IV.—CAUSATION AND ITS ORGANIC CONDITIONS.

III.

SCIENTIFIC analysis teaches us that the externally compelled portion of our mental presence consists immediately only of sensorial elements specifically aroused. The objectifying and further complemental amplification of these specific sensorial signals result from an activity operating within our own self, an activity by which their respective significations are discriminated and recognised through the more or less complete mental reinstatement of their usual bearings upon our individuality.

We may roughly picture this process in the likeness of the widening vortex, formed by the outflow of a fluid through a narrow opening of a vessel, involving ultimately in its commotion the entire superincumbent mass of contents.¹ The local sensory disturbance or sensorial awakening is similarly followed by a more or less extensive stirring up of the mental repose, by a spreading actuation within the resting contents of potential mind.

The special group of mental reinstatements, representing as so-called ideas or images further sensorial potentialities directly connected with actually experienced sensations, constitutes our percepts. A percept is adjudged real and correct when its ideal complement of feeling can be positively realised by placing ourselves in proper situations actually to receive the suggested feelings as veritable sensorial impressions.

Now it happens generally and very naturally that in perception the intrinsic process of reinstatement is lost sight of. Not the specifically stimulating influence that arouses the actual sensorial sign, nor the sensorial sign itself, but the whole perceptual result externalised is taken as cause of its own representation within the mental presence. Thus the entire perceptually objectified thing is hypostatized as the efficient agent which is affecting our sensibility, which in fact is forcing itself upon our attention.

¹ This figure applies with almost literal truth to the organic process underlying perception. The functional tapping of the sensory inlets by specific stimulation actually creates a centrally widening vortex of functional commotion, involving more or less of the synthetical substance (see *MIND* No. XVII.). But the loss by outflow through functional disintegration is promptly made good by reintegration, and this is exactly the specific prerogative of vitality.

The constraining force of this illusion is to be found in the circumstance that there actually subsists a connaturally pre-established harmony or correspondence between the ideal feelings forming part of a percept and the external energies or causes thereby suggested. The direct external causes which would give full actuality to the now merely ideally aroused perceptual complement lie, in truth, ready to exert their stimulating efficiencies in combination with the special sensory stimulus by which the percept has in fact been awakened. The suggested feelings are by dint of pre-arrangement premonitory of actual feelings.

Through this perceptual illusion, which projects internally awakened feelings as actualities of external causes that in truth are only potentially subsisting, everything that has its existence between the hypostatically complemented object and its mental representation remains more or less neglected. In accordance with this attitude we believe that we are perceiving exactly, or at least figuratively, what is outside of us. We are then Realists of various shades, according to the amount of modifying power which we are willing to attribute to the organic medium whereby the external thing effects its impression on the mind. Practically we are all Realists of the purest grain, overlooking habitually the entire combination of realising contrivances, and only attending to the thing or event that we are finally perceiving, as if this were entirely a foreign existence outside of us.

If through philosophical reflection we have, on the contrary, become Idealists, we cannot of course allow ourselves to transcend the sphere of mind. Finding the perfected object mentally given, we seek to account for it by constructing it out of mental elements, or by detaching it from an all-comprising mental totality. We do not admit extramental causes or contrivances at all.

The thorough Realist assumes nothing essentially qualifying between the object and its mental mirror. The thorough Idealist grants nothing beyond variously clustered or synthesised mental states, or beyond a complex mental constitution, of which the object is thought to form a part or to inhere as affection.

We, in conformity with the results of our previous research, have—unlike the Idealist—to look for all causation of mental states outside the mental presence, which to us means outside mind altogether. Unlike the Realist, we can admit as positively known only effects within the mental presence, not their external causes. These we only infer.

Our task will then simply be to find the proper attitude towards the effect-compelling forces. For through the interpreta-

tion of the effects we desire to become aware of the full range and peculiar disposition of the causative agents. This is undeniably what we always endeavour to do when we wish to explore what we are compelled to take for external. We assume the receptive mood, and place our sensory inlets in tentative relation with the surmised foreign powers. We then judge of the nature of these powers solely by the manner in which they are capable of affecting us, *i.e.*, of arousing mental states. Henceforth those powers are for us nothing more nor less than their ascertained range of specific influence upon our sensibilities.

Now it is clear that, just as the living individual naturally behaves in order to gain an accurate knowledge of the causes effecting his perceptions, so have we here designedly to behave in order to gain a full knowledge of the complex causes effecting the mental presence. We have to undertake the office of a general and impartial reagent, opening our sensibilities just as well to the impressions caused by the organic individual itself as to the impressions caused by its environment. We have to take in, under one and the same manifesting aspect, the entire combination of conditions here co-operating. In this manner the organic individual and its vital properties on the one side, and the non-vital things and occurrences surrounding it on the other side, can all be tested by one common standard. Their differences and their agreements may in this way be faithfully recorded in the sensitive medium which they are both affecting under the same conditions. Disinterested reason, sitting in judgment on the constitution and mutual relation of these uniformly viewed appearances, will perhaps, when thus impartially informed, prove competent to arrive at some valuable conclusions regarding their peculiar mode of interaction and their respective participation in the production of the mental presence.

From this point of view, which is the point of view of true science, it becomes first of all certain that the organism and its environment belong to one and the same order of nature. They affect the sensitive and observing reagent in an essentially similar manner. The differences perceived are evidently due, not to an incommensurable disparity of being, but to a varied disposition of their fundamental points of agreement. It is furthermore readily recognised that external influences, which evince themselves to the sensibility of the observer as actually perceived or legitimately imagined motions of certain actually perceived or legitimately imagined substrata, are capable of affecting the living substance as stimuli. By some inscrutable efficiency their motions seem to awaken through impact motions in the living substance. But the motions thus induced in the living substance are found to differ totally from the motions

displayed by the stimulating agents. The motions of the stimulating agents are neither translated nor transfigured into the motions of the vital substance; nor do the motor energies of such agents combine in any way with energies inherent in the living substance. Outside powers simply effect a chemical rupture in the organic material, shattering its constitution in a specific way at the points of contact. Thus far, and no farther, does the direct influence of stimuli extend.

From this plain fact, biologically proved beyond suspicion, much may be learned. Many an elaborate philosophical scheme, dispossessed thereby of its fundamental assumption, crumbles to pieces. We may rest assured that there is here no passage open through which outside powers can in any manner and shape make their entry into the living substance. What is outside remains outside for good, so far as stimulation and irritability are concerned. There is here no blending of the objective and subjective, no coalescence of external and internal components, resulting in a subject-object presentation of influences. Whatever happens inside the organism, in consequence of the stimulating clash, is due to nothing but the indwelling endowments of the living substance itself. We can therefore finally dispose of the doctrine, which assumes that outside and inside influences combine like chemical agents, the things perceived being the outcome of this mystic union. Most unmistakably the external and the internal conditions do not here coalesce, are not compounded into an effect, which represents these conditions unified. The dynamical stimuli are to the organism only excitants arousing its own specific energies. The entire vital effect is an internal response, in which the stimulus does in no way itself participate.

Accordingly, we have also to reject the very prevalent theory that outside things are reproduced inside the organism in a transfigured state. However accurate the correspondence of the living order to the stimulating order, there can result therefrom no such product as that assumed in "Transfigured Realism".¹ The properties of external existences are not in the remotest degree reproduced in the organic medium through stimulation. They can in no way impress themselves in transfigured projection. There obtains no representative relation whatever between the affecting influences and the aroused affections of

¹ Mr. Herbert Spencer, who uses the above misleading term, is himself fully aware of the incommensurability of the stimulating powers and their effects within mind. But it is an unfortunate name, and a still more unfortunate illustration, by which he endeavours to make clear the actual correspondence obtaining between the world outside the organism and its sensorial revelation within the organism.

the living substance. The stimuli in their direct effects are, on the contrary, hostile, destructive. They disintegrate the functioning material. It is only the slowly acquired power of effective resistance which enables life to confront and adequately to reflect, *i.e.*, to ward off outside infringement. It is the perfect play of subtly attuned vital reaction against most specific dynamical encroachment which renders the internal commotion consonant with the external motion. Whatever becomes inwardly revealed, as result of this awakening contest, is most certainly vitality's own specific creation.

The sensitive surface presents a solid front to the impinging powers not admitting their interpenetration. Its adequate resistance is due to its high-wrought restitutive energies. Thus in full-tuned accord its restitutive beats resist the disintegrating dynamic beats, and it is in this synchronous activity, in this subtly responsive vital quivering, that lies the secret of its sensitive impressibility; but not the secret of its sensorial sensibility. The inward qualitative ring of the awakening touches is altogether dependent on pre-established molecular constitution.

The kinship of nature, so obviously obtaining between the organism and outside existences, does certainly not originate at the sensitive surface. The external powers of nature are, on the contrary, effectively repelled at the sensitive front. Where kinship obtains, it has been established by connatural evolution. Physical conditions and chemical elaboration have led, on the one hand, up to various definite modes of being outside the organism; on the other hand, up to the organic tissue in which sensibility is inherent. In proportion as the developmental conditions of the outside things have been like those of the feeling organism itself will there be found kinship of nature between them. And just in proportion as the outside things have contributed to the development of the organism will there be found adaptation of the organism to their affecting influences.

The observer has both orders before him, the vital things and the non-vital things. The vital things coming under the play of energies emanating from the non-vital things are affected thereby; specifically affected by the sundry specific energies surrounding them. These direct and specific affections, to which in the course of development the organism has become attuned, have acquired for it the significance of definite signs, by which its entire range of relationship to the signalised external existences is more or less vividly awakened. But, and this is a very essential point, the relational feelings roused by the specific sign may have their seat and fulfilment not at all at the sensitive surface, or anywhere within the region of perceptual re-

alisation, but somewhere entirely outside its domain. A most striking and urgent instance of the kind is given in the powerful and definite relational feeling, which binds the organism to its restitutive material. This evidently is of entodermic origin, and its realisation or gratification is essentially an entodermic process. The kinship with this peculiar outside existent, which actually gives significance to the sign coming from the sensitive surface, lies unmistakeably in the pre-established molecular constitution of the two related existences, the organism and its food. It does not rest in the perceptual effect of the food through the sensory inlets of the organism.

It is each time the deeply rooted play of our own nature that is set going by the definite but superficial influences of other existences. And however much this internal play may be significant, either of actually occurring inner affections within other existences, or merely of outer potentialities of the same; the matter-of-fact coincidence of what we ourselves experience, with what is actually contained in the thing observed, is exclusively due to pre-established similarity or correspondence of constitution in the realising subject and the foreign existence influencing it.

You who are now appearing within my field of vision are my percept, exteriorised by an automatic reference to the compelling powers that in reality constitute your existence. I understand the significance of your smile solely by dint of the congruity obtaining between my being and yours; a congruity brought about by connaturalness of evolution.

The sight of this flame suggests its heat, *i.e.*, its influence on my organ of sight awakens, along with visual perceptions, also the idea of heat connected with it. I am then further capable of realising as matter-of-fact this ideally suggested heat, so that it shall become an actual sensorial affection. But this is accomplished solely by dint of a pre-established correspondence between my own nature and the nature of that which constitutes a flame as a thing-in-itself.

The links binding the ideas, suggestively awakened by actual sensorial signs to the hidden potential virtues inhering in foreign existences, have been organically elaborated. They rest as acquired constitutional or structural properties in the realising subject.

The justification of this interpretation, given by the Philosophy of Organisation, must be found, first, in the organic facts actually obtaining, and then in its efficiency to explain the configurations and processes of nature as a whole. It is my endeavour to prove that the same entity which appears to us as a human organism experiences also, as an affection of its own,

the mental presence. It would almost seem as if to unsophisticated minds this proposition must appear well-nigh self-evident. Yet what a drift of revolutionary consequences is involved in its admission. To become competent to judge of such a position, philosophers must not shrink from the task of mastering the general facts of organisation. It might readily be shown that transcendental and experiential philosophies have always been, in truth, little else than a more or less correct conceptual or perceptual rendering of organic occurrences. But these occurrences were recognised only in their immediate mental effects within the region of highest organic elaboration; and thus was overlooked the entire combination of causes co-operating in the production of this highest organic region, and therewith also of its immediate effect, the mental presence.

In consideration of this import of organisation we will not refrain from casting an evolutionary glance at the relation of the organism to its environment.

Though the influences of the environment induce all developmental changes in the living substance, yet they bring about the progressive elaboration in a very indirect way. Their immediate operation is merely to shatter in specific fashion the chemically cumulating surface of the organism. Nevertheless, it is through this functional clash of the organism and its surroundings that the vital knot with all its wondrous perplexities is tied. As regards the foreign powers, which are inferred as emitting the influences, it is rightly conjectured that their exertions in relation to the organism are purely dynamical. They act by mechanical impact, by definite dynamical beats on the surface of the living substance, disintegrating the same. In consequence, the living substance restitutes itself by force of its own intrinsic affinities, appropriating the necessary complemental material. But it does more than this. The many incident forces impinging on its surface succeed in effecting a slight resultant change in the entire combination of the chemical radical, which remains after functional disintegration. The living substance, after a second functional disturbance, is not exactly identical with the same living substance after its first functional disturbance. The disintegrating forces effect a more and more unitary rearrangement: less complete chemical disruption, more chemical commotion and readjustment. In consequence, the following saturation or restitution accomplishes the production of a higher chemical unit, of a living substance more highly elaborated.

This structural development evinces itself, on the one hand, in a greater degree of resistance to the disintegrating influences by means of more rapid restitution; on the other hand, in a more unitary co-operation of all the vital processes occurring

within the living substance. It is always an internal commotion of the living substance that is effected by the foreign influences. But this internal commotion is incited by means of specific disintegration. The specific disintegration caused by the foreign powers is followed by a specific reintegration due to the intrinsic constitution of the living substance itself.

The lower the living substance in the scale of evolution the more thoroughly do the disintegrating powers overthrow its constitutional or chemical equilibrium. The lowest organisms cannot even attain a stable or equilibrated surface. When at a higher stage of development the living substance is becoming so far elaborated as to maintain against the impinging forces the stability of its surface through prompt repair, then the internal commotion caused by the surface-disturbance is also becoming more and more regulated. At last, the surface-disturbances are found specifically attuned to the special kinds of disintegrating influences. The chemical surface-vibrations of the living substance are now synchronous with the dynamical medium-vibrations, and constitute therefore adequate signs or responses, followed by no more internal commotion than their restricted range of activity directly compels. Through more and more definite restriction and developmental specification of the general commotion of the living substance, the perceptual world is gradually wrought with growing distinctness within its sensorial susceptibility. The general sensitiveness of the vital unit becomes thus significantly determinate through the organisation of a system of specific and localised sensory relations, which sensory relations on stimulation furnish to the mental presence sensorial signs denoting the existence of specific external powers. In the highest organisms the entire surface is found variously and delicately attuned by means of specialised relational elements to the influencing powers all around.

The sensorial sign denotes the external existence, because it has been gradually elaborated by the action of that specific foreign influence up to the point of synchronous restitution, whereby in adequate response it resists the disintegrating beats. The sensory resistance, or counterbalancing of disintegration through restitution, gives to the compulsion the character of a specific and fixed functional commotion. It contains also the germ or "impression" of our idea of power so vainly sought for by Hume, and, in my opinion, so wrongly placed by many philosophers and scientists in a feeling believed to accompany the innervation of voluntary muscles. The compelling power is felt only because it is resisted, and it is felt not only in consequence of resistance experienced by muscles, but also in consequence of resistance exerted by sensory organs.

The principal truth, however, which I am endeavouring to render quite clear is, that during the evolutionary process there is no putting-together of pre-existing elements of any kind, neither of a mere sensory nor of a reflex nature. Whatever appears separate and elemental in the organic individual, and here more especially in its ectoderm, has been gradually specialised within a single living unit; has been rendered heterogeneous and concrete by the establishment of more and more specialised organic relations to specific outside influences. All these multitudinous relations are cosmical riches accruing to the one indivisible individual, complicating its organisation and contributing to the resources of its mental microcosm. Thus, at the sensory surface, the objective world makes its symbolical entry into the living substance. With specialised sensorial affections it builds up its objectified appearances, supplying the organic individual with all its wealth of knowledge. It is centripetally that our unitary being receives its discriminable and specialised affections, and on its system of organised surface-relations is dependent the development of its entire nature down to its innermost core. Through organic elaboration, starting at its points of contact with other existences, the living substance is gradually impregnated with meaning, with definite references to surrounding powers, and its consonant constitution reveals at the remotest suggestion a wide and varied expanse of such organised relations. These relations, now firmly and definitely pre-established, have been all centripetally wrought by slow degrees of specific elaboration, have with progressive subtlety and distinctiveness been welded into the unitary structure of the living substance by the persistent operation of specific outside influences.

I dwell thus emphatically and repeatedly on the structural elaboration of the living substance through peripheral influences, because once adequately recognised it renders certain the direction of the creative influx, and rescues us from the tyranny of sterile doctrines. Take, for instance, even Critical Idealism, whose aim it is to be a conciliatory form of Transcendentalism, keeping resolutely in view the import of the sense-derived material of thought. It is clear that under its assumption of a pure, intelligible Ego, irradiating all synthetical powers, progress of any kind—if at all attainable—can make its way into our world only through the same entry as the energy, on whose activity the entire value of experience is made to depend. We should then have to look for any accession to our mental capacities, not to the fructifying intercourse with the sensible world, but to the transcendent source that sustains the intelligible Ego, through whose energising influence our mind is supposed to derive all its phenomenal efficiency. If I am *a priori*

in possession of certain powers, which transfigure a meaningless medley of material into a full-fashioned universe; if it is I who impose shape and order upon nature, accomplishing this by dint of spontaneous faculties supernaturally derived; then it is certain I have to look for guidance in life only to inward inspiration.

This being undeniably so, can any serious thinker believe that it will make no difference in the fate of humanity, whether its leading minds are directed by the one or the other, by the centrifugal or the centripetal attitude towards the life-giving source? It is, therefore, above all incumbent on us to seek a firm basis for a sound theory of practice, for the systematic organisation of progress.

Exulting in the harmonised and unified wealth of our ideal world, we have nevertheless to recognise that it is an experiential and not a transcendental gift; not a gift accruing directly to mind as such, but accruing to it indirectly through organising influences.

It will very likely be pertinently remarked that the view here taken is itself transcendental and dogmatic in the highest degree. We have conceded that nothing but mental states are really given, and, notwithstanding, a whole universe of external powers is not only hypothetically conjectured, but its existence confidently postulated, and pressed into active service as the efficient source of the very mental states, from which it was a mere inference. This, certainly, seems to be not only a vicious circle, but one whose larger half is moreover formed by a pure fiction. It is well worth while earnestly to ponder over these specious objections, for they take us to the very heart of the question. I have sufficiently shown that what we really understand by a mental state is to be found only within the mental presence. The mental presence alone is actual mind. All the rest is merely potential mind. This is a fact so obvious that when once realised it can nevermore be overlooked. It necessarily involves transcendentalism and dogmatism in all philosophy. For the task is to explain the nature of the vast system of hidden potentialities, the partial and actual manifestation of which, at the time being, constitutes the mental presence. Where then are all the multifarious possessions of mind not just now consciously present? This is a supreme question, the answer to which cannot in any way be evaded. Let philosophers candidly ask themselves: Is it fairly answered by conceptually amplifying the mental presence so as to make it contain a full assortment of mere abstract signs for all mental potentialities? This, however, is exactly the account that is rendered by so many thinkers of the stupendous confluence of transcendent

powers that upholds our universe. Some, indeed, try to imagine a mental presence containing within its one conscious moment the actuality of all our mental potentialities. But this is to postulate an altogether inconceivable and incongruous entity. For our mental nature forms an enduring unit only by dint of its potential implications. Start going its potentialities, and in dense crowds the perishing manifold will hurry by; keep on with sufficient incitement, and in wild delirium the whole unitary system will dissolve into a dizzy maze of crumbling thoughts and flitting phantoms.

All the explanations of mental potentialities keeping exclusively within the sphere of mind, and resting on the desire to assimilate the hidden powers with that which appears to us most exalted, are clearly subjective fictions, having nothing outside to sustain them. The Philosophy of Organisation, on the contrary, wishing for the present to account for nothing more exalted than just our own mental potentialities, offers as explanation of them an infinitely more verifiable background of power. It does not fancifully construct an inconceivable state of existence endowing it *ad libitum*; but shows how that, which with minute distinctness is in all verity perceptually revealed to us, must, by dint of its disclosed properties, be itself the unitary being, incorporating all the wealth of potential mind. Truth has to be unswervingly followed, wherever it may lead. Surely its guidance alone can take our thought to the fountain head, whence our being mysteriously flows; to the depth of power, from which it primordially arose, and on which it now trustingly reposes, from moment to moment transcendently sustained. In this sense the Philosophy of Organisation is uncompromisingly transcendental. Kant called his system Transcendental Idealism, placing the powers and their efficient operations within the mental sphere. He gave in contradistinction the name of Transcendental Realism to that philosophical system which hypostatizes things-in-themselves as efficient causes of things in perception. The view of reality here explained may be likewise called Transcendental Realism; but with the understanding that under the causative things-in-themselves are to be reckoned nothing actually mental, but only all inferred powers, as far as they are capable of affecting the organic individual, together with all such inferred powers as constitute the organism itself.

The whole question here involved lies really in a nutshell. Kant, having chiefly the mental states as such in view, neglected the entire neural organisation lying between the skin and those parts of the central nerve-substance, which furnish to the mental presence the conceptual order. He offers to the outside powers impressible sensibility and also pure inactive

time and space, in which somehow the sense-material falls into perceptual order, so as to form appearances. Then he sets in motion his only sphere of activity, the conceptual powers, by which the passive raw-material of perception is conceptually assimilated. Instead of tracing the vital activity unifying and transforming sense-material along the entire neural organisation from periphery to centre, he reaches out from the most exalted region of the mental presence itself, and attempts at once to snatch up into it the crude products of sensory function.

We, on the contrary, do not lose sight of the organisation under the skin. Granting likewise¹ that we receive sensory impulses from outside, we endeavour *organically* to account for the marvellously varied and systematised synthesis of sense-material found accomplished within the mental presence.

The chief difficulties in the way of a common understanding are, it would seem, first the evident but mysterious subsistence somewhere of all mental potentiality as a unitary system, and secondly the unmistakeable but unexplained spontaneity, identity, and ideal self-sufficiency of the centrifugal current of personality.

The Philosophy of Organisation answers, as we have seen, the

¹ To silence those who wish to make it appear that Kant reached the sphere of things-in-themselves only within mind by means of mental synthesis, complementing all mental implication by the so-called Ideas of pure reason, I will quote two passages.

Eberhard had maintained: "We may choose as we please, we arrive at things-in-themselves." Kant replies: "This exactly is the constant burden of the *Critique*." "It says the things, as things-in-themselves, give the material to empirical intuitions (they contain the ground that determines the perceptual faculty according to its sensibility), but they are not themselves the material of the same." *Werke*, Vol. I., p. 436, Ed. Rosenk.

"Is it possible to believe that Leibnitz understood under pre-established harmony the coinciding of two beings totally independent of each other in their nature, and not to be brought into communion with each other through their own powers? That would be enunciating Idealism indeed; for why should one at all assume bodies, if it is possible to view everything that occurs in the soul as effect of its own powers, which it would exert just the same when perfectly isolated? Soul, and the entirely unknown substratum of appearances, which we call bodies, are quite different beings; but the appearances themselves as mere forms of intuition dependent on the nature of the subject's soul are only perceptions. And thus the communion between intellect and sense in the same subject, according to laws *a priori*, becomes intelligible, whilst at the same time the necessary natural dependence of these laws on external things has not to be sacrificed to Idealism." Vol. I., p. 480.

These unmistakeable sentences were written seven years after the *Prolegomena*, and nine years after the first edition of the *Critique*.

A centripetal determination is here most distinctly admitted, curtailing very essentially anything like efficient causation within the sphere of subjective ideality.

first of these problems in a general way by recognising as potential mind that which perceptually appears to us as the nervous system of an organism. It answers it more exhaustively by showing how the nervous structure can form a potential system, of which the mental presence is the actuality.

Not to feel shocked, as we are so apt to be, at the apparent tangibility and familiarity of that which we declare to be the seat and substratum of mind, we have to remember how very remotely and figuratively we, in truth, become aware of it. The entity that constitutes an observed personality merely incites in specific ways—mostly through the help of foreign media—the observer's sensibility, whereupon a pre-organised system of efficiencies produces a definite appearance within his mental presence. The observed personality when, for instance, visually perceived, contributes to this phenomenal revelation nothing but an inferred complex of awakening beats, indirectly conveyed to the observer's sensitive surface by the so-called cosmic ether. Thus the nervous system, as the seat of potential mind, is but a figuration framed in a foreign mind; framed there autonomously through the agency of a foreign organisation, incited by a foreign medium. It is into this far-off depth of hidden being that recedes the veritable complex of energies, which we so confidently call a nervous system. Nevertheless we trust, and securely trust the perceptual revelation as a symbolical representation most reliable to count upon. Surely what is here so distinctly disclosed to us will give us no deceptive hints regarding the true nature of potential mind.

With regard to the compounding of mental constituents, it has been the custom hitherto to explain it, organically, by assuming a mere synergistic chiming of relational elements. A definite set of such elements—nerve-fibres and nerve-cells—functionally incited were believed to produce, by a momentary combination of their so actuated energies, all complex mental states which we experience. In *MIND XVII*, I have at length shown how utterly impossible it is that a number of elementary beings should concentually, by the blending of their various internal commotions, produce any kind of joint or compound effect. Nervous structure can transmit a sensorial effect only through reproduction of the effect within its own substance. A functional beat at the end of a nerve-fibre has the same sensorial value as the initial beat, only because the functioning substance at both places happens to be identical. If a number of diversely functioning nerve-fibres are found to converge centrally towards a common focus, where they terminate as separate elements, then a compound effect of their elementary energies can only be realised through an inherent

efficiency of the central substance, which they conjointly incite. The compound effect is the response of a synthetic substance, which has become attuned to the complex stimulation; and this response follows solely by dint of the powers inherent in that substance. The central substance, in which all sensory elements terminate, and in which all so-called motor elements originate, is indeed a veritable synthetic substratum with cumulative stages of comprising and representative value. It constitutes sensorially the more and more unified and epitomised effect of all incoming relational elements. So much is this the case that even the higher seated sensory organs are already in themselves structures unifying and epitomising the effects of lower sensory organs. An example of this, strikingly obvious, is given in the relation of sight to touch. For sight may be interpreted as virtual touch; touch sublimated into a widely comprehensive and subtly suggestive system of intellectualised tactile representations.

Thus the entire organic elaboration of the individual culminates in the production of its mental presence, in which the whole complex of aroused affections is found condensed into one moment of conscious realisation. In this way, peripherally incited signs, for instance, have compelling power first to reinstate through stimulative irradiation their perceptual complement, and then to reinstate also though less coercively through central representation and re-representation all their many ideally suggested responses.

Of course it is only in merest outline that we can, at present, infer what actually happens during the process of sensorial concentration, which gives rise to the peripheral influx into the mental presence. The special central arrangements are too little known as yet. But it would seem as if the time were not far distant when we shall be able accurately to fill in this general outline. Meanwhile we can with great certainty conclude as much as is here indicated. For it is obvious that all neural arrangements go to form the microcosmic focus, which we have called the mental presence. All collocations and properties of the nervous tissue are therefore to be viewed as the potentiality of the ever-resuscitated moment of conscious realisation.

One still more recondite central problem remains to be examined. What constitutes the spontaneous, identical, self-sufficient current of personality?

We are irrefragably aware that our mental states are not all compelled by energies foreign to ourselves; that from the depths of our innermost being there goes out a fulness of power to meet the inrushing throng of impressions, and to dispose of them according to ways of our own; that it is ourselves who

possess the key to the order of the phenomenal universe, referring each casual occurrence to its proper place in the vast and unitary system of things found registered in the records of our memory, nay, found imperishably ingrained in the intricacies of the vital structure, where through endless toil it has become securely and livingly organised.

Indeed, compared with the accumulated result of experience, of which our entire frame with all its vitality constitutes the condensed expression, the sundry happenings of individual life are like random whiffs of wind sounding the chords of a mighty instrument, which with its own massive swell is ever reverberating the grand harmonised sense of ever-speeding nature.

This universal sense constitutes super-individual Truth through the common inheritance of generical acquisitions, and is rendered more and more available and definite through special synthetical representations within the central substance and thereby within the mental presence. It is this capitalised unity of import that we discriminatively and testingly oppose to the particular incitements of daily life, that we moreover constructively impose on the raw material of nature. It is this organised and organising fund of cumulative power that

"Sweeps through the dull, dense world, compelling there
All new successions to the forms they wear,
Torturing th' unwilling dross that checks its flight
To its own likeness, as each mass may bear;
And bursting in its beauty and its might
From trees and beasts and men into the Heavens' light."

In various ways I have laboured to show that the fundamental occurrence and culminating point of life is not its functional manifestation; that, for instance, contraction is not the fundamental occurrence and culminating point of muscular vitality, but rather a retrograde event.¹ It is by dint of intrinsic and spontaneous energies that muscular substance expands, gathering thereby through chemical cumulation the force which it afterwards expends in contraction. Here, where we can visibly follow the entire process, we gain an unmistakeable insight into the centrifugal or creative current. It is this same intrinsically propelled current, which on every occasion maintains the identity of the living substance, restituting it after functional disintegration, and repairing its integrity after deeper mutilations. It is this regenerative current also that effects the developmental growth of the organism that brings with it all the accumulated and unified wealth of our being, preserving it intact against the shattering influences of the outside world. It is this self-

¹ See a paper by the present writer in Pflüger's *Archiv* XXV., "Zur Lehre von der Muskelcontraction."

evolving current of life, which is persistingly upholding our being. In its unflagging perseverance our personality, with all its spontaneous activities, safely abides.

It must be remembered that nerve-substance is really only a very much higher elaboration of contractile substance. Its response to impinging forces has become an adequately attuned resistance. This is no longer the manifest yielding, with which contractile substance answers to stimulation. But, essentially, the process remains nevertheless the same. The foreign influences shatter the living substance, causing a more or less profound chemical rupture. A small, split-off fragment goes to form the excretions of the body. The main remaining portion of the living structure contracts if it is muscular substance. Here the contraction is the salient, and, as far as we know, the only organically efficient function. This contraction is seen by an observer as a more or less extensive mass-motion of the functioning substance. But besides this mass-motion, and corresponding to what is perceived as molecular commotion, the muscle may possibly experience in itself some dim feeling of its activity, may propagate towards the central substance elements of consciousness. At all events, it is that which is perceptually realised by an observer as mere molecular commotion that constitutes in nerve-substance the only organically efficient function. According to many positive indications this perceivable molecular or chemical stir of nerve-substance is accompanied by a peculiar inward experience, realised by the functioning substance itself. This experience we call feeling.

A feeling is an exclusively subjective incident, qualitatively incommensurable with anything inferred in the outside powers, which we assume as its excitants, or as its substratum. It is wholly the product of organic elaboration and activity, whatever this may be in itself. The world figured in feeling is therefore an organic creation. The initial sensorial responses, as well as their synthetical values realised in the central substance, are altogether incalculable revelations, manifesting a unitary life-world marvellously self-efficient with regard to the enviroing powers, but wholly dependent on organic structure.

In order then to form some idea in what manner the mental presence is the product of nerve-structure, we have, above all, to realise that mind is its natural and vital affection, that it is the functional actuality of its potential energies. The activity of what we perceive as nerve-centres forms the mental presence. We perceive the mind-emitting substratum and its activity as nerve-substance in molecular commotion, because it possesses also the power of thus specifically stimulating an observer, who however remains thereby totally unparticipant of the

mental presence displayed simultaneously within the observed subject.

Having now as observers allowed both the organic individual and its affecting surroundings to record their mutual relations¹ on our impartial sensibility, we are in a position to judge which part is played by each of them in the production of the final effect, the mental presence. But it was solely by interpretation of this final effect, *i.e.*, the *observer's* own mental presence, that the characteristics of all powers and their activities, *i.e.*, of all causes and their effectuations, had to be construed. We can, therefore, readily conceive what an excessively involved problem Causation really is. Indeed we need only study the very diverse opinions held by the foremost thinkers of all historical times to become aware what a Gordian knot Causation has ever proved to philosophy.

Influences external to the organism act only as stimuli upon the same, bringing into play through peripheral excitement a pre-arranged system of deep-seated relations. This awakening process furnishes to the organic individual the centripetal contents of his mental presence, from which are inferred all external existences and activities.

The symbolical figurations of this system of organically signalled occurrences may, however, prove deceptive as regards their extrinsic bearings, chiefly because all sensorial affections may also be more or less vividly awakened through stimulation taking place inside the organism. We are beset not only by a world of externally compelled suggestions, but also by a world of suggestions of exactly the same import internally originating.

In both cases the stimulated affections are more or less assimilated or neglected by the centrifugal activities, *i.e.*, by the spontaneous current which embodies the integrating power and steadfast core of our being.

EDMUND MONTGOMERY.

(*To be continued.*)

¹ Not to complicate the present difficult discussion more than necessary, I have here purposely left out of sight the effects produced by the living individual on its surroundings. Of these it will be time to treat, when on some future occasion I shall have to consider "Final Causation" from an organic standpoint.