any concrete circle, constructed by any of the methods of practical mathematics, or in any of the arts, is a symbol of the same validity and applicability as rose or red. It has not the universality of beauty—triangle, or square, or oblong, or straight line, or curve may, in varying circumstances of actual fact, have to replace it—but it is manifestly a symbol properly applicable to aspects of or particularities in the real. Not so the term as abstracted for the purposes of pure geometry. So used it becomes a symbol of ideal relations never nearer to the concrete than a make-believe. At most it furnishes imaginary limits to certain

aspects of the actual. In itself it is nowhere in reality; and though applied mathematics, or the pure mathematics which continually enlarges the field in which applied mathematics are an efficient weapon, need not be concerned with its essential basis in the fanciful and unreal, philosophy, restricted by its own purpose to the analysis of the existent, must. Reality can fill the terms "rose" and "red" and "beauty." It can fill the term "circle" as used by the draughtsman or practical mechanic, but it can furnish no true approximation to "circle" as used in pure mathematics. The reason, using in its own way the scalpel of the logician, can see that the electron is no nearer to the ideal point, by any standard that is absolute, than is the mountain. It may be nearer the centre of a block of material reality, but that centre is of and in that of which it is the centre, whereas the mathematical point is the ideal focus of a nothingness. The centre—the practical existent centre—is in the order of things real. The point is not even of the order which includes the imaginary where by the exercise of conceivable power or capacity it might become a prevision. It is of that other order which we may call the fanciful, the wholly imaginary, or the unreal, because the existence of the things therein is never, in the face of the real or the possible, more than a wordy deceit. Moreover, centre is a term applicable in the last analysis to things actual and practical. Where we refine it to stand for the meeting-place of absolute equalities, the intellect, constrained to consider the actual, must acknowledge that we have no absolute equalities, and no meeting-place which is not a something.

Pure dynamics, because it is an activity every advance in which serves practical dynamics, has a real value so long as we aim at nothing beyond practical dynamics. Since practical dynamics enlarges the facts which philosophy must consider, philosophy must indirectly have a regard for pure dynamics. It must, however, preserve its perspective. Practical dynamics operates in immediate contact with the reality in which philosophy is concerned, while

pure dynamics does not. They have no immediate contact with philosophy save as a general outside fact distinguishable in what may be called the activities of intellect. Whatever in pure dynamics is living, vital, and actual or applicable to the interpretation of things living, vital, and actual passes from the theoretical to the practical, and only where they have effected this passage are they an immediate concern of philosophy. To make sure that they do not pretend to pass, and obtain under the camouflage of the logical phrase credit for their pretensions, should be an insistent task for philosophy. The symbol that is imaginary must not, in short, be allowed to slip into and usurp the place of a symbol that is truly applicable to the real. The circle that is the trajectory of a moving nothing must not oust, in philosophy, the circle the draughtsman describes.

In being on its guard against the devices of intellect that, deceived as to its own clarity, seeks to obscure and betray reason, philosophy must not undervalue intellect. No construction of intellect, no framework devised by it to hold the real in any passing phase, should be disregarded where it adds to the power or autonomy of life. Philosophy must judge of function and utility, and define the limit whereat the selection, the abstraction, or the condensation passes out of touch with reality into the realms of the purely fanciful.

Philosophy where it founds itself on the realisation that it is something implicit which moves towards the explicit by ways indistinguishable from those through which the race, in its full life, has achieved definition and the expressible, must have regard to all classes of symbols—to the limited symbol such as man or rose which stands for irreducible particularities in the body of reality, to the less limited symbol, such as red, which applies to aspects of particularities, and to the truly universal symbols, such as beauty. It will see in the symbol a social weapon and necessity. Reality will be to it the all-embracing symbol which stands for everything. Looking at this symbol in its social origin as a symbol which all men may use and,

using it, reason correctly, and in accordance with the necessities of themselves and other selves, philosophy will see that it stands for the indissoluble unity of self and experience—of observer and world observed. In pursuing its real problem of explaining and describing this reality, it will not be disturbed because there is not an absolute at the outset of its questioning. The million different realities to which the million observers apply the term that recalls to each his own will be accepted because such is fact; and practical life, in the end, always lives with, understands, and describes fact to the limits of its purpose. It will, however, accept no symbol that arbitrarily denies the duality. To condense the duality into a monism is a practical problem—a desirable effort at simplification—but to see that it is effected in accordance with the reason that proves itself in practical life is a compelling necessity, and one which manifestly cannot be met unless the symbols of its discourse are valued as well as used aright. Otherwise its efforts may be vitiated by some autonomous thrust of intellect involving a substitution or usurpation parallel to that which would be effected were pure dynamics to displace, as unworthy of attention, the practical and applicable called applied dynamics.

Of course, philosophy cannot disregard the symbols which emerge in the autonomous by-ways of an intellect immersed in its own activities. They also are in the great whole that is called reality. But it must decide how they are in it. Are they in it as limited symbols, as more general symbols, or as universal symbols, or are they in it in quite a peculiar sense which makes them, as here alleged, creatures of purely individual fancy? In this case they are of interest, not alone because they furnish tools the practical reason may use to define its acceptance and aid its natural movements, but because, in certain aspects of reality, they best express constraints against which, as lever against fulcrum, achievement becomes possible. But if they are classed with universals such as beauty which are really aspects of reality, philosophy is committed to build-

ing a world out of such units as mathematical points and their relation in space—a nothingness in which they are nothing but the limits of relations which are nothing and yet everything once this little claim is admitted and the efficiency and felicity of logical discourse accepted. Accepting, for the moment, the view that the material reality with which we live in such intimate contact is a thing made, as surely as it is a thing we may manipulate, how it might arise may be conceived, having regard to these symbols of intellect as principles of construction, to the limited symbols as ideals of proximate particularities, and to the truly universal symbols as the ideals that shape the ultimates of purpose where the fullness of reality is concerned. Accepting the symbols of intellect as universals in the same sense as beauty rules out at once the idea that material reality, and all reality indeed, is other than a self-existing dynamic the eternal elements of which are logico-mathematical symbols and relations. If this chapter has fulfilled its purpose it has indicated clearly, however, why the intellectual symbol is of the order of things fanciful, unreal, and incapable of holding any part or aspect of that reality in respect of which reason seeks explanation and expression.

CHAPTER III

PHILOSOPHY AS ACTIVITY AND IDEAL

PHILOSOPHY is both an activity and an ideal—such is the clear implication of the preceding chapters. Music, painting, sculpture, mechanism, mathematics, and a host of other distinguishable particularities of human endeavour, may equally be described as possessing this double aspect of ideal and activity. The recognition has the importance of carrying with it in every case the acceptance of the endeavour as historical. The activity in each case has emerged at a particular stage in human history. At its birth it moved out of the complex of reality as a whole, its outlines as a particularity only dimly discernible. As it advanced it developed a core of singularity which could no more be pressed back to an equivalent origin than the rose, as seen by a man, can be reduced to the earth, air, and water incorporated in its developing structure. It grew to be a true particularity because, while marginally coalescing with the general, while implicit in the general as a particularity of growth novelty and development rather than as a possibility of the mechanical rearrangement of the existent, the irreducible and the autonomous flowered where the activity touched and informed its stimulative ideal, and reacted to the inspiration of this ideal. It flourishes where both the activity and the ideal—the achievement and the imaginative prevision that spurs the activity—act and react each on the other in that true co-ordination founded in the active and unmeasured interest of one in the other.

Recognising this, the view of the present effort is that philosophy, to be effective, must be a true particularity never breaking marginally with the wholeness out of which it has arisen; and that where it allows itself to be dominated by intellect it ceases to be a true particularity, organically

one with reality, and moves into a world of unrealities. Its activities thereafter become one with the autonomous activities of intellect, and its ideal necessarily that of a unifying logic no element of which is in organic union with reality. It explains and expresses, but its activities are concerned with a fancy the elements of which are imaginaries that consciousness does not and cannot really hold, although terms may be so used as to breed the faith that behind approximation the thing aimed at must lie. It is forgotten that we cannot approximate where the object of approximation is not of the same nature as the medium. The minute is not really related to the point that has no magnitude. Moreover, the logical is essentially the mechanical, every particularity it describes being a factor in a totality that includes it, yet never changes. But life, in all that makes it a particularity, denies the mechanical; and it is maintained that philosophy has to take account of this denial, and should it ultimately reject it, the rejection must not be because of logical ideals developed in a by-way of human activity, but because the expressible that is truly implicit can be moved to a recognition from within coincident with that which logic, from without, seeks irrationally to impose on life. Should reality prove to be a mechanism, the activity that strives within its wholeness to enlarge the circle of the recognisable, and the field of the expressible, cannot fail ultimately to push its analysis to this irreducible end; but where it yields itself to the guidance of a fancy whose elements are outside reality, it must fail to value facts seen through the obscuring veil of prejudices rigid as the rigidities that have bred them. The hunger to torture every fact of nature and life into mathematical form cannot convert itself into a realism new or old by assuming a title. The real activity of philosophy, therefore, must be an attempt to press all that we believe we know into recognitions that are definite and to descriptions that symbolise irreducibles, to ascertain in this manner how far we can describe reality and its particularities, and from a general view of all the things described, partially

described, or recognisably accepted as evading description, to form a judgment as to what they are, and how they are related and connected; and so to deduce a general theory giving us some conception of why reality is rather than nothing. The problem is one of describing reality as it is in itself, and we must not frame it in intellectual abstractions such as those of the void which is an empty nothingness, or of the time which flows eternally in a meaningless non-achievement, unless we find the space and the time of the mathematical logician to be realities rather than useful fictions abstracted from a practical generalisation of the facts of concrete extensity and concrete duration. Such a framing has hitherto merely facilitated that cleverish juggling with riddles called antinomies by which some philosophers have shut extensity and duration out of reality by calling them space and time and so identifying them with unrealities.

As an ideal, philosophy is rooted in a persistent "Why?" to which there clings the belief that an answer can be found. This belief marks it as one of those whys of practical life which arise out of need and aim at service. Here the need is wider and perhaps vaguer—a matter affecting the goal of all the urge and impulse of life—but the service is clearly set in the desire to make intelligible the mystery and wonder that seem inseparable from any contemplation of that whole we call the universe. Often our life seems a movement from the impenetrable to the unknown; yet, as a race, we are for ever passing from this mood to one in which we grasp at assurances and explanations, and we never seem quite able to withdraw interest and attention from conflicting solutions. If, as is here held, philosophy is implicit in life, this is inevitable; and as a fact challenging general acceptance it suggests that the view is correct, and that knowledge and the descriptive symbolising of knowledge is a progression ever moving from the felt to the communicable; and that whenever we get outside this very real movement, and the felt is vitally concerned in the need, as it is in philosophy, it surges

upwards into the artificialities of intellect, and drags it back to reason and the wider perspective.

At an earlier stage in human history the ideal that the progressions of the material world could be so known as to admit of manipulation and control was clearly implicit. As this ideal moved towards the explicit the race advanced; and when the activity expanded into the mensurables of science and mechanism every dimly-felt ambition and aspiration of the race moved to a prevision which seemed clearly poised above achievement. Is it not recognisably possible that, as a necessary condition of fruitful growth, the larger and more inclusive ideal we call philosophy is also one which the race, under the constraint of its own possibilities, is bound to press towards the fullest expression? Is it not also possible that we may find in the place practical life assigns to intellect in manipulating the material a valuable indication that in philosophy too its place is that of a tool or a servant—an aid in defining recognitions and formulating descriptions, not the provider of unbreakable rigidities with which descriptions must coincide, and outside of which realities must be disregarded.

CHAPTER IV

PHILOSOPHY IN ITS RELATION TO THE ACTIVITIES OF INTELLECT

In concrete living the expressible is never the full measure of life, and as philosophy is ultimately concerned, not with the expressible, but with this full measure, we should take critical note of the fact. We should do so more especially because thought and research directed to philosophical ends, being so largely outside the interests and concerns of ordinary social life, sometimes present themselves as the activities of an intellect which has in itself an absolute existence unrelated to humanity. Sometimes, indeed, its students and professors strive as if to divorce their thought from all contact with the merely human was a necessary condition of success; and they have occasionally persuaded themselves that they have entered into some realm of pure thought and penetrated to a reality freed from all dross of human perception. Knowing and the known become indissolubly one to their minds, and this logical unity, this thing in itself, something absolute, unconditioned, necessarily self-existing, and to be described only in words empty of all content, since content is a gift of that which knows. They have failed to realise that fully intellectualised thought is apt to be a manipulation of abstractions; that thought admitting of adequate expression, acceptable to man in the mass, may, at best, convey only that part or aspect of experience which social contacts and the progress of life have made fully explicit; and that, at its worst, it may build, on a vagueness dominated by the feeling tone of self-appreciation, a wordy simulation of real conceptions. They have, in fact, even where they hold some doctrine of degrees in knowledge, never truly realised that thought is the cutting edge of a weapon whose body looms dimly

in the darkness out of which it sweeps, and whose full capacity is still unmeasured even though it has reached general conceptions, such as beauty, which are really elements in a final solution, because truly applicable to that reality whose mysteries we seek to solve. Reason—that reason which preserves its autonomy and proves itself in applying ideal mathematics to the concerns of practical mathematics—should never, therefore, surrender to intellect its rights in formulating philosophy.

It is, perhaps, natural that those who have conceived a system of logical relations and elaborated a system of mathematics in accordance therewith should believe that the purely intellectual is the only analysis which can explain reality. In the progress of real thought they observe a progressing refinement of method and conception. Instead of conceiving a real goal towards which this refinement moves, such a goal, for instance, as the physicist might conceive in the irreducible and basic phase of the immensurable which lies below the material, they bemuse themselves with words without content, and name as a reality some conception which is only a name—only a name because the refinement it describes is judged a fancy by the irrefutable test that it cannot retrace the road at the end of which it is supposed to stand as the final refinement. Magnitude diminishes—refines itself—towards the mathematical point; but there is no way in which the mathematical point, however its infinities may be jostled on the point of a needle, can grow to magnitude. Their obsession is natural. They observe the march of science as it continually brings the vague within the expressible, and adds success to success under the definite tests of calculation and prevision. They accept the homage science pays to their obsession in its unrelaxing efforts to approximate its conceptions and descriptions to the frameworks intellect has prepared. They hardly realise that their frameworks do not anywhere touch the mensurable which science will not quit, and that science is not really aiming at the conceptions they describe, but at real conceptions which their symbols, because of the

original content which clings to them, suggest. Science is, therefore, somewhat complacently placed in the position of a practical activity of which theirs is the pure and theoretic form. The theoretic activity condescends to the practical activity, hoping to stimulate it to the final effort wherein it will really coincide with the intellectual mirage. Nevertheless, the real mass of the thought that is truly philosophy in the making does not condescend to science. It mixes with science, it infuses scientific activity and drags it back from time to time out of the clutches of intellectual dogmatism. It is mostly content to move in the wake of science, elaborating, generalising, suggesting, and tentatively forming proximate theories; but it knows impatience, and, tiring of waiting for the day when the mensurable facts of science will reach the stage at which they are fully adequate to afford the final and indefeasible solution, clutches occasionally at the emotional incoherences of mysticism.

It is right in its regard for science. It is wrong where, in an undue regard for science, it forgets that philosophy, moving behind its natural ideal, must aim at being a universal solvent, taking into account and unifying all aspects of reality, and capable of allotting its place to all recognisable particularities in the body of reality—even to science and to intellect. It forgets the example set by life in its regard for science. Life is always the overlord. If any progression of the material world in which it has a practical interest evades the framework of expressed scientific knowledge, it wastes little time on any endeavour to constrain fact into the prepared rigidities, but quickly calls on science to explain or reconstruct its rigidities to meet the compulsions of actuality. Science hurries to obey practical life in such instances. Only where it names itself philosophy does it assume the superior and appeal to a future which will make clear the all-embracing potentiality of its frameworks. Life, eagerly engrossed in the proximate, has an easy tolerance where the future is appealed to, and either ignores or gives unreflecting assent to the claim.

Philosophy cannot imitate the easy tolerance of a life

absorbed in the tasks of the day. It has its own clearly defined and, for it, proximate task; and it cannot in the pursuit thereof submit to the inefficient or the impracticable. It cannot accept, on mere assumption, that perspective of science which brings all reality into one common focus; for it sees, outside the line of that perspective, the looming shapes it ignores; and, within its garish illumination, the shadows hiding what must be seen and valued. Moreover, it sees the limitations which naturally and inevitably must cling to science where it is an honest and whole-hearted human endeavour pressing a method, successful beyond all the hopes it held at the outset, into unexhausted fields, and in itself in nowise concerned with what may lie outside these fields. Nor can it, on the other hand, imitate that life in calling on science to reconstruct its rigidities when it knows, outside them, that which in its palpable nature is incommensurable with any modification of which they admit. It must, therefore, do more than hold a regard for science and welcome its aid. It must criticise science, not only to do it a service which it can only imperfectly accomplish for itself, but to determine the degree to which its facts are facts for philosophy, and factors in arriving at the final and inclusive conceptions which explain and describe reality. Science, claiming to be philosophy by right of a success within clearly defined, however extensive, limits, can claim no sympathy from the real effort to understand and describe. In the claim it ceases to be science, and is philosophy only by acquiescence, through the prejudices and obsessions involved in its habitual activities, in the conclusions of those intellectualist philosophies which favour mechanism. Its prejudices are determinist necessarily. In facing any conception where the carbon compound molecule is shaped, even to implicit ends, by some immensurable potency, its activities are necessarily directed towards the destruction of the conception. Naturally, therefore, its prejudices coincide with the view of an intellect whose very framework is the eternal and changeless certainties of mechanism.

Yet there are other habits involved in the activities of science which, it may be hoped, will save it in the mass from the permanent acceptance, even as a theory from outside, of the conclusions of any purely intellectualist philosophy. It is, after all, an activity in contact with facts of reality, and facts are always the solvent at whose touch intellect is clutched by uncertainty, and surrenders its dogmatisms to the vital movements of reason. Moreover, it is essentially antidogmatic, and ultimately, of its own free activity, overflows and disregards the symbol that does not connote the fact, however convenient it may have proved as a term in a nicely-rounded logical conception. It has, therefore, a tendency to discover for itself the points at which it has pressed into aspects or particularities of reality which its frameworks—its devices—do not adequately contain. It finds them interpenetrating its dynamics in biology, and doubts if psychology admits of even the figurative aid of its equations. It has only to really move into philosophy, retaining its own sincerities of action, to see that while the ideals of intellect—the logical irreducibles of intellect—may be valid in themselves, their relation to reality is a matter of fact, not of theoretical assumption, and to recognise that implicit in the movements of that wholeness with which philosophy is concerned there is a particularity of thought which intellect may aid, but can neither supersede nor ignore. Science, in fact, has in itself a latent faith in reason, and a capacity easily to accept it as the particularity which moves naturally from the implicit to the explicit, and in operations paralleling those of intellect functions in full union with reality. The man of science may, therefore, be an intellectualistic philosopher, just as he may be a Baptist or a Tory, but these attitudes of human approval have no necessary connection with his activities as a man of science, though his habits as a man of science may any day move into his approvals and modify their intensity.

Still, the potentialities of the man of science, and the capacities of growth involved in his fundamental attitude as a man of science, do not obscure the fact that to-day he

is the ready thrall of the intellectualist philosopher, and gives easy assent to a logical mechanism, however phrased, and however difficult to conceive in terms of any reality he knows. Could he recognise the fact that his ordinary habits of thought recoil from any addition of the new to the existent, while his faculties of observation, recognition, and judgment perpetually bring him face to face with incarnate novelty, he might begin to dissolve these chains of habit, and effectively question the functions of intellect. He might even begin to consider that the ideals of intellect may have a function in the explanation of reality not incomparable with those of economic law in sociology. In certain connections, and to a certain end, social progress must keep within the boundaries of economic law. This is a plain fact. It gives us the conditions of maximum efficiency in a certain aspect of social growth. It does not give us conditions which apply inexorably, for the aspect is one to be finally measured in terms of human values, and to be accorded a primary, secondary, or even negligible value in what ought to be an organised system of values. Moreover, no one pretends that social progress is compounded of the elements of economic law, or even that it is strictly describable in terms of economic law. And yet economic law can be elaborated to an ideal system, as rigid, as calculable, as inescapably logical as that at which the New Realism aims. Its elements may be suggested by facts, and elaborated and refined to absolutes in quite the same fashion as pure dynamics; and the systematised doctrine built on these fancifuls of intellect may have exactly the same compulsory eternity. Actual fact may never be found to coincide with the fancy; but then, does any infinitesimal of matter hold out a better prospect of ultimate coincidence? And so it seems not unreasonable that the real thought which functions fluidly in unbreakable contact with reality should see that, while a part or aspect of reality may necessarily move within the ideal limits elaborated by mathematical thought, and function to a particular end while conforming to the limitations of mathematical law, there

need be nothing in reality identical on ultimate analysis with any element out of which a purely intellectual mathematic may be built, nor any possibility of exhaustively describing reality in terms of this mathematic.

I may conceive a point moving in a curve under the compulsion of forces acting in definite directions at continuously varying intensities. I conceive the space. I conceive the absolutely mensurable forces. I calculate in accordance with the principles of my mathematic, and finally conceive and give a description of the curve. I have dealt with the existent and added to it; but the existent to which I have added is an ideal existent which never was and never can be outside the realm of intellect. I may make an objective construction conforming to my curve, but it will never coincide with my curve, even though the width of my concrete line were a millionth of what my finest instruments can achieve; nor can I by any exercise of the constructive imagination give this curve objective existence in my field of consciousness. Constructed by the manipulation of symbols that have only a fictitious reality, nothing can exist in it beyond the purely imaginary. I may picture to myself an extensity which is a greyness or a blackness, but this will not be the permissive void of the space I require, nor will the curve whose flow I contrast with this background fail to have some tinge of sensation-quality. It will not be the trajectory which is nothing but a trajectory—an immobilised ghost of the movement of a nothing. My imaginary curve will be akin to the curves of concrete reality, and can afford me no real approximation—for approximation is concerned with things of like nature—to the curve intellectually created, however closely it be akin to the things from which intellect may abstract a symbol.

The mathematician refines and generalises his conceptions until the numerable things and concrete diagrams with which he begins become symbols which are purely the counters of an ideal logical exercise. His ideal point, his ideal line, his ideal space, his ideal trajectory in space, and his calculations on the relations of the infinite, the infinitesi-

mal, and the extended, may yield a theory rich in symbolical content and fertile in descriptive form. He seems embarked on an activity holding within it an impulse of irrepressible and unlimited expansion. He has little conception of an ultimate goal wherein it may, in a complete and realised co-ordination, merge itself into the equipment of intuition; for such a conception would be foreign to his activities, and natural only where their results were consistently and constantly applied as a tool in the analysis of a particular aspect of the real. In its exercise, however, he adds to his own mental power and equipment, and advances the general intellect of the race, the highest mathematic inevitably filtering down and infusing itself into the activities of life. Moreover, because in the application of his results to the concrete movements of material things there is a practical side to his activities, his speculations have a fundamental justification emphasised by the fact that the fuller the analysis of his ideal, the more comprehensive is the vision he instructs, and the greater is its effect on calculations applied to the understanding and control of actual mechanisms. Nevertheless, his essential activities are concerned with symbols which represent nothing existing outside the conscious activities of intellect—with things that are abstractions that have moved out of touch with the real, and with symbols that are mere verbal simulations of the symbols that really stand for an existent or recognisable. That these manipulations seem, by a sort of organic and inevitable rightness, to lead to a system of general relations which may be regarded as existent should time, space, substance, and intellect itself be swept into nothingness, is no proof even of possibility. It is simply a fact, which philosophy, concerned in the actual, must disregard neither as a minutely describable phantasy, nor as a phantasy furnishing frames of extraordinary applicability to the physical universe. If the mathematician, essaying philosophy, realises that at most these ideals may not rise above constraints on certain aspects of reality, and, recognising that while mathematics is an activity which may concern itself

with the purely ideal, concede that this new activity must concern itself with things that are actual and real, he would be no more open to criticism from the philosophy here recognised than any other man. It is because he will not do so, and as a consequence lends giant aid to all the spurious efficiencies of intellectualist philosophy, that the real nature, object, substance, and efficiency of his thought must be unsparingly pressed to a last analysis. He often acknowledges a very real limitation where he touches the material world. He does so in recognising the virtual autonomy of practical dynamics. In his conceptions the movement of a point may make the line, of a line the surface, of a surface the solid; yet he has hesitation in accepting the suggestion that the earth conforms to an infinity of unitary points, although, under practical tests, it answers to this conception so far as to encourage him to seek in further refinements of his ideal analysis, and even in curvatures and eccentricities of his space, the final key which will reconcile all material progressions with his ideals. In rare cases he may doubt whether matter may not have in it some inherent lawlessness which carries it from time to time incalculably above and below the definite. Could he cling to this doubt he might arrive at the conviction that, even in the best-defined elements with which physicists deal, there is a quality which sets the material aspect of things absolutely outside coincidence with his ideal in any of its elements. Nor could he afterwards fail to see that to compass reality he must immerse himself in reality, and that the attempt to compass it by purely logical activities is to forget that mathematics is a specialisation of human activity, nurtured on abstractions suggested originally by the mensurable qualities of material things, and that however useful these abstractions may be in the interpretation of that out of which they have arisen, actuality in interpretation remains the primary need of philosophy. Afterwards he might see that the existence of a body of logico-mathematical principles which no material progression can transcend is a fact of very special value to electro-dynamics,

to chemistry, to physics, to astronomy, to mechanism, but that it does not preclude, for instance, the conception of a material universe in which there is no space, only extensity as one of the qualities of movement; no point, only the innumerables of actual rhythms of motion analysable into classes in terms of relative extensity, velocity, and duration of phase; and that the persistence of extensity and velocity, under all forms of combination and association, in a class or classes of these ultimate irreducibles may be the fact describable under all the symbols which science dignifies into immutable laws. Moreover, he might come to see a special importance to philosophy in the broad contrast of an ideal perfection carrying in it the inescapable suggestion of application to a reality which is palpably, by its standards, imperfect.

The philosopher must realise that philosophy is a distinct specialisation of human effort; that it is not an activity arising in some realm of pure thought; and that, whenever it makes an abstraction at the cost of abandoning any single shadow of a thing that has fallen within human experience, it risks the evasion of its problems. For philosophy is not, like mathematics, a logic of abstractions in an existent that is purely ideal. It is a fundamentally practical concern; the purpose, meaning, and conduct of human life, as well as the whole system of values evolved by man individual or man social, are things from which it cannot divorce its conclusions. To be successful, therefore, its analysis must embrace the imponderables of intellect, emotion, imagination, and even hallucination, as well as the mensurable qualities of material things. It must distinguish and value their particularities; it must explain how they arise, and under no compulsion of figments like that of the absolute confuse the transient and accidental with the commonage of organic, persisting, transforming fact. Should it seek a basic irreducible—a fundamental something admitting of no further simplification—it may push its analysis beyond Descartes' "I think, therefore I am," and find the ineffaceable in "there is a perception," "a thing that perceives,"

"a sensation," "a thing that experiences," "a thought," or "a particularity of substance," but it can do so profitably only while relating it to the full background of man and his world. The philosopher may find a starting-point for the formal exposition of his analysis either within the experience he regards as peculiarly his own, or at the confines of what may be called the inorganic world, but he must not imply a simplification of his problems in this starting-point; and if in any part of the complex he explores a hint is found of something which evades simplification, he must recognise that here is not alone a difficulty, but a persistent challenge, and even, perhaps, that which may, if ignored, bring all his efforts to naught. Activities grounded in this recognition cannot easily yield themselves to the guidance of an autonomous intellect—intellect will have full consideration, but receive no homage or obedience outside its recognition as a tool. They will, therefore, naturally evade the entanglements of metaphysical gymnastics such as concern themselves with the ideas or simulated ideas men symbolise by "absolute," "being," "pure relation," addressing themselves more to the tangible and the practical, and arriving, perhaps, organically and within the full limits of reality, at generalisations which may suggest, but can never coincide with the purely imaginary.

CHAPTER V

PHILOSOPHY MUST GROUND ITSELF IN THE CONSCIOUSNESS OF THE INDIVIDUAL MAN

The mechanist, the man who believes that the rule of equality between antecedent and consequent is inviolable, and that becoming is, therefore, a predetermined or eternally existing process, whether he calls himself realist, materialist, or idealist, carries in his conception the seeds of ultimate inapplicability unless the basic reality is undeviatingly mechanistic in its entirety and down to its irreducible elements. If the possibility of novelty exists in any part of reality, a consequent transcending its antecedent may emerge, and mechanism necessarily fail as a theory of things. If, on the other hand, the principles of mechanism are operative as aids or barriers in the processes of concrete becoming, the antimechanist, be he pragmatist or intuitionist, can hope for no final success unless he allots to mechanism its due measure and part. The philosopher who recognises the full range and complexity of his problems will, therefore, press every distinguishable element in reality, and every aspect of reality, towards definite expression, and recognise that the function of his thought is to describe the actual. In doing so he will always seek to judge the degree of his success, and to make that judgment a bond between the particularity covered by the expression and what may be recognised as its elusive and indefinite penumbra. He must, in short, bear in mind the actual distinction between the intellect, which may legitimately play with abstractions, fictions, and imaginaries, and the reason, which becomes irrational the moment it abandons the real.

The present effort recognises mechanism because it cannot explain away the historical progressions we call life and the mechanistic prevision it every day justifies in effort.

The eclipse, the day and hour of which is foretold, and the chemical reaction that is foreseen before it occurs, equally with the mechanistic resultants of concrete mechanisms, justify our convention of the calculable equation between antecedent and consequent. But, equally inescapable, there are in human life a thousand evidences of a new that transcends the things out of which it has arisen; and in concrete living no mechanist fails to do homage to this irreducible fact. It believes, therefore, that the natural starting-point from which to analyse and understand should be the functional meeting-place, if such there be, of the mechanical and the ultramechanical; and it conceives such a meeting-place to be in the consciousness of the individual man. Here, whether finally irreducibles or not, is the belief in a self, in other selves, and in the innumerables of what may be described as the organic and inorganic worlds. Here, also, sensations which seem a continuation of the outer world contrast with sensations which seem a direct product of an inner world, and meet that world of emotion, intellect, and operative reason, which so peculiarly belongs to the inner world of the self, and from here radiate those conceptions of space, time, substance, and cause which are inescapable concerns of the analysis. Whether it is a functional meeting-place only the analysis can disclose; but this at least is clear: unless there be function here, all the previsions we justify in our lives are illusions.

Moreover, consciousness furnishes a vital problem for philosophy, and the conscious is the individually human so far as direct experience is concerned. Furthermore, the concrete sciences of physics, chemistry, biology, and psychology, whose specialised methods and results form so large a part of the material with which philosophy deals, are never outside the limitations of their human origin. Biology and psychology, being sciences that deal with life, are manifestly chained to their nearest example. But equally, chemistry and physics, despite the infinity of interests, from radiation to astronomy, they cover, are always in relation to us personally, since they are, in their

development and at their base, sciences of measurement, and measurement is essentially a human device. The ideal of measurement is, in a sense, a real ideal. There may be ideals constructed out of relation to the existent or the possible. Such ideals, once they are constructed, are no doubt a part of reality, at least temporarily, but at the same time they are in a by-way of reality which need never pass out of the exclusive possession of a self. The ideal of measurement is not of this class. Comparison, perhaps, as an attitude of life closely knit with the intertwined basic capacities of consciousness and feeling, is lived before it is recognised as a separable act. But its conscious exercise is the first movement in the differentiations that culminate, along one path, in the activities of intellect; and the entities which emerge in the process—number, succession, order, continuity—assume an independence of the inner and outer worlds, and seem, when fully explicit, to pass outside the realities involved in the concrete progressions of matter and life. Yet the realm to which they pass is common ground which may be trod by all the generations of men. Wherever intellect becomes explicit these ideals naturally develop, and wherever they are developed they find men avidly willing to apply them to certain aspects of reality. The class of ideal units, absolutely equal one to another, may not exist, but once these ideals are developed man accepts as irreducible the logical developments of the mathematic in which they take an inevitable place. There is, therefore, a degree of absolute validity in these ideals, and measurement is of their class. In so far it is, as stated, a real ideal. It is not, nevertheless, the ideal that gives an orientation to real effort. This is a practical ideal of varying limits, and has no real point of contact with the ideal intellectual measurement based on the unit that is in absolute relation to the position that has no magnitude. It is as far removed from the intellectual ideal as the concrete measurements of science and life are in themselves removed from an expressible relation to the point that is position only. Practical measurement is, historically, an action aiming at a precision varied and judged in relation to

formulated need. The intellectual ideal helps the growth of the practical ideal, but it cannot be conceived as ever replacing it in practical life; and if allowed to replace it in the philosophical analysis of the actual, leads thought inevitably away from the realities which philosophy must continuously regard.

It is easy to obtain a general idea of the growth of science. For this purpose it is not necessary to make an enquiry into the actual successions by which the marginal activities of practical life, urged by the inherent restlessness, curiosity, and overflowing energy of our remote ancestors, laid the foundation of an extended and systematic knowledge of concrete things, and afterwards generalised facts, and through the generalisations arrived at acceptable principles. There were, we know, many roads; and the passage from, let us say, the hunter who knew his flints in the individuality of each to the hunter who coined or adopted words to enumerate them, and thenceforward down the centuries to the theorist in number, would give us a path by itself, and a path entirely distinct from that leading through the husbandman who isolated corn from the grass, and the herd from the fauna of the jungle and the plain, to the biologist in his laboratory. Independently of precision in the details, or of accuracy in the steps of the progression, we have a general conception indubitably justified by all we know of the past and judge of the present. We know, in outline, how the practical passed into the theoretical, or rather, perhaps, expanded so as to include the theoretical in the recognisable, and how the divergent lines converged, and how, finally, despite specialisation, they are recognisably one in aim, and we cannot ignore the common origin of each and all in the needs and activities of practical life. A little consideration will give us the idea of how the concrete and the theoretical —the actual facts felt, seen, or accepted from description, and the moulding of facts into a conception through a complex activity in which comparison and judgment are recognisable elements—are blended into a movement towards what we call knowledge, and how the progress reacted on

its origins and clarified and circumscribed the acceptance of the concrete, and its manipulation along lines made habitual by the growth of intellect. We will, then, have no difficulty in realising that the finest measurements of experimental science are but the fruits of age and effort, and that in the essentials of method and fundamental value there is no break between the calculations of the hunter on the size and shape of a particular flint and of the scientist who determines the mean diameter of an electron. A world of trial and error lies between, no doubt, but it is also a world of ends ever gaining in definiteness, and of means ever adjusted to a finer accordance with aim and purpose.

The reveries of the hunter would be, most likely, pure daydream. The idle revival of memories would have little tinge of any intellectual reshaping or selection. Conscious retrospection in the modern complexities of valuation, judgment, and tentative and purposeful prevision, would be almost entirely implicit, and the fact would be accepted with no movement of thought he could afterwards recall. The flint was selected from the heap, was chipped, was balanced, was accepted as fitted to its purpose, in a continuous action wherein the reflective consciousness had no explicit part. His action would be a succession as clearly in a line with the whole past of himself and his ancestry as any reflex act in his physical organism. Yet it would have its little marginal hesitations and doubtings, its occasional confessions of error, its gratifying moments of noticeable success; and in this marginal region the implicit was clearly passing into the explicit, and the conscious balancings of reason, aided by memory, imagination, and intellect, that designs and carries out the experiments of a Rutherford or a Perrin, were possibilities involved in the fact. Here was the moving edge where life experimented into reason informed by intellect, and wherever reason touches any problem in that reality out of which it has arisen, the condition of its efficiency is that it holds firmly to the contact with its origin.

This is not always remembered. Yet to forget or ignore

it breeds the rigid and the conventional in a science whose life-blood should be freedom and fluidity of thought and conception, and, where the scientist would be a philosopher, involves him in the disaster of valuing tool and medium above his work itself. When he tells us that the velocity of light is about one hundred and seventy-five thousand miles in a second, it is difficult for him to realise that he is not giving us a fact of absolute and eternal meaning in itself. Yet clearly, unless there is in reality an absolute space admitting of absolute measurement, and also a time admitting of absolute division, his statement has a validity related only to human action and acceptances. A consciousness functioning in association with a free electron could give it none of the values in extensity and duration given it by that knit to the human organism. Nevertheless, the statement has a very real value for the scientist, and in varying degrees for all men; and, up to a point, it does not really matter that the scientist should lack a due appreciation of the fact that no juggling with mathematical symbols and infinities can yield the unit wherein the infinite collection of points passed into the minimum of extensity. It may matter, perhaps, where the aim of science presses towards its next analysis, and the understanding and control of atomic dynamic systems. Manifestly, however, it matters greatly where the lack of realisation encourages for the philosopher a facile simplification of the irreducible elements of even material reality. Here it obscures the fact that his realities are realities, not because they are distinguishable parts of an impersonal, but because they are things which any personality may at any time attend to, accept, and describe in identical terms. Furthermore, it obscures the fact that illegitimately to convert the relative into the absolute leads to a failure to realise that most terms are, in all that concerns concrete reality, counters which have the utility of symbols representing classes rather than constants and identities. After this, it is but a step to convert the impersonals of intellectual abstraction into fundamental realities, and so to vitiate from the outset all subsequent philosophical construction.

We speak of a rose, but rose is a symbol for all the roses that have been or will be, with their infinite variety of form and colour and odour; and it is, moreover, a symbol for the hundred roses the same rose may be to a hundred observers. There is not even an average rose in any absolute sense.

Even in measurement, the inch of the most rigid and unchanging material, ascertained and marked with the utmost refinement of mechanical skill, is in reality a constant only for practical purposes—that is, in direct relation to human life and wants. It is solid, fixed, and immovable only by a convention which accepts the average extensity of a complex built on innumerable electrons gyrating in fairly constant paths around centres that maintain an average of relationships one to another. To the hundred observers it is the fact which always answers to the same practical tests, even though it remains to each observer a thing which no art can transmute into an identity for another observer. A workman compelled to wear spectacles finds, for a time, all his customary judgments bewildering failures, and a traveller in a new country finds distances strangely elastic according to the character of the day and his own physical and mental condition. Is there not here an indication that the only identities are nominal identities; that in the real approximation is never transcended under the analysis of science or practical life, and that the approximation is not the approach to an ideal of imagination, but to numerables and calculables arising directly out of human experience? The fact should bind philosophy to a fundamental reliance on the personal. All the rhythms of nature recognised by science are related to personal rhythms, not to the rhythms of pure mathematics. Only where they are condensed into related rhythms of the organism can they be recognised in their double aspect—sensation to the attentive consciousness, movement to the intellect that analyses and compares.

The realities of the logical intellect are ideal realities. They furnish us with a system of relations which are eternal

constraints wherever they fully apply. The book of logic, however, is still in the making, and the man who accepts it as completed, and its conceptions as inherent in the body of the real, rather than as interpreters and fulcrums outside the real, is committed to some form of barren theorising which makes them concrete elements in what must, on this view, ultimately refine itself to pure illusion.

When we accept the equality of antecedent and consequent as guide and interpreter in describing a chemical reaction, our method is sound. It is sound so long as our aim is to understand and control material progressions that are recognisably chemical. Where it is sought to bring within knowledge and control a more fundamental progression, involving the evolution of something below what we regard as the ponderable into the electron and the atom, the equality may have to be read in some form that will give a more fluid and comprehensive applicability; but where it is asserted that, because it applies in the rough averages of the chemical balance to the event wherein oxygen, hydrogen, and an electric spark are concerned, it must also be applicable even to the achievements of art, only a mind over-canalised by devotion to the ideal things of intellect, and thereby divorced from a truly informing contact with the actual, can acquiesce.

It seems clear, therefore, that philosophy must base its efforts on the contents of that consciousness wherein alone knowledge and experience are alike in a position to judge at all times of the adequacy with which things explicit are shaped to intellectual expression, and wherein also effort can alone succeed in wringing out of the implicit those differentiations that add to the content and value of the explicit. No other base can save effort from being misled by that urge of autonomy which suffuses its existence, and, as a consequence, from dowering some little fragment of the explicit with all that it has necessarily left behind in its emergence, and so from building on this fragment an imaginary superstructure in which, out of this sole ingredient, the body and variety of the real is imitated.

CHAPTER VI

A PHILOSOPHICAL THEORY: EXPOSITION AND SUBSTANTIATION

In arriving at a theory there is always what may, perhaps, be described as a grope forward. Even in the most definite of the material sciences a theory is rarely the result of a purely logical judgment on marshalled facts. Behind the urge and desire for the illuminating generalisation the whole past of the theorist is operative in a complex of feeling, emotion, and intellect—in a complex holding all the potentialities that have achieved or may achieve distinguishable quality. And so it is that to hardly a greater degree than the musician who achieves the phrase in an urge that is half instinctive action and half conception does the theorist move along lines of mechanised intellect. The theory seems to find a sudden birth involving the self as a whole. It is the intuition—the single apprehensive and constructive act by which a complex is reduced to order. Possibly it is something more than this in so far as it marks a reach of capacity beyond its level at the moment before, and is the achievement of a power whose limits and content may afterwards be explored by reflective analysis, or, as is generally the case, used as the foundation of further growth in elements whose intensive qualities the acting self recognises only casually in the course of further effort. The musician has aptitudes, inherited and acquired, and a personality to which music is the natural gesture expressing certain complex phases of thought and emotion. The theorist has also his aptitudes, and a personality to which intellectual expression is inevitably desirable. The musician appeals to æsthetic judgment and emotion in assessing the value of his phrase. The theorist appeals to fact and intellect, as well as, perhaps, to some

dim emotional glow from what is called the passion for truth; and having achieved his theory, poses it before reason, and submits it to the chisel of intellect. Where either activity is naturally and vitally human, the parallelism is recognisably close.

When, therefore, a theory has been arrived at and accepted, bearing in mind its complex origin, and the fact that it is a growth and a wholeness which expression may not entirely exhaust, there must be room for doubt as to the manner in which it may best be placed before men for judgment. In ordinary intercourse, where men equally interested in the result are concerned, the natural way seems to be to state the theory, proceed to show how it meets the facts, and how, should there exist some other theory also meeting the facts, the new theory is in some definable way more acceptable. Where the subject falls within the domain of the physical sciences this method generally suffices, and sooner or later the theory that affords the fullest explanation is accepted. It always, however, rests on definite and definable fact; and whenever the progress of discovery or the operation of a finer analysis adds to or modifies the facts, it takes the position of the theory it displaced, and itself invites modification or supercession. A philosophical theory does not, however, deal with any body of agreed fact. It may be asserted, even, that it cannot rest on agreed fact while there exists, explicitly or implicitly, any rival theory, since one way of describing the object of philosophical theory is to state that it prepares the universal frames which must include all lesser frames and condition the forms of acceptance and description. Even where the irreducibles of physical science are concerned, there is no agreement; although, when considered in relation to practical life, the divergence need not appear, as in this case the accepted purpose does not invite that critical probing towards the ultimately irreducible which breeds disagreement. Nevertheless, once the endeavour to determine what the thing is in itself is made, and assumptions and acceptances have to be sub-

mitted to reason re-enforced by the questionings of the logical intellect, we seem involved in unending disputes around interpretations varying from those of the materialist to those of the idealist.

In matter the materialist finds a residual substance, and attributes to this substance not only the qualities found therein by practical life and research, but qualities he has to imagine so as to explain logically the actual progressions of reality as a whole. His philosophy and his fact are indissoluble. The idealist is unable to accept this assumption of a basic substance, and points out that all the qualities analysis can find and describe in matter are, in their ultimate terms, things of the mind; and that, apart from things of the mind, we have of substance nothing describable left. Here also philosophy and fact are indissoluble. Nor is the unsystematic thought of common life innocent of a formative constraint arising from the philosophy it lives. Common life is essentially pluralistic. It finds no difficulty in accepting both substance and mind; and its contempt for a monism of either is very near the surface of both its felt and its expressible. The present theory has necessarily much the same outlook as common life. Only in a willingness to accept a monism, should sanely-considered facts allow of such acceptance, and in the interest to press the analysis to limits defined by more ultimate ends, does it differ from common life. It is as far as common life from agreement with the outlook of materialism or idealism. It finds that both views are based on the acceptances and conceptions of a self; and it finds that both have been led astray by a natural movement of the self wherein intellect treats the ideals it has isolated from the explicit as things it has isolated from reality, rather than from what are essentially creations suggested by reality, and therefore as essential parts of reality. Basing its own effort on a recognition of this fundamental error, and striving in consequence to restrict intellect to its proper function as the tool of reason, it never regards the irreducibles of intellect as absolutes or as exist-

ences. As a consequence, it always retains the attitude which, while clinging to the explicit, regards it as an emergence out of an implicit which holds the past, the present, and the potential future of a wholeness by which it is immeasurably transcended. To the intellect, matter as a thing explicit is a complex of mensurable autonomous movements. It is this to one activity of a conscious self; but to that more fundamental activity known in the attentive consciousness of a self it is recognisable under certain conditions as sensation—and sensation, as an experience of the self, is neither autonomous nor mensurable under categories of intellect. Recognising this, the present theory, while agreeing with common life and the materialist in so far as to recognise in matter a something which is outside the self, agrees with common life alone in finding no warrant for the materialistic conception of life. It cannot regard the realities of a self as arising from rearrangements of the ultimate units of matter into mechanistic relations. It retains, in fact, the essentially pluralistic view of common life, and regards reality as an interaction in which what we best know is in the self; moreover, it regards this best known as the activity that matters, that accepts and interprets, and on the basis of its acceptances and interpretations bends a plastic mechanism to the ends of purpose and value.

The present theory does not pretend to be the outcome of an analysis that cuts deeper than preceding efforts, nor of a logic dependent on differentiations, qualifications, and equivalences overlooked in the past. The only merit claimed is that of a refusal to be led out of touch with reality by any posturing of intellect, and the unqualified acceptance of a perspective that would recommend itself to any man who faced the problems of philosophy unhampered by tradition. In this attitude it is fortified by a full realisation of the historical aspects of human endeavour. This is seen as a tidal movement ever sinking back for a renewal of effort. The crest of the wave is the explicit. The hollow is the implicit below which lie the unplumbed depths of

ocean. To be in the true movement—the effective movement—is to sink back, not to reach towards the impossible in the dust of even sunlit spray. The explicit enriches the intuition, imbues its acceptances with the strivings of nascent form, and so moves the mass that is the implicit towards a transcending explicit. To such an attitude there are dangers in traditional form. The philosophical thought of the past endows the philosophical thought of the present. Consciously or unconsciously, the heirship must be accepted, however mixed with dross its gold may be; but the inheritance must either be accepted lightly or with the full realisation that its value lies mainly in its power to enrich intuition, and that its weight can shackle free movement and confine it disastrously within traditional lines.

It might seem that the natural course of the exposition should in this case begin with an analysis of the facts of consciousness, ascertaining and classifying what consciousness may hold, and relating its contents to valid knowledge and to the whole complex that persists outside the individual consciousness. It might thus lead step by step to conclusions, and co-ordinate conclusions into an embracing theory. This would be what is called a systematic exposition—that is, an exposition which rests on the framework of an accepted logical whole. As a method, therefore, it would be entirely in its place where the fully known and accepted was being dealt with for any purpose of record or instruction. Here, however, we are not dealing with the fully known or accepted. We are dealing with acceptances which rest on intuitions, and to show the natural and vital relation of intuition to acceptance, of acceptance to expression, and of all and each to the self, is by far the biggest part of the struggle to enforce belief. Inadequacy of form in describing the results of a single analysis might falsify fact, and defeat an argument whose first and last appeal is to fact. The exposition, therefore, must give scope for considering its perspective in many lights, and aiding its apprehension by many contrasts. Thus only, it is conceived, can the assent that buttresses conviction grow

into an organic union with the individual line of thought it seeks to aid.

Moreover, one of the recognitions on which the present theory bases itself is that nowhere in the real have we things that are fully known, though we may have things that are, in degree, truly experienced. Under the conditions of organic life, at least, no basic analysis leading down to absolute being is possible; and a metaphysic that busies itself about such refinements of purely intellectual thought has no real claim on that credibility which philosophy seeks. Such a metaphysic may, like mathematics, have in it an ideal capable of aiding the reason to formulate the actual; but where mathematics touches the actual there are innumerable tests to correct its vision, and because in these tests it deals with the practical and the mensurable it cannot finally mislead. The refinements of a metaphysic meet no such compelling tests. They may inform the imagination, and infuse an ideal into the concrete progressions of science and morality and the general conduct of life. But life is capable of the most colossal blunders; and the tests of error are imponderables of which the life that has been misled cannot judge. It is incapacitated by the very fact of its error. Yet all philosophy, and, indeed, all the thought that serves practical life, is in a sense a metaphysic. Each seeks some solvent to make fluid that which resists a purpose.

In the first paragraph of this chapter a parallel was drawn between the achievement of a musical phrase and of a theory. The parallel holds, it is believed, even where a theory is most completely concerned with the counters of logical thought; but it is very much closer when the theory is one that is believed to arise directly in contact with human life, and, by implication, to furnish a criticism of all its values and activities. Now, in this parallel there is a suggestion of method. The musician plays over the phrase, subjects it anew to the urge that gave it birth, shapes and modifies it according to his sense of form, presents it as a whole for judgment, and if it continues to

appeal to himself is prepared to submit it again and again for approval. The primary test to which he appeals, however, is that of emotional acceptance; and despite the contentions of the pragmatist, there is no activity of such compelling wholeness before which a theory of philosophy may be placed. An appeal to emotional acceptance, however cultivated the æsthetic judgment that infuses it, is the appeal to a standard that is relatively fixed. A theory of philosophy which appeals to human reason has, on the contrary, to appeal to a standard that is in living movement all the time, that has to suspend its judgment through many moments and moods, and that inevitably grows with its consideration of the theory in a fashion that, where acceptance closes the contact, marks something nearer to assimilation than to a mere act of approval. Yet, conceding all this, we have to recognise that where a theory claims to formulate what is implicit in the general progress of life, it has an appeal as a completed thing to an acceptance that is intuitive. If, on a full statement, with no attempt at argument, it appeals to the living as a poem might, or a piece of music, and is taken possession of by life, it cannot thereafter be lightly dismissed. But, for reasons indicated above, no appeal of this kind can be conclusive, for life has its prejudices. Exposition must therefore appeal as well to that human reason that lives in and helps to control human life, and is capable, given freedom, of winning it away from its most inveterate obsessions. The intellect arms reason, reason enriches intuition, and the intuitions, symbolised in the words that fully recall their wholeness, are the true counters in the discourse that aims at a philosophy.

Through the accident of considering and accepting a particular view-point or perspective, it is believed that not alone does the present theory cast a light on those residues which science has not resolved, but that, in addition, it holds within itself a principle of clarification which should help science to truer conceptions—conceptions more nearly representative of its own particular aspects of reality, and

in a more vitally intimate relation to that human life which alone makes science an activity worthy of consideration—and, by changing the objective of certain persistent quests, accelerate its progress. There is, therefore, a reason, based on what may prove to be the extravagance of its claims, why the present speculation may face a clearer test if its implications concerning the facts of the argument are set forth in advance of the argument itself. "Systematic" lines are always artificial lines, and out of place wherever it is sought to bring a fuller and more vital meaning within expressions whose acceptance or manipulation is a part of practical life; and if, at the outset, the nature of these fuller meanings is indicated, there is less fear that they may convert what seeks to be a defence on facts into a defence on mere words. It is thought, therefore, that with some advantage exposition may precede substantiation, and the aim be to describe clearly conceptions of the irreducible acceptances reason should regard as parts or aspects of reality, and show how these irreducibles imply a theory co-ordinating themselves and their progressions. Accepting description as the goal of that passage from the implicit to the explicit which is the natural quest of reason, no attempt will be made to divorce exposition from incidental appeals to reason, nor, in the substantiation which is to follow, will any incidental opportunity be evaded of adding to description such clarification or extension as the more formal consideration may educe. If, in the whole, what may be called a natural history of the thought which organises for itself the lines and limits of a theory is given, rejection will not be feared; nor will the course and method of exposition matter so much.

BOOK II
EXPOSITION

CHAPTER I

THE PRIMARY IRREDUCIBLES

THE irreducible is that which we can recognise and describe, but cannot for the moment wholly reduce to other recognisables, capable, by their recombination, of reconstructing the particularity from the analysis of which they have been derived. If it is declared that water is an irreducible, we have to ask from what point of view we call it an irreducible. As a liquid, possessing at certain temperatures definite physical properties, it may properly be so described; for it is, in the last analysis, a dynamical system dependent for its qualities on its unity. But if we are chemists, we may, after recognising it as a distinct and describable particularity, press our analysis to the point whereat it yields the gases oxygen and hydrogen, and is reconstituted by their recombination. From this point of view water would no longer be an irreducible; oxygen and hydrogen would. But, if we are seeking the ultimate nature of material things, although oxygen and hydrogen are still irreducibles in actual scientific achievement, we will find many indications that they are each a dynamical system into which electrons enter in organised relations one to another, and that it is legitimate to suspect at their base—as the contingency out of which they arose—some dynamical evolution of submensurable units into mensurable units, and of mensurable units into atoms. The irreducible here, therefore, becomes a quest which may legitimately be formulated as the irreducible unit of movement; and a general theory which makes matter one of the

progressions in a dynamical evolution becomes legitimate, and may be accepted by philosophy.

Has any activity of human thought equally acceptable reasons for regarding the self as an irreducible only in a relative and human use of the term? As a particularity in the body of reality, having certain conventional attributes and functions, it must be regarded, equally with water, as an irreducible. But does it, like water, admit of an analysis suggesting a more ultimate analysis? Certain aspects may be isolated and described. Activities in consciousness such as knowing, feeling, intellectual analysis and judging, imagining, and what is sometimes called the illusion of will, as well as the conviction of persisting personality, may be isolated; but can they be isolated in any definite mould of rigidity, and held, examined, and recombined to form a self? Allowing that they can, do they admit of any simplifying analysis which suggests a quality like sensibility as clinging to the ultimate irreducibles of the physical world, forming a unity with these irreducibles, and so, as paralleling the dynamical evolution of the ponderable by an inextricably associated evolution, describable in the terms applicable only to a self? Moreover, are we sure that the self, taken from the perspective of biology, psychology, and what is called introspection, shows no recognisable residue? If the limits of its possible analysis are here truly judged it would seem, therefore, that to deny that the self is an irreducible is to make an assertion without proof. That it is an assertion outside any indication of ultimate demonstration the course of this book will clearly show, by substituting a credible picture of its organic unity, and of its residues of untried capacity for the superstition which holds it a mirage built on the temporary association of mechanisms.

The whole necessarily involves parts and aspects, and the existent is manifestly a plurality in unity—not in the unity, be it noted, that is another name for the rigidities of mechanism, or of the meaningless equational symbolism called the absolute, but in a unity which conceives the

possibility, throughout the whole, of contact and influence. The movement of life from the implicit to the explicit recognises this plurality; and, where it thinks or reflects, arrives at symbols representing both the plurality and its interconnections. It presses analysis, clarifying impressions by dwelling on their content and context, and forms new symbols in accordance with the utilities it values. It has one rule of adequacy to serve its contacts in the material world, another to meet the necessities of a science in contact with the desire for knowledge as distinct from utility, and still another to satisfy the abstract manipulations of intellect. In philosophy the conception of adequacy must be stricter still. It can yield neither to the mechanisms of life, the mechanisms of science, nor the mechanisms of intellect, in its standards of precision, and must press analysis quite as ruthlessly. But, wherever it recognises a particularity in the body of reality, it must treat that particularity as an irreducible, unless, under analysis, it can be made to yield other particularities which represent all the elements necessary to its reconstitution, or finds clear indication of some functioning simplicity which may yield it as a whole by describable process. No refuge in imaginaries is open to it. Imagination may be its servant, devising the ideals against which reality may be posed, or aiding it to conceive the possible and the probable, but never its master. Science has reasonable grounds for viewing oxygen as completely explainable in terms of dynamics. It may, therefore, cease to regard oxygen as an irreducible, and the analysis of science in this case may be accepted by philosophy; for here they deal with the same aspect of the same reality, although it must be marked that the judgment that they are dealing with the same aspect of the same reality is a judgment within the province of philosophy, and not a judgment within that of science.

In committing itself, as it has here and there, to a theory of monistic evolution which necessarily reduces the self to the same ultimates as are conceived in the evolution of oxygen, can philosophy regard science as equally justified?

It cannot, because to its vision the realities of a self, and the symbols which describe its qualities, aspects, and distinguishables, are of another order from the things which may be called material. No aspect of the self is a basic aspect back to which its perceptibles or apprehendibles can be pressed. In it there is no suggestion of tenuities which by mere assemblage or entry into dynamical relations can yield its qualities. It must regard the self, therefore, as an irreducible. This does not mean that it regards the self as an existence without origin, or as a static or unrelated existence. Such a view might be consistent with its existence in an ideal logical system, but is not consistent with its position as an historical particularity in the body of an all-embracing reality.

The self is a recognition which may not be explained away, or rebuilt out of any separables into which it may be divided by analysis. It is neither finite nor infinite—both terms are meaningless outside those realms of pure fancy in which the intellect disports itself. From what seems merely the poise of a conscious "here" and "now," it may pass into activities of perception, feeling, emotion, intellect, or imagination. We can trace the growth of these activities, but we cannot trace their genesis to any unit or aggregation of matter. Imagination builds on memories, or the power to recall, and to some extent re-embody, what is regarded as the past. It also builds on generalisations of parallel experiences, using its generalisations as raw materials; and its generalisations are not the condensed and composite photographs conceived by Bergson, but constructed frameworks for its intuitions of reality, as well as for its free activities of prevision. Imagination may be either purely an activity having relation only to the mood of the immediate now, or that which moves through a gamut of emotion and judgment to a constructive prevision of something believed to be within reach of achievement. Intellect also bases itself on the capacity to remember—that is, to immobilise and retain conceptions or abstractions the foundation of which is in the past; and this

is so despite the fact that the basing is here far slighter, the influence of the past more obscure, and the activity itself, except where it is merged in reason, somewhat indifferent to the concrete progressions of reality. Emotion is an activity wherein all other activities may be lost for the moment. With the aid of imagination, it may be conceived as rooted in the past, and its genesis as traceable to the edge of feeling. Its growth is clearly in the past; but not in the past of events so much as in the past of achievement, and of its own activities. It goes as near to something fundamental as anything we can distinguish, yet how divergent in quality! All these distinguishables alike—perception, memory, intellect, emotion, reason—are manifested in consciousness as activities, and as ever intertwining, impermeating, rising towards recognisable singleness, or sinking, through the complex and the inchoate, back to the poise of a "here" and a "now" which hold so much of what may be called explosive possibility as to make ridiculous the thought that at its base we can find the unity of a sameness. Moreover, in a wholeness of action they admit of fusion into an intuitive prevision which lifts them, as a whole, above their previous level. Clearly, they are not temporary contiguities of what are called mental states, but are, on the contrary, objective activities in an irreducible relation to a subjective wholeness edged by judgment. They are, in fact, displayed before a central core of individuality without which, despite all the modern intellectualism that would make them evanescent relations locally focused, or temporary and meaningless processes of an all-embracing absolute, none of these activities in what we call consciousness is understandable.

The self is not an epiphenomenon of the mechanical balance and progressions of brain substance. This denial is really involved in its acceptance as an irreducible, for brain substance is reducible up to the limits of the inorganic world. Brain substance is as much its servant and its tool as the scalpel or the plough.

The field of consciousness into which the individual self

throws its activities is a field of varying extensity. Not alone is mass or extensity a characteristic of sensations directly experienced or recalled in memory, but of all the activities of emotion and intellect as well; and the mass or extensity (a quality which has nothing to do with the device we call absolute space) varies with the nature, degree, and persistence of the activity. Acquiesce in this varying extensity, and no modern psychologist doubts it, and you are compelled to regard the activities of the self, in its private and personal field of consciousness, as movements. By a movement, by a conscious extension of what seems an indivisible "here" to a "there," it recombines the sensations of its past, and builds thereon fancies or previsions enshrining possibilities of beauty or of ideal perfection. It individualises and juxtaposes the concepts of intellect in movements and extensions introspection cannot miss; and in emotion there is always a movement into something to which only the prejudices of an intellect obsessed by its own symbols can deny the term mass. Objectively, therefore, the self may be described as a potentiality of movement, centred, and thereby individualised, in its own particular "here," and recognisably definite in its own particular "now."

This conception, or intuition, of a self that moves admits of some simplification. The primary movement of that here and now we call a self may be simple and almost complete absorption in a sensation. In our complex and developed selves we may recognise this as still a part of our capacity. Where we meet a sound or a colour of surpassing appeal, although the experience is momentary, and almost directly involved in the products of the activities of our later growth, we have evidence of this fact. Almost coincident in birth is the movement of like or dislike, persistence or withdrawal, and close on the heels of like and dislike must come comparison, which is the birth of reason and the germ of intellect; and reason, as the servant of judgment, is always weighted with the possibilities of emotion. The secondary movement that will repay distinct consideration is what

may be called intuition. Intuition is a unity of action which reflection shows as effected by a complex of capacities. It is a shaping and a selection. But it is, at the same time, a unity of effort, and involves the activities of reason and a sort of judgmental emotion to whatever extent they may have moved into the position of recognisable capacities. As one of the facts of reality it is a complex fact, entirely constructed by the self, however suggested. Yet it is an organic fact. It has a wholeness in regard to the self, and its existence marks definitely the centred self, and suggests the expression—the symbol—that can recall the memory. The intuition is a perceptive act which is whole, simple, and outside the modifications of judgment or conscious expectation. It is momentary, for in repetition the practical capacity that shapes it to knowledge and use is at work, and stresses only what custom has made definitely recognisable and distinctly within expression. Yet the greater this practical capacity, the greater the content of the intuition in what may be recognised and expressed; and it is believed that the greater also will be the marginal content which moves towards the explicit, and the content of the intuitive background wherein the objective as a whole, and the self as a whole, are in intimate perceptive contact. Reason moves through and lives on the intuition. Where it gets away from the intuition, clinging to abstraction, it moves into the autonomous activities of intellect; and in a sense tends afterwards to place itself in conflict with both its original efficiency and the intuition by which it really lived. Where it remains in functional contact with intuition, the movements of reason parallel those of intellect; but where intellect is comparing, marshalling, and judging abstractions and unrealities, reason compares the expressible content of intuitions, and sometimes the full intuitions themselves, and as a consequence its activities develop, as Croce so clearly shows, along lines that evolve generalities applying to the narrowly practical or the economical, the socially practical or the moral, and the ultimately practical or the philosophical. Although

making his stages too definite (because he is at bottom a mechanistic idealist, as Hegel was before him), and placing, finally, too exclusive a value on the function of the pure concept, Croce is, in this matter, schematically correct. The self does not, necessarily, move beyond the activity or the intuition of the economic or of the moral. He is justified, also, in emphasising the persistence of the earlier stages in the later stages—of intuition economical and moral in the intuition philosophical—but it is questionable if his own final intuition has gathered the facts of their real complexity, permanence, and interpenetration, into his recognisables and expressibles. As a consequence, the road of the implicit to the explicit is not entirely describable within his clear-cut generalisations, nor within those of any man shackled within the absolutes of an essential monism. Monism constricts the full intuition of the implicit in its prepossession that the known and the knower are one (are the artist and his picture one?), and the final superpersonal, all-embracing spirit of Croce, despite intrusions from the intuitions of a mystic, is manifestly a mechanistic monstrosity.

There is an outer world independent of the self. Its most direct contact with the self is through the highly organised substance of brain and nerve—specialised parts of that outer world. Acting through these, the self constructs an outer world which is an individual world, and really a private world to every self. The actual world that science analyses into irreducibles which all men may similarly test and similarly describe is part or aspect of a real world which serves as the fluid basis of many worlds. Its rose is a stage in a progression of which science can give a very interesting and, to the reason, more or less adequate description. Although the descriptive process may not be fully completed, it is undeniable that outside the special unity appertaining to the rose because it lives, it at any moment admits of description in terms which are quantitative, and which any man may verify. This is so because the rose is, within an individual limit of duration, a con-

stant in all its material aspects. Yet it is never the same rose in the succeeding moment which repeats the limit; and it is never the same rose to two persons seeing it each in his own perspective.

There is a long individual history behind the beholding eye. Every moment of that history—unique despite its parallelisms—lives in the resulting complex of possessions (memories), capacities, and aptitudes of perception, emotion, and intellect. There is, therefore, individual vision, individual æsthetic emotion; and individual approvals of judgment.

There is a history of the rose ending in a thing mensurable, definite, and describable. There is a history of the system of nerves and neurones which carries to the brain, through eye, ear, and nostril, its shape, movements, odours, and infinitesimal rustlings; and here, also, the resultant is a thing mensurable, definite, and describable. But that which accepts, appreciates, and judges has also a history we may trace. Although it is fluid and elusive beyond all our standards of measurement, we cannot doubt that it, also, has its moments of definiteness. These moments are not, however, filled with recognisables that are in any degree mensurable within the standards even of number. That there is a logic in their growth and interdependence is a statement we may neither accept nor reject; nor need we drop the hope that a pure mathematic of the future may give us frames which will make their progressions more understandable and describable. What we must face and realise, however, is that they are outside the dynamical frameworks which have so clear and practical an application to the material body of the rose and the brain.

The factors in our vision of a rose are mensurable up to where a rose emerges in consciousness. At this point we reach that page in the book of common knowledge which marks the limit of its mensurables. The knowledge of science and practical life, as defined and expressed by intellect, hides the existence of this limit at the cost of

error; for it hides a fact known individually to every man. Beyond this limit is clearly that which evades the standards of mechanised intellect; and yet, because the beyond touches so closely on the practical life which intellect serves so well, there is a perpetual temptation to simulate description within symbols that imply the mechanical. Moreover, the simulation is a practical necessity of social life, and serves social ends roughly, if at some danger to the more ultimate individual and social ends, pending more explicit frameworks for intuitions that life perpetually thrusts on attention. It is for philosophy to clarify the usage, to admit its justification in the service of certain social ends, and its adequacy in knowledge framed to serve discernibly practical ends, while at the same time bringing to common recognition the fact that here we really pass into a realm of values wherein the mensurable is the figure and the simile, but never even the accurate common denominator to which all men may apply their habits of calculable prevision. We have here a radical divergence of nature with no possibility of easy compromise. Epiphenomenon will not serve. In this connection it is a trick of language—a term with which to obscure, illegitimately, the impotence of analysis, and apply, as description, an assertion founded on a prejudice of mental habit. It has a restricted place and usage as a temporary and conventional term on the borderland between physiology and psychology, but it has no place in a beyond which shows no mark indicating community of nature. Here real description and vital definition must be sought; and until they are found the activity of philosophy is still a quest. In the mechanical world, although there are alternatives and contingencies, the whole progression is preinvolved, and the present is always the past whatever the degree of rearrangement. Moreover, as a progression functioning calculably in space and time, the present and the past are logical equalities; and the apprehending intellect might indifferently move in either direction. In the world of the self, on the contrary, the intellect, even in so far as it is

capable of devising truly applicable descriptions, cannot find commensurables on both sides of the indivisible now. Its apprehending pathway must be that marked by discernible growth. In retracing, it will find itself abandoning values for other values, and each system of values is a thing in itself, admitting of comparison only in terms of value, and never to be measured as the things which intellect schematically isolates in the material world can be measured. Furthermore, it will find itself forced to recognise a higher and a lower, a simpler and a more complex, which are not dynamical resultants, even figuratively; and to realise that there is here a stream flowing only from past to future, and that the things it carries, though related, are never recombinations, simply, of earlier things. In the world of the self there is real growth; the perception that is singular and individual is always adding to memories, and serving activities of feeling, emotion, reason, and imagination that have within them principles of expansion, and are fed on rather than preinvolved in the past.

Three primary irreducibles, therefore, emerge for consideration—the irreducible which science and practical life calls the material world, the irreducible which the self accepts in consciousness, and the irreducible which that self constitutes as a something that experiences, and is judge and observer in respect of what it accepts or, to be more accurate, constructs in consciousness.

The first irreducible has an aspect freely open to the analysis of science. In this analysis the concepts which intellect, acting as an autonomous activity, is able to construct have a special application in the ideal mechanisms which they suggest, and to which material progressions have a recognisable approximation. This aspect, however, does not exhaust its distinguishables, and leaves its inner nature manifestly untouched.

The second irreducible has an aspect open to the science of psychology, though it affords no objectively separable approximations to the ideal mechanics developed by intel-

lect; for none of its elements are persistingly objective, as are those of the first irreducible.

The third irreducible is one that psychology tends to confuse with the second. Much of that current philosophy which can see no distinction between knowing and the thing known regards it as an illusion essentially evanescent and meaningless. The science of persisting mechanisms agrees with the philosophers in question, covers both the third and the second irreducibles by the term epiphenomena, and so demonstrates, to its own satisfaction, the monism in which it has so abiding a faith.

The present theory asserts and maintains the irreducible existence of all three. It sees the first as an objective persistence independent of any or all consciousness, and the second as an activity of the third due to the free initiative of that third, and to its interactions with the first. In the third it sees the irreducible self. It regards the substitution of real explanation, and of a description that really describes the distinguishable, for the irrationality covered by the term epiphenomenon as one of the primary tasks of philosophy.

CHAPTER II

THE BRIDGE

PHILOSOPHY has been apt to pose a contrast between things of the mind, whose character is intensive quality, and things of the material world, characterised by mensurable quantity. In colour, for instance, we have a sensation in consciousness; and quality, intensity, and emotional appeal characterise its acceptances by a self. In colour, as the name which science applies to an event in the material world, which it finds repeated again and again in uniformities of mensurable and calculable vibratory action, there is only the mensurable and the calculable interpreted on interrelations of its ideals of space and time. In itself it has nothing describable in terms proper to the sensation in consciousness. The two perspectives—that of science and that of consciousness—are placed, therefore, in absolute opposition—one a perspective to all parts of which quantity alone applies, and the other a perspective to all parts of which intensity alone applies. Colour is the symbol for each, because the practical reason has no doubt as to the identity of the colour seen in a rose and the vibratory system wherein the rose is a stage (or filter) between the sun and some terminal of brain substance. From the standpoint of consciousness, and from the standpoint of science, the common term is justified; but science is not justified when it deprives its acceptance of the facts of consciousness of all meaning, and incorporates them, without evidence, in that aspect of the facts with which alone it deals, and philosophy is less justified where, as a device in any of its intellectual contortions, it places in absolute apposition the quantity of science and the quality of sensation. Its contrast ignores the facts, and is achieved by deceiving itself into accepting, as parts of the real, symbols that, in a last analysis, have

not even behind them an ideal that can be reduced to imaginary construction.

The rhythms of light are a particularity in the body of reality. Within the limits of the relative and practical measurements adopted by science, they are described in terms acceptable to and verifiable by all men. The description, however, is that of a degree of coincidence with an artificial framework constructed in accordance with the ideals of intellect. To construct a finer and more comprehensive framework, and to conceive the rhythms as coinciding more and more nearly therewith, this is the problem of science in accepting and explaining these rhythms. Its habitual activities seem, therefore, to have no point of attachment to sensation. At the same time, it is usefully and justifiably pursuing its proper activities where it tries to establish some sort of quantitative relation between stimulus and sensation; and its results are results for real philosophy so long as it does not allow itself to assume a philosophy which dims the honesty of its vision and obscures the reality that stands behind the little marginal region in which its correspondences are truly found. Rigidly applying its methods, and ruthlessly judging its results, science might achieve a real success in this marginal region; and, coming to see that science is, in its spirit, sane acceptance, classify, compare, and describe (as, indeed, most psychologists are content to do) facts associated with sensation in conscious acceptance, and abandon the attempt to bring them into a meaningless coincidence with the dynamics of matter.

The mind, because it has arrived at the recognition of universals which are not qualified by space or time, is by these philosophers set outside space and time. Where we consider only the logical ideals we know as space and time, and find these infinities of positions that have no magnitude and of nows that have no duration yield certain logical antinomies, we may reduce space and time to illusions, and so find the exclusion justified. For these universals are indeed verities, and lend themselves to logical discourse

that simulates the discourse of reason when we forget that they are but verities of an ideal order. They are truly outside space and time, as they are undoubtedly outside our concrete world of extensities and durations. But space and time are not terms that describe extensity and duration, and the antinomies of space and time in no way justify us in placing the mind outside extensity and duration so long as we mean by mind something that is a reality rather than an abstraction. These universals are verities of an ideal order to which the intellect has attained in the inevitable course of its inherent activity. But they are nevertheless products of intellect, and intellect is an activity that invariably starts from that here and now we call a self. They are not intellect, intellect is not mind, and mind is not a self, and the whole difficulty intellectualism has erected on the conceptions of quantity devoid of quality and quality devoid of quantity, is a difficulty concerned in unrealities alone. Accepting, perceiving, knowing, judging, may, if we wish, be bracketed as activities of mind. But mind is not a mosaic built out of these distinguishable possibilities of action; and the self can no more be called mind than mind can be called intellect without obscuring an irreducible particularity which is far more inclusive. Even if we accept all these activities as the results of an exhaustive analysis of a self, and concede that it knows no activity divorced from a rhythm of extensity and duration that are conditions of its existence, we cannot eliminate its moments of possibility poised above action and inaction, nor make irrational the questions—what accepts, what perceives, what knows, what, above all, judges? Moreover, the rhythms of extensity and duration with which we are forced to credit its activities can be reduced to no multiple of the ideal indivisibles of logical space and time, and fail, therefore, to provide a reality corresponding to this philosophical counter of intensive quality unrelated to quantity. In truth, the quantity and the quality are neither of them absolutes in the absence of that ideal point from which the mensurable of quantity could flow outwards, and the immensurables of intensity

gather inwards in an infinity that remains as one. They are both, on the contrary, fluid and living recognitions of a self, and should not be outside description and such relations as description may suggest as rational.

Through the activity known to us in mechanistic science we find that, preceding the acceptance of sensation, there is a passage of motion having a mensurable amplitude and rate of progression. It is traceable from some material object to the eye, and in the eye there is a selective acceptance and condensation of this rhythmic motion, and beyond the eye this related motion is continued into the substance of nerve, neurone and brain. So far as science can carry its analysis, we have motion—a progression of successive vibrations—but where the actual sensation emerges this analysis reaches a blank wall. Where the self persists in pressing intellect to formulate what is not yet fully explicit, and does so with no real sense of the complexity of the fact itself, and no appeal to other activities at its disposal, it always slips into an unreal world of its own contriving. Caught in the snare of this unreality by its exclusive contemplation of the progression in which motion precedes sensation, the impasse which might bring pause, realisation, readjustment, and ultimate sanity of vision, is obscured by devising and accepting the term epiphenomenon. The sensation is the epiphenomenon of the motion. Thus it embarks on a career of full-mouthed obscurantism!

After this it is easy to elaborate the view that under proper stimulus the brain yields sensation and all the mental and emotional activities of a self, just as the liver yields bile. It is forgotten that analogy is an aid to understanding, or at most a suggestion, never a substitute for proof; and that while bile is a material progression, one in kind with the material progressions that have preceded it, formed, indeed, out of some of the actual and unaltered elements of these progressions, merely a new dynamical system incorporating the units of a former system, and so, in acceptable theory, a calculable and mensurable resultant, sensation is not even

describable in the terms that are applicable to the calculable and mensurable stimulus. In this way, by attaching the qualities of sensation, in however dim and germ-like a fashion, to the concrete movements of the material world, and attaching them merely by empty words, the real differences between the distinguishables of the inner and outer world are obscured, and, more fatally still, the realisation of motion as a common denominator is rendered impossible.

To science movement is an affair of quantity; it is mensurable, and admits of no complications that cannot be fully expressed in terms of its dynamics. Moreover, movement is an objective view of a thing, an aspect of its existence or persistence under the scrutiny of intellect, and in the scientific analysis—that is, in the intellectual analysis —of irreducible things we never get inside this dynamic. Oxygen is found, for instance, to be an organised system of movements built, probably, on units such as the electrons. It is accepted unhesitatingly as a mensurable mechanistic system, and its powers and qualities are all conceived as functions of its organisation into a machine that is never at rest. In oxygen, as a thing in itself, science can conceive no analysis that cannot add to or refine the expressible details of a mechanistic system of movements. True, it plays with a word it knows as energy, and sometimes seeks by applying it to everything that matters to achieve a philosophy. The ether itself is conceived as a kind of negative energy, inorganic matter as an exhibition of positive energy, and consciousness, with all that it connotes, as the manifestation of a variety to be called biotic energy. A monistic progression of a something awe-inspiring, and to be accepted with religious fervour, is thus described in steps which are, to its vision, absolute contiguities, and therefore terms of the absolute equation. Nevertheless, it has to concede to the intellect which bred the fancy that nowhere, from ether to brain, is there a system of energy aggregations, potential or dynamic, outside the plain picture of units moving so as to constitute systems, and

systems moving so as to constitute more complex systems, and all expressible in terms borrowed from an ideal mechanic functioning in an ideal space. Along the line where the windmill lifts the water that flows to feed the turnips, which feed the hogs which yield the breakfast bacon of the philosopher, there are relations the inner nature of which is one with the thoughts and feelings of Bertrand Russell and all the wise New Realists!

Mechanistic science has to be content with an analysis whose ultimate term is movement; but if it is to construct a philosophy, it must resolve movement instead of dowering it mysteriously with the fragments of human realities required by the descriptive necessities of a monistic evolution. Otherwise it cannot transform an electron into any other fact in the field of consciousness, or legitimately picture it as a thing outside the recognisable symbolism of intellect. None of the living terms of our sensation experience are available—none of the terms by which we, and even they, describe the facts of sensation one to another—for intellect has taught them the virtual denial of that in the midst of which they really live.

We must be clear. Intellect is an activity in consciousness. Its most elementary manifestations are indistinguishable from the entirely practical movements of intuition and reason, and are concerned with parts or aspects of experience directly in touch with reality as a whole. Even in its earliest comparisons and recognitions, however, it has to depend on memory—on the power to recall and contrast what was with what is—and no recollection fails to be an ideal divorced from reality, however closely imitative of some aspect of reality. As its development proceeds, and it refuses to refer again to the intuition in which it had its birth, the elements on which it builds become more and more things in themselves, until, as already pointed out, they become elements in the purely fanciful. Equality, sameness, order, number, position which has no magnitude, time which has no duration—these, and other symbols of their class, may aid in the

interpretation of impersonal reality; but they are not elements in impersonal reality. With the capacity to build its own world out of such elements, intellect, however dependent on consciousness its existence may be, is therein a thing in itself, entirely distinct from the interacting reality we know; and its recognitions are in nowise translatable into what is known in the experiences of acceptance, recollection, and imaginative reconstruction, as sensation.

The bell is struck. The note is heard. All the vibratory movements wherein the trembling metal, the air, the ear-drum, the nerves beyond, and the neuronic complexes of the brain, are concerned can be recognised by intellect as things which admit of exhaustive description in terms of movement—in terms that reason, using intellect, recognises as its ultimate counters in interpreting reality in the aspect that is mensurable. The understanding may be aided by pictures in consciousness as well as by the symbolic manipulations that are purely intellectual. Sensation aids apprehension, here as in other circumstances, but the aid is dependent on no community of nature between the ideal recognitions of intellect and the concrete facts of sensation. Diagram, and cognate movements otherwise produced, may instruct the imagination until a fair picture of the vibrations in all their complexity can be produced; and the student of practical mathematics may, aided by his equations and with a little visualising, obtain a very fair conception of the mensurable system concerned. The man who embodies its facts in the equation with some almost nascent picturing also achieves the conception, and possesses the symbol of an implicit which, unless he falls entirely in thrall to intellect, can at will expand to real and imaginative realisation. In the actual facts of life he is never, therefore, in thrall to pure fancy; in philosophy, unfortunately, he often is, and therein most completely illustrates the division between the intellect, which clings to ideals of its own construction, and the reason, which functions only amidst realities.

It is such slaves to intellect who are fond of setting the facts of the outer world, as intellectualised, against the facts

of the inner world, as experienced, and in the process arrive at conceptions which bloodless abstraction has deprived of all content, so that they finally represent symbols that are symbols and nothing else. They pose the problems of the contrast, and build a theory of metaphysics on the clash of antinomies instead of on recognitions that persist and are irreducible. Their metaphysic may capture the fancy for a while, and simulate the bridge, but this airy nothingness ultimately dissolves, and the hard facts of things real and contrasting challenge explanation anew.

The contrast is not one built on a fundamental sameness. It is not one of mind and matter. Matter may, indeed, be conceived as built on a fundamental sameness interpretable as the aggregation and dissociation of persisting and autonomous infinitesimals of movement. But it is not so with the inner world. To call it mind merely gives a general term, useful and necessary in its proper place, but inducive of the profoundest error when used as matter may properly be used. For there is no inner world apart from the activities of what we know as a self, and each self is an historical uniqueness, and therefore something the existence of which is inconsistent with the processes of reduction and amalgamation to which mechanical resultants so naturally submit. There is no method, real or imagined, by which we can contemplate intellect, emotion, feeling, sensation, and the disposition of conscious action and acceptance, as rolled back into a mass of the simple or the similar. Sooner or later all will abandon this search for a fundamental sameness in the inner world, recognising it as merely an appetite of intellect; and realise that though the self is an irreducible, it is a complex irreducible, where, even below the memories and capacities that are purely personal, there are distinguishables in each of which is a core of the fundamentally different. It will then be easy to see that the facts of intellect, the facts of feeling, and the facts of emotion, however they may touch the outer world, have in no way that intimate, traceable, even crudely mensurable relation to the facts of the outer world we find in sensation. The sensation

which feeling in no way touches—in respect of which we have neither like nor dislike, nor even curiosity—is accessible to experience. Experience, therefore, knows the sensation that is sensation and nothing more. Realise this—realise the existence of sensation-experience in which no other human activity is involved—and our problem will be transformed, and the credibility of monisms of matter or mind relegated to their place as superstitions that have naturally and inevitably dogged the habits of intellect grown to a stature that has lifted it into a world entirely of its own contriving. The chasm will be seen as one between the self on one side and a world of mechanistic motion on the other. It will, however, have to be considered as a chasm which the self seems easily to bridge in its ordinary progressions, while only by some alchemy, which can neither be intelligently described nor in any way constructively imagined, can monism construct a bridge crossing from the other side. Moreover, the conviction cannot be evaded that the bridge used by the self is at the point where sensation meets movement, and here alone.

Bergson has come to close quarters with the solution. By divorcing the symbols space and extensity, he has established the latter as the symbol of a quality or distinguishable in material reality, and swept the former into the realm of the purely intellectual and fanciful. He has shown this distinguishable to be a measure of movement, and to be a common symbol in descriptions both of the inner and outer worlds as they are in reality. The quantity which the outer world has taught us he carries inwards into the world of sensation, and the quality we experience in that inner world he has carried outwards into the material world of persistent movement. Matter is the intellectual interpretation of resistance. It is the framing, in the intellectual schemes of time and space, of a persistence whose realities are moments of movement and duration strung into rhythmic phases. It is a world of matter, of mensurable movement. Nevertheless, this outer world is a world of sense—of sensation whenever the inner and intimate

capacity of a self comes into the direct pre-intellectual relation therewith. Movement is a common term—a common quality, and so is the quality we recognise as sensation. Intellectually the organ-note is a vibratory movement of the air continuing itself in related vibrations of neuronic substance, and to the intellect it is this alone. To sensation-acceptance it is quality, but although quality and movement are unrelated interpretations, the reason can arrive at the recognition of both as indissolubly connected in a single manifestation.

Bergson's bridge is, however, too wide. He has failed to free himself from a basic taint of monism. His hypothesis of a spirit that has fallen towards matter, or which has not yet risen to the autonomy of movement that is truly free, dowers the world of mechanistic motion with implicit consciousness, feeling, emotion, and intellect, as well as with a creative urge and an intuition powerful beyond intellect. Bergson would really apply matter only to movement in absolute coincidence with mechanism. Therefore, for him real matter does not exist; he has not truly grasped the function of an ideal mathematic, or the importance of its possible existence, and he is essentially a monist who conceives of mind-stuff, to use Clifford's term, blindly struggling towards a god of freedom it creates as it struggles. It is rather surprising that the intuition—the imaginative reconstructive sympathy—with which he is so richly endowed has not given him the inner view of one of the ultimate movement-sensation elements, and suggested how truly free these elements may be in themselves. Autonomous movement is surely theirs; because, on any modern view of inorganic evolution, they maintain it throughout all the transformations from submensurable to mensurable, from electron to atom, from atom to colloid, from colloid to cell, and back again to submensurable ever pressing away from its here. It is nothing to them that they move within the curves of an oxygen atom rather than in a curve that is almost a straight line from star to star. The atom is built, the organism is perfected, purely

because these autonomies will persist, and by their persistence make possible a form and an organisation in which they have no interest. They are the bricks with which, because they are bricks, and remain bricks, the temple is built. He might then conceive them as what they are—the irreducible inconsistencies with a monism of any kind. As it is, his elementary movement, which is elementary sensation and a sort of neutralised consciousness, is inconsistent with any analysis which does full justice to the self. For no impartial analysis can fail to see that only in sensation is there any real community of nature between the self and the outer world. In the complex of material movements there is no trace of consciousness, no shadow of feeling, no gropings of emotion, of intellect, or of that which shapes and makes possible the organisation of values which frames the inner core of a self.

In the whole complex of reality we have two distinct orders of movement. In the outer world there are many distinguishable kinds of movement, but all are reducible under the scalpel of science to complications of elementary movements. In the inner world also there are distinct varieties of movement, but there is no warrant for regarding them as simultaneous or progressive organisations or aggregations of elementary movements common in kind. Consciousness is not a thing that can be, half be, and not be, although its distinguishable concerns may vary from the micrometer-like movements of an intellect absorbed in its own most abstract interests to acceptances, contemplations, imaginations, resolves, hopes, despairs, and all the gamut of the things that are personal to a self that aspires, grows, enjoys and suffers. Where it is conceived as a thing evolving, there is a fundamental failure to recognise its meaning as a descriptive term. For consciousness is not an irreducible reality, or even a relation between irreducible realities, so much as a name that recalls the facts of personal experience generalised and symbolised. It is, as we know it, the term which names the fact that the self experiences—that it accepts, knows, or recognises the inner intrinsic

quality of sensation, emotion, or intellect, in manifestations which science can neither recognise nor imagine apart from movement, nor under any aspect other than persistent phases of movement. Sensation, feeling, emotion, and intellect, as displayed to us introspectively, and inferred in social contacts, are the things in themselves. The use of consciousness as a general term to connote the existence of any or all of them obscures our whole problem unless we realise that consciousness is inconceivable apart from a self, and one or more of these particularities in relation to a self. We may easily imagine the self, entirely undeveloped, as coinciding with some movement, and remaining utterly without consciousness until it loses the movement, and, regaining the movement, remembers. The key to consciousness, and to everything consciousness makes possible, lies here for the man who will rest on this imagining, and test it, without preconception, against reality.

As the conceptions of mechanism become rationalised—as they are brought into a vital and intimate relation with reality through the progressions of a thought that is sharpened by intellect—sensation will be recognised as alone the existence which is a reality of the inner world and a reality of the outer world. Sensibilia will be accepted as movements with which a direct activity of the self, as well as an indirect or induced activity, may be concerned—movements when thrown into the frameworks of intellect; sense elements where the acceptance is directly concerned with intimate quality. Sense-acceptance itself will be seen as an activity of the self—as an activity the resultants of which are mainly things of the self—pressing into existence in one irreducible moment of the rhythm of a self, and in the succeeding irreducible moment sinking back to memory and potentiality. But primary acceptance will be found to have a varying element of novelty, or of the determinate, and this element to be furnished by the progressions of what we call matter, and matter to be capable of entering into functional relations with a self because it is, in its inner nature, one in quality with the sensations of which a self is

conscious, and can, after learning their particularity, make for itself. Feeling is an acceptive or repulsive movement of the self. Emotion is a movement involving the whole self in a manner entirely unique. It builds on feeling, had probably its birth in feeling, and acts and reacts to and on the whole physiological equipment of the organism as if both were for the moment intimately and entirely one. It is, nevertheless, a thing of another order altogether from sensation, and its only analogue in the outer world—attraction and repulsion—is demonstrably a thing in which the mechanical relations of complexes of movement are alone concerned. Anhydrous sulphuric acid has no hunger for water; it is merely an unstable mechanical system which falls violently into a more stable state whenever or wherever it is given the opportunity. Intellect, indeed, in its most abstract positionings as well as in its concrete previsions, gives to its movements some pale shadow of sensation-quality. This indicates no community, but merely distinguishes for us that two of the capacities which a self exercises are used to a common purpose. That the movements of intellect should be in terms of sensation argues no community in their inner natures, and contemplation will soon discover that intellect shows at its height ends and activities that are as much outside sensation as they are outside matter. At the same time, this rudimentary sensation-quality with which thought is apt to clothe its most abstract symbols should help us to grasp the essential nature of the bridge. In the activities of intellect introspection cannot fail to perceive occasions in which there is a translation from sensation to thought and from thought to sensation; and if such be held and observed, recalled and re-experienced, a conviction in which more than logic is concerned may be arrived at, and acceptance given to the fact that the sensation that is only sensation to one activity of the self may become motion and motion alone to the activities of intellect.

Sensation is a possible content of consciousness. In the activities of a self it is always being called into existence,

and, as attention finds other interests, allowed to pass out of existence. Movements from the outer world passing into the apparatus of the special senses are so followed by sensation-experience that we are justified in tentatively considering them as transformed into sensation. Here, however, it is believed that there is neither transformation, epiphenomenon, nor arbitrary sequence, but simply a recognition of the movement in its fundamental quality as sensation. It is movement to the intellect—movement is its persistence as conceived by the intellect. It is movement though it had never come in contact with a self so equipped with intellect as to recognise the extensity and continuity of its successive moments. At the same time it is always sensation, recognisable as such wherever it falls within the sensation-activity of a self. It is, therefore, always movement and always sensation; but, considering what intellect is and what sensation is, how the former is abstraction drawn from an aspect of reality, and the latter an intimate and primary acceptance of reality, we cannot fail to find our irreducible description of the outer world to be that it is a complex built out of elements which, in the last analysis, have the character of sensations. Had the self the power to press the sensation-movements of consciousness to a certain degree of persistence, matter would, by the effort, be created; and a movement, initiated by the self, pass outside the consciousness of the self, and be available to the analysis of science as a movement, and under conditions, to acceptance as a sensation by any self. There is no other bridge between the inner and the outer worlds.

The material world is not, therefore, a world of beauty, or of intellect, or of emotion, nor has it any germ of these realities. As much as the picture of the painter it is a collection, numerable if not enumerated, of particularities like the paints and the canvas, and in ultimate intellectual analysis approximates to a mechanical system. It has aspects of beauty, and intellect and emotion may feed on its stages and progressions; but these things are neither in it nor of it, and only in contact with something such as we call a self

can it have any part in these things. They are recognisables in reality viewed as a whole. In the material aspect of reality, considered as a particularity, they have no existence. Matter is essentially raw material—an artist's medium would be, perhaps, the better term—and the only bridge, the only vital contact between it and ourselves, arises out of the fact that its inner quality is that of a complex of sensation-elements. Its function is primarily to awaken the self to its own possibilities, to initiate the growth of these possibilities by affording it the model on which it can initiate sensations, and afterwards to furnish new material on which the self may exercise a creative power which acts, responds to reaction, and grows because it has to fight.

CHAPTER III

THE IMPERSONALS OF MECHANISTIC SCIENCE

Science frames its intuition of reality in a mechanistic system which it can analyse only into movements. Its final resistant particle, its centre of force, its rings and strains and knots in an ether that is at one and the same time solid, elastic, and granular in structure, are, to the candid analysis of reason, nothing but metaphysical assumptions which help it to convey the tactual and visible models of mechanism into that which underlies its analysis. These assumptions may be in their place as aids to certain specialised activities of science, and as such may be accepted so long as they serve these activities. Their justification is purely pragmatical, and, Do they work? is the final question they have to face. Where, however, science criticises its own results, and in its own spirit takes stock of its positive achievements, it has to contemplate movement as the final term in its analysis.

Philosophy is a criticism that cannot regard the intuition of science as the final intuition, or its activities as the flower and consummation of the more general activities of life. Philosophy needs the irreducibly final term more than science; and although it may accept the conceptions of movement and of a dynamical system from science, and regard them as having a very practical application to the material aspect of reality, it must press the analysis, and determine whether they have what may be called an absolute application. It is here found that they have not an absolute application—that material reality is not a dynamical system such as pure mathematics, or even practical mathematics, can contrive, but a fluid approximation, of which the truest idea is obtained by regarding it as something made, and in the making of which the dynamical ideal furnished principles of construction; and that the defect of

science, where its results are judged by the higher standard, is in accepting the devices called space and time as parts of the real. In space, apart from certain contemplations of the mathematician, science accepts an underlying emptiness, infinite in extent and infinitely divisible. In it the irreducible element is a position that has no magnitude, just as the irreducible now of its time is a moment that has no duration. Nothing can be in this irreducible space, nothing can happen in this time which allows of no event; therefore its progressions of movements are an infinity of juxtaposed immobilities of nothing. No demonstration by mathematicians on continuity and infinite collections can meet this clear fact, or dispose of the irreducible antinomy between the scientific view of matter as movement and the voids of space and time.

Science should be content in theory, as it is in practice, with the recognition of extensity and duration. They are involved in every acceptance of experience. Empty space is only a logical ideal representing the possibilities of unhampered movement, as eventless time is that representing the possibilities of ordered activity and growth—the one abstracted from the innumerables of interpenetrating extensities, and the other from the concrete multiplicity of overlapping events. Both are devices useful and necessary up to a certain stage in knowledge related to practical life. Their utility ends where practical life seeks a philosophy.

Extensity and duration are describable characteristics of movements. The here and the there of human experience are irreducibles, and the thing attended to, passing unbrokenly from one to another, defines at once a movement and an extensity. Apart from this, there is no more of extensity, as a persistent existence, than there is of the shape, colour, or odour of a rose in its buried ashes. Extensity is a descriptive term of which no man doubts the meaning, and its application may vary from a pin-point to the starry heavens. It is not a thing in itself such as intellect would make space, yet it is a symbol properly applicable to aspects of reality which can at any moment

coincide with and fill it. In the same way, the now which holds the continuity that is observed or felt exists nowhere apart from that continuity; and the jostling infinity of such nows cannot constitute by their existence or succession any indifferent, unregarding duration. Space and time are ideals of intellect. As such alone do they exist. Extensity and duration are the warp and woof of material reality. They are not, nevertheless, things we can relate to anything absolute or ultrahuman. They are strictly relevant to basic facts disclosed in consciousness. In consciousness we can detect a distinguishable rhythm of extensity and duration related to the outside world in the study of our acceptances through the specific senses. In the vibrations of light, for instance, we can only accept a movement that phases—that is, completes one of its distinct attainments of maxima and minima—in the $\frac{1}{500}$ of a second. This duration is a physiological and psychological unit definite enough for common acceptance and social use, and practically coincident with an artificial division of our mechanised duration. It is more than probable that all experiences of sensation are subject to limitations at or about this unit. Physiologically there is probably a limit of vibration in the organised substance of nerve and neurone which is coincident; and only in so far as the molecular movements of heat and chemical action can directly coincide therewith, or admit of periodic coincidence therewith, can we experience what are known as the general organic sensations of the body, or the more definite sensations of taste, odour, and hearing. The self has had to construct special apparatus wherever, in the course of the historical development of that succession which comprises its ancestry and itself, it sought to use or evade the physical facts which the movements we know as light, heat, sound, taste, and odour convey.

We have, then, a personal irreducible limit of extensity and duration. It has a relation to elements in material reality; but, as will be shown later, this has been determined, not by the accidents of a mechanical evolution, but by the necessities of a self moving towards an expansion of

capacity through its power to influence contingencies in material successions. On this personal unit our concrete world of extensity and duration is built. The extensity is there, the duration is there, the raw materials—distinguishable phases of extensity knit with duration—are there; but only in so far as we can relate them through sense, or intellect based on sense, to experience or knowledge can they be a characteristic of material reality known to or experienced by us. There may be innumerable rhythms of extensity and duration whose phases are too minute for our finest instruments and methods of analysis, or too large and slow. There may be a world that passes us by more completely than music passes the deaf, for they can investigate and detect the concrete rhythms which are concerned in its existence from the physical side, though it be out of relation to their sense equipment.

When a scientist gives us the mean diameter of the system which constitutes an atom of hydrogen, the velocity of an electron, or the distance of the nearest fixed star, he is not giving us facts of absolute meaning, but facts of meaning in irreducible relation to averages founded on the basic rhythms of a self. Science has no measurement that marks the passage of the point in its ideal space into measurable extensity, nor of the indivisible now of its ideal time into mensurable duration; and through this fact, irrefutable as it is to candid and impartial reason, the whole structure of purely intellectual philosophy, from mechanistic monism to logical idealism, falls to the ground. In extensity and duration we have realities which intimately concern us. They are irreducible facts in regard to which the antinomies which reduce space, time, and achievement to illusions have no application. They are, in the last analysis, human things, and therefore they are amongst the things that are also God's, and the cold impersonals—the oppressive inhumanities intellect has built out of its ideal elements—can no longer be the unregarding infinities which reduce human values to infinitesimal illusions in the womb of immensities no personality can plumb.

CHAPTER IV

THE TWO DISTINGUISHABLE HISTORIES

In the last three chapters an attempt has been made to show how the present effort takes a view of reality under which the material world appears to be a complex of persistent movements which are, in the last analysis, one in character with sensation; and though the intellect legitimately conceives this complex to be a dynamical system, it may, with equal legitimacy, and a closer approach to its essential quality, be conceived to be a complex of sensation-elements. The analysis of intellect covers a wider ground than that of consciousness. It reaches on one side to the edge of elements that are below the mensurable, and on the other side to a mass wholeness such as gravitation suggests, while consciousness has only slowly extended its field, making here and there some keener differentiations, but on the whole chained more closely to lines that directly interest organic life. There is, no doubt, a marginal straining of sense-capacity to include elements made distinguishable through intellect; and though, owing to the definite limitations of sense-capacity, it can hardly be imagined that the self and its organism can ever arrive at, for instance, the sensation-quality of the whirling infinitesimals we generalise as ether, or as the submensurable, the continuity of movement in which the ultimates are involved in aggregation within aggregation so clearly realised in the justifiable conception of inorganic evolution suggests, with a force that cannot be evaded, a parallel continuity of sensation-quality. It does not suggest, however, a parallel evolution of pure sensation-quality. The vibration of a violin string depends for its birth on a complicated particularity, reducible in all its elements to progressions that have grown to a dynamical arrangement. Each vibration making up the complex

vibration which passed to the ear may be subjected to an analysis pressing backwards to the submensurable. But the vibration-complex alone is a traceable resultant. The sensation-value of the complex is not a traceable resultant, for each vibration has its own individuality and might be produced by widely different aggregations of matter; and the vibration—the intellectually discernible aspect of the sensation—has its own irreducible individuality. Otherwise memory and imaginative reproduction would be impossible.

The practical device of framing these movements into an infinity of immovable nothingness, and comparing their successions on the background of a duration indifferent to and independent of the real event, has vastly extended our contacts with, understanding of, and control over the progressions of matter; but we must recognise, nevertheless, that the more restricted knowledge is, for our present purpose, the more necessary knowledge, as it is undoubtedly the knowledge nearer to a description of the real. A mechanistic system of movements may with propriety be accepted by science and practical life. Indeed, philosophy, with the criticism of ultimates necessitated by its own position, may also accept it, but it must bear in mind that the practical device frames what is really a complex the movements of which are distinguished and described in the terms of an extensity and duration definitely related to a self. We find this complex to be one in character with an experience of the inner self, and its interpretation to be conditioned by what may be called the unit-capacity of a self in executing one of its distinguishable individualities of movement. Furthermore, we have in that part of reality we distinguish as a self movements of a quality nowhere indicated in the world of sensation, for at this point—the point whereat meet sensations that are permanent, persisting, calculable things, and sensations that are casual, incalculable, and evanescent—reality seems poised on a meeting-place of life and experience and of two histories of traceable progressions.

One history is that of moments of measurable equiva-

lence in which quantity ever passes into equivalent quantity. Its irreducible elements phase in indivisible moments; and every larger element, whether it arises in the course of inorganic nature or presents itself as a modification or construction associated with life, has its phases of maximum and minimum, perfection and decay. Through all its transformations it is practically a mechanism, and makes a close approximation to that ideal mechanism which the intellect elaborates on its conceptions of space, time, and the persisting actualities and relationships of movements. Science works on averages. Nowhere can it deal with or compare separates and distinguishables isolated so as to admit of absolute measurement. Yet its working theory is an assumption which attributes the absolutely calculable and the absolutely mechanical to material reality; and the assumption need involve no inefficiency, unless the man of science carries it with him into philosophy, as a rigid and unquestionable axiom. Subjected to the questionings of persistent reason, he may have to acknowledge that matter is not a mosaic built on infinitesimal elements of that metaphysical irreducible termed substance, and that such general statements as the conservation of matter or energy are merely practical generalisations hardened into rigid devices the better to aid science and life in interpretation and manipulation. With a truer view of the nature of matter as a mechanism, it will be easier to realise the importance of the deduction that in its inner quality it is a plexus of elementary sensation, existing in itself, and having now no necessary relation to any activity in any consciousness. The other history, that associated here and there with this complex of sensations, is history in a more real sense. It is a history of the achievement of values that are human, and its events cannot be translated into any of the terms which express our intellectual view of the material history. The two histories are not a history of matter and a history of mind, but a history of matter and the history of a self.

Whenever these two histories are in a relation of specially

intimate contact, as they are in the human organism, there is a distinguishable process in the body of reality, and in connection with it the implicit is passing into the explicit. In the material world, focused at this point, there is, it is true, a passage to the explicit only by a convention which personifies that which is in its essence indifferent to all its transmutations of form and function. The explicit is an affair of a self in whom alone can exist any standard of value the explicit can serve. Nevertheless, we cannot relegate the progressions of the organism to a class comprising only the material. There is, no doubt, a continuity in the whole complex of matter from ether to neurone. But from our point of view this continuity does not preclude an intimacy of use and association which marks divisions that cannot be ignored; and such a division is present in a supreme degree where we have an organism. The tendency of material progressions to seek always the lines of least resistance, and dissolve their complexities into simplicities, seems to have been arrested in the interests of living forms, and, in addition, they have been forced into special constructions which allow of the production, isolation, and persistence of sensation-movements that cannot be produced apart from the elaborations of living forms. The vibrations of light beat on the bare surface of a granite ledge. Absorption, with the initiation of that molecular dance we know as heat; absorption, with electrical and chemical strains, if no reactions; reflection into the air—these roughly outline the classes of progressions that attend its course; and it is to be noted that they are all describable in terms restricted to a mechanism that is proximately a mechanism and nothing else. No proximate purpose is associated with these changes in the dynamical system. Where, however, this light falls on a green leaf, we have, in addition to changes in the dynamical system, a selective and purposive bending of these changes to discernible ends concerned with the growth, persistence, and reproduction of the plant; and where the green light, reflected into the air, falls within the visual system of an animal, we may

have a further bending to purpose—a purpose to the animal primary and exclusive of all the actions and reactions otherwise attendant on the passage of light from the sun to the earth. There is, therefore, manifestly a history in the most real sense of the term, even though it be a subsidiary history, in this part of the progressions of matter; and considering the evidences of traceable continuity from this point to the utmost conceivable limits of the inorganic world, our limits of history are nowhere reached in the fabric of reality. Physical science and psychology are the instruments of research which furnish the raw materials for a history. They intertwine and overlap as do the histories of matter and a self. Primarily they are autonomous activities directed to the analysis and description of fact; but ultimately their efficiency must largely depend on correctly valuing that view-point in consciousness out of which they have really arisen, and out of touch with which they tend to become a jumble devoid of perspective, and liable to developments that are abnormal and against the connected facts of reality. Philosophy, especially, must defer to this view-point, for the history it necessarily contemplates must be shaped to standards and aspirations that can be found nowhere else.

The reed by the river may conceivably vibrate so as to yield the sixteen regular vibrations per second which correspond to the lowest musical note appreciable by man. To pure intellect there would be nothing here but mensurable movements. The long succession of intercalated transferences from here to there by which all the elements arrived at this particular moment of vibration might be followed and described by intellect; but event, as history knows it, and the explicit, as the complex self recognises it, would be things so far removed from the frameworks of intellect as to give no indication of their possibility. When the human ear, however, comes within the limits of these vibrations, they touch an elaborated system which reacts by related vibrations of its own; and these related movements breed the reaction in consciousness we name sensation. The

actual sensation is not, however, so much the discovery of fundamental quality in the movements of the reed, the movements of the air, or even the movements of the ear-drum, as it is the free action of a self using some restricted terminal of brain substance to initiate movements outwards in rhythms that coincide with some out of the many persisting movements in the outer world they traverse. Sense-capacity has for its servant an objective physical equipment, but this equipment always brings more than the capacity can use where it acts, as in ordinary circumstances, in accordance with the aptitudes developed in its individual history. The self may retrace the pathway of the associated movements, but its analysis is equipped with a knowledge, because it knows sensation, which intellect, of itself, must ever regard as incomprehensible.

From the considerations thus indicated it ought to be clear that in the quests of philosophy these two histories, so manifestly lines of its necessary research, must be conceived in terms and pursued to ends which only a self balanced on the point where they intersect can formulate or define. Seeing this, it is but a step to realise that there is a primacy and compulsion in the history of this entity that formulates, values, and defines, which makes it the history that really matters; that the history of the persisting sensation-complex we know as matter is a subsidiary history; and that in focusing the two into a history which describes so as to show how truly applicable is the prepared framework of a philosophical theory, the central problem is the character of the emergence of the explicit.

CHAPTER V

THE CHARACTER OF THE EMERGENCE

TAKING the material history which culminates in the reaction of the reed to the wind, we may have, admitting of little variation in its course and none in its aim and purpose, a precise description of successive physical facts; but where we reach its effects on the listening human ear, and continue the history into the human consciousness, we find the mechanistic history impinging on a complex of sensation-capacity, memory, emotion, and intellect, with effects unending in their variety and significance.

There can be no profit in seeking to carry the mental habits and prepossessions which sufficed adequately to formulate the material history into a history concerned with things manifestly so fundamentally different. Moreover, in doing so we seek to understand a maker by his tool, and to explore a complex origin without leaving a little restricted by-way into which a fraction of its capacities and potentialities have thrust themselves and sought to form a particularity which imagines itself the measure of its origin.

We have a meeting-place wherein the sensation that has the permanence we call matter and the sensation that has the shifting elusiveness we know in the inner objective activities of a self are in touch. There is here a call for the readjustment of habits and prepossessions so as to meet the fact that beyond this point—in the consciousness of the self—we have the history of an emergence into the explicit the elements and events of which are elements and events *sui generis,* and to recognise that this new chapter necessarily illuminates the history of dynamical systems without itself receiving any vital light from a history that need never have come in contact with the history of a self.

Let us realise the emergence. Life has moved from the

microscopic to man—from what we have to regard as a blind instinctive urge functioning behind a field of consciousness filled by some undifferentiated complex of sensations to a field of consciousness holding all that the human self can compass of memory, of constructive imagination, of prevision, of moral and æsthetic judgment and emotion, and of that sheer joy in living which we share with the whole kingdom of life. We may assume the mode of science for the moment, and try to conceive the emergence as in a series of steps which may be named—sensation, feeling, emotion, intellect, and reason. We have already found that, although we may intellectualise the steps into differentiations of movement, analysis offers no reason for regarding any one as a complex built out of another, or out of elements common to it and that other. In many of their aspects the activities of a self seem to intermingle and even to arise serially; but the activities themselves, once they are clearly distinguishable, are manifestly singular and irreducible. We have an analogy in white light, where the wave-lengths that correspond to the different colours intermingle in a common effect wherein none of the colours that may ultimately emerge can be distinguished. But it is only an analogy, serviceable up to a point and dangerous beyond; for no intermingling of mensurable vibrations can be a true parallel to the vital movements of a self where we have use, interdependence, interrelation, contacts of origin and development, and yet, withal, autonomous growth and development. Sensation moves into a consciousness. It does not move into feeling or emotion or intellect; yet these things emerge, and at its stimulus, as it itself, where it is that of the self, has emerged at the contact of the impersonal sensation of the world of matter.

What is the character of the emergence? In the long history which covers the ascent of the amœba to man it is, objectively—that is, intellectually—the development of capacities of movement. The absolutes of rest and movement are ideal conceptions—interpretative conceptions—

and we know too little even of material reality to judge of the exact degree to which it evades them; while in respect of the self we have in moments of judgment, moments of realisation, and moments of expectancy, some warrant for thinking that in its inner core there are moments of pure and unchanging duration. Moreover, there are results in the activity we call thought—that, for instance, at which we arrive in a general conception such as beauty—which suggest realities that are particularities in an inner capacity which rests out of time, out of space, out of movement; and yet are always ready to inform our concrete activities of acceptance, of analysis, of judgment, and of constructive effort. Considered in relation to its possibilities of activity, nevertheless, the self can be described as an organisation which is the result of its history. Its stores of memories; its capacities of experience, of sensation-acceptance, intellectual interpretation and forecast, and emotional primacy and response; its resources of imagination and prevision, and the complex of values which seeks to guide its further progressions, are all related to a describable past, and that past has been a past of action wherein the material world has played a part not dissimilar to that of an artist's medium. It has taught, it has constrained, it has aided; yet it has served things wherein in itself it had no concern.

When the painter achieved, there was an ideal beneath his activity, or rather, perhaps, an emotion of vision akin to that intuition which divines in something its inner possibility, and dowers it implicitly with values whose growth may be based thereon. It was outside his powers of language. It was outside even his powers of fully recognisable feeling and emotion. But it emerged in the region of constructive imagination by some tentative urge of the underlying, and still growing, still seeking the definite, thrived on effort and bred achievement. To the painter his results are inadequate, possibly, for the judgment may pose achievement against a resurgence or transcendence of his ideal—against the full fact of his most vivid intuition and its growth; yet before other eyes there is an actuality

of beauty and emotional appeal the world has not before possessed. Here is a concrete case of emergence into the explicit—an event in that progression of which a real history is possible, and through which surges that passion to create which the intuition of Bergson places so truly at the roots of reality. A restlessness, merging into an emotional urge, fastening on and striving to incorporate itself with suggestions of actuality and of constructive imagination, moves onwards towards a recognisable achievement. Much of it was implicit from the beginning, and the picture is its emergence into the explicit. Yet it is manifestly a stage in a history, and this history is real, and is not the description of mutations which are the past in another dress, but, on the contrary, the tracing of growth wherein the elements are conserved beneath transformation and transcendence. In the achievement some unresting urge of that irreducible primordial element in the self, which must be described, provisionally, as potentiality, has emerged in action.

We cannot accept the self of the painter as a complex system of physical movements whose epiphenomenon functions in resultants such as have just been described, for we reject this meaningless term, and refuse to endow the organism with any inner quality of emotion or intellect or other recognisable specialities of a self. Nor can we conceive any organisation of brain substance holding standards of value against which the activity that is achieving lays its achievement stage by stage for judgment or impulsion. We have, therefore, no belief in a basic mechanistic structure holding the realities of a self, and we must conceive the real manifestations of a self, however they may use the organism or accept its aid, as arising essentially from a poise of capacity we must term potentiality.

When we balance a rock upon the mountain-top we are said to have potential energy. The rock may, in the long attrition of earth, air, and water, shrink to a pebble, or some sudden disturbance of its equilibrium may send it crashing downwards, gathering momentum as it goes. In either case the energy that was conceived as potential will

have expended itself. This is the practical view made definite and expressible by science. Even in the analysis of science itself, however, there is only a rearrangement of mensurables. Persisting movements have changed their direction, their relation to other persisting movements. The affair may be viewed as a transference from this complex of movement to that; the rest is an irrelevance, and the dissipation of the potential energy would be equally explainable (theoretically) were the rock a block of dynamite which we explode instead of tipping over the edge. Potential energy is a very convenient term, and frames a useful device in practical dynamics. Its applicability can be demonstrated by experiments wherein the agreements of measured facts with theory are almost exact. It even holds where a man carries himself up the hill and brings himself down again, although the man may have his doubts, and the factors be really so many and so complicated as to preclude definite complete and recordable figures as balanced as the conception. In recalling the mechanistic conception of potential energy, however, the object was neither to illustrate, confirm, nor belittle it, but to emphasise the fact that at most it is but a rigid statement of facts wherein only things separable and definite are concerned, and that it can have in it nothing whatever of the quality to which it is here sought to apply the term potentiality. Yet social usage has endowed the word with some shadow of the meaning it attaches to creation, and credited the idea it represents with some magic of transcendence; and potentially has consequently applications which ignore the mechanistic, and are inconsistent with a pause in mechanical progressions. Moreover, it holds clearly the picture of capacities which flaunt no outward sign, and yet can move effectively to stimulus and purpose.

When, therefore, it is said that the potentiality at the base of the self is a creative potentiality, the fact to be conveyed has no necessary connection with dynamical terms like energy; and similes like the coiled spring are neither applicable nor descriptive. Potentiality, as here used, may

be symbolised as a complex of all possible movements held one by another in a neutralising equilibrium out of which one, another, or all may emerge in any order or to any degree, and in combinations which acquire meanings or values answering only and finally to categories such as are applicable to the realities of the artist in the self, and to the self in that growth wherein ends of beauty, emotion, and ethical appeal are ever passing into the explicit.

In this potentiality there is, at the outset, the possibility of every variety of movement known in the consciousness of a self—every variety of such singleness, combination, and simultaneity of movement as may be classified into the following groups :

(i.) The specialised movements of sight and hearing;
(ii.) The movements of taste, odour, heat and cold—movements closely knit with molecular structure within and without the body;
(iii.) The general organic sensations of the body;
(iv.) Pleasure-pain;
(v.) Emotion;
(vi.) Intellect; and
(vii.) Reason.

As here conceived, these groups of movements do not originate in any rigidly fixed order or succession, although, no doubt, a succession wherein sensation-acceptance, pleasure-pain, emotion, intuition, and reason, with intellect as a by-product implicit in and branching off from intuition, may be distinguished as in consonance with recognisable fact.

The self is an historical growth pressing into a future determined largely by its system of values, its operative preferences in respect of sensation, its discriminative variety and capacity in respect of emotion, its powers of analysis, its breadth of simultaneous acceptance and sanity of judgment, its resources of intellect, and its capacities in that broad analysis, constructive co-ordination, and imaginative prevision which mark the full exercise of reason. Its choice in a contingency is determined largely by motive—

an implicit judgment in which all its capacities are varyingly concerned in formulating a partially explicit ideal; and these contingencies themselves, in addition to the impersonal element furnished by the mechanistic progressions of matter, are posed at each particular point in its progress by dispositions and capacities developed in its whole past. Its future is, no doubt, largely the resultant of its past; but where most clearly a resultant, inseparable from the element of novelty, there is a hint of constructive freedom; and in concrete living, elements of free choice are always marginally operative in conscious decision, and often, dimly and implicitly, in action that seems practically instinctive. The old controversies of freedom and determination have little application once we place the absolutes of intellect in their true relation to reality; and the degree to which a self can itself modify the future becomes a matter of fact and observation rather than a logical equation. The facts of life show novelty, achievement, transformation, and transcendence, in all that intimately concerns the self. Remembering that these intimate concerns are in their expression—that is, as activities in consciousness—facts of movement, we must note that these movements never become persistingly present either consciously or what is called subconsciously. They are always knit to purpose—at least, in their persistence—and purpose is purely an affair of a self, never of a self-acting mechanism.

These particularities explicitly distinguishable in the consciousness of self have, like sensation, a double aspect—an intimacy of quality distinguishable only in conscious acceptance, and, recognisable in the results of introspection armed with intellect and the generalisations of science, a quality of movement. The grouping may therefore be interpreted in terms of movement, as well as in those of the qualities given above, and we can have such a parallelism as follows :

Group.	Qualities in Consciousness.	Character as Objective Movements.
(i.)	Sensations of sight and hearing.	Direct movements outwards into extensity.
(ii.)	Sensations of taste, odour, heat and cold.	Movements which seek a definite location within the organism, circling in unison with abnormal movements of molecular structure.
(iii.)	General organic sensations.	Movements within the body, less localised, and in a general unity with the movements that constitute the facts of chemical and physical constitution.
(iv.)	Pleasure-pain	Movements of the same general character as those of Group (iii.), but which either overlie and seek quantity, or make efforts to detach and ignore.
(v.)	Emotion.	Movements of larger rhythm and mass which tend to dominate, transfuse, and transform all other movements of the self and the organisms.
(vi.)	Intellect	The movements of intellect perpetually strive towards an approximation to pure form. They do not, however, content themselves with pure form, but aim further at distinguishable positions which are symbols merely, yet to which value of all sorts may be attached, and be held and judged in an aspect to which duration and extensity are irrelevancies, even though time and space be allotted their part in determining value. It may, therefore, be conceived that the movements of intellect are movements to produce pure trajectories kept so continuously uniform as to represent immobilities; but it must be realised that, beyond this, intellect strives autonomously to become the consciousness of an ideal potentiality informed on a fully explicit system of pure logic.

Group.	Qualities in Consciousness.	Character as Objective Movements.
(vii.)	Reason.	Reason has movements similar in character to those of intellect, but where it seeks positions that are symbols it tends to make them marks of intuitions, and in continually seeking to retain and deepen these intuitions, and press them to yield discernible aspects, it tends to movements outwards, and to movements of acceptance and withdrawal like pleasure-pain, as well as to movements of inclusive dominance like emotion.

It must be remembered that these movements, as here conceived, have no necessary coincidence with any movements in the world of matter. They are purely movements initiated and maintained by the creative potentiality we call a self. If we picture to ourselves such a complex of these various movements as may be active in a self, conceive them as refined and reduced to single and characteristic movements representing the barely differentiated quality of each, and consider each and all retreating and returning to their source in a here—a here that is, properly speaking, not a centre, but a concrete extensity representing a single phase of every possible rhythm—we may have a symbol making conceivable the idea sought to be expressed by using potentiality as a name for the primordial operative quality of a self. Accepting it, we must accept with it the conception that this here which we call a potentiality, and call a self, has qualities we must recognise without describing—an initiative in judgment and in the exercise of capacity, and an organisation which places a system of values at the disposal of that initiative, as well as memories which vary in expression from a trace that is merely felt to a detailed fullness paralleling the original experience. We have, in fact, if we do not obscure it by the attempt to make objective what in its nature cannot be

made objective, and to fit within the frames of intellect something outside the mechanisms to which these frameworks properly apply, an intuition of the self as of the nature indicated above; and even intellect, where it keeps any living contact with reason, will be finally forced to accept this intuition as a necessary acceptance if reality is to be given applicable description instead of obscuring symbolisms.

When we accept the self, the character of the emergence will offer no difficulty to our apprehension, provided we trust its formulation to that imagination which has the capacity to summarise the past and construct practical ideals of human action. Should we, instead, endeavour to drag it out of the refinements of an intellect standing outside the concrete things that are real and existent, we will achieve nothing beyond some formal unity of words in which both the implicit and the explicit lose meaning.

The potentiality is taught to exercise its sensation-capacity in actual coincidence with rhythms in the material world. This is conceived to be the foundation on which the explicit is ultimately built. Like and dislike (pleasure-pain) comes into operation where marginal coincidence with the natural rhythms of the potentiality gives the pleasurable sense of easy effort or disturbs and constrains by inherent differences. Ease of coincident movement and difficulty of coincident movement may mark the emergence of pleasure-pain. Possibly, also, memory may mark the customary in the first few repetitions of a single movement, and the intrusion of that which differs be resented, as it so often is at subsequent stages. Emotion must follow closely behind pleasure-pain, and be fully born with the first organisation of associated matter. Intellect and reason functioning as intuition must come into the capacities exercised with the first contrast of the unusual against the usual. We have thus a credible conception of the emergence of capacities, intertwined and interpenetrating, but distinguishably different from the outset.

The foregoing is necessarily sketchy and schematic. To

justify itself as a utility, however, it need claim for itself nothing more than to be such a symbol of reality as we achieve in the structural formula of a carbon compound. It is held to represent facts—to hold facts in an aspect that is organised—but the degree of its accordance with actuality is necessarily outside any existing analysis. At the same time, if, as is believed, it holds the truth in an aspect which gives it the impetus to explain and furnish the frameworks of explanation, it cannot in the future meet defeat, however far our achievements in the explicit may qualify and define. Its primary recognition is that of the self as an originating potentiality which is a complex of unexercised and undifferentiated capacities. This potentiality grows to powers of construction, and to the possession of an equipment which may place design and forecast in ever-increasing measure behind its activities—informing it and shaping it to developing purpose. Sensation, emotion, intuition, reason, and intellect, are all realities which the self constructs once it has been taught, or forced to construct, sensation. To the self they have each and all their distinct, direct, and irreducible quality. In experiencing they are each and all the creations of the self. Objectively, as indicated by our analysis of the sensation-movement of which the material world consists, they are in their duration, in their actual existence and persistence, movements. The experiencing, the knowing, the judging, the imaginative forecasting, these are realities of the self. They are not one with the things experienced. The thing known, the thing judged, the thing constructed in an ideal forecast, are objective constructions of a self. They are not parts of the technical equipment of a self, however intellectualists may bemuse themselves into the acceptance of equations involving this identity. They are primary irreducible realities which can have no existence as relations between movements or sensations, and must be accepted as what they are. The description that recalls their reality in social intercourse is the only description of which they admit while reason holds its own.

CHAPTER VI

BIOLOGICAL EVOLUTION IS A DUAL EVOLUTION, NOT A MONISTIC EVOLUTION

In the view here taken of reality two orders of movement are recognised. They do not comprise the whole of reality, and are not, necessarily, coexistences. The first order, which may be called the persisting or material order, is an interconnected complex of mechanistic movement. It is this under the analysis of intellect; and intellect, by its natural and ordinary methods, cannot transcend this analysis. When, however, direct personal experience is held unflinchingly in contact with intellect, we can convince ourselves that the basic nature of these movements is of that quality we call sensation. In their finer manifestations they may have the character deducible in a study of light, electricity, and radiation, and be a complex of infinitesimals revolving and gyrating at relatively enormous velocities. Light is the most simple and unhindered of the contacts between the self and this basic matter; and light appears to be a rhythm imposed temporarily on these submensurable infinitesimals. It indicates their existence, and we call them the ether; and considering that light is a wave-motion whose phases are mensurable, we may, on the analogy of air and sound, press our analysis into the submensurable with the justifiable hope of bringing it ultimately within the calculables of science. Furthermore, we may accept that general view of science in which mensurable matter arises out of the organisation of submensurables, and recognise that with every fresh organisation, or aggregation of organisations, a new rhythm, and its possible translation, a new sensation, is born. We cannot experience the original quality, and, possibly, only the quality of a few of the rhythms born of the complications it suffers. Our

recognitions, from the view-point of science, and from the experiences of a self, are, however, sufficient to justify the general conception of a material world which answers increasingly to the efforts of intellect to describe it in coincidence with a framework of mechanism, and of experience in consciousness to regard it as a complex of that fluid and shifting quality we name sensation. The whole complex conditions life; and life in many and various ways specialises the experiences in which it is concerned.

The potentiality at the base of life is poised on the capacity to move into sensation. The complex which is at once movement and sensation induces the potentiality to move. It teaches life sensation—teaches it to experience and recognise sensation, and gives it the foundation on which to reproduce, recombine, and marginally initiate temporary manifestations of sensation.

There is no warrant for attributing to any sensation or movement the acceptance, as sensation, of another sensation or movement, or for holding that any element in material reality is concerned in feeling, emotion, or intellect. The factors which comprise material reality are purely the raw materials of worlds in which life alone is concerned, and of organisms which life sustains.

The second order of movements is not a mechanistic persistence. It is not causeless, as it compels a view in retrospect which formulates a history which naturally tapers to an origin. It has successions wherein the present depends on the past, but its progressions transcend the implications of antecedent and consequent. There is no rigid principle of conservation which may be related to its progressions, as may the conservation of energy to artificially closed systems in the progressions of material reality. For here is growth—is that which makes, and, so far, adds to the sum of things. Artistic creation is the fullest and purest type we know of progressions functioning to a recognisable end, and artistic creation manifestly whirls its beginnings into expressions that nothing calculable can symbolise.

It is always an order which must be related to a centre of

what we call life. Our own selves act through such a centre, and however close the racial unity of action and purpose may be in such aggregations of life as we know in, for instance, ants and bees, wherever there is life there are always such individual centres. In the movements thus originating in a centre we must remember that we are endeavouring to obtain a view of all the realities we know, and that of these realities those most vital to our purpose, and which are of abiding interest to us, are those proper to the human self. We must, therefore, take this self in the highest development of which introspection, and all the knowledge of other selves acquired by observation and description originating in other selves, may allow, and, determining its full nature so far as we may, carry our analysis downwards. Efforts conducted in the contrary direction are intellectual fancies achieving simulative construction with the aid of imaginaries, instead of being, what the constructions of true philosophy must always be, descriptions of progressions in which thought and symbol represent the actual. Following the true method of analysis, we have found the simplest descriptive term applicable to the self to be potentiality, and the simplest exercise of that potentiality to be an active acceptance—really a construction—of sensation. In considering subconsciousness we may find that there is an acceptance which must be described as passive, which lies outside the focus of an attention determined otherwise. We should therefore note that active acceptance connotes an acceptance above which feeling-tone, as the potentiality of like and dislike at least, is always poised.

The potentiality is freedom to act, but it is so articulated with the mechanism we know as matter that it has only a partial freedom of action. In it we may recognise a fundamental restlessness (a necessary complement, we may say, of feeling-tone) whose highest expression is the urge to create. Governing its activities we may also recognise an ideal logic, culminating in the system of relations the mathematician is engaged in developing, and of greater

moment—a system of values for which the thought that frames the truly universal symbol serves the purposes logic serves on a lower plane.

The tendency to like or dislike, while retaining its fundamental tone, moves along one line of development, wherein, intertwining with intellect, it breeds approval, disapproval, and judgment; and into another wherein, knit with the implications of intellect, purpose, and constructive imagination, it achieves all the complexities of emotion.

The potentiality finds the sensation-movement in the material world and acquires it for its own. It develops other movements in a concrete history wherein sensation movements are the occasion of movements of intellect, reason, and emotion that have no analogue in the world of matter. It has a traceable development—an historical and definite growth which aggregates distinguishable possessions (memories), aptitudes, capacities, and dispositions—and this development, in the unifying phase of its distinguishable present, holds, apart from possibility, more of implicit quality and capacity than its history has yet afforded it the opportunity of passing into the explicit and nameable. It is, therefore, necessarily held that this second order of movements is not implicit in the first, or even wholly conditioned by the first, and that the conception of a monistic evolution is, apart even from any analysis of the actuality for which evolution may be a proper symbol, purely a prejudice of intellect.

The scientific theories summarised as biological evolution may be accepted as affording a working generalisation articulating a connected description of the development and successions of organic forms. The mechanical aspects of inorganic and organic evolution form a connected progression which science most properly and fruitfully regards as a succession of rearrangements proceeding from the simple to the complex in accordance with recognisable uniformities of dynamical transformation. Still, it must be remembered that simple and complex are terms relative, purely, to human values. Where the values are intellectual,

the free movements of an electron, following unhampered paths of strange curvatures into immeasurable extensities, and yet maintaining a relation affording a subordinating government and control to the whole of dynamical reality, might be a thing far more complex than the circumscribed system known as an organic compound molecule. And so, when evolution is said to proceed from the simple to the complex, the dynamical facts of the progression may ultimately admit of being represented as a progressive simplification; the ether may be an infinite plexus of neutralising particularities of immeasurable movements, and the cell a selective aggregation which organises and relates a few of the immensurables, and gives them, in themselves, a local and temporary simplification. This does not, however, affect science. It in no way reduces the utility of its evolutionary hypothesis. It does, at the same time, suggest to science some regard for the possibilities of extension, qualification, or substitution in respect of its dominant theories; and there is ample evidence that it has an instinct to hold them tentatively. It has not, however, the clear compulsion, which true philosophy must always acknowledge, of seeking to relate the aspect of reality in which it is interested to irreducible facts of a reality whole and undivided; and so it does not clearly see the necessity of defining the limits of its analysis, or recognise the possible inadequacy of any conception which may be symbolised as monistic evolution so long as it is proximately useful.

To science, as to philosophy, a monistic evolution must mean, if it means anything, that under the permission of a mathematical space and time a primordial substance holds implicitly, not alone the activities of a self and the values such a self places on its activities, but all the natural laws which condition the whole progression of inorganic and organic physical and chemical transformations. That from the first each complex of differentiation and relation could look only for its equivalent in differentiations and relations in anything the future might hold. That in the countless

movements into one alternative rather than into another which have bent these progressions, here and now (1915), to a conflict of good and evil which bleeds the world white, no deflecting or guiding strain other than what full analysis would find in the primordial substance and the dynamical relations of its particularities was involved. That the ideal human values which have made the conflict possible, which no man doubts, as a matter of fact, to have been the decisive agencies in its incidence and progress, are only the phosphorescence, the epiphenomena, of inevitable progressions of substance moving in the inexorable grip of an eternal and absolute mechanism. That if evil should triumph, and the promise of a high level of free individuality give place, as its ultimate outcome, to a clan organisation of caste and canalised efficiencies declining inevitably to the prize-pig superman and the subhuman labour serf, we will have merely the phase of a single and mechanistic progression, not an historical resultant which came to pass because forces of an order outside mechanism—forces imaginative, æsthetical, emotional, moral—wrought antagonistic developments which organised themselves on irreconcilable ideals of what was primary and important in the scheme of human values, and that where evil controlled the greater degree of mechanical power it triumphed over good.

Is it to be wondered at, then, that a philosophy which claims to view reality whole, and finds itself, as a consequence, inevitably human, should deny that a unitary and mechanistic progression can represent the facts? The follies of mankind are not due to an evasion of intellectual guidance. They would be were mechanism the adequate symbol of all that was, is, and will be; but the facts of life are more effective in the destruction of this superstition than any formulæ of logic can be in establishing the reduction of ethic and æsthetic to a department of mathematical science. The standards of value which govern the growth of emotion and increase implicit control over the development of life are not mathematical deductions, nor in any way things parallel to mathematical deductions. They

have been achieved in conflict, and are as truly an historical resultant where they frame the ideals of human progress as where they gild the road to decadence and decay. They originate in that drift of life which can surge upwards to a St. Francis or an Abraham Lincoln, or eddy backwards into any of the most repulsive parasitisms which science or social life can lay bare; and this drift is not a mechanism, nor is it in any way one with that substance which suffers mechanism.

For the purpose of this immediate outline mechanistic monistic evolution may be accepted as the term describing the progressions from ether to organism, but it is accepted with the assertion, clearly an implication of the foregoing chapters, that from the moment the first complex compound molecule became associated with life the action of a potentiality outside the limits of the mechanistic world was clearly discernible, and that in it lay the free capacities which superimposed on the world of matter the world of life. Thenceforward mechanistic evolution was bent at recognisable points to serve the developing values of that potentiality.

Bertrand Russell says: "You first arrive at a theory of the world which is agreeable, both because it is easy to imagine and because it fulfils your hopes while thwarting those of your enemies. You can then establish your metaphysic by refuting all arguments designed to prove that some other metaphysic must be true." This is, no doubt, an accurate, if somewhat unsympathetic description of the gymnastics of intellectual philosophers. Coming from a prophet of that new realism whose system of irreducible relations is so manifestly inconsistent with any practical and human theory of things, it suggests the impregnable position of such a philosopher once he merges his philosophy in mathematics—impregnable, at least, against his fellow-intellectualists until the specialised activities of mathematicians yield the symbols that become the common counters of intellect. Then, indeed, the rival imaginaries may be erected. The present theory, however,

is not an imagined construction erected to confound enemies. At the same time there are enemies, it must be confessed—natural enemies which the theory cannot help distinguishing as such. In the present they are those who would deprive the things that are essentially human of abiding value; but they are of the inner household as well as of the outer world of men. Three decades ago they were the inevitable questionings of explanations which were accepted as a part of the environment, and did indeed give full value to things of life. Down the years they have been the tendencies to accept the general principles that science, in its assumption of philosophy, accepted as the ultimate key to all our riddles. The questionings were encouraged because there was an irreducible distaste to dwelling in any paradise of fools, as well as, perhaps, because ethical antinomies were found which the explanations seemed unable to meet. The tendencies were resisted because of an inability, equally irreducible, to discard things in favour of symbols which could not replace things discernible yet imperfectly analysed, and because, also, the ethical questionings could not be laid by reducing ethics to the position of a temporary lubricant useful where the mechanism creaked.

x is not the only symbol, but it may stand as the representative symbol. As such its utility as a mark for the unknown is indisputable in mathematics, or wherever a specialised activity of intellect can assume in advance that all for which the x stands is fully expressible in terms proper to the activity. There is utility even where an aspect of the imperfectly known can be fully expressed in terms of the activity, provided it be recognised that the results are applicable only to the aspect. But where no part of the unknown is outside the purpose of the inquiry, to extend the results obtained on a restricted symbolisation so as to imply a primarily all-inclusive symbolisation is to beg any question involved. This is essentially the fallacy of science and of a philosophy like that of Herbert Spencer. The things of life and the things of substance are arbitrarily

compounded, and the subsequent demonstration of how the resulting x evolves life is wasted effort.

Science makes a series of beautiful experiments on the nature of light. Aided by many elegant demonstrations effected thereon by the mathematician, it establishes a theory of light. It develops, changes, interpolates, doubts, reconsiders, and adjusts to meet the new fact; but throughout it is dealing with motion—with concrete transferences from here to there, or from there to there—and its difficulties are all concerned with dynamics, which may be those of varying states in a medium of presumed qualities, or of particles which may be modifications of this medium, or of both. Its researches are beautiful, its demonstrations are elegant, its experiments are ingenious, its theories are interesting. That, absorbed in its specialised activities, it should forget that beautiful, elegant, ingenious, and interesting, are symbols of no meaning apart from a self is of no consequence so long as it is within the circle of its own activities. When, however, it seeks to become a philosophy, and to press its theory so as to include vision—the concrete acceptance by a self of certain sensation-elements—it cannot take its symbols "colour" and "light" into this new activity and evade ridiculous failure unless they are systematically restricted to those aspects of a complex happening which are fully covered by physical dynamics. Yet this is exactly what it does when it pursues its descriptions on the assumption of a monistic evolution, and no polysyllable like epiphenomena can hide the fact. Its x's have assumed in the final equation, as they really assumed in the first statement; and the assumed retains its position as something unexplained despite all the gyrations between.

The distinguishable qualities and capacities of a self are seen to be outcrops clinging to one another and to some wholeness which admits of no disintegration into parts or relations. This wholeness may be symbolised by the term potentiality, but the symbolisation is not the prelude to its use in any series of logical equations. The symbol is used

in the older way—to describe by traceable analogy, and serve as the signal to recall a distinguishable—for it is believed that candid analysis cannot evade the conception of the self as an inexhaustible reservoir of capacities of movement which have the inner quality of what we name feeling, sensation, emotion, or intellect, according to its kind, as well as of that something of which capacity is the weapon—that something which, accepting and valuing, builds purpose on an organisation of values, and wills its own growth and transcendence. The history of creative art, no less than the facilities of practical life, shows the capacity growing with exercise; and it is becoming increasingly clear that the growth and transcendence is due to no mechanistic felicity in transforming chemico-physical relations into their epiphenomena, but that it makes a power, and adds it to the powers reality as a whole possessed before that growth began. . . . This conception may be false, but it is at least definite and understandable if we but seek the elements of understanding in the realities of our own inner life, unhampered by the superstition that the things of our artificial mechanism are the things of all reality. Moreover, it will rationally explain what mechanistic monism and the platitudes of the logical equation must leave for ever unexplained. We have the right, therefore, pending our full argument, to gather the implications of what we distinguish as a self into this single symbol. But this word, so arrived at, so justified, cannot be the x in any equation yielding a theory of things. Enough that it can recall to us that part of the wholeness which has achieved the explicit to some degree; and hold for us the idea of potentiality as a term which will always be inspiringly descriptive in any analysis of the self, though its meaning, applied to the passing aggregations of the outer world, can never be more than figurative. Moreover, it can always be for us the symbol behind which is the conception of a particularity never beyond the reach of human thought and analysis; and be, therefore, the symbol properly to be relied on in pressing the analysis of reality towards ultimate description.

The acceptance of potentiality as a term applicable to the self in a sense in which it can never be applied to the stages of inorganic evolution necessarily suggests a dual evolution, as it involves the search for a theory which, while abandoning nothing of explicit reality, will give just weight to every factor in the concrete progressions we live and cannot evade. Such a theory will have to account for a matter that is mechanistic, and yet has its contingencies bent to serve purposes that arise in irreducibles differing vitally from mechanism. It will have to account for the success of a science which believes in mechanism as a condition of its existence, and of an art which believes (equally as a condition of its existence) in creation, and justifies its faith by adding the new to the existent. It will also have to account for the errors, obsessions, and hallucinations of a self; for these things, however transitory, however restricted in their emergence, are all in the fabric of reality. Moreover, it will have to account for each and all so as to appeal to a sense of credibility that cuts deeper than logic, and yet base itself so as to fear no scalpel of the intellect. The pathway to such a theory is not the easy road to an imagined construction, but the difficult human road which rationalises the intuition of the real, and returns to the real, equipped with disciplined reason, to seize an intuition which may be held for a fuller analysis, and never abandons this patient quarrying for any mirage of intellectual abstraction. Apagogical proof has no application to such a theory; for its interest in other theories is not interest in their logical impregnability, but in their capacity to infuse and instruct our intuitions of the real. It has an interest in the criticisms all theories must meet, but only in so far as the criticisms are concerned with the analysis and description of the actual. It has but a passing interest in the absolute, or in infinite collections of absolute identities, for these things belong to the intellect as a thing in itself, and do not enter into the fabric of that reality in which philosophy is concerned.

An absolute proof of the duality of evolution is outside the possibilities involved in the facts themselves as much as

it is outside the judgments on which we so unhesitatingly act in the affairs of practical life. A proximate proof—the proof beyond which most men would not wish to go—would be to show that dual evolution better describes the concrete happenings than does monistic evolution. If, in addition, it can be shown that dual evolution offers the better framework for our intuitions of reality—giving them a fullness of analysable content otherwise unattainable—the proof may, it is contended, be regarded as indefeasible. Such a proof this book as a whole is believed to afford, at least in outline; but here, in the section aiming at exposition, it must suffice if we show how simply and adequately dual evolution explains. Monistic evolution is so far in possession of the modern mind that the exposition carries contrast with it implicitly, and before the contrast can become explicit and fruitful the mind must be convinced that dual evolution is a theory that works, that adequately explains. To this end it is necessary to show how the basic atom of potentiality can be conceived of as acting on matter and leading matter to the organism and the procession of life. In judging from the exposition of the comparative merits of a monistic and dualistic theory of evolution, we must remember that life has not been an unbroken ascent; that, judged by our values, it has had failures and retrogressions—abominations, even, have flowed out of and flourished amidst a general appearance of achievement and advance. Palpably it has, on occasions, crushed its best and encouraged its worst; but there is neither best, nor worst, nor abomination in the view which intellect tricks itself into believing so far superior to the vision of the mere man; and, after all, can man abandon that reason which lives a contempt for the unreal posturings of intellect?

Our starting-point is a centre of what we have called potentiality. To arrive at a working conception of this potentiality, let us lay in order a generalised view of what we mean by a man, recalling his capacities, his possessions, his dispositions, his ethic, his æsthetic, and that system of values which may vary within limits suggesting what we

mean when we speak of saint and devil, centre on puerilities, or strain towards the heights of achievement. Let us realise the possibilities of advance, of decadence, of inertia. Then let us by justifiable imaginative effort roll back the differentiations of a self into a complex of all its potentialities—a complex out of which no single quality has come to recognisable existence.

The inorganic progressions of nature have bred a colloid—that is, a complex organic compound molecule in which are all the gradations of chemical association from the escaping electron to protoplasm. A labile aggregation admitting of energy-transformations—release and reorganisation of movements—at a pace coincident with the natural rhythms of a self has thus arisen in the course of the mechanistic rearrangements of matter. Into this compound molecule, perhaps at the moment when it has reached the colloidal aggregation, perhaps at the moment when its larger rhythms admit of coincidence with the potential rhythms of a self, the potentiality is thrust.

The potentiality moves with the rhythms of the matter. It coincides with a sensation-complex, the other and inner description of a colloid. It almost becomes the sensation-complex, and in becoming exercises its inherent capacity. Afterwards it may recognise, if not actually reproduce, a movement which is a sensation-element. It cannot, however, become the sensation-element, for a sensation is recognisably a thing the potentiality produces for itself when it has reached the stage at which memory and imagination are parts of its explicit experience, and withdraws at will from the things that exist. Knowing and the known are nearer to each other than they can ever be again outside the cloud-cuckoo land of the intellectualist philosopher. Here is clearly the first acceptance in the long history of an individual experience, and possibly even a race experience. But behind this capacity to accept a sensation and make it its own is a vast complex of potentialities which are not reducible to any aggregation of or relation between sensation-elements. Like and dislike are

on the heels of sensation-acceptance. The sensation is liked or disliked. The movements of acceptance, repugnance, and resistance intervene in this passive acceptance. These are movements of another order, and there is thus not only a further development of the potentiality in following amidst conflicting sensations the sensation it likes, and in evading the sensation it dislikes, but the birth as well of the first tentative urge of desire and the hunger to create. Progressions which come unsought no longer suffice. Thenceforward there is implicitly the impulse to control. It may, indeed, be said that something of what we call will seeks domination. Yet how is domination to be achieved in any degree where the progressions are fully predetermined? The potentiality would have one weapon. It could prefer and attach itself to one contingency rather than to another. It would have in this a degree of freedom which a monistic epiphenomenon could not. Exercising this weapon, it would slip away from the less favoured contingency and cling to the favoured contingency, thus influencing the future by selecting, within such limits as offered, the aggregation to which it felt most inclined. It would, in fact, move towards restricting its associations with matter to association with a tool. This movement would, of course, win the definite and recognisable almost imperceptibly; for it could achieve no regular and orderly advance if matter be such a mechanism as science makes it, as the necessary succession of contingencies could arise in multiple and unregarding contingencies only so as to present the necessary phases accidentally, momentarily, and at varying intervals. Still, the succession could be found, although not, it may unhesitatingly be stated, by any mere epiphenomenon. The persisting patience of the lowest life indicates how any hunger may orientate purpose and maintain an operative edge unaffected by duration or event. The potentiality would in time find itself in the aggregation it would implicitly recognise as its tool, but a tool once achieved, it would naturally and effectively be used in that seeking and evading, accepting and rejecting, which might

add to it, organise it, and finally afford the potentiality a sense of satisfied unity with such an organised speck as we know in the protozoon. Thus, even if shackled by that absolute and undeviating mechanism the intellectualist conceives as part of the existent, this potentiality, existent outside mechanism, might use mechanism and initiate the progression of living forms.

Absolute mechanism is denied, however, as absolute space and time are denied. Extensity, duration, and movements are the realities in the fundamental analysis based on the realities of our acceptances where space, time, and substance self-coerced into absolute mechanism are the intellectual interpreters and principles of design. The material mechanism is conceived, therefore, to be a proximate mechanism—a skilful approach, which in this element falls short by an infinitesimal, and in that element overlaps by an infinitesimal. It offers, consequently, something more than the inherent contingencies of a complex mechanism to a potentiality which can of itself make movements one in kind with the movements of the mechanism. Acceptance or refusal, movement coincident with, or movement in rejection of, may add the infinitesimal, and press the balance to the side of rudimentary purpose. The process is all the more effective, perhaps, because within the potentiality is the possibility of intellect, and so of arriving ultimately at an explicit knowledge of immaterial principles which mechanisms cannot transcend, and which, therefore, furnish the resistant against which these malleabilities can be wrought.

Schematically, the foregoing ought to suggest an outline of the process in accordance with which persisting mechanism may be bent so as to yield the organised protozoon. It should suggest also that none of the facts, as marshalled to exhibit the march of biological evolution, can offer any special difficulty where the intuition of this complicated progression has behind it the conception of a dual evolution wherein the struggle for mere persistence is a struggle of the second element to establish and maintain

itself in the difficulties of an environment furnished by the first element. To the biologist the protozoon is a simple form of life, although out of it have grown all the variety of the animal and vegetable worlds. It has climbed to the oak-tree and to man, found a multitude of cross-roads and resting-places by the way, and is yet, despite all the urges of progress, despite all the pressures of varying environments and contingencies that have driven its feet along strange paths, in recognisable existence as a distinct organism. In more directions than a Chinese civilisation has life shown its capacity for this inertia—for achieving and resting in the achievement as if duration and possibilities were irrelevancies—and the fact is, therefore, entirely consistent with the conception of a dual evolution, though more difficult of rational explanation, perhaps, where a monism, functioning mechanistically, affords the only basis for explanation and description.

To the view of monistic science protoplasm is an organic substance which readily decays, and in itself is little regarded by the mechanical successions that must have stumbled into it so casually. A speck of protoplasm has evolved an envelope marking it off from the outer world, making it a recognisable particularity. In its centre is the nucleus—an inner organically separated subspeck holding minute organised masses of matter called determinants. Such is the protozoon which, functioning purely by the answer of mensurable reaction to mensurable stimulus, met a contingency, constructed chlorophyll, and made possible that vegetable kingdom on which all other life directly or indirectly depends. And this contingency would be some accidental change, some variation from a higher to a lower or a lower to a higher synthesis, to a more rigid physical arrangement or to a simpler and more fluid constitution, and would be purely a mechanical resultant, just as are the determinants which take so orderly and marshalled a part in every reproduction and transformation from protozoon to man. In achieving the man, what a host of contingencies must have been accepted, all in the direction necessary to

the achievement! What a run of luck beyond the gambler's wildest dreams of probability!

Is it any wonder, then, that though the mechanistic monist may be intolerant of our conception of an outer potentiality under whose implicit urge a tool has been fashioned capable of sowing factors of possibility in that potentiality—factors in which matter is in nowise concerned, being entirely neutral and equally willing to be organised into determinants which may foreshadow more definite nerve elements, or to slip back along the easy road to the constitution that is purely inorganic—we should feel confident that the reason which refuses divorce from the real is bound ultimately to approve and accept dual evolution?

CHAPTER VII

A SUMMARY IN WHICH THERE IS RE-EXPOSITION

In a sense, philosophy is an all-embracing intuition, held, recalled, re-experienced, made explicit, and tested by renewal of these successive activities until there is the conviction of a vision whose interest and completeness compel social utterance. In a summary of a system, therefore, there must be an alternative to what may be called the textbook method. Instead of abstracting what precedes, the theory may be restated from the point of view of its final conclusions and its completed vision; and its solution of the problems of the procession of life be described so as to summarise, as an organism summarises all the details of its physiology.

It is believed that the mechanistic world—the intercalated and interconnected plexus of matter, of movement, of elementary sensation, winding itself and unwinding itself into complications and simplifications of what is at once sensation and movement—is the deliberate creation of a personality. Why is a conception so antagonistic to the philosophy of to-day—so rudely definite even in the face of some of the most highly cultivated exponents of religion—a necessary part of the present theory? Primarily because it has emerged inevitably, and irreducibly, in the process of obtaining the fullest possible intuition of reality, and making that intuition explicit. Secondarily because reason has approved of that part of this explicit which may be symbolised as a Personal God. Reason has been constrained into acquiescence in this atavism: firstly, because it has to recognise the peculiar validity of logic and pure dynamics, and to contrast with the intellectual ideal they formulate a reality to which this pure dynamic is palpably the principle of construction; secondly, because life arrives

at a system of values the particularities in which are actual and descriptive; thirdly, because material reality is manifestly a unity, and a construction in the sense that a work of art is a construction; fourthly, because life has in every individual thread a history which tapers to an origin, and this origin is in a potentiality of possibilities which could not have existed in this poise of nascent growth were its origin other than a potentiality in which these possibilities were active beyond the limits of our imperfect previsions. (Every fact of biology and inheritance suggests and confirms the validity of this fourth reason.) There are other reasons to be set out in full in a later chapter, but the whole appeal may be summarised in the statement that the facts of imperfection in contrast with the ideal dethrone the absolutes of intellectual mechanism, and substitute for an eternal and necessary "is" the Great Artist who, because there are universals other than beauty, is truly the Personal God.

Science is forced to conceive the material world to be a unity no part of which is in other than relative isolation from the rest. The views of science when it assumes the mantle of philosophy and attributes infinity to this unity must be disregarded. As here analysed, it cannot be accepted as an existent held by absolute, infinite, and otherwise empty space, but as a plexus one of whose irreducible qualities is an extensity directly related to the personal. Furthermore, as a practical mechanism, it must be regarded as a thing constructed, not by itself, or eternally existent, but as something made; and as it is clearly made, not by assembling fragments, but by evolving, progressively, particularities out of something that is unbrokenly one and basic, its construction has to be attributed to a single agent. In seeking the agent, we can find it in no logical summation either of natural laws or true universals, but in the conception of a creative personal potentiality which has cast the material world into extensity under the limitations and aids that are daily rendered more and more fully explicit in our developing system of pure dynamics, and to which we are forced to have regard in our own

concrete efforts to dominate and use the material. As a perfect mechanism, it might be a thing eternally self-existent. As an approximation to an ideal of mechanism, it is a construction which implies a beginning and even admits of an end.

It is reasonable, therefore, to believe that the world of mechanism exists because a creative imagination designed a process—a plexus of raw materials admitting of an infinity of progressive constructions and modifications. So might we ourselves, and give to it in our private and personal field of consciousness a real although temporary existence. But the Creative Personality was not tied to the progressions of an existing mechanism. He had that real freedom which we continually try to exercise in action by transcending the implications of our history, knit as it is to the moments of a dual evolution. He had the power, therefore, to give His prevision objective permanence, and the duration necessary to a purpose and a design.

It has been stated that our history tapers to an origin. The potentiality at the base of the individual human personality cannot be conceived of as drifting through space seeking the stimulus on which to base a development. Retracing its history, we find origin behind origin back to the protozoon; and each origin emerges, definitely and calculably, at a particular moment in that rhythm of durations which make up the real and concrete duration we intellectually express in terms of time. We find a whole world of potentialities involved in our research, and cannot evade the recognition of the innumerable parallel developments and offshoots on every side. We find in the research, moreover, a clear suggestion of common origin behind all the potentialities that function through the innumerables of the living and the dead; and in respect of each potentiality we find that the facts of its embryology and life impose on us the belief that its individual history moved out of the poise of a now equipped with racial memories and aptitudes which in its initiating phase were purely potential. But can we have a potential otherwise than as the resultant of

activities? We cannot in the world of mechanism, for there a potentiality is the pause—the separable and recognisable moment—between a progression before and a progression after the moment. In the things of life we find an actuality of which mechanism sometimes furnishes a simile which aids apprehension. There we can also find, in considering the exercises of intellect, reason, and the artistic faculties, the pause between progressions; but it is a pause wherein the activities of the past seem to reintegrate themselves into a complex of pure qualities before embarking on the renewed activity which may breed transcendence. Nevertheless, in considering it we cannot evade a conviction that the poise is largely a symbol of qualities that have been, and that lie in the direct line of the past behind that poise. We thus arrive at the point where, on recalling our analysis of what we symbolised by potentiality, and on contrasting this basic conception with what it has achieved in humanity taken at its highest in all its activities and aspirations, warrant is found for attributing the origin of these potentialities to a single potentiality whose qualities, however transcendent, are one in kind with those of man. We have to conceive this potentiality in terms of our own natural values, to dower it with capacities and emotions parallel to our own, and with an intellect whose ultimates lie along familiar lines, however great the degree to which it transcends human conceptions. We may call it an absolute in so far as it must be conceived as capable of the full intuition equipped with the capacity to make that intuition entirely explicit, but we must, nevertheless, conceive it as a personality centred in its own particular here and now, and realise that anthropomorphism may be applied to our conception as a term of abuse, but without applicability in reasonable and candid criticism. Anthropomorphism! A millimetre is quite as anthropomorphic a symbol as that we name Personal God!

God, then, created the material world, because, not being a mathematical formula, nor a summation of true universals, nor an absolute, nor an essentially unmeaning infinity of the unknowable, He wished, at a particular stage in His

own duration, to add to His realities beings that, starting with the potentialities inherent in His own nature, might develop an intellect like unto His own, and capacities, possessions (memories), and an emotional equipment parallel to His own. The dilemma set by the older infidels—from an eternity of idleness I, God, awoke—is not ours. Our concern is with one concrete world, in its own rhythm of extensity and duration, but we can intellectually conceive of other rhythms—of an infinity of rhythms, in fact—and realise that innumerable creations may progress out of contact with our own—may even unrecognisably interpenetrate our own. Moreover, we can conceive of God as moving for Himself alone in a rhythm of relative infinity. Enough that from our concrete world, by taking the highest values it has yielded, we may conceive in some dim way of the heights to which individual man may ultimately climb; and from this conception infer the purpose and achieve a general understanding of the method. Furthermore, we can understand that no positive, direct, fully predetermined creation could meet a purpose aiming, not at creatures, but at children in the inner sense of the term. Only historical evolution under special conditions could achieve this result. The potentiality born of the supreme potentiality, dowered potentially with the capacities of that supreme potentiality, is set the compelling problem of inevitable persistence balanced against the instabilities of change. In it is that urge of free creation which seeks an object for its activity, and, in finding, ever finds the new objective beyond. This is not an assumption added to recognisable fact, such as memory is when the mechanist incorporates it in matter. It is, on the contrary, a recognition which impartial observation on the progressions of the living cannot evade. But in life this urge can act only through the complex of sensation-elements to which it finds itself attached. Its own outer world is, therefore, largely shaped by the raw material given to it. Moreover, this material is intractable. It constrains, and the constraint involves a development which must be the fruit of a struggle wherein freedom and

mechanism strive; and in this development, with its infinity of contingencies each of which closes a past, individuality is assured in each unravelling of capacity.

When, therefore, the here born of God is brought into functioning contact with matter it is potentially, in itself or its children, anything from a protozoon to a poet or a prophet. In it is a capacity to recognise, reproduce, and achieve the multiple complex a self may build on sensation-elements, as well as the possibility of becoming absorbed in lesser things—remaining, for instance, a protozoon to the end of the chapter. In the potentiality, moreover, no mechanism wherein part is exclusive of part, and each part a distinct factor in a complex whole, is implicit. Sensation-capacity is the foundation on which the potentiality develops all its movements of emotion and intellect; but in itself it has nothing in common with emotion or intellect. It is simply the first activity, and it may, though it need not, be the start of multiple and diverse activities crowned by that effort to create which may bring into explicit consciousness, not only the aims of the artist, but the aspirations wherein saint and mystic seek to transcend and transform the historical self. The potentiality is more than a mechanism, for mechanism is but the willed and contrived product of potentiality. It is more than a complex, for a complex may be unravelled into its parts, and here the unravellings are one with each other and with an inexhaustible reservoir out of which everything that emerges seems but a fresh guarantee of treasures behind.

There is here no mysticism. Mysticism is an experience—at its highest a movement wherein the developing potentiality surges back to some contact with its source; and at its lowest a transcendence wherein, as in poetry, emotion, suffusing intuition, carries the self towards an explicit far in advance of the proximate historical vision and the careful march of intellectual apprehension. It is a great experience; but forced into the moulds of intellect, and, so expressed, taken as a true measure of reality and its possibilities, it is necessarily liable to disastrous misreadings. In arriving at

the present conception aid has been sought from no source resistant to rational deduction, and this deduction can find no warrant for the idea of a mystical reunion in which the developing self becomes one with a mystical absolute. The self develops by acquiring capacities of movement. The activities which make explicit its whole organisation of values and the things it values might be represented objectively—that is, to the intellect—as a complex of trajectories into which the self emerges at will. Now, this organisation is not a mechanism. It is not the achievement of perfect form, to be reached one day or another by all selves. It is, on the contrary, the concrete resultant of an irreducible history every event in which was unique, and there can be no identity between one such organisation and another, and no possibility of climbing to a non-existent ideal organisation of absolutes. Coalescence, therefore, is barred; and extinction, since it would mean reducing a something to a nothing, and nothing is a symbol void of meaning, is impossible. We have, therefore, to recognise that persisting, evergrowing personality is clearly involved in the recognisable existence we call a self.

There is a self in the protozoon. It need, however, be little more than consciousness directly engrossed in sensation, and made unstable only by a marginal motive-complex of like and dislike. Although it may be the nearest thing in all the realm of reality to that union of knowing and the thing known which modern intellectualists find at the end of one of their equation chains, it is still, as biological history has proved, a full potentiality. From a protozoon may have grown the man. Nevertheless, as a protozoon, it must be conceived as merely flickering towards the unravelling that connotes growth. Its explicit is a shadow. Its history is a perpetual beginning; and there may be no development of movement-capacity inconsistent with coalescence. There may be a stage, therefore, at which individual persistence is achieved. It may be found, perhaps, at the point where justice demands a balancing which will compensate for evil in the concrete history of an

individualised existence that comes unsought. It is reached by stages wherein the descendant in any linear progression starts equipped with the memories, capacities, and dispositions necessary to control production of the ancestral type of organism. This complex of memories, being a plexus of fluidities rather than, even symbolically, a mechanism, varies in organisation. In addition, the emergence of memories has a capriciousness determined, possibly, by the stresses of an inner urge, no less than by the contingencies of stimulus. Its historical moment is always, therefore, poised on the possibilities of variation. There is, in fact, the capriciousness of life in the emergence of a memory which is mainly that of a sensation-succession; and, moreover, the sensations presented by mechanical successions for its recognition move under the contingencies of the mechanistic aggregations and dissociations of matter. Let us give definiteness to this general conception of an historical growth in the construction of an organism, and to that of the growth in capacity, aptitude, disposition, and the organisation of values in the potentiality knit to the organism, by considering, schematically, the course of development it indicates in the case of a man.

The zygote, or union of parent cells, is the point in material reality to which a joint potentiality, born of both parents, is attached. By division, redivision, and specialisation, this joint potentiality is to bend matter to the form and function of a human body. This joint potentiality carries the capacities, dispositions, and sensation-memory complex of the parent potentialities as developed up to the stage whereat, in the course of the concrete history of each, they sunk from the position of being active concerns of consciousness to that of subconscious possessions. They sunk to the subconscious when the reproductive elements were localised and set apart from the general progressions of the organism. There they remained, dwelling on a sensation-complex orientated towards a commencement of the task which could alone awaken them to that order of emergence in which they might follow their history anew. Duration

was necessarily an irrelevance. It is always an irrelevance where we are entirely absorbed in expectation. With the coalescence of the cells there would necessarily be an admixture of the developed singularities of the potentiality, together with a union of the basic undifferentiated potentiality; but the development would have been so largely racial—so largely in the nature of innumerable relivings of closely parallel histories—that the competition of competing activities for points of attachment to the sensation-complex would find so many points identically recognised as to induce in action a fusion into an indistinguishable oneness. Other differentiated activities, or memories, would remain outside the new history, clinging, possibly, subconsciously to that point in the memory-complex where they almost achieved the conscious, and pass, perhaps, as potentialities of differentiation from generation to generation until some contingency supplied the opening for, let us say, the ancestral lip. We have in the case of the protozoon moving towards sex an indication of how one potentiality might cling to certain elements of the sensation-complex rather than to another, and the second cling to elements disregarded by the first. So, the union of the diverse cells would supply the coalescing potentialities with a stimulus recognisable by both as the beginning; and by restoring missing factors, and securing competing memories, determine that the emergence of racial memories would repeat history in the proper order of its events. Mechanism would inevitably tend to a sort of efficiency. It is hard to conceive how or why it should retain the comic nose of the Bracksteds from generation to generation, for instance; while to one who knows the Bracksteds in the social and human sense, and regards the matter from a human standpoint, it would present itself simply as a racial tenacity, one in character with their capacity to take advantage of circumstances wherever they could add an acre to their possessions.

Thus would be born the possibility of a new self. Its earliest efforts would be to influence assimilation, division, and specialisation in the direction of a remembered sensa-

tion-succession each element of which, as it emerged, would be recognised by a coincident movement describable as implicit memory. At a certain stage the potentiality would again divide, and a part, clinging to elements holding the promise of reconstruction, would pass out of the progressing historical consciousness, just as some elements of a community might abandon a new they distrust and devote all their powers to the conservation and resuscitation of the old and familiar. The part so passing would be full potentiality orientated anew to the beginnings of race. The part remaining (though part is really a term inapplicable where, though there is division, there is no diminution of the whole) would press on, carrying its historical now to a freer, more individual, more personal achievement, involving further growth and the development of conscious movements of emotion and intellect leading to an ultimate organisation of the potentiality on lines of value as determined by the course and action of its individual history.

Inorganic evolution is, practically, a mechanistic progression. So is organic evolution in the aspect defined by chemistry and physics. But there is a difference. In the organism the mechanistic progressions are directly subsidiary to the development of a real potentiality, and the progressions are afterwards those of a dual evolution, the non-material side of which is alone of abiding moment. The potentiality originally born of God must be conceived as possessing the pure potentiality of God. It has, however, neither the differentiated qualities, the developed dispositions, nor the concrete possessions of God. In life, within limits defined by the fact that it is involved in a mechanism, it is autonomous. It may therefore rest content at any stage of the actual unravelling of qualities and dispositions. It may move along any of the lines of progression we trace in the kingdoms of vegetable or animal life; may cling to certain stages, as in the protozoon; may suffer retrogression, as in certain parasitic and other forms of life; may achieve the highest success, or, through some accident in the

material successions with which it is associated, some failure to accept the fruitful contingency, or some struggle of competing memories, sink into comparative failure. But, with reality dominated in ultimate things by a free potentiality, no failure, no arrest, no retrogression, need be outside a compensating development somewhere in the depths of God's duration.

This, briefly, is the conception of evolution and growth which is confidently contrasted with that of a self-unrolling mechanism. Certain factors, certain principles, certain universals, may be conceded, and must be recognised as governing both conceptions; but whereas in the mechanism they must be things which are a part of itself, in the conception of a dual evolution they are things which exist solely as principles of constraint and permission in certain aspects of action. To conceive them as qualities of God, or as constructed devices of God, would be to follow intellectualism into the barren path that seeks the absolute instead of the living.

But, beyond the universals which may be accepted by Mechanistic Monism and Dual Evolution in common, that human reason which is something greater than explicit intellect must recognise the existence of universals above those necessarily operative in the understanding, description, and control of material reality. These higher universals seem outside the becoming in which we are involved, yet they are in a contact of suffusion with that becoming. The concepts of mathematical intellectuality move towards a divorce from all quality; but the concepts of these super-universals have, like the realities of emotion to which they are akin, a quality as unique as that of sensation, and are, appreciably, part of our concrete reality. In the concepts of mathematical intellectuality we make explicit universal principles of constraint and permission. They are of supreme utility in interpreting and dominating mechanism. Their applicability to the realities a self builds in its history is almost negligible. We may, indeed, conceive a stage in development whereat, wholly intellectualised, these prin-

ciples of construction would sink to the position of an instinctive equipment of the acting self. Not so, however, where these higher universals are concerned. The mark of their development is a growth in actuality, in applicability, in dominion over the ends and values of life. They are constraints only if they are accepted as constraints. They are inspiration rather than open ways of the permissive. They belong to the inner realities of that self which judges, acquires, holds, and builds within itself the organised system of values in accordance with which it loves the beautiful and the good. They are concepts wherein we feel that quality of absoluteness which gives to the children of duration, extensity, and growth the right to worship. They are marks of kinship with the Supreme Father; but, held in contact with the universals that are merely constructive—the practical concepts of practical life—they are guarantees of real individuality, and the negation of the mysticism, or intellectualism, that would make immanence inconsistent with persisting and growing personalities, and doom all life to trial, suffering, and wrong, ending, at the full turn of the wheel, in a meaningless coincidence with its origin.

BOOK III
SUBSTANTIATION

CHAPTER I

THE PROBLEM AND THE METHOD

In substantiation the problem is, through an appeal to human reason—to the belief and the fact that we are capable of forming a judgment on the credible—to effect a conviction that the explanation of reality here given is a true explanation. Methods known as logical are disclaimed equally with those which ignore logic. In substantiation, as in exposition, the problem is viewed from its natural centre—the point in human consciousness where the implicit is passing into the explicit, and the effort to be made is to satisfy the thought-process, as a social wholeness, that the individual thought-process, whose results have been disclosed, is valid.

The effort seeks to conform to certain rules of practical reason. No term must be accepted as of greater implication than the explicit it actually covers. To do so would be to commit ourselves to one of the cardinal errors of intellectualism. At the same time, we must note the gradations from the entirely implicit to the almost completely explicit, remembering that reason judges essentially on the contrast of intuitions which always hold a palpable background of the implicit, and always tacitly recognises four kinds of irreducible—the irreducible that is felt or the acceptance of which cannot be refused; the irreducible that is recognised in its tendency or effect, but is not fully describable; the irreducible which is socially describable; and the irreducible that intellect, aided by general human faculty, is able to distinguish and accept as fundamental to the felt, the recognisable and the describable. Furthermore, the intercalations of the four divisions must be borne in mind,

as well as the fact that aspects of each and all, however far short they fall of full reality, are expressible—that is, socially describable.

In the view here taken the fact that certain universal conceptions of intellect—those of number or order, for instance—are accepted gives them no primacy in arriving at true conceptions of reality. Indeed, it is expressly held that to import conceptions of this class into the body of reality is to obscure reality—to incorporate in it a realm of the unreal. It is felt at the same time that any attempt to ignore these universals, or view them as proximate and relative things of purely human origin, must lead to solutions quite as fanciful and as far divorced from reality as does their acceptance as the mathematico-logical foundations of a metaphysic. For, in one way, with the whole of that human activity we know as intellect, they are a part of our problem. Their concrete emergence into things explicit in the human consciousness is a fact of momentous importance. The emergence and its validities constitute facts in human history which cannot be denied; and which dispose of that sceptical attitude which makes truth merely a part of the practical, and the conclusions of philosophy things of merely relative validity. For here is truth—irreducible truth which cannot be evaded. That it is concerned with imaginary entities which have not and cannot have a concrete existence does not invalidate the logical system it constructs. At most, the purely fanciful nature of its assumptions simply negatives its claims to furnish, of itself, a descriptive analysis of reality. Moreover, material reality is recognisably of real importance as an irreducible factor in the development of selves; and on this ground alone the mathematics of intellect, making as it does for the comprehension of matter and the increase of practical control over its progressions, should not be ignored. It is not a part of material reality, but it is part of a self, and as such must be allotted its part in that view of reality which functions in a self.

Our theory of reality is not a logical construction, nor

yet a refinement of ordinary human acceptances. It is, rather, an analysis fuller than practical life finds it necessary to make. Science is at once a fuller analysis and a refinement; but science is almost necessarily in bond to intellect, while the success here claimed is attributable to such an evasion of the bonds of intellect as preserves reality whole before the final activities of judgment.

We must realise that a gradation of human effort is schematically possible. That intuition—as a term restricted to the sensation-constructions of a self, which overlies, is in contact with, and selects from material reality—forms with its expression, its description, its achieved response to symbols, a primary stage; that the acceptance of this intuition as an element of use and reconstruction in individual life forms another; that the activities of individual life lead to a third stage wherein ethical or social ends are aimed at; and that a fourth—the philosophical—must use the preceding stages if it hopes truly to interpret reality. In the things that matter it is closer, therefore, to ordinary human acceptances than to acceptances of science; and its substantiation should, it is considered, follow the lines of ordinary acceptances, realising how far, consciously and unconsciously, their interpretation is coloured by the formalisms of science, and by the implicit philosophy with which science, through many roads of assumption, imbues the common mind. In this connection we must not forget that monistic evolution, even where, as in much of the scientific speculation of later days, it conceives the basic oneness as a sort of mind substance, is essentially opposed to any philosophy which conceives reality to be concerned in any way with the growth of persisting personalities. It necessarily reduces knowing, where it does not entirely deny its existence as a fact, to a mathematical relation between phase and phase of a mechanism, and acquiesces in the illegitimate devices intellect thrusts into its descriptions of reality.

It is considered, therefore, that the method should move along such general lines as are indicated by contrasting the

problem as seen by common life with its solution as given in that mechanistic philosophy which science is disposed to assume, and with the solution here arrived at. The idealist mechanism of intellectualist philosophy necessarily falls with the more concrete mechanism which science, in its self-appreciation, seeks to lift from the position of a device to that of an absolute and ultimate explanation.

The common life—the general acceptances and social beliefs of humanity—is a thing varied and fluid, and so to a lesser degree is the life which accepts the general view and explicit attitude of science. The lines of the contrast cannot, therefore, be laid down with logical precision; and both in the order of exposition, and in the matters which may be dealt with or touched upon therein, many things may necessarily be involved whose place is not strictly definable in the above scheme of contrasts. Moreover, the contrast must be largely a contrast of explanations where difficulties present themselves for solution, and the general lines must show that the effort is addressed to those human faculties that judge and decide in the ordinary affairs of life—that it, in fact, takes account of the difficulties the common life is conscious of whenever it seeks to formulate for itself a definite theory of things, and shows its regard for the position science occupies in the common life by isolating, clearly and reasonably, the assumptions of science from the facts of science, and placing the facts themselves in such a perspective as admits of a judgment on their true value as facts for philosophy.

The common life—the ordinary practical affair of living and shaping the conduct of life—is not divorced from the things of philosophy. However inadequate the answer that satisfies, and however much it may be accepted as a matter of feeling and emotion rather than as something definitely expressible, life asks in some rudimentary fashion the questions metaphysicians have sought to answer. It has a sense of unity functioning in space and time even where its intellect is most instinctive and its acceptances limited by the parish; and cause and effect are things it lives and must

allow for. The answers are lived, even false answers, whether there is explicit questioning or not; and this fact ought to warn intellect of how small a value may attach to its utmost efforts if contrasted with the concrete experiences of the meanest life. It ought also to show the futility of explaining life by getting away from life into a land of abstractions, and to reconcile intellect to addressing itself seriously to the problem as stated and the solution as given in terms which do not deny the common life or the primacy of that reason which cannot live out of touch with the concerns of common life. If life is entirely a matter of mechanism, if its emergences are things ultimately explainable in terms of an energy system—consciousness and all it holds being merely a function of some slower system of transformations than any possible before a cooling world and the contingences of chemical change bred a colloid—life itself is capable of recognising the fact when reason builds for it the outlines that can make it a part of the explicit; but life alone is capable of judging whether intellect has not crowded its realities into some meaningless formula. Intellect has nothing to do with meaning or content—things from which it naturally gets away into its own realms of the purely imaginary. Its perspective is naturally non-human. Biology means no more and no less to it than the immensities of duration it helps science to conceive as filled by mechanistic progressions inconsistent with life; and its satisfaction in helping to reduce humanity and its values to drops of spray flung off momentarily from the great ocean of reality may have for it much of the satisfaction mysticism affords the Dean of St. Paul's.

There is a certain order in which common life poses its problems. That of the self and its relation to the non-self is its first problem; the outer world, the non-self, the persisting intuition which it may ignore, move away from, return to, use, or transform, is its immediate and practical problem. It accepts the self in living its history. It views the outer world as a mechanism, so far agreeing with science, and readily accepts the views of science in respect

of this mechanism. It is also ready to accept the views of science in respect of time and space. When it comes to the self, and to the problem of actual existing life, its attitude towards science, and the philosophy with which science has associated itself, becomes somewhat detached. Its intellect is one of its pleasures—achievement, novelty, triumph independent of the rough touch of obstructive and inimical realities. It toys with the conception of universal determinism, but even where fatalism is its accepted creed it lives an inspiration of freedom. It accepts evolution in a vague and general sense as the connected description of a world in the making; but it has its doubts, accentuating the doubts of science, as to what may really live in, beyond, or associated with matter; and a bar of feeling, of emotion, of the prejudice that is bred in some accordance of custom and fact, holds it back from acquiescing in a monism that is in itself so manifestly a thing of no moment, despite its immensities, except in those rare and fitful occasions when its successions stumble into life. It has an unexplored intuition that Monism must be either God or Devil or Chained Futility, and that it can be God only if its ideal of the good reaches at least to the ideals of life—ideals that are inconsistent with the reckless making and unmaking of centres wherein the capacity to rise to heights of personality seems clearly involved.

Could science see that the self is really an irreducible, impossible of deduction from the mechanisms in which it is involved; could it see that mechanism is compounded of the definite and describable only to the extent that its personal intuitions of the material world are definite and describable; could it see that the interpretation of this mechanism is impossible on any devices of intellect which leave out of account the inner realities of a self; could it realise how the ultimates of intellect are ideal things operative in reality only in so far as they help to make explicit the constraints and principles of construction which a mechanism must observe, it ought to become more fully conscious of the control it may exercise over the succession

of our concrete mechanisms; but also it ought to see that the conceptions of the present theory are the conceptions which really make more understandable the reality it knows, and that they involve a larger, a freer, a more definite and purposeful use of the researches it loves.

In substantiation, therefore, we shall first analyse the self from our chosen point of view, associating with this analysis certain discussions of theoretic yet strictly relevant importance, such as the nature and content of consciousness, and the justification for the conceptions we name space, time, and cause. Afterwards it may be well to pass to some definite contrasts wherein the explanations offered of certain parts of the evolutionary procession by monistic mechanism are set against the conception of irreducible units of potentiality developing in contact, not with pure mechanism, but with a machine, and all that this conception involves.

CHAPTER II

THE SELF : A GENERAL VIEW

Monistic science uses the term self, recognising it as a counter in social usage if only that it may show how essentially void it is of any real or persisting unity. The theory of dual evolution uses self as the symbol of an irreducible particularity in the body of reality. It regards the human organism as the dual product of a dual evolution distinguishing the body, which at any moment is a term—a summarising resultant—in associated progressions of mechanism from the inner and real self which is an historically developed potentiality progressing at the point where the differentiations of values, practical, æsthetical, and ethical, and the capacity consciously to initiate movements of emotion, reason, and intellect, and to form a judgment of values on their content, have reached the level of personality. We need not here discuss how far below man the developing potentialities may have reached personality. If instead of accepting the symbol for the common recognition of social life which it recalls, we were to press it back to definition, and attach it to wherever we found reason to accept historical individuality in any distinguishable unit of potentiality, we might speak of the self in a protozoon. But the object here is not to engender the present in remote origins, but to illuminate origins by securing a truly comprehensive intuition of the present. We adopt, in fact, that luminous idea of a perspective and a view-point which Bertrand Russell uses in his endeavours to intellectualise space, and believe that the fuller and saner our view of the immediate foreground, the less likely we are to overvalue some subsidiary accident or necessity visible in all the distances. The self of which a general view is here to be sought must, therefore, be the human

self to which each and all of us have an access that is unique, and in analysing this self, for this purpose, it must be recognised that we may with profit depart here and there from the general or social acceptances and seek the inner, personal, and individual.

We have bought, let us say, a piece of ground on which we are to erect our ideal house and lay out our ideal garden. We recall descriptions and visualise experiences, and more or less sketchily give them body by the exercise of memory and imagination. Proceeding, we contrast, combine, select, design, and call into activity the whole gamut of mental life, from the sensuous revival of colour to that abstract work of construction and forecast which deals with symbols almost devoid of quality, although we know that each holds in its grip a world ready to expand and at any moment overflow the whole field of consciousness. Let us ask ourselves what we have here, and realise by dwelling on it this fact of the symbol that flits like a shadow into consciousness, and which the attention barely touches, yet touches so surely that not alone is it an irreducible counter in reasoning and prevision, but an efficient reservoir of potentiality when we call on it for expansion and content. In the activity as a whole we have undoubtedly movements in consciousness. But behind the movements, in a relation of interest and attention and will to the movements, have we not the observer to whom the whole, from symbol to fully imagined and remembered sensation, and to the sensation perpetually accepted from the world outside, is objective—that is, consciously experienced? Does it not suggest an inner self who is essentially the judge and observer and holds the standards of value; and, as a corollary, that nowhere outside consciousness, neither in that space which radiates from it as from a centre, that time which seeks infinity behind and before its irreducible moments, nor in those mechanistic movements studied in our science, can surer ground be attained from which to view and weigh the problems of reality? Use all devices of intellect, press every avenue of scientific research, but remember that no

result is a result for philosophy which lacks a foundation in individual consciousness.

Considering that wholeness which I name myself, and regarding it steadily as an object in my consciousness, what do I find? Do I not find a complex of sensation, and do I not come naturally to regard the brain as the centre of my awareness of this complex? I have a diffused consciousness of the brain as a combination suggesting warmth and extensity, and with this sensation-complex the equally persisting consciousness of a something poised, as it were, on the capacity to become active in any out of many undifferentiated directions. I have no consciousness of unresting, ever-varying activity. On the contrary, the consciousness of pause, of realisation, of prevision, as precedents of action, cannot be evaded, and I find myself, if asked to distinguish myself—the real inner persisting myself—by a single aspect, ready to acquiesce in "I can" as the clearest description of this aspect. I can. Utility, possibility, practicability, are apart from the "I can." It is a recognition purely of conscious potentiality. This, however, like most stages open to introspection, is evanescent, or, rather, it is so far open to the suggestions of a restless attention, ever activity rather than immobility, that it has to be grasped in a serious effort to restore a phase that is being succeeded by other phases. It has to be held also in despite of an intrusion of purpose that militates against the impersonal objectivity sought by introspection.

It is a winter's day. I am sitting in front of a good fire, and I can locate sensations of cold below the shoulder and of heat below the knees, where, being no longer young and a little tired, I also locate stray sensations of discomfort. I find, in fact, that I am aware of my body throughout its whole extent with many different kinds of awareness. In addition, I see the movements of my pen on the white paper, and hear the soft crackle of the flames with vague noises I place more or less outside; and yet, all the time, I am following with direct and concentrated attention the task of reducing a complex to definite thought, and thought

to words that slip, faintly and sketchily, into and out of consciousness as I commit their symbols to paper.

I pause. In the distance sounds the clear call of a bugle. It is night-time and war-time. In the interval of one tick of the clock I have had an experience compounded of thought, feeling, and an inchoate urge holding in it all my values, and that implicit background that edges life into purpose. It would take me all night to disentangle, make explicit, and bring within definite expression, the most recognisable aspects of this moment of experience. It is dominated by war in my personal conception of its horror and futility, in its devilishness and righteousness, in its historical achievements as an agency in human development, in its seemingly irreplaceable wastages, in its romance, in its sordid realities, and in the allegation of gain even now that it has degenerated into a manufactory of outrage and slaughter directed to ends suggested by a disastrous misreading of a biological evolution framed in mechanistic monism. Through this, felt rather than expressed, flashes the thought that humanity has to its hand struggles equally strenuous, equally capable of dominating the petty and restoring the vision that fastens on permanent and fundamental values, and lacking the aftermath of hypocrisy laughing at its simulated enthusiasms. Into this question, ignoring it, yet somewhat deflected towards it, glides a complicated vagueness holding in suspension, as it were, symbols that connote the general struggles of life, with its successes and failures; and from it I slip into a side-glance at those ideals of time, space, and substance into which I so easily fit my world. This analysis is momentary, is deliberately held back from depth and detail, and is effected in what seems only a moment of concrete duration. It has not, of course, the objective validity of an estimation of the carbon, oxygen, and hydrogen in a carbon compound. It is not an analysis I can ever quite repeat, although I may parallel it, for a moving history cannot duplicate its concrete moments. There is, moreover, no certainty that expression has met the need, or that the aptitudes and prejudices of habit have

not stressed the facts according to a partly-formulated and partly-felt system of personal values. But the end sought was not the analysis of a moment of selfhood as it might be analysed if frozen into temporary immobility, and its distinguishable contents separated by selected reagents. The aim was to show its organic range and fluidity, and to suggest an irreducible wholeness of recognisable complexity in fundamental contrast to the existences and progressions of material mechanisms. The experience is not singular. It is one of a class of experiences accessible to every man, and equally effective for the particular purpose. Its truth, as a fact representing a wellnigh infinite class of parallel facts, is within anyone's personal verification.

Now, what emerges under reflection on this analysis? Clearly, a central something capable of fitting names to a multitude of things as they come under its attention, and also the fact that most of these things are possessions accumulated in the course of a concrete history, and always within its power to recall to memory, while some seem to come before it arbitrarily and outside its direct control. For instance, I can recall at will a grassy upland, a majestic sky, and a circle of hills seen across reaches of purple moorland. I can recall the scene with no more detail than may attach to a mathematical symbol. I may, by an effort, bring to memory all the accompaniments of a concrete day therein, detailed in its minutest features, although, no doubt, imagined constructions and an averaging of memories may here and there replace the real as originally seen. I can describe it so that another may recognise it, and I may go to the place itself on a future day and verify the minutest particulars of the memory. The sound of the bugle just heard I may bring back with less of its full particularity; for, although the quality of the sound remains in my memory, the actual call received but an intermittent attention and escaped me. I may not, however, by any effort of the will, cause it to sound again for my actual hearing. I might, conceivably, get a bugle to blow again, but the particular event is in the past, and survives only in my capacity to reproduce an imperfect memory. There are

thus two classes of events presented to my attention. One class consists of existences I can recall and in some degree bring before it at will, and the other of existences over whose presentation I lack this control.

We need not for the moment be concerned with the fact that everything recalled in memory may have really to be acknowledged as a part of reality that never existed before. I see the water tossing over the weir to-day. This is an original experience not initiated by the self, however far the self may have given it an individual character. To-morrow I recall the scene in memory. This will be a new event—a new existence—and if, two days hence, I recall it a third time, there will be another event still. The point to be dwelt on is that the second and the third and subsequent events in a chain of recalls are casually connected with that first which was based on persisting facts of the material world; and that the series, even including the first, become possessions of the self and stand in irreducible opposition to that outside mechanistic event necessary to the birth of the series. The physical event—the mass, rate of movement, colour, and atmosphere of the water, the depth of the fall, the line along which the eye received the vibratory movements of light, the ear those of sound, the nose those of odour, the skin those of temperature and other atmospheric qualities—these are all things belonging to the order that comprises the mensurable and calculable progressions of matter. Science is capable of plotting out and approximately measuring all the movements involved. It can conceive the movements from the perspective of the experiencing human organism, and represent the diminishing value of each vibration as it recedes along the lines of contact. It cannot, however, deal with the variations of receptive attention and the incalculable fluidity in which it involves things which the intellect can handle only under forms essentially mechanistic. It cannot, in fact, reduce the constructions made by the self for its own immediate purpose to the objective rigidity necessary to its analysis. For, as seen by the self, as accepted by the consciousness, it has a uniqueness and individuality outside the calculable and the mensurable; and its character, as

accepted by the self, is one of those things science is apt to hide beneath a symbol which appears on both sides of its equations, and has no meaning, despite its rolling name—epiphenomenon. Not alone is the manner of the acceptance in accordance with the dispositions of the self, but as well its passage as a memory into the possession of the self. These dispositions are complicated resultants of history. In action they furnish the factors on which individual acceptances depend, and are a complex of the physical characteristics proper to the body, and of the system of inner values which the self has developed and in obedience to which it has accustomed itself to use the physical equipment. The physical equipment is individualised by the differentiations of sense-equipment, the rapidity with which nerve substance reacts, and the variations of this reaction as it moves in a curve determined by the conflict of outer and inner stimuli. The eye of one person takes account of colour, of another of form, of a third of gradation in illumination. The eye of a fourth stresses distance, and of a fifth detail, and in these last we are touching the point whereat physical action is modified by the inner standards. The physical side is, however, comparatively simple and calculable. The results of quantitative experiment by the physiological psychologist here fall within at least the symbolically mensurable, and the idiosyncrasies are often clearly distinguishable as ancestral inheritance. There is, however, a beyond of almost unconquerable fluidity. The individual has, in his history, built up a system of values the lines of which are no doubt indicated by the concrete facts of physical inheritance and development and the varying pressures of environment; but this system is rarely rigid, and generally it is growing, and therefore marginally changing, and growth and change alike transcend the implications of physical equipment. We have men who draw almost instinctively, and we have had great painters who have had to bend their physical equipment laboriously to the service of their chosen art. Every self has dispositions of sensation-acceptance, of intellectual formalism, and of emotion, and, brooding over

all, its system of values; and these have been developed, not freely, but by the pressure of that fluid and half explicit complex of purpose which edges the potentiality chained to the contingencies of a material environment which includes the animal organism, and a liability to guidance and deflection from influences due to its position as a unit in a social whole. Yet we have but to look the facts of life clearly in the face to realise that the driving force of development has been entirely from within. Of greater moment than any physical agency has been the educative and directive influence of other selves in the historical progress of the community to which the self belongs. This progress has made intuitions vocal, reduced them to the raw material of concerted effort, and induced man to formulate experience as communicable knowledge, and submit it to the criticism of science and philosophy. This social factor is, however, essentially one in kind with the self itself; and there remains, after all, the irreducible fact that the self itself is the moving here and now in whose growth we are alone concerned, and in relation to whose growth these things are the materials of a structure, inasmuch as, though it need not incorporate them, its work would in their absence be other than it is.

The possessions of a self are its system of values, its generalised memories, and the specific memories which are reducible to recognisable detail. Its capacities are its dispositions of sensation-acceptance, intellectual apprehension and construction, emotion, and imaginative vision, whether serving intellect, emotion, or prevision. Consciousness is the irreducible environment of the self—the intimate environment of the self. Without it there could be neither possessions nor operative dispositions; yet in respect of both it is essentially a permissive indifference, being so, marginally, even when attention is directed to the specific. Without a self it has no existence, for, like space, it is an ideal nothing apart from its contents. As will be seen in the next chapter, consciousness is merely a useful general symbol for activities that are, in all that gives them unity and character, activities of a self.

CHAPTER III

CONSCIOUSNESS

WHAT is consciousness—the consciousness, for instance, of a red triangle on a white sheet of paper?

Science marshals the facts leading to our problem in the order dictated by its own activities. In the purely permissive voids it calls space and time, with, perhaps, a basic neutrality it calls substance, it posits intercalated and interrelated energy systems mounting from some inframensurable element through electron, atom, and molecule to the bleached and matted cellulose which reflects to the eye that mixture of vibratory movements it calls white light; and on the background thus provided some particles of beta eosin capable of reflecting only red light. It traces these vibratory movements in their juxtaposition, continuity, and spacial relation from the paper to the eye; and from the eye, in some related condensation, accompanied possibly by complexities of molecular rearrangement, release of electrons, and modifications of magnetic fields, through the substance of nerve and neurone to some part of the brain. It does not, of course, trace completely. It has a general view indicating that such is the course of events, and that there is the possibility of accurately measuring each and all of the events—simultaneous and successive—which are concerned in this vision of the red triangle on the white sheet of paper. It knows, however, that from the inside—as an acceptance in a consciousness—the movements have a translation into sensation. It acknowledges that in consciousness the whiteness is seen as a plane and the redness as the outline of a triangle; and, being unable to explain why movement—a mere transference in traceable trajectories at most—should end in things having a quality so uniquely inexpressible in terms of

movement, it constructs the word epiphenomenon; and constructs not, as it properly might, to mark a point beyond which it cannot see its activities, as guided by its existing methods, extend, but as an adequate explanation. There are no geometrical planes or triangles in the substance of the brain, but some parts must be somehow so related that they are able at once, on presentation of this red triangle on the white sheet of paper, to vibrate into those epiphenomena of sensation which we so describe; and above these related parts there must be other parts, capable, with equal celerity of action, of vibrating into the self consciousness of the epiphenomena of these first elements; and still further parts capable of judging that the paper is inferior, the ink diluted, the ruler out of the straight, and the blotting-paper carelessly applied. It looks, somewhat, as if science has been led by its vanity, as religion and metaphysics have occasionally been led before it, to a form of explanation wherein the substance of knowledge is ignored, and to, moreover, an illegitimate denial of a fundamental difficulty. Epiphenomenon might be an acknowledgment of this difficulty if it were used to mark the region in which, possibly, the elements of a dualism interact; but it is not so used. It is used on the assumption that reality is a monism, and that all its progressions are mechanistic successions in an eternal equality of things antecedent and things consequent.

Epiphenomenon is a term singularly useful in the artistic and emotional presentation of that monistic philosophy to which science has allied itself so readily. By it the flabby sentimentality of Haeckelians has been well served indeed; and it is surprising that some modern followers of a theology infused with Plotinus have not identified it with the absolute. In that logical arrangement wherein expressible deduction follows expressible deduction, it alone can bridge the gap which seemed to gape between mechanistic movement and sensation; and having once found a word big enough, and in sound sufficiently plausible to hide the bald assertion that sensation clings to movements of a

certain complexity, it becomes easy to assert that a rudimentary consciousness clings to all movements. The law of economy—of short, simple, direct and proximate explanation—is a useful rule even in practical reason. But in life, as in philosophy, very little thought will show how easily and disastrously it can cover that inertia which evades the real judgment wherein the essential nature of the things contrasted is a primary concern. In mathematics, in dynamics, in the physical and chemical aspects of the facts of biology, the law of economy can rarely mislead; but wherever there is a possibility that the activities of thought are concerned with a borderland—a meeting-place of aspects of reality which are not directly expressible in terms one of the other—its operation almost inevitably tends to a begging of any question really at issue.

If it is asserted that the submensurables which drift progressively into the distinguishables we call matter have a rudimentary consciousness, direct disproof is impossible—as impossible as it would be to disprove a child's assertion that each distinguishable particularity and movement in the complex of matter is fully conscious of its fellows. Before, however, we can consider the absence of any direct negation as making either assertion worthy of rational consideration, we have to remember that from its very nature there can be no proof that consciousness exists anywhere apart from social expression. Reaction of a certain type between a particularity and its environment may in some cases justify an inference, but in all such cases the inference is one wherein judgment must not ignore the possibilities of pure mechanisms simulating conscious life. And there is no shadow of evidence anywhere that consciousness, as a discernible, describable existence, develops —that is, rises from a state below recognition, through half existence, to unmistakable existence, thence passing to heights of growing and dominating existence. Indeed, consciousness as a permanent quality of matter, such as impenetrability is, furnishes science with a conception far easier to handle than that of a consciousness which

develops with the complexities of such dynamical systems as we know in nerve and brain substance; but even this conception cannot be adopted on a mere assumption that consciousness is a distinct and specific quality. Consciousness must first be made a distinguishable modification of some lower form of energy, and brought so far within the mensurable and describable as to indicate the final possibility, at least, of graphically representing that little whorl in its ordinary progressions which parallels the envy Jones finds ever rising in him at the thought of Brown.

The old dualism which set matter in contrast with mind must give place, not to a monism that is but an empty logical formula, but to the unbiased consideration of a connected pluralism of irreducible fact, before science is truly free to consider the problem of consciousness as philosophy must consider it. Mind in some philosophical systems covers sensation as well as the experience of sensation. Nevertheless, sensation is clearly a movement whose inner quality is the same, alike in the persisting progressions of the material or outer world and in the fugitive imaginings of a self; and it has nothing in common with knowing, believing, judging, which are truly things of the mind, or of the self, as here conceived; and, for reasons which will appear, it is even more utterly divorced from consciousness. Experience, knowledge, recognition—these are not things of the mechanistic world. Their function is outside mechanism; for, manifestly, they can have no traceable utility in a mechanism wherein they can only be relations in no way able to modify the successions which carry them as a useless phosphorescence. The final hope of scientific description to express consciousness as a system of dynamical relations must buttress other hopes, and science looks forward to the day when it may express "red" as an equation holding the vibratory system of red light in its particles, the curiosity which led to and sustained the research in some power-index within its limits, and the judgment of intellect which approved

the equation in some magic curvature clinging to its sign of equality.

The believer in mechanistic monism cannot deny the concrete facts of human history, and the part ideals, convictions, and standards of value have had, apparently, in shaping its course. He cannot deny them, and he cannot explain them away. He will be living them when he denies them, and his denial will always shrink to illusion, however perfect his logical phrase, when viewed against his own concrete history.

He holds to his belief that these things are but epiphenomena of the calculable and mensurable progressions of whatever it is that is studied in chemistry and physics. Yet he places a barrier between matter and mind—a barrier which has persistence on one side of it (Newton's brain dissolves its temporary associations, but is, in its irreducible ultimates, immortal because mechanistic), and on the other side of it a wonder-world of thought, of emotion, of judgment, of human values organised into a hierarchy of cardinals and bishops and priests and laymen, which dissolves—into what or how? What antecedent and consequent holds the conception of "fluxions"—existing, dwelt upon, recalled, communicated, used as part of the implicit framework which held his intuitions of material reality—and this conception embodied in description, together with the brain that supported it, as a mechanism and its dependent fluorescence? Furthermore, has our mechanistic monist any assurance that his measurings and calculations are devices which guarantee permanence from moment to moment in that barrier of persistence. Can he disprove an assertion that there is, in all his averages, in all his constants, an ebb and flow too fine in the nature of things for detection by any device he can ever hope to compass? Yet no modesty in his valuation of scientific faculty holds him back from asserting—from assuming on the prejudices of his ordinary mental habits—that there is an unbroken progression from the electron to the sense of beauty. At the beginning of

the progression he sees the electron—a thing calculable, persistent, and in itself, or in its units, a basic element in reality. At the end he sees the sense of beauty—a fortuitous and elusive imponderable manifested somehow where an aggregation of organic compound molecules vibrates in a particular order. Yet he must add to his faith in the possibility of this marvellous progression a faith in the truly magical progression which terminates in that faith itself.

As a working hypothesis the assumption is, perhaps, natural to science until its limits are incontrovertibly defined; and the order of acceptances it involves is certainly a convenient order. Its foundation is in the definite things of practical life—the foot-rule and the butcher's scales—however defined. Nevertheless, it has no rational or even logical validity. The reason that operates on living intuitions of reality has an immediate intuition of its absurdity. Its faith in this circulating mechanism should, if truly operative, be ready to answer with effort to the demand that it should start from the other end, and regard the world of beauty, the world of intellect and values, the world of concepts like beauty and good and evil, as the really persisting world, and the molecules, atoms, electrons, and submensurable elements of the ether as its mechanistic condensations—its slumber, perhaps. It should be ready to analyse these realities and to reduce them step by step to a common unit admitting of integration into the progressions which make up a reality ultimately and entirely mensurable and calculable. Logically, the submensurable which would really prove the unit of calculation might as well be in the sense of beauty as on the edge of an electron's magnetic field. Let us waive proof, and for the moment accept the assumption that all the realities of a self are built on combinations of sense-data. Can it conceive these sense-data as mechanistically constricting to that point of hate which hides the world in an urge to destruction? Only where they forget love, and hate, and joy, and ecstasy, and the serenities of being, and

play with words without content, can they contemplate an integration of sense-data yielding those higher things which so clearly, here and there, grow with, live on, and use sense-data for their own autonomous purposes.

The physical world, with its infinitesimals, immensities, and relativities, poses unending problems which continually just evade the fully expressible combination of symbols furnished by the mathematician. They strain the ingenuities of the experimenter, always, to breaking-point; and yet as the fat ox to a moonbeam is the most elusive of these problems to the best-defined problem of psychology to which mensurable and calculable standards of comparison can be even figuratively applied. In the self we have things to which purpose, beauty, essential meaning, or sublimity may be applied. In the subelectronic element back to which they are to be pressed there is at best, and at most, nothing beyond the mensurable; and even the mensurable is essentially meaningless apart from a self.

The present concern is not, however, with the champions of mechanistic monism, but with the monistic evolutionist who, only because he finds consciousness as the final term in an expressible order of succession, would engender it in the first term, and so place it in eternal association with sense-data—with the unitary facts of his mechanical progressions—and evolve it into the recognisable as the resultant in a stage of the mechanisms he studies. That evolutionist cannot have it both ways. He must either maintain his persisting mechanisms, with extensity, duration, and continuity, the realities he proves them to be, or in abandoning them drift into the essential irrationalities of the logico-mathematical schoolmen. The place between the places, the moment between the moments —these are verbalisms leading to the symbol that is called infinity. But infinity, applied to realities, requires the basic that dips over the edge of the mensurable at both ends; and science has to abandon mechanism where it abandons the mensurable. If it is to retain its footing in

the actual, it must not slip through a device into a metaphysic reached by no real process of thought. Symbols must not juggle it into the assumption that an infinity of positions or an infinity of moments exists outside the realms of the ideal. That the numerables of concrete extensity and concrete duration are in our day, and with our powers, uncountable proves neither their infinity nor their numerability; and science must insist on proof before it commits itself to the acceptance of fact. The man of science must cling to his realities, and look to the mathematician for devices rather than descriptions of reality, knowing that, as always, the mathematician will continue to come back from his cloud-cuckoo land, and, all the better for his symbolisations, become the practical man rendering a giant's aid in making that material reality which abides all men's questioning more describable, calculable, and subject to control. No intellectual gymnastic can fail of practical effect while reason is maintained as the true weapon whereby we subject our intuitions of reality to the analysis that cuts progressively deeper; and neither the man of science nor the mathematician, reinvolving himself in reality, can find any warrant for attaching consciousness, or its germ, to any element in reality outside a discernible self; and certainly neither to a sensation as experienced by a self, nor to a sensation-element as measured in accordance with the frameworks which hold the outer world for our questioning. In the material world there is nothing that is not a calculable factor in describable progressions, and consciousness is neither calculable nor a factor. In the analysis of experience it is a stage. There are those who cannot distinguish between experiencing and the experience—to such a pass have they been brought by verbalism. The apple and the tooth are one in mastication, but both abide our analysis of the complex fact; and so, also, the rose and the consciousness of the rose fall apart before our thought; and consciousness, like the tooth, leads inwards to a self that acts; and the rose, like the apple, outwards into a world that is objective. Fol-

lowing our analysis inwards, we find consciousness no less a term in itself. We cannot attribute it to the apple that touches another apple; neither can we attribute it to the apple that touches another apple in our inner sensational experience. Consciousness is clearly autonomous. Experience abides our questioning, and will demonstrate that consciousness is a symbol for the capacities of a self in action.

The man of science knows consciousness only as associated with an organism, with a particularity in the body of reality built of recognisable aggregations of intercalated energy systems—that is, of persisting units of movement in slowly changing spacial relations. He says: "I cannot recognise the validity of the old philosophical rule that in the antecedent there must be some recognisable unity of nature with the consequent. Firstly, because I regard all nature as one in ultimate quality. Secondly, because, seeing the red rose arise out of the dark earth, the golden flame crown the rapid oxidation of carbon, the impalpable hydrogen gas condense to the blue liquid, and a thousand other evidences of difference where there is undeniable succession, I can see no difficulty in conceiving consciousness as a quality developing in the molecular arrangements with which I find it associated. It has its physical aspect in some complexity of relation between movement and movement; and possibly, like some other distinguishable effects, it can rise above the threshold of the recognisable only when the complexity reaches a particular limit of mass." His first reason is that of a dogmatic philosopher. So used, it is, in this connection, a begging of the question at issue. His second reason is a presumption suggested by analogies; and in every one of these analogies his ordinary activities recognise the entirely calculable relation between antecedent and consequent. The successions involved are all successive spacial relations of groups of movements. In each and all there is the fundamental factor known as persistent movement; and sensation, as known to a self, is the same irrelevance it must ever remain on the monistic

and epiphenomenistic assumptions. The equation may entirely ignore it, and the knowing—the experiencing of the sensation—must be regarded as, if possible, a greater irrelevance still. Yet, if he is to be philosophical, these are facts he must face, although his logic may regard them as things that cancel out and are of no account. The dark earth and the rose are different only because knowing is in contact with progressions otherwise unbrokenly one in kind, and discloses to the observing self a quality that is unique. Here is this fact of knowing. As a philosopher he cannot ignore it. He must make the acceptance of common sense—that knowing is an activity of a self—a rational belief, or regard knowing as a mystery which, like gravitation, comes into evidence once certain contingencies present themselves. The latter view is most consonant with his habits. It enables him to view consciousness as a relation involved in his mechanisms. In many ways he lives rather close to life, and he has a moral hatred of the mystic way which makes human misery a shadow of no moment in an all-knowing, all-feeling, all-enjoying oneness. Yet a mathematical mysticism which makes the oneness a cold and helpless logic will serve him little, after all, in acquiring a knowledge and formulating a description of consciousness which can assuage this moral hatred. Relation, as it may be used in practical life where it may denote a factor in a thought that unifies for itself, and transfuses all things with its own interests, is not relation as it may be used in the logical technique of science. In science it can only be used where there is full identity in ultimate nature between the entities related. And consciousness, as the name of a relation not yet entirely describable, will have to exist on both sides of the relation. Not only would the cat be conscious of the beef, but the beef of the cat. The intensity or mass of a sensation may be related to that object in the world of matter on which it was initiated. In the last analysis they are one in kind. But consciousness is not the mathematical line joining the objective in consciousness with the persisting material,

which is also objective. To explain consciousness as a relation between mensurable systems is, therefore, no more than to assert monism; and so, at the end of the argument, to beg, once again, the question at issue.

If the man of science will but trust his own results—if he will accept his mechanism as a thing which neither a metaphysic nor an ideal logic can explain away, he will ultimately come to see that neither epiphenomenon nor mathematical relation can bridge the gap between brain and consciousness, and he will be forced to seek its solution from a starting-point firmly grounded in the realities of his inner self, rather than at the confines of the inorganic world. Once it is sought in this natural way, he may find himself able to discard the untenable idea that consciousness is a quality, and to recognise it for what it is—a generalisation which stands for the activities of a self as actually exercised. The futility of the view which makes it a quality developing into the recognisable with the approach of a certain stage in a system of complex compound molecules, as well as the utter irrelevance of experiments on the irritability of substance in determining the presence of consciousness, will afterwards be equally apparent. Moreover, the true appreciation of consciousness, and its recognition as a purely general term covering the varied, recognisable, and distinctly historical and individually unique activities we know in a self, must of itself relegate monisms of mind and matter to the limbo of forgotten superstitions.

We will be nearer to a true appreciation and tenable solution of this problem of consciousness if we recognise that for the man of science, as such, there is no direct, limited, distinctly conclusive argument with which to confute the assertion that consciousness is a by-product of substance. We can only point out to him that every attempt at direct proof of the assertion is but the addition of an assumption to a summary of facts which, in the last analysis of science, are purely facts of dynamics—of the motion of particles, associated particles, and of perceptibly

enduring systems of such particles, the particles themselves being deductions based on the recognition of persistent movements. That, therefore, the insertion of consciousness into the mechanism, as a constant quality of the mechanism, has no appeal to reason beyond that furnished by the fact of temporary association—a fact that to the true scientific spirit is clearly a question, not the answer to a question. If the self is essentially the contiguity, association, or organisation of movements arising in brain substance, these movements must evidently evade all scientific tests. These tests have not yet found the mesh fine enough to hold the imponderables out of which an electron is shaped, and it seems vain to hope that they can ever afford evidence of even the conscious state occupied exclusively with sensation. Moreover, no conceivable extension of the domain of the calculable, no determination of movement systems associated with those we can now identify, would bring us any nearer to the real problem of what it is that knows knowing. Consciousness can no more be brought within mechanism than can that beauty of which it admits the recognition.

Into a movement system called an electron move ultraponderable elements. (They need not necessarily be always ultraponderable. Science may ultimately arrive at the limiting fraction of an electron within which they lie.) The sensation-value which is the inner quality of these basic movements is one in respect of which the human organism has not found it necessary to construct any special sense-channel, though it may furnish overtones to what we call general organic sensation. There is, however, a wave-motion—that of light—which involves these ultraponderables. Out of these the eye selects by a related movement of nerve substance; and, in consciousness, we find the inner quality of the related movement to be colour. But even the science which posits consciousness as a quality of brain substance cannot isolate, within the definite and defined physiological channels they follow, the precise rhythms whose quality is thus disclosed. How,

then, can we expect science to detect this rhythm should it exist as an unhampered activity of a persisting self apart from mere substance? To plain, rational, unprejudiced judgment, it is clear that the activities of science are not adapted to secure crucial evidence for the views either of the monist or of the present theory.

We must regard what is here called the scientific view as an assumption justified only by the habitual prejudices of scientific activity as hitherto directed, and contrast its reasonableness with the simple and connected explanation which makes consciousness a convenient general term connoting the activities of a self. The potentiality at the base of the self has an infinite capacity for activities of movement. (This does not mean that it has, in some matrix, a condensation of an infinity of movements. It means, more simply, that, just as we intellectually recognise the power to extend a series of numbers, or of dots, or of lines, unendingly, so the possibilities of movements initiated by the potentiality are without limit.) The basic exercise of this capacity is in movements having the inner quality of sensation. When, therefore, we say we are conscious of a colour sensation we should mean, if we are using an ultimate description, that our inner self is exercising its capacity to move in a particular rhythm or harmony of rhythms. The movements in the physical world are not necessarily sense-data, since there may be only a single thread of their permanences involved in the exercise of an acquired historical capacity initiated on contact therewith. They are possible sense-data, since they are in themselves persisting sensations; but this existence of theirs has no necessary contact with the activities wherein the self is shown to us, introspectively, as following a movement from here to there, and as being interested in it, not as a movement, but as a sensation.

Let me in imagination throw a red triangle on a white sheet of paper. I, or the mechanistic movements of nerve substance, am not scurrying from element to element of brain substance, stirring up such vibratory deformities

resulting from past experience as may suit my purpose, or the "purpose" of the mechanical moment of nerve substance, and suppressing all conflicting vibrations. I am, on the contrary, boldly and freely moving in constructive imagination, and the movements of the brain associated with this effort, though they directly involve the channels of sense, are more largely concerned with inhibition—the neutralising, in a general diffusion, of the simultaneous and successive nerve movements that are continually reaching the brain from the outer world and all parts of the organism.

If, through some defect of vision, an accident of perspective, or a dominant expectation, I saw a red triangle on a white sheet of paper where all other men could clearly see a red triangle standing away from a white background, the movements in my private field of consciousness would be precisely those that would be present were there in reality a red triangle on a white sheet of paper; but, bringing reason to bear on my experience, I could clearly describe it as hallucination. Were my experience without physical foundation, were my red triangle and the white sheet of paper seen where other men could see only a grey wall, my experience would be illusion.

The rose of which I am conscious is, indeed, my own rose. No other member of the human family can reproduce it. But the rose whose vibrations are more or less accepted by a coincidence therewith of the free vibrations of my inner self is, in so far as it has furnished me with sense-data or sense-stimuli, a complex of the mensurable which may be intellectually determined, described, and expressed by any man.

The power of a potentiality, such as we conceive at the base of the human self, to follow and coincide with a movement (a sensation) with which it comes in contact is the fact the existence of which we generalise by the word consciousness. It is consciousness where the protozoon clings to the protoplasmic complex. It is consciousness where, in constructive imagination, we ourselves create

the quality by movements we initiate, and suffuse this creation by other movements of emotion and æsthetic and moral judgment functioning as a framework for the realities which are truly the things we permanently value.

Man has reached that stage in his history whereat the co-ordination of the self and the organism gives to his acceptances a recognisably dual character—an extensity which is a recognition due to the capacities of intellect, and a sensation-quality which is primarily and immediately real. Organic tone, warmth, cold, taste, odour, touch, colour, sound—each and all have the distinct, the immediate, the individually recognisable quality which meets the general description, sensation. They are things of the individual consciousness, and, save by a description acceptable to the social consciousness, things of the individual consciousness alone. Intertwined with this quality is a palpably varied extensity, and extensity has, we can now recognise, the primacy of being the basic and necessary form in all the experiences in consciousness. It underlies the distinctive quality which is, objectively, a distinctive movement; and it is that on which intellect ultimately constructs our conception of space. It also enables the intellect, when we subject experience introspectively to reflection, to satisfy us that it is possible to describe all sensation-experience in terms of movement. This might be regarded as giving the mechanist a common term indicating unbreakable unity in the outer world of sensation and the conscious world of sensation unless we press experience and introspection to their limits. Doing so candidly, and calling into use our powers of free and constructive imagination, we will find ourselves driven to recognise sensation-quality which is a refining of experience, moving nearer to a perfecting and a transcendence, and so to recognise a creative autonomy to which the self has grown. This does not necessarily warrant, perhaps, the conclusion that the colours or sounds remembered after dreaming, or embodied in some rare urge of artistic creation, may have no exact analogue in the persisting

movements of matter. Let it be nothing more than a selective intensification, it is, nevertheless, an experience which transcends the shackles of antecedent and consequent; and it illustrates that primary potentiality of the self that acquires capacity in contact with the complex of persisting sensation-movement in which it is involved, and develops therefrom its capacity to move into constructions that not only transcend the qualities of matter, but build, on its own plane and in its own persistence, the things which have the qualities of intellect and emotion.

Sound, light, emotion, and intellect, are things *sui generis*. In that relation wherein they are things attended to by the inner self we may call them all sensations. It is a matter of terminology, and as a descriptive term amounts to no more than the assertion that they are all movements in the consciousness of a self. Its use involves no error so long as we recognise that, while sound and light are things of which any man may find examples in the persisting material world, intellect and emotion are movements which have no analogue in the material world, and are definitely nearer to pure constructions of the self than can be any of the sensations which matter parallels.

How exactly are they nearer? Let us imagine an unconditioned and undeveloped self—a pure potentiality such as that from which we conceive the self to have grown—and imagine it alone in a here with its complex of capacities. Its duration has no history, therefore it is outside that succession of durations we intellectualise as time. Its activities are purely potential, therefore it is outside extensity and those varying extensities on which intellect builds its abstraction—space.

We can conceive that it might rest unendingly in its poise of possibilities. But, remembering that it is no unit of monistic substance, no equilibrium of balancing forces doomed to unchanging persistence in an environment that can yield no disturbing factor, but something of which an essential quality is the inherent restlessness of the creative urge, we can more easily conceive it as adventuring into

some rhythm of movement and achieving the transit from a here it retains to a there from which, after touching, it retreats. This first experience, this primary disturbance of the poise of potentialities, could not be intellect, for intellect needs comparison to give it birth, and comparison waits, equally with emotion, on like and dislike. It may well be, therefore, sensation of that kind which constitutes the world of matter, and it will not be irrational to dower it with some dim qualities of colour and shape, and to conceive it as followed into extensity by varying movements having parallel qualities. We must not let our imagination be misled by the implications of monistic evolution, and imagine these movements as foggily groping towards quality. Not impossibly they would have quality, vivid and intense. Anyway, they would have quality in some degree, and could not but induce the beginnings of preference; and on its simple beginnings this potentiality, being free, might build a wonder-world strictly its own, with light, and shape, and form, and sound, exercising its attention. Presently it might recall the movements liked, combine these movements, and exercise prevision, and climb to the joys of beauty growing beneath its own autonomous effort; and, finally, estimate and construct under the full urges of intellect and emotion. The movements of intellect and the movements of emotion would, in any analysis, have to be regarded as activities emerging in the wake of those sensation-movements which drew it from the poise of potentiality to the activities of development and growth. But they would have to be seen as the dominating values where sensation-movements must inevitably come to be regarded as tool, material, and device; and there would be a hierarchy, a primacy, a distinction of nature from its own point of view, between the movements that were judged and the movements of judgment, and between the movements that were disliked and eliminated from its activities, the movements that were liked and reproduced, and the movements of like and dislike.

After this defensible imaginative construction of the

growth in outline of an entirely free potentiality we can understand that, where the potentiality has its data given to it—its elements of light, sound, colour, shape, and organic sensation involved in a mechanism to which it is tied, and out of which it must isolate, recognise, and acquire—the movements it makes in its exercise of emotion and intellect, though constrained to some extent by the complex in which it is involved, are far nearer to being free constructions of its inner potentialities than the movements which are so largely suggested and paralleled by the persisting movements of what science calls matter. Furthermore, we ought, on returning to our intuition of the realities we live, find consciousness a word absurdly out of place when used as a symbol for any quality of substance or any aggregation or subdistinguishable in an impersonal recognition such as energy.

CHAPTER IV

THE ACCEPTANCES AND CONTENTS OF CONSCIOUSNESS

WHAT are the acceptances of consciousness? Clearly they are, objectively, the coincidences of rhythms of the self with rhythms of the material world. But, equally clearly, they are movements of the self—direct constructions of the self—in which some rhythm of the outer world may be, for the moment, definitely involved, and movements of the self which are entirely distinct from any persisting movement in the complexes of matter, even though, in the historical association of the self, its organism, and the world, they may be initiated on some fragmentary contact with the rhythms of matter. Subjectively they are experiences, varied in quality, which the self not only endures, but makes, in making acquires, and afterwards holds within its own initiative. The sensation red perceived in the rose is not the persisting sensation which is a part of the rose, or of the light reflected from the rose, but, rather, movements of the self which selectively coincide with movements determined by the rose. Men differ as to the shade of the rose because one self chooses to coincide with the redder wave-lengths, and another self seeks the fragments of blue. It is, in fact, an illuminating reflection to consider how impossible it is to know that one man's violet may not differ rather widely from another man's violet, and that one man's red, could it really be objective to another, might prove to be that other man's cardinal.

The contents of consciousness are the varying movements which the self from time to time casts into an extensity that may be called its private and personal field of consciousness. They are its experiences, its objective life of action, whether the movements be paralleled in the world of matter, or be those movements of intellect and emotion which belong to itself alone. But, as will be indicated

later, they are more than this. The self is not rigid form. Its activities may overlap the historic moment—the point of growing experiences on which its attention is focused—and it may carelessly, casually, heedlessly, accept many things in which it has no attentive and immediate interest, and what it accepts it retains.

Wherever the self is consciously experiencing it is doing so, not because it is involved in the world, but because movement is its natural, inevitable, irreducible method of expressing to itself the fullness of what we call experience. In this movement the symbol that is merely its inner and private mark of the capacity to remember and re-embody expands to a reality which may be judged, modified or approved, and reintegrated as a symbol. The self, nevertheless, is not a movement or a congeries of movement, as Bergson would have us believe. The judgment that reaches finality at a particular moment is not a movement; the resolve momentarily immobilised as a pause of realised prevision and potentiality is not a movement; the ineradicable realisation of self is not a movement, nor is its storehouse of memories a simmering condensation expanding to a detail at the impulse of will or stimulus. In any pause the self is as independent of duration as it is of extensity—both alike are qualities of its activities. In its realisation of self it must adventure into its field of consciousness, making objective its concepts and its values, and outlining its history to some degree. In doing so it commits itself to activities of movement. In its search for a memory, too, it may recall and re-present to itself the details of its past, or anxiously press its organised use and control of bodily aptitudes to yield it the hint it may expand into the memory. In so doing it is undoubtedly moving. But behind all these movements is the reservoir of potentiality, with things in it that are implicit, as well as things that have found, and may, at any moment, again find, the explicit; and potentiality is not a movement, but a thing above the extensity and duration with which it clothes its actions.

In two respects, however, the contents of consciousness, or, rather, the possible contents of that field of consciousness which is private to a self because always created anew by a self, deserve further consideration. The self, it has been said, has possessions that are concrete and unique in the particular self, just as it has capacities, dispositions, and concepts that are also unique, however closely they may parallel those of other selves. They are all resultants of that history in which it has itself been the protagonist. Its possessions—concrete memories—may be larger than it knows, and its capacities and aptitudes may, in the face of stress, show unsuspected powers of expansion, while its concepts and values seem always ready to move into a fuller realisation, and so into a fuller content, where thought dwells on and presses them to a clearer objectivity, and where purpose moves to serve the ends of a more universal thought. We must, of course, really class its concepts and values as possessions equally with generalised memories and memories that are concrete and detailed, and realise that the store of either or of all may, in the face of contingency, prove larger than the self had realised. Yet these possessions are not all related in quite the same way to the facts of experience. The concrete memory of a particular scene or event is a possession we may no doubt regard as a thing directly acquired from the outer world, while the value which we have arrived at must be regarded as a complex resultant to which experience, social opinion, comparisons of standards as described or presented by other movements of thought and emotion in our more reflective moods, may all have contributed. A generalised memory may also be a complex resultant, and one in the formation of which superimposed congruents may have had a far smaller share than the implicit criticism of our intuitions by the growth of universals. To trace all the activities of the self involved in acquiring its stock of possessions, describing the individual core of each particular activity and its relation to the medium worked in, and noting and tracing the fluidities and interconnections of all the recognisables concerned,

would fill many pages; but it is enough to indicate these things, and to ask that they be borne in mind as in themselves invalidating the crude and meaningless conception of the self as the epiphenomena of dynamical systems. Their consideration should, however, be pressed a little further for our present purposes. The pressure need not be along lines of analysis, but along the lines of introspection which show us a memory, a generalised memory, a concept of the character we may, in practical life, call an intellectual device, or a concept, such as beauty, which furnishes us with a real universal, moving under want or impulse from the potential of mere possession to a place in consciousness. Let us watch it as a reaction. There is the perception of the circumstance to which it is applicable, or the question to which it is an answer, and the response ready as a muscular reflex. We can watch the movement inwards and the movement outwards, noting at the turn something that has the quality of a symbol, and the expansive range possessed by all symbols which stand for realities. Now, what is the nature of this keynote on touching which a memory floods into consciousness?

The older biology, and indeed psychology, not to speak of mechanism, had a simple theory of memory. Memories, on the objective side, were modifications of brain substance. The remembered word, the remembered scene, the remembered event, with its details of colour, of form, of sound, of individual action, even of judgment on any human value that might have been involved therein, was remembered because all these things are in their nature epiphenomena of the vibration of organic cells in the substance of the brain; and to each memory corresponded a modification of structure, due to the original event, which confined this modified part of the brain to its acquired particularity of vibratory action. A man learned a language. By the act he was modifying rows and rows of cells which answered to the nouns and adjectives and the verbs and the particles of that language. He was also laying down mazy pathways which answered, implicitly or explicitly, to its syntax, and constructing gauges and frames into

which uses and abuses of phrase and vocabulary would fit for judgments, instantaneous or deliberative and delayed. When he learned another language he modified other cells and trod out other pathways; and in learning a third or fourth or an *n*th language he repeated the process. It would have been very interesting had he continued this learning of languages to the stage at which the necessities of language would have been such as to leave no matter available for other records, and to have watched the movements of a brain which, like some logicians, could deal with words alone, having no room for new events or for activities unconnected with the stringing of words together in certain formal relations. This purely mechanical aggregation of molecules might in due course arrive at the stage wherein, although it could say in multitudinous ways, it could find nothing to say; and resting on this unexercised capacity drift through dumbness to the wiping out of all its abnormalities, and so return to a fresh impressibility that might allow it to exhibit the illusions of experiencing and acquiring once again.

Psycho-physical parallelism is difficult to realise. Logically there is no reason why two such utterly unlike progressions as those of brain movements and the experiences of a self may not go on side by side, whether they be indissolubly connected, like two faces of a coin, or are merely invariable accompaniments, like the conjurer's patter and his trick. But to consider its implications, to arrive at some describable realisation of the complexity of interrelation it implies between brain cell and brain cell, is to try capacity beyond its limits. Only by hiding the real complexity of a self in its activities, as well as in its pauses of realisation, judgment, and will, and assuming it to be a complexity built on simplicities, can the suggestion be made tolerable.

In picturing our mental life from the side of the brain we must exclude all action that is not physical, and we must find complexity and relation capable of functioning with the swift wholeness we know in introspection directed to the things that are ours subjectively as well as objectively

in the field of consciousness. We must, therefore, conceive for each nerve or pathway through brain substance a saturation-point beyond which it can accommodate no further movement. We must conceive an order in which the movement that is refused is accepted by other pathways, so that the passage of a stimulus may always be autonomous. It should be autonomous even in a case of inhibition—where the man suddenly meeting the bear neither runs away nor attacks—though the autonomy in this case may be no more than the possibility, through the existence of an enormous number of pathways of delicately graduated resistance, of a stimulus having the force to flood them all simultaneously, and so to balance contraction by contraction to a resultant in immobility. Beyond this, however, remembering how possible actions are clearly associated as alternatives, and the feeling of conscious choice with which one is chosen rather than another, and taken, often, after prolonged and conscious inhibition, we must conceive of saturation-points so organised and related by the course of the brain's organic history as to meet the conscious feelings of choice, deliberation, valuing, judgment, and achievement, which undoubtedly accompany these mechanistically autonomous chains of brain movements which can be initiated on so slight a physical stimulus. Any man who will carefully record a complex train of thought and feeling leading to a prevision, missing as little as possible of its side-issues and special colourings, can try and plot out the corresponding plexus of interconnected and interrelated vibratory action, marking the saturation-points and mechanical deflections. As one fact of experience he may consider it as consistent with psychophysical parallelism. But when he remembers the inexhaustible parallelisms he may produce day after day, can he still retain his faith in himself as the epiphenomenon of persisting and autonomous mechanisms? Let us take a simple and accessible case, but let us take it whole, not as a fact converted into what is little better than an imagination by cutting off vital aspect after vital aspect. Take a case wherein one searches, during the action of committing

thought to writing, for the most suitable word. Look at the circumstances introspectively so far as we may, and consider whether the full and meticulous parallelism of brain movement to this search and achievement is really conceivable or tenable. The argument which shows that it is not, and exhibits the rational and tenable relation of the self and its possessions to brain movement, is very fully and, it is believed, conclusively elaborated by M. Bergson in *Matière et Mémoire*.

The brain is a nerve system. It differs from the simple nerve system which automatically controls a reflex action only in its relatively enormous complications. The control of breathing; the answer of organic function to organic stimulus; the organisation and relation of nerve substance to muscle substance—these are schematically simple. It is such that a stimulus passes in and out around a connected system, and secures a mechanical response all along its pathways. The passage of the vibrations from a rose to the brain, and from the brain along the nerves that control the muscles that extend the hand and secure the plucking of the rose, is equally simple in conception. We know it is enormously complicated in fact—that it is a mechanism full of the most varied and delicate adjustments and compensating devices, and moving along lines wherein chemical and physical changes of the most varied kind progress as accompaniments; yet we know that our simplification falsifies no reality, since the most exhaustive description could never get outside expressible movements. But above this plexus of action and reaction what complexities of consciousness may not reside. What judgments, what comparisons, what recalls of names and of memories, of scenes, events, and feelings! We should not, if we will dwell on our natural intuition of the facts, need Bergson to show us that this complex is not dependent on a particularity of permanent modifications in the plasticity of the brain. The brain is organised only to action. It is the acting centre of our nervous system, and nothing more. It differs from the spinal column only in its provision of the complex alternatives which the potentiality

requires in the immediate tool through which it achieves its history. When we recall the name of the rose, the stimulus of the light rays on the optic nerve has not passed mechanically along certain channels and stirred into vibratory activity a permanently deformed system of molecules. On the contrary, the name is a possession of the self, and is in no way a thing dependent on a meticulously scored record. In remembering it, the moving impulse has stirred and opened up the systems which control the actions involved in uttering the name, or visualising it as a printed or written word; and straightway the self thrusts in the memory as a foreshadowing of the action of utterance or of vision. Let the name begin with an M. Should the channels that control the physical movements necessary to speak the M, or the M in its combination with the vocable that should follow it, be injured or decayed, then the self will in vain inhibit, delay, and cast into all possible channels this moving impulse; the movements of its memory into objective extensity will be impossible, and the name remain one of its subconscious possessions. Should the injury be repaired, should decay be arrested and its ravages replaced by new growth, should the temporary cloggings of fatigue be removed, then the self finds that the power to make its memories objective is its own again. All the records of amnesia answer naturally to explanations on these simple lines. No torturing can fit them into the frameworks required by the conceptions of gramophone records in the substance of the brain. Moreover, why should nature, when it effects repair in the lesion that has effaced the old scar, restore in brain substance that old scar while it ignores it in the finger?

Consider and contrast the view of the historical growth of a self as given here with the view which makes it the epiphenomena of such an impossible mechanistic organisation as is indicated above. Contrast it, on the other hand, with such mystical absurdities as those of which the Subliminal Self is a type. The self is the historical development of a potentiality. Itself and its organism are parallel and connected histories, but they are not in any way equiva-

lent or mutually translatable histories; yet the free history of the self is always constrained to that moving edge of action which the organism at any particular moment presents. The potentiality is always beating against the limitations of possibility, and seeking to transcend the aptitudes of its organism and the constraints of its environment. Its conscious states are always largely the prefigurement of possible action. Only marginally, only in judgment and in the high endeavour its prevision builds under the constraint of its system of values, can it overflow the possibilities of action. Necessarily, then, it is in contact with stimulus overflowing on all sides the possibilities of action. Through every sense-organ streams of movement flow in clamouring for attention. Its own activities flow to meet these activities originating in the material world and in the world of life. It overflows them and learns their particularity; but the attention—the focus of the acting self—decides the fragments to which it gives a full and conscious acceptance, for attention nearly always stands as one with the possibilities of connected historical action in undivided succession with its past. So it is that occasionally we have in our possession details that were unnoticed when the main event fell within our experience; and that, under hypnosis, the Greek ode which the maid-servant unheedingly heard her master declaim may flow from lips that had never in conscious life uttered a word of Greek. So it is, also, that the self diverted by hypnosis or disease from the point of organic contact with its history may thrust into some open channel of brain substance the subsidiary memory, or the subsidiary value; and, the old organisation of the capacities and possessions of the self being for the time in abeyance, move them into a fresh orientation, and through their plasticity construct the simulacrum of a new personality. But the new personality cannot persist. It is but a passing moment in a history comprising almost innumerable moments, and once the personality comes into complete possession of that history and its results, this induced phase has no more of permanence or importance than any idle fancy of an idle day.

CHAPTER V

THE EXPLICIT IN CONSCIOUSNESS : INTUITION, INTELLECT, REASON

THE thing explicit is that which the judgment recognises as fully known. Where it is of the nature of pure mathematics it is fully expressible, because this mathematical knowledge is concerned only in a part of reality comprised within the autonomous developments of intellect—in things entirely created by the self and entirely known. The belief that pure mathematics has a concrete concern in anything which really exists in the world of matter or in the world of potentialities has no justification. At best it furnishes the potentiality with interpretative aids in apprehending, memorising, or schematically immobilising, for purposes of thought directed to practical ends, the progressions of matter, and, as a corollary, it is a lever and a guarantee in constructive effort. It does not even furnish us with principles of relation obtaining absolutely between any one particularity of reality and another, although it helps us to that intuitive apprehension and response to the fluidity of the real relations which we know as skill. In this book it is held to have in it the possibility, finally, of coincidence with the mathematic of God, and so of furnishing the constructive principles in relation to which the creative act has moved in initiating the progressions we study in the material world. As God could not create a nothing, which is essentially what empty, indifferent space would be, He could not create an absolute mechanism. He could create a movement having the qualities of sensation and extensity—the capacity is also our own and the guarantee of our development—and cast such movements into a plexus allowing of interpretation in terms of the mathematical mechanism in accordance with

which it is here held that He designed its progressions and foresaw its possibilities.

Were the view of the mathematical mechanist correct—were his theory of reality a true theory—all the experiences of a self would, in their ultimate analysis, be facts of dynamics; and there would be no growth, only kaleidoscopic changes holding such illusions as personality and beauty in their shifting relations. All experience could, were knowledge sufficient, be described and expressed clearly and indubitably in symbols having an exact logical value; for reason and intellect would be one, and their unity a fact in dynamical relations. If, on the contrary, the view here held is correct—if dynamics has but a partial applicability, and at that an applicability only to that matter which is the raw material on which experience—itself a thing of another order—is built, no symbols, no words, no efforts on canvas or in marble, or in the successions of the musical phrase, are fully adequate to holding and communicating any part of the concrete and real experiences of a self. Thought, where it is description closing a real movement of reason—that is, where it is the edge of history moving into the explicit, and so never out of contact with the body of reality—yields conceptions of reality far nearer to the adequately explicit; but thought is not fully served by symbols or words of any kind. Behind thought is the urge of the great complex of a future that is yet unmade as it approaches the explicit through those channels of emotion which seek the symbols we know in art—symbols that are creative and stimulative rather than definite signs such as thought and intellect seek. No doubt they may, to the user, be symbolic of the emotional mood and germinal of the creative prevision; but they never recall the particularity of the emotional mood which bred them. They fail, perhaps, because they are never more than an outcrop from the complex beneath, and the complex is a thing so fluid and living, so incessant in its strivings, that the potentiality has grown, has reached a new phase, has had the stimulus of a more satisfying

prevision, before the symbol has fully emerged into concrete existence. To another potentiality the symbol is never more than the occasion for parallel emotion of its own. It is always the symbol of another's perspective, and its real value is the value of fact, as it may hold and disclose what our own perspective obscured, or what our hurrying history, turned to its own values, ignored. It is never, therefore, a thing explicit in another's consciousness, though the intuition in which it has been primarily accepted, the form in which it becomes a possession, and the judgments and emotional activities that have originated in its presentation, are things explicit. We can return, therefore, to our opening statement that the thing explicit is the thing which judgment recognises as fully known, and understand that the thing explicit in this sense is an ideal of possibility rarely attained in the consciousness of man. It is attained in the formalisms of logic—two and two do not make four and a fraction where the units are things absolutely individual and absolutely equal—which neither need nor can obtain confirmation from the observable particularities which are really existent. It is attained also where that thought-process which is reason functioning within the forms of intellect yields a true universal like beauty. The explicit in consciousness holds far more than the recognisables that are fully explicit. It holds the recognisables which comprise every movement therein which attention can isolate so that they admit of the attention subjecting them to recognition and judgment. It holds, therefore, all those movements in consciousness which are activities of the self as it lives its history, but it does not hold movements which are casual, accidental, and at the moment unrelated to the now of that history. The mass of all the coexisting movements in consciousness has, in fact, a focus. This is not a geometric focus, but a concrete centre of interest, and outside it the recognisables are in a relation of perspective which deprives them progressively, and as they recede from the focus, of positive content; and, outside a shifting

and fluid margin, relegates activities which may exist to the unrecognisable, or, as moderns term it, the subconscious.

Of the things explicit in consciousness, however, this chapter is concerned mainly with those falling within three recognisable activities of a self—the activities of intuition, the activities of intellect, and the activities of reason; and the perspective from which they are viewed is that in which expression is seen to be the outcome of a process of thought which is essentially that of an implicit judgment by which recognisables are isolated, immobilised, and made objective by temporarily separating them from the full intuition. Originating in the vagueness of like and dislike, the thought-process moves into progressions that achieve the recognition of beauty, and from the recognition of beauty the progression is unbroken up to the achievement or acceptance of "beauty" as a universal symbol. At this culminating-point something implicit as reality has become explicit, and the explicit is the supreme weapon of a self. Henceforth beauty is a term the judgment may apply to all things, noting degree in presence or defect. That my realisation of beauty is ever acquiring a deeper content, and that with it your realisation of beauty can never be identical, does not affect its universality; it only marks its truth as a personal equipment which all personalities may parallel; and, on consideration, shows how vital and organic is the difference between a universal symbol dragged by a self out of its conflicts with the real and one, such as the point, achieved by a self in the autonomous activities of intellect. Having possessed ourselves of the symbol "point," we have an exact device of great utility in dynamics. Holding the symbol "beauty," we have a conception which takes rank in our system of personal values, and may be accepted as a conception through which each of us is in touch with one of the everlasting aspects of all that was, is, and shall be.

Thought, as a particularity of action, has recognisable degrees of exhaustiveness. Aiming at the personally useful, it ignores the merely theoretic, for its interests in

realities are strictly confined to those that are proximately calculable. Aiming at the socially useful, it seeks a wider field, taking into account the generally useful, and even the generally interesting. Seeking the knowable with no direct regard to personal or social ends, it shapes its activities to meet a general conception it calls truth, and its standards of accuracy become progressive refinements in the analysis that reaches irreducibles, and relates them to each other and to the general plexus of reality. At this stage it becomes, essentially, the thought of philosophy. But being the activity of a personality, it cannot rest in this third stage. It must move towards recognitions which will enable it to formulate principles that are ethical, and seek conceptions of value capable of outlining the ends which shape the activities of life. Having embarked on this later stage, it returns and reshapes, and re-enforces and clarifies the activities of the earlier stages; but always, and in all its fluid and interpenetrating activities, thought is the form through which reason reaches judgment.

In matters where intellect alone is concerned, conviction is the final stage of a progress that is purely mechanical. We may judge whether this artificial process or that reaches the conclusion most efficiently, and whether the artificialities of its postulates and axioms retain their designed content throughout. But we nowhere judge as reason judges realities. We nowhere judge with the implicit recognition that we are not balancing fully-apprehended realities, but personal constructions suggested by realities which always overflow the constructions, and which may, on a later contact, constrain constructions holding a fuller content. The end before intellect is, in fact, static and unalterable principles which would hold were all that is concrete swept into oblivion, and not even the void left. Judgment on its activities is, therefore, to judgment on realities as play is to work.

To effect judgments which are the judgments of reason, to combine and manipulate them so as to reach conclusions, and to co-ordinate conclusions so as to yield a theory with

which we may return and repeat the whole progression from intuition to thought—this is to embark on the activity whose goal is a philosophy. This statement necessarily condemns the philosophy which relies on science or on a mathematical restatement of the results of science. Equally it accepts a fundamental reliance on intuition.

Now, intuition is almost a term of offence to mechanists. Except where it can be confounded with instinct, it is denied any office as a legitimate concern of philosophy. Yet intuitions are the basis of all knowledge, and the accentuation of this is, perhaps, the real offence. For intuition, where it is an intuition of the outer world, is manifestly a form imposed on the underlying mechanism which suggests a way of knowing evading the moulds of intellect, and which, therefore, may know mechanism and be in itself a thing outside mechanism. It has an immediate appeal, consequently, to all the prejudices of those presuppositions that govern the daily activities of intellectualists of all degrees. Bergson defines it, in contradistinction to knowledge from the outside, as knowledge from the inside; and as a knowledge, therefore, far more potent in the interpretation of reality than any which reason can furnish. He accepts it, also, as a knowing borne in the body of reality, while he considers the knowing of intellect as an artificial knowing, arrived at by a fanciful reconstruction of aspects of reality. We do not entirely agree with Bergson. Intuition has no special magic. The efficiency of the racial memory in certain complex acts of the living may indicate an intimate and complete experience where the frameworks of reason have not forced the selection of aspects; but it has in itself no function in philosophy until it has yielded the explicit in some degree. Moreover, intuition as here used has not quite the same symbolic value as when used by Bergson. It is not expected to symbolise the whole urge of potentiality in contact with matter, nor is its application restricted to what is called pure perception, or extended so as to signify the unbroken movement from perception to expression. It is

expected simply to symbolise the direct action of the self in primary unreflective perception, and to include the constructive modification the historic self automatically imposes on its acceptances. It implies a free movement of the self initiated in accordance with its dispositions of sense-acceptance, imaginative construction, and instinct for values; and regards the movements as determined not only by objective elements outside the self, but by the objective constructions in consciousness which the self produces from its generalised memories and implicitly uses as forms of acceptance. Intuition is, therefore, regarded as a simple and direct action of the self as a whole, and necessarily, while all of capacity developed by the self in its concrete history is present as the technique of acceptance, there is present as well some shadowy influence from the implicit potential capacities which always seek an outlet. It is the act of insight which has in it nascent valuation and judgment, for its relation to action often provides a movement as simple and undivided as any reflex act in the organism. Yet it is our only raw material when we seek explicit knowledge, and it is often capable of yielding to the contemplation that recalls its moments to memory additions to the knowledge it yielded to primary reflection.

Intellect may construct an ideal order, and, ascertaining the uniformities of its progressions, call these uniformities laws, and systematise them into a logic. Denying, because its autonomy breeds that fallacious sense of power which, to the objective view, is identical with conceit, the real knowledge that moves from intuitions to the distinguishables of reason, it seeks to make its order and reality coincident. In pursuing this task it does not strive to make intuitions explicit. It is not a continuous effort to accentuate and vitalise the natural reaction wherein knowledge, won from intuition, returns on intuition as an equipment of the self, working as a facility—as a skill acquired and assimilated until its action is instinctive and inevitable—to bring into consciousness a recognisable fuller of con-

tent and so inducive of a completer knowledge. It is, on the contrary, the refining of an ideal order until it becomes a net whose meshes are so minute that on applying it to reality it hides reality. Observing a progressive success in this effort, it comes to believe that it is clarifying rather than obscuring, and fails, naturally, to realise that its excursus is into a by-way of its own contriving, and that to seek the knowledge philosophy seeks it must make itself one with that reason from which it has diverged, and return to the high-road along which the full reality flows, and, between successive efforts, merge itself in the current.

Could the potentiality start with the logic of mechanism fully explicit, and exist in circumstances constrained by no externally persisting element, we may imagine it as serving the urge of its dominant activity by initiating movements of elementary sensation making the closest possible approximation to pure trajectories in Euclidean space, and maintaining and adding to them until they achieved dynamical systems. In this activity the potentiality would follow the movement, engrossed in the movement, and feeling rather than knowing the unity of quality and purpose in the movement, and it would strive in its effort to give objective persistence to the movement so that it might really symbolise its logic in action. Having achieved its success, we may easily conceive how, having withdrawn from a movement and converted it into a thing persistingly objective, it might return to it to test the knowledge it had framed in terms of purpose, function, and relation; and in so returning merge knowledge in experience, and achieve the intuition that would be not only a thing explicit in its consciousness, but a thing fully known as well.

In the world of matter such an intuition may be God's. It may even yet be the intuition of a man of science if he will perfect his logic and treat it afterwards as a tool rather than as a thing one with the material aspect of reality. But to an intuition of reality as a whole there is no such road; for reality as a whole is a thing that grows and

achieves, and is for ever sweeping that immediate in which intuition lives into a future that transcends it.

In concrete reality, where the perception is concerned with a complex of which only an aspect has emerged, the aspect is a construction in which the personality is in contact with an objective which is in unbroken relation with the whole of persisting objectivity. Its attention isolates, at most, a little group of rhythms out of the immensity of contiguous rhythms. And this attention itself is the active edge of a potentiality in which there is a real infinity of possibilities, and which, despite its particularity, despite its irreducible individuality, is not a thing isolated, but a thing connected through the whole chain of its ancestry with its origin in God himself. On our side of the contact, therefore, is the implicit purpose of God with all that it holds of definable ends towards which that purpose may reach. On the side of the persistingly objective we have a construction, an expression, a symbol, a medium contrived by the Great Artist to serve His purposes. The perception or the intuition is not, therefore, the contact of intellect with its artificialities, but, at its least, that of purpose with the material which may serve its ends; and however far intuition may be from the clarity of expression which intellect so proudly achieves, it holds undivided reality in its grip; and if a theory of things is to be won by thought, the activity must manifestly base itself unrestingly on this solid fact.

CHAPTER VI

THE CONCEPTIONS WE NAME SPACE, TIME, AND CAUSE

WHY space and time are here regarded as pseudo-concepts—fanciful or artificial concepts—and not as true universals applicable to reality as a wholeness, ought to be clear from the preceding chapters. Essentially they are products of intellect; and intellect cannot arrive at a true universal. The reason alone can mould the thought capable of yielding the universal which philosophy can accept as it may accept beauty. The intellect cannot conceive cause. It may use it artificially as the symbol for that which precedes the circumstances under consideration; but it finally and inevitably reduces it to a synonym with the eternity of mechanism, and so finds it no longer a symbol having use or purpose. Not so reason, which, as will be shown, in recognising growth recognises cause.

The intellect conceives space. It thinks space; but apart from the fact that the thought of intellect is to the thought of reason as shadow is to reality, we can clearly trace in this case how it has been developed artificially on abstractions which reality suggests. To the mathematician there are many possible kinds of space. His mechanical and inevitable manipulations of conceptions such as unity, order, class, infinity, relation, yield him spaces that, while entirely artificial, may yet hold dynamical progressions such as science studies. There are units of which he imagines himself to conceive. Here and there he may look at his conceptions through the eyes of reason and realise that they are devices, and in themselves things purely imaginary, and outside concrete existence even in the fancies he throws into his field of consciousness. Generally, however, the purely logical proof obscures the artificialities of his methods; and he is careless of the fact

that reason can recognise no units in the body of reality. There are no units in the body of reality. There is unity in the sense of wholeness, there is diversity in the sense of particularity, but the eternal and unchanging unit is a conception that even science has had to abandon. The point—the position that has no magnitude—is clearly an abstraction carried over the edge of unreality. Equally, the infinite as a term applied to an existing thing, or as a description of any group of things which exist, has no application. It connotes possibility in the enumeration of unrealities such as numbers—there is an infinite series of numbers, of odd numbers, of even numbers, or of identities such as points—and a group of any of these unrealities may be symbolised as infinite. The points on the circle which marks the inner boundary of the wheel-rim are infinite, so are those in the circle which marks its outer rim. The device is enumeration at its limit, and it does not contemplate anything greater than infinity, nor admit the relevancy of such a question as whether the inner infinity holds more points than the outer infinity. Its utility is a thing unending in the practical mathematics of concrete science. Yet the attempt to make it a universal applicable to any aspect or particularity of that persisting wholeness to which men address identical questions and obtain identical answers cannot survive the simple question, An infinity of what?

We have an intuition of space. Let us consider its development from the simple acceptance of various "theres" up to the Euclidean void of modern man. Like all intuitions, it has grown, and its growth has a history we can trace in sufficient outline to recognise the general lines. The practical reason that deals with the material has returned again and again to its intuitions of the material, bringing, with each return, some added equipment of interpretative form, and taking away intuitions increasingly describable. The equipment has been accepted from intellect, but has been used only in so far as it proved itself in practice to be really applicable to the material.

Where intellect, moving into autonomous activities, refined conceptions that were real into conceptions that were ideal —creating a void and the problems of Zeno—its results proved inapplicable, and were either disregarded by reason or, like Euclidean space, adopted as devices so far as they worked. Practical life, and the reason that lives with and directs its activities, are heedless of antinomies that never obstruct a concrete act, and can implicitly place the conception of extensity beneath the symbol space.

Naturally, therefore, the conception of space has an appeal to reason. It seems an elementary statement of fact to observe that outside any "here" we may think of a spherical aggregation of "theres" of which the "here" is a centre, and that all the "theres" may move outwards and away unendingly. Why, then, should not infinite space be the explicit idea—the expressible conception—which underlies its intuitions of extensity and free movement? It does not, however, accept willingly the spaces conceived by artifice. Curvatures, manifoldings, and hidden dimensions, are things it can at best regard only as particularities within an all-holding space which is essentially Euclidean, though it is willing to test in its science, or in any of its concrete activities, devices which work whatever the fancies lying behind them.

In concrete living, where the vital and personal are actually involved, the reason never hesitates to reject deductions or conclusions that are purely intellectual. At most the intellect furnishes a doubt to be confronted with and measured against the real. Where this practice is carried, as it ought to be, into philosophy, and the intellectual conception called space is confronted with the intuitions of concrete extensity, the reason will find no difficulty in relegating to its proper category a device or fancy which adds infinite difficulties to its tasks of recognition and description, and in no way affords help that is not adequately rendered by the directly deducible conception extensity.

Will is the symbol of action. Action is its expression, and action is always movement. To the self movement is

the creation of a thing objective—of a thing that may be accepted intuitively and fully for what it is, and analytically, intellectually, and reasonably for as many distinctions of quality as thought can make explicit. The reason will refuse to immobilise a movement, will regard its trajectory as a device of more or less utility according to end, need, and necessity, and will regard extensity or volume as a descriptive term applicable to one of its aspects. It will give to empty space the criticism and the value it gives to the trajectory, and, while accepting it as a device, reject it as a reality.

Taking into account the information afforded it by the analysis of science, it will consider the concrete movements called light. It will readily concede them an extensity mensurable within the practical standards of human life; but it will see no justification for underlying this fluid extensity which cannot be divorced from the thing itself by a reality to be called space, and describable only as a void, an emptiness, a permissive nothingness. Space as a device and a convenience it can accept. As a reality it cannot accept it; and cannot substitute for the concrete plexus of extensities that fill perception to the limits of sense-acceptance this illusion based on a refinement of a generalisation which can be expressed in words, but never described. Can we infinitely divide a particularity of any kind arriving at the irreducible which lies between the limits something and nothing? Can we conceive a particularity as an infinity of points that are nothings? Can we attribute eternity and a trajectory that is illimitable to any concrete movement? These are the questions for reason judging the symbol space where it seeks to analyse reality. The unlimited void, and the trajectory therein that is equally a nothing—an abstract symbol of relativities of abstract movements—it unhesitatingly reduces to the position of devices. They have uses in the interpretation of matter, and make possible a theoretic dynamic of real utility in solving the problems of practical dynamics. Space, then, is a convenient term, acceptable because it is

proximately extractable from the existent plexus of interdependent and intercalated extensities which are one aspect, and that perhaps the most vital to practical life, of all the rhythms of material persistent reality. It conveniently represents the plexus as generalised and held in one extensity expanding at will to the utmost limits of human interest. It does not, as a device, falsify any intuition of material reality, and it helps to throw them into a perspective in definite relation to the fundamental rhythms of a self, holding distance, proximity, possibility, and immensity, as the real and relevant interests which they are to practical life. Nevertheless, it is a false counter in philosophy—a universal which has no part in reality, and is found in no particularity of reality—and its destruction does not deprive us of that real extensity in which we live and move, although it may wreck the whole conception of an eternal self-existing mechanism incapable of purpose, and essentially inconsistent with any personality other than the passing and illusive resultant of mechanistic phases.

The time of the mathematician—the empty and meaningless flow of "nows" which have no duration—is equally a mere device of intellect. We are in a flux of events. A framework holding these events with varying success is furnished by the intellectual analysis which arises out of the imaginative refinement of material progressions. Space and time are the warp and woof of these frameworks. Extensity and duration furnish the real and only frameworks which a self interpreting its own intuitions can accept.

The most rigid standards of measurement which science can devise and apply have no support beyond the assumption of averages in the complexities of intercalated rhythms; and whether, in these rhythms, there may not be a waxing or a waning in their irreducible moments too minute to be determined in the relatively infinitesimal duration of science is outside any absolutely decisive test. Moreover, the existing averages, such as they are, found

themselves purely on the individual rhythms of human perception. Did man stride from star to star in the tick of a clock, he might fail to obtain a device sufficiently accurate to determine a thousand miles. Were his organism that of some forms of microscopic life, the dust might be to him a conglomerate of Alps, and the pebble an appalling and unscalable mountain. And yet his values might in either case be identical with his values of to-day. He might still have his valleys of easy descent, his plains of pleasant tarrying, and his hills of strenuous endeavour. We have imagination enough to convince us of this fact; and to consider it ought to lead us to see that extensity and duration are the real things which frame our world and our activities, and that space and time are conceptions whose rigidity, artificiality, and essential unreality exclude them from any vital function where we face and seek to know the realities in which we are so deeply concerned. In practical life the ideals of mathematical space and time are ideals of real utility. Space co-ordinates the jostling extensities which we must estimate, compare, and judge; and in respect of time there is a succession, a contiguity, a ceaseless march of innumerable durations, for which it furnishes the net in which they may be held and made subservient to the reflection that makes achievement wholly our own and enriches the possibilities of prevision.

The real duration we live is, no doubt, a succession of moments, and these moments are, for our purposes, practically mensurable and comparable; but our most vital interest is not in the arithmetic, so to say, of duration, but in achievement; and our time is a co-ordinated aspect of the succession of achievements growing organically one out of another. Ideal time—mathematical time—is a continuity divisible absolutely by the immediate, instant, eventless now. Real time—concrete duration—knows no such thing as an immediate and eventless now. Nor does its flow pass over or through any eventless now. In it event and existence are inseparables. Moreover, it has an interpenetrative quality which ideal time lacks; for its

moments, though recognisably distinct, carry always the past into the present and foreshadow the future before it has begun. In, perhaps, plainer words, the phase we name the moment past is an irreducible which has not finished before the moment present has commenced. The recognitions overlap, and because they are real recognitions, not verbal artificialities, the overlapping does not breed either the confused or the indistinct, for it is one with the fluidity which the instinctive reason allows for in all things, and science symbolises by its term continuity.

A man steps up the bank to pluck a rose. He has a purpose. The resulting movement begins before the purpose is fully explicit. The plucking of the rose and realisation are one. We will suppose, however, that the instinctive calculation on extensity and duration is a failure. He steps back, and almost before he has reached the limits of his downward path is stepping forward again. A little nearer, perhaps, and still failure; but the unbroken effort—a real rhythm of sway forward and sway backwards—surges to wider limits and he plucks the rose. Here is an event—a wholeness we may analyse into a series of events involving measurements of extensity and duration as symbolised in our ordinary devices of measurement. It is, looked at one way, a series of attempts culminating in success. The contrasted attempts involve relatively immense differences of mathematical time and space, and real differences in extensity and duration. But is the man always conscious of these differences? Has he not, rather, the consciousness of an indivisible of effort and duration which would be the same whether he succeeded at the second time or at the fourth? Extensity as an aid to effort, as a hindrance to effort, or as an appropriate frame for effort, is a real concern of the acting self, so is duration, and in almost exactly the same way. But, implicit in the self, is there not recognisably the conviction that, ultimately, both extensity and duration are negligibles except in so far as they are the guarantees of freedom and fruition? They are things the self regards as eternally existent, because his activities all presuppose that they are things he creates at

will and holds otherwise as voids of indifference. Yet, taking up after the manner of intellect the conception of space as an infinity of heres that have no extensity, and of time as a succession of nows that have no duration, is it possible to avoid the conclusion that every movement science studies is an infinity of immobilities? The movement in the point that has no extensity, and in the now that has no duration, is manifestly an immobility; and how does placing an infinite trajectory beyond the point, and beyond the now infinite time in which to tread this infinite trajectory, transmute immobility into motion?

The reduction of the conceptions named space and time to abstractions which have no existence in concrete reality, and are only practical devices serving the ends of action where it deals with the material, or with the unifying descriptions that serve the ends of this action, is an insuperable objection to the acceptance of the mechanism with which science, and the philosophy that clings to the skirts of science, seek to explain existence. In reacting on the theory we call mechanism, it inevitably reacts also on the conception we name cause, for cause is rejected by this pseudo-philosophy—this effort to generalise science as an absolute analysis. It may be retained as a term properly to be used in practical life where the snapping of the brake precedes the collision. It is also conceded its utility in the everyday work of science where the congruence or contact of certain dynamical progressions is a phase isolated for convenience in describing the emergence of a particular and succeeding progression, and its use in ordinary life, where men will persist in regarding cause as something constructive and originative, is patronisingly tolerated, but it is rejected in its real and human sense.

Let us consider this real sense. The painter takes canvas and pigments and produces the picture that holds an appeal to the deepest feelings of generations unborn. The canvas, the pigments, and the light, are undoubtedly commonplaces; only in combination, and before the eyes of man, have they that oneness which appeals to depths of human feeling, and has to be recognised, primarily, as incarnate

novelty. Necessarily, and as the condition of his sincerity, the mechanist must deny this novelty. The science which, on its conceptions of relation, function, and persisting law governing successions in irreducible substance, would make the present always a function of the past—a thing exactly describable in terms of the past—is logically constrained to a confession of inadequacy once it acknowledges novelty. All we know of sensation, of intellect, of reason, is but a function of matter and its spacial arrangements according to this scientific philosophy; and the progressions of matter being purely sequences arising out of the persistence of elementary motions, all things from the diamond to despair are functions of these elementary motions. Attraction and repulsion, chemical action and gravity, are merely convenient terms for classes of sequences. Science may ultimately resolve them into a great unifying "law" of which they are special cases. Such a law would arise, for instance, were they all recognised as related to aggregations and screenings arising in the persistence of intercalated and indestructible particularities of movement. In any case, material sequences are in themselves without cause. They are the consequents of antecedents; and although there is a permissive capacity in the irreducible units of movements to group themselves here into a colloid and there into a mountain, there is no cause—no constraining necessity—behind the fortuitous contingencies which lead to the one and to the other as a consequent equally of the antecedents. The persisting movement might just as well persist eternally evading the constraints of association with other movements as wander into an orbit wherein its relations make it a factor in a multimolecular compound molecule; and its association with that epiphenomenon of life or mind which is a function of the dynamical relations in which it is involved in no way alters this fact. There is no room for cause in this web of persistence to which the anthropomorphic symbol necessity is sometimes affixed. Contingency is the root of the illusion of novelty which breeds the conception of cause. In the aggregations of multimolecular carbon com-

pounds, where integration and change are, relatively, of extreme slowness, a particular change may be determined by accessibility to sunlight, or to some other form of free movement. The possibility of this kind of contingency or chance is necessarily involved in the complexity and number of the dynamical units involved, and in the possibilities of a relative isolation converting some mechanical combination into a distinguishable particularity. Life would originate in some of these inevitable contingencies, and biotic energy emerge as a distinguishable retraceable to its antecedents in mere dynamical energy; and out of the new class of progressions thus initiated the efforts of the painter, and their results in human values, would arise in the course of a persistence and variation which left the functional relation untouched. Cause, in the human sense, is manifestly outside this description of inevitable sequences. Yet can reason be persuaded to abandon a conception the reality of which it feels and lives, and on which it implicitly founds its previsions?

Reason must decide the reality of its conceptions by facts, not by the equations of logic. But the facts must be real facts, not hypothetical constructions arrived at by manipulating abstractions; otherwise reason abandons the decision to intellect. Relying on reason, we have to consider that from almost the beginnings of organic living forms we have evidence of some implicit impulse taking the organism beyond utility, and moving, recognisably the same, throughout the whole kingdom of life up to the explicit purpose to which the painter's effort seeks to give effect. Could the painter, having imaginatively prefigured his picture, wave some magic wand, and set it before all men concretely, and yet beyond the power of any analysis to relate its material aspects to the pre-existing material, operative cause—originating potentiality—would be at once acknowledged. But because he only modifies and reshapes materials that he found existing and ready to hand, is cause to be denied? And because his prefigurement and performance have a history we can roughly trace, showing how ideals have had their birth, have grown, and

been transformed, are we to deny the reason that accepts the new? Because intellect can give a sketchy description, showing a meaningless determinism blundering into an effect the elements in which are manifestly inconsistent with the basic abstractions on which science founds its analysis, are we to deny the plain deduction seen as a fact arising out of facts?

It is properly maintained, then, that here, in human life, in the activities of a self wherein prevision shapes creative effort, ample warrant is to be found for the acceptance of real causality. Introspection can satisfy us that in constructive imagination the movements that are sensations are not manipulated by the self as fragments or conglomerated fragments of concrete memories, but as seemingly inexhaustible material wherewith we build the objective in consciousness—all the factors are caused at will, withdrawn at will, and recreated at will, in a fluid unbroken effort posed before the judgment of the attentive "I." Values are here the primary cause, but the values are not particularities in a dynamical system. They are values as distinguishable particularities in the fluidly organised envelope of a "here" and a "now" poised above achievement. The decision or will that edges into action is the specific cause; and potentiality, as developed and developing, the operative cause. We have here, therefore, the justification for inferring cause as a real universal —one of the irreducible conceptions that is part of the fabric of reality. Its defect in the mechanisms of matter is, when we regard the mechanisms as the approximations to an absolute dynamic which they really are, that merging of will into concrete action which characterises all the definite phases which arise in progressions whose origin so clearly tapers to that first cause in which the persistent "Why?" may reasonably rest. Reasonably because that explicit which is the spear-head of reason probes from cause to underlying cause only where cause is inadequate; and here, in that God whose potentialities hold the root of all the concrete and of all the theoretical, there is the final adequacy behind which the why has no reason to persist.

CHAPTER VII

THE MECHANISTIC WORLD: THE FACTS AND LIMITS OF THE SCIENTIFIC VIEW

As accepted by science the facts are, in respect of what they are assumed to hold, and in the limits towards which they reach, essentially those of common life. This is so despite the utmost refinements of the chemist and the physicist. In the practical activities of every day, man accepts space, and time, and resistant substance together with the mechanistic explanations of the progressions of reality. He accepts the mechanistic system from science; but he accepts it neither as a novelty nor as the framework of a metaphysic, but rather as an elaboration and refinement of things that are expressible in terms of the scales and foot-rule of the workshop and the market-place. Implicitly he recognises that mechanism furnishes a general framework into which, with increasing definiteness, the material world may be fitted, and brought more fully within the calculable, the controllable, and a common and communicable symbolism serving the needs of social life. The watchmaker can afford to laugh at Zeno and the antinomies of motion, and wants their resolution neither by Bergson nor Bertrand Russell. The duration man has lived, the extensity in which he has moved, the resistant substance he has judged, estimated, weighed, measured, allowed for, and bent to his purposes, slip easily into those frames of space, time, and substance which science has prepared. They afford him a clearer prevision and a more definite control. They work; and, being a true Pragmatist where proximate ends are concerned, he accepts, as he would equally accept extensity, duration, and a sensation-complex which is also persisting movement, were they the conventional and equally efficient frameworks.

He is not, however, a Pragmatist outside the proximate. In the long history of his martyrdoms and forlorn hopes he has cast the scorn of his blood on Pragmatism, and spent life in obedience to an urge that disregards the present and the conventions that work. Given, therefore, leisure and interest, he is quite willing to follow science to its last analysis, and to press understandingly after it down to the conceptions it forms, the difficulties it meets, and the doubts it seeks to assuage where it is in contact with the electron and the hypothetical ether. He is willing to follow the logical order it accepts, and with it to retrace the progressions which rise to life and solar systems. Given leisure and interest, he is willing to follow the analysis further still; and, with the intellectualist metaphysician, to pass through a picturable symbolism founded on the facts of daily life to the abstractions which seek an entirely abstract calculus holding truth entire, and laying bare the roots of reality. But would he afterwards live that calculus? Would our modern Platonist look more tolerantly on life where it conflicts with his personal traditions? Could he always avoid the thrusts of reason where intellect sinks to the subconscious, and the proximate facts of actuality are valued under the pressure of human necessities? Far more freely and naturally, it is believed, and with less of stifled misgivings, can he pursue the same road in an effort which, like the present, criticises the metaphysic that is misled by abstractions, and recognises thought as a process imminent in reality—recognises thought as an activity which, in the pursuit of ultimate things, should not get outside reality, and so uses the conceptions of intellect mainly as tools wherewith to reinforce reason, and force into the explicit conceptions that are properly ultimate, because undeniably and demonstrably part of the fabric of the real. Surrendering himself to activities in the by-ways of intellect, his effort must ever be to get a logical ultimate which admits of no alternative; and unless the logical ultimate necessarily implies a coincident reality, his effort can be recognised as philosophy only when it

meets the practical test of framing and holding all possible aspects of actuality. Before he has satisfied this final test, to formulate his philosophy is to shout victory before the fight has begun. Where, however, the man who seeks a philosophy relies on reason—relies on an effort that is one in kind with the working activities of life—the test and the effort are never divorced; and though progress may be slower, though it may be far off the ultimate and all-embracing, it has a very real assurance against arriving at some conclusion which the facts of existence directly negative, and a real claim to illuminate the pathway of life, and afford it the inspiration of purpose determined by actuality and possibility. The task should not, therefore, be the intellectual refinement of the facts of science, but that of an analysis of the acceptances of science conducted so as to press them to final irreducibles; and, because reality as a whole must be brought under consideration, the analysis must be fundamental enough to test the extent to which intellect, in the light of its own activities, has abandoned things that would not fit its frames. He cannot, therefore, avoid some consideration of what is called epistemology so as to judge how far knowledge can compass reality, how far, as expressible, it can be accepted as irreducibly valid, and whether there are any certainties, any irreducibles known to his faculties as a whole, which his intellect is not quite competent to render fully explicit, or in respect of which, perhaps, its efforts are as yet efforts only.

It is not here practicable to diverge into any systematic discussion of the limits and validities of human knowledge. As a matter of fact, the present theory implies a very definite view of the matter, and this view will, it is expected, be fully disclosed and rendered entirely tenable in the efforts to make the theory credible. The natural reaction of Pragmatism and Humanism against the assumptions of Intellectualism ignored the distinction between reason and intellect, and, in addition, failed to give due weight to the plain facts either of rational deduction or of intellectual

constructiveness. Mathematics is not the creation of mathematicians. That two and two make four is a principle of absolute validity, and one of many universals the intellect, in a very real sense, discovers rather than constructs or elaborates. These universals, although they may have a very real existence as a necessary element in the equipment of a potentiality, are not things a self can truly embody in any, even temporary, objectivity, and they are not descriptions pertaining to some superreality. Humanly, and in relation to things that persist, they have applications which all may discover and accept. They are principles of interpretation, of restraint, of permission, and, in some directions, guarantees of achievement. They are not, however, elements in the things that persist, or in any way things coincident with the things that are real. Two and two make four even though there were not two distinct and nameable things in the whole of reality; but if, because of this, we assume that there must be classes of the absolutely distinct and the absolutely equal, we are mortgaging our ultimate conclusions to the silly logic that infers the absolutely perfect from the imperfect; and so implicitly denying any achievement wherein free effort is conceived of as in any way modifying, controlling, or diverting the course of inevitable mechanisms. All the sensation-acceptances of a man inevadably lead to that intuition of a "here" and a "there" which has been abstracted into the ideal of space; but that geometry is able to attribute universals to that space has no more to do with its actual existence than the circle therein, which never was, and never can be as a thing distinct and describable, has to do with the concrete circle traced by the compass. The compass circle suggests the ideal circle which is the trajectory of a pure movement in a constant relation to a position which is nothing but a position. The geometer has taken a thing that is real into the realms of the ideal, abandoning reality on the way; and, later on, the mathematician, yielding still further to the autonomous activities of intellect, generalises this imaginary circle into a general statement

to which space is irrelevant. The ideal once achieved, the process may be reversed, and the symbol used as a frame to hold many things, to make many things intelligible, to aid forecast, and to define the limits of prevision; but it is never an irreducible entity in any of the things it frames, and, moreover, it is not really the frame—the frame is something real, which it suggests, such as the circle drawn by the compass. Mathematics may properly accept infinities—an infinite number, an infinity of points in the infinitesimals of space as well as in infinite space—but this gives it no right to assume that there is anywhere, outside its own ideal, an infinite collection of things. A man begins to count—1, 2, 3, 4. . . . He has set out to achieve an infinity. He sees the possibility of that infinity if he can keep on counting. But equally he knows that, all other things apart, the very counting, counting for ever, makes his effort ever a numerable, never an infinity. There is infinite time before the achieving now. Yes, but quite as indubitable is the thought that this infinite can never be known, or lived to, or reached; that, though it connotes possibility, it connotes impossibility—an antinomy to be resolved simply by attaching both possibility and impossibility to reality, and reading into the ideal of infinite time the guarantee of duration always available to achievement. Pure intellect conceives an ideal goal towards which the mathematician strains. From the point of view of this book he strains towards the eternal mathematic of God implicit in the potentiality of which he is the historical now. It is the ideal order because it is the only order; but because God is more than this order, because He is a reality, not an abstraction, it is only His mathematic, only His guarantee that action is free because it is a thing which can be calculated and foreseen and shaped through prevision to end and purpose. It is no part of God or of anything else that is real in the sense in which reality has here to be discussed, and can have no function for philosophy comparable to that of truly universal conceptions, such as beauty, which are really in the very fabric of all that is

actual and existent. The mathematic—the ideal logic, the ideal order—is an intuitive possession of God. One day man may have so fully discovered it—so completely co-ordinated the results of intellectual activity and analysis—that it will become his also, and equip intuition instead of throwing on intuition the shadows of an oppugnancy bred in an illusion that the things of intellect and the things of intuition are so far one in nature that they conflict.

There is a real—the real in which matter progresses in aggregations and dissolutions, and is here and there in contact with a self. The nature of this real as a whole is our problem. We have to find out what this matter is, what this self is, and the relation of one to the other. Taking things in an order manifestly natural to the activities through which we seek knowledge, it is clear that ideal logical principles—intellectual universals—are things which present themselves for consideration towards the end of our analysis. Though the book of logic is yet in the making, enough has emerged to show clearly that the body of universals at which the logico-mathematician aims will be pure verities, tinctured by no trace of extensity, or duration, or substance, or concrete reality of any kind. So recognised, they will have all the greater efficiency as principles of interpretation where they instruct reason, and as principles of construction where they arm prevision. They will become the highest tools of action, but never autonomous tools, never calculating machines able to resolve the real without the intervention of that direct intuition wherein the acting and interested self faces its world. While, therefore, we have the right to consider the conception of these verities as, by some magic of interrelation or degradation, yielding the primary protyle out of which reality might have arisen, we must not accept the conception because it can be formed or expressed intellectually. We must accept it only because it can hold intuition to that degree of absolute coincidence which is one of its own counters. We must not, for instance, assume that an infinity of unextended positions can generate space or exten-

sity unless we can rationally describe the genesis. We cannot do this, nor can we anywhere bring about the coincidence except by a process of abstraction ending in a trick of words wherein the final abstraction abandons the real while denying that it has done so. We have, consequently, to contemplate these universals as things to be explained in themselves, and in their emergence into the known and knowable, and not as things we have isolated from reality in any process of analysis, and which may, therefore, be thrust back into that aspect of reality the contemplation of which has stimulated their emergence. Clearly, then, they are properly describable as principles of interpretation and of construction. They indicate limits which the concrete cannot transgress; but, more importantly, they guarantee achievement by furnishing that barrier of the impossible which affords possibility its necessary fulcrum.

In the history of science and the practical life out of which science has arisen, this has been the real function of the intellectual universals. Geometry itself, looking at it from the standpoint of these universals, is an attempt to embody them in imaginary refinements of spacial sensation as defined visually and tactually; and where geometry has sought fully to interpret the facts of astronomy, these imaginary refinements have but served as schematic explanations, inviting in all directions the ingenuities and refinements of practical mathematics in contact with a reality the ideal frameworks fail to hold.

In considering, therefore, the facts and limits of the scientific view, we must bear in mind the gap between what are called natural laws and those ideals of the mathematician which have helped to give them form and precision. Because, formally, certain results in analytical geometry are absolutely true granted the existence of certain abstractions or fancies suggested by reality, we cannot assume therefrom that a space which is a permissive emptiness actually exists, or that, because we have an equation between antecedent and consequent very closely applicable

to certain progressions in the material world which we can practically isolate and withdraw from the general flux, we have anywhere in these progressions more than an approximation, within our limits of measurement, to that equation. Theologian, man of science, philosopher, and man of the market-place and workshop, we are all dogmatists and the slaves of words! There is only one road to liberty, and that is the road whereon thought rides the intuition in which it had its birth and out of contact with which it is at the mercy of intellect.

The science of to-day, in so far as it deals with matter, is distinctly framed in that general conception we call evolution. It contemplates an orderly procession extending unbrokenly from the limits of the inorganic world up to the most complex specialisations of brain and neurone. In its activities it places a fundamental reliance on the equation of antecedent and consequent generalised in the conservation of energy, and unhesitatingly accepts the material world as a mechanism. Where science touches biology, there is some evidence of cleavage—of a school that calls itself orthodox and has the general support of the chemist and the physicist, and of a school that, to varying degrees, oscillates from a general doubt as to the entire applicability of mechanism to a school that would place consciousness recognisably outside the frames of mechanism. There is even a school which recognises some general vagueness as bending mechanism to an end and purpose it recognises as its stages are reached rather than completely foresees. Even in psychology, where science considers a connected and articulated group of recognitions which will not wait the measuring-rod and the scales, there is an orthodox group who would infer mechanism; and generally the psychologist refrains but rarely from the quest for some ideal framework which shall hold and show the same connection of necessary succession throughout all the particularities of consciousness, sensation, perception, idea, concept, emotion, instinct, and intellect, as is conceived to

obtain in matter, and to make this evolution a function of the mechanistic evolution of substance. This mechanistic view has to meet the criticism of that concrete reason which is the judgment of the self concerning itself with the actualities in which it is involved. The autonomous activities of science in psychology return, in fact, to their origin, and are confronted anew with that real and living activity without which they had never been. This reason says to the general body of mechanistic and evolutionary science, "You have a unit whereon to found the progressions you call material evolution. Whether this unit be the electron or some as yet submensurable constituent of the ether, it may be accepted provisionally as an existent justifiably inferred. It may be accepted provisionally, and accepted, not as an abstraction, but as a particularity in reality which it is hoped may ultimately admit of isolation by any man, and of test and examination in certain of its aspects. Your evolution built thereon may one day become a very complete system of practical dynamics in which all the facts accessible to science will be co-ordinated mensurabilities of movement. But where is your unit in psychology? There is not in psychology, as in physics, a complex of objective particulars out of which any man may isolate and examine a unit like the electron. Allowing, for the moment, that sensation may be a symbol of something so common to all men that it may pass for a unit, how do you combine or relate sensations so as to arrive at consciousness, at the experience of sensation, at intellect, and at emotion? You must not assert that research will ultimately lay bare the combination or the relation, for there is nothing in the facts here to suggest a unit, as the facts of physics and chemistry suggest the submensurable elementary unit in the ether; and assertion in the absence of any reasonable indication, and, indeed, against many inevadable facts as it here is, can be only a prejudice of intellect. The possibility of a dynamical system wherein phases of the submensurable constitute the electron, of the electron the atom, of the atom the molecule, and of all these and other com-

plications the neurone, can be conceived—it has in it the possibility of illustration by a visible and tactual machine. But what dynamical system can be conceived as representing the mixture of consciousness, sensation, emotion, intellect, judgment, imagination, memory, and implicit creative impulse, and as furnishing a descriptive outline of a man's inmost relation to a great painting, poem, or piece of music? There is nothing in material nature outside the plain picture of a machine. As a possibility, trajectories and velocities can give a permanent and objective record of the behaviour of tri-nitro-toluene in the moment when it disintegrates. Can you conceive a picture of the dynamical system which may, from the side of consciousness, be recognised as the cold and malignant edge of persisting hate? You evade. You simplify by jettisoning. You assume. You accept an hypothesis because there is, within your experience, habitual contiguity between the facts of psychology and those of neural progressions. You can see the rose-bush only through the window, so you place the window and the rose-bush in irreducible union. With no warrant, apart from the habits and prejudices of your habitual intellectual activities, you substitute association for contiguity, and invest association with all the implication of a parallelism signifying basic identity. On this interpretation of parallelism, the neural progression is the accessible aspect of psychology; and not only the accessible aspect, but the aspect in which all psychology is really objective and tangible, and such as to allow you to dismiss the realities of the self from the facts which must be explained without residue or unexplored by-way before man can have a really applicable theory of things."

The rational criticism is unanswerable. Intellect is manipulation, and manipulation may be idle, or irrelevant, or of moment, according to what it is that is manipulated. If you manipulate fancies your results cannot transcend the realms of fancy.

The mechanistic world is a conception which frames certain aspects of the real world, and enables the history of

its particularities to be intelligently and, therefore, interestingly described. Its facts are practical facts—that is, artificial facts wherein aspects of reality are, by certain devices, isolated and withdrawn from a complex wherein they are real and vitally connected elements. The limits of its views fall far short of a full description of matter, for consciousness is essentially a thing with which its activities have no real contact of analysis; and consciousness alone can take into account that side of matter which is identical in quality with sensation.

Dynamics is an ideal system of calculable movements acting along trajectories. The ideal line, the ideal point, the ideal summation of energy divorced from the complications of extensity, together with the ideal time which is a permissive continuity of nows, are the basis of its axioms; and its practical efforts are directed to reconcile logical deductions, built on these axioms, with concrete results in circumstances wherein the point is a dimension, the line a pathway, the energy a complex based on an extensity which is a constant only within certain irreducible moments of molecular, atomic, electronic, and possibly subelectronic, phases. If there is not perpetual conflict between practical and theoretical dynamics, there is a perpetual process of adjustment in which the practical effort is the irritant, more especially now when relativity threatens to pass the sponge over its most elaborate efforts.

Undoubtedly dynamics finds material intractable. It will not fit into the frames. Could it rely on any irreducible constant, a definite and completed effort might be its goal; and man, through the urgings of intellect, naturally seeks the system that has no gaps, and beyond which there is no cloudland of the unanalysed. Hitherto, however, the unit about to be assumed and adopted has constantly retreated beyond the limits of the mensurable. The solid particle has to be recognised as a complex of molecules whose relative relations depend on temperature, and, not improbably, on certain stresses in electric and magnetic fields; the molecule as an organisation of atoms which, although free,

probably, from the influence of temperature, has in it such oscillations around an average as a solar system may present to the astronomer; the atom as another solar system, the elements in which are almost inconceivably minute, but whose relative aberrations are probably of greater moment than any in a solar system; the electron as an element in the atom, but not as yet, with any certainty, the only element, and even in itself a thing so related to infinitesimals of vibratory movement as to raise inevitable doubts as to how far any ultimate analysis of its constitution can yield even an average calculably related to the movements of atom, molecule, compound molecule, colloid, and particle. Yet dynamics, both as a science of the ideal movement in the ideal extensity and of the attempt to interpret the concrete in accordance with this ideal, is essentially an activity which man is constrained to pursue; and which he can pursue without committing himself to any metaphysic. In the end it has no concern with mechanism as a metaphysic. Sooner or later it is bound to see that this metaphysic is essentially a brake on its free activity; and, challenging the aspects and the particularities that naturally belong to its own individual perspective, perceive that the more fluid, the more elusive, the more clearly a thing of eternally varying averages, the ultimate units and progressive aggregations of matter may prove to be, the greater the triumph towards which its efforts in ideal construction and rational interpretation can direct themselves.

The effort of dynamics to elaborate its ideal depends, from the side of theory, on the perfection of its mathematic —on the growth of a purely logical development arising out of the conception of a view-point which is a view-point alone—that is, which is a pure position, a pure focus of action, departure, or movement. On the side of practice it follows the concrete descriptions of all the concrete sciences. But it does more than follow. Calculation is at the root of all human endeavours directed to understand or control the material. It properly imposes on them the

obligation to reduce all their descriptions to the closest practicable approximation to its own ideal conceptions. When, therefore, radiation, molecular physics, electrodynamics, chemistry, astronomy, terrestrial physics, or biology, conducts research on the specialised lines of its own special activities, the lines must be fundamentally those indicated by dynamics; and they are forced to formulate and arrange most of their descriptions so as to furnish a parallelism with the symbols required by the activities which the basic logic of intellect is developing in mathematics.

When, therefore, the mathematician seeks to formulate and demonstrate a metaphysic, his reliance on science is fundamentally illegitimate. For his own demonstrations are essentially formal—essentially the rigid, mechanical, inevitable manipulation of symbols—and his symbols can never represent more than abstractions he has forced the practical to withdraw and place at his disposal for a final divorce from reality. Relying on science, therefore, on that knowledge the matter and manner of which he has constrained to an illusive coincidence with a pattern he has prepared, he is doomed, where he seeks a metaphysic, to eternal entanglement in the *circulus in probando*. Even if science could find the ultimate particle this metaphysic imposes on it, and relate this particle, absolutely, to the ideal point in one of the ideal spaces, the logico-mathematical metaphysician could get outside the circle only in respect of the material. Consciousness could not be brought within his theory, since, as already demonstrated, it is not and cannot be a relation in the mathematical sense. As, however, the extended nothingness named space is, as has been shown, purely an imaginary conception to be found nowhere in reality, this particular quest of science must fail even in respect of material reality, and the whole hypothesis of the mathematical realist fall with the cruder and more popular hypothesis of the mechanistic monism of the materialists. In the contrast which is to follow, therefore, only the hypothetical mechanism of substance

need be considered. The logic of the spiritual determinist is at its base one with the logic of materialistic monism. The defeat of one is essentially the defeat of both; but the conceptions of materialism are so close to the assumptions of practical life that they inevitably present themselves as the flank of attack. They are, moreover, the conceptions practical life has absorbed with scientific knowledge in the last few decades, and they must be brought into the open and contrasted with the conceptions that really explain before practical life can seize again a metaphysic that will conserve its values and give the illumination of purpose to its forward path.

Before proceeding to the contrast, however, one principle of disproof may again be asserted. No man who accepts one single concrete case of the emergence of the new—of the new which is not completely a function of the pre-existing—can hold the doctrine that any absolute—idealistic or mechanistic—coincides with or contains reality.

CHAPTER VIII

SOME PROBLEMS OF THE CONTRAST BETWEEN A MONISTIC AND A DUALISTIC CONCEPTION OF EVOLUTION

When electrons glided into the controlled relationships which lead to atomic systems, the emergence of the elements which chemistry recognises followed sequences; and they came into existence so as to allow of a classification into groups of eight in which general properties seem repeated on different levels. The researches on radium would seem to indicate that the elements of greatest atomic weight were first formed, and, failing in stability, fell to less massive stabilities, with loss of simple electrons, and electrons organised as hydrogen. But it is possible that there was also a stage of progressive aggregation wherein helium, or some element of very temporary stability, aggregated with itself and electrons, forming elements of greater stability. The actual course of the progressions is, however, largely speculative as yet; but the inference that it answers to some mathematical statement is clearly indicated when we arrange the elements in order of atomic weights, and observe the groups of eight and their relationships. There are gaps in the groups; and the general properties vary here and there so as to suggest that the elements could not, in their emergence, have been rigidly dominated by a formula making quality a function of atomic weight, and atomic weight of the number of electrons. Thus early, even, the researches of science indicate a want of coincidence between the things that are and the frames of mathematics; and, moreover, it is not always clear that here and there the evasion of the perfectly articulated mechanistic evolution has not yielded things of supreme importance in the history of inorganic nature as looked at from the point of view of man. Radium, for instance, was a rather clumsy

effort at the massive. It was no efficient sweep into a complexity inevitably unravelling itself according to law. It resolves its complexity rather awkwardly; but, in the light of actual events, the electrons that slip from its unstable grip have had the profoundest effect on the history of this earth as the abode of life, and to-day have an effect on temperature the importance of which we are only beginning to estimate: one of the sequences which made man possible—yet, as the outcome of mechanism, a sequence which paid but little heed, apparently, to the necessities of an absolute self-determined mechanism.

Chemistry makes the assumption of a pure element called iron. It ascertains its atomic weight with, from the human standpoint, great accuracy. But the accuracy is that of an average repeating itself closely in group after group of results; and the conception that there is an absolute underneath these averages is pure assumption. Within the limits of our analysis there is a constant recognisable as iron; but how far this constant is from being the representative of an invariable no man can tell; nor can there be any certainty that minute differences may not exist between one atom of iron and another, or between the same atom in one moment and the succeeding moment. Indeed, our researches into radio-activity would suggest that the atom of iron may be continually losing electrons which in their gyrations overstep the limits of atomic influence, and receiving into the system free electrons that invade and are caught up in the system. Most analytical chemists must have had experiences suggesting, in known substance, averages rather than constants—elements and compounds occasionally behaving with a disregard for theory not quite convincingly explained by the hypothesis of undetected impurities. In these facts, which the atomic weight of iron most clearly illustrates, we have some ground for thinking that, even in the basic certainties of the inorganic world, there is evidence that no conception of absolute mechanism, as a thing objectively embodied in the world of matter, can be valid. The perfect wheel of the perfect machine, like

all the fluid things of life, is merely struggle and approximation within limits made manifest in intellectual activities that are purely ideal. And if the perfect wheel of the perfect machine is nowhere in our inorganic world, how have the little blunderings of the imperfect mechanisms found themselves moving into the realities of a self? These realities are only the elements of the machine in fresh relation one to another; but, from the human standpoint, are they not the supreme facts of the mechanism; and is it not a strange fact that all-sufficing mechanism should yield its highest effects by little betrayals of its principles?

Allowing, for the moment, that the associated group of electrons which constitute iron arose in one of the contingencies of incandescent matter as the periodic and inevitable condensations progressed, we must allow that it was a contingency most fortunately accepted. We must also allow that there were other contingencies, such as those which yielded carbon, oxygen, hydrogen, and nitrogen, without which biological evolution would have been impossible. Carbon aggregated so as to possess a peculiar aptitude for entering into compounds; and where would life be without carbon compounds? Iron was essential to chlorophyll, and carbonic acid was the necessary medium out of which, by its aid, the protozoon that founded the vegetable kingdom constructed the indispensable carbohydrates. Oxygen and hydrogen were equally essential to this basic and far-reaching synthesis; but in addition, as the atomic condensations proceeded and compounds were freely formed, oxygen and hydrogen were concerned in the most momentous of all compound formations—water. Without water there could be no life as we know it; but, even with water, had this compound aggregated so as to comply with the general law that increased density follows on decreased temperature, life would have had to face an almost frozen world. Water on the point of freezing would have fallen to the bottom of every sea. Even in the tropics the depths of ocean would be solid ice; and although algæ and other elementary forms of life might here and there precariously

emerge, the sweep and compass of the varied life the world knows and has known would have been impossible. Water, however, evaded the law at a temperature of 4° Centigrade, and has to freeze on the surface instead of in the depths; so that even the glacial age could only face life with a new difficulty, and, in effect, add to the variations in environment without which to-day could not have been. Looking at these contingencies, and at others, such as the existence of cosmic dust in the spaces between sun and planet, is it any wonder that men, dubious as to this conception of absolute mechanisms, should find it difficult to evade the thought of some extraneous agency either actively directing, delegating direction, or possessed of a practical mathematic admitting of prevision far beyond anything which our mathematicians can imagine? Fechner, with his vision of an earth soul, is less open to derision than the mechanistic monist with his unresting, unheeding, ever aimlessly achieving progressions of substance. In the present view directive delegated agency need not, indeed, be excluded. The task of bringing about and using contingencies may be the chosen work of highly developed individualities of potentiality. The future and real science will surely show whether such an approach to mechanism as we conceive could have such deviations inherent in its progressions—foreseen and imposed on them from the outset like the swerve on a cricket-ball—as might lead, in due course, to preparing outlines which life might make more definite. The film of water freezing on the window-pane can achieve arrangements akin to ideal vegetable form, as can also, to some extent, the sand of the sea-shore or river-basin where deposited by sluggish and half-retreating tides. The general progressions of matter must, therefore, either have had these possibilities inherent in the matrix of motions out of which they are distinguished, or some outside potentiality must be always alert to bend them to purpose. The former appears to be most clearly in a line with fact, for these effects are achieved multitudinously, while only rarely have they actually served life; and the

idea of a medium lavishly prepared to serve the germs that were germs of potentiality wherever they sought a centre of growth seems more in a line with the dual evolution which we contrast with mechanism.

The evolution of life is not a direct line beginning with some unicellular organism and ending in man. It embraces living forms of all kinds; includes the cell that is with difficulty assigned to the animal or the vegetable kingdom; and rises to such distinguishables as the oak-tree, the elephant, and the ant, as well as to man. As a term evolution describes, broadly, the fact that in most of the living forms of any complexity which we know an ancestry can be traced wherein the remote appears at a first glance to have no relation to the near. It suggests the possibility of a descriptive history of types as a resultant of insensible variations, interrupted here and there by variations of discernible moment; and regards the operative cause as a conflict of persisting mechanism with an environment which suppressed and dissolved with increasing pressure, and so imposed on life the dilemma of efficiency or extinction. In the strictly mechanistic view the process could have no interest in arriving at what man would call higher forms. Nor did there seem to be in it any inherent stress constraining an advance. Cells in all respects similar to those in which life originated may exist to-day, and the results of evolution admit of representation by a huge tree whose roots are still in the earth. Moreover, the lines have not always been lines of progress as we name progress, and evolutionary theory has to take account of arrest and retrogression as well as of persistence, variation, and succession—all things not easily achieved in the inevitable course of mechanistic changes.

Biology poses innumerable questions of which the nature of life appears to be of abiding interest. A monistic evolution is compelled to regard life as the epiphenomenon of an energy system. It may call it biotic energy, but it must relate it as a consequent to its antecedents, and as entirely due to and dependent on complexities of relation between

discernibles of persisting motions. It must, therefore, explain life in terms of physical and chemical dynamics, and view with unshaken faith in science the battle wherein vitalists and others point to some barrier beyond which the explanations of mechanism are inoperative, and, after holding it valiantly for a little, retreat into some fresh entanglement which the struggle itself has disclosed. They watch triumphs and defeats which are neither triumphs nor defeats rightly viewed, for there should be no real doubt as to the ultimate success of science in laying bare the dynamics of the organism, and, apart from the fact that the complete dynamic may be a system fine enough to show an outside control that may be finer still, the battle monism must win is to carry a mechanism moving purely by law and its consistent contingencies through a labyrinthine evolution to an end wherein it looks back on itself from a little outcrop of interests and values. The real problem monistic mechanism has to face is not that of how an evolution could achieve, but why it achieved irrelevant values; and, moreover, perhaps, why it achieved blunders and fatuities in its inevitable and entirely predetermined progressions.

Allowing for the moment that chemical and physical laws may account for the fact that out of colloidal substance, in the contingencies of environment, an organised unit displaying life may arise, why should this organism have any capacity beyond persistence and growth? It might reasonably be inferred that once it had achieved organisation it would sustain this organisation so long as other natural factors allowed. Moreover, it might be regarded as natural that, assimilating matter beyond a certain point, it should find it convenient, in the face of its environment, to divide into two, and following increases and decreases in the matter to be manipulated, and the chemical changes slowly developing within the mass, to exhibit much of those phenomena of conjugation and redivision which characterise the life-history of protozoa. Why should life pass beyond this stage? Why should a

protozoon compound chlorophyll, and by its aid, using sunlight and carbonic acid, press through the deadly formaldehyde to the sugar that makes further progress possible? What accident or contingency led to the sheath of cellulose which determined once for all the fate of its progeny and knit it to the future of plants? How came its brother to take the other and more active road of toil and danger leading through metazoa, cœlenterate, planarium, and vertebrate, to man?

Mechanistic monism answers these, and all problems which reason asks in its effort to obtain a coherent and constructive description of reality, by the simple assertion that all these things are resultants of a mechanism moving in accordance with natural law. That other mechanistic monism, which is the absolutism of intellect, merely substitutes an eternal *is* for natural law.

In conceiving the mechanism contemplated by science we must consider the term as applicable to things very different from the machine of the workshop. The solar system may, it is true, be viewed as a kind of vast orrery; but in this, as in the system which constitutes the atom, invisible bonds of natural law replace the material connections of a human construction. What must be thought of throughout is the definite movement of definite things under a compulsion they cannot evade; and the atom of carbon with its special properties, and the multimolecular aggregations of which these properties admit, are, equally with the solar system, definite mechanisms in this enlarged sense of the term. We may have a steam-hammer to break the rock, or we may have a chemical machine—an explosive capable of falling from the constitution of a complicated solid occupying little space to gases irresistibly expanding—equally adapted to the purpose. A chemico-physical machine is what science contemplates in picturing to itself the process it calls evolution. That a multimolecular compound, complicated by mixtures in the nature of alloys of organic radicles and inorganic elements, has not been fully analysed does not invalidate its theory. It is sufficient

for the purposes of its hypothesis that the production of such an aggregation of substance should be in a line with the things that progressively happen; that, on destructive analysis, the weight of the matter to be examined should equal the total weight of all its recognisable constituents; and that, once produced, it should have a constitution that slowly alters, breaking down combinations and building up combinations with a continuous capacity to transform energy. It may be difficult to conceive that this rising of substance against its ordinary tendencies can ever be credibly related to rigid mechanistic law, more especially since no demonstration of the equivalence of antecedent and consequent is other than the weighing, within limits that allow a margin holding the possibility of much electronic, electric, and submensurable action, of a system that is never absolutely isolated from the general flux of matter. Indeed, it is not surprising that bio-chemists should seek to fill this disquieting margin with assumptions dowering matter with inherent tendencies to aggregation, with rudimentary memory, and with other metaphysical qualities. These assumptions do not, however, meet the real difficulties of monism. Absolute demonstration does not depend on an exhaustive description of the chemical and physical changes which distinguish the organism from birth to death; and to prove it by the absolute measurement of antecedent and consequent is an aim that can never be more than a pious aspiration of a science misled by intellectualism. It can claim rational assent only when it shows that every contingency in the progressions it studies has been negotiated purely in accordance with mechanistic law. There is no room for an appeal to a *mneme* which has in it no potentiality—no power to accelerate or delay the infinitesimals of movement—nor to any tendency to aggregation other than the traceable and calculable conditioning of the environment.

To this end science, while refusing to quit its legitimate grounds in a describable dynamic, must indicate how it conceives that the physical divisions and chemical changes

possible in protoplasm and other colloidal substances can be so separated, condensed, and organised as to take on the appearance of being correlated and controlled along the varying and diverse paths leading to the innumerables of organic life; and it must not ignore the fact that the organism, in addition to continuous and almost indistinguishable variations, suffers sudden mutations suggesting the changes of a coherent unity. The analysis of this mechanism of physical and chemical aggregations has also to explain why a simple unicellular protozoon should take on varied forms and activities, constructing even needles and shells of flint, often beautiful and complicated, and, when it reaches the oak-tree, separating into over two hundred varieties which serve no ascertainable necessity of an always predetermined mechanism. These indications of wilfulness and spontaneity seem oddly out of place in a mechanism, and must be explained away. Stupidities must be brought within theory, as must the occasions on which the mechanical progression missed the obvious in achieving a particular recognisable. Why, for instance, in building a backbone, should the progression ignore, instead of modifying, the notochord. The plain possibility of gradually transforming the proximate has been evaded in so many cases as to suggest that mechanism must have mislaid its "law of parsimony" on reaching life. Why through long generations should a race cling to its little defects—sometimes merely roots of ugliness, sometimes germs of disaster? It would seem, often, as if the serious defect can be mended while the minor inefficiency escapes notice. These things offer no difficulty to the conception of a developing potentiality using a mechanism blunderingly, and in accordance with a capricious memory and an ill-balanced order of preference. Are they consistent with a dynamical progression which, in the mass, is wholeness fully predetermined? That is the question for science where it commits itself to an acceptance of mechanistic monism.

Obsessed by its logic of antecedent and consequent,

science is hardly in a position to judge of the possibilities of success in a quest which is to relate, incontrovertibly, the realities of a self to the mechanisms of the organism and the mechanism of a monistic reality. In a little microscopic speck it must find movements so related that the progressions they initiate end in a brain. In the brain it must, in each nerve, find saturation-points beyond which no further movements of sensation can be accommodated, and in brain substance as a whole find interconnections laid in innumerable orders for the possible reception of the refused movements. It must find evidence of a fluid and shifting correlation between systems of pathways and systems of pathways, so that the epiphenomenon of an organised and connected mental life may be maintained. Simple cases—artificially simplified and detached from a really inseparable context—must be regarded purely as steps leading to a dynamic system really capable of supporting in all minutiæ the subconscious and conscious activities of a self. Not only must it find in the little speck a mechanism inevitably fulfilling this recognisable end, but it must find the elasticities that make variation possible, the rigidities that conserve previous variations, and, as well, the strain which imposes on the organism an overmastering impulse to reproduce after its kind—even, in more cases than that of the honey-bee, at the cost of the organism's life.

We have a chemical machine—supercrystals in a medium. Fed with superabundance of the proteids out of which it has arisen, it may be conceived as duplicating itself. Being constructed of carbon compounds, it may be conceived as liable to minute variations in the course of these reproductions. How came it, however, to build the first living cell organised into a body and a differentiated and separately organised nucleus? Science can trace the phenomena of life to nothing simpler, but it must if its proper activities are to bridge the gap between the inorganic and the living. True, it can laboriously imitate certain chemical syntheses which life seems to achieve easily in its slow routine. But even if it found life arise, unquestion-

ably divorced from previous life, in some man-assembled medium, and could proceed to manipulate that medium into a protozoon, would its task be any nearer a triumphant conclusion? Everything in matter suggests the possibility of guiding it into those complex aggregates we know in association with life. What the tadpole can compass in the pond the scientist, surely, can ultimately achieve in his laboratory. He will find, perhaps, that it may prove difficult to maintain matter at the level of this fluid organisation, yet he must do so before he can credit himself with the performance of the tadpole's daily task, and, moreover, there must be nothing formal in his methods—that is, there must be no progression which cannot be fully described and related to dynamical fact. Jargon, even under the form of metaphysical or logical terms, must nowhere obscure the necessity to construct an entirely inclusive order of connected and describable fact; for the old certainties of what was called scientific free-thought are wearing thin, and the standards of evidence are become so real as to exclude the rhetoric of a merely logical theory. Yet there was courage and sanity as well as fearless sincerity in most of that free-thought. It was more largely human and reasonable than pseudo-detached and intellectual; and could it succeed in mentally magnifying the organic compound until it could conceive, schematically, the circling rush of its indivisible units, it was capable of imagining something of like nature to man as influencing from outside the transitions of this compound—delaying the carbon here, accelerating the oxygen there, and interpolating the sulphur between both—and so transforming and changing as life transforms and changes. More easily than much of modern science it was capable, through its very humanity, of seeing the worthlessness of organic synthesis as a weapon in defence of mechanistic monism, and of realising that monism, as a philosophy, has no necessary connection with the activities of science.

Science surveys a little span in what its working perspective constrains it to regard as a cycle of unending

routine. Having erected the practical generalisation known as the conservation of energy, applied it absolutely to this little span, and supported it by the necessarily related assumptions of mathematically divisible space, time, and substance, it names its working hypothesis a philosophy, and calls it mechanism. This mechanism—this alternative term for the absolute—functions purely by measurable reaction answering to measurable stimulus, and through a number of fortuitous contingencies builds the interconnected plexus of the living. Because of a contingency some cells constructed chlorophyll, and made possible that vegetable kingdom on which other life depends. In order that this kingdom might be of extraordinary beauty and variety, other contingencies had to be negotiated without violating the basic continuity, and yet negotiated with such tendencies to marginal variation as must suggest in retrospect some imminent goal of form and efficiency. What little enclave in the mechanistic particularity, or bias in its obscure motions, could hold this aspiration? Certain concentrations in the nucleus of the cell became so organised as to exercise a controlling influence on proximate physical and chemical changes, and so constituted as to dominate growth and make it an inevitable process in which the instabilities of variation were conserved and interpenetrated by such principles of construction as give æsthetic values to the forms ultimately achieved. Surely science has an onerous task of its own without seeking to do the work of that entirely distinct activity we call philosophy. The cordwainer may be a syndicalist, and aim at contributing his share to the common government; but where he seeks to govern because he is a cordwainer, to allow his claim may well mean bad government and worse boots.

In rejecting the philosophy which science uncritically adopts, no doubt as to the future of science need be involved. We shall ultimately arrive, it may be believed, at a very complete description of all the chemical and physical sequences involved in the evolution of living forms. We may have faith, even, that unless mankind

wearies of the task science will one day achieve that final analysis which will lay bare the actual points whereat the contingencies of mechanism have been used and supplemented by something incommensurable with mechanism. The oak-tree, originating in a single cell, which, by progressive divisions, differentiations, and specialisations, answering to the stimulus of earth, air, water, and sunshine, as the tree that mothered the acorn answered before it, and erecting by the way the same wonderful machine on the edges of which the living protoplasm functions from generation to generation, is a construction calculated to sustain emotional curiosity at its highest. But when all is known that the scientist hopes to know, will it, or any other particularity in life, or in the dead spaces of matter, be wonderful? Wonder, emotion, and curiosity are anthropomorphic terms of the kind that science in its ascetic search for truth is ever—necessarily, perhaps—trying to evade. But where it identifies itself with mechanistic monism it seeks to make philosophy nothing more than the literary jackal of science. Successful in this effort, its mechanism would be unquestioningly adopted, and life viewed as a little emergence bred of contingencies, necessarily rare, in the giant spaces and innumerable years of cosmic evolution. Could it then continue to regard the oak-tree as a wonderful machine, or to retain any of the eager and vital curiosity that carries it perpetually beyond the confines of the narrow limits which outline the socially useful?

It is, of course, in nowise implied that the man of science may not be also a philosopher; but it is implied that there are clear dangers in men of science assuming a priesthood of philosophy. Mechanism is their line of least resistance, and the scientist of all men, familiar as he is with arrested development and retrogression, ought to know to what the line of least resistance may lead. And where he truly embarks on the activities of philosophical thought his habit of searching into residual phenomena ought to warn him of the essential weakness of any philosophy which simplifies so as to abandon particularities recognisable in the

body of reality. The human values, the human concepts of beauty, of justice, of defensible purpose, and of adequate cause, cannot be set on one side by intellect while it pursues its calculus of unrealities if the quest is for an all-embracing theory of things. But in this theory of monistic evolution, a few of the insurmountable difficulties in the way of accepting which this chapter seeks to indicate, they are not really set on one side. Intellect constructs a Frankenstein, but the intellect is, for all its efforts, that of man, and humanity is at its core; and in the penultimate equation it always, under some plausibility of terminology, smuggles in, as in some sort cancelling symbols, the human values and recognitions it professes to disregard.

CHAPTER IX

THE CONTRAST CONTINUED: MAINLY IN RESPECT OF DIFFERENTIATIONS THAT LEAD TO SEX

The probabilities of biological speculation point to the origin of man in a protozoon. This protozoon may have developed out of some form akin to bacteria; but there is no evidence carrying existing animal life nearer to unorganised matter than the protozoon. Any contrast of life as a unitary evolution with life as a dual evolution must, consequently, start with something so wonderful in itself, when regarded as a mechanistic sequence, as to strain credulity where it is explained to be the product of an evolution which did not seek it, and which, presently, will pass on and blot out as heedlessly as it has made. A protozoon is a microscopical speck of protoplasm. Protoplasm is the name which we apply to a particular organic substance. It readily decays, and, in itself, has little regard from the mechanical successions that stumbled into it so casually. Apart from its functions in association with life, it would deserve less consideration from pure intellect than a stray fragment of igneous rock. Considered, however, as the starting-point in the long struggle of living matter against all the unresting tendencies that seek its destruction, it is a truly wonderful construction. As a main constituent of the protozoon it is more wonderful still; for by a multiplicity of the little changes and transferences of energy of which it admits, a succession of changes, and an order of changes, has arisen; and at a stage in the progressions thus contrived the protozoon has become an organism possessed of a defensive sheathing individualising it against the outer world, and furnished with an inner nucleus—an organically separated subspeck—in which special aggregations of matter, called by biologists chromosomes or determinants,

sit and control the activities of the protozoon and the future of its progeny. Under the guidance of these determinants the protozoon has made constructions of wonder and beauty, and laid the foundations of the kingdom of plants and animals.

In respect of the successions or contingencies that led carbon compounds to associate with certain minute quantities of sulphur and other inorganic elements, so as to yield protoplasm, mechanism has to assert that a tendency, distinctly embodied in the facts of the dynamics of the compounds and their environment, must have become operative in a particular concatenation of factors—heat, moisture, atmospheric pressure, magnetic field, free electronic movement, and ethereal or submensurable vibration. Pure chance operative in infinitesimals of space and time! Yet the chance involved Aristotle, Canova, Raphael, Shakespeare, and Beethoven. Clinging to their theories, they point to matter, and to the fact—to incandescent matter and to Shelley—and assert that the existence of the latter must have been determined by the qualities of the former. Recognise a succession, assume that the succession has been nowhere invaded by movements of another order, adopt a name, or a phrase, to signify the succession, and so evade real thought, and the candid analysis of any fact which necessitates a fresh conception of the limits within which the activities they love can properly function—such is the procedure of the scientific mechanist. It is for philosophy to determine whether the facts, impartially viewed, can possibly be regarded as consistent with the assumption in the particular progression under review. It is held in this book that the assumption may stand up to a point—up to the colloid, if not up to protoplasm—but cannot hold, on any reasonable consideration, where the existence of a protozoon is faced.

Mechanism, where it explains the evolution of the living according to its assumptions, views the determinants as an originating focus of all that follows. In the cell from which, by cell-division leading to multiplication and to

intercellular activities, the human frame is built the nucleus holds thirty-two determinants. Mechanism must see in this group a chemical machine which, by exploiting its units in due order, constructs, by the assimilation of fresh material, a larger machine called man. It must see in it the certainty that some definite relation of one infinitesimal of movement to another suffices to conserve from generation to generation the little physical peculiarities that pass from father to son, and which, though discernible, are of absolutely no moment in any part of the life or capacity of the organism. These trifles are often the things which are most persistent as racial characteristics. Why, amidst so much that varies, that is fluid and unstable, should mechanism conserve these peculiarities? As a part of the racial memory, too little in contact with any stimulus, either of environment or of that implicit prevision which finds an outcrop in variation, it is easy to understand these constructional habits lasting so long as the reproductive cells of the race find themselves the starting-point of a new parallelism to the racial history. The inertia of memory in non-essential details is understood; but the inertia of a little mechanical by-way in a mechanism, the construction of which is necessarily an effort of great complexity, and an effort hospitable to variation, is neither understood nor believed in. The reason that will look judicially at the facts of organic growth and of inheritance has little need of Driesch's logic-chopping to reject the conception of the reproductive cell as a mechanistic manifold.

Leaving man for the moment, let us return to the protozoon and to that individual protozoon which, enjoying its activity, made no attempt at the construction of envelopes either of inorganic materials or of cellulose. Mechanism, looking for one of its simple and natural causes—culling a phrase from the little book of its logical phrases—sees this organism split into two because material has accumulated beyond the easy control of one nucleus. Yet the explanation is clearly insufficient, for the excess somehow involves such activities of prearrangement in the nucleus as point to

a prefigurement of reproduction in the machine. The nucleus and its material seemed to persist naturally up to the point at which some constraint imposed a rearrangement and reconstruction as the preliminary to the conversion of one protozoon into two. We trace the history of a colony of protozoa from this simple beginning, and we find an advantage as regards survival arising from the union of one cell with another. Two cells unite; more particularly, the nuclei unite; and the subsequent division gives us more vigorous organisms. Mechanism explains that in the contingencies of the continuous organic changes which characterise living matter the determinants of each may have lost or injuriously modified some element in the complex, and that presence and absence, modification positively and modification negatively, may have produced the attraction which leads to union and the renewal of efficiency. A little later we find protozoa developing these losses or modifications to such an extent as to yield what must be called male and female cells. And the male cells seek the female cells rather actively. In fact, our organised protoplasm must, in their view, have developed some form of magnetic field—another contingency negotiated in a progression which, missing it, would have been impossible—to neutralise those simpler and easier progressions which would lead to inefficiency and extinction. Frankly, are we not rationally compelled to regard the negotiation of this last contingency, this laying of the sex foundation, this blind effectiveness in a matter of such moment to all the subsequent developments of the living, as so clearly outside any successions inevitably involved in the changing persistencies of chemico-physical machines as to make it impossible to retain the mechanistic view in the face of the simple and sufficient explanation of inherent potentiality? To the natural man this succession of vital points at which chance or contingency operated to a particular end must be outside the reach of mechanism. Looking backwards, we see inorganic material moving into the male and female protozoon. If we are monists, the progressions compel us

to attribute some inherent prefigurement of the later stages even in the electron and in the irreducible infinitesimal wherein matter was poised above the point in space that would be a nothing; and how, under mechanism, are we to conceive this prefigurement? A chemico-physical progression must accept a contingency so as to secure a particular effect, whether the effect be a change of relation between some or all of its parts or the retention of its previous relational system. It must accept a contingency so as to secure some effect. Having secured the particular effect, it accepts the next contingency so as to secure another effect; and after a succession of such acceptances there is a series each moment of which is part of the describable succession which constitutes the series, and no acceptance is unnecessary to the completion of the series. The particular series would be purely a matter of contingency or chance. There is, therefore, nothing irrational in attributing a series of physical happenings to the inevitable functioning of a mechanism. But, when this series moves precariously to overcome the palpable difficulties lying between its beginnings and an end to which we are forced to give values, can we attribute it to chance—to each moment achieving the next with no implied prevision? Yet, if we deprive mechanism of this liability to achieve the momentous by pure runs of what may be described as the gambler's luck, how insoluble, how essentially insoluble from the human point of view, becomes the puzzle of even the squirrel on the tree-top!

Biologists are doubting somewhat where the mechanistic conception of the chromosome as a manifolded mechanism is suggested as the origin in the little sequence of successions that leads to the organism. Yet where else can we hope to find that first movement which dynamically involves the subsequent movements? Assume that chromosomes are the beginnings of nerve elements, and owe their efficiency to receiving stimulus which may be diverted to action, we but carry recognisable brain action to an earlier and simpler stage, and make the action of environment,

and reaction to environment, more clearly a factor in organic growth and evolution. We are making mechanism more tenable. So we are; but observe the how and the why of our success, and judge whether it is not a little too obvious, a little too conclusive so far as the mere words are concerned, and a little too schematic. It may suggest to us the real inability of the mechanists to wait on the patient unravelling of fact where prejudice makes one of its pompous, all-inclusive gestures, and hurries the observer along the pleasant road he expects to tread.

One who holds the present theory must, no doubt, also hurry on. But he is not under the same obligation to tarry. He clearly perceives that the chromosome holds probably a whole quarry of dynamical fact; and just as the mechanist believes that the quarry holds dynamic describables which exactly determine the future, whether it be that of an elephant or an ant, he believes that the dynamical describables are incommensurable with the future, even of the organism so far as it is a mechanical unity, and entirely incommensurable with the animal when its special activities in consciousness are considered. He has, however, come down to the chromosome from a view-point wherein he has found the things of a self and the things of mechanism outside any essential congruence or relation; and has merely consented to consider the progress of a monistic science at a particular stage of the road that begins at the confines of the inorganic world whereat nothing of the self can be postulated. He has, therefore, the right to point out how complex the problem becomes at this particular stage where the scientist makes it, not merely a problem in research confined to the material aspects of a particularity, but a test of philosophical theory, and to indicate that there is a philosophy offering a simpler theory. He has also the right to suggest that the chromosome is a nerve element, more especially since biology finds, in connection with the protozoon, phenomena which it explains by rudimentary consciousness and memory, and to pose the contrast of mechanism and a potentiality using mechanism at the point

where a fact emerges which calls for his denial of rudimentary as a term applicable where consciousness comes into the realm of the recognisable. Against a mechanism which must hold an almost inconceivable complexity of the determined within the determined, we contrast the conception of a germ which is really a germ of growth, and recall in connection with the contrast our demonstration of consciousness as a word of no meaning apart from the activity of what we call potentiality. Reason is, by this contrast, invited to judge that mechanism is a thing used rather than a thing autonomous; but the judgment cannot be one rendered on logical equations, but on a comparison of the rival intuitions, one of which builds itself on an absolute dynamic, and the other on an intuition of reality which brings with it, down to this little localisation of physical and chemical progressions, the irreducible conception of a self.

In the judgment which this second intuition supports, the potentiality attached to the protozoon may be regarded as rudimentary in the sense of something that is at the beginning of its growth. What the judgment really excludes is the idea of consciousness (or the potentiality) as a thing that can develop from a trace that half is and half is not to a something fully existent. Life, defined as biotic energy, would suddenly emerge. It would not, however, instantaneously emerge. Like gases passing to the liquid state, there would be a gliding through an intermediate stage—the energy that at this moment was the recognisable energy displayed in the ordinary dynamics of inorganic matter would find the relations of movement which constitute energy on its objective side move towards a point where they would unmistakably connote biotic energy; but, approaching the turn, there would be a twilight land of half and half. Biotic energy, as an explanation of the realities of a self, is rejected, not only on this ground, but on the ground that it is, at best, merely a classification term, of use only where the successions in an unresting dynamic are subjected to descriptive analysis.

The energy progressions that are objective in the free movement of electrons, in the associated condensations of the atoms, or in the further restricted organisations of molecule, compound molecule, colloid, or solid, are recognisably one in kind. There is no real transformation; and the fact of, say, judgment is nowhere conceivably the other side of a dynamical fact. We have, therefore, a far better right to picture the progressions of the protozoon in accordance with our conception of a dual evolution, and to apply to them our constructive imaginings, than has the monist. Against his conception of male and female cells determined purely by contingencies in an intercalated mechanism we may confidently set a conception which regards the potentiality attached to the female protozoon as one that has dwelt too persistently on the actual sensation-complex in which it was involved, and which has come to separateness as a sort of secondary personality within the potentiality attached to the protozoon which divided itself into male and female. It would have allowed contingencies to pass which the more active and less absorbed potentiality had accepted as the stimulus to action. Driven to separation by incompatibility, the male protozoon might carry change to the discomfort that misses the familiar, while the female would tire of activities knit to a chain. In both would be latent, necessarily, the full possibilities of a potentiality; and the common impulse to the continuous activity that in achieving the new conserves the past would urge to a unity wherein the racial memory would find its essentials restored and enriched by a fuller content of the fundamental, and a richer variety in the marginal and the new.

Mechanism, as applied in explanation of biological evolution, depends for its plausibility on being able to conceive changes which, from origin to result, show a striking advance as due to the cumulative effect of insensible changes. It does not really conceive. It does not and cannot formulate the outlines of any adequate description. It takes very simple mechanical transitions, assumes transitions as also underlying unanalysed complexities; and,

properly speaking, asserts mechanism rather than conceives an adequate and operative mechanism. This fundamental variation in the direction of sex differentiations seems to be outside impartial explanation on the hypothesis of an autonomous mechanism. We find, as we follow the natural history of the gamete or reproductive cell into the higher organisms, that the form and division of function achieved in the protozoa persists. At the base of the individual life of the higher organism, as at that of some of the protozoa, we have the union of two cells. The zygote, or compounded cell, builds the organism; but, at a stage in this building, the control and mechanism under which the gametes are reproduced is concentrated locally in the organism, there to await the action by which the organism as a whole may place it in a position to continue the race. The mechanism present in the zygote must first expand so as to build an organism capable of meeting the problems of its environment by reactions which autonomously readjust. But, at a stage in this compelling task, it has to isolate, from its complexities, the elements of a separate control which seeks the interest of the race regardless of the interests of the individual. Is it possible to regard as free from obscuring bias the intellect that explains such successions, so co-ordinated to discernible ends, as resultants in an autonomous mechanism? Can reason hesitate before the alternative that suggests points of attachment in the gamete for a memory which is intuitive, simple, and linear in the sense of answering to stimulus as a reflex answers, rather than points of departure for mechanical progressions? Anyway, the alternative gives a real conception, and one that is consistently explanatory from protozoon to man. The potentiality attached to the protozoon is a full potentiality. It is, however, only at the beginnings of growth. Its development has proceeded no further than the acceptance of the limited sensation-succession which outlines the transformation of the colloidal organisation into the organisation we call a protozoon. Its interests, so far, are all in following this little succession,

which it necessarily accepts as a cycle, not as a linear progression involving, where it is relived, the return to an origin. When, therefore, unitary control is slipped, and the subconscious, so to say, becomes the conscious, in the resulting division we have this subconscious functioning as a new potentiality attached to the last stage of the sensation-succession in which it is interested. It awaits the beginning which is the next stage in its cycle of memories, after concerning itself in achieving the gamete under the form of a female protozoon. Its complement in the potentiality that has divided does not lose this cycle of memories. It has, with its noticeable urge towards change, some elements of novelty attached to it; and it also concerns itself in achieving the gamete, but under the form of a male protozoon. In higher organisms the process is parallel, but the memory-cycle is enormously fuller of content. When the organism reaches that point in its growth at which the potentiality can no longer follow its vivid and engrossing overlaying of the presented stimulus with the memory that exactly coincides, it also, in its desire for the next stage, brings about the organisation of a gamete, and with it sinks through the subconscious to separation. Having organised the gamete, it remains attached thereto, waiting the contingency that may allow it to pursue the racial history anew. Weismann may be conceived as largely right in his facts of inheritance; but the essential continuity is not that of mechanisms in the germ-plasm, but of the continuity of memories the potentiality has exercised so often that they acquire a persistent and cyclical activity, which seeks autonomy, and, seeking, brings about the birth of a new potentiality having a special and individual point of attachment in the physical world. Having achieved a separation which can never be absolute, it may be under some stray influences from that parent potentiality which has broken the cycle, and gone on to create, in conflict with its environment, a new personality; and so it may show the variation and the inherited characteristics that are inconsistent with pure Weismannism. It may carry with it the

germs of aptitudes, intellectual and emotional, anxious to bend the racial equipment to new purposes.

Let us consider man somewhat further. Let us consider him in the environment of to-day. Mechanism regards him as a machine, the exact resultant of factors too many and too complex for full analysis; but, nevertheless, as a machine which, if taken at any moment, and all the factors furnished by itself and its environment exhaustively calculated and estimated, affords an exact prediction of its next action. Those who make the assertion should, it would be thought, furnish the proof; but the proof from their point of view can only be the completion of a research the end of which the race may never reach. In the meantime they have managed to involve their opponents in guerilla warfare wherein the antimechanist seems to be perpetually asserting the inadequacy of physical and chemical laws to explain some process in the progressions of an organism, and perpetually retreating before research, and establishing himself on some fresh barrier. We have no desire to commit ourselves to this false position. We have from the beginning endeavoured to take our stand in regions which, to our vision, are manifestly inaccessible to mechanism, and the progress of research which carries description into the natural vicissitudes of the organism is accepted without reserve as a progress in desirable knowledge, although it be a progress which can have no decisive interest for philosophy. It is thought well, however, to meet the machine theory by a reasonable consideration of two concrete cases in the full life of a man. Simple decision, and what religious people call conversion, are within common experience as regards the first, and not too remote from ordinary life as regards the second, and it may be useful to contrast the explanation offered by mechanistic monism with that offered by the conception here defended.

CHAPTER X

THE CONTRAST WHERE DECISION, CONVERSION, AND CONVICTION ARE CONSIDERED AS FACTS OF HUMAN EXPERIENCE

A MAN is idly turning over some printed matter; he sees the word Killarney, and decides on a summer holiday in the South of Ireland. The decision might be sudden, and due to the fact that he had no prepossessions, and merely received the impulse with an open mind. We choose to consider a case where the decision is deliberate—where the man recalls what he has heard or knows, considers times, ways, means, and itinerary, contrasts the possibilities with other possibilities, and believes that he has compared, judged, and made a decision.

Let us, from our own experience, generalise his course, first realising that explicit thought arises out of a complex, which is always something more than thought; and that thought, owing to the habits bred by the fact that we are social beings, seeks an outlet in words, but is never entirely expressed when so formulated, however skilfully the medium of language may be used, or however exhaustively the intellect may analyse. The general movement of the self is greater than thought, and thought transcends words. This, to the mechanist, means, of course, that the movements of brain substance involve marginal movements to which we do not attend, or which, owing to the limitations of experience (that is, of previous movements), are not associated by the well-marked connections which underlie actual conscious mental operations. Yet it may be held that the fact, carefully and candidly observed, affords one of the many confirmations of the present theory. The potentiality is a complex of possibilities; and in it the aptitudes of emotion, sensation, intellect, and reason, move

into that relative independence which makes a personality, entirely according to the successions in a concrete history; and it is quite clear, therefore, that language, the tool of social want, must always be transcended by the need it serves. It is the bow of the violinist, which ever more completely masters the possibilities of tone, and in doing so ever breeds, deep down in the artist, the dissatisfaction which means a further need for expression and a more strenuous appeal to technique.

In this man's deliberations, then, there will be a connected complex made more or less articulate, its symbols more or less pressed to yield concrete contents, and, again, gathered back into the complex, contrasted and judged on, and the decision felt before being formulated.

How can mechanism picture this? Far in the past there were monkeys and apes, the product of an enormous number of contingencies negotiated in a particular way by their ancestors. (We need not say favourably negotiated, for such a term would be anthropomorphic, scientific mechanism having no real standpoint from which to label a succession favourable or unfavourable, except that it favours a particular result, and results are, to pure science, merely what emerges, not what is of value.) Some of these monkeys or apes developed emotional aptitudes which led to the colony rather than to the solitary life. The colony necessarily meant imitation, comparison, judgment, and the growth of intellect; and, finally, the contingencies under which language had birth, and man, as we know him, was made inevitable. We have already indicated the complexities of neurone and nerve substance, which must be conceived as a substratum to the real activities of a self. The past must build into the nervous system an enormous number of orders in which the stimulus is received, inhibited, diverted, and distributed in channels forming associated systems. When, therefore, this man saw the printed words, the nerve movements underneath all succeeding illusions of controlled thought and imagery must have been determined entirely by the receptivity, saturation-points, and connections of

nerve substance; and the final result was certain from the moment his eye caught the word. Now, this theory has no absolute quarrel with the mechanism—receptivity, saturation-point, and connections—though it maintains that it can be neither autonomous nor free from contingencies. The potentiality always strives to mechanise its acted past, a thing in itself supporting the view that the organism is a tool, and the nerve system a triumph of constructive effort. It might complete the process were the potentiality suddenly to lose its characteristic fluidity, become content in a cycle of experiences wherein the past always returned exactly into the present, and where the contingencies of matter were equally what may be called horological. As it is this clearing-house of movement has little autonomy save where the movements serve recognised reflexes, and are ordinarily outside our conscious concerns. The movements proceed in one or many directions, or flood into all available channels of the brain; they pass in, they pass out—still the measurable, calculable things of science—and are always existences which may be experienced as sensations, and apprehended as one in the ultimate quality with the rest of the material universe. At the same time, only where the self attends can they be consciously perceived, either as movements or as sensations, or in their double aspect. Therefore, we may view the incoming impulse from the word Killarney, when accepted by the attentive "I," as the key to unlock memory, set free constructive recollection and imagination, and involve the reason in its work of contrast, comparison, judgment, and explicit formulation. The subsequent brain movements are largely efferent movements which seek the channels of prefigured action. The self is a free agent, but it is restricted to its point of development, and to its machine; thought, imagination, and the formal clothing of memory, can only slightly overlap the bonds of aptitude its history has placed at its disposal. The man has been constrained by his mechanism; but at point after point he has dominated the inherent contingencies of a loose and approximate mechani-

cal system; and, here and there, changed, retarded, or amplified its movements by the movements that were truly his own. The final result, therefore, was never inherent in its antecedents—any stray surge of memory might have changed it at the last moment—and, moreover, that final complex, that concrete conception which condensed the ramblings of his thought, had a character of wholeness to which we can conceive no possibility of a corresponding wholeness in the brain movements, which must be pictured as a mechanical succession in infinitely divisible time. This latter point seems of great importance, and one that vitiates the whole conception of psycho-physical parallelism. We have many moments in which we gather and hold some concrete conception of thought, or imagination, or forecast, or resolve. Like all things of the inner self, such a moment is fluid and alive, and may be marginally changing; but, while the consciousness holds it and dwells upon it, we know in it a core of definite persistence. What can we picture to ourselves as the plexus of nerve movement which conditions this epiphenomenon? How conceive of the innumerable nerve elements, and fractions of nerve elements, constrained into the necessary and organised continuity? How reconcile it with the facts of an unresting mechanism? Here is there not clearly the individual rhythm of the individual potentiality, poised on many points of contact with the rhythms of material things—related, no doubt, but essentially incommensurable—and is there not a wholeness in the mental moment to which there can be no corresponding, constraining fact in the incessant changes of multimolecular compounds, or the cells into which they are organised?

What is called conversion is one of the commonplaces of religious experience. I will take a concrete case—indeed, the only case within my own full experience. The man drank, gambled, neglected his wife and family, and his business. On his better days, and in his own proper activities, he was unequalled in the mixed urban and rural community where he lived. Besides, men felt that he was not

a truly bad man—that meanness and treachery were outside his nature. Therefore, it being a tolerant Catholic community, he went his way, and mended his life neither for the upbraiding of priest nor the advice of friend. In an evil day he met a pretty woman; and, within a week, she left husband and child and started for America with him. The couple were overtaken in a Cork hotel. The husband attempted chastisement, and was thrown downstairs. The parish priest, who accompanied the husband, raised his cane and was thrown after the husband. The woman, however, was not of the same stern stuff, and returned home to enter a convent as a penitent. The man also returned home; but in a large part of his conduct of life he became a changed man. He had utterly outraged his community, and he knew it; for, in the essential social and personal ideals wherein he was at one with that community, his sin was the unforgivable, and ranked, where there was no tolerance for problem novels in art or in life, with selling his God or his country for gain. He was never afterwards seen to drink, or to gamble, or known to neglect his business. He became in all respects a model father, husband, and citizen; and, from an indifferent and scoffing Catholic, became a practical and sincerely devout Catholic. The fact that determined the change is clear enough. He, a married man, ran away with another man's wife. In doing so he overstepped all his limits, and stood self-convicted of a baseness at which that organisation of values which governed his inner self revolted. How does mechanism explain this sudden change of life, this transformation of all the responses his brain had learned to make to stimulus, this sudden *bouleversement* of ideals dependent on mechanical records in brain substance? Frankly, I cannot imagine the physico-chemical transformation, though the turmoil of a potentiality recasting, rejudging, and forecasting, in the light of that new experience of repentance and self-revulsion, seems clear enough to me as an operative agent.

The mechanist believes the universe to be an autonomous

mechanism. It is here believed to be the deliberate creation of a potentiality. These two beliefs are facts of mental life. On the former assumption, remembering that the belief in concrete conscious realisation varies from a symbol to a very full conception, what mechanism can we picture, varying, as it must, from the movements of a single cell to an elaborate system of neurones, and their connections and contacts, as underlying this fact of belief, and so organised as to be ever ready to function, according to stimulus, in varying gradations of completeness? None that can really be conceived; and, moreover, we are again faced by the dilemma of making relative and commensurable this irreducible fact of the epiphenomenon, and the never-ceasing, casually-related successions of the physico-chemical mechanical system to which it is attached. The mechanist may, of course, fall back on analogy. In the hand I have a most complicated system of co-ordinated machinery. It may just touch, and it may lift or throw a heavy bar of iron, and is adequate to innumerable actions between. It has been built up, largely as a response to stimulus, in the course of a long ancestral and personal history. May not the system underlying this fact of belief be an equally elaborate machine, constructed by all the movements involved in the experiences that led to the belief? The analogy would hold were belief an action. All things the hand can do are commensurable with the machine, but the mental fact is of another order. I utter the word "good" or the word "bad." To the mechanist it appears that some definite locality in the brain must hold a modification connected with the utterance. This is probably so, for the spoken word is an acquired habit, and acquirement canalises the channels of nerve movement. But the words have value for me, and the values are at either end of a scale between the limits of which I place all things. What modifications of brain substance correspond to these values?

In arriving at the belief innumerable things were given values—contrasted, compared, and adjudged. How could

a mechanical system, autonomous and self-acting, simulate this very real illusion? Moreover, in these mental processes there have been, here and there, what is best described in ordinary language as reaches of intuition—touches of a mental state in which we seem suddenly to spring ahead of the orderly connected activities of the mind, and, propelled by something innate, seize a conception, a point of view, an explanation, or a belief, which is afterwards elaborated and tested, and, if finally accepted, fitted into an organic place in our system of things believed. Mechanism must explain this as the epiphenomenon of a large number of nervous elements simultaneously excited. So, it may be supposed, it would also seek to explain a musician's sudden urge towards melody or a musical phrase; and his subsequent working towards the sequence of notes or harmonies would be merely the successive repetitions of nervous movements which, at the outset, occurred together. We are here really at one of the points where argument can never yield agreement. It is the narrow point whether mental action precedes, in any case or degree, the movement of nerve substance; and it involves the whole position. It is thought, however, that personal experience can here be confidently appealed to. All men have had moments that correspond to artistic creation—moments in which they reached beyond the ordinary to the new—and, if recalled and candidly examined, they must find that such moments are inconsistent with an autonomous mechanism. Equally inconsistent is the working of instincts, and the capacity life shows of subjecting them, marginally, to experience and intuition, and often, through this agency, of largely changing or transforming their function. Mechanism can, of course, formulate an explanation, as it can of the survival of certain moral inhibitions in the hypnotic state, and also of the resumption, under hypnosis, of control over reflexes and organic functionings which, in ordinary life, are below the limits of conscious control; but the explanation can convince only where mental habits obstruct the really free exercise of perception and intellect.

BOOK IV
PRACTICAL DEDUCTIONS

CHAPTER I
INTRODUCTORY

THERE are many practical deductions and considerations which present themselves towards the close of this effort. Theoretical rather than practical might, perhaps, prove to be the qualifying term surest of general acceptance; but inasmuch as they are deductions bearing directly and intimately on the conduct and meaning of human life, they seem, from the general standpoint of this book, intensely practical.

The conception of what man is ought to emerge clearly from the foregoing pages. Individuality, in the sense of something rounded and completed, something admitting of what may be called absolute separation from the plexus of reality, is not a term applicable to man. The material world, as here conceived, is a monism most probably. It is a creation which is a plexus of motion that is also sensation in its inner quality; and it has the unity in fact, and in recognisable principles of construction, which marks it as the work of a single personality. Reality is not, however, this material particularity. It has, indeed, no necessarily permanent function in enduring reality; and may be one, in succession or simultaneity, of a myriad constructive efforts. But our reality, the only reality we can know, or in our own day be interested in, comprises the contact of this materiality, this complex of sensation-elements thrown into mechanistic progressions, with the potentiality that created it, and the developing potentialities born of the originating potentiality. The materiality is not believed, with Berkeley, to occupy the consciousness of God, any

more than it occupies the consciousness of man. In part or particularity it can occupy both; but its permanence and persistence give it, in the moments of history with which we deal, a real concrete and independent existence in factual opposition to the fleeting sensation-elements we attend to in our private and personal field of consciousness. The potentiality, man, is one of a chain of potentialities born one from another or others back to the originating potentiality; and since we reject space and absolute separateness, we cannot deny the possibility of an interpenetration, as well as continuity, though holding them entirely consistent with a personality really centred in its own "here" and in its own historical "now."

The essential man is not believed to be a union of body and soul, of spirit and matter, of sensation-elements and potentiality. Man in those moments of his historical progress with which philosophy is concerned is undoubtedly an organisation wherein sensation-elements are in intimate use and association with a potentiality which has grown to the conscious possession and exercise of many recognisable faculties, and therein to some extent conforms to the old description of man as the union of body and soul. Union is not, however, here recognised, although association is; and soul has associations which do not quite coincide with our conception of the self, and its developed capacities, dispositions, and possessions.

The organisation of material progressions we recognise as the human body is believed to form a tool historically constructed. In its construction, and in its use, the potentiality has developed and acquired. It is, however, of no permanent interest to the potentiality, which would at any moment willingly change it for a better tool if equally familiar to use and custom. The potentiality, in origin at least, existed before the material world was thought of: can the particularities that are described as human personalities be reasonably thought of as persisting in the fullness of their historical capacities, dispositions, and possessions after the dissolution of this material tool? Does that world which is essentially a man's private and personal

world pass into nothingness in the moment we call death? These questions are answered in the preceding pages, and the answer is, indeed, a vital part of the theory of dual evolution. There is no lurking doubt as to personal survival; and the conception of survival here held differs very materially, because of this very qualification, personal, from most of the wordy platitudes written around the term immortality. It does not contemplate a sublimated or transformed John Jones, or a John Jones enlarged by inclusion in some Ibrahim Mackcloudsley who lurked below the threshold until the moment of death; but rather a John Jones with every pettiness and distortion he ever suffered or acquired still clinging to his particular self. It is, therefore, an intensely practical conception of survival, and should be clearly set out in reasonable detail.

But personal survival might be a fact arising after eternities of contingent successions which skirted its possibility. As such a probability it is sometimes feared, even by mechanists. It might thus be, conceivably, a fact of horror or of promise according to the possibilities of further contingencies and their control. If, however, personal survival is a thing aimed at and secured through the workings of purpose in a Personal God, who, however far above man, is yet in a very real sense the father of man, and better described in terms that apply also to man than in any borrowed from the abstractions of the logician, the whole aspect of the problem changes. All the loves, all the loyalties, all the aspirations, all the hopes, all the noble thrusts of courage that man has felt in the face of fate, find a new life; and man hears again the trumpet-call to that real battle which is always being won. The conception of a Personal God must, therefore, receive special treatment.

Behind these two governing conceptions all the values of life fall into relations of perceptible orientation, though every man may stress the ethic, the æsthetic, and the practical previsions they involve along lines made largely inevitable by his own individual history. Discussion here would, therefore, be almost necessarily personal opinion, and will not be touched on in the present volume.

CHAPTER II

PERSONAL SURVIVAL

It has been said already that personal survival is implied in the conception of reality we name dual evolution. It is the crown and purpose of a process which otherwise has neither meaning nor value. The potentiality of all that human life may achieve, or conceive itself capable of achieving in the depths of unending duration, starts its growth in contact with some little particularity in the material mechanism, learns from this particularity the elementary exercise of its capacities, may rest in that elementary exercise for a duration long in relation to history as man contemplates history—an infinitesimal viewed against the background of a duration that is always at its beginning—may progress in intuitions accelerating its command over and power to modify material progressions and take advantage of their contingencies, may move into the wider capacities that imply reason and prevision, may stagnate, may retrogress; but, always, before it lies unplumbed duration, and the unending possibilities of its potential capacities. Our ancestor, the protozoon, having had its little cell of organised matter plucked from its clutch by accident or contingency, may drift back to the potentiality out of which it has arisen, or, in the deeps of extensity, find some other attachment, some other rhythm, or plexus of organised rhythms, compelling it to move into the paths of growth. Neither possibility involves the futility of unending, unregarding, unmeaning mechanism, nor is such involved in the first alternative in the case of any unit in the long line of that ancestry until values have been achieved—until the perceptible start, at least, has been made on the road to personality. Then extinction or retrogression would be a futility in the body of reality; and though tem-

porary failure is accepted as involved in the very conception of reality as we know it, futility is not.

The whole march of developing, growing personality is neither seen nor conceived as a process reaching mainly or primarily to the lordship of mechanism. This is Bergson's conception. It is ours only as an almost negligible incidental. We view it rather as the growth of something increasingly independent of mechanism—increasingly made up of capacities that transcend mechanism, and possessions that have an existence independent of mechanism. The far-off goal is a higher organisation of an informing and guiding system of values; an intellect more and more approaching to an implicit and instantaneously informing mathematic; a reason ever surer in its balancings and judgments on realities; a power of prevision and constructive imagination ever taking a wider sweep over the practicable and the desirable, and ever widening and deepening its creative aspirations; an emotional capacity fuller, truer in response to the great ultimates of love and beauty and goodness, and ever more poignant in its intensive quality. So seen, so conceived, the idea of a personality decaying with the progress of age or disease, and dissolving when the body drops away, must be regarded as the idea of an unspeakable futility. Against the conception with which some psychologists toy—that of personality as a succession of momentary illusions in consciousness, built on the varying summation of juxtaposed mental states, and the contingencies of a partial and capricious emergence of elements that temporarily dominate and orientate—we place the conception of an historical growth and the concomitant organisation of developing particularities of potentiality. True, this organisation is fluid, and has none of the rigidities of a mechanism. It is clearly, nevertheless, sufficiently definite to give an irreducible individuality to every aptitude of perception and thought; and such an organisation, growing to a maximum of capacity, can never really drop below a height it has once reached, however far it may be from continuing to act as if at that level throughout the

duration wherein it is chained to the contingencies of the material organism.

"Why should man survive?" the metaphysician who calls himself a scientific philosopher is rather fond of asking. "His little world is a speck in immensities, and life is a microscopic marking on its crust. Away in the unending spaces are suns and solar systems and dead worlds, as well as worlds in the making. Is not man, therefore, too insignificant to be of any moment in this majestic mechanism which knows life only in infinitesimals of space and time? Only those obsessed by the habits of anthropomorphism can evade the clear appeal to reason of this plain statement of fact."

It may be replied that there is neither majesty nor immensity, in fact or in symbol, apart from a centre of knowing—for our purpose—apart from life, apart from man. It is vain to try and escape anthropomorphism. There may be selves to whom the earth and Orion may be juxtaposed particles. They could find their majesties and immensities in rhythms and perspectives incommensurably beyond our powers of visualisation, while their values differed in nowise from ours. Man is our concern; and no science, no posturings of intellect, can place reality outside his personal frameworks. We may accept, then, this statement of fact, and face the implications of relative immensities of space and mechanism, which know not a dual evolution, without finding any antinomy to our convictions. The organism built on the carbon compounds is, no doubt, unknown in the sun and unknown in the moon. But does it necessarily follow that developing potentiality, as we conceive it, is not served in some larger and freer activity by these desert spaces? May not a potentiality have grown along other or parallel lines to those we know, and find its task of shaping contingencies to purpose even in the progressions of the nebulæ? Empty spaces to us in our present stage of knowledge—that, and that alone. This scientific objection falls, in fact, with the reduction of space and time to ideals of intellect. With that reduction the

worse than nothingness those meaningless and empty infinities impose on the spirit of man drop away, and extensity and duration, as guarantees of illimitable growth, emerge as the true aspects of material reality.

Nevertheless, reason poses some legitimate questions which are difficulties unless rationally met. The continuity of personality from childhood to old age is not clear; and in the absence of any possibility of including in experience an intuition of a surviving personality, it and the other questions which may be raised have a real appeal to the attitude that doubts. The continuity of personality is not necessarily a continuity of growth, though, within the limits of an individual, it is necessarily this to some extent. But real growth—the growth in expanding capacity and the acquirement of values that appreciate—may stop at any stage wherein the failure or retrogression of the organism imposes obstacles to development. And, moreover, where the growth in capacity may have ceased, or apparently failed to hold its gain, possessions (concrete memories) may continue to accumulate. Character, which is the operative unity of the system of values, may appear to change radically with the years, and a youth of generous emotion and vivid interests decline to an old age of avarice and self-centred isolation. Is there, it may well be asked, any continuity of personality in such a life; and at its end what can remain worth preserving?

To meet the doubt such considerations must inevitably raise we must recall what we have conceived to be the growth of potentiality, and remember that this conception involves two recognitions. The first recognition is that of a progressive development of definite capacities of movement the inner quality of which is known to us in the experiences we name sensation, emotion, intellect, or reason; and, concomitant therewith, the accumulation of memories and values which we acquire by the exercise of our capacities. This recognition is the foundation on which we may conceive and describe the growth of personality. The second recognition is that of the historical and conditional

character of this growth. It is constrained by the dispositions of the organism and its own inner dispositions as developed, and has to grow in an unrelaxed orientation to the moving edge of its history. Personality is thus the resultant of history and innate activities the exercise of which is restricted as well as encouraged by that environment of which the body is a part; and it is, therefore, an organisation which the subconscious can have no power to modify. This fact is the key to our difficulties—this, and the fact that there can be no retrogression in capacity, although disuse may supervene on use.

In the light of these recognitions let us consider such an interruption to the persistence of personality as unconsciousness, in full health and vigour, may produce. Here we have a conscious personality, an apparently temporary extinction of that personality, and a revival wherein the personality appears to take up its full and ordinary content after an interval in which it had seemed no longer to exist. The man is looking at a horse. A sudden blow from behind stuns him. The horse passes on. He awakes to a blue sky, and on full recovery expects still to see the horse. To the mechanist there is, of course, a simple explanation. The machine is temporarily jarred to a standstill, readjusts itself, and resumes its action. Can the mechanist, however, explain why the machine, which vaguely and in piecemeal fashion begins to move again, should take up its normal action with an unblurred excitation of that particular neuronic system which enshrines the modifications due to the rays of light passing from the horse, and revive all the concrete perceptions and modifications it carried? The vital processes had only slowed down. Anabolism and metabolism and nervous movement were not brought to a standstill. The machine was moving. Why should it turn back in so many of its elements? Surely it would in most cases revive a consciousness of something usual and habitual—more, say, on the lines followed on awakening from sleep or when looking at the sky—or else take up gradually the actual and the new, going back, perhaps,

only in subsequent memories. At this stage, however, this is a side-issue. The problem under consideration is how, on the present view of personality, the facts as stated are explainable. Simply, the personality was in a state of orientation towards the horse. The afferent nervous channels were bringing in movements originating at the horse, the efferent were touched to receptivity in relation to the horse, and the attentive consciousness was absorbed in the nervous movements. The nervous elements suddenly ceased to function, and all the alternative nervous elements in whose activity the self might interest itself cease also to function. Only if the potentiality could turn away finally from the organism, and attack that problem of full self-realisation that awaits it at death, could the attention vary from the elements of sensation to which it was attached. It would hold in its attitude of expectant attention for a long time as measured by science; but to itself, nothing happening, there would be neither a passage of time nor a moment of empty duration. When the brain commenced to function again marginal sensations would flicker into and out of the attentive consciousness, but would fail to win the full attention of the observing "I." Presently, however, the nerve elements in which the self was really interested, and from which its attention had not been effectively diverted, would resume their normal functioning, and, receiving that thrust of memory the attentive potentiality throws into the channels accepting it in the preceding moment of consciousness, demand the presence of the horse. The relation of the self to the body may be explained on parallel lines in the case of sleep. Here, however, there is rarely a sudden cessation of consciousness. Whether sleep be due to fatigue products or to an habitual phase in which neurones lose contact one with another is immaterial. That the movements along afferent and efferent nervous paths either cease, or cease to be a concern of the self in consciousness, is the fact. The cessation, however, is seldom entire. The nerve channels remain open, or open sketchily in some of their elements from time

to time; and the self finds opportunity for activities which, from the very fact of their restriction and their freedom from that intellectual challenge which comes with full possession of the organism, have the vividness and actuality we know in dreams. Sometimes, too, we have the strange phenomenon of the self looking at what seems another self, and judging the activities to be dream activities, and even occasionally taking these secondary activities so seriously as to force itself into the customary nervous channels, and so awaken the organism to the task of dealing effectively with this disturbing content of consciousness. Ordinary awakening is, however, to an expectation of the usual, and indicates that the attention of the self, although marginally and intermittently diverted, remains steadily tuned to the channels of its customary action. The self, organised by its history into intimate relation with the organic machine, is in a state of readiness to take up its historical and connected use of the machine whenever that machine resumes the normal. But because it is a machine used by the self and not part of the self, and because the self is a distinct thing, and essentially an unresting activity, any departure of the machine from the normal is likely to give opportunities to activities in the unrealised background of the organised personality to thrust themselves into attention. The opportunity is, however, very temporary in sleep, and it is so made up of evanescent states, and so quickly followed by the normal in which personality functions along the usual lines, that the hallucination of an ideal for a real has no chance of survival. It is somewhat otherwise in disease. In a state of high fever the nervous machine is considerably disturbed, and both the afferent and the efferent nerve elements, their connections, and the channels available ordinarily for inhibition and delay, are disordered, so that the self is as if suddenly placed in a new world to which its aptitudes and possessions are ill-adjusted, and as a consequence is at the mercy of illusion and hallucination. There is rarely any continuity or cohesion in this experi-

ence, and as a rule, with the return of the nerves to normal health, it is relegated to its place with memories which the intellect adjudges to represent no reality. The case of dementia is somewhat parallel. Even where no perceptible disease of nerve matter can be traced, there is always some evidence of disorder in the general bodily function; and it is fair to assume that the brain, as an organ through which stimulus is received, inhibited, or delayed, or its movements passed on to the channels of action, has lost its historic parallelism to the normal personality. Where there is recovery the normal personality takes up life again practically where it was dropped, thus indicating not only its survival, but its power to dominate and relegate to the subconscious the elements that passed into its possession marginally and without its concurrence as an historically developing self. It seems clear that all cases of nervous injury or disorder, of hypnosis, and of what are called diseases of the personality, may be explained on these lines, as may also those cases where the self itself has, through overindulgence in dream states, whether self-induced or due to drugs, lost touch with its historical present. They are, essentially, permanent or temporary breaks between the necessary machinery used by a developing self and that self at a particular stage in its evolution. It follows clearly from our conception of the potentiality and its growth. At the core of this potentiality is the observing "I"—a constant in attitude, and in the relation of its activities to perception.

The objective resultant of all experience is the capacity to make movements in its field of consciousness. Sensation-movement, which at first seems no more than the power to follow and to recognise matter, is knit with that capacity to disengage from a sensation disliked which is at the root of emotion—indeed, a thwarting of the effort to disengage or withdraw is, most probably, what we know as pain. Furthermore, this early exercise of the possibilities of change and contrast is at the beginning of intellect. Our history is, therefore, a multiplication and complication of

these movements; and, inevitably, there is a culminating-point in this history wherever the co-ordination of capacities and possessions at the command of the observing "I" is adjusted to the maximum of the opportunities for action afforded by the organism to which it is attached. Any retrogression of the organism leaves this maximum organised complexity of the potentiality without the machinery it is prepared to use; and in the result only its possessions are afterwards likely to be modified—emotion and even intellect may be exercised by the cramped experience, but it will be all at a lower level than that to which the personality had reached, and cannot vitally affect it. Therefore in old age, in the gradual restriction of all appeal from the outer world and its challenge to emotion, intellect, imaginative forecast, and the urge to action which edges the personality as a whole, no retrogression need necessarily be involved. Divorced from the body, the readjustments of the old may involve a reattention of the personality to many things affecting emotion and the order and value of possessions stored in the memory, but the resulting reorganisation may fairly be assumed as emerging in accordance with the personality at its maximum complexity. Age may have found some lines of real advance, intellectual or intellectual-emotional; they must be fitted into their place. Also, there may be moral and emotional retrogressions, bound to concrete memories, and calling for what may be called a disciplinary consideration following on the awakening of the more complete and powerful self.

This conception of a personality necessarily reverting to the general lines of its maximum development as co-ordinated with the maximum efficiency of the organism which served as its instrument of action is obviously schematic. It ought to prove full enough, however, to indicate that it is a conception definitely and regularly arising out of reality as contemplated in this theory, and to suggest, not as a fanciful speculation, but as an inevitable speculation, the entry of the personality, after death, on further activities under conditions involving no break with

the history and development which lie behind it—on activities the starting-point of which will be found in the qualities, aptitudes, and possessions its individual life has achieved.

Consider the disembodied self in the attitude to which reference has already been made—the pause prior to action. Knit with the organism, the pause would wait on stimulus; and the stimulus, it is recognised, might come from either of two directions. It might come from a potential activity of the self moving into virtual activity, or from a movement of nerve substance attracting the attention of the self. In either case the activity would be, *de facto*, an activity of the self—it would be this equally where the self took up a purely intellectual speculation, or a criticism on human conduct as illustrated by some memory of fact, or art, or human history, as well as where the blackbird's note suddenly caught the attention that had for many moments disregarded it. In the former case, however, its emergence would be dependent on such an efficiency of nerve substance as afforded ready hospitality to movements outlining the acts of vision or utterance necessary to make the activity one with that historical activity of a self wherein the movements of the organism and the movements of the potentiality are in what may be called harmonic accord; and in the latter case, equally, the movements from the outside world have to fall within the limits of harmonic accord. We have two factual existences. The first is the self with its systems of values and all its aptitudes of sensation-construction, intuitive perception, deliberative analysis, imaginative prevision and construction, and emotional feeling. The second is the organism, in direct contact, and to some extent union, with the persisting sensation-complex which constitutes the cosmic mechanism, and disciplined, individualised, and equipped with aptitudes of sensation-acceptance. It is a tool which history has made efficient, but it is liable to fall below its highest level, and to do so casually, gradually, partially or wholly. It is liable, therefore, to fall out of tune with the self as a functioning

organised wholeness, and to restrict the harmony and association of initiative and use so as to relegate the self, in many of its particularities of potentiality, to the subconscious. At death it may be conceived as relegating, for the moment, the whole of the self to the subconscious, and so permanently divorcing the self and its tool. To realise the self after this divorce—to conceive, in respect of it, some permanent organisation capable of functioning apart from a tool, or with the aid of a tool it might itself instantaneously, automatically, and, in effect, mechanistically, construct—that is here our problem.

We must remember that in the course of this chapter we have shown reasons why we may regard the self as retaining its historical organisation when using its tool so partially as to induce the conception of a personality forced into an organisation which belies its past and its historical individuality; and so as capable of resuscitating the historical moment and resuming its true individuality once the tool is restored to full efficiency. We conceive the time during which it is divorced from its historical continuity as a time during which its organisation has suffered a torsion bringing subconscious elements, and elements in the background of its memories, into operative consciousness; and as a result inducing such a distortion of its system of values as to create a secondary personality in accord with that orientation of attention which the accident or defect in its historical tool has constrained. We have no difficulty, therefore, in conceiving the self as, at death, finding itself in full possession of its maximum equipment, and outside the further possibility of an orientating attention tied to some little terminal of mechanistic substance and capable of subjecting the historical self to a distortion. Its rigidities would be its system of values; and on the lines this system would make largely inevitable we may conceive it as exploring all its possessions, testing its aptitudes, and organising a summation in the personality which its history as a whole had bred.

Now, how can we picture to ourselves this personality as

a functioning wholeness? The memories that in life may have lain with the subconscious, failing certain open channels in brain substance, the values which required the full operation of memory and sense-acceptance to give them objective existence; and the emotional aptitudes which flooded and found body in the definitely objective—how can they be held in a unity of existence and the lines which constitute this unity realised and described? We may not, with the Theosophists, find warrant for accepting an Astral Body, which is a shadow body of the real body, growing with the growth we know as material—a something nearer to Plato's pure form than the objective mechanisms we know can compass, a tenuity of persisting motion organised on the lines of the old persisting tool. At the same time we must realise that we cannot rationally give or withhold assent from this conception. If not a probability, it is a possibility. There may be a world interpenetrating our familiar world, and it may not be a shadow world, but a world of sensation-qualities more vivid and more clearly individualised. All the persisting motions concerned in organic sensation and in the activities of the specialised senses may admit of an existence organised and articulated without that foundation of mechanistic movement which science studies from electron to cell, and the self may actually find itself in a body which gives it the full sensation-complex and sensation-capacity to which the earthly life had accustomed it.

On the other hand, exploring the memories death had placed fully at its disposal, the self may be able to give such objective persisting existence to the groups of memories concerned in its habitual earthly feeling tones and activities as suffices to construct a body similar, from within, to its former body, and objectively holding all those rhythms which are outside anabolism and metabolism and those mechanical successions the self controlled only in the larger rhythms they subserved. All its memories at its disposal, it may bring the groups concerned out of the subconscious into the conscious, and find itself capable of retaining them

in that sort of dual attention often displayed in ordinary life.

This is, of course, pure speculation. It has no validity as an appeal to the reason that affirms the existent. But, for our purpose, need it have such an appeal? Is it not sufficient to justify our conception of persisting personality against this particular doubt if the imagination can give a picture, however schematic, showing the personality in functional persistence apart from the body we know?

This imagined body, which we may call the body of objective memory, need not persist. It may, like memories in general, admit of withdrawal into the position of an equipment or possession of the potentiality, and of reconstitution at will; and it may allow of a new and freer experience in sensation-acceptance with the corollary of sensation-construction. As an imagined thing, it is not inconsistent with that real existence of the potentiality which in this book is conceived to be the persistence in its own here and now of a potentiality whose inner urge is creation, and that has experienced, grown, and become equipped with a judgment instructed by a system of values, a storehouse of memories, and definite aptitudes of intellect and emotion. At the same time, this imagined thing does not, perhaps, meet with entire adequacy the legitimate demand for, if possible, a description suggesting how it may be conceived as existing in a pause apart from any activity.

Further back, potentiality was described by illustration as a here in which all possible rhythms were held in a neutralising equilibrium representing a single phase of each. How are they held? We need not conceive them as in any mechanistic or geometrical relation. They may freely interpenetrate. They are held until the "I"—the central germ of initiative cause and operative power—gives the impulse to one, few, or all according to the technique it has acquired. How does it store that technique—its system of values and its mathematic, its principles of construction and the purpose that may dominate construction? How, above all, does it hold that history which is a concrete and detailed memory?

Referring again to the preceding pages, attention has been called, it will be seen, to the expansion of a symbol to a detailed memory—to the introspection which shows the merest impulse of will passing into an activity which revives the past experience with ever-increasing completeness, and which might, possibly, embody it in a very real objectivity were the activity not hampered and constrained by the mechanistic complex of the material world. Moreover, introspection can, it is thought, further show that all memory is held in the frameworks of our developed system of values and mathematic. The expansion of one is the explicit functioning of the other, and they retreat together into the symbol which may shrink to the "I," which is merely a pause, however vivid, intense, and alive, in the moment before it acts. We have here a fact, but we have no hint of an actuality that can be made objective and described. Like knowing and loving, its inner quality is a recognition the intellect, which necessarily views things from the outside, can never get within. The appeal for description is an appeal to intellect, or, at any rate, to a technique which intellect has instructed and developed. It is, therefore, an appeal which may have force, and breed the desire to respond, but it can have no validity as a condition on which fact is to be accepted or denied. We are here, it is thought, at a dead wall—outside the province of philosophy, and outside the contacts of our intuitions with reality. We can, nevertheless, accept the self while recognising that extensity, duration, and mechanism—those necessary forms of objectivity—are conditions of its activity, but in nowise conditions of its irreducible existence. The fundamental things that give it its reality cannot be made objective, and cannot, therefore, test the ingenuities of intellect in devising frames to hold them. We cannot picture them, but we must accept them, for we live them even now; and so, also, must we accept the real and historical self with all its qualities unimpaired as poised above activity, and capable, because it has learned in a dual evolution, of contriving by its own activities, if only for momentary use, a tool such as the body was to it in essence.

CHAPTER III

THE ANTHROPOMORPHIC GOD

THE illegitimacy of substituting the label anthropomorphic for argument has, perhaps, been sufficiently laboured in the preceding chapters. With the reader who does not now recognise that man is essentially the measure of all thought really applicable to reality the whole argument of this book has failed. Where this elementary fact is accepted the conception of an eternal and self-acting mechanism will be rejected, and the conception of a Creative Personality, describable only in terms of man, regarded as the inescapable alternative. The terms in which we may describe Creative Personality are not, of course, those we may draw from a study of the human organism, which, at its highest, is but a self that grows, and finds in the body a unique tool. But they are those suggested in the activities of that self as they seek the ultimates of achievement in intellect, reason, prevision, emotion, and artistic creation, reaching towards those real frameworks—those true universals—we know in terms such as beauty, truth, goodness, and love.

If it has been demonstrated that the mechanism which science studies in all its particularities from radio-activity to biological chemistry and physics is at most a skilful approach to an ideal construction with which fact and material are inconsistent, the demonstration carries implicitly the reference of this construction to a constructor. Not in the fine adaptation of means to finer ends is the existence of a Creative God implied, but in the defect of the achievement framed against the recognisable principles of construction which lie beneath it. The mathematician, whatever he may think as a philosopher, does not really elaborate a mathematic to displace this conception. On the contrary, he elaborates a mathematic which, because

it can be contrasted with events such as practical mathematics has to recognise, demonstrates God. He discovers an ideal order. Were this order coincident with a real and possible order, the idea of a Creative God might no longer be necessary to thought. But the man of science steps in, and, in an analysis ever seeking certainties and rigidities, finds himself continually discovering approximations and fluidities, thus demonstrating in the material world construction, and in the mathematician's order the principles of this construction. The evasion of the certainties and rigidities is an evasion of the frameworks of the mathematical order. The recognition of the order can no more be evaded than the recognition of the evasion; and this dual recognition makes it inevitable that we recognise in this human intellect which discovers the mathematical order a quality held in common with the potentiality which initiated the material successions we study. Illuminated by this recognition, we face the problem of origin; and finding oneness and unity in the intercalated interconnections of the whole plexus of materiality, we are forced to postulate unity of origin, and to concede intellect as an equipment, and the principles of the mathematical order as discoverable principles of construction—of technique—in the potentiality which contrived the origin. Reason, in fact, accepts the origin as a maker equipped with intellect.

Were we to accept the ideals of intellect concerned in space as an empty nothingness, and in time as a meaningless duration, and combine with them our recognition of logical constraints and eternally operative natural laws, we might conceive of some unitary substance tossing and drifting in these permissive nullities, and helplessly and hopelessly mounting to such illusions as are reached in man, and eternally slipping back into the clutches of a mechanism which cannot permanently organise it, and can only unknowingly, and with all the blameless cruelty of iron fate, bar and break its efforts. This is the only solution open to the scientist who tinges his thought with mysticism, and believes he can solve the problems of reality

by reliance on the methods of his habitual activities. It is not ours, not only because we have to reject his space and time, but because we find his substance to be a relatively simple thing of a quality directly known to us—movement to the intellect, sensation to the more direct and intimate knowing of a conscious self—and have to recognise that it is entirely incapable of effecting, by any dynamical combination, the evolution of knowing or of that full life of a growing personality whose activities are activities in an individualised consciousness. We have, therefore, no hesitation in rejecting this philosophy of science and accepting our own reasonable deduction of a central potentiality equipped with intellect.

We find this potentiality creating—initiating—sensation-elements, and throwing them into a persistence which involves the combinations and progressions that have taken the forms we study in the material aspects of cosmic evolution. The " substance " that is used as the basis on which the material aspect of cosmic evolution is built is one in quality with a something we ourselves can create in the most elementary exercise of the activities of our inner potentiality. It follows that the central potentiality embodied prevision as we might imaginatively embody our own previsions. We have, therefore, a central potentiality equipped with intellect (more accurately, perhaps, as previously indicated, with a mathematic so completely a possession as to act as an instinctive equipment in prevision) which creates a plexus of movement-sensation through the exercise of an activity identical with the activity of a self; and, observing the complexities of movement into which the progressions thus initiated easily, if not inevitably, drift, we have, taking into account the intellectual equipment, to credit this central potentiality with a prevision of all the glories and complexities of sensation involved in the progressions.

We find, furthermore, that out of our analysis of reality —the reality which concerns selves and is always the self and the persisting mechanism in contact—certain applicable

universals emerge into recognition and expression. These are not abstractions, or ideal deductions of fancy such as the intellect discovers in its own peculiar activities. They are not outside reality, as are point and line, and unit and equality, and exactly expressible and calculable relation, and existent and concrete infinities. They are things which mark values towards a higher and higher fulfilment of which reality moves. Unlike our points and lines, and units and equalities, and calculable relations and infinities, they are recognisably and demonstrably present, in degree or defect, whenever we challenge an aspect of reality in their name. No landscape is without beauty, no act outside the permissive judgment on its relation to goodness, no contact of life with life free from the emotion we name love, no statement of fact immensurable with a proximate framework which may be called truth, no event the outcome of an uncaused nothing. Finding these universals in the fabric of our reality, we are forced to conceive that they also form part of the equipment of that creative potentiality whose prevision underlay the process in which they have emerged.

It is, then, apparent that we are justified in attributing to this potentiality a basic activity one in quality with that of a self, an intellect at one with ours in the logical ultimates towards which we strive, and the perfect intuition of these universals or standards of value which inform the reason, and in an urge that is one with emotion ever aims at heights of achievement beyond the achieved. We cannot, therefore, deny to it the description Creative Personality; we must describe it in terms of man, and, finally, we can find no term more applicable than Personal God.

The whole process of reason in arriving at this conception might be summarised in a certain order of conclusions, and these argued one by one, and systematically, instead of in the discursive order necessarily adopted in this book. The conclusions would be:

(1) The world of material is a world one in quality with sensation, and may be objectively described as persisting

movements expressible in terms of extensity and duration which are strictly in relation to personal and social units recognisably founded on the experiences of man.

(2) Relying on these units, we find in the material world a social perspective which makes each observer the centre of an extensity which is the common holder of multiple extensities, and a duration which is the common container of multiple events or durations, and we prepare the intellectual frameworks of an ideal, non-existent, purely abstract space and time to hold them all, and unending and interminable alls beyond our direct knowing, and to make them fall more easily within the powers of social expression, and more calculably within the capacities of human control.

(3) We recognise the frameworks prepared by intellect in their character of devices, and so remain in real contact with that aspect of reality which is a plexus of sensation or movement, and is not a coincidence of any aspect of reality with an absolute mechanistic order.

(4) We find in this matter no trace of consciousness, or knowing, or feeling, or emotion, or intellect. These recognitions are recognitions neither of epiphenomena nor of relations between one part of matter and another. No dynamical rearrangements of motion can involve their birth from matter, nor their emergence out of any particularity of its complications.

(5) We find the existence of consciousness to be entirely independent of matter, and to be inconceivable apart from a centre of activity which is an originating potentiality, not a dynamical focus of dynamical relations.

(6) We find what is called evolution to be a dual process in which the potentiality is taught in a unique and singular history to realise itself, and so to develop its powers and acquire aptitudes and possessions.

(7) We find this dual process to be one that is not predetermined by persisting uniformities of mechanistic action. The potentiality faces the possibilities of relative stagnation and retrogression as well as of growth. It is a free potentiality, inasmuch as its growth is essentially from within.

Its growth, however, must be in accordance with an order which may be defined as the continual approach to an organisation of values informing its judgments and previsions, and the freedom involves relative failure, and, moreover, its association with the practical mechanisms which science studies determines, to some extent, the order and degree in which its capacities emerge, gives a certain rigidity to its history, and at the same time presents contingencies so varied and so independent of the self that no two histories can be exactly alike. Dual evolution is the medium in which irreducible personalities grow.

(8) We find the growth of the potentiality to move progressively towards control of the material order, accompanied by an increasing independence of that order in its inner life; and the facts of its existence to be inconsistent with the extinction, dispersal, or absorption of its personality.

(9) Because the world of matter is a practical mechanism rather than a perfect mechanism, because it is constructed of materials one in quality with what we can initiate in our own most basic activities, because all the facts disclosed by science indicate a wholeness inconsistent with its infinity, we are forced to conceive it as constructed or initiated in its persisting elements by a centre of originating potentiality.

(10) We find that the intellect naturally establishes an order which aids in the interpretation of the material aspect of reality. The conceptions of this order move towards an ideal perfection, but are always imperfectly applicable to the reality that has suggested them. They more and more assume the position of principles of construction which no persisting complex of sensation-elements may evade. These universals are universals only in an ideal order. They are outside reality, and have no concrete existence. When, dwelling on this fact, we recognise that material reality beats everywhere against these universals as if they were concrete restraints, and everywhere achieves its results as if they were fulcrums against which its progressions might brace themselves for continued effort, we are forced

to attribute intellect to the potentiality. We can imagine an elephant vertically balanced on the tip of its trunk. The tenuous sensation-complex picturing this imagination in our private and personal field of consciousness might be given by us a degree of persistence. It would exist, yet it would violate none of these intellectual universals; for to this elephant, related only to a wilful activity of the inner self, they would be inapplicable. A real elephant in material reality, thrown for an infinitesimal of duration into this position, could not be so maintained beyond an infinitesimal of duration. The progressions of material fact to which we affix our mathematical frames would not tolerate the persistence of an elephant balanced on the tip of his trunk. Therefore, the material complex was not an exercise of fancy. It must have resulted from an accidental initiation of such complexity as to surge in all directions up to the limits set by these ideal universals, or it must have been deliberately given such form as would eventually lead to practical coincidence with the ideal mechanism it indicated. Accident of such complexity is inconceivable. Prevision must, therefore, be accepted, and this prevision involves the possession of the ideals of intellect by the potentiality. The order discovered by intellect has no concrete existence, as witness our imaginary elephant. It comes into discernible existence only because it is applicable to action of a certain kind, and must be one of the equipments of the potentiality capable of this action. The persisting complex of matter is capable only of persistence. It persists in recognisable and describable progressions. It does not originate. Only a self can originate. Only a self can be equipped with the intellect that is its guarantee of the possibility of certain activities. Only a self can discover and elaborate the ideal order in which that intellect finds its guarantee of achievement. Intellect, and a knowledge of the intellectual order one in kind with our elementary knowledge thereof, was, therefore, an equipment of the originating potentiality.

(11) In reality as a whole—in reality seen as it is—in the

association of material progressions with the progressions of centres of initiating potentiality, we find universals of another order. They afford us the real standards of value on which to judge this order. They are a part or aspect of knowing or experiencing. They are nowhere in material reality considered as a thing in itself. Individually, their quality is as fluid and as many-sided as the histories in which they have emerged. Yet there is a parallelism which admits of general and recognisable description, and points to them as, in germ or flower, a common equipment of all potentialities. Of such is beauty or goodness. Of such is truth or sincerity. Of such is love. Of such, although as yet, perhaps, imperfectly realised, is that positive colour of mere existence we call joy. All these are things of the potentiality. Analysed, they are things each of its own indivisible unrelated kind. Yet they have a fluidity—a power of fusion and unity in the experience which is always the cutting-edge of the action that enlarges capacity and connotes growth. We can trace a potentiality, such as exercises this intuition of real universals, back to origin after origin; and cannot evade the recognition that it and all the describables which its analysis may make explicit are properly applicable to the originating potentiality. This potentiality is thus disclosed by our thought as a final centre equipped, not only with intellect, but with all the capacities of intellect, reason, and emotional value which characterise a man. We cannot deny it personality. It has its own selfhood, however it may in capacities and possessions transcend the human self, and this selfhood can be symbolised only in terms of the qualities that apply to man. We have, therefore, at the origin of reality the Great Personality who is the father of all personalities, and, in fact and recognisable truth, the Creative God.

PRINTED IN GREAT BRITAIN BY BILLING AND SONS, LTD., GUILDFORD AND ESHER