

THE SCIENTISM OF GOETHE

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I N his creation and portrayal of Werther, there had gradually taken place within Goethe a transformation that was to give definition to his entire life. Werther's enthusiasm for nature, his imaginative absorption in the phenomena around him, in the character of the landscape, in the changes of the seasons and the weather, had assumed in the mind of the great Poet the character of a deep scientific interest. From being merely a lover of nature, who clung with passion to reality and sought to fix it in his drawings and poetry, he had become a naturalist; and affected by the emotions which the sublimity of nature inspired within him, he aspired to a more profound conception of the world and the processes which govern it.

Life at Weimar, in country, wood and garden, brought natural objects more clearly before his eyes, and afforded him the opportunity of making a closer acquaintance with the realities of nature and the processes by which they are developed. Forestry led to botany, and the Ilmenau mining works, of which he had the official superintendence, led to mineralogy and geology; and of the pleasure he found in the latter science he once wrote: "Since I have had to do with the mines of Ilmenau, I give myself and my soul to mineralogy." This profound enthusiasm was bound to find expression in some form. In an eloquent essay on granite, he not only gave indication of the trend his thoughts were taking but justified the transition from "the contemplation and description of the human heart—that youngest, most manifold, varying, and changeable of creations—to the observation of the oldest, firmest, deepest, most imperturbable son of Nature." The disciple of Spinoza revelled in the contemplation of the universe, eternally changing, but changing according to unchangeable laws. The poet needed to conceive of Nature as an active and living organism, carrying out its life as a

whole into its parts, and believing that she is slow and steady in her action; that the earth is subject to gradual processes of transformation for which enormous periods of time must be allowed. This view he also extended to the organic world believing that gradual changes are continually taking place, but that the transformations of vegetable and animal species are not the results of leaps and bounds but gradual developments extending over infinite periods of time. The close intimacy between plants and animals he associated with the idea of a blood relationship of all organic beings to one another, by means of which man had developed from animals and animals from plants. There can be no doubt but that Goethe, and his contemporary Herder, both, more or less, grasped the point of view which we associate with the name of Darwin. Nature makes no leaps, he said with Leibniz, but rather functions as a consecutive development from a beginning to an end, proving his faith by the discovery of the intermaxillary bone in man and thereby disproving the asserted difference between the skeleton of man and that of the ape. This discovery afforded him infinite happiness and attested the love with which he sought to explain the inexplicable mysteries of Nature. "In accordance with the teaching of the Gospel," he wrote to Herder from Jena, "I must inform you with all my haste of a piece of good luck which has befallen me. I have found neither gold nor silver, but which gives me inexpressible delight—the os intermaxillare in man!" And to Frau von Stein, he wrote: "I have had a most delightful experience; I have made an anatomical discovery that it is important and beautiful. You shall share it too. But no word of it to anyone. A letter has also announced it to Herder under veil of secrecy. My joy is such that all my bowels are stirred within me."

It was the tendency of modern natural science, since Copernicus, to escape illusions which the mere sensuous perception of things so often provoked, by considering things instead by the sense of direct perception. The fancy and imagination of the poet's mind rebelled at the methods of study followed by his contemporaries, and he cherished against the Newtonian doctrines somewhat the same hatred which Hamann felt for analysis. An opposition, similar between that of Herder and Kant, separated him from the enlightened school of the eighteenth century. "Distinguishing and counting," he himself says, "did not lie in my nature." It was rather by the mere sensuous perception, to which he combined an associated

imagination and practical examination, of the realities of nature that enabled him to promote his research so successfully in the realm of science, differing in this respect from the mathematical procedure which characterized the school from Newton to Kant. It was inconceivable to him how the application of mathematical procedure could explain the phenomena of plant types to which he had devoted his energies, and which finally led to his noteworthy discovery of which he wrote to Frau von Stein: "If I could only share my vision and my joy with any one, but it is impossible. And it is no dream, no phantasy; it is a discovery of the essential form with which nature, as it were, is forever but playing, and, in playing, brings forth life in all its variety. Had I time in our brief space of life, I make bold to say that I would spread myself over all nature's kingdom—over her whole kingdom!"

It was not, however, the mere acquisition of knowledge that impelled his assiduous activity, but rather the enthusiastic desire to extend existing knowledge. "The time will soon come," he wrote in 1782, "when fossils will not be arranged pell-mell, but relatively to the epochs of the world." And two years later he feels he is on the road to an intelligible conception of the earth's formation, when he wrote, "The ideas I have conceived on the formation of the globe have been well confirmed and justified, and I can say that I have seen objects which, while confirming my system, surprise me by their novelty and grandeur."

Goethe's attitude was vastly different from that of the ordinary scientist. His interest in his discoveries was not for themselves, but rather for the light they shed upon the processes of nature as a whole. He had constantly persisted in attaining a conception of the Kosmos which would satisfy both his intellect and his heart, and all his endeavors had been instituted towards the realization of certain conceptions to which he had arrived, and which he felt explained the purpose of creation and gave harmony to the progress of things. In a letter to Knebel relative to his paper on the intermaxillary bone we have this passage: "The harmony of the whole makes every creature what it is, and the human being is a human being as much by the form and nature of his upper jaw as by the form and nature of the last joint on his little toe. And so, again, every creature is but a tone, a shade of a great harmony, which must be studied in its entirety, otherwise no individual has any meaning." As a result he was profoundly struck by the contrast

between the action of men and the processes of inanimate things. "The strangest feature in the way things are connected is that the most important events that can happen to a man have no connection with each other, "but he nevertheless felt himself comforted in the inconsistency of this view by the fact that "the consequences of nature made abundant amends for the inconsequences of man." In *Die Natur*, he has summarized his conception of the processes of nature in its totality. It is a rhapsody on the relation in which man stands to "the unsearchable, unconditional, self-contradictory being," that animates the universe. Later he thought it the expression of "a kind of pantheism," although defective because it fails to recognize what he calls "the two mainsprings of all nature,"—polarity and ascent.

Goethe everywhere sought in the order of nature for verification of the ideas which he had developed *à priori*. He conceived that it is in the right conception of the processes of nature that man's true attitude to the universe depends, and that in these processes of nature the simplest means are invariably employed to effect Nature's ends. He was a positive thinker on the *à priori* Method,—a method vicious when the seeker rests contented with his own assumptions, or seeks only a partial or hasty confirmation with facts—what Bacon calles *notiones temerè à rebus abstractas* but a method eminently philosophic when it merely goes before the facts (anticipating what will be the tardy conclusions of experience. He reserved all inquiry into final causes,—by Bacon admirably styled, "barren virgins,"—and attempted to find what IS.

It was the synthetic against the analytic mode of regarding nature. And for the Poet, the controversy between Cuvier and St. Hilaire was of paramount importance for upon the outcome depended the future of humanity. The question whether truth or error, and therefore whether good or evil, was eventually to triumph was of profound and permanent interest to him, and affected him deeply, for it was the animating principle of all his thinking on art, philosophy and religion, it was his conception of nature, for which St. Hilaire contended. "From the present time," he said, "mind will rule over matter in the physical investigations of the French. There will be glimpses of the great maxims of creation, of the mysterious workshop of God! Besides, what is all intercourse with nature, if, by the analytical method, we merely occupy ourselves with individual material parts, and do not feel the breath of the spirit

which prescribes to every part its direction, and orders, or sanctions, every deviation by means of an inherent law?" His heart, as well as his intellect, was in all his nature study, and seeing her with a poet's as well as with a student's eye, he communicates, as only a poet can, the sense of her being, "a living garment," in endless and ceaseless change.