



## *Chapter 2*

# **The Origin of Goethe's Concept of Metamorphosis**

When tracing the historical development of Goethe's thinking on organic morphology, one will certainly wonder what to ascribe to the poet's youth — that is, to the time before he arrived in Weimar. Goethe himself did not think very highly of his knowledge of the sciences during that period: "I had no concept of what external nature actually is, and not the least knowledge of her so-called three kingdoms." On the basis of this statement, it is generally thought that Goethe's scientific reflections began only after his arrival in Weimar [in 1775, when he was 26]. Nevertheless, it seems necessary to go back further if we do not wish to leave unexplained the whole spirit of his views. The powerful impetus that guided his studies in the direction described below already manifested itself in his earliest youth.

When Goethe entered the University of Leipzig, all scientific endeavors there were still dominated by a spirit characteristic of most of the eighteenth century, which split science as a whole into two extremes that no one felt the need to unite. On the one hand there was the philosophy of Christian Wolff,<sup>1</sup> entirely immersed in a realm of abstractions; on the other stood the various branches of science that lost themselves in external descriptions of endless details, making no attempt to find higher principles in the world of their investigations. Wolff's philosophy could not find its way out of the realm of abstract concepts into the world of immediate reality, of individual existence. The most obvious things were treated with utmost thoroughness. One

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1. Freiherr Christian von Wolff (1679–1754), German philosopher and mathematician. — ED.

learned that a “thing” is something that contains no contradictions, that there are finite and infinite substances, and so on. But if these generalities were applied to the things themselves in an attempt to understand their life and working, investigators were soon at a complete loss; they could not apply these concepts to the world that we live in and seek to understand. The actual things around us, however, were described in a manner largely void of any principle, purely according to appearances and external traits. A science of principles that lacked all living content, all loving absorption in immediate reality, was juxtaposed with a science devoid of principles and ideal meaning. These confronted one another without mediation; each remained fruitless for the other. Goethe's healthy nature found both equally repulsive in their one-sidedness; and by struggling against them he developed views that later led him to a productive understanding of nature in which idea and experience, in full interpenetration, mutually enliven one another and become one whole.

Goethe therefore first developed the concept that those extremes were least able to grasp: *the concept of life*. A living being, observed in its outer appearance, presents itself as a sum of particulars that appear to us as its members or organs. Describing these members — their shapes, relative positions, sizes, and so on — can become the object of extensive research of the kind conducted by the second school of science mentioned above. But any mechanical assemblage of inorganic bodies can also be described in this way. It was altogether forgotten that, in considering an organism, the main thing to keep in mind is that its outer appearance is governed by an inner principle, that the whole is working in every organ. The outer appearance, the spatial juxtaposition of its members, can also be examined after its life has been destroyed, for it continues to exist for a time. But the dead organism before us is, in reality, no longer an organism. The principle that permeated all the particulars has vanished. *Early on, Goethe confronted the approach that destroys life in order to investigate it, with the possibility of and need for a higher view*. This can already be seen in a letter dated July 14, 1770, during his Strasbourg period, in which he wrote of a butterfly:

The poor creature trembles in the net, rubs off its most beautiful colors; and if one captures it unharmed, it ends up stuck upon a pin, stiff and lifeless. The corpse is not the whole creature,

something else belongs to it — an important thing, and in this case, as indeed in all others, the main thing: *its life*. . . .

These words from *Faust* arise from the same view:

Who would study and describe the living starts  
By driving the spirit out of its parts:  
In the palm of his hand he holds all the sections,  
Lacks nothing, except the spirit's connections.

(*Faust*, lines 1936–1939)

Since it was not in his nature to remain satisfied with the negation of a way of looking at things, Goethe increasingly sought to develop his own view; and we can recognize the seeds of his later works in indications of his thinking available to us from 1769 to 1775. Here we find him developing the idea of a being whose every part animates the others, in whom one principle permeates every particular. In *Faust* he says:

How all within the whole are weaving,  
Each in the other working, living. . . .

(lines 447–448)

and in *Satyros* [Act 4]:

The primal thing from no-thing sprang,  
The power of light through darkness rang,  
In beings' depths igniting fire:  
Creation's joy, born of desire;  
The elements poured into the world,  
Rapaciously one into the other whirled,  
*All-permeating, all permeated.*

Goethe conceived of this being as subject to continuous changes in time; yet, throughout all the stages of these changes, it is always only *one and the same* being that manifests itself, that asserts itself as enduring and stable amid change. In *Satyros* there is more about this primordial thing:

And up and down and in full swing  
Came the all and one eternal thing,  
*Ever changing, ever enduring.*

Compare this with what Goethe wrote in 1807 as an introduction to his study of metamorphosis:

If, however, we observe all forms, especially organic ones, we find that nothing is permanent, nothing is at rest or complete, but rather that everything is in continuous fluctuating movement.

In contrast to this flow, Goethe now posits the idea or “something held fast in experience only for a moment”<sup>2</sup> as the *constant*. It will be recognized clearly enough from the *Satyros* passage that the foundation for Goethe's morphological ideas had already been laid before he came to Weimar.

It must be noted, however, that this idea of a living being is not applied to an individual organism — the entire universe is conceived of as such a living being. This concept originates, of course, in Goethe's alchemical studies with Fräulein von Klettenberg and in his reading of Theophrastus Paracelsus after returning from Leipzig [1768–1769]. At that time the attempt was made, through some kind of experiment, to reveal the principle that permeates the whole universe, to bring it to manifestation through some substance. However, this way of looking at the world, bordering on the *mystical*, constitutes only a passing episode in Goethe's development and soon gives way to a healthier and more objective manner of thinking. Nevertheless, a view of the entire universe as a great organism — as indicated in the passages from *Faust* and *Satyros* — remains integral to Goethe's thinking until around 1780, as we shall see later in connection with his essay “Nature.” Once again in *Faust* we find the earth spirit described as the life principle that permeates the universal organism:

In tides of life, in action's storm  
 To and fro I wave,  
 Weave eternally!  
 Birth and grave,  
 An eternal sea,  
 A changeful strife,  
 A glowing life.

(lines 501–507)

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2. In this formulation we see Goethe's participatory thinking apprehending the idea *in* experience. — ED.

While Goethe was thus developing certain views, he came upon a book in Strasbourg that sought to establish a worldview directly opposed to his own — Holbach's<sup>3</sup> *Système de la Nature*. Until then, Goethe had only had to criticize the tendency to describe what was alive *as though* it were a mechanical conglomeration of particulars; in Holbach he now encountered a philosopher who actually *regarded* the living organism as a mechanism. What formerly had arisen merely out of an inability to recognize the roots of life led in Holbach to a life-denying dogma. In his autobiography, *Poetry and Truth*, Goethe writes of this:

Matter was supposed to have existed from eternity, to have been in motion from eternity, and now, without further ado, it was to bring forth, with this motion, right and left and in all directions, the endless phenomena of existence. We would indeed have been satisfied with all this if the author had in fact built up the world before our own eyes out of his agitated matter. But he might have known as little about nature as we do; for hardly has he rammed in a few general concepts when he immediately leaves them in order to transform what appears higher than nature or as a higher nature in nature into a material, heavy element — in motion, to be sure, yet without direction or form — and he believes that he has thus achieved a great deal.

Goethe could find nothing in all of this but “matter in motion,” and it was in opposition to this that his own concepts of nature took on ever clearer form. We find these presented as a coherent whole in his essay “Nature,” written around the year 1780. This essay takes on special significance because it brings together all of Goethe's thoughts about nature, which until then we find only in scattered indications. Here we meet the idea of a being undergoing continuous change but nevertheless remaining the same:

Everything is new, and yet always the old. . . . She [nature] is forever transforming herself, and there is within her no moment of standing still, [yet] her laws are unchangeable.

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3. Baron Paul-Henri-Dietrich d'Holbach (1723–1789), French atheist and materialist who wrote extensively for the *Encyclopédie*. — ED.

We shall see later that Goethe sought the one archetypal plant in the endless multitude of plant forms, a thought already indicated here:

Each of her [nature's] works has its own being, each of her manifestations has the most isolated concept, and yet all constitute One.

Indeed, even his later position with respect to exceptions — namely, not to regard them simply as defective formations, but to explain them as manifestations of natural laws — is already very clearly expressed: “Even the most unnatural is nature [and] her exceptions are rare.”<sup>4</sup>

We have seen that even before Weimar Goethe had already developed a definite concept of an organism. For while “Nature” was written long after his arrival there, it nevertheless largely contains his earlier views. He had not yet, however, applied this concept to a specific order of natural phenomena, to individual creatures. To do this he needed access to the actual world of living nature in its immediate reality. Goethe could not be stimulated by a reflection of nature that had passed through the human mind. Conversations about botany with Privy Councillor Ludwig in Leipzig and dinner conversations with his medical friends in Strasbourg had no deeper effect. In his scientific studies, the young Goethe appears to us very much like *Faust*, who, deprived of the fresh, direct beholding of nature, expresses his longing for it:

Ah, could I but on mountain height  
Wander in thy [the moon's] lovely light,  
Hover with spirits round caves and trees,  
Weave in your twilight through the leas. . . .  
(lines 392–395)

This longing seems to have been fulfilled when, upon his arrival in Weimar, Goethe was permitted “to exchange chamber and city air for the atmosphere of country, forest, and garden.”<sup>5</sup>

The direct incentive for the poet's study of plants was, we find, his involvement with the planting of the garden given him by the Duke

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4. In section 15, paragraph 103, of his *Metamorphosis of Plants*, Goethe describes a proliferous rose in which the abnormal growth of a sprouting stem out of the center of a blossom reveals the hidden potential of the blossom's central organs to become a whole plant. — ED.

5. From the essay “History of My Botanical Studies.” — ED.

Karl August. Goethe accepted the garden on April 21, 1776, and his diary (edited by Keil) informs us frequently from then on of his work in this garden, which had become one of his favorite occupations. An additional field for this kind of endeavor was afforded him by the Thuringian forest where he had the opportunity to acquaint himself with the phenomena of lower organisms. He was especially interested in the mosses and lichens. On October 31, 1777, he asked Frau von Stein<sup>6</sup> for mosses of all kinds, with roots and damp if possible, so that they would continue to propagate. It must be considered highly significant that, already at this time, Goethe occupied himself with the world of these lower organisms, and later nevertheless derived the laws of plant organization from the higher plants. When we consider these circumstances we will not ascribe this fact to Goethe's underestimation of the importance of less-developed organisms, as many commentators have done, but to his fully conscious intention.

From this point on, the poet never left the world of plants. He most probably took up the writings of Linné<sup>7</sup> at a very early date. We first hear of his acquaintance with them in letters to Frau von Stein from 1782.

Linné tried to bring a systematic overview into the knowledge of plants. He strove to find a definite sequential order in which every organism would occupy a specific place so that it could be easily located at any time — indeed, so that there would be a means of orientation within the infinite multitude of particulars. To this end, plants had to be examined to determine their degree of interrelatedness and then grouped accordingly. Since the main point was to identify and easily classify any plant within the system, special attention had to be given to the characteristics that distinguish one plant from another. To make confusion impossible, one sought primarily for these distinguishing traits. Thus, Linné and his students regarded external traits — size, number, position of individual organs — as characteristic.

The plants were indeed ordered sequentially, but in the same way that one might also have arranged a group of inorganic objects: according to traits taken, not from the inner nature of the plant, but from their outer appearance. The way they are ordered appears su-

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6. Charlotte von Stein (1742–1827), German writer, lady-in-waiting at the court of the Duchess of Weimar, corresponded extensively with Goethe. — ED.

7. Carl von Linné, or Linnaeus (1707–1778), Swedish botanist and professor at Uppsala University. He traveled extensively and wrote many important works in his field. — ED.

perfcial, without any necessary inner connection. Because Goethe had a significant concept of living organisms, this way of looking at them could not satisfy him. For it did not include any research into the essential nature of the plant. Goethe had to ask himself: What is it that makes a particular being of nature into a plant? Moreover, he had to acknowledge that whatever it is, it must occur in all plants in the same way. And yet there was an endless differentiation of individual entities that demanded explanation. How is it that this oneness reveals itself in such manifold forms? These must have been the questions that Goethe raised as he read Linné's writings, for he himself says: "What he, Linné, tried to force apart could, according to the innermost urge of my own being, only strive toward unity" ("History of My Botanical Studies").

Goethe's encounter with Rousseau's botanical endeavors came at about the same time as his first acquaintance with Linné. On June 16, 1782, he wrote to Karl August:

Among Rousseau's works there are the loveliest letters about botany in which he expounds this science to a lady in the most intelligible and charming way. It is truly a model of how one should teach, and a supplement to *Emile*. I therefore now take occasion to recommend to my beautiful lady friends the beautiful kingdom of the flowers.

Rousseau's botanical studies were bound to make a deep impression on Goethe. The emphasis upon a nomenclature that arises out of and corresponds to the nature of the plants, the originality of observation, the contemplation of the plant for its own sake apart from any utilitarian considerations — all these aspects of Rousseau's work strongly appealed to Goethe. The two also had in common that they had not come to the study of plants for any specific scientific purposes but rather out of general human motives. The same interest drew them to the same subject.

Goethe's next thorough observations of the plant kingdom occurred in 1784. Wilhelm Freiherr von Gleichen, called *Russwurm*, had just published two works dealing with research that interested Goethe intensely: "The Latest from the Plant Kingdom" and "Selected Microscopic Discoveries in Connection with Plants, Flowers and Blossoms, Insects, and other Noteworthy Things." Both writings dealt with fertilization processes in plants. Pollen, stamens, and pis-

tils were carefully examined, and the processes occurring within them were portrayed in beautifully executed plates. Goethe now repeated these investigations. On January 12, 1785, he wrote to F. H. Jacobi: "My microscope is set up so that, come spring, I can repeat and verify the experiments of von Gleichen, (called Russwurm)." During that same spring he also studied the nature of the seed, as we see in a letter to Knebel of April 2, 1785: "I have thought through the subject of the seed as far as my experience permits." In all these investigations, Goethe was not concerned with detail; the goal of his endeavors was to explore the essential nature of the plant. On April 8, 1785, he reported to Merck that he had "made nice discoveries and combinations in botany." The expression "combinations" also shows that his intention was to construct a thought-picture of processes in the plant world. His study of botany was rapidly approaching a definite goal.

In this connection we must of course bear in mind that in 1784 Goethe had already discovered the intermaxillary bone, which we shall later discuss in detail, and had thereby come a significant step closer to the secret of nature's way of forming organisms. We must also bear in mind that the first part of Herder's *Reflections on the Philosophy of the History of Humanity* was completed in 1784 and that Goethe and Herder conversed frequently at that time on subjects pertaining to nature. Thus Frau von Stein reports to Knebel on May 1, 1784:

Herder's new work makes it seem probable that we were first plants and animals. . . . Goethe is pondering these things very thoughtfully now, and everything that has gone through his mind becomes extremely interesting.

This indicates the nature of Goethe's interest in what were the greatest scientific questions of that time. His reflections on the nature of the plant and his combinations in the spring of 1785 seem therefore quite comprehensible. In mid-April of that year he went to Belvedere for the express purpose of solving his doubts and questions, and on May 15, he shared with Frau von Stein:

I cannot tell you how readable the book of nature is becoming for me; my long efforts at deciphering, letter by letter, have helped me; now all of a sudden it is having its effect, and my quiet joy is inexpressible.

Shortly before this he had even wished to write a brief botanical treatise for Knebel to win him over for this science.<sup>8</sup> Botany attracted him so strongly that the journey he began on June 20, 1785, to Karlsbad, where he was to spend the summer, became a botanical expedition. Knebel accompanied him. Near Jena they met a seventeen-year-old youth, Dietrich, whose specimen box showed that he had just returned from a botanical excursion. We learn more about this interesting journey from Goethe's "History of My Botanical Studies" and from reports of Cohn in Breslau, based on a manuscript of Dietrich's. In Karlsbad, botanical conversations frequently provided pleasant entertainment. Upon returning home, Goethe devoted himself with great energy to his study of botany; with the aid of Linné's *Philosophica Botanica* he made observations of mushrooms, mosses, lichens, and algae, as we see from his letters to Frau von Stein. Only after he had thought and observed a great deal did Linné become more useful to him; through Linné he found information on many details that helped him forward in his combinations. On November 9, 1785, he reported to Frau von Stein:

I am continuing to read Linné; I have to, for I have no other book with me; it is the best way to read a book conscientiously, which I must practice more often since I do not easily read a book to the end. This one was not made for reading but for recapitulation, and it has done me the most valuable service because I have thought about most of its points myself.

In the course of these studies it became ever clearer to him *that what appears in the endless multiplicity of individual plants is, after all, only one basic form; this basic form itself was becoming more and more perceptible to him.* He realized, furthermore, *that within this basic form lies a capacity for endless modification, whereby diversity is created out of unity.* On July 9, 1786, he wrote to Frau von Stein: "*It is a becoming aware of the form with which nature is always only playing, as it were, and in playing, bringing forth its manifold life.*"<sup>9</sup>

What he now needed to do was to take this enduring, constant element, this archetypal form with which nature plays, as it were, and develop it in detail into a graspable picture. In order to do this he

8. "I would have gladly sent you a lesson in botany if it were only already written," from a letter to Knebel of April 2, 1785. — R. STEINER.

9. This is a beautiful example of Goethe's creative, participatory view of nature. — Ed.

needed an opportunity to separate the truly constant and enduring element in the plant form from the changing and mutable. The scope of Goethe's research was as yet too narrow for observations of this kind. He would have to observe the same species of plant under different conditions and influences, for only then would the changeable element really become visible. It is less noticeable in plants of different kinds. All this was granted to Goethe through his fortunate journey to Italy, which he had undertaken from Karlsbad on September 3.

The flora of the Alps already afforded him many observations. Here he found not only new plants he had never seen before, but also some he already knew, *but changed*.

Whereas in the lower regions the stalks and stems were stronger and thicker, the buds closer together and the leaves broad, higher in the mountains the stalks and stems became more delicate, the buds moved further apart so that there was more space between the nodes, and the leaves assumed a more lanceolate shape. I noticed this in willows and gentians and assured myself that they were not of different species. At the Walchensee [Bavaria], as well, I noticed that the rushes were longer and more slender than in the lowlands. (*Italian Journey*, Sept. 8, 1786)

Similar observations occurred repeatedly. In Venice, by the sea, he discovered various plants that presented him with qualities that only the old salt of the sandy soil, and, still more, the salty air, could give them. There he found a plant that appeared to him like "our innocent coltsfoot, but armed with sharp weapons and with leaves like leather, as were also the seedpods and stems; everything was thick and fat" (*ibid.*, Oct. 8, 1786).

Goethe was encountering the inconstancy, the continually changing nature of all the external characteristics of the plant, of everything belonging to its outer appearance. From this he concluded that the essential nature of the plant does *not* lie in these characteristics but must be sought at a deeper level.

Darwin proceeded from similar observations when he asserted his doubts about the constancy of the outer forms of genera and species. The conclusions the two thinkers reached are entirely different, however. Whereas Darwin believed that the nature of the organism is, in fact, limited to those external characteristics, and thus concluded from their variability that there is nothing constant in the life of

plants, Goethe went deeper and concluded that if the outer characteristics are not constant, then what is constant must be sought in something else underlying those changeable externalities. To develop a concept of this “something else” became Goethe’s goal, while Darwin’s efforts went toward exploring and explaining in detail the causes of the organism’s variability. Both approaches are necessary and complement one another. It is altogether a mistake to believe that Goethe’s greatness in organic science is that he was a mere forerunner of Darwin. Goethe’s approach is far broader. It embraces two aspects: first, the *type* — that is, the lawfulness that manifests in the organism, the being of the animal in the animal, the life that unfolds out of itself, which has the power and capacity to develop itself in diverse outer forms (species, genera) through the possibilities lying within it; second, the interaction of organisms with inorganic nature and with each other (adaptation and the struggle for existence). Darwin developed only the latter aspect of organic science. Therefore one cannot say that Darwin’s theory is the elaboration of Goethe’s basic ideas — it is actually only the development of one aspect of those ideas. It looks only at those facts that cause the world of living organisms to evolve in a certain way, but not at the “something” that comes under the determining influence of those facts. This one aspect, pursued exclusively, can never lead to a complete theory of organisms. Such a theory must be pursued essentially in the spirit of Goethe; this one aspect must be complemented and deepened through the other aspect of his theory.

A simple comparison will make the matter clearer. Take a piece of lead, heat it until it becomes liquid, and pour it into cold water. The lead undergoes two successive stages; it passes through two states, the first caused by the higher temperature, the second by the lower. How the two stages take form depends not only on the nature of heat and cold but also, quite essentially, on the nature of the lead itself. A different substance, subjected to the same influences, would manifest very different changes. Organisms, likewise, are subject to the influence of their surroundings; as they are affected by this influence, they also take on different states, and they do so very much in accordance with their nature, with that essential being that makes them organisms. And it is this essential being that we find in Goethe’s ideas. Only when equipped with an understanding of this, their essential nature, can we comprehend why organisms respond to specific

influences in one particular way and not another. Only then will we be able to form correct views of the variability in the manifest forms of organisms and of the related laws governing their adaptation and struggle for existence.<sup>10</sup>

The idea of the archetypal plant assumed an increasingly clear and definite shape in Goethe's mind. In the botanical garden in Padua where he moved amid a vegetation strange to him, "the thought became more and more alive that one could, perhaps, develop all plant forms out of one" (*Italian Journey*, Sept. 27, 1786). On November 17, he wrote to Knebel:

Thus, after all, my little bit of botany is granting me great pleasure, especially in these lands where a happier, less interrupted vegetation is at home. I have already made rather pleasing observations that tend toward the general and that you will also find agreeable.

On February 19, 1787, he wrote in Rome that he was on his way "to discovering new and beautiful relationships — how nature, such an enormity, a baffling profusion, develops the manifold out of the simple." On March 25 he requested that Herder be informed that he would soon be ready with the archetypal plant. On April 17, in Palermo, he wrote of the archetypal plant:

Surely there must be such a thing! How else would I recognize that this or that formation is a plant if they were not all formed according to the same model? (*Italian Journey*)

He had in mind the complex of formative principles that organizes the plant, that makes it what it is — the principle through which a particular object in nature evokes in us the thought: "This is a plant" — that is, the archetypal plant. As such, it is something ideal that can only be grasped in thought; but it takes on shape, it takes on a specific form, size, color, number of organs, and so on. This outer phenomenon is nothing fixed but can undergo endless variations, all of which are in keeping with that complex of formative principles and follow from it with necessity. When we have grasped these formative principles — this archetypal picture of the plant — then we have taken hold

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10. It should be clear that this view casts no doubt on the modern theory of evolution and that it does not attempt to restrict its claims. On the contrary, it establishes a firm basis for such claims. — R. STEINER.

of, as idea, the very foundations upon which nature bases every single individual plant, from which she derives it and through which she allows it to come into being. Indeed, in accordance with this lawfulness one can even invent plant forms that follow with necessity from the essential nature of the plant and that could exist if the necessary conditions arose.

Thus Goethe seeks to reproduce in thought what nature accomplishes in the formation of her works. On May 17, 1787, he wrote to Herder:

Moreover, I must confide to you that I have come very close to the secret of the generation and organization of plants and that it is the simplest thing one can imagine. . . . The archetypal plant will be the most extraordinary creature in the world, for which nature herself will envy me. With this model and the key to it one will then be able to invent plants ad infinitum that must be consistent. In other words, even if they do not exist, they could exist and are not merely painterly or poetic whims but possess an inner truth and necessity. It will be possible to apply the same law to all living things. (Ibid.)

At this point a further difference between Goethe's view and Darwin's becomes apparent, especially when we consider how the latter is usually represented.<sup>11</sup> This view assumes that outer influences work like mechanical causes upon the nature of an organism and modify it accordingly. For Goethe, individual modifications are various expressions of the archetypal organism, which has within it the capacity to take on manifold forms and, in any given case, takes on the form most suited to the conditions in its environment. These external conditions are only the outer inducement for the inner formative forces to manifest in a particular way. These forces alone are the constitutive principle, the creative element, in the plant. Therefore, on September 6, 1787, Goethe also called them the *ἓν καὶ πᾶν* ("one and all") of the plant world.

Now, when we consider this archetypal plant itself, we can say:

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11. We are not referring here so much to the theory of evolution put forward by scientists who base their conclusions on empirical fact but rather to the theoretical foundations, the principles, that underlie Darwinism — especially as represented by the Jena school led by Haeckel. In this first rate mind, the Darwinian theory in all its one-sidedness has probably reached its most consistent expression. — R. STEINER.

Anything that is alive is a self-contained whole that brings forth its various states out of itself. Both in the spatial juxtaposition of its members and in the succession of its stages over time, every living entity manifests interrelationships that do not appear to be determined by the sense perceptible characteristics of its members, nor by some kind of mechanical causality through which earlier stages determine later ones. These interrelationships are governed, rather, by a higher principle that stands above the members and stages. It is inherent in the nature of the whole that a specific stage arises as the first, another as the last; and the sequence of the intermediary stages is also determined within the idea of the whole; what comes before is dependent on what comes later, and vice versa. In short, in a living organism there is *development* of one thing out of another, transition from one stage into another — there is no finished, completed existence of any one particular, but rather continuous *becoming*.

In the plant this determination of each single member by the whole arises insofar as all its organs are built according to the same basic form. On May 17, 1787, Goethe conveyed this thought to Herder:

I have come to realize that the organ of the plant we ordinarily call the leaf conceals the true Proteus,<sup>12</sup> who can conceal and reveal himself in all formations. Backward and forward, the plant is only leaf, linked so inseparably to the future seed that one should not think one without the other.

Whereas in the animal the higher principle governing every particular comes to meet us concretely as that which moves its organs, uses them according to its needs, and so on, the plant still lacks such a palpable life principle. Its life principle manifests only in the less distinctive fact that all its organs are built according to the same formative type — indeed, that the whole plant is potentially present in each of its parts and can, under favorable conditions, be brought forth from them. This became especially clear to Goethe in Rome when Councillor Reiffenstein, on a walk with him, broke off a twig here and there and asserted that if they were stuck in the ground they would grow and develop into a whole plant. A plant is thus a being that, over successive periods of time, develops specific organs that are all built according to one and the same idea, both in relation to one

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12. *Proteus* was the Grecian god able to assume any shape or form. — ED.

another and in the relationship of each to the whole. Every plant is a harmonious whole composed of plants.<sup>13</sup> When Goethe came to see this clearly, it only remained for him to make the individual observations that would enable him to describe in detail the various developmental stages of the unfolding plant.

The necessary groundwork for this had already been done. As we have seen, Goethe had already made a study of seeds in the spring of 1785. On May 17, 1787, he reported to Herder from Italy that he had found very clearly and without doubt the point where the germ is concealed. This took care of the first stage of plant life. But the unity in the formation of all the leaves also soon revealed itself. In numerous examples, but in fresh fennel above all, Goethe found a strong differentiation of upper and lower leaves that nevertheless always remain the same organ. On March 25 [1787] he asked that Herder be informed that his study of cotyledons was so sublimated that it would be difficult to take it further. Only a small step remained to recognize that petals, stamens, and pistil are also metamorphosed leaves. The research of the English botanist Hill was at that time becoming more generally known; it dealt with the transformation of specific organs of the blossom into others, and paved the way for Goethe in this respect.

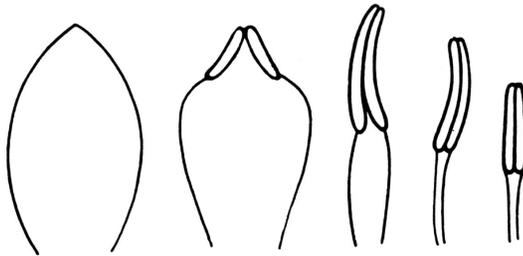


Fig. 1. Transition from petal to stamen.  
(White Water Lily). (from Grobmann, 1989).

As the organizing forces of the plant's being come into actual existence, they assume a sequence of spatial formations. What was now

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13. Just how these particulars relate to the whole will be discussed at various points in these introductions. Borrowing a concept for a whole composed of living part-entities from contemporary zoology, we could take the example of an insect colony. This is a kind of community of living beings, an individual consisting of independent individuals, an individual of a higher sort. — R. STEINER.

called for was a living concept to connect these forms backward and forward.

By examining Goethe's study of metamorphosis as formulated [in *The Metamorphosis of Plants*] in 1790, we find that for Goethe this concept was one of alternating expansion and contraction. In the seed the formation of the plant is most strongly contracted, or concentrated. With the leaves the first unfolding and expansion of the formative forces takes place. What is compressed into one point in the seed now reaches outward into space in the leaves. In the flower bud the forces draw together once more around an axial point in the calyx; the corolla is the result of the next expansion; stamens and pistil come about through the next contraction; and the fruit arises through the third and last expansion, whereupon the entire force of the plant's life (its entelechial principle) once again conceals itself in its most intensely contracted state in the seed. Whereas we can now follow nearly all the details of Goethe's thoughts on metamorphosis up to their final formulation in his essay of 1790, it will not be so easy to do the same with his concept of expansion and contraction. Still, we will not go wrong in assuming that this thought (which is, incidentally, deeply rooted in Goethe's spirit) was also already woven into his concept of plant formation in Italy. Since it involves a greater or lesser spatial unfolding, as determined by the shaping forces, and since this presents itself directly to the eye, the concept of expansion and contraction will certainly arise most easily when we draw the plant in accordance with its natural formation. In Rome Goethe found a bushlike carnation plant in which he could perceive metamorphosis with particular clarity:

Seeing no way to preserve this marvelous form, I attempted an exact drawing of it, whereby I deepened my insight into the fundamental concept of metamorphosis.

He may have made such drawings often, and this may have led to the concept in question.

In September 1787, during his second stay in Rome, Goethe expounded the matter to his friend Moritz; he found how alive and vivid it became through such a presentation. Whatever had been discussed was always written down. From this passage [in his *Italian Journey*] and some other remarks of Goethe's, it seems likely that the first — at least aphoristic — formulation of his study of meta-

morphosis also occurred already in Italy. He continued: “Only in this way — through my presentations to Moritz — could I get some of my thoughts down on paper.” There is now no doubt that the work in its present form was written at the end of 1789 and the beginning of 1790; however, it remains difficult to determine how much of this manuscript was a mere editing and how much was added at that time. The announcement of a book for the next Easter Book Fair, which might have contained some of the same thoughts, induced Goethe in the autumn of 1789 to take up his ideas and to arrange for their publication. On November 20 he wrote to the Duke that he had been spurred on to write down his botanical ideas. As early as December 18 he sent the manuscript to the botanist Batsch in Jena to read; on the twentieth he went there himself to discuss it with Batsch; on the twenty-second he informed Knebel that Batsch had received it favorably. He returned home, worked the manuscript through once more, and then again sent it to Batsch, who returned it on January 19, 1790. What vicissitudes the manuscript as well as the printed edition then went through have been described at length by Goethe himself. The great significance of his concept of metamorphosis, as well as its specific nature, will be treated later in chapter 4, “The Nature and Significance of Goethe's Writings on Organic Morphology.”