Goethe's Conception of the World

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by

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Foreword to the New Edition

The outline of Goethe's world-conception attempted in this book, was a task which I undertook in the year 1897, with the object of giving a comprehensive presentation of what a prolonged study of Goethe's mental life had given me. The Foreword to the First Edition describes what I then conceived to be my aim. If I were to re-write this Foreword to-day I should in no way change its content, but only its style. As, however, I see no reason to make any essential alterations in the book, it would not seem right to speak in a different way about the feelings with which I published it twenty years ago. Neither my further studies of Goethean Literature since the publication, nor the results of recent scientific research have modified the thoughts expressed in the book. I do not think that I lack understanding of the great progress made by scientific research in the last twenty years; neither do I think that this progress affords any ground for speaking of Goethe's world-conception at the present time in a sense other than I did in 1897. What I said at that time about the relation of Goethe's world-conception to the then current ideas of Nature, appears to me also to hold good in reference to the Natural Science of our day. The form of my book would in no way differ if I had written it now. The only thing which distinguishes the new edition from the old is the fact that I have elaborated several passages and made certain additions which seemed to me important.

In the Afterword to this new edition I have referred to the fact that what I have for sixteen years been publishing about Spiritual Science has not in any way induced me to make any essential alterations in the contents of this book.

Rudoli Stelliel		
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Foreword to the First Edition

The thoughts expressed in this book are intended to set forth the fundamental principles which I have observed in Goethe's conception of the world. In the course of many years I have studied again and again what is presented by this world-conception. It especially fascinated me to contemplate the revelations which Nature had made in regard to her laws and her being to Goethe's delicate organs of sense and of spirit. I learnt to understand why it was that Goethe treasured these revelations so highly that he sometimes accounted them of more value than his poetic genius. I entered into the feelings that flowed through Goethe's soul when he said that "nothing induces us to think about ourselves so intensely as when we see after long intervals, highly significant objects or striking scenes in Nature and compare the impression remaining with the present effect. Then we shall notice, on the whole, that the object stands out in greater relief; that if we previously experienced joy and sorrow, serenity and distraction in contemplating the objects, we now, with controlled egoism, recognise their claim that their characteristics and qualities, in so far as we penetrate them, shall be understood and prized in a higher degree. The artistic eye affords the former way of perceiving; the latter befits the investigator of Nature, and although at the beginning it was not without a certain pain, I could not but ultimately account it a happy circumstance that, whereas the one sense threatened gradually to abandon me, the other developed in eye and mind with all the greater power."

We must acquaint ourselves with the impressions made upon Goethe by the phenomena of Nature if we would understand the full import of his poems. The secrets he learned by listening to the being and becoming of Creation live in the Poet's artistic productions and become intelligible only to those who pay attention to what he says in reference to Nature. Those who know nothing about Goethe's observations of Nature cannot fathom the depths of his art.

These were the feelings that prompted me to concern myself with Goethe's Nature studies. First of all they afforded opportunity for the maturing of the ideas which more than ten years previously I had expressed in the volumes of Kürschner's *Deutsche Nationalliteratur*. What I then began, in the first, I have elaborated in the three following volumes of Goethe's *Natural Scientific Writings*, the last of which has just been

published. I was prompted by the same feelings when, several years ago, I undertook the pleasant task of supervising the publication of some of Goethe's Natural Scientific writings for the great Weimar edition. The thoughts I brought to this work and those which I worked out while engaged on it form the content of this present book. I am able to say in the fullest sense of the word that this content has been a matter of experience with me. I have tried to approach Goethe's ideas from many starting-points. I have called forth all the opposition to his worldconception that was slumbering within me in order to preserve my own individuality in the presence of the power of his unique personality. And the more my own self-achieved world-conception developed, the more was I convinced that I understood Goethe. I tried to find a light which should also illumine certain spaces in Goethe's soul that were obscure even to himself. I wanted to find between the lines of his writings, elements which would make him fully intelligible to me. I tried to discover forces that dominated his spirit, of which he, however, was not himself conscious. I wanted to penetrate into the essential qualities and tendencies of his soul.

When it is a question of a psychological study of a personality, our age likes to leave ideas in a mystical semi-obscurity. Clarity and definite thought in such matters is nowadays regarded as prosaic intellectualism. It is considered more 'profound' to speak of the one-sided mystical depths of soul life, of daemonic forces within the personality. I must confess that, to me, this enthusiasm for mistaken mystical psychology is superficial. It exists in men whom the content of the world of ideas leaves unmoved. They are incapable of fathoming the depths of this content and do not sense the warmth that streams from it. They therefore seek this warmth in vagueness. A man who is able to enter the luminous spheres of the world of pure thought experiences therein something that is nowhere else to be found. Personalities like that of Goethe can only be understood when one is able to lay hold of the ideas which dominate them in all their clarity. Those who love a pseudo-mysticism in psychology may perhaps find my mode of thinking cold. Is it to my discredit that I cannot identify real profundity with obscurity and indefiniteness? I have tried to present the ideas which dominated Goethe as living forces in all the purity and clarity in which they appeared to me. It is possible that the lines and colouring which I have adopted may seem to many to be too simple. I am, however, of opinion that we best characterise greatness when we attempt to portray it in all its monumental simplicity. Flourishes and ornamentations only confuse perception. The essential thing to me, so far as Goethe is concerned, is not the mass of secondary thoughts induced in him by some

relatively unimportant experience, but the fundamental trend and direction of his mind. Even if here and there this mind may strike bye-paths, one main direction is always present, and it is this that I have tried to follow. If there are people who think that the regions which I have traversed are icy cold, I can only say to them that they have surely left their *hearts* behind them.

If I am reproached with describing only those aspects of Goethe's view of the world to which my own thinking and feeling lead me, I can make no other reply than that I only wish to regard another personality as it appears to me in accordance with my own being. I do not place great value on the objectivity of exponents who are willing to efface themselves when they are describing the ideas of others. I believe that they can only give us lifeless, colourless pictures. A conflict always lies at the basis of every true presentation of another's world-conception; and one who is wholly conquered will not be the best exponent. The other power must compel respect but one's own weapons must perform their task. I have therefore stated unreservedly that in my view there are limitations to the Goethean mode of thought; there are regions of knowledge which have remained closed to it. I have indicated the direction which observation of world phenomena must take if it would penetrate to those regions which Goethe did not enter, or around which he wandered with uncertain feet when he ventured into them. Interesting as it is to follow the paths of a great mind, I only want to follow anyone so far as he furthers me. What is of value is life, self-activity, not contemplation or knowledge. The historian pure and simple is weak and powerless. Historical cognition saps the energy and elasticity of individual activity. A man who wants to understand everything will in himself be of little account. Goethe has said that only what is *fruitful* is true. To the extent to which Goethe is fruitful for our age — to that extent ought we to penetrate his world of thought and perception. And I think that the following exposition will show that innumerable, as yet undiscovered treasures lie hidden in his world of thought and feeling. I have indicated where modern science has remained behind Goethe. I have spoken of the poverty of the modern world of ideas and have held up in contrast to it the wealth and abundance of that of Goethe. In Goethe's thought there are germs which modern natural science ought to bring to maturity. His mode of thought might well be a model for modern natural science which has at its disposal a greater abundance of material for observation than he had. It has, however, permeated this material with meagre, inadequate concepts only. I hope

that my exposition will show how little the modern scientific mode of thought is qualified to criticise Goethe and how much it could learn from him.

Rudolf Steiner	

Introduction

If we want to understand Goethe's world-conception we must not rest content with simply listening to what he himself says about it in isolated phrases. It was not in his nature to express the core of his being in crystalline, sharply-cut aphorisms, which seemed to him to distort rather than present a true picture of reality. He had a certain fear of arresting the living, the reality, in a transparent thought. His inner life, his relationship to the outer world and his observations of things and events were too rich, too full of subtle, intimate elements for him to reduce them to simple formulae. He expresses himself when some experience or other impels him, but he always says either too much or too little. His living participation in everything that approaches him often forces him to use sharper expressions than his nature as a whole demands. This led him just as often to express himself indefinitely where his being felt the need of a definite opinion. He is always uneasy when it comes to the point of making a decision between two views. He does not like to depart from impartiality by giving a clearly defined direction to his thoughts. He contents himself with this thought: "Man is not born to solve the problems of the universe, but to try to discover where the problems begin, and then to remain within the boundary of the comprehensible." A problem that a man thinks he has solved deprives him of the possibility of clear vision of a thousand phenomena that fall within the domain of this problem. He pays no more heed to them because he thinks that he understands the sphere where they occur. Goethe would rather have two contrary opinions about a thing than one definite opinion. Every single phenomenon seems to him to include an infinity which man must approach from different angles if he is to perceive something of its full content. "It is said that the truth lies midway between two contrary opinions. By no means! The problem invisible, the eternal active life conceived of in repose lies between them." Goethe's aim is to preserve a living quality in his thoughts, so that when compelled by reality he can at any moment transform them. He does not want to "be right;" he wants always to "set about" the right and nothing more. At two different times he expresses himself differently about the same thing. He is suspicious of a rigid theory that defines, once and for all, the law underlying a series of phenomena, because such a theory deprives the cognitive faculty of an unbiased relationship to mobile reality.

When, however, it is a question of perceiving the unity running through his conceptions, we must pay less attention to his words than to his conduct of life. We must consider the relationship existing between him and the objects while he is investigating their nature and being, and then we must add what he himself does not say. We must penetrate to the innermost being of his personality — which is, for the most part, hidden behind his utterances. What he says may often be contradictory; his life, however, is always in conformity with a self-contained whole. He may not have set down his world-conception in a definite system but he has expressed it in a personality complete in itself. When we study his life all contradictions in his words are resolved. They are only present in his thoughts about the world in the same sense in which they are present in the world itself. He has said many things about Nature but he has never laid down his conception of Nature in a permanent thought-structure. Nevertheless, when we survey his individual thoughts in this region, they coalesce of themselves into one whole. We can form a conception of the thought-structure that would have arisen if he had presented his ideas in absolute coherence. In this book I have set myself the task of describing how the innermost being of Goethe's personality must have been constituted in order to be able to express such thoughts about natural phenomena as are found in his scientific works. I know that it is possible to quote sentences of Goethe that contradict many things that I have to say. In this book, however, the salient point, so far as I am concerned, is not to give any history of the development of his utterances but to depict the basic elements in his personality which led to his deep insight into the creative activity and the work of Nature. These basic elements cannot be understood from the numerous passages in which he takes other modes of thought to his aid in order to make himself intelligible, or in which he uses the formula; of this or that philosopher. Out of what he said to Eckermann one would be able to portray a Goethe who could never have written the Metamorphosis of the Plants. To Zelter he said many things that might lead us erroneously to assume the existence of a scientific conviction at variance with his great thoughts in reference to animal life. I admit the existence of forces in Goethe's personality of which I have not taken account, but these recede into the background of those that are really determinative and give his world-conception its special stamp. I have set myself the task of describing these determinative forces as vividly as lies in my power. Therefore in reading this book it must be remembered that it has never been my intention to allow any element of my own view of the world to colour the presentation of the Goethean mode of conception. I think that in a book of this kind one has no right to present the content of

one's personal world-conception, but that one's duty is to apply what has been gained from this to the understanding of the particular world-conception under consideration. For example, it has been my aim to describe Goethe's relationship to the Western evolution of thought as this relationship appears from the point of view of his own world-conception. This is the only method which seems to me to guarantee historic objectivity to one's own view of the world-conception of a particular personality. A different method must be employed only when such a world-conception is considered in connection with others.

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1 Goethe and Schiller

Goethe narrates a conversation that once ensued between Schiller and himself after they had both attended a meeting of the Society for Nature Research in Jena. Schiller was dissatisfied with the results of the meeting. He had found there a most disintegrating method for the study of Nature and he remarked that such a method could never appeal to a layman. Goethe replied that "possibly this method was cumbersome for the initiated also and that there might well exist yet another way of portraying Nature active and living, struggling from the whole into the parts, and not severed and isolated." And then Goethe evolved the great ideas which had arisen within him concerning the nature of plants. He drew "with many characteristic strokes, a symbolic plant" before Schiller's eyes. This symbolic plant was intended to give expression to the essential being lying in every single plant, whatever particular form it assumes. It was intended to demonstrate the successive development of the single portions of the plant, their emergence from each other and their mutual relationship. In Palermo, 17th April, 1787, Goethe wrote these words in reference to this symbolic plant form: "There must be such a thing; if not, how could I recognise this or that structure to be a plant if all were not moulded after one pattern?" Goethe had evolved in himself the conception of a plastic, ideal form that was revealed to his spirit when he surveyed the diversity of the plant forms and observed the element common to them all. Schiller contemplated this form that was said to live, not in the single plant but in all plants, and said, dubiously: "That is not an experience, that is an idea." To Goethe these words seemed to proceed from an alien world. He was conscious of the fact that he had arrived at his symbolic form by the same mode of naive perception by which he arrived at the conception of anything visible to the eye and tangible to the hand. To him the symbolic or archetypal plant was an objective being just as the single plant. He believed that this archetypal plant was the result, not of arbitrary speculation, but of unbiased observation. He could only rejoin: "It may be very pleasing to me if without knowing it, I have ideas and can actually perceive them with my eyes." And he was very unhappy when Schiller added: "How can there ever be an experience that is commensurate with an idea? For the inherent characteristic of the latter is that an experience can never be equivalent to it."

Two opposing world-conceptions were confronting each other in this conversation. Goethe sees in the idea of an object an element that is immediately present, working and creating within it. In his view, any given object assumes definite forms for the reason that the idea has to express itself within this object in a particular way. For Goethe it has no meaning to say that an object is not in conformity with the idea, for the object can only exist as the idea has made it. Schiller thinks otherwise. To him the world of ideas and the world of experience are two separate regions. To experience belong the diverse objects and occurrences filling Space and Time. The realm of ideas stands over against this as a different kind of reality that is laid hold of by the reason. Schiller distinguishes two sources of knowledge, because man's knowledge flows to him from two directions — from without through observation, and from within through thought. For Goethe there is one source of knowledge only, the world of experience, and this includes the world of ideas. Goethe finds it impossible to speak of experience and idea, because for him the idea is there before the eye of the spirit as the result of spiritual experience, in the same way as the sense-world lies before the physical eyes.

Schiller's conception has grown out of the philosophy of his time. We must go back to Greek Antiquity to discover the basic conceptions which are the hall-mark of this philosophy and which have become the motive forces of the whole of Western spiritual culture. We can form a picture of the particular nature of the Goethean world-conception if we endeavour to build up this picture entirely from elements inherent in the worldconception itself, with the help of ideas gleaned from it. Such an attempt will be made in the later chapters of this book. A delineation of this kind can, however, be assisted by a preliminary consideration of the fact that Goethe expressed himself in this or that way about certain matters because he agreed or disagreed, as the case might be, with what others thought about some particular region of natural and spiritual life. Many an utterance of Goethe becomes intelligible only when we study the modes of conception which confronted him and which he analysed in order to arrive at his own personal point of view. How he thought and felt about one thing or another throws light on the nature of his own world-conception. When it is a question of considering this sphere of Goethe's being a great deal of what with him remained unconscious feeling only must be given expression. In the conversation with Schiller referred to above there stood before Goethe's spiritual eye a world-conception contrary to his own. And this element of opposition shows how he felt in regard to the mode of conception proceeding from one aspect of Greek culture, which perceives a

gulf between material and spiritual experience; it shows how, to him, sense experience and spiritual experience were united without any such gulf, in a world-picture communicated to him by reality. If we want to experience in conscious living thoughts what was in Goethe a more or less unconscious perception of the constitution of Western world-conceptions we must consider the following. At a certain crucial moment a mistrust in man's organs of sense took possession of a Greek thinker. He began to think that these organs of sense do not impart the Truth to man but that they deceive him. He lost faith in the results of naive, direct observation. He discovered that thought about the true being of phenomena has not the same thing to say as experience. It is difficult to indicate the particular mind where this mistrust first gained a hold. We meet with it in the Eleatic School of philosophy, of which Xenophanes, born at Kolophon, 570 B.C., is the first representative. The personality of greatest significance in this School appears in Parmenides. Parmenides has asserted more emphatically than any of his predecessors that there are two sources of human knowledge. He has declared that sense impressions are illusory and deceptive and that man can only attain to knowledge of the True through pure thinking that takes no account of experience. As a result of this conception of thought and sense experience that arose with Parmenides many later philosophies came to be inoculated with an evolutionary disease, from which scientific culture still suffers to-day. To discuss what origin this mode of conception has in oriental thought does not fall within the scope of the Goethean world-conception.

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Plato expresses this distrust in experience with his own admirable courage. "The things of this world which our senses perceive have no real existence: they are always becoming, they never are. Theirs is only a relative existence; taken together, they exist only in and by virtue of their relation to each other; hence we can with equal truth say of their whole existence that it is Non-Existence. Hence they are not objects of a real knowledge. There can only be real knowledge of something that exists in and for itself, and ever the same way, whereas these sense-phenomena are only the objects of conjecture evoked by sensation. So long as we are restricted to the perception of these things we are like men in a dark cave, bound so rigidly that they cannot even turn the head, seeing nothing except when the light of a fire burning behind them throws on the wall in front the shadows of real objects which pass between them and the fire; each man sees only the shadows of the other, only the shadow of himself on that wall. But the wisdom of such men would consist in predicting the sequence of those shadows as taught them by experience."

Platonism tears the perception (Vorstellung) of the universe into two parts: the perception of the world of appearance and that of the world of ideas, and true, eternal reality is supposed to correspond only to the latter. "That which alone may be said to have true existence, because it always is, neither becoming nor passing away, is the ideal Archetype of each shadow picture, the eternal idea, the archetypal form of each object. These eternal ideas undergo no multiplicity, for each in its true nature is *one* and one alone; it is the archetype whose reflections or shadows picture are all homonymous, single, transitory things of the same nature. These eternal ideas do not arise, neither do they pass away; they truly *are*, they do not become nor pass away like their transitory reflections. Hence of them alone can there be a real knowledge, for the object of a real knowledge can only be that which *is* eternally and in every respect, not that which is and again is not, according to how it is perceived."

It is only justifiable to make a distinction between ideas and perception when we are speaking of the way in which human cognition arises. Man must allow the objects to speak to him in a twofold sense. They communicate one part of their being to him voluntarily, and he need only

pay attention. This is the part of reality that is free of ideas. The other part, however, he must himself extract from the objects. He must set thought in action and then his inner being is flooded with the ideas of the objects. The stage whereon objects reveal their inner, ideal content, is within the personality. They there make manifest that which is forever concealed from external perception. The true being of Nature here becomes articulate. It is due to the constitution of the human organisation that objects can only be cognised through the consonance of two tones. In Nature we have one exitant producing both tones. The open-minded man listens for the consonance. In the ideal speech of his inmost being he recognises the utterances which the objects make to him. Only those who are no longer open-minded interpret the matter otherwise. They believe that the speech of their inmost being proceeds from a sphere other than that of the speech of external perception. Plato realised how important it is for man's worldconception that the universe is revealed to him from two sides. His understanding appreciation of this fact made him recognise that reality may not be ascribed to the sense-world per se. Only when the world of ideas lights up from out of the life of soul and in his contemplation of the world man is able to set before his spirit, idea and sense perception as a uniform, cognitional experience, has he true reality before him. That which confronts sense-perception without being irradiated by the light of the world of ideas, is a world of appearance. In this sense Plato's insight also sheds light on Parmenides' view concerning the illusory nature of sense objects. It may well be said that Plato's philosophy is one of the most sublime thought-structures that have ever emanated from the mind of man. Platonism represents the conviction that the goal of all striving after knowledge must be the assimilation of the ideas that support the world and constitute its foundations. A man who cannot awaken this conviction in himself has no understanding of the Platonic view of the world. So far as Platonism has entered into the evolution of Western thought, however, it reveals yet another aspect. Plato did not only stress the knowledge that so far as human perception is concerned the sense world becomes mere appearance when the light of the world of ideas is not shed upon it, but his presentation of this fact has furthered the notion that the sense world in itself, apart altogether from man, is a world of appearance, and that true reality is to be found only in the ideas. Out of this notion the question arises: How do ideas and the world of sense (Nature) outside man coincide? Those who cannot admit the existence of a sense world, free of ideas, outside man, must seek for and solve the problem of the relationship of idea and sense world within the being of man. And this is how the matter stands before the Goethean world-conception. The question, "What

is the relationship outside man between idea and sense world?" is, so far as this world-conception is concerned, unsound, because for it there exists outside man no sense world (Nature) apart from idea. Man alone can for himself separate ideas from the world of sense and so conceive Nature void of ideas. It may therefore be said that in the Goethean worldconception the question which has occupied the evolution of Western thought for centuries as to how idea and sense-object come together, is utterly superfluous. And the outcome of this current of Platonism in the evolution of Western thought which Goethe encountered in the abovementioned conversations with Schiller, for example, and also elsewhere, seemed to him an unhealthy element in human thought. The view that he did not definitely put into words but which lived in his perception and was a formative impulse in his own world-conception was this: healthy human feeling teaches us at every moment how the languages of perception and of thought unite in order to reveal the full reality, and this has been ignored by the speculative thinkers. Instead of paying attention to the way in which Nature speaks to man, they have built up artificial concepts of the relationship of the world of ideas and experience. In order to realise fully what deep significance this trend of thought, considered by Goethe to be unsound, had in the world-conception which confronted him and from which he would have liked to take his bearings, we must bear in mind how this current of Platonism which dissipates the sense world into appearance and so brings the world of ideas into a distorted relationship to it, has been strengthened as the result of a one-sided philosophical interpretation of Christian truth in the course of the evolution of Western thought. It was because of the fact that Goethe encountered Christian conceptions bound up with this, to him, unhealthy current of Platonism, that he could only with difficulty build up his relationship to Christianity. Goethe has not followed up in detail the further influence of this current of Platonism (which he discarded) in the evolution of Christian thought, but he perceived its influence in the modes of thought which he encountered. As a result of this, light is thrown on the development of Goethe's mode of conception by observation that is able to trace the growth of this influence in the directions taken by thought through the centuries prior to Goethe. The evolution of Christian thought as shown in many of its exponents, endeavoured to come to terms with the belief in the world Beyond and with the value that sense existence has in relation to the spiritual world. Those who adhered to the conception that the relation of the sense world to the world of ideas has a significance apart altogether from man, arrived, together with the problems arising out of this, at the conception of a Divine World Order. And Church Fathers, faced with this problem, had to cogitate

on the role played by the Platonic world of ideas within this Divine World Order. Here there arose the danger of conceiving idea and sense world (which are united in human cognition through direct perception) not only as being separated off from man in themselves, but separated from each other, so that the ideas, apart from what is given to man in Nature, lead an independent existence of their own in a spirituality separated from Nature. When this conception, which is based on a false view of the world of ideas and the sense world, was added to the justifiable opinion that the Divine can never live in full consciousness in the human soul, the result was a complete severance of the world of ideas and Nature from each other. That which ought always to be sought within the spirit of man is then sought outside it in creation. The Archetypes of all objects are thought to be contained within the Divine Spirit. The world becomes the imperfect reflection of the perfect world of ideas resting in God. As a result, then, of a one-sided understanding of Platonism, the human soul is separated from the relationship existing between idea and "reality." The soul extends its rightly conceived relationship to the Divine World Order to the relationship existing within itself between the world of ideas and the world of sense appearance. This mode of conception leads Augustine to the following view: "We can believe without hesitation that although the thinking soul is not of like nature to God, since He permits of no communion, the soul may indeed be illuminated as the result of participation in the Divine Nature." And so when this particular mode of conception is carried to extremes, it is no longer possible for the human soul in its contemplation of Nature to experience the world of ideas as the essence of reality. Such experience is designated unchristian. The one-sided conception of Platonism is extended to Christianity itself. Platonism, as a philosophical view of the world remains more within the element of thought; religious experience plunges thought into the life of feeling and establishes it thus in man's nature. Grappled in this way to the soul life of man, the unsound element of a onesided Platonism was able to assume a deeper significance in the Western evolution of thought than would have been the case if it had remained pure philosophy. For centuries this thought-evolution confronted questions such as: What relation is there between that which man builds up as idea and objects of reality? Are the living concepts existing in the human soul through the world of ideas only notions, names, that have nothing to do with reality? Have these concepts within them something real that enters into man when he becomes aware of reality and comprehends it through his intelligence? So far as the Goethean world-conception is concerned such questions are not reasonable in reference to anything that lies outside the scope of man's being. In man's perception of reality these problems

are resolved through true human cognition in eternal, living essence. And the Goethean world-conception has not only to come to the conclusion that an element of a one-sided Platonism lives in Christian thought but it has a feeling of estrangement even from true Christianity itself when this appears before it saturated with such Platonism. In many of the thoughts that Goethe developed, in order to make the world intelligible to himself, there lived this element of aversion from the current of Platonism that he felt to be unsound. That he had, also, an open mind for the way in which Platonism raises the soul of man to the world of ideas is proved by many an utterance of his in this connection. He felt in himself the activity of the real world of ideas while observing and investigating Nature in his own way; he felt that Nature herself speaks in the language of ideas when the soul opens itself to such language. But he could not admit that the world of ideas may be considered as something separate and apart, and that it is possible, as a result of this, to say of an idea of the plant-being, that this is not an experience but an idea. For Goethe felt that his spiritual eye perceived the idea as reality, just as the eye of sense sees the physical part of the plant-being. In this sense the orientation of Platonism towards the world of ideas entered into the Goethean world-conception in its purity and the current of Platonism that leads away from reality was there overcome. As the result of this configuration of his world-conception Goethe had also to reject so-called "Christian" conceptions which had assumed a form that could only appear to him as transformed and one-sided Platonism. And he was, moreover, bound to feel that many of the world-conceptions confronting him and with which he would have liked to come to terms, had not been able in Western culture to overcome this Christian-Platonic view of reality that is not in conformity with Nature and Ideal.

Consequences of the Platonic View of the World

In vain did Aristotle resist the Platonic division of the conception of the world. Aristotle saw Nature as a uniform entity containing the ideas as well as sense-perceptible objects and phenomena. Only in the human spirit can the ideas have an independent existence, but in this state of independence they have no reality. Only the soul can separate the idea from the perceptible objects in conjunction with which they constitute reality. If Western Philosophy had adhered to a true understanding of Aristotle's conception, it would have been preserved from a great deal that necessarily appears erroneous to the Goethean view of the world.

But this true understanding of Aristotelianism was at first an inconvenience to many of those who sought to acquire a thought-basis for Christian conceptions. Many of those who considered themselves "Christian" thinkers in the true sense did not know what to make of a conception of Nature that removed the highest active principle into the realm of experience. Many Christian Philosophers and Theologians therefore interpreted Aristotle in a new sense. They attributed to his views a meaning which in their opinion was able to serve as logical support of Christian dogma. — The mind is not intended to seek in the objects for the creative ideas. Truth is communicated to men by God in the form of revelation. Reason is only there to verify what God has revealed. Aristotelian principles were interpreted by the mediaeval Christian thinkers in such a way that the religious doctrine of salvation received its philosophical corroboration from these principles. It is the conception of Thomas Aguinas, the most important of Christian thinkers, that first tries to weave Aristotelian thoughts into the Christian evolution of thought to the extent to which this was possible in his day. According to the conception of Thomas Aguinas, revelation contains the highest truths, the scriptural doctrine of salvation; but it is possible for reason to penetrate into objects in the Aristotelian sense and to extract their ideal content. Revelation descends so far, and reason can rise so high that at a certain point the doctrine of salvation and human knowledge can flow over into each other. Aristotle's mode of penetration into objects becomes, then, the means whereby Thomas Aguinas attains to the sphere of revelation.

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With Bacon and Descartes began an era where the will to seek for truth through the inherent power of the human personality asserted itself. Habits of thought had taken such direction that all endeavour ended in setting up views which, in spite of their apparent independence of the preceding Western world-conception, were in fact, only new forms of it. Bacon and Descartes had also acquired a distorted conception of the relation of experience and idea as heritage from a thought-world into which degeneration had entered. Bacon had perception and understanding only for the particulars of Nature. He believed that he arrived at general laws for natural events by gathering together equivalent or rather similar elements from the varied domain of space and time. Goethe speaks of Bacon in these apt words: "For even although he indicates that one should only gather the particulars together for the sake of being able to select from them, to coordinate them, and eventually to arrive at universalities, yet, with him, the particular cases retain undue prominence, and before one is able to arrive at simplification and finality through induction — even such induction as he recommends — life is spent and one's forces are worn out." For Bacon these general rules are the means whereby reason is able to survey the region of the particulars. But he does not believe that these rules are rooted in the ideal content of the objects and are actual, creative forces of Nature. Therefore he does not directly seek for the idea in the particular, but abstracts it from a multiplicity of particulars. Those who do not believe that the idea lives within the single object will not be disposed to seek for it there. They accept the object as it is offered to external perception pure and simple. Bacon's significance lies in the fact that he pointed to the external mode of perception that has been undervalued by the one-sided form of Platonism already referred to. He emphasised the fact that in this external mode of conception there lies a source of truth. He was not, however, in a position to establish the rights of the world of ideas in relation to the world of perception. He pronounced the ideal to be a subjective element in the human mind. His mode of thinking is an inversion of Platonism. Plato sees reality only in the world of ideas, Bacon only in the world of perception that is free of ideas. In the Baconian conception we have the starting-point of that tendency of thought which still dominates investigators of Nature to-day. This tendency of thought suffers from a false view of the ideal element of the world of experience. It could not come to terms with the view of the Middle Ages that had arisen as the result of a question wrongly put and which led to ideas being regarded as mere names and not realities inherent in things.

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Three decades after Bacon we have the views of Descartes, proceeding, it is true, from a different standpoint, but no less influenced by one-sided Platonic modes of thought. Descartes also suffers from the hereditary sin of Western thought, from mistrust in an impartial observation of Nature. Doubt as to the existence of objects, doubt as to whether objects are capable of being cognised is the starting-point of his research. He does not concentrate his gaze on the objects in order to gain access to certainty, but he seeks a tiny door, a bye-way in the truest sense of the word. He withdraws into the most intimate region of thought. "All that I have hitherto believed to be truth may be false," he says to himself. "My thoughts may be based on illusion. But the one fact remains that I think about the objects. Even if my thought amounts to falsehood and deception, I think, nevertheless. If I think, I also exist. I think, therefore I am." Descartes believes that he has here obtained a permanent point of departure for all further reflection. He puts another question to himself: Is there not in the content of my thinking still something else that points to true existence? And then he finds the idea of God, as the idea of an All-Perfect Being. As man himself is imperfect how comes it that the idea of an All-Perfect Being is able to enter his world of thought? It is impossible for an imperfect being to produce an idea of this kind out of itself. For the greatest perfection which it is capable of conceiving is still imperfect. This idea must therefore have been put into man by the All-perfect Being himself. God must therefore exist. But how can a perfect Being deceive us by an illusion? The external world which presents itself to us as real must therefore be, in fact, a reality. Otherwise it would be a delusive image imposed on us by the Godhead. In this way Descartes tries to acquire the trust in reality which, as the result of inherited conceptions (Empfindungen), he did not at first possess. He seeks for truth by the most artificial means. He proceeds merely from thought. To thought alone he concedes the power to produce conviction. Conviction in regard to observation can only be acquired when it is imparted by thought. The consequences of this view were that it became the endeavour of Descartes' successors to establish the whole compass of truths which thought is able to evolve out of itself and prove. Their aim was to find the sum-total of all knowledge out of pure reason. They wanted to proceed from the simplest, immediately evident perceptions and to traverse progressively the whole orbit of pure thought. This system was supposed to be built up according to the model of Euclidean Geometry. For it was held that this too proceeds from simple, true premises and evolves its whole content merely by a chain of deduction, without recourse to observation. Spinoza endeavoured to give such a system of reasoned truths in his "Ethics." He takes a number of

conceptions: Substance, Attribute, Mode, Thought, Extension and so forth, and examines their connections and content purely with the reason. The essence of reality is considered to express itself in the thought structure. Spinoza considers that the only knowledge corresponding to the real essence of the universe and yielding adequate ideas is that which exists as a result of this activity that is alien to reality. Ideas derived from senseperception are to him inadequate, confused, mutilated. It is easy to see the after-effects of the one-sided Platonic view, of the antithesis between perceptions and ideas in these conceptions also. Only those thoughts that are evolved independently of observation have any value for knowledge. Spinoza goes still further. He extends the antithesis to the moral sense and the actions of human beings. Feelings of unhappiness can only spring from ideas derived from sense perception; such ideas generate desires and passions in man, who becomes their slave if he gives himself up to them. Only that which originates from the reason can give birth to feelings of unqualified happiness. Hence the highest bliss of man is life in the ideas of reason, devotion to knowledge of the pure world of ideas. A man who has overcome all that is derived from the world of perception, and yet lives in the realm of pure knowledge, experiences the highest bliss.

Not quite a century after Spinoza there appeared the Scotchman, David Hume, with a mode of thought again assuming knowledge to be derived from perception only. Only single objects in space and time are given. Thought connects the single perceptions together, not, however, because there lies in the objects themselves anything corresponding to such a connection, but because the intellect is accustomed to bringing them into connection. Man is accustomed to see that one thing follows another in time. He forms for himself the idea that there must be sequence. He calls the first, cause; the second, effect. Man is further accustomed to see that a thought in his mind is followed by a movement of his body. He explains this by saying that the mind brings about bodily movement. Man's ideas are habits of thought and nothing more. Perceptions alone have reality.

The combination of the most varied trends of thought that had come into existence through the course of the centuries appears in the Kantian view of the world. Kant also has no natural sense of the relation of perception and idea. He lives in the midst of philosophical preconceptions which he has assimilated from the study of his predecessors. One of these preconceptions is that there exist necessary truths, brought into being by

pure thought, free of all element of experience. In Kant's view the proof of this is afforded by the existence of mathematics and pure physics which contain such truths. Another of his preconceptions consists in denying to experience the possibility of attaining to equally necessary truths. Mistrust of the world of perception is present in Kant also. These thought-habits of Kant are further influenced by Hume. Kant admits that Hume is right when the latter asserts that the ideas into which thought unites the single perceptions are not derived from experience but that they are added by thought to experience. These three preconceptions are the basis of the Kantian thought-structure. Man is in possession of essential truths, but these essential truths cannot be derived from experience, because experience has nothing of the kind to offer. Man, however, applies them to experience. He connects the single perceptions in conformity with these truths. They are derived from man himself. It is inherent in his nature to bring things into a connection that is in line with the truths which have been acquired by pure thought. Kant goes still further. He credits the senses also with the capacity for bringing what is imparted to them from without into a definite order. This order does not flow in from outside with the impressions of the objects. The impressions receive spatial and temporal order for the first time through sense-perception. Space and Time do not appertain to the objects. Man is so organised that when the objects make impressions on his senses he brings them into spatial or temporal order. From without man receives impressions, sensations only. Their arrangement in space and in time, their association into ideas is his own work. But neither are the sensations derived from the objects. Man does not become aware of the objects themselves but only of the impression they make upon him. I know nothing about an object when I have a sensation. I can only say I am aware of the appearance of a sensation in myself. I cannot experience the attributes which enable the objects to evoke sensations in me. In Kant's view man has nothing to do with the things-in-themselves, but only with the impression they make upon him and with the connections into which he himself brings these impressions. The realm of experience is not received objectively, from without, but is only instigated from without; it is produced subjectively from within. The character it bears is not imparted to it by the objects but by the organisation of man. It has therefore no existence per se apart from man. From this point of view the postulation of essential truths — truths that are independent of experience — is possible. For these truths are related merely to the way in which man determines his world of experience from out of himself. They contain the laws of his constitution. They have no relation to things-in-themselves. Kant, then, has found a way out which

enables him to adhere to his preconception that there are essential truths which hold good for the content of the world of experience without being derived therefrom. In order to discover this way out he had, of course, to decide in favour of the view that the human mind is incapable of knowing anything about things-in-themselves. He had to limit all knowledge to the phenomenal world which the human organisation weaves out of itself as the result of the impressions produced by the objects. Why should Kant trouble about the essential being of the thing-in-itself if he could only preserve the eternal, necessary truths in the sense in which he conceived of them? One-sided Platonism produced in Kant a harvest that is paralysing to knowledge. Plato turned away from perception and directed his gaze to the eternal ideas, because it seemed to him that perception did not make manifest the essence of the objects. Kant, however, renounces the conception that the ideas open up a true insight into the essential being of the universe if only there remains to them the attribute of eternity and necessity. Plato adheres to the world of ideas because of his belief that the true being of the universe must be eternal, imperishable, unchangeable, and because he can ascribe these attributes only to the ideas. Kant is content with merely predicting these attributes of the ideas. They need not then any longer express the essential being of the universe.

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Kant's philosophical mode of conception was nourished in a yet higher degree by the trend of his religious sense. He did not proceed from vision of the living harmony of the world of ideas and sense-perception in the being of man, but he put this question to himself: Can anything be cognised by man, as the result of experience of the world of ideas that can never enter into the realm of sense perception? A man who thinks in the Goethean sense seeks to cognise the world of ideas in its real nature by apprehending the essential being of the idea, realising how this allows reality to be perceived in the world of sense-appearance. Then he may ask himself: To what extent does this experience of the real character of the world of ideas enable me to penetrate into the region wherein the relationship of the supersensible truths of Freedom, of Immortality, of the Divine World Order to human knowledge is discovered? Kant denies that it is possible to cognise anything about the reality of the world of ideas from its relationship to sense-perception. Out of this assumption there arose for him, as a scientific result, that which, unconsciously to him, was demanded by the trend of his religious sense: that scientific cognition must come to a standstill before problems which concern Freedom, Immortality, and the

Divine World Order. It followed that, for him, human cognition can only reach to the boundaries enclosing the realm of sense and that in reference to everything that lies beyond faith alone is possible. He wanted to set bounds to cognition in order to preserve a place for faith. It inheres in the character of the Goethean world-conception first to provide knowledge with a firm foundation as the result of perceiving in Nature the world of ideas in its true being, in order hereafter, within this world of ideas, to proceed to experience lying outside the sense world. Even when regions are cognised which do not lie within the realm of the sense world, the gaze is directed to the living harmony of idea and experience, and certainty of knowledge is sought as a result of this. Kant could discover no such certainty. He therefore set out to discover, beyond knowledge, a foundation for the conceptions of Freedom, of Immortality and of the Divine World Order. Inherent in the character of the Goethean world-conception is the desire to know as much of the "things-in-themselves" as is permitted by the comprehension of the true being of the world of ideas within Nature. The nature of the Kantian world-conception makes it deny to knowledge the claim of being able to illuminate the world of the "things-in-themselves." Goethe wants to kindle in knowledge a light that will illuminate the true essence of the objects. He realises that the true essence of the objects so illuminated does not lie in the light, but in spite of this he maintains that this true essence may become manifest as a result of the illumination. Kant insists that the true essence of the illuminated objects does not inhere in the light; the light therefore can reveal nothing of this true essence.

The Kantian world-conception can only appear to Goethe's in the following light: the Kantian world-conception has not arisen as the result of the removal of old errors, nor of a free, original penetration into reality, but as the result of a logical interblending of acquired and inherited philosophical and religious preconceptions. It could only emanate from a mind where the sense of the living, creative activity in Nature has remained in an undeveloped condition. And it could only influence minds that also suffered from the same defect. The far-reaching influence which Kant's mode of thought exercised on his contemporaries proves to what an extent they were living under the ban of a one-sided Platonism.

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Goethe and the Platonic View of the World

I have described the evolution of thought from the age of Plato to that of Kant in order to be able to show the impressions which Goethe was bound to receive when he turned to the outcome of the philosophical thoughts to which he might have adhered in order to satisfy his intense desire for knowledge. He found in the philosophies no answer to the innumerable problems which his nature impelled him to face. Indeed, whenever he delved into the world-conception of some particular philosopher, he found an opposition between the drift of his questions and the world of thought from which he would have liked to get counsel. The reason for this lies in the fact that the one-sided Platonic separation of idea and experience was repugnant to his being. When he observed Nature the ideas lay there before him. He could therefore only think of Nature as permeated by ideas. A world of ideas that neither permeates the objects of Nature nor brings about their appearance and disappearance, their becoming and growth, is to him nothing but a feeble web of thought. The logical fabrication of trains of thoughts without penetration into the life and creative activity of Nature appeared to him unfruitful, for he felt himself intimately one with Nature. He looked upon himself as a living member of Nature. In his view, all that arose in his spirit had been permitted by Nature so to arise. Man should not sit away in a corner and imagine that from there he can spin out of himself a web of thoughts which elucidates the true being of things. He should rather allow the stream of world-events to flow through him perpetually. Then he will feel that the world of ideas is nothing else than the active, creative power of Nature. He will not then want to stand above the objects in order to reflect upon them, but he will sink himself into their depths and extract from them all that lives and works in them.

Goethe's artistic nature led him to this mode of thinking. He felt his poetic creations grow out of his personality with the same necessity as that which makes a flower blossom. The way in which the spirit within him produced the work of Art seemed to him no different from the way in which Nature produces her creatures. And just as in the work of Art the spiritual element cannot be separated from the spiritless material, so it was impossible for him, in face of a natural object, to think the perception without the idea. A point of view to which the perception is only an indefinite, confused element and which wishes to see the world of ideas separated off, purged

of all experience, is therefore foreign to him. In all those world-conceptions in which the elements of a partially understood Platonism lived, he sensed something contrary to Nature. For this reason he could not find in the philosophers what he sought. He was seeking for the ideas which live in the objects and which allow all the particulars of experience to appear as if growing out of a living whole, and the philosophers offered him husks of thought that they had combined into systems according to the principles of Logic. He always found that he was thrown back on himself when he turned to others for explanation of the problems which Nature set him.

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One of the things from which Goethe suffered before his Italian journey was that his yearning for knowledge could find no satisfaction. In Italy he was able to form a view of the motive forces which give rise to works of Art. He recognised that perfect works of Art contain what men reverence as the Divine, the Eternal. After beholding the artistic creations which interested him most deeply, he wrote these words: "The great works of Art, like the highest creations of Nature, have been brought forth in conformity with true and natural law. All that is arbitrary, that is invented, collapses: there is Necessity, there is God." The art of the Greeks drew forth this utterance from him: "I suspect that the Greeks proceeded according to those laws by which Nature herself proceeds, and of which I am on the track." What Plato believed to have found in the world of ideas and what the philosophers could never bring home to Goethe, streamed forth to him from the works of Art in Italy. What he is able to regard as the basis of knowledge is revealed to him for the first time, in a perfect form, in Art. He sees in artistic production a mode and higher stage of Nature's working; artistic creation is to him an enhanced Nature-creation. He expressed this later in his characterisation of Winckelmann: "In that man is placed on Nature's pinnacle, he regards himself as another whole Nature, whose task is to bring forth inwardly yet another pinnacle. For this purpose he heightens his powers, imbues himself with all perfections and virtues, summons discrimination, order and harmony, and rises finally to the production of a work of Art." Goethe does not attain to his worldconception along the path of logical deduction but as a result of the contemplation of the essence of Art. And what he found in Art he seeks also in Nature.

The kind of activity by means of which Goethe acquired his knowledge of Nature does not differ essentially from artistic activity. Both play into and mutually react on each other. In Goethe's view the artist must surely become mightier and more effective when, in addition to his talent, "he is a well-informed Botanist, when he knows, from the root upwards, the influence of the different parts on the health and growth of the plant, their significance and mutual interaction, when he penetrates into and reflects upon the successive development of the flowers, leaves, fertilisation, fruit and new seed. He will not then reveal his own 'taste' by a choice from among the phenomena, but by a true portrayal of the qualities he will instruct and at the same time fill us with admiration." The work of Art is therefore the more perfect, the more fully it expresses the same law as that embodied in the work of Nature to which it corresponds. There is but one uniform realm of truth, and this includes both Art and Nature. Hence the faculty of artistic creation cannot differ essentially from the faculty of the cognition of Nature. Goethe says in reference to the artist's style that "it is based on the deepest foundations of knowledge, on the essence of things in so far as it is granted us to cognise this essence in visible, tangible forms." The view of the world that had proceeded from one-sided understanding of Platonic conceptions draws a sharp boundary line between Science and Art. It bases artistic activity upon phantasy, upon feeling, and would represent scientific results as the outcome of a development of concepts that is free of the element of phantasy. Goethe sees the matter differently. When he directs his gaze to Nature he finds there a sum-total of ideas; but to him the ideal constituent is not confined within the single object of experience; the idea points out beyond the particular object to related objects wherein it manifests in a similar way. The philosophical observer takes hold of this ideal element and brings it to direct expression in his thought-creations. This ideal element works also upon the artist. But it stimulates him to give form to a creation wherein the idea does not merely function as in a work of Nature, but becomes present in appearance. That which in a work of Nature is merely ideal, and is revealed to the spiritual vision of the observer, becomes concrete, perceptible reality in the work of Art. The artist realises the ideas of Nature. It is not, however, necessary that he should be conscious of these in the form of ideas. When he contemplates an object or an event something else assumes direct form in his spirit — something that contains as actual appearance what Nature contains only as idea. The artist gives us images of Nature's works and in these images the ideal content of Nature's works is transformed into perceptual content. The philosopher shows how Nature presents herself to contemplative thought; the artist shows how

Nature would appear if she were to reveal openly her active forces not merely to thought but also to perception. It is one and the same truth that the philosopher presents in the form of thought and the artist in the form of an image. The two differ only in their means of expression.

The insight into the true relationship of idea and experience which Goethe acquired in Italy is only the fruit of the seed that was lying concealed in his nature. The Italian journey afforded the sun-warmth which was able to ripen the seed. In the Essay "Nature" which appeared in 1782 in the Tiefurt Journal, and for which Goethe was responsible, [Compare my proof of Goethe's authorship in Vol. VII of the publications of the Goethe Society.] the germs of the later Goethean world-conception are already to be found. What is here dim feeling later develops into clear, definite thought. "Nature! we are surrounded and embraced by her, we cannot draw back from her, nor can we penetrate more deeply into her being. She lifts us, unasked and unwarned, into the gyrations of her dance and whirls us away until we fall exhausted from her arms. ... She (Nature) has thought and she broods unceasingly, not as a man but as Nature. ... She has neither language nor speech, but she creates tongues and hearts through which she speaks and feels. ... It was not I who spoke of her. Nay, it was she who spoke it all, true and false. Here is the blame for all things, hers the credit." At the time when Goethe wrote these sentences it was not yet clear to him how Nature expresses her ideal being through man; but what he did feel was that it is the voice of the Spirit of Nature that sounds in the Spirit of Man.

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In Italy Goethe found the spiritual atmosphere which was able to develop his organs of cognition in the only way that in accordance with their inherent nature they could develop, if he were ever to find complete satisfaction. In Rome he had "many discussions with Moriz about Art and its theoretical demands;" as he observed the metamorphosis of plants on the journey there developed in him a natural method that later proved fruitful for the cognition of the whole of organic Nature. "For as vegetation unfolded her procedure before me stage by stage, I could not fall into error, but allowing things as I did to take their own course, I could not fail to recognise the ways and means by which the most undeveloped state was brought to perfection." A few years after his return from Italy Goethe was able to find a mode of procedure, born of his spiritual needs, for the observation of inorganic Nature also. "In connection with physical

investigations the conviction was borne in upon me that in all observation of objects the highest duty is to search for every condition under which the phenomenon appears, with the greatest exactitude, and to strive for the greatest possible perfection of the phenomena; because ultimately they are bound to range themselves alongside each other or rather overlap each other, to form a kind of organisation before the gaze of the investigator, and to manifest their inner, common life."

Nowhere did Goethe find enlightenment. He had always to enlighten himself. He tried to find the reason for this and came to the conclusion that he had no facility for philosophy in the proper sense. The reason, however, lies in the fact that the one-sided comprehension of the Platonic mode of thought which dominated all philosophies accessible to Goethe was contrary to the healthy tendency of his nature. In his youth he had repeatedly turned to Spinoza. He admits that this philosopher always had a "pacifying effect" upon him. The reason for this is that Spinoza conceives of the universe as one great unity with the single parts proceeding necessarily from the whole. But when Goethe entered into the content of Spinoza's Philosophy he still felt it to be alien to him. "It must not be imagined that I was able to agree absolutely with his writings and admit their truth word for word; for I had already realised only too clearly that no one person understands another, nor thinks as another, even although their words may be the same; I had realised that a conversation or reading would awaken different trains of thought in different people. And one will credit the author of Werther and Faust with the fact that, deeply permeated by such misunderstandings, he is not conceited enough to imagine that he has perfect understanding of a man, who, as a disciple of Descartes has raised himself through mathematical and rabbinical culture to the summit of thought which up to the present time seems to be the goal of all speculative endeavours." It was not the fact that Spinoza had been taught by Descartes, nor that Spinoza had attained to the summit of thought as the result of mathematical and rabbinical culture that made him an element to which Goethe could not wholly surrender himself, but it was Spinoza's purely logical method of handling knowledge — a method that is alien to reality. Goethe could not surrender himself to a mode of pure thinking free of all element of experience, because he could not separate this from the sum-total of the real. He did not want to connect one thought with another in a merely logical sense. Such an activity of thought seemed to him rather to depart from true reality. He felt that he must sink his spirit into the experience in order to reach the idea. The mutual interplay of idea and perception was to Goethe a spiritual breathing. "Time is regulated by

the swings of the pendulum; the moral scientific world is regulated by the interplay of idea and experience." To observe the world and its phenomena in the sense of these words seemed to Goethe to be in conformity with Nature. For he had no doubt but that Nature observes the same procedure; that she (Nature) is a development from a mysterious, living Whole into the diverse and specific phenomena that fill space and time. The mysterious Whole is the world of the idea. "The idea is eternal and unique; that we also use the plural is unfortunate. All things that we perceive and of which we can speak are but manifestations of the idea; we utter concepts and to this extent the idea is itself a concept." Nature's creative activity proceeds from the ideal Whole into the particular that is given to perception as something real. The observer ought therefore "to recognise the ideal in the real and allay his temporary dissatisfaction with the finite by rising to the infinite." Goethe is convinced that "Nature proceeds according to idea just in the same way as man follows an idea in all that he undertakes." When man really succeeds in rising to the idea and in comprehending from out of the idea the details of perception, he accomplishes the same thing as Nature accomplishes by allowing her creations to issue forth from the mysterious Whole. So long as man has no sense of the working and creative activity of the idea, his thinking is divorced from living Nature. He must regard thinking as a purely subjective activity that is able to project an abstract picture of Nature. But directly he senses the way in which the idea lives and is active in his inner being he regards himself and Nature as one Whole, and what makes its appearance in his inner being as a subjective element is for him at the same time objective; he knows that he no longer confronts Nature as a stranger, but he feels that he has grown together with the whole of her. The subjective has become objective; the objective is wholly permeated with the spirit. Goethe thinks that Kant's fundamental error consists in the fact that he (Kant) "regards the subjective, cognitive faculty itself as object, and makes indeed a sharp but not wholly correct division at the point where subjective and objective meet " (Weimar Edition, Part II. Volume II. Page 376.). The cognitive faculty appears to man as subjective only so long as he does not notice that it is Nature herself who speaks through this faculty. Subjective and objective meet when the objective world of ideas lives in the subject and when all that is active in Nature herself lives in the spirit of man. When this happens, all antithesis between subject and object ceases. This antithesis has meaning only so long as it is artificially sustained and man regards the ideas as being his own thoughts by which the being of Nature is reflected, but in which, however, this being is not itself active. Kant and his followers had no inkling of the fact that the essential being of objects is

directly experienced in the ideas of reason. To them the ideal is merely subjective, and they therefore came to the conclusion that the ideal can necessarily only be valid if that to which it is related, the world of experience, is also merely subjective. The Kantian mode of thought is in sharp contrast to Goethe's views. There are, it is true, isolated utterances of Goethe where he speaks with some appreciation of Kant's views. He says that he has been present at many discussions of these views. "With a little attention I was able to observe the reappearance of the old cardinal question — the question as to how much the Self and how much the external world contributes to our spiritual existence. I had never separated these two, and when I philosophized in my own fashion about objects, I did so with unconscious naiveté and really believed that I saw my opinions clearly before me. As soon, however, as that dispute came into the discussion, I wanted to range myself on that side which does man most credit, and I gave entire approbation to all those friends who maintained with Kant that even if all knowledge commences with experience it is not necessarily all derived from experience." Neither does the idea, in Goethe's view, originate from that portion of experience which may be perceived through the senses of man. Reason, Imagination (Phantasie) must be active and penetrate to the inner being of things in order to master the ideal element of existence. To this extent the spirit of man participates in the birth of knowledge. Goethe thinks that honour is due to man because the higher reality which is inaccessible to the senses, is made manifest in his spirit; Kant, on the other hand, denies the character of higher reality of the world of experience, because it contains elements that are derived from the spirit. Goethe was only able to find himself in some measure of agreement with the Kantian principles when he had interpreted them in the light of his own world-conception. The fundamental principles of the Kantian mode of thought are strongly antagonistic to Goethe's nature. If he does not emphasise this sharply enough, it is really only because he will not allow himself to enter into these fundamental principles because they are too alien to him. "It was the Introduction (to The Critique of Pure Reason) that pleased me; I could not venture into the labyrinth itself for here I was restrained by my poetic gift and there by the human intellect. and I felt no benefit anywhere." In reference to his discussions with the followers of Kant, Goethe had to make this confession: "They listened to me, it is true, but could give me no reply nor be helpful in any way. More than once it happened that one or another of them admitted in smiling admiration, 'it is certainly analogous to the Kantian mode of conception, but in a very peculiar sense." ... It was, as I have shown, not analogous at all, but the very reverse of Kant's mode of conception.

It is interesting to see how Schiller tries to explain to himself the difference between the Goethean mode of thinking and his own. He senses the originality and freedom of Goethe's world-conception. He cannot, however, rid his mind of thought elements that are the result of a onesided conception of Platonism. He cannot attain the insight that idea and perception are not separated from each other in reality, but are only thought of as separated by the intellect that has been led astray by a misguided trend of ideas. Therefore in contrast to the Goethean mode of thinking which he describes as intuitive, he places his own speculative mode of thinking and asserts that both must lead to one and the same goal if they only operate with sufficient power. Schiller assumes that the intuitive mind adheres to the empirical, the individual, and rises from there to the law, to the idea. If such a mind is endowed with the quality of genius it will cognise in the empirical, the necessary; in the individual, the species. The speculative mind, on the other hand, must proceed by the reverse path. The law, the idea, has first to be given to it and from thence it descends to the empirical and individual. If such a mind is endowed with the quality of genius it will of course always have the species only in view, but with the possibility of life and with an established relation to real objects. The assumption of a special type of mind — of the speculative in contradistinction to the intuitive — is based on the belief that the world of ideas has an existence separate and distinct from the world of perception. If this were the case a path could be found along which the content of the ideas about the objects of perception might enter the mind even when the mind does not seek it in experience. If, however, the world of ideas is inseparably bound up with the reality given in experience, if the two only exist as one Whole, there can only be an intuitive cognition that seeks for the idea in the experience and apprehends the species along with the individual. The truth is that there is no purely speculative mind in Schiller's sense. For the species exist only within the sphere to which the individuals also pertain. The mind cannot find them elsewhere. If a so-called speculative mind really has conceptions of species, these are derived from observation of the real world. When the living feeling for this origin, for the essential connection of the species with the individual, is lost, there arises the opinion that such ideas can arise in the reason also without experience. Those who hold this opinion describe a number of abstract conceptions of species as the content of the pure reason because they do not see the threads which bind these ideas to experience. Such an illusion can occur most easily in connection with ideas that are the most general and comprehensive in character. Because such ideas cover a wide region of

reality, a great deal that appertains to the entities belonging to this region is effaced or obliterated. A man may absorb a number of such general ideas through tradition and then come to believe that they are inborn in human beings or that they have been spun by man from out of pure reason. A mind that lapses into such a belief may regard itself as speculative in character. It will, however, never be able to extract from its world of ideas any ideas other than have been placed there by tradition. Schiller is in error when he says that the speculative mind, if it is endowed with the quality of genius, produces "indeed only species but with the possibility of life and with an established relation to real objects" (Compare Schiller's letter to Goethe, 23rd August, 1794.). A truly speculative mind, living only in concepts of species, could find in its world of ideas no established relationship to reality other than that already existing within that world of ideas. A mind that has relation to the reality of Nature and in spite of this designates itself as speculative, is labouring under a delusion as to its own nature. This delusion can mislead it into negligence of its relation to reality and to actual life. It will imagine itself able to dispense with direct perception because it believes that other sources of truth are in its possession. The result of this always is that the ideal world of such a mind bears a dull, pale character. The fresh colours of life will be lacking from its thoughts. Those who wish to live with reality will be able to acquire little from such a world of thought. It cannot be admitted that the speculative type of mind is on the same level as the intuitive; it is stunted and impoverished. The intuitive mind is not concerned with individuals alone, it does not seek the character of necessity in the empirical. But when it applies itself to Nature, perception and idea coalesce into unity. Both are seen to exist within each other and are perceived as one Whole. The intuitive mind may rise to the most universal truths, to the highest abstractions, but direct, actual life will always be evident in its world of thought. Goethe's thinking was of this nature. In his Anthropology, Heinroth has spoken about this kind of thinking in striking words that pleased Goethe in the highest degree, because they explained to him his own nature. "Dr. Heinroth speaks favourably of my nature and activity, indeed he describes my modus operandi as original; he says that my thinking faculty is objectively active, by which he means to express that my thinking does not sever itself from the objects; that the elements inherent in the objects and the perceptions enter into my thinking and are permeated by it in a most intimate way; that my perceiving is itself thinking, my thinking, perceiving." Fundamentally speaking, Heinroth is describing nothing else than the way in which all sound thinking is related to objects. Any other mode of procedure is a deviation from the natural

path. If perception predominates in a man he adheres to the individual element; he cannot penetrate to the deeper foundations of reality. If abstract thought predominates in him, his concepts are manifestly inadequate to comprehend the whole living content of the real. The extreme of the first deviation from the natural path produces the crude empiricist who contents himself with the individual facts; the extreme of the other deviation is represented in the philosopher who worships pure Reason and who merely thinks, without realising that thoughts in their essential being, are bound up with perception. In beautiful imagery Goethe describes the feeling of the thinker who rises to the highest truths without losing the sense for living experience. At the beginning of the year 1784 he writes an Essay on Granite. He goes to a hill composed of this stone where he is able to soliloquise as follows: "Here you are resting on a substructure that extends to the very depths of the Earth; no newer stratum, no deposited, heaped-up fragments are laid between you and the firm foundation of the primordial world; you are not passing over a continuous grave as in vonder fruitful valleys; these peaks have brought forth no living thing, have devoured no living thing; they are antecedent to all life, they transcend all life. In this moment when the inner attractive and moving forces of the Earth are working directly upon me, when the influence of the heavens hovers more closely around me, it is given to me to attain to a more sublime perception of Nature, and as the human spirit gives life to everything, an image whose sublimity I cannot withstand, is stirred to activity within me, looking down this naked peak with scanty moss hardly perceptible at its base, I say to myself that this loneliness overtakes one who would fain open his soul only to the first, oldest, deepest feelings of truth. Such an one can say to himself: here on the most ancient, imperishable altar, built immediately above the depths of Creation, I bring a sacrifice to the Being of all Beings. I feel the first firm beginnings of our existence; I look over the world with its valleys now rugged, now undulating, its wide fertile meadows, and my soul, raised above itself and all else, yearns for the Heavens that draw nigh. But soon the burning sun calls back thirst and hunger — human needs — and one looks around for those valleys above which one's spirit had raised itself." Such enthusiasm in knowledge, such a sense for the oldest, immutable truths can only develop in a man who continually finds his way back from the spheres of the world of ideas to direct perceptions.

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Personality and View of the World

Man learns to know the external side of Nature through perception; her more deeply lying forces are revealed in his own inner being as subjective experiences. In philosophical observation of the world, and in artistic feeling and production, the subjective experiences permeate the objective perceptions. What had to divide into two in order to penetrate into the human spirit becomes again one Whole. Man satisfies his highest spiritual needs when he incorporates into the objectively perceived world what that world reveals to him in his inner being as its deeper Mysteries. Knowledge and the productions of Art are nothing else than perceptions filled with man's inner experiences. An inner union of a human soul-experience and an external perception can be discovered in the simplest judgment of an object or an event of the external world. When I say, 'one body strikes the other,' I have already carried over an inner experience to the external world. I see a body in motion; it comes into contact with another body, and as a result this second body is also set in motion. With these words the content of the perception is exhausted. This, however, does not satisfy me, for I feel that in the whole phenomenon there is more than what is vielded by mere perception. I seek for an inner experience that will explain the perception. I know that I myself can set a body in movement by the application of force, by pushing it. I carry this experience over into the phenomenon and say: the one body pushes the other. "Man never realises how anthropomorphic he is" (Goethes Sprüche in Prosa. Bd. 36, 2. S. 353. National-Literatur: Goethes Werke.). There are men who conclude from the presence of this subjective element in every judgment of the external world that the objective essence of reality is inaccessible to man. They believe that man falsifies the immediate, objective facts of reality when he introduces his subjective experiences into it. They say: because man is only able to form a conception of the world through the spectacles of his subjective life, therefore all his knowledge is only a subjective, limited human knowledge. Those, however, who become conscious of what reveals itself in the inner being of man will not want to have anything to do with such unfruitful statements. They know that Truth results from the interpenetration of perception and idea in the cognitional process. They realise that in the subjective there lives the truest and deepest objective. "When the healthy nature of man works as one Whole, when he feels himself to exist in the world as in a great and beautiful Whole, when the

harmonious sense of well-being imparts to him a pure, free delight, the Universe — if it could be conscious of itself — having attained its goal, would shout for joy and admire the summit of its own becoming and being" (National-Literatur. 27 Bd. S. 42.). The reality accessible to mere perception is only the one half of the whole reality; the content of the human spirit is the other half. If a man had never confronted the world, this second half would never come to living manifestation, to full existence. It would work, of course, as a hidden world of forces, but it would be deprived of the possibility of manifesting itself in its essential form. It may be said that without man the world would display a false countenance. It would exist as it does, by virtue of its deeper forces, but these deeper forces would remain veiled by what they themselves are bringing about. In the spirit of man they are released from their enchantment. Man is not only there in order to form for himself a picture of the finished world; nay, he himself co-operates in bringing the world into existence.

Subjective experiences assume different forms in different men. For those who do not believe in the objective nature of the inner world this is another reason for denying that man has the capacity to penetrate to the true essence of things. For how can that be the essence of things which appears in one way to one man and in another way to another man? For those who penetrate to the true nature of the inner world the only consequence of the diversity of inner experiences is that Nature is able to express her abundant content in different ways. Truth appears to the individual man in an individual garb. It adapts itself to the particular nature of his personality. More especially is this the case with the highest truths, truths that are of the greatest significance for man. In order to acquire these truths man carries over his most intimate spiritual experiences and with them at the same time the particular nature of his personality, to the world he has perceived. There are also truths of general validity which every man accepts without imparting to them any individual colouring. But these are the most superficial, the most trivial. They correspond to the common generic character of men, which is the same in them all. Certain attributes which are similar in all men give rise to similar judgments about objects. The way in which men view phenomena according to measure and number is the same in everyone — therefore all find the same mathematical truths. In the attributes, however, which distinguish the single personality from the common generic character, there also lies the foundation for the individual formulation of truth. The essential point is not

that the truth appears in one man in a different form than in another, but that all the individual forms that make their appearance belong to one single Whole, the uniform ideal world. In the inner being of individual men truth speaks in different tongues and dialects; in every great man it speaks a particular language communicated to this one personality alone. But it is always the one truth that is speaking. "If I know my relationship to myself and to the external world, I call it truth. And so each one can have his own truth, and it is nevertheless always the same." — This is Goethe's view. Truth is not a rigid, dead system of concepts that is only capable of assuming one single form; truth is a living ocean in which the spirit of man dwells, and it is able to display on its surface waves of the most diverse form. "Theory per se is useless except in so far as it makes us believe in the connection of phenomena," says Goethe. A theory that is supposed to be conclusive once and for all and purports in this form to represent an eternal truth, has no value for Goethe. He wants living concepts by means of which the spirit of the single man can connect the perceptions together in accordance with his individual nature. To know the truth, means, to Goethe, to live in the truth. And to live in the truth means nothing else than that in the consideration of each single object man perceives what particular inner experience comes into play when he confronts this object. Such a view of human cognition cannot speak of boundaries to knowledge, nor of a limitation to knowledge consequential upon the nature of man. For the questions which, according to this view, man raises in knowledge, are not derived from the objects; neither are they imposed upon man by some other power outside his personality. They are derived from the nature of the personality itself. When man directs his gaze to an object there arises within him the urge to see more than confronts him in the perception. And so far as this urge extends, so far does he feel the need for knowledge. Whence does this urge originate? It can indeed only originate from the fact that an inner experience feels itself impelled within the soul to enter into union with the perception. As soon as the union is accomplished the need for knowledge is also satisfied. The will-to-know is a demand of human nature and not of the objects. They can impart to man no more of their being than he demands from them. Those who speak of a limitation of the faculty of cognition do not know whence the need for knowledge is derived. They believe that the content of truth is lying preserved somewhere or other and that there lives in man nothing but the vague wish to discover the way to the place where it is preserved. But it is the being of the things itself that works itself out in the inner being of man and passes on to where it belongs: to the perception. Man does not strive in the cognitive process for some hidden element but for the equilibration of two forces that work upon him from two sides. One may well say that without man there would be no knowledge of the inner being of things, for without man there would exist nothing through which this inner being could express itself. But it cannot be said that there is something in the inner being of things that is inaccessible to man. Man only knows that there exists something more in the things than perception gives, because this other element lives in his own inner being. To speak of a further unknown element in objects is to spin words about something that does not exist.

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Those natures who are not able to recognise that it is the speech of things that is uttered in the inner being of man, hold the view that all truth must penetrate into man from without. Such natures either adhere to mere perception and believe that only through sight, hearing and touch, through the gleaning of historical events and through comparing, reckoning, calculating and weighing what is received from the realm of facts, is truth able to be cognised; or else they hold the view that truth can only come to man when it is revealed to him through means lying beyond the scope of his cognitional activity; or, finally, they endeavour through forces of a special character, through ecstasy or mystical vision, to attain to the highest insight — insight which, in their view, cannot be afforded them by the world of ideas accessible to thought. A special class of metaphysicians also range themselves on the side of the Kantian School and of one-sided mystics. They, indeed, endeavour to form concepts of truth by means of thought, but they do not seek the content of these concepts in man's world of ideas; they seek it in a second reality lying behind the objects. They hold that by means of pure concepts they can either make out something definite about this content, or at least form conceptions of it through hypotheses. I am speaking here chiefly of the first mentioned category of men, the "fact-fanatics." We sometimes find it entering into their consciousness that in reckoning and calculation there already exists, with the help of thought, an elaboration of the content of perception. But then, so they say, thought-activity is only the means whereby man endeavours to cognise the connection between the facts. What flows out of thought as it elaborates the external world is held by these men to be merely subjective; only what approaches them from outside with the help of thinking do they regard as the objective content of truth, the valuable content of knowledge. They imprison the facts within their web of thoughts, but only what is so imprisoned do they admit to be objective. They overlook the fact

that what thought imprisons in this way undergoes an exegesis, an adjustment, and an interpretation that is not there in mere perception. Mathematics is a product of pure thought-processes; its content is mental, subjective. And the mechanician who conceives of natural processes in terms of mathematical relations can only do this on the assumption that the relations have their foundation in the essential nature of these processes. This, however, means nothing else than that a mathematical order lies hidden within the perception and is only seen by one who elaborates the mathematical laws within his mind. There is, however, no difference of kind but only of degree between the mathematical and mechanical perceptions and the most intimate spiritual experiences. Man can carry over other inner experiences, other regions of his world of ideas into his perceptions with the same right as the results of mathematical research. The "fact-fanatic" only apparently establishes purely external processes. He does not as a rule reflect upon the world of ideas and its character as subjective experience. And his inner experiences are poor in content, bloodless abstractions that are obscured by the powerful content of fact. The delusion to which he gives himself up can exist only so long as he remains stationary at the lowest stage of the interpretation of Nature, so long as he only counts, weights, calculates. At the higher stages the true character of knowledge soon makes itself apparent. It can, however, be observed in "fact-fanatics" that they prefer to remain at the lower stages. Because of this they are like an aesthete who wishes to judge a piece of music merely in accordance with what can be counted and calculated in it. They want to separate the phenomena of Nature off from man. No subjective element ought to flow into observation. Goethe condemns this mode of procedure in the words: "Man in himself, in so far as he uses his healthy senses, is the most powerful and exact physical apparatus there can be. The greatest mischief of modern physics is that the experiments have, as it were, been separated off from the human being. Man wishes to cognise Nature only by what artificial instruments show, and would thereby limit and prove what she can accomplish." It is fear of the subjective — fear emanating from a false idea of the true nature of the subjective — that leads to this mode of procedure. "But in this connection man stands so high that what otherwise defies portrayal is portrayed in him. What is a string and all mechanical subdivisions of it compared with the ear of the musician? Yes, indeed, what are the elemental phenomena of Nature herself in comparison with man, who must first master and modify them in order in some degree to assimilate them" (Goethes Werke. Nat. Lit., Bd. 32, 2. S.351.). In Goethe's view the investigator of Nature should not only pay attention to the immediate

appearance of objects, but what appearance they would have if all the ideal, moving forces active within them were also to come to actual, external manifestation. The phenomena do not disclose their inner being and constitution until the bodily and spiritual organism of man is there to confront them. Goethe's view is that the phenomena reveal themselves fully to a man who approaches them with a free, unbiased spirit of observation and with a developed inner life in which the ideas of things manifest themselves. Hence a world-conception in opposition to that of Goethe is one that does not seek for the true being of things within the reality given by experience but within a second kind of reality lying behind this. In Fr. H. Jacobi, Goethe encountered an adherent of such a worldconception. Goethe gives vent to his indignation in a remark in the *Tag-und* Jahresheft (1811): "Jacobi displeases me on the subject of divine things; how could I welcome the book of so cordially loved a friend in which I was to find this thesis worked out: Nature conceals God! — My pure, profound, inherent and practised mode of conception has taught me to see God within Nature and Nature within God, inviolably; it has constituted the basis of my whole existence; how then could I fail to be forever spiritually estranged from a man of such excellence, whose heart I used to love and honour, when he makes such a strange — and to my mind — such an extraordinary, one-sided statement." Goethe's mode of conception affords him the certainty that he experiences Eternal Law in the penetration of Nature with ideas, and Eternal Law is to him identical with the Divine. If the Divine concealed itself behind the phenomena of Nature, although it is at the same time the creative element within them, it could not be perceived; man would have to believe in it. "God has afflicted you with the curse of Metaphysics and has put a thorn in your flesh. He has blessed me with Physics. I adhere to the Atheist's (Spinoza) worship of the Godhead and relinquish to you all that you call — or would like to call — religion. You adhere to belief in God, I to vision." Where this vision ceases there is nothing for the human spirit to seek. In the Prose Aphorisms we read: "Man is in truth placed in the centre of a real world and endowed with organs enabling him to know and to bring forth the actual as well as the possible. All healthy men have the conviction of their own existence and of a state of existence around them. There is, however, a hollow spot in the brain, that is to say, a place where no object is reflected, just as in the eye itself there is a minute spot which does not see. If a man pays special attention to this hollow place, if he sinks into it, he falls victim to a mental disease, and begins to divine things of another world, chimeras, without form or limit, but which as empty nocturnal spaces alarm and follow the man who does not tear himself free from them, like spectres." From the

same sentiment comes the utterance: "The highest would be to realise that all 'matters of fact' are really theory. The blue of the heavens reveals to us the fundamental law of chromatics. Let man seek nothing behind the phenomena, for they themselves are the doctrine."

Kant denies that man has the capacity to penetrate that region of Nature wherein her creative forces become directly perceptible. In his view concepts are abstract units into which human understanding groups the manifold particulars of Nature, but which have nothing to do with the Living Unity, with the creating Whole of Nature out of which these perceptions actually proceed. In this grouping-together man experiences a subjective operation only. He can relate his general concepts to empirical perceptions, but these concepts are not in themselves living, productive, in such a way that it would ever be possible for man to perceive the emergence of the individual, the particular from them. A concept is to Kant a dead unit existing only in man. "Our understanding is a faculty of Concepts, i.e., a discursive understanding for which it obviously must be contingent of what kind and how very different the particular may be that can be given to it in Nature and brought under its concepts" (Para. 77. Kant's Critique of Judgment.). This is Kant's characterisation of the Understanding. The following is the necessary consequence: "It is infinitely important for Reason not to let slip the mechanism of Nature in its products and in their explanation not to pass it by, because without it no insight into the nature of things can be attained. Suppose it be admitted that a supreme Architect immediately created the forms of Nature as they have been from the beginning, or that he predetermined those which in the course of Nature continually form themselves in the same model — our knowledge of Nature is not thus in the least furthered, because we cannot know the mode of action of that Being and the Ideas which are to contain the principles of the possibility of natural beings, and we cannot by them explain Nature as from above downwards." (Para. 78. Critique of Understanding.). Goethe is convinced that in his world of ideas man has direct experience of the mode of action of the creative being of Nature. "When in the sphere of the moral, through belief in God, Virtue and Immortality, we do indeed raise ourselves into a higher sphere where it is granted to us to approach the primordial Essence, so may it well be in the sphere of the Intellectual, that through the perception of an ever-creating Nature we make ourselves worthy for a spiritual participation in her productions." Man's knowledge is, for Goethe, an actual "living into" the creative activity and sove-reignty of Nature. Knowledge is able "to investigate, to experience how Nature lives in creative activity."

It is contrary to the spirit of Goethe's world-conception to speak of Beings existing outside the world of experience and of ideas that is accessible to the human mind, who, nevertheless, are supposed to contain the foundations of this world. Every kind of Metaphysics is rejected by this world-conception. There are no questions of knowledge which, if rightly put, cannot also be answered. If science at any given time can make nothing of a certain region of phenomena, this is not due to the nature of the human spirit, but to the fortuitous circumstances that experience of this region is not yet complete. Hypotheses cannot be advanced in regard to things that lie outside the sphere of possible experience, but only in regard to such things as may at some time enter into this region. An hypothesis can never do more than assert: it is probable that within a region of phenomena this or that experience will be made. Objects and processes that do not he within the range of man's sense-perception or spiritual perception cannot be spoken of by this mode of thinking. The assumption of a "thing-in-itself" that brings about perceptions in man, but that can never itself be perceived, is an inadmissible hypothesis. "Hypotheses are scaffoldings erected around the building and are taken away when the building is completed; they are indispensable to the workman, only he must not take the scaffolding for the building." In presence of a region of phenomena for which all the perceptions are given and which is permeated with ideas, the spirit of man declares itself satisfied. Man feels that a living harmony of idea and perception resounds within him.

The satisfying fundamental note which runs for Goethe through his world-conception is similar to that which may be observed in the Mystics. Mysticism aims at finding the primordial principle of things, the Godhead within the human soul. Like Goethe, the Mystic is convinced that the essential being of the world will be made manifest to him in inner experiences. But many Mystics will not admit that penetration into the world of ideas constitutes the inner experience which is to them the essential thing. Many one-sided Mystics have practically the same view as Kant of the clear ideas of Reason. They consider that these clear Ideas of Reason lie outside the sphere of the creative Whole of Nature and that they belong exclusively to the human intellect. Such Mystics endeavour, therefore, to attain to the highest knowledge, to a higher kind of perception, by the development of abnormal conditions of perception, by the development of abnormal conditions, for example, by ecstasy. They

deaden sense observation and rational thought within themselves and try to enhance their life of feeling. Then they think they directly feel active spirituality actually as the Godhead within themselves. When they achieve this they believe that God lives within them. The Goethean worldconception, however, does not derive its knowledge from experiences occurring when observation and thought have been deadened, but from these two functions themselves. It does not betake itself to abnormal conditions of man's mental life but is of the view that the normal, naive methods of procedure of the mind are capable of being perfected to such an extent that man may experience within himself the creative activity of Nature. "It seems to me that ultimately it is only a question of the practical, self-rectifying operations of the general human intellect that has the courage to exercise itself in a higher sphere" (2 Abt. Bd. 11. S.41. Weimar Edition of Goethe's Works). Many Mystics plunge into a world of indefinite sensations and feelings; Goethe plunges into the crystal-clear world of ideas. One-sided Mystics disdain clarity of ideas and think it superficial. They have no inkling of what is experienced by men who are endowed with the gift of entering profoundly into the living world of ideas. They are chilled when they give themselves up to the world of ideas. They seek a world-content that radiates warmth. But the world-content which they find does not explain the world. It consists only of subjective stimuli, of confused representations. A man who speaks of the coldness of the world of ideas can only think ideas, he cannot experience them. A man who lives the true life of the world of ideas feels within himself the being of the world working in a warmth that cannot be compared with anything else. He feels the fire of the World Mystery light up within him. This is what Goethe felt when the vision of weaving Nature dawned in him in Italy. He then realised how the yearning that in Frankfort he expressed in the words of Faust, can be appeased:

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"Where shall I grasp thee, infinite Nature, where? Ye breasts, ye fountains of all life whereon Hang Heaven and Earth, from which the withered heart For solace yearns..."

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The Metamorphosis of Phenomena

Goethe's world-conception reached its highest state of maturity when there dawned within it the perception of Nature's two great motive forces: the meaning of the concepts of *polarity* and *intensification* (Steigerung) (Compare the Essay, Erläuterung zu dem Aufsatz 'Die Natur'). Polarity inheres in the phenomena of Nature in so far as we think of them in a material sense. It consists in this: everything of a material nature expresses itself in two opposites, like the magnet, in a north and a south pole. These states of matter are either apparent to the eye, or they lie latent within the material and can be roused into activity by appropriate means. *Intensification* presents itself when we think of the phenomena in a spiritual sense. It can be observed in Nature processes which fall within the scope of the idea of development. At the different stages of development these processes manifest the idea underlying them with greater or less distinctness in their external appearance. In the fruit, the idea of the plant, the vegetable law, is only indistinctly expressed in outer appearance. The idea cognised by the mind and the perception do not resemble each other. "The vegetable law appears in its highest manifestation in the blossom and the rose becomes once again the summit of the phenomenon." What Goethe calls "intensification" consists in the emergence of the spiritual from out of the material as a result of the creative activity of Nature. Nature being engaged "in an ever-striving ascent" means that her endeavour is to create forms which, in ascending order, bring the ideas of the objects ever more and more to manifestation in outer appearance also. Goethe holds that "Nature has no secret that is not somewhere revealed to the eye of the attentive observer." Nature can produce phenomena wherein the ideas proper to a wide sphere of allied processes may be discerned. They are the phenomena wherein the "intensification" has reached its goal, wherein the idea becomes immediate truth. The creative spirit of Nature here appears on the surface of the objects; what can only be apprehended by thought in the coarse material phenomena — what can be perceived only by spiritual vision — becomes visible to bodily eyes in "intensified" phenomena. Here all that is sensible is also spiritual, all that is spiritual, sensible. Goethe thinks of the whole of Nature as permeated with spirit. Her forms are different because the spirit becomes in them outwardly visible to a lesser or greater degree. Goethe knows no dead, spiritless matter. Those things appear as such in which the spirit of Nature assumes

an external form that does not resemble her ideal essence. Because one and the same spirit is working in Nature and in his own inner being man can rise to a participation in the products of Nature. "From the tile that falls from the roof, to the shining flash of spirit that arises in thee and which thou impartest" — everything in the universe is to Goethe the activity, the manifestation of One Creative Spirit. "All effects of which we are conscious experience, of whatever kind they be, are in continuous interdependence; they merge into each other; they undulate from the first to the last." "A tile is loosed from the roof and in the ordinary sense we call this chance; it falls on the shoulders of a passer-by, in a mechanical sense certainly; yet not only mechanically, for it follows the laws of gravity and so works *physically*. The ruptured life veins give up their functioning forthwith; instantaneously the fluids work chemically, the rudimentary qualities make their appearance. But the deranged organic life offers opposition with equal rapidity and tries to restore itself; the human being as a whole is, meanwhile, more or less unconscious and psychically disturbed. The person coming to himself again feels himself deeply wounded in an ethical sense; he bewails his disturbed activity of whatever kind it may be, but man does not willingly resign himself in patience. In a religious sense, on the other hand, it is easy to ascribe this accident to a higher destiny, to view it as a preservation from a greater evil, as a preliminary to a higher good. This is sufficient for the sufferer; the convalescent, however, rises up with the buoyancy of genius, with trust in God and himself, and feels himself saved; he takes hold even of what is accidental and turns it to his advantage in order to begin an eternally fresh orbit of life." All effects in the world appear to Goethe modifications of the spirit, and the man who penetrates into their depths, and studies them from the level of the fortuitous to that of genius, experiences the metamorphosis of the spirit from the form wherein it expresses itself in an external manifestation unlike itself, right up to the stage where it appears in its own most appropriate form. In the sense of the Goethean world-conception all creative forces operate uniformly. They are one Whole manifesting itself in a gradation of related multiplicities. Goethe, however, had no inclination to present to himself the unity of the universe as homogeneous. Adherents of the idea of unity often fall into the error of extending the law that may be observed in one region of phenomena to cover the whole of Nature. The mechanistic view of the world, for example, has fallen into this error. It has a special eye and understanding for what can be explained mechanically. Therefore the mechanical alone appears to it to be in accordance with Nature, and. it tries to trace the phenomena of organic Nature as well back to mechanical laws. Life is only a complicated form of the co-operation of mechanical processes. Goethe found such a world-conception expressed, in a singularly repulsive form, in Holbach's "Système de la Nature" that fell into his hands in Strasburg. Matter was supposed to have existed and to have been in motion from all eternity, and to this motion to right and left in every direction, were attributed the infinite phenomena of existence. "We might have allowed even so much to pass if the author, out of his matter in motion, had built up the world before our eyes. But he seemed to know as little of Nature as we did, for, after simply propounding some general ideas, he forthwith disregards them in order to change what seems above Nature, or a higher Nature within Nature, into matter with weight and motion but without aim or shape, — and by this he fancies he has gained much." (Poetry and Truth, Book II.). Goethe would have expressed himself in similar words if he could have heard Du-Bois Reymond's phrase (Grenzen des Naturerkennens, S.13.): "Natural knowledge is a tracing back of the variations in the corporeal world to movements of atoms generated by their central forces which are independent of time, or it is the conversion of natural processes into the mechanics of atoms." Goethe thought that the modes of natural operations were interrelated, the one passing over into the other; but he never wanted to trace them back to one single mode. He did not aspire after one abstract principle to which all natural phenomena should be traced back, but for observation of the characteristic mode in which creative Nature, in each single one of her regions of phenomena, manifests her universal laws through specific forms. He did not want to force one particular form of thought on all natural phenomena, but by living experience in different forms of thought, his aim was to keep the spirit within him as vital and pliable as Nature herself. When the feeling of the mighty unity of all Nature's activity was strong within him he was a Pantheist. "With the many and varied tendencies of my being, I for myself can never be satisfied with one mode of thinking; as poet and artist I am a Polytheist, as Nature investigator, a Pantheist, and such as decisively as the other. If I need a God for my personality as a moral being, that also is provided for" (To Jacobi, 6th January, 1813.). As Artist, Goethe turned to those natural phenomena where the idea is present in direct perception. Here the particular seemed immediately divine, the world a multiplicity of divine entities. As Nature investigator Goethe had perforce also to follow up the forces of Nature in those phenomena where the idea in its individual existence was not visible. As Poet, he could rest content with the multiplicity of the Divine; as Nature investigator he had to seek for the uniformly active ideas of Nature. "The law that manifests in the most absolute freedom, according to its own conditions, produces the objectively beautiful, and this must indeed find worthy subjects by whom it can be

understood." As Artist, Goethe's aim is to perceive this element of objective beauty in the single creation, but as Nature investigator his aim is "to cognise the laws according to which universal Nature wills to act." Polytheism is the mode of thought that sees and venerates a spiritual element in the *particular*; Pantheism is the mode that apprehends the Spirit of the Whole. The two modes of thought can exist side by side; the one or the other asserts itself according to whether the gaze is directed to Nature as one Whole, that is, life and progression from one central point; or to those entities wherein Nature unites in *one* form all that she usually extends over a whole kingdom. Such forms arise when, for instance, the creative powers of Nature "after producing manifold plant forms, produce one wherein all the rest are contained;" or "after manifold animal forms, a being who contains them all: Man."

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Goethe has made this remark: "Whoever has learnt to understand my writings and my real nature will have to admit that he has attained a certain inner freedom" (Conversations with Chancellor F. von Müller, January 5th, 1813.). Goethe was referring here to the active force which asserts itself in all man's striving for knowledge. So long as man remains stationary at the point where he perceives all the antitheses around him, regarding their laws as principles which have been implanted in them and by which they are governed, he has the feeling that they confront him as unknown powers working upon him, forcing upon him the thoughts of their laws. He feels no freedom in face of the objects; he experiences the Law of Nature as inflexible necessity to which he has to submit. Only when man becomes aware that the forces of Nature are only forms of the same spirit that works also in himself does the intuition dawn in him that he partakes of freedom. Nature's Law is perceived as compulsion only so long as man looks upon it as an alien power. If he penetrates its true being it is experienced as a force which he himself uses in his inner being; he feels himself to be an element co-operating productively in the "being and becoming" of things. He is on intimate terms with all power of "becoming;" he has absorbed into his own action what he otherwise only experiences as external instigation. This is the liberating process brought about by the cognitional act in the sense of the Goethean world-conception. Clearly did Goethe perceive the ideas of Nature's activity as they faced him in the Italian works of Art. He also realised clearly the liberating effect which the mastery of these ideas has on man. A consequence of this is his description of the mode of cognition which he speaks of as that of comprehensive minds. "Comprehensive minds, which we can proudly speak of as creative, are productive in the highest degree; in that they take their start from ideas, they already express the unity of the Whole, and *it is really thereafter the concern of Nature* to submit herself to these ideas." Goethe, however, never attained to direct perception of the act of liberation. This perception can only be attained by one who observes himself in the act of cognition. Goethe did indeed practise the highest mode of cognition, but he did not observe this mode of cognition in himself. Does he not himself admit: "I have been clever, for I have never thought about thought."

But just as the creative powers of Nature after manifold plant forms bring forth one wherein "all the others are contained," so, after manifold ideas, do these creative powers of Nature produce one wherein is contained the whole of ideas. And man apprehends this idea when to the perception (Anschauung) of other objects and processes, he adds the perception (Anschauung) of thinking. For the very reason that Goethe's thinking was entirely filled with the objects perceived, because his thinking was a perception, his perception a thinking, he could not come to the point of making thought itself into an object of thought. But the idea of freedom is only attained through the perception of thought. Goethe did not make the distinction between thinking about thought and the perception of thought. Otherwise he would have attained the insight that although in the sense of his world-conception one may indeed refrain from thinking about thought, it is nevertheless possible to attain to perception of the world of thought. Man has no participation in the coming-into-existence of all other perceptions. The ideas of these perceptions come to life within him. The ideas, however, would not be there if the productive power to bring them to manifestation did not exist within him. The ideas may be in truth the content of what is working in the objects, but they come to evident existence as a result of the activity of man. Therefore man can only cognise the essential nature of the world of ideas when he *perceives* his own activity. In every other perception he does nothing more than penetrate the idea in operation; the object in which it is operating remains, as perception, outside his mind. In the perception of the idea the operative activity and what it has brought about are contained within his inner being. He has the whole process completely present within him. The perception no longer seems to have been generated by the idea; for the perception is now itself idea. This perception of what brings forth its self, is, however, the perception of freedom (free spiritual activity). When he observes thought, man penetrates the world-process. Here he has not to search for

an idea of this process, for the process is the idea itself. The previously experienced unity of perception and idea is here experience of the spirituality of the world of ideas which has become perceptible. The man who perceives this self-grounded activity has the feeling of freedom. Goethe indeed experienced this feeling but did not express it in its highest form. He practised a free activity in his observation of Nature, but this activity was never objective to him. He never gazed behind the veils of human cognition and therefore never assimilated into his consciousness the idea of the world-process in its essential form, in its highest metamorphosis. As soon as man attains to the perception of this highest metamorphosis he moves with certainty within the realm of things. At the central point of his personality he has attained the true point of departure for all observation of the world. He will no longer search for unknown principles, for causes that he outside himself; he knows that the highest experience of which he is capable consists in the self-contemplation of his own being. Those who are wholly permeated by the feelings which this experience evokes will attain the truest relationship to things. Where this is not the case men will seek for the highest form of existence elsewhere and since it is not to be discovered in experience, they will conjecture that it lies in an unknown region of reality. An element of uncertainty will make its appearance in their observation; in answering the questions which Nature puts to them they will perpetually plead the unfathomable. Because of his life in the world of ideas Goethe had a feeling of the firm central point within the personality, and so he succeeded within certain limits in acquiring sure concepts in his observation of Nature. Because, however, the direct perception of the most inward experience eluded him, he groped around insecurely outside these limits. For this reason he says that man is not born "to solve the problems of the universe but to seek where the problem commences, and then to keep within the boundary of the comprehensible." He says: "Unquestionably the greatest service rendered by Kant is that he sets up limits to which the human mind is capable of advancing, and that he leaves the insoluble problems alone." If the perception of the highest experience had yielded him certainty in the observation of things Goethe would have attained more along his path than "a kind of qualified reliability by means of ordered experience." Instead of penetrating right through experience in the consciousness that the true has only meaning to the extent to which it is demanded by the nature of man, he came to the conviction that "a higher influence favours the constant, the active, the rational, the ordered and the ordering, the human and the

pious" and that "the moral World Order" manifests in the greatest beauty where it "comes indirectly to the assistance of the good, of the valiant sufferer."

Because Goethe did not know the most inward human experience it was impossible for him to attain to the ultimate thoughts concerning the moral World Order which essentially belong to his conception of Nature. The ideas of things are the content of the active creative elements within them. Man experiences moral ideas directly in the form of ideas. A man who is able to experience how in perception of the world of ideas, the ideal itself becomes self-contained, filled with itself, is also able to experience how the moral element is produced within the nature of man. A man who knows the ideas of Nature only in their relationship to the world of perception will want to relate moral concepts also to something external to them. He will seek a reality for these concepts similar to the reality that exists for concepts that have been acquired from experience. A man, however, who is able to perceive ideas in their own proper essence will be aware that in the case of moral ideas nothing external corresponds to them, that they are produced directly in spiritual experience as ideas. It is clear to him that neither an externally working Divine Will nor an externally working moral World Order is active in producing these ideas. For no trace of relationship to such powers can be observed in them. All that they express is also included in their pure, ideal form which is experienced spiritually. They work upon man as moral powers by virtue of their own content only. No categorical imperative stands behind them with a whip and forces man to follow them. Man feels that he himself has brought them forth and he loves them as he loves his child. Love is the motive power of action. Spiritual delight in one's own production is the source of the moral.

There are men who are incapable of giving birth to any moral ideas. They assimilate those of other men through tradition. And if they have no perceptual faculty for ideas *per se* they do not recognise the source of the Moral that can be experienced in the mind. They seek this source in a superhuman Will that lies outside them. Or they believe that outside that spiritual world which is experienced by man there exists an objective, moral World Order whence the moral ideas are derived. The speech organ of this World Order is frequently thought to lie in the human conscience. Goethe is uncertain in his thoughts about the source of the Moral, just as he is about certain matters pertaining to the rest of his world-conception.

Here too, his feeling for what is in conformity with ideas drives him to principles that accord with the demands of his nature: "Duty — where man loves the commands he gives to himself." Only a man who perceives the basis of the Moral wholly in the content of moral ideas could have said: "Lessing, who reluctantly was aware of various limitations, puts these words into the mouth of one of his characters: Nobody is compelled to be compelled (Niemand muss müssen). A spiritually-minded, happily disposed man said: He who wants to — must. A third, a man of culture to be sure, added: He who has insight, he also wants to. And so it was believed that the whole range of knowledge, will and necessity had been defined. But on the average, man's knowledge of whatever kind it be, determines his actions and missions; therefore nothing is more terrible to see than ignorance in action." The following utterance proves that a sense of the true nature of the moral held sway in Goethe but never became a clear perception: "In order to become perfect the will must submit itself in the moral sphere, to the conscience that does not err. ... The conscience needs no ancestry, everything exists within it, it is concerned with the inner world alone." "Conscience needs no ancestry" can only mean that originally there exists no moral content in man; he supplies it himself. In contradistinction to these sayings we find others where the origin of conscience is relegated to a region outside man: "However strongly the earth with its thousands upon thousands of phenomena attracts man, he still raises his gaze with longing to the heavens, because he feels deeply and vividly within himself that he is a citizen of that spiritual realm the belief in which we can neither reject nor surrender." "That which defies solution we leave with God as the All-determinant, All-liberating Being."

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Goethe has no faculty for observation of the innermost nature of man, for self-contemplation. "I acknowledge in this connection that the mighty command which sounds so significant — 'Know thyself!' — has always roused the suspicion in me that it was a ruse of a secret confederacy of the priesthood whose aim it was to confuse men by unattainable demands and to lead them away from activity in the external world to a false inward contemplation. Man knows himself only to the extent to which he knows the world. He becomes aware of the world only in himself, and of himself, only in the world. Every fresh object, contemplated with deliberation, opens up a new faculty within us." *The truth is exactly the reverse*: man knows the world only to the extent to which he knows himself. For what is present as perception in external objects in reflection, example, symbol,

only reveals itself in his inner being in its own essential form. That which man can otherwise only speak of as unfathomable, impenetrable, divine, appears before him in its true form in self-perception. Because in selfperception he sees the ideal in direct form he acquires the power and faculty to seek for and recognise this ideal element in all outer phenomena also, in the whole of Nature. A man who has experienced the flash of selfperception does not any longer set out in guest of a "hidden" God behind the phenomena; he apprehends the Divine in its different metamorphoses within Nature. Goethe remarked in reference to Schelling: "I would see him more frequently if I were not still living in the hope of poetic moments; philosophy ruins poetry so far as I am concerned, probably because it forces me into the object, and since I can never remain purely speculative but am compelled to seek a perception for every principle I take flight at once out into Nature." The highest perception, the perception of the world of ideas, however, was just what he could not discover. That perception cannot ruin poetry, for it alone frees the spirit from all conjectures as to the existence in Nature of an unknown, an unfathomable element. It makes the spirit able to surrender itself wholly and freely to the objects, for it imparts the conviction that all that the spirit may desire from Nature may be gleaned from her.

The highest perception, however, also frees the human spirit from any one-sided sense of dependence. In possessing it the spirit of man feels itself master in the realm of the moral World Order. The spirit of man knows that in its inner being there works, as in its own will, the motive power that brings forth all things, and that the highest moral decisions lie within itself. For these highest decisions flow from the world of moral ideas, and the soul of man has been present at the production of this world. Man may be conscious of limitation in regard to a particular thing, may be dependent on a thousand others, but on the whole he himself sets his own moral goal and moral direction. The operative element of all other things is manifested in man as idea; the operative element in man is the idea which he himself brings forth. The process that takes place in Nature as a Whole is accomplished in each single human individuality: it is the creation of an actuality from out of the idea, man himself being the creator. For at the basis of his personality there lives the idea which imparts content to itself. Going beyond Goethe, we must expand his phrase that Nature "in her creation is so bounteous that after multifarious plant forms she makes one wherein all the others are contained, and after multifarious animals one being who contains them all — Man." Nature is so mighty in her creation that she repeats in each individual human being the process by means of

which she brings forth all creatures directly out of the idea, inasmuch as moral acts spring from the ideal basis of the personality. That which man feels to be the objective basis of his acts is only the result of "paraphrasing" and misunderstanding of his own being. Man realises himself in his moral acts. In concise phrases Max Stirner has described this knowledge in his work: "The Individual and his Rights." "I am the owner of my power; I am this when I know myself as a unique individual. In the individual the owner returns to his creative void out of which he was born. Every higher being above me, be he God, be he Man, weakens the sense of my individuality and pales before the sunlight of this consciousness. If I cast my lot upon myself, the individual, it rests on its own perishable, mortal creator who consumes himself, and I am able to say: 'I have cast my lot on Nothingness." But one may reply to Stirner in the words of Faust to Mephistopheles: "In thy Nothingness I hope to find the All," for in my inner being dwells, in its individual form, the active power whereby Nature creates the All. So long as man has not perceived this active power in himself he will appear, in face of it, as Faust appeared to the Earth Spirit. It will always cry to him in the words: "Thou'rt like the Spirit whom thou comprehendest, not me!" Only the perception of the deepest inner life can conjure forth this Spirit which says of itself:

"In the tides of Life, in Action's storm, A fluctuant wave,
A shuttle free,
Birth and the Grave,
An eternal sea,
A weaving, flowing
Life, all-glowing,
Thus at Time's humming loom
'tis my hand prepares
The garment of Life
which the Deity weaves."

In my *Philosophy of Spiritual Activity* (*The Philosophy of Spiritual Activity*, Anthroposophical Publishing Company, 46 Gloucester Place, London, W.1.) I have tried to show how the knowledge that in his actions man is dependent upon himself is derived from the most inward of all experiences, from the perception of his own being. In 1844 Stirner advocated the view that if man truly understands himself he can only see the basis of his

activity in himself. In the case of Stirner, however, this knowledge did not proceed from perception of the most inward experience but from the feeling of being free and untrammelled by all-constraining world powers. Stirner does not go further than to demand freedom; in this region he is led to lay the sharpest possible emphasis on the fact that human nature is based upon itself. I have tried to describe life in freedom on a broader basis by showing what man discovers when he beholds the foundation of his soul. Goethe did not attain to the perception of freedom because he had an aversion to self-knowledge. If this had not been the case the knowledge of man as a free personality based on itself must have constituted the summit of his world-conception. We find the germs of this knowledge everywhere in Goethe, and they are at the same time the germs of his view of Nature.

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In his real studies of Nature Goethe never speaks of impenetrable courses or of hidden motive forces of phenomena. He is content with observing the phenomena in their sequence and explaining them by the help of those elements which in the act of observation are revealed to the senses and the mind. On May 5th, 1786, he writes in this sense to Jacobi; he says that he had the courage "to devote his whole life to the observation of objects accessible to him" and of whose essential being he "can hope to form an adequate idea," without worrying in the least about how far he will advance or about what is suitable for him. A man who believes that he draws near to Divinity in the single object of Nature does not any longer need to build up for himself a separate conception of a God existing exterior to and alongside of the objects. It is only when Goethe leaves the realm of Nature that his sense for the essential being of objects no longer asserts itself. His lack of human self-knowledge leads him then to make statements that cannot be reconciled either with his innate mode of thought or with the trend of his Nature studies. Those who are prone to refer to statements of this kind may assume that Goethe believed in an anthropomorphous God and in an individual continuation of that form of the soul's life that is bound up with the conditions of the physical, bodily organisation. Such a belief is contradictory to Goethe's Nature studies. The trend of these studies could never have become what it is if Goethe had allowed himself to be guided by this belief. In accordance with the whole character of his Nature studies is the conception that the true being of the human soul lives in a supersensible form of existence after the body has been laid aside. This form of existence necessitates that by reason of the

changed life conditions it will also assume a mode of consciousness different from that which it possessed through the physical body. And so the Goethean teaching of metamorphoses leads also to the perception of metamorphoses of soul life. But we shall only be able to apprehend this Goethean idea of Immortality aright if we realise that Goethe's view of the world could not lead him to conceive of an unmetamorphosed continuation of that form of spiritual life that is conditioned by the physical body. Because Goethe did not attempt a perception of the life of thought in the sense indicated here he was not induced in the course of his life to develop in any special degree that idea of Immortality which would have been the continuation of his thoughts on Metamorphosis. This is, however, the idea that would really in truth have followed from his world-conception in reference to this sphere of knowledge. What Goethe gave as the expression of a personal feeling in reference to the view of life of one or another of his contemporaries, or from some other motive, without thinking of its connection with the view of the world won from its Nature studies must not be quoted as characteristic of his idea of Immortality.

When it is a question of a true estimation of some particular utterance of Goethe within the collective picture of his world-conception, we must also take into consideration the fact that the attitude of his soul in the different periods of his life gives special colouring to such utterances. He was fully conscious of this variation in the forms in which his ideas were expressed. When Forster gave it as his view that the solution of the Faust problem is given in the words:

"A good man through obscurest aspirations Has still an instinct of the one, true way,"

Goethe's reply was: "That would be an explanation. Faust ends as an old man, and in old age we become Mystics." And in the Prose Aphorisms we read: "There is a specific philosophy answering to every period of life. The child is a Realist, for it finds itself as convinced about the existence of the pears and apples as it is about its own. The youth, assailed by inner passions, must reckon with himself, must feel his way, and he is transformed into an idealist. On the other hand, the grown man has every cause to become a sceptic; he does well to doubt as to whether the means which he has chosen for his ends are the right ones. Before acting and in action he has every cause to keep his intellect mobile in order that he may

not later have to regret a wrong choice. The old man, however, will always embrace Mysticism; he realises that so much seems to be dependent on chance; the unreasonable succeeds, the reasonable strikes amiss, fortune and misfortune alike balance unexpectedly; thus it is, thus it was, and old age rests in Him Who is, Who was and Who will be."

In this book I have been concerned with Goethe's world-conception out of which his insight into the life of Nature has developed, and was the driving force in him, from the discovery of the intermaxillary bone in man up to the completion of his Doctrine of Colours. And I think I have shown that this world-conception corresponds more fully to his personality as a whole than any compilation of utterances where it is necessary above all to take into consideration the colouring given to the thoughts by the mood of youth or mature age. It is my belief that in his Nature studies Goethe was guided by a true feeling, although not by a clear self-knowledge in conformity with ideas, and that he maintained a free and independent mode of procedure, derived from the true relationship of human nature to the external world. Goethe himself realises that there is something unfinished in his mode of thought. "I was conscious of great and noble aims, yet I could never understand the conditions under which I worked; I noted what was lacking in me, and equally what was exaggerated; therefore I did not abstain from developing myself from without and from within. And yet it remained as before. I pursued each aim with earnestness, intensity and fidelity. I often succeeded in a complete mastery of refractory conditions, but I was often frustrated by them because I could not learn how to yield and to evade. And so my life passed amid action and enjoyment, suffering and opposition, amid love, contentment, enmity and displeasure of others. Let those who share the same destiny behold themselves mirrored here!"

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7 The Doctrine of Metamorphosis

We cannot understand Goethe's relation to the natural sciences if we confine ourselves merely to the single discoveries he made. I take as a guiding point of view for the study of this relation the words which Goethe wrote to Knebel from Italy, 18th August, 1787: "After what I have seen of plants and fishes at Naples and in Sicily I should be tempted, if I were ten years younger, to make a journey to India, not in order to discover anything new, but to observe, in my own way, what has already been discovered." It appears to me to be a question of the way in which Goethe coordinated the natural phenomena known to him in a view of Nature in harmony with his mode of thinking. Even if all his individual discoveries had already been made, and he had given us nothing but his view of Nature, this would not detract in the least from the importance of his Nature studies. I am of the same opinion as Du Bois-Reymond that "even without Goethe's participation, science would still be as far advanced as it is today" ... that "the steps attained by him would have been attained by others sooner or later." (Goethe und kein Ende S.31.). I cannot, however, apply these words, as Du Bois-Reymond does, to the sum-total of Goethe's work in natural science. I limit them to the individual discoveries made during the course of his work. In all probability we should not be without a single one of them to-day even if Goethe had never occupied himself with botany, anatomy, and so forth. His view of Nature, however, emanated from his personality; none other could have achieved it. The single discoveries as such did not interest him. They arose of themselves during his studies, because in regard to the facts in question, views prevailed which were not reconcilable with his mode of observation. If he could have built up his views with what natural science had to offer he would never have occupied himself with detailed studies. He had to particularize because what was said to him by the investigators of Nature about the particulars did not correspond with his demands. The individual discoveries were made only accidentally, as it were, during the course of these detailed studies. For instance, the question whether man, like other animals, has an intermaxillary bone in the upper jaw-bone did not at first concern him. He was trying to discover the plan by which Nature develops the series of animals and, at its summit, Man. He wanted to find the common archetype which lies at the basis of all animal species and finally, in its highest perfection, at the basis of the human species also. The Nature investigators said: there is a difference between the structure of the animal body and that of the human body. Animals have the intermaxillary bone in the upper jaw, man has not. Goethe's view was that the human physical structure could only be distinguished from the animal by its degree of perfection, not details. For, if the latter were the case, there could not be a common archetype underlying the animal and the human organisations. He could make nothing of the assertion of the scientists, and so he sought for the intermaxillary bone in man — and found it. Something similar to this can be observed in the case of all his individual discoveries. For him they are never the end in itself; they had to be made in order to justify his ideas concerning natural phenomena.

In the realms of organic Nature the important thing in Goethe's views is the conception he formed of the *nature* of life. It is not a question of emphasising the fact that leaf, calyx, corolla, etc., are plant-organs identical with each other and unfolding out of a common basic form. The essential point is Goethe's conception of the whole plant-nature as a living thing, and how he thought of the individual parts as proceeding from the whole. His idea of the nature of the organism is his central, most individual discovery in the realm of biology. Goethe's basic conviction was that something can be perceived in the plant and animal which is not accessible to mere sense observation. What the bodily eye can observe in the organism appears to Goethe to be merely the result of a living whole of formative laws working through one another, laws which are perceptible only to the 'spiritual eye.' He has described what his spiritual eye perceived in the plant and in the animal. Only those who are able to see as he did can recapture his idea of the nature of the organism; those who remain stationary at what the senses and experiments give, cannot understand him. When we read his two poems "The Metamorphosis of Plants," and "The Metamorphosis of Animals," it appears at first as if the words simply led us from one part of the organism to another, as if the intention was merely to unite external facts together. If, however, we permeate ourselves with what hovered before Goethe as the idea of the living being we feel ourselves transplanted into the sphere of organic Nature and the conceptions concerning the various organs develop from out of one central conception.

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When Goethe began to make independent reflections upon the phenomena of Nature it was the concept of life that claimed his attention above all else. In a letter from the Strasburg period, 14th July, 1770, he writes of a butterfly: "The poor creature trembles in the net, and its fairest colours are rubbed off; even if it is caught uninjured, in the end it perishes there, stiff and lifeless; the corpse is not the whole creature. Something else is required, indeed the essential part, and in this case as in every other, the most essential part: Life." It was clear to Goethe from the beginning that an organism cannot be considered as a dead product of Nature; that something more exists within it over and above the forces which also live in inorganic Nature. When Du Bois-Reymond says that "the purely mechanical world-construction which to-day constitutes science was no less obnoxious to the princely poet of Weimar than, in earlier days, the 'Système de la Nature' to Friederike's friend," he was undoubtedly right; he was no less right when he said that "Goethe would have turned away with a shudder from this world-construction which, with its primeval generation, borders on the Kant-Laplace theory; from man's emergence out of chaos as the result of the mathematically-determined play of atoms from eternity to eternity; from the icy world-end, from the pictures to which our race adheres with all the insensibility by means of which it has accustomed itself to the horrors of railway travel." (Goethe und kein Ende. S.35. f.). Naturally Goethe would have turned away in disgust because he sought and found a higher concept of the living than that of a complicated, mathematicallydetermined mechanism. Only those who are incapable of grasping a higher concept of this kind and identify the living with the mechanical because they can only see the mechanical in the organism, will enthuse over the mechanical world-construction with its play of atoms, and regard without feeling the pictures which Du Bois-Reymond sketches. Those, however, who can assimilate the concept of the organic in Goethe's sense will dispute its justification as little as they dispute the existence of the mechanical. We do not dispute with those who are colour-blind concerning the world of colours. All views which represent the organic mechanically incur the judgment which Goethe puts into the mouth of Mephistopheles:

"Who would describe and study aught alive. Seeks first the living spirit thence to drive; Then are the lifeless fragments in his hand, There only fails, alas! the spirit band."

The opportunity of concerning himself more intimately with plant life came to Goethe when Duke Karl August presented him with a garden (21st April, 1776). He was also stimulated by excursions in the Thuringian forest, where he could observe the living phenomena of lower organisms. Mosses and lichens claimed his attention. On October 31st he begged Frau von Stein to give him mosses of all kinds, if possible with the roots and moist, so that he could use them for observing the process of propagation. It is important to bear in mind that at the beginning of his botanical studies Goethe occupied himself with lower plant forms. He only studied the higher plants when later he was forming his idea of the archetypal plant. This was certainly not because the lower kingdom was strange to him, but because he believed that the secrets of plant-nature were more clearly manifested in the higher. His aim was to seek the idea of Nature where it revealed itself most distinctly and then to descend from the perfect to the imperfect in order to understand the latter by means of the former. He did not try to explain the complex by means of the simple, but to survey it at one glance as a creative whole, and then to explain the simple and imperfect as a onesided development of the complex and perfect. If Nature is able, after countless plant forms, to create one more which contains them all, on perceiving this perfect form, the secret of plant formation must arise for the mind in direct perception, and then man will easily be able to apply to the imperfect what he has observed in the perfect. Nature investigators go the opposite way to work, for they regard the perfect merely as a mechanical sum-total of simple processes. They proceed from the simple and derive the perfect from it.

When Goethe looked around for a scientific guide in his botanical studies he could find no other than Linnæus. We first learn of his study of Linnæus from his letters to Frau von Stein in the year 1782. The earnestness with which Goethe pursued his studies in natural science is shown by the interest he took in the writings of Linnæus. He admits that after Shakespeare and Spinoza he was influenced most strongly by Linnæus. But how little could Linnæus satisfy him! Goethe wanted to observe the different plant forms in order to know the common principle that lived in them. He tried to discover what it is that makes all these forms into plants. Linnæus was satisfied with classifying the manifold plant forms in a definite order and describing them. Here Goethe's naive, unbiased observation of Nature, in one special instance, came into contact with the scientific mode of thought that was influenced by a one-sided conception of Platonism. This mode of thought sees in the separate forms manifestations of original, co-existing Platonic Ideas, or creative thoughts. Goethe sees in the

individual formation only one special form of an ideal archetypal being which lives in all forms. The aim of the former mode of thought is to distinguish the separate forms with the greatest possible exactitude in order to discern the manifoldness of the ideal forms or of the plan of creation; Goethe's aim is to explain the manifoldness of the particular from out of the original unity. That many things are present in manifold forms is clearly evident to the former mode of thought, because for it the ideal archetypes are already manifold. This is not evident to Goethe, for according to his view the many only belong together when a unity reveals itself in them. Goethe therefore says that what Linnæus "sought to hold forcibly asunder, had to strive for union, in order to satisfy the innermost need of my being." Linnæus simply accepts the existing forms without asking how they have arisen from a basic form. "We count as many species as there are different forms that have been created in principle." This is a basic statement. Goethe sought the active element in the plant kingdom that creates the individual through the specific modifications of the basic form.

In Rousseau Goethe found a more naïve relationship to the plant world than was the case with Linnæus. He writes to Karl August, 16th June, 1782: "In Rousseau's Works one finds the most delightful letters on botany in which he gives a very clear and charming exposition of this science to a lady. It is a fine example of the way one ought to give instruction, and is a supplement to Emil. It makes me want to recommend the beautiful kingdom of flowers anew to my friends of the fair sex." In the "History of my Botanical Studies' Goethe tells us what attracted him to Rousseau's botanical ideas: "His relation to plant lovers and connoisseurs, specially to the Duchess of Portland, may have widened his penetrating sight, and a spirit such as his, which felt called to prescribe law and order to nations, was forced to suppose that in the immeasurable kingdom of plants no such great diversity of forms could appear without a basic law, be it ever so concealed, which brings them back collectively to a Unity." Goethe was seeking for a fundamental law which leads back the manifold to the unity from which it has originally proceeded.

Two works of Freiherr von Gleichen, called "Russwurm," came at that time to Goethe's knowledge. Both of them deal with the life of plants in a manner which proved fruitful for him; they are 'Das Neueste aus dem Reiche der Pflanzen' (Nürnburg, 1764), and 'Auserlesene Mikroscopische Entdeckungen bet den Pflanzen' (Nürnburg, 1777/1781.) These books deal with the processes of fructification in plants; pollen, stamens and pistils are minutely described and the processes of fructification presented in well-

executed diagrams. Goethe himself now makes attempts to observe with his own eyes the results described by Gleichen-Russwurm. He writes to Frau von Stein, 12th Jan., 1785: "Now that Spring is approaching my microscope is set up in order to observe and check the experiments of Gleichen-Russwurm." At the same time Goethe studied the nature of the seed, as may be gathered from an account which he gives to Knebel, 2nd April, 1785: "I have reflected on the seed substance as far as my experiences extend." These observations of Goethe only appear in the right light when one considers that even at that time he did not stop at them, but tried to acquire a *general perception* of natural processes which should serve to support and strengthen them. On April 8th of the same year he tells Knebel that he is not merely observing facts, but that he has also made "fine combinations" of these facts.

The share Goethe took in Lavater's great work, "Physiognomic Fragments for the furtherance of Human Knowledge and Human Love," which appeared in the years 1775 to 1778, had a considerable influence on the development of his ideas concerning the workings of organic Nature. He himself contributed to this work, and his later mode of regarding organic Nature is already foreshadowed in the way he expresses himself in these contributions. Lavater goes no further than treating the form of the human organism as the expression of the soul. He wanted to indicate the character of soul from the forms of the body. Goethe began even then to observe the external form in itself, to study its own laws and formative force. He began at the same time to study the writings of Aristotle on physiognomy and endeavoured, on the basis of the study of the organic form, to confirm the distinction between man and the animals. He finds this in the prominence of the head which is determined by the human structure as a whole, and in the perfect development of the human brain to which all parts point as to an organ by which they are determined. In the animal, on the other hand, the head is merely appended to the spine; the brain and spinal cord comprise no more than is absolutely necessary for the execution of subordinate life-principles and sense-activities pure and simple. Goethe was already then seeking for the distinction between man and the animals, not in any one detail, but in the different degrees of perfection which the same basic form attains in one case or the other. Already there hovers before him the picture of a type which occurs both in

the animal and in man, but which is developed in the former in such a way that the entire structure subserves animal functions, whereas in the latter the structure furnishes the scaffolding for the development of the spirit.

Goethe's specific studies in anatomy grew out of such considerations. On Jan. 22nd, 1776, he writes to Lavater: "The Duke has sent me six skulls, and I have made some magnificent observations which are at your service if you have not already found the same things without me." In Goethe's Diary, under the date, 15th Oct., 1781, we read that he studied Anatomy in Jena with Einsiedel, and in the same year began to enter more deeply into this science under the guidance of Loder. He speaks of this in letters to Frau von Stein, 29th Oct., and to the Duke, 4th Nov., 1781. He also had the intention of "explaining the skeleton" to the young people at the Drawing Academy, "and guiding them to a knowledge of the human body." "I do it," he says, "for my own sake as well as for theirs; the method I have chosen will give them this winter a real acquaintance with the basic structures of the body." The Diary shows that these lectures were, in fact, given. During this time he also had many conversations with Loder concerning the structure of the human body. Again it is his general view of Nature which is the motive force and the real aim of these studies. He treats "the bones as a text to which all life and everything human may be appended." (Letters to Lavater and Marck, 14th Nov., 1781.)

Goethe's mind was occupied at that time with conceptions relating to the workings of organic Nature and the connection between human and animal development. That the human form is simply the highest stage of the animal, and that man produces the moral world out of himself as a result of this more perfect stage of animal life, is an idea which is already expressed in the ode "*The Divine*" — written during the year 1782. "Let man be noble, helpful and good; for that alone distinguishes him from all the beings known unto us. According to laws mighty, rigid, eternal, must all we mortals complete the orbit of our existence." The "eternal, rigid laws" work in man just as they work in the rest of the world of organisms; in him alone they reach a perfection which makes it possible for him to be "noble, helpful and good."

While such ideas were establishing themselves in Goethe's being more and more firmly Herder was working at his "Ideas for a Philosophy of the History of Mankind." All the thoughts of this book were discussed by the two men. Goethe was satisfied with Herder's comprehension of Nature; it harmonised with his own conceptions. Frau von Stein writes to Knebel, 1st May, 1784: "Herder's work makes it probable that we were first plants and

animals. ... Goethe is now brooding profoundly over these things and whatever has passed through his mind becomes supremely interesting." Goethe's words to Knebel, 8th Dec., 1783, afford the justification for arriving at his ideas from Herder's. "Herder is writing a Philosophy of History, fundamentally new, as you may well imagine. We read the first chapters together the day before yesterday — and very excellent they are." Sentences such as the following entirely harmonise with Goethe's mode of thought: "The human race is the great coalescence of lower organic forces." "And so we assume that man is the central creation among animals, i.e., the developed form wherein the features of all species around him are summed up superbly." The view of anatomists at that time that the tiny bone which animals have in the upper jaw, the intermaxillary bone which contains the upper incisors, is lacking in man, was of course irreconcilable with such conceptions. Sommering, one of the most noted Anatomists of the time, writes to Merck, 8th Oct., 1782: "I wish you had consulted Blumenbach on the subject of the os intermaxillane which, ceteris paribus, is the only bone which all animals possess from the apes onward, including even the orang-utan, but which is never to be found in man; with the exception of this bone there is nothing in man which cannot be attributed to the animals. I am sending you therefore the head of a hind in order to convince you that this os intermaxillane, as Blumenbach, or os incis as Campa calls it, also exists in animals which have no incisors." That was the general view of the time. Even the famous Camper, for whom Merck and Goethe had the deepest respect, admitted it. The fact that the intermaxillary bone in man coalesces left and right with the upper jaw bone without any clear demarcation in the normally developed individual, led to this view. If the learned men were correct in this it would be impossible to affirm the existence of a common archetype for the structure of the animal and human organism; a boundary between the two forms would have to be assumed. Man would not be created according to the archetype which lies at the basis of the animal. Goethe had to remove this obstacle to his world-conception. This he succeeded in doing, in conjunction with Loder, in the Spring of 1784. Goethe proceeded according to his general principle that Nature has no secret which "she does not somewhere place openly before the eye of the attentive observer." He found the demarcation between upper jaw and intermaxillary bone actually existing in some abnormally developed skulls. He joyfully announced his discovery to Herder and Frau von Stein (27th March). To Herder he wrote: "It should heartily please you also, for it is like the keystone to man; it is not lacking; it is there! But how?" "I have thought of it in connection with your 'Whole' and it will indeed be a fair link in the chain." When Goethe sent the treatise he

had written on the subject to Knebel in Nov., 1784, he indicated the significance which he attributed to this discovery in his whole world of ideas by the words: "I have refrained from pointing to the logical outcome which Herder already indicates in his ideas, that the distinction between man and the animal is not to be looked for in any single detail." Goethe could gain confidence in his view of Nature only when the erroneous view about this fatal little bone had been rejected. He gradually found the courage to extend to all kingdoms of Nature, to her whole realm, his ideas concerning the manner in which, playing as it were with one basic form, she produces life in all its diversity. In this sense he writes to Frau von Stein in the year 1786.

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The book of Nature becomes more and more legible to Goethe after he has deciphered the one letter. "My long 'spelling out' has helped me; now at last it works, and my silent joy is inexpressible." He writes thus to Frau von Stein, 15th May, 1785. He now regards himself capable of writing a small botanical treatise for Knebel. Their journey together to Karlsbad, in 1785, becomes a formal journey of botanical study. After their return the kingdom of fungi, mosses, lichens and algae were studied with the help of Linnæus. He informs Frau von Stein, 9th November: "I continue to read Linnæus, indeed I must, for I have no other book with me: it is the best way of reading a book conscientiously and I must cultivate the practice, for it is not easy for me to read a book to the end. This book is not compiled for reading but for repeated study, and is of the very greatest service to me because I have thought for myself on most of the points." During these studies the basic form out of which Nature fashions all the manifold plant forms assumes separate contours in his mind, even if they are not vet quite definite. In a letter to Frau von Stein, 9th July, 1786, we find these words: "It is a perception of the form with which Nature is, as it were, always playing, and in her play producing life in its diversity."

In April and May, 1786, Goethe made microscopical observations of lower organisms which develop in infusions of different substances — plantain pulp, cactus, truffles, peppercorn, tea, beer, and so on. He carefully noted the processes which he perceived in these organisms and prepared drawings of them. It is apparent also from these notes that Goethe did not try to approach the knowledge of life through such observation of the

lower and simpler organisms. It is quite apparent that he thought he could grasp the essential features of life-processes in the higher organisms just as well as in the lower. He is of the opinion that in the infusoria the same kind of law repeats itself as the eye of the mind perceives, for instance, in the dog. Observation through the microscope only yields information of processes which are, in miniature, what the unaided eye sees on a larger scale. It merely affords an enrichment of sense-experiences. The essential nature of life reveals itself to a higher kind of perception, and not to observation that merely traces to their minutest details, processes that are accessible to the senses. Goethe seeks to cognise this essential nature of life through the observation of higher plants and animals. He would undoubtedly have sought this knowledge in the same way, even if in his age the anatomy of plants and animals had advanced as far as it has today. If Goethe had been able to observe the cells out of which the bodies of plants and animals are built he would have asserted that these elementary organic forms reveal the same conformity to law as is to be perceived in the most complex. He would have explained the phenomena in these minute entities by means of the same ideas by which he interpreted the life-processes of higher organisms. It is in Italy that Goethe first finds the thought which solves the riddle facing him in organic development and metamorphosis. On September 3rd he leaves Karlsbad for the South. In a few but significant sentences he describes in the *History* of my Botanical Studies the thoughts stimulated in him by the observation of the plant world up to the moment when, in Sicily, a clear conception comes to him of how it is that "a fortunate mobility and plasticity is bestowed on plant forms, together with a strong generic and specific tenacity, so that they can adapt themselves to the many conditions working upon them over the face of the earth and develop and transform themselves accordingly." The "variability of plant forms" was revealed to him as he was crossing the Alps, in the Botanic Gardens of Padua, and in other places. "Whereas in the lower regions branches and stalks were stronger and more bounteous in sap, the buds in closer juxtaposition, and the leaves broader, the higher one got on the mountains the stalks and branches became more fragile, the buds were at greater intervals, and the leaves more lancelate. I noticed this in the case of a willow and of a gentian, and convinced myself that it was not a case of different species. So also near the Walchensee I noticed longer and thinner rushes than in the lowlands" (Italian Journey, 8th September). On October 8th, by the seashore in Venice, he finds different plants wherein the relation between the organic and its environment becomes specially clear to him. "These plants are all both robust and virile, succulent and hardy, and it is apparent

that the old salt of the sandy soil, and still more the saline air, gives them this characteristic; they are swollen with juices like water-plants; they are fleshy and hardy like mountain-plants; if their edges have the tendency to form prickles, like thistles, they are exceedingly strong and highly pointed. I found such leaves on bushes; they appeared to me to resemble our harmless coltsfoot, but here they were armed with sharp weapons, the leaves like leather, as also the seed capsules and the stalk, everything very thick and succulent." (Italian Journey). In the Botanical Gardens at Padua the thought of how all plant-forms could be developed out of one, assumes more definite shape in Goethe's mind. In November he writes to Knebel: "The little botany I know has for the first time become a pleasure to me in this land with its brighter, less sporadic vegetation. I have already made fine general observations which will subsequently be acceptable to you also." On 25th March, 1787, there comes to him "considerable illumination regarding botanical phenomena." He begs that "Herder may be told that he is very near to finding the archetypal plant." Only he fears "no one will be willing to recognise the rest of the plant world therein." On April 17th he goes to the Public Gardens "with a firm, calm determination to continue his poetical dreams." But all of a sudden the plant-nature catches him up like a ghost. "The many plants which I was formerly only accustomed to see in pots and tubs, indeed only behind glass windows for most of the year, stand here fresh and gay under the open sky, and thus fulfilling their destiny, they become clearer to us. Amongst so many formations, some new, some familiar, the old fancy again occurred to me as to whether I could not discover among the multitude the archetypal plant. There must be such a thing: how otherwise should I recognise this or that form to be a plant if they were not all fashioned after one type?" He tries hard to distinguish the divergent forms, but his thoughts are guided ever and again to an archetype that lies at the basis of them all. Goethe starts a Botanical Diary in which he notes all his experiences and reflections on the subject of the plant world during the journey. (Goethe's Werke. Weimar Edition Bd. 17. S.273). These diary leaves show how untiringly he is occupied in seeking out specimens of plants fitted to lead him to the laws of growth and reproduction. When he thinks he is on the track of any law he first puts it into hypothetical form, in order to confirm it in the course of his further experiences. He makes careful notes of the processes of generation, of fructification, of growth. More and more it dawns upon him that the leaf is the basic organ of plants, and that the forms of all other plant organs are best understood if they are considered as transformed leaves. He writes in his Diary: "Hypothesis: all is leaf, and through this simplicity the greatest diversity becomes possible." And on May 17th he

writes to Herder: "I must further confide to you that I am very near to the secret of plant generation and organisation, and that it is the simplest thing conceivable. Under this sky the finest observations are possible. I have found clearly and indubitably the cardinal point where the germ is concealed: already I see everything else in its entirety, and only a few details have yet to become more definite. The archetypal plant is the most wonderful creation in the world, for which Nature herself should envy me. With this model, and its key, one can invent plants ad infinitum, and consequently, that is to say, plants which could exist, even if they do not exist, and are not as it were artistic or poetic shadows and fancies but have an inner truth and necessity. The same law may be applied to all else that lives. ... Forwards and backwards the plant is ever only leaf, so indissolubly united with the future germ that one cannot think of the one without the other. To grasp such a concept, to sustain it, to discover it in Nature, is a task which places us in a condition that is almost painful, despite its joy." (Italian Journey).

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For an explanation of the phenomena of life Goethe takes a path entirely different from those which scientists usually travel. Investigators of Nature may be divided into two classes. There are those who advocate the existence of a life-force working in organic Nature, and this life-force represents a special, higher form of force compared with other Natural causes. Just as the forces of gravity, chemical attraction and repulsion, magnetism, and so on, exist, so there must also exist a life-force which brings about such an interaction in the substances of the organism, that it can maintain itself, grow, nourish and propagate itself. These investigators of Nature say: In the organism work the same forces as in the rest of Nature, but they do not work as in a lifeless machine. They are taken up, as it were, by the life-force and raised to a higher stage of activity. Other investigators oppose this view, believing that no special force works in the organism. They regard the phenomena of life as more highly complicated chemical and physical processes and hope that some time it will be possible to explain an organism just as it is possible to explain a machine, by reducing it to the workings of inorganic forces. The first view is described as the theory of vitalism, the second as mechanistic theory. Goethe's mode of conception differs essentially from both. It appears to him self-evident that in the organism something is active as well as the forces of inorganic Nature. He cannot admit a mechanical explanation of living phenomena. Just as little does he seek a special life-force in order to

explain the activities in an organism. He is convinced that for the understanding of living processes there must be a perception of a kind other than that through which the phenomena of inorganic Nature are perceived. Those who decide in favour of the assumption of a life-force realise, it is true, that organic activities are not mechanical, but at the same time they are not able to develop in themselves that other kind of perception by means of which the organic could be understood. The conception of the life-force remains obscure and indefinite. A more recent adherent of the theory of vitalism, Gustav Bunge, thinks that "All the riddles of life are contained in the tiniest cell, and with the existing means at our disposal we have already reached the boundary line." (Vitalismus und Mechanismus, Leipsig. 1886, S.17). One may answer, entirely in the sense of Goethe's mode of thinking: "That power of perception which only cognises the nature of inorganic phenomena has arrived at the boundary which must be crossed in order to grasp what is living." This power of perception, however, will never find within its sphere the means adequate to explain the life of even the tiniest cell. Just as the eye is necessary for the perception of colour phenomena, so the understanding of life is dependent on the power of perceiving directly in the sensible a supersensible element. This supersensible element will always escape one who only directs his senses to organic forms. Goethe seeks to animate the sensible perception of the plant forms in a higher sense and to represent to himself the sensible form of a supersensible archetypal plant. (Geschichte meines botanischen Studiums, Kürschner Nat. Lit. Bd. 33. S.80). The Vitalist takes refuge in the empty concept of the "life-force" because he simply does not see anything that his senses cannot perceive in the organism; Goethe sees the sensible permeated by a supersensible element, in the same sense as a coloured surface is permeated by colour.

The followers of the mechanistic theory hold the view that some day it will be possible to produce living substances artificially from inorganic matter. They say that not many years ago it was maintained that substances existed in the organism which could only arise through the activity of the life-force and not artificially. To-day it is already possible to produce some of the substances artificially in the laboratory. Similarly, it may one day be possible to produce a living albumen, which is the basic substance of the simplest organism, out of carbonic acid, ammonia, water and salts. The mechanists think that this will provide the irrefutable proof that life is nothing more than a combination of inorganic processes — the organism just a machine that has arisen in a natural way.

From the standpoint of Goethe's world-conception it may be said that the mechanists speak of substances and forces in a way that has no justification in experience. And people have grown so accustomed to speak in this way that it becomes very difficult to maintain the clear pronouncements of experience in the face of such concepts. Let us, however, consider, without bias, a process of the external world. I/it us take a quantity of water at a definite temperature. How do we know anything about this water? We observe it, notice that it takes up space and is enclosed within definite boundaries. We put a finger or a thermometer into it and find that it has a definite degree of warmth. We press against the surface and find that it is fluid. This is what the senses tell us concerning the condition of the water. Now let us heat the water. It will boil and finally change into steam. Again one can acquire knowledge through sense-perception of the constitution of the substance, of the steam into which the water has changed. Instead of heating the water, it can be subjected to an electric current, under certain conditions. It changes into two substances, hydrogen and oxygen. We can learn about the nature of these two substances also through the senses. Thus in the corporeal world we perceive states, and observe at the same time that these states can, under certain conditions, pass over into others. The senses inform us of these states. When we speak of something else besides states which change we no longer keep to pure facts, but we add concepts to these. When it is said that the oxygen and the hydrogen which have developed out of the water as a result of the electric current were already contained in the water, but so closely united that they could not be perceived individually, a concept has been added to the perception — a concept by means of which the development of the two bodies out of the one is explained. When it is further maintained that oxygen and hydrogen are substances, as is shown by the fact that names have been given to them, again a concept has been added to what has been perceived. For, in reality, in the space occupied by the oxygen, all we can perceive is a sum of states. To these states we add, in thought, the substance to which they are supposed to belong. The substantiality of the oxygen and hydrogen that is conceived of as already existing in water is something that is added in thought to the content of perception. If we combine hydrogen and oxygen into water by a chemical process we can observe that one collection of states passes over into another. When we say: "the two simple substances have united to form a compound," we have there attempted to give a conceptual exposition of the content of observation. The idea "substance" receives its content, not from perception but from thought. The same thing holds good with "force" as with "substance." We see a stone fall to the

earth. What is the content of perception? A sum-total of sense impressions, states, which appear at successive places. We try to explain this change in the sense-world and say: "the earth attracts the stone; it has a 'force' by which it draws the stone to itself." Again our mind has added a conception to the actuality and given it a content which does not arise out of perception. We do not perceive substances and forces, but states and their transitions into each other. These changes of states are explained by adding concepts to perceptions. Let us conceive of a being who could perceive oxygen and hydrogen but not water. If we combined oxygen and hydrogen into water before the eyes of such a being the states it perceived in the two substances would disappear into nothingness. If we now described the states which we perceive in water, such a being could form no idea of them. This proves that in the perceptual contents of hydrogen and oxygen there is nothing from which the perceptual content water can be derived. When one substance arises out of two or more different ones that means: Two or more perceptual contents have transformed themselves into a content which is connected with them but is absolutely new. What would have been achieved if it were found possible to combine carbonic acid, ammonia, water and salt into a living albumenous substance in the laboratory? We should know that the perceptual content of many substances could combine into one perceptual content. But this latter perceptual content cannot in any sense be derived out of the former. The state of living albumen can only be observed in itself; it cannot be developed out of the states of carbonic acid, ammonia, water and salt. In the organism we have something wholly different from the inorganic constituents out of which it can be formed. The sensible contents of perception change into sensible-supersensible when the living being arises. And those who have not the power to form sensible-supersensible conceptions can as little know anything of the nature of an organism as they could experience water if the sensible perception of it were inaccessible to them.

In his studies of the plant and animal world Goethe tried to conceive of germination, growth, transformations of organs, nutrition and reproduction of the organism, as sensible-supersensible processes. He perceived that this sensible-supersensible process is the same, *ideally*, in all plants and that it only assumes different forms in its outer manifestation. He was able to establish the same thing concerning the animal world. When man has formed in himself the idea of the sensible-supersensible archetypal plant he

will find this again in all single plant-forms. Diversity arises because things, the same *ideally*, can exist in the perceptual world in different forms. The single organism consists of organs which can be traced back to one basic organ. The basic organ of the plant is the leaf with the nodes from which it develops. This organ assumes different forms in external appearance: cotyledon, foliage, leaf, sepal, petal, etc. "The plant may sprout, blossom, or bear fruit, but it is always the same organs which in manifold conditions and under frequently changed forms fulfil Nature's prescription."

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In order to get a complete picture of the archetypal plant Goethe had to follow, in general, the forms which the basic organ passes through in the progress of the growth of the plant from germination to the ripening of the seed. In the beginning of its development the whole plant-form rests in the seed. In this the archetypal plant has assumed a form, through which it conceals, as it were, its ideal content in outward appearance.

"Simply slumbered the force in the seed; a germ of the future Peacefully locked in itself, 'neath the integument lay, Leaf and root and bud, still void of colour and shapeless; Thus does the kernel, while dry, cover that motionless life. Upward then strives it to swell, in gentle moisture confiding, And from the night where it dwelt, straightway ascendeth to light."

(Translation by A. E. Bowring).

Out of the seed the plant develops its primary organs, the cotyledons, after it "has left behind its coverings more or less in the earth" and has established "the root in the soil." And now, in the further course of growth, impulse follows impulse, nodes upon nodes are piled one above the other, and at each node we have a leaf.

The leaves appear in different forms, the lower still simple, the upper much indented, notched, and composed of many tiny leaves. The archetypal plant at this stage of development spreads out its sensiblesupersensible content in space as external sense appearance. Goethe imagines that the leaves owe their progressive development and improvement to the light and the air. "When we find these cotyledons produced in the enclosing seed-walls, filled as it were with a crude sap, almost entirely unorganised, or at any rate only crudely organised and unformed, so do we find the leaves of those plants which grow under water more crudely organised than others that are exposed to the free air; indeed even the same plant species develops smoother and less perfect leaves if it grows in deep, moist places; whereas, on the contrary, in higher regions it produces fibrous and more finely developed leaves, provided with tiny hairs" (Goethe's Werke, Kürschner Nat. Lit. Bd. 33. S25.).

In the second epoch of growth the plant again contracts into a narrower space what was previously spread out.

"Less abundantly yielding the sap, contracting the vessels, So that the figure 'ere long gentler effects doth disclose. Soon and in silence is checked the growth of the vigorous branches

And the rib of the stalk fuller becometh in form.

Leafless however and quick the tenderer stem then upspringeth,

And a miraculous sight doth the observer enchant.

Ranged in a circle, in numbers that now are small, and now countless,

Gather the smaller-sized leaves, close by the side of their like, And as the perfectest type, brilliant-hued coronals form.&lrquo;

(Translation by A. E. Bowring).

In the calyx the plant form draws itself together, and in the corolla again spreads itself out. The next contraction follows in the pistils and stamens, the organs of generation. In the previous periods of growth the formative force of the plant developed uniformly as the impulse to repeat the basic form. At this stage of contraction the same force distributes itself into two organs. What is separated seeks to re-unite. This happens in the process of fructification. The male pollen existing in the stamens unites with the female substance in the pistils, and the germ of a new plant arises. Goethe calls this fructification, a *spiritual anastomosis*, and sees in it only another

form of the process which occurs in the development from one node to another. "In all bodies which we call living we observe the force to produce its like. When we perceive this force *divided*, we speak of the *two* sexes."

The plant produces its like from node to node, for nodes and leaf are the simple form of the archetypal plant. In this form production means growth. If this reproductive force is divided among two organs we speak of two sexes. In this sense Goethe believes he has brought the concepts of growth and generation nearer to each other. At the stage of fruit-formation the plant attains its final expansion; in the seed it appears again contracted. In these six steps Nature accomplishes a cycle of plant development, and begins the whole process over again. Goethe sees in the seed only another form of the nodule which develops on the leaves. The shoots developing out of the node are complete plants which rest on a mother-plant instead of in the earth. The conception of the basic organ transforming itself stage by stage, as on a "spiritual ladder" from seed to fruit is the idea of the archetypal plant. In order to prove to sense perception, as it were, the transforming power of the basic organ, Nature, under certain conditions, at one stage allows another organ to develop instead of the one that should arise in conformity with the regular course of growth. In the double poppy, for example, petals appear in the lilace where the stamens should arise. The organ destined ideally to become a stamen has become a petal. In the organ that has a definite form in the regular course of plant development there is the possibility to assume another.

As an illustration of his idea of the archetypal plant Goethe considers the bryophyllum calycinum, a plant species which was brought to Calcutta from the Molucca Islands, and thence came to Europe. Out of the notches in the fleshy leaves these plants develop fresh plantlets, which grow to complete plants after their detachment. In this process, sensibly and visibly presented, Goethe sees that ideally a whole plant slumbers in the leaf. (Goethe's Notes on Bryophyllum Calycinum. Weimar Edition, Part 2. Vol. VII.).

One who develops the idea of the archetypal plant in himself, and keeps it so plastic that he can think of it in all possible forms which its content permits, can explain all formations in the plant kingdom by its help. He will understand the development of the individual plant, but he will also find that all sexes, species, and varieties are fashioned according to this

archetype. Goethe developed these views in Italy and recorded them in his work entitled *Versuch, die Metamorphose der Pflanzen zu erklären* which appeared in 1790.

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In Italy Goethe also makes progress in the development of his ideas concerning the human organism. On January 20th he writes to Knebel: "As regards anatomy, I have only a very indifferent preparation, and it is not without some labour that I have succeeded in acquiring a certain knowledge of the human frame. Constant examination of the stages here leads one to a higher understanding. In our Academy of Medicine and Surgery it is merely a question of knowing the part, and for this a wretched muscle serves just as well. But in Rome the parts mean nothing unless at the same time they present a noble form. In the great hospital San Spirito they have prepared, for the sake of artists, a very beautiful body displaying the muscles, so that one marvels at its beauty. It could really pass for some flayed demi-god, for a Marsyas. Thus one does not study the skeleton as an artificially arranged mask of bones, but rather after the example of the ancients, with the ligaments by which it receives life and movement."

After his return from Italy Goethe applied himself industriously to the pursuit of anatomical studies. He feels compelled to discover the formative laws of the animal form just as he had succeeded in doing in the case of the plant. He is convinced that the uniformity of the animal organisation is also based on a fundamental organ which can assume different forms in its external manifestation. When the idea of the basic organ is concealed the organ itself has an undeveloped appearance. Here we have the simpler organs of animals: when the idea is master of the substance, forming the substance into a perfect likeness of itself, the higher, nobler organs arise. That which is present *ideally* in the simpler organs manifests itself externally in the higher. Goethe did not succeed in apprehending in a single idea the law of the whole animal form as he did for the plant form. He found the formative law for one part only of this animal form — for the spinal cord and brain, with the bones enclosing these organs. He sees in the brain a higher development of the spinal cord. He regards each nerve centre of the ganglia as a brain which has remained at a lower stage (Weimar Edition, Part 2, Vol. 8.).

He explains the skull-bones enclosing the brain as transformations of the vertebrae surrounding the spinal cord. It had occurred to him previously that he must regard the posterior cranial bones (occipital, posterior and anterior sphenoid bones) as three transformed vertebrae; he maintains the same thing in regard to the anterior cranial bones, when in the year 1790 he finds in the sands of the Lido a sheep's skull, which is, by great good fortune, cracked in such a way that three vertebrae are made visible to immediate sense perception in a transformed shape in the hard palate — the upper jaw-bone, and the intermaxillary bone.

In Goethe's time the anatomy of animals had not yet advanced so far that he was able to cite a living being which really has vertebrae in place of developed cranial bones, and which thus presents in sensible form that which only exists ideally in developed animals. The investigations of Karl Gegenbauer, published in the year 1872, made it possible to instance such an animal form. Primitive fish, or selachians, have cranial bones and a brain which are obviously terminal members of the vertebral column and spinal cord. According to this discovery a greater number of vertebrae than Goethe supposed, at least nine, appear to have entered into the head formation. This error in the number of vertebrae, and, in addition, the fact that in the embryonic condition the skull of higher animals shows no trace of being composed of vertebral parts but develops out of a single cartilaginous vesicle, has been adduced as evidence against the value of Goethe's idea concerning the transformation of the spinal cord and vertebrae. It is indeed admitted that the skull has originated from vertebrae, but it is denied that the cranial bones, in the form in which they appear in the higher animals, are transformed vertebrae. It is said that a complete amalgamation of vertebrae into a cartilaginous vesicle has taken place, and that in this amalgamation the original vertebral structure has entirely disappeared. The bony forms which are to be perceived in the higher animals have developed out of this cartilaginous capsule. These forms have not developed in accordance with the archetype of the vertebra, but in accordance with the tasks they have to fulfil in the developed head. So that in seeking an explanation of the forms of any cranial bone the question is not, "How has a vertebra been transformed in order to become the bones of the head?" — but "What conditions have led to this or that bony form separating out of the simple cartilaginous capsule?" It is believed that there is a development of new forms, in conformity with new formative laws, after the original vertebral form has passed over into an unorganised capsule. A contradiction between this view and Goethe's can only be found from the standpoint of "factfanaticism." The vertebral structure that is no longer sensibly perceptible in the cartilaginous capsule of the skull does nevertheless exist in it *ideally* and re-appears as soon as the conditions for this appearance are there. In the cartilaginous skull-capsule the idea of the vertebral basic organ is concealed within matter; in the developed cranial bones it re-appears in outer manifestation.

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Goethe hopes that the formative laws of the other parts of the animal organism will be revealed to him in the same way as was the case with those of brain, spinal cord, and their enveloping organs. With regard to the Lido discovery he informs Herder, through Frau von Kalb, April 30th, that he "has come much closer to the animal form and its many transformations and indeed through a most curious accident." He believes himself to be so near his goal that he wants to complete, in the very year of his discovery, a work on animal development which may be placed side by side with the "Metamorphosis of Plants" (Correspondence with Knebel, pp 98.).

During his travels in Silesia, July, 1790, Goethe pursues studies in Comparative Anatomy and begins to write an Essay *On the Form of Animals* (Weimar Edition, Part 2, Vol. 8, p. 261.). He did not succeed in advancing from this happy starting point to the formative laws of the whole animal form. He made many an attempt to find the Type of the animal form, but nothing analogous to the idea of the archetypal plant resulted. He compares the animals with each other, and with man, and seeks to obtain a *general picture* of the animal structure, according to which, as a model, Nature fashions the individual forms. This general picture of the animal type is not a living conception that is filled with a content in accordance with the basic laws of animal formation, and thus recreates, as it were, the archetypal animal of Nature. It is only a general concept that has been abstracted from the *special* appearances. It confirms the existence of the common element in the manifold animal forms, but it does not contain the law of animal nature.

"All the members develop according to Laws Eternal.

"All the members develop according to Laws Eternal.

And the rarest of forms secretly preserves the Archetype."

(The Metamorphosis of Animals.)

Goethe could not evolve a uniform conception of how the archetype, through the transformation according to law of a basic member, develops as the many-membered archetypal form of the animal organism. The Essays on *The Form of Animals* and the *Sketch of Comparative Anatomy proceeding from Osteology*, which were written in Jena in 1795, as well as the later and more detailed work, *Lectures on the first three Chapters of an Outline of a General Introduction to Comparative Anatomy*, only contain indications as to how the animals are to be compared suitably in order to obtain a general scheme according to which the creative power "produces and develops organic beings," in accordance with which these descriptions are worked out and to which the most diverse forms are to be traced back, since such a norm may be abstracted from the forms of different animals. In the case of plants, however, Goethe has shown how through successive modifications an archetype develops, according to law, to the perfect organic form.

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Even if Goethe could not follow the creative power of Nature in its formative and transforming impulse through the different members of the animal organism, yet he did succeed in finding single laws to which Nature adheres in the building of animal forms, laws which do indeed conform to the general norm but vary in their manifestation. He imagines that Nature has no power to change the general picture at will. If in some creature one member is developed to a high degree of perfection, this can only happen at the expense of another. The archetypal organism contains all the members that can appear in any one animal. In the single animal form one member may be developed, another only indicated; one may develop completely, another may be imperceptible to the senses. In the latter case Goethe is convinced that the elements pertaining to the general type that are not visible in an animal exist, nevertheless, in the idea. "If we behold in a creature some special excellence we have merely to question and find where something is lacking. The searching spirit will find somewhere the existence of a defect and at the same time the key to the whole of creation. Thus we can find no beast who carries a horn on its head and has perfect teeth in the upper bone of the jaw; the Eternal Mother, therefore, could never have created a lion with horns even by the exercise of all her power. For she has not enough substance to implant the full series of teeth and at the same time bring forth horns and antlers." (Metamorphosis of the Animals.)

All members are developed in the archetypal organism and maintained in equilibrium; the diversity arises because the formative force expends itself on one member and, as a result, another remains in an absolutely undeveloped state or is merely indicated in external manifestation. This law of the animal organism is called to-day the law of the correlation or compensation of organs.

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Goethe's conception is that the whole plant world is contained in the archetypal plant and the whole animal world in the archetypal animal, as idea. Out of this thought arises the question: How is it that in one case these definite plant or animal forms arise, and in another, others? Under what conditions does a fish develop out of the archetypal animal? under what conditions a bird? In the scientific explanation of the structure of organisms Goethe finds a mode of presentation that is distasteful to him. The adherents of this mode of conception ask in regard to each organ: What purpose does it serve in the living being in whom it occurs? — Such a question is based on the general thought that a divine Creator, or Nature, has predetermined a definite purpose in life for each being and has then bestowed upon it a structure which enables it to fulfil this purpose. In Goethe's view this is just as absurd as the question: To what end does an elastic sphere move when it is pushed by another? An explanation of the motion can only be given by discovering the law by which the sphere is set in motion through a blow or other cause. One does not ask: "What purpose is served by the motion of the sphere?" but, "Whence is the motion derived?" In Goethe's opinion one should not ask: "Why has the bull horns?" but rather: "How can he have horns?" Through what law does the archetypal animal appear in the bull as a horn-carrying form? Goethe sought for the idea of the archetypal plant and animal in order to find in them the reasons for the diversity of organic forms. The archetypal plant is the creative element in the plant world. If one wants to explain a single plant species then one must show how this creative element works in this special case. The thought that an organic being owes its form, not to the forces formatively acting in it, but to the fact that the form is imposed upon it from without for certain ends, was repulsive to Goethe. He writes: "In a pitiful, apostolically monkish declamation of the Zurich prophet I recently found this stupid sentence: 'Everything that has life, lives through something outside of itself' — or words to that effect. Only a proselytiser of the heathen could write such a thing, and on revising it, his genius does not pluck him by the sleeve" (Italian Journey, 5th Oct., 1781). Goethe

thinks of the organic being as a "little" world, a microcosm which has arisen through itself, and fashions itself according to its own laws. "The conception that a living being is produced from outside for certain extraneous ends, and that its form is determined by a purposive primeval force, has already delayed us many centuries in the philosophical consideration of Nature, and still holds us back, although individual men have vigorously attacked this mode of thought, and have shown the obstacles which it creates. It is, if one may so express it, a paltry way of thinking, which like all paltry things is trivial just because it is convenient and sufficient for human nature in general" (Weimar Edition, Part 2, Vol. 7, p.217). It is, of course, convenient to say that a Creator, when forming an organic species, has based it on a certain purposive thought, and has therefore given it a definite form. Goethe's aim, however, is not to explain Nature by the intentions of some supernatural being, but out of her inherent formative laws. An individual organic form arises because the archetypal plant or animal assumes a definite form in a special case. This form must be of such a kind that it is able to live in the conditions surrounding it. "The existence of a creature which we call fish is only possible under the condition of an element that we call water." (Weimar Edition, Part 2, Vol. 7. p. 221). When Goethe is seeking to comprehend the formative laws which produce a definite organic form he goes back to his archetypal organism. This archetypal organism has the power to realise itself in the most manifold external forms. In order to explain a fish Goethe would investigate what formative forces the archetypal animal employs in order to produce this particular fish form from among all the forms which exist in it *ideally*. If the archetypal animal were to realise itself in certain conditions in a form in which it could not live it would not survive. An organic form can only maintain itself within certain conditions of life if it is adapted to them.

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"Thus by the animal's form is its manner of living determined, Likewise the manner of life worketh back

on every creature, And so the organised form firmly makes its appearance,

Yet with the power to change, through outer conditions of Nature."

(The Metamorphosis of Animals.)

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The organic forces surviving in a given life-element are conditioned by the nature of the element. If an organic form were to leave one life-element for another it must transform itself accordingly. This can happen in definite cases because the archetypal organism which lies at its base has the power of realising itself in countless forms. The transformation of one form into another is, however, according to Goethe's view, not to be conceived of in such a way that the external conditions immediately remould the form in accordance with their own nature, but that they become the cause through which the inner being transforms itself. Changed life-conditions provoke the organic form to transform itself in a certain way according to inner laws. The external influences work indirectly, not directly, on the living being. Countless forms of life are contained in the archetypal plant and animal *ideally*: those on which external influences work as stimuli come to actual existence.

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The conception that a plant or animal species can in the course of ages, as a result of certain conditions, be transformed into another, has its full justification in Goethe's view of Nature. Goethe's view is that the force which produces a new being through the process of procreation is simply a transformation of that force which brings about the progressive metamorphosis of organs in the course of growth. Reproduction is a "growing-beyond" the individual.

As the basic organ during growth undergoes a sequence of changes which are ideally *the same*, similarly, a transformation of the external form can also occur in reproduction, *while the ideal archetype remains the same*. If an original organic form existed, then its descendants in the course of great epochs of time could pass over through gradual transformations into the manifold forms peopling the earth at present. The thought of an actual blood-relationship uniting all organic forms flows out of Goethe's basic conceptions. He might have expressed it in its completed form immediately after he had formed his idea of the archetypal animal and plant. But he expresses himself with reserve, even indefinitely, when he alludes to this thought.

In the Essay, *Versuch einer allgemeinen Vergleich-ungslehre*, which was probably written shortly after the *Metamorphosis of Plants*, we read: "And how worthy it is of Nature that she must always employ the same means in order to produce and nourish a creature. Thus one will progress along just

these paths, and just as one at first only regarded the inorganic, undetermined elements as vehicles of organised beings, so will one now progress in observation, and again regard the organised world as a union of many elements. The whole kingdom of plants, for example, will again appear to us like a great ocean, which is just as necessary to the limited existence of the insects, as the waters and rivers are to the limited existence of fishes, and we shall see that a vast number of living creatures are born and nourished in this ocean of plants; we shall, finally, again regard the whole animal world as a great element where one race maintains itself out of and through the other if not arising from it." There is less reserve in the following sentence from Lectures on the first three Chapters of an Outline of Comparative Anatomy (1796): "We should also have come to the point where we could fearlessly maintain that all the more perfect organic beings, among which we reckon fishes, amphibia, birds, mammals, and at the summit of the last, Man, are formed according to one archetype, which only in its constituent parts inclines hither and thither and daily develops and transforms itself through procreation." the Goethe's caution regarding thought of transformation comprehensible. The epoch in which he elaborated his ideas was not unfamiliar with this thought. It had, however, been developed in the most confused sense. "That epoch," writes Goethe, "was darker than one can conceive of now." It was stated, for example, that man, if he liked, could go about comfortably on all fours, and that bears, if they remained upright for a period of time, could become human beings. The audacious Diderot ventured to make certain proposals as to how goat-footed fauns could be produced and then put into livery, to sit in pomp and distinction on the coaches of the mighty and the rich! Goethe would have nothing to do with such undue ideas. His aim was to obtain an idea of the basic laws of the living. It became clear to him here that the forms of the living are not rigid and unchangeable, but are subject to continual transformation. He had, however, no opportunity of making observations which would have enabled him to see how this transformation was accomplished in the single phenomenon. It was the investigations of Darwin and the reflections of Haeckel that first threw light on the actual relationship between the single organic forms. From the standpoint of Goethe's world-conception one can only give assent to the assertions of Darwinism in so far as they concern the actual emergence of one organic species from another. Goethe's ideas, however, penetrate more deeply into the nature of the organic world than modern Darwinism. Modern Darwinism believes that it can do without the inner impelling forces in the organism which Goethe conceives of in the sensible-supersensible image. Indeed it would even deny that Goethe was

justified in arguing, from his postulates, an actual transformation of organs and organisms. Jul. Sachs rejects Goethe's thoughts by saying that he transfers "the abstraction evolved by the intellect to the object itself when he ascribes to this object a metamorphosis which, fundamentally speaking, is only accomplished in our concept." According to this view Goethe has presumably gone no further than to reduce leaves, sepals, petals, etc., to one general concept, designating them by the name 'leaf.' "Of course the matter would be quite different if we could assume that the stamens were ordinary leaves in the ancestors of the plant-forms lying before us, etc." (Sachs, *History of Botany*. 1875, p. 169).

This view springs from that "fact-fanaticism" which cannot see that the ideas belong just as objectively to the phenomena as the elements that are perceptible to the senses. Goethe's view is that the transformation of one organ into another can only be spoken of if both contain something in common over and above their external appearance. This is the sensiblesupersensible form. The stamens of a plant-form before us can only be described as the transformed leaf of the predecessors if the same sensiblesupersensible form lives in both. If that is not the case, if the stamen has developed in the particular plant-form simply in the same place in which a leaf developed in its predecessors, then no transformation has occurred, but one organ has merely appeared in the place of another. The Zoologist Oscar Schmidt asks: "What is it that is supposed to be transformed according to Goethe's views? Certainly not the archetype!" (War Goethe Darwinianer? Graz. 1871, p. 22.). Certainly the archetype is not transformed, for this is the same in all forms. But it is just because this remains the same that the external forms can be different, and yet represent, a uniform Whole. If one could not recognise the same ideal archetype in two forms developing out of each other, no relation could be assumed to exist between them. Only the conception of the ideal archetypal form can impart real meaning to the assertion that the organic forms arise by a process of transformation out of each other. Those who cannot rise to this conception remain chained within the mere facts. The laws of organic development lie in this conception. Just as Kepler's three fundamental laws make the processes in the solar system comprehensible, so can the forms of organic Nature be understood through Goethe's ideal archetypes.

Kant, who denies to the human spirit the power of understanding, in the ideal sense, a Whole by which a multiplicity is determined in its appearance, calls it "a risky adventure of reason" to seek to explain the various forms of the organic world by an archetypal organism. For him man

is only in a position to gather the manifold, individual phenomena into one general concept by which the intellect forms for itself a picture of the unity. This picture, however, exists only in the human mind and has nothing to do with the creative power by which the unity really causes the multiplicity to proceed out of itself. The "risky adventure of reason" consists in assuming that the Earth first allows the more simple organisms to proceed out of her womb and that these then produce from themselves forms with more deliberate purpose; that from these again, still higher forms develop, up to the most perfect living being. Kant holds that even if such a supposition is made, it can only be based on a purposive creative force, which has given evolution such an impulse that all its various members develop in accordance with some goal. Man perceives a multitude of different organisms; and since he cannot penetrate them in order to see how they themselves assume a form adapted to the life-element in which they develop, he must conceive that they are so adapted from without that they can live within these conditions. Goethe, however, claims the faculty of being able to recognise how Nature creates the particular from the whole, the outer from the inner. He is willing to undertake courageously what Kant calls the "adventure of reason" (cp. the Essay: Anschauende Urteilskraft Kürschner. Bd. 34.). If we had no other proof that Goethe regarded as justifiable the thought of a blood-relationship among all organic forms within the limits here specified, we should have to conclude it from this judgment of Kant's "adventure of reason."

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A sketch, *Entwurf einer Morphologie*, which still exists, suggests that Goethe intended to present, in their sequence, the special forms which his archetypal plant and archetypal animal assume in the main forms of living beings. He wanted first to describe the nature of the organic as it appeared to him through his contemplation of animals and plants. Then he wanted to show how the organic archetypal being, "proceeding from a centre," develops on the one side to the manifold plant world, on the other to the multiplicity of animal forms, and how particular forms of worms, of insects, of higher animals and the form of man can be derived from the general archetype. He intended even to shed light on physiognomy and phrenology. He made it his task to present the external form in its connection with the inner spiritual faculties. He was impelled to follow the organic formative impulse, which in the lower organisms is portrayed in a

simple external appearance, in its striving to fulfil itself stage by stage in ever more perfect forms until it produces in man a form which makes him able to be the creator of spiritual production.

This plan of Goethe's was never completed, any more than was another, the commencement of which is to be found in the fragment, Vorarbeiten zu einer Physiologie der Pflanzen (cp. Weimar Edition, Part 2, Vol. 6, pp. 286 ff.). Goethe tried to show how the various branches of material knowledge, — Natural History, Physics, Anatomy, Chemistry, Zöonomy and Physiology — must work together, in order to be applied in a higher mode of perception to explain the forms and processes of living beings. He wanted to bring forward a new science, a general morphology of organisms, new indeed "not in reference to its subject-matter, for this is known, but in its outlook and method, which must give an individual form to the doctrine as well as establish a place for it among other sciences." What Anatomy, Natural History, Physics, Chemistry, Zöonomy, Physiology have to offer as the various laws of Nature, would be taken up by the living idea of the organic and placed on a higher level, just as the living being itself takes up the different processes of Nature in the cycle of its development and places them on a higher level of activity.

Goethe reached the ideas which guided him through the labyrinth of living forms along paths of his own. The prevailing conceptions in regard to important regions of Nature's activity contradicted his own general worldconception. Therefore with regard to these regions he had to form for himself conceptions in accordance with his own being. He was convinced, however, that there was "nothing new under the sun," and that one "could certainly find one's own perceptions already indicated in traditions." For this reason he sent his work on the Metamorphosis of the Plants to learned friends, and begged them to tell him whether anything had already been written or handed down concerning the theme in question. He was glad to be told, by Friedrich August Wolf, of an "admirable precursor," one Caspar Friedrich Wolf. Goethe became acquainted with his Theoria Generationis which had appeared in 1759. But this very work shows that it is possible to hold a correct view of the facts and yet that a man cannot come to the full idea of organic development unless he is capable of arriving at the sensible-supersensible form of life through a power of perception higher than that of the senses. Wolf was an excellent observer. He sought to discover the beginnings of life by means of microscopical investigations. He

recognised transformed leaves in the calyx, corolla, pistils, stamens and seed. But he ascribed the process of transformation to a gradual decrease of the life-force, which diminishes in proportion to the length of time the plant exists, until it finally disappears. Calyx, corolla, etc., are, therefore, for him an imperfect development of the leaf. Wolf came forward as the opponent of Haller, who advanced the theory of Pre-formation or "Encasement." According to this theory, all the members of a fully-grown organism are already represented on a small scale in the germ, and, indeed, in the same shape and mutual arrangement as in the developed living being. The development of an organism is thus simply an unfolding of what already exists. Wolf would only accept validity in what he saw with his eyes. And since the encased condition of a living being could not be discovered even by the most careful observations, he regarded development as an actually new formation. According to his view, the shape of an organic being is not yet present in the germ. Goethe is of the same opinion in reference to the external manifestation. He, too, rejects the "Encasement Theory" of Haller. For Goethe the organism is indeed prefigured in the germ, not according to its external appearance but according to the idea. He regards the external appearance as a new formation, but reproaches Wolf with the fact that where he sees nothing with the eyes of the body, he also sees nothing with the eyes of the spirit. Wolf had no conception of the fact that something may still exist in the idea even if it does not pass into external manifestation. "Therefore he is always concerned with penetrating to the beginnings of the development of life by means of microscopical investigations and so following the organic embryos from their earliest appearance up to their development. However admirable this method may be, yet the excellent man did not think that there is a distinction between 'seeing' and 'seeing,' that the eyes of the spirit have to work in constant, living union with the eyes of the body because otherwise one may fall into the danger of seeing and yet overlooking. ... In the plant-transformation he saw the same organ continually contracting, continually diminishing, but he did not see that this contraction alternated with an expansion. He saw that it diminished in volume, but did not observe that at the same time it became more perfect, and he therefore absurdly attributed the path towards perfection to a process of impoverishment." (Kürschner Nat. Lit. Bd. 33.).

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Until the very end of his life Goethe was in touch with innumerable scientific investigators, both in personal and written intercourse. He followed the progress of the science of living beings with the keenest interest; he saw with joy how modes of thought resembling his own gained entrance into this department of knowledge, and how his doctrine of metamorphosis was also recognised and made fruitful by individual investigators. In the year 1817 he began to gather his works together and to publish them in a periodical which he founded under the title, Zur Morphologie. In spite of all this, however, he made no further progress, through personal observation or reflection, in the growth of his ideas concerning organic development. On two other occasions only did he feel compelled to occupy himself more deeply with such ideas. In both cases he was attracted by scientific phenomena in which he found the confirmation of his own thoughts. The one case was the Course of Lectures held by K. F. Martius on "The Vertical and Spiral Tendency of Vegetation" at the Conference of Natural Scientists in the years 1828 and 1829, of which the periodical "Isis" published extracts; the other was a scientific dispute in the French Academy which broke out in the year 1830 between Geoffrey de Saint-Hilaire and Cuvier.

Martius conceived of the growth of plants as being dominated by two tendencies by a striving in the vertical direction which governs the root and stem, and by another which causes the leaves, the organs of the blossoms and so on, to incorporate themselves into the vertical organs of the form of a spiral line. Goethe took these thoughts and brought them into connection with his idea of metamorphosis. He wrote a long essay (Kürschner Bd. 33), into which he collected all his experiences of the plant-world which appeared to him to point to the existence of these two tendencies. He believed that he had to merge these tendencies into his idea of metamorphosis. "This much we must assume: there prevails in vegetation a general spiral tendency, whereby, in union with the vertical striving of the whole structure, each formation in the plant is brought about in accordance with the laws of metamorphosis." Goethe regarded the existence of spiral vessels in the various plant organs as a proof that the spiral tendency dominates the life of plants throughout. "Nothing is more in accordance with Nature than the fact that what she intends in the Whole she activates through the minutest detail." "Let us in summer look at a stake planted in the soil up which a bindweed (convolvulus) climbs from below, winding its way to the heights and — clinging closely — maintains its living growth. Let us think now of the bindweed and stake as both equally living and ascending upwards from one root, producing each other alternately and so

progressing unchecked. Those who can transform this picture into an inner perception will find the idea considerably easier. The twining plant seeks outside itself that which it should itself produce, but cannot." Goethe uses the same comparison in a letter to Count Sternberg, 15th March, 1832, and adds these words: "Of course the comparison does not entirely fit, for in the beginning the creeper must wind itself round the stem in barely perceptible circles. The nearer it approaches the summit, however, the quicker must the spiral line turn in order finally (in the blossom) to collect itself in a circle on the disc. This process resembles the dances of one's youth, where half reluctantly one was often pressed in the close embrace of affectionate children. Pardon these anthropomorphisms!" Ferdinand Cohn remarks in reference to this passage: "If only Goethe had known Darwin! How pleased he would have been with this man, who through his strictly inductive methods knew how to find clear and convincing proofs for his ideas." Darwin thinks that in nearly all plant organs he can show that in the period of their growth they have the tendency to spiral movements which he calls circummutation.

In September, 1830, Goethe refers in an essay to the dispute between the two investigators, Cuvier and Geoffrey de Saint-Hilaire; in March, 1832, he continues this essay. In February and March, 1830, Cuvier, the "factfanatic" came forward in the French Academy in opposition to the work of Geoffrey de Saint-Hilaire, who, in Goethe's opinion, had attained to a "lofty mode of thought in conformity with the idea." Cuvier was a master of the distinctions existing between the various organic forms. Saint-Hilaire tried to discover the analogies in these forms and to prove that the organisation of animals is "subject to a general plant only modified here and there, whence the differences can be derived." He tried to acquire knowledge of the relationship between the laws and was convinced that the particular could develop stage by stage from the whole. Goethe regards Saint-Hilaire as a man of like mind with himself and he expresses this to Eckermann, 2nd August, 1830, in the words: "Geoffrey de Saint-Hilaire is now our ally, and with him all important followers and adherents in France. This occurrence is of inconceivable value to me and I justly rejoice at this final victory of a matter to which I have devoted my life and which is my own special concern." Saint-Hilaire practises a mode of thought which is also that of Goethe, for he seeks to lay hold in experience of the idea of unity simultaneously with the sensible manifold. Cuvier clings to the manifold, to the particular, because in his observation of the particular the idea does not immediately arise. Saint-Hilaire had a right perception of the relation of the sensible to the idea; Cuvier had not. Therefore he describes Saint-Hilaire's all-inclusive principle as presumptive — nay even inferior. One can often experience, especially in the case of investigators of Nature, that they speak in a derogatory sense of something merely ideal, of something merely "thought." They have no organ for the ideal, and therefore do not know its mode of working. It was because Goethe possessed this organ in a highly perfect state of development that he was led from his general world-conception to his deep insight into the nature of the living. His power of allowing the spiritual eye to work in constant living union with the eye of the body made it possible for him to behold the uniform sensiblesupersensible essence which permeates organic evolution. He was also able to recognise this essence where one organ develops out of the other, and where, by its transformation, it conceals its relationship and similarity to its predecessor, even belying it, and changing, both in its function and in its form, to such a degree that no parallel, according to external characteristics, can be found with its earlier stages (cp. the essay on Joachim Jungius, Kürschner, Nat. Lit. Bd. 33.). Perception with the eye of the body imparts knowledge of the sensible and material; perception with the eye of the spirit leads to the perception of processes in human consciousness, to the observation of the world of thinking, feeling and willing; the living union of the spiritual and bodily eye makes possible the knowledge of the organic which, as a sensible-supersensible element, lies between the purely sensible and the purely spiritual.

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The Phenomena of the World of Colour

The feeling that "great works of Art are produced by men according to true and natural laws" was an ever-present stimulus to Goethe to search for these laws of artistic creation. He was convinced that the effectiveness of a work of Art must depend on a natural conformity to law that it reveals. He wishes to discover this conformity to law. He wanted to know why the highest works of Art are at the same time the loftiest productions of Nature. It became clear to him that the Greeks proceeded according to the same laws which Nature follows when they developed "the circle of divine form out of the human structure" (Italian Journey, 28th Jan., 1787.). His aim is to see how Nature brings about this form in order that he may understand it in works of Art. Goethe describes how in Italy he gradually acquired an insight into the natural law of artistic creation (Kürschner, Nat. Lit. Bd. 36.). "Happily I could always hold fast to certain maxims taken from poetry, which inner feeling and long usage had preserved in me, so that as the result of an uninterrupted perception of Nature and Art, animated conversations with connoisseurs of more or less insight, and the life I continually led in the company of more or less practical or thoughtful artists, it became possible for me, though not without difficulty, gradually to analyse Art for myself without dissecting it and to become conscious of its interpenetrating elements." But one particular element will not reveal to him the natural laws in accordance with which it is active in a work of Art, namely colour. Several pictures were "designed and composed in his presence and carefully studied according to their parts, arrangement and form." The artists were able to tell him how they proceeded with their composition. But as soon as it came to the question of colour everything seemed to depend on caprice. No one knew what relation prevailed between colour and *chiaroscuro* — light and shade — or between the single colours. Nobody could tell Goethe, for instance, why yellow makes a warm, pleasant impression, why blue evokes a feeling of cold, why yellow and reddish-blue side by side produce an effect of harmony. He realised that he must first acquaint himself with the laws of the world of colour *in Nature* in order from there to penetrate into the secrets of colouring.

The ideas concerning the physical nature of colour-phenomena which still lingered in Goethe's memory from his student days, and the scientific treatises which he consulted, alike proved fruitless for his purpose. "With

the rest of the world I was convinced that all colours were contained in light; I never heard anything but this, and I never found the slightest cause for doubting it, because I had then no further interest in the matter" (Confessions of the Author, Kürschner, Nat. Lit. Bd., 36.2.). When, however, his interest began to be aroused, he found that he "could evolve nothing for his purpose" out of this view. Newton was the founder of this view which Goethe found to be prevailing among Nature investigators and which, indeed, still occupies the same position to-day. According to this view, white light, as it proceeds from the sun, is composed of colours. The colours arise because the constituent parts are separated out from the white light. If we allow sunlight to enter a dark room through a small round opening, and catch it on a white screen placed perpendicular to the direction of the instreaming light, we obtain a white image of the sun. If we place between the opening and the screen a glass prism through which the light streams, then the white circular image of the sun is changed. It appears as though distorted, drawn out lengthways, and coloured. This image is called the solar spectrum. If we place the prism so that the upper portions of light have to traverse a shorter path within the mass of glass than the lower, the coloured image is extended downwards. The upper edge of the image is red, the lower, violet; the red passes downwards into yellow, the violet upwards into blue; the central portion of the image is, generally speaking, white. Only when there is a certain distance between the screen and prism does the white in the centre vanish entirely; the entire image then appears coloured, from above downwards, in the following order: Red, Orange, Yellow, Green, Light Blue, Indigo, Violet. Newton and his followers conclude from this experiment that the colours are originally contained in the white light but intermingled with each other. They are separated from each other by the prism. They have the property of being deviated in varying degrees from their direction when passing through a transparent body, that is to say, of being refracted. The red light is refracted least, the violet most. They appear in the spectrum according to their degree of refrangibility. If we observe through a prism a narrow strip of paper on a black background this also appears deviated. It is at the same time broader and coloured at the edges. The upper edge appears violet, the lower red; the violet here also passes over into the blue and the red over into yellow; the middle is generally white. Only when there is a certain distance between the prism and the strip does this appear wholly in colours. Green again appears in the middle. Here also the white of the strip of paper is said to be resolved into its colour constituents. That all these colours appear only when there is a certain distance between the screen or strip of paper and the prism, whereas otherwise the centre is white, the

Newtonians explain simply. They say: In the middle the more strongly refracted colours from the upper portion of the image coincide with those that are more weakly refracted from below, and blend to make white. The colours only appear at the edges because here into these portions of light that are more weakly refracted, no strongly refracted colours can fall from above, and into those portions that are more strongly refracted none of the more weakly refracted portions can fall from below.

This is the view from which Goethe could evolve nothing useful for his purpose. He had therefore to observe the phenomena himself. He went to Büttner in Jena who lent him the apparatus with which he could make the necessary experiments. He was occupied at the time with other work and was, at Büttner's request, about to return the apparatus. Before doing so, however, he took a prism in order to look through it at a white wall. He expected that it would appear in various degrees of colour, but it remained white. Colours only appeared at those places where the white contacted dark. The window-bars appeared in the most vivid colours. From these observations Goethe thought he had discovered that the Newtonian view was false, that colours are not contained in the white light. The boundary, the darkness, must have something to do with the origin of the colours. He continued the experiments. He observed white surfaces on black, black surfaces on white backgrounds. Gradually his own view was formed. A white disc on a black background appeared distorted on looking through the prism. Goethe thought that the upper parts of the disc extend over the adjacent black of the background, whereas this background extends over the lower parts of the disc. If one now looks through the prism one perceives the black background through the upper part of the disc as through a white veil. If one looks at the lower part of the disc it appears through the overlying darkness. Above, the light is spread over the dark; below, dark over light. The upper edge appears blue, the lower, yellow. The blue passes over into violet towards the black — the yellow into red below. If the prism is moved further from the disc the coloured edges spread out, the blue downwards, the yellow upwards. At a sufficient distance the yellow from below extends over the blue from above, and green arises from their overlapping in the middle. In confirmation of this view Goethe observed a black disc on a white ground through the prism. Now dark is spread over light above, light over dark below. Yellow appears above, blue below. As the edges are extended by placing the prism farther away from the disc, the lower blue, which gradually passes over into violet in the centre, spreads over the upper yellow and the yellow, as it extends, gradually takes on a reddish shade. The colour of peach-blossom arises in

the middle. Goethe says to himself: what holds good for the white disc must also hold good for the black. "If the light is there resolved into colours here also the darkness must be regarded as being resolved into colours" (Confessions of the Author. Kürschner. Nat. Lit. Bd., 36.). Goethe now imparts his observations and the doubts which had grown out of them with regard to the Newtonian view to a Physicist of his acquaintance. The Physicist considered his doubts to be unfounded. He interpreted the coloured edges and the white in the centre, as well as its transition into green when the prism is removed further away from the object observed, according to Newton's view. Other Nature investigators whom Goethe approached did the same, and so he continued the observations in which he would have liked to have had assistance from trained specialists alone. He had a large prism of plate-glass constructed which he filled with pure water. He noticed that the glass prism whose cross-section is an equilateral triangle is, on account of the marked dispersion of the colours, often a hindrance to the observer; therefore he had his large prism constructed with the cross section of an isosceles triangle, the smallest angle of which was only 15 to 20 degrees. Goethe calls the experiments performed when the eye looks at an object through the prism, subjective. They present themselves to the eye but are not rooted in the outer world. He wants to add to these objective experiments. To this end he made use of the waterprism. The light shines through a prism and the colour-image is caught on a screen behind the prism. Goethe now caused the sunlight to pass through the openings in cut pasteboard. In this way he obtained an illuminated space bounded by darkness. This circumscribed beam of light passes through the prism and is refracted by this from its original direction. If one places a screen before the beam of light issuing from the prism, there arises on it an image which is, generally speaking, coloured at the edges above and below. If the prism is placed with the narrow end below, the upper edge of the image is coloured blue and the lower edge yellow. The blue passes over towards the dark space into violet, and towards the light centre into light blue; the yellow passes over towards the darkness into red. In this phenomenon, too, Goethe derived the appearance of colours from the boundary. Above, the clear light-beams radiate into the dark space; they illumine a darkness which thereby appears blue. Below, the dark space radiates into the light-beams; it darkens the light and makes it appear yellow. When the screen is moved further from the prism the coloured edges get broader, the yellow approaches the blue. Through the streaming of the blue into the yellow, when there is a sufficient distance between the screen and the prism, green appears in the middle of the image. Goethe made the instreaming of the light into the dark and of

the dark into the light perceptible by agitating a cloud of fine white dust which he produced from fine, dry hair-powder along the line by which the light-beam passes through the dark space. "The more or less coloured phenomenon will now be caught up by the white atoms and presented in its whole length and breadth to the eye of the spectator" (*Farbenlehre*, Didactic Part., para. 326.). Goethe found that the view he had acquired of the subjective phenomena was confirmed by the objective phenomena. Colours are produced by the working together of light and darkness. The prism only serves to move light and darkness over each other.

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After these experiments Goethe cannot adopt the Newtonian conception. His attitude to it was the same as his attitude to Haller's Encasement Theory. Just as according to this theory the developed organism with all its parts is contained in the germ, so the Newtonians believe that the colours which appear under certain conditions in the light, are already contained in it; Goethe could use the same words against this belief which he used against the Encasement Theory, that it "is based on a mere invention, devoid of all element of sense experience, on an assumption which can never be demonstrated in the sense world" (Essay on K. Fr. Wolf. Kürschner. Nat. Lit., Bd. 33.). To Goethe colours are new formations which are developed in the light, not entities that have merely developed out of the light. He had to reject the Newtonian view because of his own mode of thinking in conformity with the idea. The Newtonian view has no knowledge of the nature of the idea. It only acknowledges what is actually present, present in the same sense as the sensible-perceptible. Where it cannot establish the reality through the senses it assumes the reality hypothetically. Because colours develop through the light, and thus must already be contained ideally within it, the Newtonians imagine that they are also actually and materially contained in it, and are only called forth by the prism and the dark border. Goethe knows, however, that idea is active in the sense-world; therefore he does not transfer what exists as idea into the realm of the actual. Idea works in inorganic just as in organic Nature, but not as sensible-supersensible form. Its external manifestation is wholly material, merely pertaining to the senses. It does not penetrate into the sensible; it does not permeate it spiritually. The processes of inorganic Nature run their course according to law, and this conformity to law presents itself to the observer as idea. If one perceives white light in one part of space and colours that arise through the light in another, a causal connection exists between the two perceptions and this can be conceived

of as idea. When, however, this idea is given embodiment and transferred into space as something concrete which passes over from the object of the one perception into that of the other, this is the result of a crude mode of thinking. It was this crudeness that repelled Goethe from the Newtonian theory. It is the *idea* which leads over one inorganic process into another, not a concrete thing that passes from the one to the other.

The Goethean world-conception can only acknowledge two sources for all knowledge of the inorganic processes of Nature: that which is sensibly perceptible in these processes and the ideal connections between the sensible-perceptible which reveal themselves to thought. The ideal connections within the sense-world are not all of the same kind. Some of these connections are immediately obvious when sense perceptions appear side by side, or after, each other, and there are others which can only be penetrated if one traces them back to others of the first kind. In the phenomenon which presents itself to the eye when it beholds darkness through light, perceiving blue, Goethe thinks he recognises a connection of the first kind between light, darkness and colour. It is just the same when light is perceived through darkness, and yellow arises. One can perceive in the border-phenomena of the spectrum a connection which becomes evident through direct observation. The spectrum which shows seven colours in a sequence from red to violet can only be understood by realising that other conditions are there as well as those which give rise to the border-phenomena. The single border-phenomena have united themselves in the spectrum into one complicated phenomenon which can only be understood if one deduces it from the basic phenomena. That which stands before the observer in the basic phenomenon in its purity, appears impure and modified in the phenomena complicated by the additional conditions. The simple facts can no longer be directly recognised. Therefore Goethe seeks everywhere to lead back the complicated phenomena to the simple and pure. To him the explanation of inorganic Nature lies in this. He goes no further back than the pure phenomenon. An ideal connection between sensible perceptions is revealed therein — a connection which is self-explanatory. Goethe calls this pure phenomenon the primary or basic phenomenon (Urphänomen). He regards it as idle speculation to think further about the primary phenomenon. "The magnet is a primary phenomenon which one need only express in order to explain it" (Prose Aphorisms. Kürschner. Nat. Lit. Bd., 36.). A compound phenomenon is explained when we show how it is built up out of primary phenomena.

Modern natural science sets to work differently from Goethe. It seeks to trace back processes in the sense-world to movements of the smallest parts of bodies and in order to explain these movements it makes use of the same laws which it applies to the movements which transpire visibly in space. It is the task of mechanics to explain these visible movements. When the movement of a body is observed mechanics ask: By what forces has it been set in motion? What path does it travel in a definite time? What form has the line in which it moves? It tries to present mathematically the relations between the force, the path traversed, and the form of its path. The scientist says: Red light can be traced back to the vibratory motion of the tiniest parts of a body, and this motion is propagated through space. This motion becomes comprehensible when the laws discovered in mechanics are applied to it. The science of inorganic Nature considers its goal to be a gradual and complete passing over into applied mechanics.

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Modern physics enquires after the number of vibrations in unit time which correspond to a definite colour. From the number of vibrations corresponding to red, and from the number corresponding to violet, it seeks to determine the physical connection of the two colours. The qualitative disappears before its gaze; it observes the spatial and time elements of processes. Goethe asks: What is the connection between red and violet when we disregard these spatial and time elements and consider only the qualitative? The Goethean mode of observation presupposes that the qualitative is also actually present in the outer world, and that it forms, with the temporal and spatial, one inseparable whole. Modern physics, on the contrary, has to proceed from the basic conception that in the outer world only the quantitative, dark and colourless processes of motion are present, and that the qualitative only arises as the effect of the quantitative, on an organism endowed with sense and mind. If this assumption were correct, the ordered connections between the qualitative could not be sought in the outer world, but would have to be deduced from the nature of sense-organs, nervous mechanism, and organs of presentation. The qualitative elements of processes would not be the object of physical investigation but of physiology and psychology. Modern natural science proceeds along the lines of this assumption. According to this view the organism translates one process of movement into the sensation of red, another process into that of violet according to the

constitution of its eyes, optic nerves and brain. The external aspect of the world of colour is thus explained if the connection between the processes of movement by which this world is determined have been perceived.

A proof of this view is sought in the following observation. The optic nerve experiences each external impression as the sensation (Empfindung) of light. Not only light but also a blow or pressure on the eye, an irritation of the retina by a quick movement of the eye, an electric current conducted through the head — all these things give rise to the sensation of light. Another sense (organ) experiences the same stimuli in a different way. If blows, pressure, irritation, or electric currents stimulate the skin they cause sensations of touch. Electricity excites in the ear a sensation of hearing, on the tongue one of taste. It is concluded from this that the content of sensation arising in the organism as the result of an influence from outside differs from the external processes by which it is caused. The colour red is not sensed by the organism because it is united with a corresponding process of movement outside in space, but because the eye, optic nerve and brain of the organism are so constituted that they translate a colourless process of movement into a colour. The law expressing this was called by the physiologist, Johannes Müller, who first enunciated it, the Law of the Specific-Sense-Energies.

This observation only proves that the sense-and mind-endowed organism can translate the most diverse impressions into the language of the particular senses on which they fall. This does not, however, prove that the content of each sense-experience exists only within the organism. Irritation of the optic nerve causes an indefinite, wholly general stimulus which contains nothing that causes us to localise its content outside in space. The sensation arising as the result of a real impression of light is, by its content, inseparably united with the spatial-time process corresponding to it. The movement of a body and its colour are in quite the same way contents of perception. When we conceive of the movement per se we are abstracting from all else which we perceive in the body. All the other mechanical and mathematical conceptions are, like the movement, drawn from the world of perception. Mathematics and mechanics arise as the result of one portion being separated off from the content of the perceptual world and studied by itself. In reality there are no objects or processes whose content is exhausted when we have comprehended in them all the elements that can be expressed through mathematics and mechanics. All that is mathematical and mechanical is bound up with colour, warmth, and other qualities. If physics has to assume that vibrations in space, of minute dimensions and a very high velocity

correspond to the perception of a colour, these movements can only be thought of as analogous to the movements which go on visibly in space. That is to say, if the corporeal world is conceived of as in motion, even to its most minute elements, it must be conceived of as endowed with colour, warmth and other qualities also down to its most minute elements. Those who regard colours, warmth, tones and so on, as qualities which only exist inwardly as the effects of external processes on the sensitive (vorstellenden) organism, must also transfer everything mathematical and mechanical connected with these qualities to within. But then there is nothing left for the outer world. The red which I see, and the light vibrations which the physicist indicates as corresponding to this red, are in reality a unity, which only the abstracting intellect can separate from each other. I should see the vibrations in space which correspond to the quality "red" as movement if my eye were organised for this. But united with the movement I should have the impression of the red colour.

Modern Natural Science transfers an unreal abstraction, a vibrating substratum devoid of all perceptual qualities into space, and is astonished that it cannot understand what causes the receptive (vorstellenden) organism with its nerve apparatus and brain to translate these indifferent processes of movement into the variegated sense-world, permeated by degrees of warmth and sounds. Du Bois-Reymond assumes, therefore, that man, because of an insuperable barrier to his knowledge, will never understand how the fact: "I taste something sweet, smell the fragrance of roses, hear the tone of the organ, see red" is connected with definite movements of the tiniest molecules in the brain — movements which in their turn are caused by vibrations of tasteless, odourless, soundless and colourless elements of the external corporeal world. "It is absolutely and eternally incomprehensible that it should not be a matter of indifference to a number of Carbon, Hydrogen, Nitrogen, Oxygen atoms how they are placed and move, how they were placed and moved and how they will be placed and will move" (*Grenzen des Naturerkennens*. Leipsig, 1882. S. 35.). But there are no boundaries to knowledge here. Wherever a collection of atoms exists in space in a definite movement, there also necessarily exists a definite quality (e.g. Red). And vice-versa, wherever red appears, there the movement must exist. Only the abstracting intellect can separate the one from the other. Those who think of the movement as actually separated from the remaining content of the process to which the movement belongs, cannot rediscover the transition from the one to the other.

Only what is movement in a process can again be derived from movement; that which belongs to the qualitative aspect of the world of light and colours can also only be traced back to a qualitative element within the same sphere. Mechanics leads back complicated movements to simple movements which are directly comprehensible. The theory of colours must lead back complicated colour-phenomena to simple colour phenomena which can be penetrated in the same way. A simple process of movement is just as much a primary phenomenon as the appearance of yellow from the inter-working of light and dark. Goethe knows what the primary mechanical phenomena can accomplish towards the explanation of inorganic Nature. He leads back that which is not mechanical within the corporeal world to primary phenomena which are not of a mechanical nature. Goethe has been reproached with condemning the mechanical consideration of Nature and limiting himself simply to the observation and classification of the sensible-perceptible (Cp. Harnack's Goethe in der Epoche seiner Vollendung. S. 12.). Du Bois-Reymond (Goethe und kein Ende. S. 29) finds that "Goethe's theorising limits itself to deriving other phenomena out of a primary phenomenon, as he calls it. It is rather like one shadowy picture following another without any illuminating causal connection. What was wholly lacking in Goethe was the concept of mechanical causality." What does mechanics do, however, but derive complicated processes from simple, primary phenomena? Goethe has accomplished in the region of colour just what mechanics perform in the realm of movement. It is because Goethe does not consider all processes in inorganic Nature to be purely mechanical that he has been accused of lacking the concept of mechanical causality. His accusers merely show that they themselves err concerning the significance of mechanical causality within the corporeal world. Goethe remains within the *qualitative* realm of the world of light and colours. He leaves to others the quantitative and mechanical elements which can be expressed mathematically. He "endeavoured throughout to keep the theory of colours apart from mathematics, although clearly, certain points arise where the assistance of the art of measurement would be desirable. But this very want may in the end be advantageous, since it may now become the business of the ingenious mathematician himself to ascertain where the doctrine of colours is in need of his aid and how he can contribute to the complete elucidation of this branch of physics" (Farbenlehre. S. 727.). The qualitative elements of the sense of sight — light, darkness and colours — must first be understood from out of their own connections. They must be traced back to primary phenomena; then at a higher level of thought it is possible to

investigate the relation existing between these connections and the quantitative, the mechanical-mathematical element in the world of light and colours.

Goethe seeks to lead back the connections within the qualitative element of the world of colours to the simplest elements, just as strictly as the mathematician or mechanician does in his sphere. "We have to learn from the mathematician the careful cautiousness with which he proceeds step by step, deducing each step from the preceding one and even where we employ no calculation, we must always proceed as if we had to render account to the strictest geometrician. For it is really the mathematical method which, on account of its cautiousness and purity, immediately reveals any gap in an assertion, and its proofs are in truth only detailed affirmations that what is brought into connection has already existed in its simple parts and its entire sequence, that its whole range has been examined and found to be correct and irrefutable under all conditions" (Kürschner. Nat. Lit. Bd., 34. Versuch als Vermittler vom Subjekt und Objekt.).

Goethe derives the explanatory principles for the phenomena directly from the sphere of observation. He shows how the phenomena are connected within the world of experience. He rejects conceptions which lead out of and beyond the realm of observation. All modes of explanation that overstep the field of experience by drawing in factors which, by their very nature cannot be observed, are contrary to the Goethean worldconception. Such a mode of explanation is that which seeks the nature of light in a medium which cannot itself be perceived as such but can only be observed in its mode of working as light. To this category also belong the methods which hold sway in modern natural science, where light vibrations are executed, not by the perceptible qualities revealed to the sense of sight but by the smallest parts of an imperceptible substance. To imagine that a definite colour is united with a definite process of movement in space does not contradict the Goethean world-conception. But the assertion that this process of movement belongs to a region of reality transcending experience, i.e. the world of substance which can be observed in its effects, but not in its own being, contradicts it absolutely. For an adherent of the Goethean world-conception the light vibrations are processes in space and have no other kind of reality than that which inheres in any other content of perception. They elude immediate observation not because they lie beyond the region of experience, but because the organisation of the human sense-organs is not subtle enough to have direct perception of movements so minute. If an eye were so organised that it could observe in all details the oscillations of a body occurring four hundred billion times a second, such a process would resemble a process in the crude sense-world. That is to say, the vibrating body would manifest the same properties as other objects of perception.

Any explanation which derives objects and processes of experience from others lying beyond the field of experience can only attain to adequate conceptions of the realm of reality, lying beyond observation, by borrowing certain attributes from the world of experience and carrying them over to what cannot be experienced. Thus the physicist carries over hardness and impenetrability to the tiniest corporeal elements to which he also ascribes the power of attracting and repelling similar elements; on the other hand he does not ascribe to these elements, colour, warmth and other qualities. He believes that he explains a process of Nature which can be experienced by tracing it back to one that is not capable of being experienced. According to Du Bois-Reymond's view the knowledge of Nature consists in tracing back processes in the corporeal world to movements of atoms brought about by their forces of attraction and repulsion (Grenzen des Naturerkennens. 1882. S. 10.). Matter, the substance filling space, is regarded as being endowed with movement. This substance has existed from eternity, and will exist for all eternity. Matter itself does not belong to the realm of observation but lies beyond it. Du Bois-Reymond, therefore, assumes that man is incapable of knowing the nature of matter as such, and that because of this he derives the processes of the corporeal world from something whose nature will always remain unknown to him. "We shall never know more than we do to-day as to what 'haunts' space where matter is" (Grenzen des Naturerkennens. S. 22.). This concept of matter dissolves into nothingness before a more exact consideration. The real content given to this concept is borrowed from the world of experience. Man perceives movements within the world of experience. He feels a pull if he holds a weight in the hand, and a pressure if he places a weight on the surface of the hand held horizontally. In order to explain this perception he forms the idea of force. He imagines that the Earth attracts the weight. The force itself cannot be perceived. Its nature is ideal, but it belongs, nevertheless, to the realm of observation. The mind observes it because it beholds the ideal relations among the perceptions. Man is led to the concept of a repelling force if he presses a piece of india-rubber and then leaves it to itself. It re-assumes its former shape and size. He imagines that

the compressed parts of the rubber repel each other and again assume their former volume. The mode of thinking of which we have spoken carries over conceptions which have been drawn from observation to a region of reality transcending experience. Thus it does nothing in reality but derive one experience out of another, only it places the latter arbitrarily in a region lying beyond experience. It can be shown in regard to any mode of thought which speaks of a transcendental region that it takes certain fragments from the region of experience and relegates them to a sphere of reality transcending observation. If these fragments of experience are removed from the conception of the transcendental there only remains a concept devoid of content, a negation. The explanation of any experience can only consist in tracing it back to another possible experience. Ultimately we come to elements within experience that can no longer be derived from others. These cannot be further explained because they are in no need of explanation. They contain it within themselves. Their immediate being consists in what they present to observation. To Goethe light is an element of this kind. According to his view, whoever freely perceives light in manifestation has understood it. Colours arise in light and their origin is understood if we show how they arise therein. Light itself is there in immediate perception. We know what is ideally contained in it if we observe the connection that exists between it and colours. From the standpoint of Goethe's world-conception it is impossible to ask concerning the nature of light, concerning the transcendental element corresponding to the phenomenon "Light." "It is really useless to undertake to express the essential nature of a thing; we perceive effects, and a complete history of these effects would in all cases comprise the nature of the thing." That is to say, a complete account of the effects of an experience embraces all the phenomena which are ideally contained therein. "It would be useless to try to describe a man's character, but put together his actions, his deeds, and a picture of his character will stand before us. Colours are acts of light, its active and passive modifications. In this sense we may expect from them some illumination concerning light itself" (Farbenlehre. Didactic Part. Preface.).

Light presents itself to observation as "the simplest and most homogeneous, undivided entity that we know" (Correspondence with Jacobi, p. 167.). Opposed to it there is darkness. For Goethe darkness is not the complete, passive absence of light. It is something active. It opposes itself to light and interplays with it. Modern natural science

regards darkness as a complete nullity. The light which streams into a dark space has, according to this modern view, no opposition from the darkness to overcome. Goethe imagines that light and darkness are related to each other like the north and south poles of a magnet. Darkness can weaken the light in its power of action. *Vice-versa*, light can limit the energy of darkness. Colour arises in both cases. A physical view which conceives darkness as perfect passivity cannot speak of such an inter-working. It has therefore to derive colours out of light alone. Darkness appears as a phenomenon for observation just as does light. Darkness is a content of perception in the same sense as light. The one is merely the antithesis of the other. The eye which looks out into the night mediates the real perception of darkness. If darkness were the absolute void, there would be no perception on looking out into the dark.

Yellow is light toned down by darkness; blue is darkness weakened by light.

The eye is adapted for transmitting to the sensitive organism the phenomena of light and colour and the relations between them. It does not function passively in this connection, but enters into living interplay with the phenomena. Goethe endeavoured to cognise the manner of this interworking. He considers the eye to be wholly living and seeks to understand the expressions of its life. How does the eye relate itself to the individual phenomenon? How does it relate itself to the connections between phenomena? These are questions which he puts to himself. Light and darkness, yellow and blue, are opposites. How does the eye experience these opposites? It must lie in the nature of the eye that it experiences the mutual relations which exist between the single perceptions. For "the eye has to thank the light for its existence. The light calls forth out of indifferent auxiliary animal organs, an organ that is akin to itself; the eye forms itself by the light for the light, so that the inner light can meet the external light" (*Farbenlehre*. Didactic Part. Introduction.).

Just as light and darkness are mutually opposed to each other in external Nature, similarly the two states in which the eye is placed by these two phenomena are also opposed to each other. If we keep our eyes open in a dark space a certain lack is experienced. If, however, the eye is turned to a

strongly illuminated white surface it becomes incapable, for a certain time, of distinguishing moderately illuminated objects. Looking into the dark increases its receptivity; looking into the light weakens it.

Every impression on the eye remains within it for a time. When we look at a black window cross against a light background, we shall, when we shut our eyes, still have the phenomenon for some time before us. If while the impression still lasts, we look at a light grey surface, the cross appears light, the panes, on the contrary, dark. A reversal of the original phenomenon thus occurs. It follows from this that the eye has been disposed by the one impression to produce the opposite out of itself. As light and darkness stand in relation to each other in the outer world, so also do the corresponding states of the eve. Goethe thinks that the region in the eye on which the dark cross fell is rested and becomes receptive to a new impression. Therefore it is that the grey surface works more intensely on it than on the rest of the eye which previously received the stronger light from the window panes. Light produces in the eye the inclination to dark, dark the inclination to light. If we hold a dark object before a lightgrey surface and look fixedly at the same place when it is removed, the space it occupied appears much lighter than the remaining surface. A grey object on a dark ground appears lighter than the same object on a light ground. The eye is disposed by the dark ground to see the object lighter, and by the light to see it darker. These phenomena are indications to Goethe of the great activity of the eye, "and to the passive resistance which all that is living is forced to exhibit when any definite state is presented to it. Thus inbreathing already presupposes outbreathing, and vice-versa. The eternal formula of life is also manifest here. When darkness is presented to the eye, the eye demands light; it demands darkness when light is presented to it and manifests thereby its vitality, its fitness to grasp the object by producing from itself something that is opposed to the object" (Farbenlehre. S. 38.).

Colour perceptions also evoke a reaction in the eye in a similar way to light and darkness. Let us hold a small piece of yellow paper before a moderately illuminated white surface, and look fixedly at the small yellow patch. If after a little while the paper is removed, we shall see the space which the paper had occupied as violet. The impression of yellow causes the eye to produce violet from out of itself. Similarly, blue will produce orange as reaction, and red will produce green. Thus in the eye every colour impression has a living relation to another. The states into which the eye is put by perceptions stand in a connection similar to that of the contents of these perceptions in the external world.

When light and darkness work on the eye this living organ meets them with its demands; if they work on things outside in space these interact with them. Empty space has the property of transparency. It does not work on light and darkness at all. They penetrate it unhindered. It is different when space is occupied with objects. This occupation of space may be of such a kind that the eye does not perceive it because light and darkness shine through it in their original form. Then we speak of transparent objects. If light and darkness do not pass through an object unweakened, the object is designated semi-transparent. The occupation of space by a semi-transparent medium furnishes the possibility for observing light and darkness in their mutual relation. Something bright seen through a semitransparent medium appears yellow, and something dark, blue. The medium is a material substance which is illuminated by the light. It appears dark, compared with a clearer, more intense light behind it, and bright compared with a darkness passing through it. When a semi-transparent medium is thus presented to light or darkness, then brightness and darkness are present and really work into one another.

If the transparency of the medium through which the light shines gradually decreases, the yellow assumes a yellowish-red hue and finally a ruby-red colour. If the transparency of a medium through which darkness penetrates increases, the blue passes over to indigo and finally to violet. Yellow and blue are primary colours. They arise through the working-together of light or darkness with the medium. Both can assume a reddish hue, the former through decrease, the latter through increase, in the transparency of the medium. Thus red is not a primary colour. It appears as a hue of yellow or blue. Yellow, with its red shades, which deepen to pure red, stands near to light; blue with its shades is allied to darkness. If blue and yellow mingle, green arises. If blue intensified to violet mixes with yellow deepened to red, purple arises.

Goethe followed up these basic phenomena in Nature. The bright sun orb seen through a haze of semi-transparent vapour appears yellow. The darkness of space seen through atmospheric vapours illuminated by the day-light presents itself as the blue of heaven. "Similarly, the mountains appear blue to us; for when we behold them at so great a distance that we no longer distinguish the local colours, and no light from their surface works on our eye, they resemble so many dark objects, which owing to the interposed vapours appear blue" (*Farbenlehre*. Para. 156.).

Out of his deep penetration into the works of Art produced by painters, there arose in Goethe the need to understand the laws which dominate the phenomena of the sense of sight. Every painting presented him with riddles. How is the chiaroscuro related to the colours? What relations do the single colours bear to each other? Why does yellow produce a joyful, and blue a serious mood? The Newtonian doctrine of colours could yield no point of view able to elucidate these mysteries. The Newtonian theory derives all colours out of light, places them side by side in sequence, and says nothing about their relation to darkness or of their living relations to each other. Goethe was able to solve the riddles presented to him by Art by the insight he had acquired along his own paths. Yellow must possess a bright, gay, mildly stimulating character because it is the colour nearest to light. It arises through the gentlest moderation of light. Blue indicates the darkness working in it. Therefore it produces a sense of coldness, just as it "is reminiscent of shadows." Reddish-yellow arises through intensification of yellow towards the side of darkness. Through this intensification its energy increases; the gaiety and brightness pass over into rapture. With the further intensification of reddish-yellow into yellowish-red, the gay, cheerful feeling is transformed into the impression of power. Violet is blue striving towards light. The repose and coldness of blue hereby change into unrest. This restless feeling increases in blue-red. Pure red stands in the centre between yellowish-red and bluish-red. The violence of the yellow quietens down; the passive repose of the blue is animated. Red gives the impression of ideal satisfaction, the equalising of extremes. A feeling of satisfaction also arises through green which is a mixture of yellow and blue. The satisfaction is purer here than that produced by red because the gaiety of the yellow is not intensified and the repose of the blue not disturbed through the red shade.

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The eye, when confronting one colour, immediately demands another. When the eye looks at yellow the longing arises for violet; when it perceives blue it desires orange; when it looks at red it yearns for green. It is comprehensible that the feeling of satisfaction should arise, if by the side of one colour presented to the eye there is placed another which the eye desires in accordance with its nature. The law of colour harmony is an outcome of the nature of the eye. Colours which the eye demands in juxtaposition to each other work harmoniously. If two colours appear side by side, the one of which does not demand the other, then the eye is stimulated into opposition. The juxtaposition of yellow and purple has

something one-sided about it, but the effect is that of brightness and magnificence. The eye demands violet by the side of yellow in order to express itself according to its nature. If purple appears in the place of violet the object asserts its claims against those of the eye. It does not accommodate itself to the demands of the organ. Juxtapositions of this kind serve to draw attention to the significance of things. They will not satisfy unconditionally but they *characterise*. Characteristic combinations of this kind demand colours which do not stand in complete contrast to each other, and yet do not merge directly into each other. Juxtapositions of the latter kind impart a kind of characterless element to the objects on which they occur.

The origin and nature of the phenomena of light and colour were revealed to Goethe in Nature. He found the same thing again in the creations of painters, where it is raised to a higher level, translated into the spiritual. Goethe acquired a deep insight into the relation of Nature and Art as the result of his observations concerning the perceptions of sight. This may well have been in his mind when, after the conclusion of the *Doctrine of Colour*, he wrote concerning these observations to Frau von Stein: "I do not regret having sacrificed so much time to them. I have thereby attained an education which I could hardly have got elsewhere."

Goethe's doctrine of colour differs from that of Newton and of those physicists who build up their views on the basis of Newton's ideas, because it proceeds from a different conception of the world. Those who do not bear in mind the connection that has here been demonstrated between Goethe's general ideas of Nature and his doctrine of colour will be unable to hold any other opinion than that Goethe came to his view of colour because he had no understanding for the physicists' true methods of observation. Those who perceive this connection will also realise that within the Goethean world-conception no other doctrine of colour is possible. Goethe would have been unable to think differently about the nature of the phenomena of colour, even if all the discoveries made in this sphere since his time had been laid before him, and even if he had been able to make use of the experimental methods in their present perfection. Although he could not embody Frauenhof's lines wholly into his conception of Nature after he had become aware of their discovery, neither this nor any other discovery in the realm of optics is an objection to his conceptions. In all these things it is merely a question of so elaborating

Goethe's view that these phenomena can find their place in it. It must be admitted that physicists who adhere to the Newtonian point of view can make nothing of Goethe's views of colour. That is not because they possess knowledge of phenomena which contradict Goethe's conception, but because they have grown accustomed to a view of Nature which prevents them from understanding the real aim and object of Goethe's view.

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Thoughts Concerning the Evolutionary History of the Earth

Goethe's connection with the Ilmenau mine stimulated his observations of the kingdom of minerals, stones and rocks as well as the superimposed strata of the earth's crust. In July, 1776, he accompanied Duke Carl August to Ilmenau. The object of their journey was to see whether the old mine could be put into use again. Goethe gave further attention to this matter of the mine, and as a result he felt more and more the desire to know how Nature proceeds in the formation of stony and mountainous masses. He climbed high summits and crept into clefts in the earth in order "to discover the nearest traces of the great shaping hand." He told Frau von Stein of his joy at learning to know creative Nature from this side also, writing from Ilmenau, 8th September, 1780: "I am now living with body and soul in stone and mountains and am overjoyed at the wide perspectives opening out before me. These last two days have revealed to me a new territory and may lead to important results. The world has now assumed for me a new, a gigantic aspect." More and more there established itself in him the hope that he would succeed in spinning a thread which could lead through subterranean labvrinths and afford perspective amid the confusion. (Letter to Frau von Stein, 12th June, 1784.) Goethe gradually extended his observations over wider regions of the earth's surface. He believed that his travels in the Harz mountains had afforded him the knowledge of how great, inorganic masses were formed. He ascribes to these inorganic masses the tendency "to break in various directions, so that parallelepipeds arise which in their turn have the tendency to split diagonally" (Cp. The Formation of large Inorganic Masses. Kürschner. Nat. Lit. Bd. 34.). He thinks of the stony masses as being interwoven by an ideal, six-sided trellis-work. Cubic, parallelepiped, rhombic, rhomboidal, columnar and laminated bodies are thereby formed out of a basic mass. He conceives of forces at work within the basic mass which separate it in the way illustrated by this ideal trellis-work. Goethe seeks this active idea in the kingdom of stone as well as in organic Nature. Here also he investigates with the eye of the spirit. Where this separation into regular forms does not actually appear he conceives of it as existing ideally in the masses. On a journey to the Harz mountains which he undertook in 1784, he asks Councillor Kraus, who accompanied him, to

execute chalk drawings in which the invisible ideal is elucidated and made perceptible through the visible. He is of the opinion that the real can only be truly represented by the draughtsman if he heeds the intentions of Nature, which do not often appear sufficiently clearly in the external phenomenon.

"In the transition from the soft to the solid state, this separation occurs, which either affects the entire mass or else is confined to its inner parts" (*Essay on Mountain Formation: General and Specific.* Kürschner, Nat. Lit. Bd. 34.). According to Goethe's view a sensible-supersensible archetype is livingly present in the organic forms; an ideal element enters into the sensible perception and permeates it. In the regular formation of inorganic masses, however, there is working an idea which does not enter the sensible form as such, but nevertheless creates a sensible form. The inorganic form is not sensible-supersensible in its appearance, but only sensible; it must, however, be understood as the effect of a supersensible force. The inorganic form is a transition between the inorganic process, the course of which is still dominated by an idea although it receives from the idea no finished form, and the organic process in which the idea itself becomes sensible form.

Goethe thinks that the formation of compound rocks is brought about by the substances, which originally existed ideally in a mass only, becoming actually separated from each other. In a letter to Leonhard, 25th November, 1807, he writes: "Thus I willingly admit that I often perceive simultaneous operations where others see only a succession. In many a rock which others regard as a conglomerate, as a heap of fragments gathered and cemented together, I think I see a rock, divided and broken out of a heterogeneous mass, and then held firmly together by consolidation."

Goethe did not succeed in making these thoughts fruitful in regard to a large number of inorganic forms. It is in accordance with his mode of thinking to explain the arrangement of geological strata out of ideal formative principles which inhere in substances according to their nature. He could not agree with the geological views of Werner, which were very general at that time, because Werner did not recognise any such formative principles, but traced everything back to the purely mechanical action of water. Still more alien to Goethe was the Plutonic theory brought forward by Hutton, and maintained by Alexander von Humboldt, Leopold von Buch, and others, which explained the development of separate earth periods by revolutions brought about by material causes. According to this conception,

great mountain systems may suddenly shoot up from out of the earth as the result of volcanic forces. Such colossal accomplishments of force seemed to Goethe contrary to Nature. He saw no reason why the laws of earthly evolution should suddenly change at certain times, and after a long period of graded activity should burst out through processes of "heaving, pressing, rolling, crushing, hurling and flinging." Nature appeared to him consistent in all her parts, so that even a God could make no change in the laws innate in her. He regarded Nature's laws as unchangeable. The forces active to-day in the formation of the earth's surface must have worked at all times.

This point of view leads him to a natural conception of the way in which the masses of rock distributed in the neighbourhood of the Lake of Geneva have come into position, and which, to judge by their constitution, have been separated off from distant mountains. He was confronted by the opinion that these rocks had been thrown into their present position by the tumultuous rise of mountains lying far off. Goethe tried to discover forces which can be observed to-day and which are able to explain this phenomenon. He found such forces active in the formulation of glaciers. He only had now to assume that the glaciers, which to-day still move rock from mountains into the plains, were once immeasurably greater in extent than at present. At that time they removed rocks much further from the mountains than at present. As the glaciers receded these rocks were left behind. Goethe thought that the granite blocks lying around in the lowlands of North Germany must have reached their present abode in an analogous way. In order to imagine that the regions covered by these erratic masses were once covered by glacier-ice, he had to assume the existence of an epoch of intense cold. This assumption became the common property of science through Agassiz, who arrived at it independently, and in 1837 laid it before the Swiss Society for Natural Research. In recent times, this cold epoch which broke over the continents of the earth after a rich animal and plant life had already developed, has become the pet study of eminent geologists. The details which Goethe brings forward concerning the phenomena of this "Ice Age" are unimportant in the face of observations made by later investigators.

Just as Goethe was led by his general view of Nature to the assumption of an epoch of intense cold, so he was led to a correct view of the nature of fossils. It is true that earlier thinkers had already recognised, in these formations, relics of organisms of former ages. This correct view, however, was so long in becoming general that we find Voltaire still regarding the petrified shell-fish as freaks of Nature. After some experience in this sphere

Goethe soon recognised that the petrified remains of organisms stand in a natural connection with the strata in which they are found. That means that these organisms lived in the epochs of the earth in which the corresponding strata were formed. He speaks about fossils in this sense in a letter to Merck, 27th October, 1782: "I am fully convinced that all the bony fragments of which you speak, and which are found everywhere in the upper sand of the earth, originate in the most recent epoch, but this, compared with our ordinary reckoning of time, is very ancient. In this epoch the sea had already receded; on the other hand streams still flowed in broad beds, yet comparatively at the level of the sea, not faster and perhaps not even so fast as now. At the same time the sand, mixed with lime, was deposited in all broad valleys, which gradually, as the sea sank, were forsaken by the water, the rivers digging only small beds in the middle of them. At that time the elephant and the rhinoceros had their home with us on the barren mountains, and their remains could easily have been washed down by the woodland streams into those great river valleys or lake plains where, permeated with rocky sediment, they were preserved to a greater or less degree and where we now dig them up with the plough, or accidentally in some way. I said before that in this way one finds them in the upper sand, that is to say in the sand that has been swept together by other rivers when the main crust of the earth was already fully formed. The time will soon come when fossils will no longer be mixed up together but will be classified in accordance with the corresponding epochs of the world."

Goethe has often been called a precursor of the Geology founded by Lyell. Geology no longer assumes mighty revolutions or catastrophes in order to explain the origin of one earth period out of the other. It traces former changes of the earth's surface back to the same processes still occurring to-day. We must not, however, ignore the fact that modern geology applies merely physical and chemical forces to explain the formation of the earth. Goethe, on the contrary, assumes formative forces operative within the rocks, and which represent a type of formative principles higher than those recognised by physics and chemistry.

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Observations on Atmospheric Phenomena

In the year 1815, Goethe became acquainted with Luke Howard's *Essay* on the Natural History and Physics of Clouds. This stimulated him to more penetrating thought concerning cloud formations and meteorological conditions. He had, indeed, already made and noted down many observations concerning these phenomena. He had, however, neither a general view nor an acquaintance with related branches of science which could have enabled him to correlate what he had observed. In Howard's Essay, the manifold cloud formations are traced back to certain basic forms. Goethe now finds an entry into meteorology, a science which had previously remained foreign to him because he could learn nothing from the way in which it was handled in his time. "It was impossible for my nature to comprehend the whole complex of meteorology, arranged as it is in a series of tabular signs and numbers; I was glad to find an integral part of it responding to my inclination and mode of life, and because in this infinite All everything stands in eternal, secure relation, one thing bringing forth or reciprocally brought forth by the other, I concentrated my attention on what the eyes can 'lay hold of,' and accustomed myself to bring the relations of atmospheric and earthly phenomena into harmony with the barometer and thermometer."

Since the barometric height stands in an exact relation to all meteorological conditions, it soon became, for Goethe, the central point of his observations on atmospheric conditions. The longer he continued these observations the more was he convinced that he found the rise and fall of the mercury in the barometer at different "places of observation, nearer or farther away, at different longitudes, latitudes and heights," occurring in such a way that the rise or fall at one place corresponded to an almost equal rise or fall at all other places at the same time. From this regularity in barometric changes Goethe draws the conclusion that no influences outside the earth are able to affect them. Where such an influence is ascribed to the moon, the planets, or the seasons, and one speaks of an ebb and flow in the atmosphere, this regularity is not explained. All these influences would have to make themselves felt at the same times in the most diverse ways at different places. Goethe is of opinion that these changes are only explicable if the cause of them lies in the earth itself. Since, however, the height of mercury depends on the pressure of the air, Goethe imagines that the earth alternately presses and again expands the whole atmosphere. If the air is compressed its pressure increases and the mercury rises; the reverse takes place with expansion. Goethe ascribes this alternating contraction and expansion of the whole mass of air to a variation to which the attractive power of the earth is subject. He regards the increase and decrease of this force as inherent in a certain individual life of the earth, and compares it with the inbreathing and outbreathing of an organism.

Accordingly Goethe does not conceive of the earth as being active in a merely mechanical sense. Just as little as he explains geological processes in a purely mechanical and physical sense does he do so in regard to barometric variations. His view of Nature stands in sharp contrast to that of modern times which seeks, in accordance with its general basic principles, to understand atmospheric processes physically. Differences of temperature in the atmosphere bring about a difference of air-pressure in different places, give rise to air-currents proceeding from warmer towards colder regions, increase or diminish the amount of moisture and give rise to cloud formations and condensation. The variations in air-pressure, and therewith the rise and fall of the barometer, are explained by such factors or by others similar to them. Goethe's conception of an increase and decrease in the force of attraction is also contrary to the concepts of modern mechanics. According to these the strength of this attractive force is always the same in one place.

Goethe applies mechanical conceptions only to the extent to which observation appears to him to demand.

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11 Goethe and Hegel

Goethe's study of the world covers a certain range only. He observes the phenomena of light and colour and penetrates to the basic phenomenon; he tries to find his bearings amid the multiplicity of plant life and arrives at his sensible-supersensible archetypal plant. He does not rise from the basic phenomena or the archetypal plant to higher explanatory principles. This he leaves to the philosophers. He is content when "he finds himself on an empirical height whence he can make a backward survey of all the stages of experience and look forward into the region of theory, even if he cannot enter it." In his perception of the real, Goethe advances to the point where the ideas confront him. The way in which the ideas are mutually connected, how the one thing proceeds from another in the spheres of ideas — these are tasks which first begin on the empirical height where Goethe stopped. His view is that "the idea is eternal and unique." "The fact that we also use the plural is unfortunate. All things of which we become aware and of which we can speak, are only manifestations of the idea." But since the idea makes its appearance in the phenomenon as a multiplicity of single ideas, for instance, the idea of the plant, the idea of the animal, it must be possible to trace them back to one fundamental form, just as it is possible to trace the plant back to the leaf. The single ideas differ in their manifestation only; in their true being they are identical. It is therefore just as much in accordance with the Goethean world-conception to speak of a metamorphosis of ideas as of a metamorphosis of plants. Hegel is the philosopher who has tried to portray this metamorphosis of ideas. He is therefore the philosopher of the Goethean world-conception. He takes as his starting-point the simplest of all ideas, that of pure "Being." In this "Being" the true form of world-phenomena conceals itself completely and its rich content becomes a bloodless abstraction. Hegel has been accused of deriving the entire rich world of idea from pure "Being." But pure Being contains "as idea" the whole world of ideas just as the leaf contains the whole plant as idea. Hegel follows up the metamorphosis of the idea from pure abstract Being to the stage where the idea becomes direct, actual appearance. He considers this highest stage to be the phenomenon of philosophy itself. For in philosophy the ideas operative in the world are perceived in their essential form. Speaking in the Goethean sense, we could say: Philosophy is the idea in its greatest extension; pure Being is the idea in its utmost contraction. The fact that Hegel sees in philosophy the

most perfect metamorphosis of the idea, proves that true self-perception is as alien to him as it is to Goethe. An object has reached its highest metamorphosis when it brings to expression in perception, in immediate life, its full content. Philosophy, however, does not contain the ideal content of the world in the form of life but in the form of thoughts. The living idea, the idea as perception, is given to human self-perception alone. Hegel's philosophy is not a world-conception of Freedom because it does not seek the world-content in its highest form on the basis of the human personality. On this basis all content becomes entirely individual. Hegel does not search for this individual element but for the general, the species. Hence he does not relegate the origin of the Moral to the sphere of human individuality, but to the World Order lying outside of man which is supposed to contain the moral ideas. Man does not himself set his own moral goal but he has to become a member of the moral World Order. Hegel looks upon the particular, the individual, as something bad when it persists in its individuality. It has its value only within the whole. Stirner considers this to be the mental attitude of the bourgeoisie, "and their poet Goethe, like their philosopher Hegel, have known how to extol the dependence of the subject on the object, obedience to the objective world and so on." We have here yet another biased mode of conception. In Hegel, as well as in Goethe, the perception of freedom is lacking because the perception of the innermost essence of the world of thought eludes both of them. Hegel feels himself to be the philosopher of the Goethean world-conception. On February 20th, 1821, he writes to Goethe as follows: "The simple and abstract, which you very strikingly call the basic phenomenon, you place at the summit; then you show the concrete phenomena as arising out of the addition of further modes of influence and circumstances, and regulate the whole process in such a way that the order proceeds from the simple to the more complex conditions; and, thus ordered, the complex now appears in all its clearness as a result of this analysis. To discover the basic phenomenon, to free it from the surroundings accidental to it, to conceive it abstractly as we say — this I consider to be a matter pertaining to the great, spiritual perception of Nature, besides being the path in general towards the truly scientific side of knowledge in this field. ... May I, however, also say to you that the special interest which a basic phenomenon brought to life in such a way has for us philosophers, is that we are able to turn it to the use of philosophy. We have, of course, in the first place our oyster-like, grey, or quite black Absolute, nevertheless we have directed it towards the air and the light, so that it has become covetous of these, but we need windowspaces in order finally to bring it out to the full light of day; our schemes would disappear in smoke if we were to transplant them into the motley,

intricate society of the perverse world. At this point, your basic phenomena serve us excellently; in this twilight, spiritual and intelligible by virtue of its simplicity, visible and tangible by virtue of its sensibility, the two worlds, our abstruse one and phenomenal existence, greet each other."

Even if there is a perfect correspondence between Goethe's worldconception and Hegel's philosophy, it would be a great mistake to place the same value upon Goethe's achievements in thought as upon those of Hegel. Their mode of conception is the same; both of them want to avoid self-perception. Goethe, however, put his reflections into operation in regions where the lack of perception does not have a harmful effect. Even if he has never seen the world of ideas as perception, he has lived in the world of ideas and has allowed his observations to be permeated thereby. The world of ideas was apprehended by Hegel as perception, as individual spiritual Being, just as little as by Goethe. What he did, however, was to reflect about the world of ideas, and as a result his thoughts in many directions are distorted and untrue. If Hegel had made observations about Nature they would have probably become just as valuable as those of Goethe; if Goethe had desired to build up a philosophical thoughtstructure, the sure perception of true reality that guided him in his observations of Nature would have forsaken him.

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Afterword to the New Edition (1918)

It was said by critics of this book immediately after its publication that it does not give a picture of Goethe's "world-conception" but only of his "conception of Nature." I do not think that this judgment has proceeded from a justifiable point of view, although, externally considered, the book is almost exclusively concerned with Goethe's ideas of Nature. In the course of what has been said, I think I have shown that these ideas of Nature are based upon a specific mode of observation of world phenomena. I think I have indicated in the book itself that the adoption of a point of view such as Goethe possessed in regard to natural phenomena can lead to definite views on psychological, historical and still wider phenomena. That which is expressed in Goethe's conception of Nature in a particular sphere, is indeed a world-conception and not a mere conception of Nature such as might well be possessed by a personality whose thoughts had no significance for a wider world-picture. On the other hand, moreover, I thought that in this book I ought only to present what may be said in immediate connection with the region that Goethe himself developed from out of the whole compass of his world-conception. To draw a picture of the world revealed in Goethe's poems, in his ideas on the history of Art, and so on, would of course be guite possible, and indubitably of the greatest interest. But those who take the character of the book into consideration will not look for such a world-picture therein. They will realise that I have set myself the task of sketching that portion of Goethe's world-picture for which the data exist in his own writings, the one proceeding consecutively from the others. I have indicated in many places the points at which Goethe came to a standstill in this consecutive development of the world-picture which he was able to present in regard to certain realms of Nature. Goethe's views of the world and of life reveal themselves in a very wide compass. The emergence of these views from out of his own original world-conception is not, however, so evident from his works in the sphere of natural phenomena as it is here. In other spheres, all that Goethe's soul had to reveal to the world becomes clear; in the domain of his ideas of Nature it becomes evident how the fundamental trend of his spirit won for itself, step by step, a view of the world up to a certain boundary. Precisely by going no further in the portrayal of Goethe's thought-activity than the elaboration of a selfcontained fragment of world-conception, one will gain enlightenment as to the special colouring of what is revealed in the rest of his life's work. Therefore it was not my aim to portray the world-picture that emerges

from Goethe's life-work as a whole, but rather that part of it which in his case comes to light in the form in which one brings a world-conception to expression in thought. It does not necessarily follow that views originating from a personality, however great, are parts of a world-view complete in itself and connected directly with the personality. Goethe's ideas of Nature are, however, such a self-contained fragment of a world-picture. And as an elucidation of natural phenomena they do not represent merely a view of Nature; they are an integral part of a *world-conception*.

It does not surprise me that I should have been accused of a change of views since the publication of this book, for I am not unfamiliar with the presuppositions which lead one to such a judgment. I have spoken about this endeavour to find contradictions in my writings in the Preface to the first volume of my Riddles of Philosophy and in an essay in the journal Das Reich, Vol. II. (Spiritual Science as Anthroposophy and the contemporary Theory of Knowledge). Such an endeavour is only possible among critics who wholly fail to understand the course which my world-conception is bound to take when it wishes to consider different regions of life. I do not propose to enter into this question here again but to confine myself to certain brief remarks in reference to this book on Goethe. In the Anthroposophical Spiritual Science that I have presented in my writings for the past sixteen years, I myself see that mode of cognition for the spiritual world-content accessible to man, to which one must come who has brought to life within his soul Goethe's ideas of Nature as something with which he is in accord, and with this as his starting-point, strives to experience in cognition the spiritual region of the world. I am of opinion that this Spiritual Science presupposes a Natural Science corresponding to that of Goethe. I do not only mean that the Spiritual Science which I have presented does not contradict this Natural Science. For I know that the mere fact of there being no logical contradiction between two different statements means very little. They may none the less be wholly irreconcilable in reality. But I believe that Goethe's ideas in reference to the realm of Nature, when they are actually experienced, must necessarily lead to the Anthroposophical truths that I have set forth when man leads over his experiences in the realm of Nature to experiences in the realm of spirit. Goethe has not done this. The mode and nature of these latter experiences are described in my spiritual-scientific works. For this reason, the essential content of this book, which was published for the first time in 1897, has been reprinted again to-day, as my exposition of the Goethean world-

conception, after the publication of my writings on Spiritual Science. All the thoughts presented here hold good for me to-day in unchanged form. In isolated places only have I introduced slight alterations and they have nothing to do with the form of the thoughts but merely with the wording of certain passages. And it is perhaps understandable that after twenty years one would like here and there to make certain changes in the style of a book. The new edition differs from the first only in certain extensions that have been made, not in alterations of content. I believe that a man who is looking for a scientific basis for Spiritual Science can discover it through Goethe's world-conception. Therefore it seems to me that a work on Goethe's world-conception may also be of service to those who wish to concern themselves with Anthroposophical Spiritual Science. My book, however, is written as a study of Goethe's world-conception per se, without reference to Spiritual Science proper. In my book Goethe's Standard of the Soul: as illustrated in Faust and in the Fairy Story of the Green Snake and the Beautiful Lily (Anthroposophical Publishing Company, 46 Gloucester Place, London) will be found something of what may be said about Goethe from the specially spiritual-scientific point of view.

Supplementary Note

A critic of this book (Kantstudium III, 1898), thought he was making a special discovery with regard to my "contradictions" by comparing what I say about Platonism (in the first edition, 1897) with what I said practically at the same time in my Introduction to Vol. IV of Goethe's Natural Scientific Works (Kürschner): "Plato's philosophy is one of the most sublime thoughtedifices that have ever emanated from the mind of man. It is one of the saddest signs of our age that the Platonic mode of perception is regarded in philosophy as the opposite of sound reason." Certain minds will find it difficult to understand that when looked at from different angles, every single thing reveals itself differently. The fact that my different utterances about Platonism do not represent real contradictions will be evident to those who do not stop at the mere sound of the words, but who penetrate into the different connections in which Platonism in its essential nature impelled me to bring it at one time or another. It is on the one hand a sad sign when Platonism is held to be contradictory to healthy reason, because it is thought that to remain stationary at pure sense-perception as the only reality alone conforms to this healthy reason. And it is also contradictory to a healthy perception of idea and sense-world when Platonism is applied in such a way that it brings about an unsound separation of idea and senseperception. Those who cannot bring themselves to penetrate the phenomena of life with thought in this sense will always remain, together

with what they apprehend, outside of reality. Those who — speaking in the Goethean sense — set up a concept in order to circumscribe a rich lifecontent do not understand that life unfolds in relationships that operate differently in different directions. It is naturally more convenient to substitute a schematic concept for a view of life in its entirety; with such concepts one can easily judge schematically. Through such a procedure, however, one lives in lifeless abstractions. Human concepts become abstractions for the very reason that man imagines he can manipulate these concepts in his intellect in the same way as objects manipulate each other. These concepts are, however, more comparable to pictures that man receives from different sides of the same object. The object is one, the pictures many. What leads to a real perception of the object is not concentration upon a single picture but the bringing together of many. Unfortunately I have had to recognise how great the tendency is among many critics to construe "contradictions" from what is really observation of a phenomenon from different points of view — a mode of observation that strives to be permeated with reality. For this reason I felt obliged by a slight alteration of style in this new edition first to make still clearer in my remarks concerning Platonism what I thought was clear enough twenty years ago in the first edition; secondly, to show by direct quotation from my other work in juxtaposition to what is said in this book, the complete harmony that exists between the two utterances. However, if there is anyone who still thinks he can discover contradictions in these matters I have thereby spared him the trouble of having to collect them from two books.

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