

# ERNST HAECKEL'S MONISTIC RELIGION

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For some of his contemporaries, the German zoologist Ernst Haeckel (1834–1919) was the “nihilistic yet superstitious prophet of a new religion.”<sup>1</sup> Others saw him as a vindicator who would confirm the triumph of science in its nineteenth-century warfare with religion. For still others, he was the “apostle of Darwinism,” the major crusader on the European continent for the acceptance of Darwinism. Charles Darwin wrote that if one of Haeckel’s works had appeared before his own *The Descent of Man* (1871), “I should probably never have completed it. Almost all of the conclusions at which I have arrived I find confirmed by . . . this naturalist, whose knowledge on many points is fuller than mine.”<sup>2</sup> Unlike some exponents of Darwinism, Haeckel’s own consequential achievements in morphology and embryology prevented him from being dismissed as merely another of “Darwin’s bulldogs.” From a position of scientific eminence, as professor of zoology at the University of Jena, Haeckel combined his activities to promote Darwinism with popularizations of his own “Monism.” He presented Monism as a scientific movement which was based on Darwinism and

<sup>1</sup>This particular description is from “Popular Science in Germany,” *The Nation*, DCXV (1879), 179–80. Haeckel’s hopes to make of his Monism an international movement were heightened by interest in his Monistic system in the United States to the point that Paul Carus, editor of the *Monist*, attempted to distinguish between Haeckel’s and that journal’s “Monism.” See the early correspondence between Carus and Haeckel, published as “Professor Haeckel’s Monism and the Ideas of God and Immortality,” *Open Court*, V (1891), 2957–58. Gently denying Haeckel’s assertions, in these letters, that the differences between them were a matter of “definition,” Carus emphasized that Haeckel’s frequent stress upon Monism as “mechanicalism” marked a key distinction between the two “Monisms.” “Monism not Mechanicalism: Comments upon Professor Haeckel’s Position,” *Monist*, II (1891–92), 438–42. Carus equated “Monism” with the “Religion of Science” and viewed science as a religious revelation. For Carus, the task of Monism was to reconcile science and religion by creating a “scientifically tenable conception of God” and by making God and “moral law” the subject of scientific scrutiny. “Theology as a Science: Part II: The Haeckel-Loofs Controversy,” *Monist*, XIII (1902–03), 32. An admirer of Haeckel, Carus devoted an entire issue of *Open Court* to Haeckel on the anniversary of the zoologist’s eightieth birthday (1914). On Carus’ criticisms of Haeckel, see n. 35.

<sup>2</sup>Charles Darwin, *The Descent of Man, and Selection in Relation to Sex* (London, 1871), I, 4. Darwin referred specifically to Haeckel’s assertions, five years previous to Darwin’s own explicit statements in this regard, of the descent of man from simian or similar forms. Darwin wrote Haeckel that, “strictly speaking every idea, although occurring independently to me, if published by you previously ought to have appeared as if taken from your works, but this would have made my book very dull reading; and I hoped that a full acknowledgment at the beginning would suffice.” *The Life and Letters of Charles Darwin*, ed. Francis Darwin (New York, 1887), II, 316.

which aimed to free science from the bonds of “dualistic” Christianity, “metaphysics,” and all “irrationality.” In a career spanning the 1860’s through the First World War, Haeckel clashed with clericals and scientific colleagues, political figures and philosophers. Like a many-sided geometrical figure, Haeckel—zoologist, popularizer of Darwinism, and polemicist for his own Monism—excited varying images in the minds of rivals and admirers.

No less varying have been the interpretations of Haeckel’s Monistic Religion. Haeckel himself contributed to some of the confusion surrounding the topic of his Monistic Religion, for he generally did not comment on writers who variously saw his “Religion of Science” as a Spinozistic pantheism, as a “natural religion” in the manner of the Renaissance Italian pantheist Giordano Bruno, or as a polemical weapon to destroy religion.<sup>3</sup> In Haeckel’s lifetime, the topic of his “Religion of Science” was given emphatic attention by admirers and critics. The Monistic Religion has been ignored, however, in frequent interpretations of Haeckel’s Monism as the shrill final stage of the popular German materialistic school of the nineteenth century, as typified by Ludwig Büchner and Karl Vogt.<sup>4</sup> This disregard of Haec-

<sup>3</sup>Even Haeckel’s biographer, his secretary, Heinrich Schmidt, relegated Haeckel’s Monistic Religion to the status of a copy of Spinozistic pantheism: Schmidt, *Ernst Haeckel: Leben und Werke* (Berlin, 1926), 420ff. Two recent studies have stressed the religious side of Monism as more pivotal to the Monistic system than previously acknowledged but do not depart substantially from other interpretations of it as pantheism: David DeGroot, *Haeckel’s Theory of the Unity of Nature: A Monograph in the History of Philosophy* (Boston, 1965), and John L. Carafides, “The Apostle of Evolution: Ernst Haeckel’s Monistic Philosophy,” Unpublished Master’s Thesis, Univ. of Pennsylvania, 1964. I am indebted to Mr. Carafides for allowing me to read a copy of his thesis. In order to emphasize how different his ideas were from other monistic systems and from “religious dualisms,” Haeckel preferred that translators of his writings capitalize the title of his system, as “Monism.”

<sup>4</sup>The tendency to view Haeckel’s Monism as materialism, a common interpretation in Haeckel’s lifetime, has continued. John Theodore Merz, *A History of European Thought in the Nineteenth Century* (Edinburgh, 1896–1914), III (2nd impression, 1930), 198, considered Haeckel’s Monism an extension of Büchner’s popular materialism. John O’Brien, *Evolution and Religion: A Study of the Bearing of Evolution upon the Philosophy of Religion* (New York and London, 1932), stated that Haeckel used science to deny religious concepts (28, 29), that Haeckel’s “deity” was “ordinary matter” (32), and that Haeckel’s Monism was heavily mechanistic, a “strident materialism” (32, 130). Similarly, Haeckel’s Monistic movement was tied to the materialism of Büchner in Hermann Lübke’s *Politische Philosophie in Deutschland: Studien zu ihrer Geschichte* (Basel and Stuttgart, 1963). The view of Monism as basically materialism is echoed in the recent works of two intellectual historians. Although George L. Mosse has presented Haeckel’s campaign for the acceptance of Darwinism as not being the revolutionary outlook Haeckel pretended, he views Haeckel’s Darwinism as materialism: *The Culture of Western Europe: Nineteenth and Twentieth Centuries* (Chicago, 1961), 8, 202, 209. Roland Stromberg has interpreted Haeckel’s Monism as one of the late nineteenth-century systems of “popular and slightly vulgar scientific materialism.” *An Intellectual History of Modern Europe* (New York, 1966), 344.

kel's "religion" would appear justified as long as his Monism is equated with materialism, since the Monistic Religion then appears to be either an anomaly within Haeckel's Monistic system or a fraudulent "materialistic" religion, a disguised atheism.<sup>5</sup>

Yet the Monistic Religion was, in its final formulation, partly the result of the decline of materialistic and mechanistic interpretations in Europe in the decade and one-half after 1900. In these fifteen years, the biologist Hans Driesch and the philosophers Henri Bergson and Eduard von Hartmann were working to establish that evolutionary theory was susceptible to vitalistic, as well as mechanistic, interpretations. Under challenge from vitalistic viewpoints, German materialism was transformed by Haeckel into an idealistic and semivitalistic system quite opposite its origins. Despite the fact that, in the process, Haeckel earned the title of philosophical "dilettante," his use of Darwinism to establish a "religion" which united differing viewpoints bears investigation. The purpose of this paper is to trace the history of the Monistic Religion from its inception as an obscure part of the young Haeckel's materialistic-mechanistic view of Darwinism to its distinct emergence, near the end of his life, as an idealistic and semivitalistic version of the Darwinian theory of evolution. To do so, it will also be necessary to delineate Haeckel's changing conceptions of his Monism, for the Monistic Religion was a direct product of these changing conceptions

Four stages may be discerned in the development of Haeckel's Monistic Religion. In the first stage, from the 1860's to 1877, Haeckel so established himself as a popularizer of Darwinism that Monism was indirectly and only sporadically mentioned by him. When Haeckel wrote of it, he portrayed it as mechanism or as, more often, a pantheism or a "natural religion" based on the outlooks of Benedict Spinoza and Bruno. Although the term "Monistic Religion" appeared in Haeckel's writings as early as the 1860's, he appeared to avoid attempts at defining the term. In his *Anthropogenie* (Eng. trans., *Evolution of Man*, 1874), he explicitly rejected Karl Semper's suggestion that Darwinism was the religion of the naturalist.<sup>6</sup> In the second stage, from 1878 through 1890, the pantheistic aspect of Monism was ex-

<sup>5</sup>Haeckel's Monistic Religion was relegated to a background position by National Socialist writers who stressed Haeckel's views on eugenics. Since World War II, East German authors have emphasized the anti-religious aspects of Monism and have stressed Monist sympathies with the Marxian-oriented Social Democratic party. For one of the most recent evaluations of the popular impact of Monism, see Hajo Holborn, *A History of Modern Germany, 1840-1945* (New York, 1969), 395-96.

<sup>6</sup>Preface to the 3rd Ed. of *Anthropogenie, oder Entwicklungsgeschichte [sic] des Menschen*. This book, a collection of lectures like many of Haeckel's works, was first published at Leipzig in 1874. It is one of the few scientific works of Haeckel not included in a collection of his writings edited by his private secretary: *Gemeinverständliche Werke*, ed. H. Schmidt (Leipzig and Berlin, 1924). Hereafter cited as *GW*.

panded by Haeckel's introduction of hylozoism into his system. Supplementing the antireligious tenor of much of Haeckel's writings was his assertion that natural science encompassed the totality of valid knowledge, that, as he later phrased it, "scientific research captures gradually the entire province of human intellectual effort," and that "all true 'science' is basically *natural science*."<sup>7</sup> In a period when the tradition of German nature-philosophy had lost support to mechanical explanations, Haeckel promoted Monism as a new, "nonspeculative" nature-philosophy which united idealism and materialism, and spirit and matter.<sup>8</sup>

The third stage, from 1890 through 1904, marked Haeckel's definition of Monism as a link uniting science and religion. It also saw, in his popular success, *Die Welträtsel* (*The Riddles of the Universe*, 1899), the introduction of the Monistic Law of Substance as a replacement for any deity. Indicative of Haeckel's tendency during this period to regard Monism as a "reform" movement were his attempts to portray Monism as a basis for eugenic reforms, for the introduction of additional scientific training into secondary school curricula, and for the elimination of the political and educational influence of the "hierarchy of the Vatican." The final stage, from 1904 through Haeckel's death in 1919, was distinguished by the reemergence of specific references to God in Haeckel's Monism, with a new formulation of the Monistic Religion, tinged with vitalistic elements and markedly similar to Schelling's Identity-philosophy. When, in 1914, Haeckel's private secretary, Heinrich Schmidt, pictured him as prophesying a "new religion, rooted in scientific knowledge as well as emotional attachment,"<sup>9</sup> the aging Haeckel tacitly approved. Significantly, the year 1914 saw Haeckel initiate his most extensive attempt to define his Monistic Religion. Haeckel's volatile Monistic mixture—of materialism, mechanism, hylozoism, idealism, and to some degree, vitalism—was thus transformed into a full and detailed Monistic Religion only during the last fifteen years of his life.

The first stage in the development of Haeckel's Monistic Religion

<sup>7</sup>"Die Grenzen der Naturwissenschaft," *Das monistische Jahrhundert*, VII (1913), 833–37. The emphasis is Haeckel's.

<sup>8</sup>The German school of nature-philosophy was derived from the iatro-chemical school of natural philosophy of the sixteenth and seventeenth centuries. In contrast to the frequent machine-universe analogy of the French Enlightenment, the German nature-philosophers of the first half of the nineteenth century stressed spiritual activity in the universe. Haeckel outlined his objections to "speculative" nature-philosophy (as arriving at conclusions by "mere guesswork" or "divine inspiration") and detailed his own view of Monism as the new nature-philosophy in *Die Naturanschauung von Darwin, Goethe und Lamarck: Vortrag in der ersten öffentlichen Sitzung der fünf- und fünfzigsten Versammlung deutscher Naturforscher und Ärzte zu Eisenach am 18. September 1882* (Jena, 1882). *GW*, V.

<sup>9</sup>H. Schmidt, *Ernst Haeckel: Rede, gehalten am 16. Februar 1914* (Leipzig, 1914), 21.

began in 1863, when his preoccupation with Darwinism became public. In that year, he established a reputation as the chief advocate of Darwinism in Germany with a speech to a scientific conference at Stettin.<sup>10</sup> He treated Darwinism as the capital concept of biology and emphasized it as a “new moral order,” arising from the “theory of descent,” which promoted scientific unity in biology and which proved vitalism “invalid.” Although the topic of Monism is mentioned only incidentally in his early writings on Darwinism, Haeckel’s stress on “logical postulates” indicated that Monism was to be a potential theory of knowledge. Despite his insistence that all knowledge was *a posteriori*—and his rejection of dualisms as *a priori*—Haeckel asserted emphatically that biologists should have the same freedom in their hypotheses as geologists who have never actually seen massive geological changes occur in the past. Natural selection constituted a general law from which the specific laws governing the descent of man, were to be deduced. Thus, he asserted that “the descent of man from lower animals is a special deductive law, necessarily following from the general inductive law of the entire doctrine of descent.”<sup>11</sup>

The key “logical postulates,” which natural selection presupposed, were spontaneous generation and the carbon theory. Through both, Haeckel hoped to demonstrate that Darwinism helped establish the unity of the organic and inorganic realms of nature. Darwin had, for Haeckel, underlined the absence of a “creating God.” In rejecting the Christian doctrine of a creation, Haeckel made the assumption of the rise of life from the inorganic to the organic a key assumption of his Monistic system. Haeckel later summarized his view of spontaneous generation by quoting the Swiss botanist Karl Naegeli: “To deny spontaneous generation is to proclaim miracles.”<sup>12</sup> Under the carbon theory, the chemical and physical properties of carbon and its compounds explained the particular faculty of movement, which distinguished organic from inorganic matter. Although Darwin indirectly rebuked Haeckel on the question of spontaneous generation, support came from unexpected quarters, particularly from the German astronomer and physicist Johann Karl Zöllner.<sup>13</sup> Zöllner’s support proved

<sup>10</sup>The brunt of Haeckel’s Stettin defense of Darwinism was that there was no reasonable counter-hypothesis.

<sup>11</sup>Phrased somewhat more timidly in earlier works, this explicit statement is from Haeckel’s *Anthropogenie*, 82–83.

<sup>12</sup>“Gott-Natur (Theophysis): Studien über monistische Religion,” *GW* (Leipzig, 1914), III, 464.

<sup>13</sup>Darwin wrote Haeckel, cryptically, that he saw “no prospect for settling” the question of spontaneous generation: *The Life and Letters of Charles Darwin*, II, 358. Haeckel’s scientific critics included the Swiss-American zoologist and geologist Louis Agassiz; in Germany, the biologist Wilhelm His; the founder of modern embryology, Karl Ernst von Baer; and the botanist Johannes Reinke of Kiel, who criticized Monism from the floor of the *Reichstag*.

useful against frequent theological demands that Haeckel resign, and Haeckel's decision to spend his entire academic career at the University of Jena was motivated by protection given him by the rector of the University, the Grand Duke Karl Alexander of Saxe-Weimar.

Vigorously and dogmatically polemic—his confidence increased by growing recognition in the scientific community of the significance of his use of the Biogenetic Law<sup>14</sup>—Haeckel utilized the carbon theory and his view of spontaneous generation to reinforce the “doctrine of descent” in writings and speeches to scientific forums in Germany. He stressed that these twin theories were of importance in deciding the long-standing conflict between teleological and mechanical views of nature, in favor of the latter. Both theories strengthened the portrait of Spinozistic pantheism Haeckel had sought to emulate in his first major book, *Generelle Morphologie der Organismen (General Morphology of Organisms)*, 1866). God was defined in that book in terms suitable for pantheism and mechanism, as “necessity” and “the total of all force and therefore of all matter.” Monism was defined as a “mechanical” or “causal” view of the universe, and Haeckel affirmed that there were no “immaterial forces.” The unity of all nature was achieved by Monism in the sense that “God reveals himself in all natural phenomena.”<sup>15</sup> Pantheism was therefore associated with mechanism through a concept of universal causality.

In the following book, *Natürliche Schöpfungsgeschichte (The History of Natural Creation)*, 1868), neither Monism nor a Monistic Religion was very systematically examined, although Haeckel referred to nature as a “sanctuary” of “divine revelation” and wrote in the Preface that the purpose of the book was to draw the reader into the “holy temple of nature.” Haeckel emphasized Monism as a “natural religion” by stating that “the only divine revelation we recognize as valid, is written in nature everywhere. . . .”<sup>16</sup> Haeckel used the term “natural religion” in a dual sense: as a deistic counterpart to “revealed” religion and as a general term describing a worshipful attitude toward the “wonders” of nature. He asserted that the express purpose of Monism was to prove that no moral order exists in the universe. In correspondence, Haeckel acknowledged that the materialistic writings in the 1850's of Karl Vogt and Ludwig Büchner had raised doubts in his mind concerning the Schleiermacherian liberal Protes-

<sup>14</sup>The Biogenetic Law, based on the work of von Baer and Johann Meckel as developed by Fritz Müller, was summarized by Haeckel as, “Ontogeny recapitulates phylogeny” (individual development recapitulates the development of the “race”). The Biogenetic Law saw individual developmental stages as an historical record.

<sup>15</sup>*Generelle Morphologie der Organismen* (Berlin, 1866), II, 451–52.

<sup>16</sup>“Natürliche Schöpfungsgeschichte: Gemeinverständliche wissenschaftliche Vorträge über die Entwicklungslehre [sic],” *GW*, (Berlin, 1868), II, 412.

tantism of his family upbringing.<sup>17</sup> He did not acknowledge that, by presenting Monism as a “natural religion,” a pantheism, and a mechanistic system, he had failed to give a clear and consistent definition of either his Monistic system, or his Monistic Religion.

Readers who continued to seek a consistent definition of his Monistic Religion or of Monism, among these Darwin himself, were justifiably confused. The confusion was not lessened by the new direction assumed by Haeckel in 1874 in his *Anthropogenie*. Here the emphasis was upon Monism as a fusion of scientific and philosophical principles. In the Preface, Haeckel argued that the new theory of evolution was a “most favorable development to the growth of scientific unity.” He added: “Unitary philosophy, or Monism, is neither extremely spiritualistic nor materialistic, but constitutes instead a fusion and combination of the opposed principles, that is, it views nature as one whole and in no case recognizes any causes but mechanical ones.”<sup>18</sup> Monism, wrote Haeckel, was a bridge between philosophy and empirical methods, since only a combination and blend of empiricism and philosophy was a “certain” basis for science. Monism was to be a new nature-philosophy, the “philosophy of science.” Monism was, therefore, not merely Darwinism, or pantheism, or mechanism, or a “natural religion,” but a combination of all of these systems.<sup>19</sup>

Haeckel's seemingly contradictory attempts to define his Monism during the 1870's reflected, to some degree, his desire to make of it a broad popular movement supplementing the anti-Catholic laws of the *Kulturkampf*, the “struggle for civilization.” In the sense that Monism would oppose the influence of “religious dualisms” in science, as well as in social and political life, it would constitute an “antireligious” cultural movement. During a scientific conference at Munich in 1877, Haeckel clashed with the man who had coined the name “*Kulturkampf*,” his former professor of pathological anatomy and the founder of cellular pathology, Rudolf Virchow.<sup>20</sup> In emphatically denying Virchow's doubts that there was absolute continuity in the development of men and animals and his charges that Darwinism was social-

<sup>17</sup>Anna Sethe: *Die erste Liebe eines berühmten Mannes in Briefen*, ed. H. Schmidt (Dresden, 1929), 332–33. While he later attempted to distinguish Monism from materialism, Haeckel consciously built on the popular German materialistic books of the 1850's, particularly Büchner's *Kraft und Stoff* (Frankfurt, 1855) and Vogt's *Köhlerglaube und Wissenschaft* (Giessen, 1855). <sup>18</sup>*Anthropogenie*, 707–08.

<sup>19</sup>This view of Monism as a theory of knowledge was presaged by comments in “Natürliche Schöpfungsgeschichte,” *GW*, II, 428.

<sup>20</sup>Virchow's teaching that all life is a function of cells had influenced the young Haeckel, who believed that without the cell theory the place of man in nature was an “unintelligible puzzle.” *Anthropogenie*, 113f.

istic, Haeckel believed that he was defending the *Kulturkampf* as well.<sup>21</sup> The substitution, beginning the next year, of antisocialist laws for the anti-Catholic laws was accompanied, in 1879, by the elimination of biological instruction from the curricula of Prussian secondary schools. Haeckel believed that the intellectual atmosphere of the 1880's in Germany, when the antisocialist laws seemed to threaten iconoclastic nonsocialists such as himself as well, was not favorable to the continued popularization of Darwinism and Monism. His increasing tendency to present Monism as a popular "antireligious" movement was arrested, and Haeckel turned to the task of expanding Monism as a philosophical system. Thus began the second stage in the evolution of his Monistic Religion.

Haeckel's attempts to transfer his own scientific eminence to an uncritical acceptance of spontaneous generation had failed to draw widespread support. Two concepts, hylozoism and a "chain of unity of sensation," were used by Haeckel during the late 1870's and the 1880's to support spontaneous generation. In the sense that both concepts offered a redefinition of the word "soul," they advanced Haeckel's gradually emerging Monistic Religion. In a speech in 1878, published as an article entitled "Zellseelen und Seelenzellen" ("Cell-Souls and Soul-Cells"), Haeckel espoused the premise that all organic matter was sensate.<sup>22</sup> The soul was a "natural phenomenon"; every organic cell possessed psychic properties which were summarized in the word "soul." By equating "soul-life" with cell irritability, Haeckel made *Seelentätigkeit* a property of all organic cells, including plant cells.<sup>23</sup>

Despite Haeckel's belief that hylozoistic Monism was distinct from materialism, his position remained similar to that of German materialists such as Büchner, who had described the soul as a function of the brain. Haeckel, however, used hylozoism to increase the credibility of his view of spontaneous generation. He stressed that spontaneous generation led to the development of protoplasm into nonnucleated primitive unicellular organisms he termed monera. The nonnucleated monera were assumed to be simple structureless masses of protoplasm, the first "life forms." The monera also constituted, for

<sup>21</sup>Haeckel's reply to Virchow was published as *Freie Wissenschaft und freie Lehre: Eine Entgegnung auf Rudolf Virchow's* [sic] *Münchener Rede* (Stuttgart, 1878). *GW*, V.

<sup>22</sup>"Zellseelen und Seelenzellen," *GW*, V, 163. Published in *Deutsche Rundschau*, XVI (1878), 40-59.

<sup>23</sup>Haeckel acknowledged that he was influenced by the work of Gustav Fechner on "soul-life" in plants. In Fechnerian terms, he later stressed that he was attempting to establish that the "soul-life of man and mammals" operated through the same laws of psychophysics: "Die Welträtsel: Gemeinverständliche Studien über monistische Philosophie," *GW* (Bonn, 1899), III, 164.



Haeckel, a true “missing link” in evolution, since they provided a line of progression between inorganic and organic matter.<sup>24</sup> Haeckel asserted that the irritability found in all organic matter progressed through evolution into the consciousness and organization of the human nervous system, the brain. This argument was the basis of Haeckel’s “chain of unity of sensation”: evolutionary history had proceeded from the “cell-soul” through “intermediary steps” to the “rational” human soul.<sup>25</sup> Hylozoism and the “chain of unity of sensation” were viewed by Haeckel as demonstrating that “natural science and evolutionary theory” were not to be used to degrade nature into a “soulless mechanism” which would “bar all ideals from the real world and destroy poetry.”<sup>26</sup> Haeckel believed that Monism had established that the soul of man was a “purely mechanical activity.” Yet he wished to avoid, through pantheism and hylozoism, a “depressing” materialism which reduced the universe to “dead matter.”

Haeckel’s first specific and direct formulation of his Monistic Religion came in 1892, early in the third stage in the development of his Monistic Religion, when he revived his *Anthropogenie* stress on Monism as unity of knowledge. His 1892 Altenburg speech, entitled “Der Monismus als Band zwischen Religion und Wissenschaft” (“Monism as a Link between Religion and Science”), portrayed Monism as a bridge, a “link” between science and faith.<sup>27</sup> Monism, Haeckel stressed, held to the basic ethics of Christianity (emphasizing egoism somewhat more and altruism somewhat less) but with the outlook of pantheism. Hylozoism was reiterated: in the manner of Bruno, Haeckel declared that “a spirit (*Geist*) lives in all things.” He also quoted Goethe’s dictum that “matter cannot exist and be efficacious without spirit (*Geist*), nor spirit without matter.”<sup>28</sup> Haeckel’s Altenburg speech indicated his concern that his Monism be favorably received publicly. It also marked his return to the concept of Monism as a popular cultural movement. The antisocialist laws had ended, and in the freer atmosphere of Germany in the 1890’s Haeckel published and spoke avidly of Monism as the “new faith”<sup>29</sup> based on a “scientific *Weltanschauung*.”

The Altenburg speech indicated, however, that Haeckel recognized

<sup>24</sup>“Zellseelen und Seelenzellen,” *GW*, V, 183.

<sup>25</sup>*Ibid.*, 194–95.

<sup>26</sup>*Ibid.*, 194. Büchner had spent much of his writing career attempting to establish, against the strong idealistic tradition in Germany, that materialism was elevating rather than “depressing” and “base.”

<sup>27</sup>*Der Monismus als Band zwischen Religion und Wissenschaft: Glaubensbekenntnis eines Naturforschers, vorgetragen am 9. October [sic] 1892 in Altenburg* (Bonn, 1893). *GW*, V.

<sup>28</sup>“Der Monismus als Band zwischen Religion und Wissenschaft,” *GW*, V, 427.

<sup>29</sup>This was a reference to David Friedrich Strauss’s *Der alte und der neue Glaube: Ein Bekenntnis* (Leipzig, 1872).

certain logical difficulties in his Monistic system. Despite his attempt to escape a “depressing” materialism, he had regarded matter as the fundamental entity in the universe. Yet he had tended to treat “soul” and “matter” as separate entities. In claiming Spinoza as his intellectual mentor, he disregarded the fundamental distinction between Spinozistic and Monistic pantheism. Spinoza, in espousing a single infinite substance with an infinite number of attributes, had rendered “matter” and “soul” identical. Haeckel had merely made them coincident (i.e., they were always found together). Although Haeckel did not seem to recognize his divergence from Spinoza, he apparently recognized that his Monistic synthesis was in danger of becoming a series of dualisms centered around the soul-matter dichotomy. He now attempted to lend cohesion to his system through a concept of a “universal substance.” In the process, he moved his Monism toward an *a priori* idealism—the characteristic which he had condemned as the watchword of the “speculative” nature-philosophy of the first half of the nineteenth century in Germany.

Although the Altenburg speech emphasized Monism as a “connecting link,” Haeckel’s later comments focused on the speech as stressing Monism as the “religion of the modern scientist.”<sup>30</sup> In 1911, he said that at Altenburg he had established that “we know no personal God, but we do know a religion.”<sup>31</sup> Haeckel thus appeared to define religion as being, like Monism, a unitary factor in knowledge. His most revealing comment on his Altenburg lecture was his observation that it was basically an attempt to find a Monistic Law of Substance.<sup>32</sup> Following his pattern, begun with his “Zellseelen” article of 1878, of redefining religious terms, Haeckel now defined God as the “universal substance.” This change was made obvious in *Die Welträtsel* (*The Riddles of the Universe*), published in 1899.<sup>33</sup> Having previously used the Darwinian theory to elucidate human origins in naturalistic terms, he now stressed that the development of man and society was an extension of the evolution of the “divine essence of the world,”<sup>34</sup> universal substance.

The section of *Die Welträtsel* entitled “Our Monistic Religion”

<sup>30</sup>“Die Wissenschaft und der Umsturz,” *GW*, V, 470–71.

<sup>31</sup>Wilhelm Blossfeldt, ed., *Der erste internationale Monisten-Kongress im Hamburg vom 8.-11. September 1911* (Leipzig, 1912), 17. <sup>32</sup>“Gott-Natur,” *GW*, III, 453.

<sup>33</sup>The original edition was entitled *Die Welträttsel* [sic]; later editions bore the more modern spelling *Die Welträtsel*. In a speech which ended with the rallying cry “Ignorabimus,” the physiologist Emil Du Bois-Reymond had, in 1872, listed seven insoluble scientific and philosophical riddles. The title of *Die Welträtsel* was derived from these “riddles.” English-language editions carried the mistranslated title of *The Riddle of the Universe*, in deference to Haeckel’s conclusion that only one riddle, the “riddle of substance,” remained. <sup>34</sup>“Die Welträtsel,” *GW*, III, 28.

proved mistitled: it focused on proving that Christianity had grown more dangerous for science as it had found “support in increasing intellectual and political reaction.”<sup>35</sup> Haeckel's desire to define more clearly his religious conception was reflected, however, in his presentation of the Pyknotic Monism of J. G. Vogt, a type of Monism which Haeckel espoused, in *Die Welträtsel*, as a solution to the “riddle of substance.”<sup>36</sup> While the “Zellseelen” and Altenburg speeches had differentiated Monism more sharply from materialism than formerly, Pyknotic Monism constituted an attempt by Haeckel to distinguish his Monism from mechanism. Without explanation, he regarded Pyknotic Monism as less deterministic than mechanistic theories.

For Haeckel, Pyknotic Monism also resolved logical difficulties in the atomic theory of the time.<sup>37</sup> In contrast to the atomic theory, reality in Pyknotic Monism proceeded from the contractions and vibrations of a continuous substance. A new dualism was thereby created, since two forms of matter were outlined, both endowed with sensation: imponderable ether, which continuously filled the universe, and ponderable mass.<sup>38</sup> Because Haeckel wished to deny “action at a distance,” he used the concept of an ether to deny a true vacuum in the cosmos. In the face of criticism that evidence supporting the existence of the “ether” was insufficient, Haeckel regarded his concepts of ether and Pyknotic Monism as “logical postulates” which did not require an empirical confirmation.

As an *a priori* construction, Pyknotic Monism moved Haeckel's

<sup>35</sup>*Ibid.*, 344. Paul Carus found *Die Welträtsel* “less scientific than religious,” strong in its exposures of the “mythologies” of traditional religion but deficient in its failure to build up a “new scientific theology.” Although Carus had paralleled Haeckel's “chain of unity of sensation” [*The Surd of Metaphysics* (Chicago, 1903), 325], he took the position that nature is not ensouled and that “the action of chemical elements and of the falling stone are no psychical actions.” “Professor Haeckel's Monism,” *Monist*, II (1891–92), 599. Objecting to Haeckel's “deification” of matter and energy, Carus stressed that “spirit” was the “resultant of the order and regularity produced by the laws of form.” “God-Nature: A Discussion of Haeckel's Religion,” *Open Court*, XXVIII (1914), 398. “The God of science is neither matter and energy nor the totality of all existent things; it is the law that shapes them . . . the eternal norm which determines the destiny of the world as a whole and also in its parts.” “The Monism of ‘The Monist,’ Compared with Professor Haeckel's Monism,” *Monist*, XXIII (1913), 436. On the unpublished correspondence of Carus regarding Haeckel, see references in the unpublished diss. (Univ. of Illinois, 1957) of James Francis Sheridan, “Paul Carus: A Study of the Thought and Work of the Editor of the Open Court Publishing Company,” esp. 26–32, 77–83.

<sup>36</sup>*Ibid.*, 288. Vogt explained his Pyknotic Monism in *Die Kraft: Eine realmonistische Weltanschauung* (Leipzig, 1878).

<sup>37</sup>Haeckel summarized his own difficulties with the atomic theory by noting that the problem of the “old atomic theory” was that it did not recognize the “nature of atoms—forms, size, psychology. . . .” “Die Welträtsel,” *GW*, III, 226–27. <sup>38</sup>*Ibid.*, 227.

Monistic system in the direction of idealism. In the companion volume to *Die Welträtsel*, *Die Lebenswunder* (*The Wonders of Life*, 1904), Haeckel increased the idealistic trend of his Monism by postulating a third aspect of matter, already outlined in *Die Welträtsel*: Psychoma, or sensation. Defined as a *Weltseele*, or universal soul, the Psychoma concept also gave a distinct vitalistic tinge to Monism. Although not novel to his system—the Psychoma was a formalization of the “cell-soul” concept, extended to inorganic matter—the Psychoma concept completed a “Trinity of Substance.” Matter, energy, and Psychoma were outlined as the three aspects of the universal, underlying substance.<sup>39</sup>

In addition to outlining the Psychoma concept, *Die Lebenswunder* supplemented explanations in *Die Welträtsel* concerning the “Law of Substance.” Haeckel had identified his “Law of Substance” as a fusion of the Law of the Conservation of Matter and the Law of the Persistence of Force. That it had virtually become an idealistic entity was clear in Haeckel’s insistence that each “chance” event involved the “universal sovereignty of nature’s supreme law, the Law of Substance.”<sup>40</sup> Haeckel asserted that he was thus merely continuing his earlier definition of God as causality, as expressed in his first major book, *Generelle Morphologie der Organismen*. Theological critics, however, lost little time in focusing on Haeckel’s “new deity”: the Law of Substance, which Haeckel had defined as “the supreme and universal law of nature.”<sup>41</sup>

Despite the critics who took note of Haeckel’s “new deity,” a cursory examination of *Die Welträtsel* would lead to the conclusion that Haeckel was shifting away from his concept of Monism as a religion, since the book stressed Monism while giving considerably less prominence to the Monistic Religion. Haeckel’s vague tone in the few sections which discussed the Monistic Religion, coupled with his quotation of the philosopher Arthur Schopenhauer’s dictum that pantheism was a polite form of atheism, led some of his contemporaries to assume that the Monistic Religion was, in fact, atheistic, and therefore, fraudulent—an attempt to deny, through science, the validity of all religions. A seemingly offhand comment in *Die Welträtsel*, however, indicated that Haeckel regarded his theories, his “logical postulates,” and his “Law of Substance” as being central to

<sup>39</sup>Carafides, *op. cit.*, 30, views the Psychoma concept as a “tacit admission that motion itself is not an adequate explanation of the universe” and stresses that it is an idealistic notion in Haeckel’s system. The Psychoma concept is discussed by Haeckel in some detail in “Die Lebenswunder: Gemeinverständliche Studien über biologische Philosophie,” *GW*, (Stuttgart, 1904), IV, *passim*.

<sup>40</sup>“Die Welträtsel,” *GW*, III, 282.

<sup>41</sup>*Ibid.*, 218.

his Monistic Religion. He mentioned that theories which completed gaps in existing knowledge were “forms of scientific faith.”<sup>42</sup> Thus recapitulating elements of his *Anthropogenie* and Altenburg definitions of Monism, Haeckel for the first time defined, if indirectly, his Monistic Religion. Its implied purpose was to justify nonempirical procedures in science so important to Haeckel's scientific views, particularly his interpretations of Darwinism and the implications of Darwinism. The Monistic Religion was to be, for Haeckel, a logical aid when empiricism failed.

The Monistic Religion, however, had developed two purposes: if a logical necessity, it was also a polemical weapon against established religions. When events in Germany revived Haeckel's enthusiasm for a new *Kulturkampf*, he returned to the latter concept of Monism. The growing popular successes of his books—*Die Welträtsel* would sell more than 300,000 copies in its German edition before Haeckel's death in 1919, plus numerous translations—reflected this new emphasis. Encouraged by the development of the Ethical Culture and Freethinkers' movements as “reform” groups in Germany, Haeckel attempted to use discontent over the political maneuvers of the Catholic Center party to unite those movements with Monism, thus opening the last stage in the development of his Monism. His “Der Monistenbund: Thesen zur Organismus des Monismus” (“Thirty Theses of Monism”), presented in 1904, constituted a Monistic creed which called other “reform” groups in Germany to unite under a *Monistenbund* (Monistic Alliance).<sup>43</sup> The *Monistenbund* would combat “intellectual and political reaction,” with vitalism specifically cited as an example of “intellectual reaction.” The “Theses” spoke of the Monistic Religion in idealistic terms appropriate to *Die Welträtsel* and *Die Lebenswunder*. God was the “unknowable cause of all thoughts, the conscious and theoretical Basis of Substance.” Yet Haeckel again referred to Monism as a link between science and religion, and he insisted that the Monistic Religion was to be recognized by the state and its “equality with other confessions maintained.”<sup>44</sup> The last statement was one of the most fateful, for it indicated that the *Monistenbund* might constitute a potential “compromise” church, as the “link” between science and religion.

Efforts to organize the *Monistenbund* succeeded in 1906. Although proposals that Monism become a cult with religious-like rituals did not win Haeckel's favor, his vision of the *Monistenbund* as a

<sup>42</sup>*Ibid.*, 309.

<sup>43</sup>Printed in *GW*, V.

<sup>44</sup>These citations are from the twenty-fifth thesis. DeGroot, *op. cit.*, 37, argues that the “Theses” had “Haeckel flirting with agnosticism” in his statement that “. . . the idea of God is tenable only so far as we recognize in this ‘God’ the ultimate unknowable cause.”

symbolic “link” was represented by the first president of the *Monistenbund*, a Protestant minister named Dr. Albert Kalthoff.<sup>45</sup> Lacking in scientific eminence and racked by factional struggles, however, the *Monistenbund* betrayed Haeckel’s vision of it. With Schmidt and Wilhelm Breitenbach, a friend, he considered dissolving it to begin anew.<sup>46</sup> But the sudden interest in the Alliance of a Nobel-laureate physical chemist, Wilhelm Ostwald, obviated such a course. In 1911, Ostwald assumed the presidency of the *Monistenbund*. Ostwald’s leadership favored the image of Monism as a cult: in order to demonstrate that Monism would replace religion, a Monistic colony or “cloister” was instituted for economic, eugenic, and euthanasic reforms; Ostwald inaugurated his weekly speeches or *Sonntagspredigten*, as the Monistic equivalent of Sunday sermons; and Ostwald persuaded Haeckel to support cooperation with the Marxian-oriented Social Democratic party in the movement to withdraw individual church memberships (*Kirchenaustrittsbewegung*), a movement which also sought to deny tax support to church enterprises. In January 1914, Ostwald triumphantly wrote Haeckel that the *Monistenbund* was fulfilling Haeckel’s lifetime plans, in the face of “helpless religion.”<sup>47</sup>

By the time of Ostwald’s letter, Haeckel had embarked on his final formulation of the Monistic Religion as outlined in *Gott-Natur* (*God-Nature*, 1914).<sup>48</sup> That book represented a repudiation of Ostwald and of the anti-religious trend of the organization Haeckel had founded. Indicative of Haeckel’s renewed emphasis on Monism as a religion, *Gott-Natur* completed the portrait of the universe as a “perpetual cosmic cycle,” a portrait which Haeckel had sought to advance beginning with his “Zellseelen” speech of 1878. Since knowledge was a “physiological process of nature,” distinctions between “religion and philosophy” were artificial. Both made use of “conceptualizations of faith” (*Glaubens-Vorstellungen*) to fill in gaps in knowledge.<sup>49</sup> By merging observation and reflection, empiricism and speculation, Haeckel’s Monism reached the “most advanced conception possible,” the unity of God and nature.

Although Haeckel in *Gott-Natur* identified the Monistic Religion as pantheism, he placed considerably greater emphasis on a new concept, the *Allgott* concept, than on pantheism.<sup>50</sup> The *Allgott* concept

<sup>45</sup>An account of the formation and first years of the *Monistenbund* is in H. Schmidt, “Zwanzig Jahre Monistenbund,” *Monistische Monatshefte*, II (1926), 1–11.

<sup>46</sup>*Ibid.*, 4.

<sup>47</sup>Letter of Ostwald to Haeckel, Jan. 12, 1914, quoted in Ostwald, *Wissenschaft contra Gottesglauben: Aus den atheistischen Schriften des grossen Chemikers*, ed. Friedrich Herneck (Jena, 1960), 33. <sup>48</sup>See n. 12. <sup>49</sup>“Gott-Natur,” *GW*, III, 428–29.

<sup>50</sup>He professed to believe, however, that “whether we view this impersonal ‘Al-

was the basis for an Identity-philosophy similar, Haeckel asserted, to "Spinoza's Identity-philosophy." By making God the symbol of the universal substance, Haeckel rendered his "universal substance-God," or *Allgott*, the unifying identity in which matter and spirit were merged. This view was expressed in the descriptions of God as the "primitive Basis of Substance" and the "theistic expression for our concept of substance."<sup>51</sup> In acknowledging a debt to the "Identity-philosophy of Spinoza," Haeckel ignored the greater similarity of his Identity-philosophy to that of one of the nature-philosophers of the early nineteenth century, Friedrich Wilhelm von Schelling. He also ignored the irony of his debt to Schelling. For Schelling had formulated his own Identity-philosophy in the spirit of the "speculative" school of nature-philosophy consistently scorned by Haeckel.<sup>52</sup> Whereas Schelling later had transformed his philosophy into a more empirical outlook, Haeckel had reversed the process. Haeckel's former denunciations of "speculative idealisms" gave way, in *Gott-Natur*, to an idealistic picture of the "universal substance-God" as a single cosmic force which made itself manifest in spirit and matter.

Despite the idealistic elements in *Gott-Natur*, Haeckel deprecated idealism and vitalism and specifically singled out Henri Bergson's concept of *élan vital* as an example of "new speculation." In 1917, however, Haeckel published his *Kristallseelen (Crystal-Souls)*.<sup>53</sup> *Kristallseelen* concentrated on the "interior qualities" of crystals and extended Haeckel's "chain of unity of sensation" to the inorganic world. Haeckel referred to "atomic souls" in inorganic matter such as crystals. Crystals were, he wrote, similar to organic forms of life in that they experienced birth, growth, death, sensation, and all "other manifestations of life-forms."<sup>54</sup> He thus applied hylozoism to the inorganic world of crystals. *Kristallseelen* reinforced Haeckel's belief that all nature, organic and inorganic, constituted an intelligent organism, the universe. Without admitting that he had done so, Haeckel had moved his Monism closer to vitalism than to hylozoism, for he had placed less emphasis than formerly on the

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mighty' as '*Gott-Natur*' or as '*Allgott*' is basically unimportant." "*Gott-Natur*," *GW*, III, 455.

<sup>51</sup>*Ibid.*, 450–51, 453, 455–60.

<sup>52</sup>Schelling envisioned an identity of mind and matter in the Absolute, which he saw as unconsciously creative. This concept, part of an idealistic stage in Schelling's thought, found no essential difference between mind and nature. In citing "Spinozan Identity-philosophy," Haeckel is apparently referring to Spinoza's identity of an infinite number of attributes in one substance.

<sup>53</sup>*Kristallseelen: Studien über das anorganische Leben* (Leipzig, 1917). Haeckel specifically rejected all "Identity-philosophies" and stressed his Monistic theory of substance as having a trinity of the "attributes" of substance (93).

<sup>54</sup>*Ibid.*, 7, 142, *et passim*.

hylozoistic view that mental life was derived from matter and stressed, instead, the "soul-life" inherent in substance as a creative force in the evolution of matter. Haeckel did not acknowledge that he thus moved his Monistic system closer to vitalism than formerly, but he did not repudiate his reference to Monism, in *Gott-Natur*, as the point at which philosophy and religion, biology and physics, vitalism and mechanism intersected.<sup>55</sup>

*Kristallseelen* was Haeckel's final book. Whereas the youthful Haeckel had portrayed Darwinism and Monism as revolutionary viewpoints, extirpating from science all dualistic and metaphysical elements, the mature Haeckel moved in the direction of idealism and, to some degree, vitalism. Thus Monism was more complex, and more contradictory, than the materialism it has frequently been described as being. When, in the first fifteen years of the twentieth century, mechanistic and materialistic viewpoints appeared to be submerged by other streams of thought, Haeckel believed that it was proper that his Monism proved sufficiently amorphous to accommodate idealistic and semivitalistic overtones within his earlier standpoints of mechanism, materialism, and pantheism. The medium of this accommodation was the Monistic Religion. Despite Haeckel's differing definitions of Monism, the rationale of the Monistic Religion was generally consistent during Haeckel's career. The role of the Monistic Religion was, by "conceptualizations of faith" and "logical postulates," to unite viewpoints which conflicted scientifically and philosophically. By justifying the nonempirical procedures and assumptions so necessary to Haeckel's explanations of the implications and uses of Darwinism, the Monistic Religion provided unity when contradictions and lack of empirical evidence threatened the cohesiveness of the "new nature-philosophy," Monism. The "universal substance-God" and the Monistic Religion were, in fact, Haeckel's ultimate "logical postulates." Rather than being an anomaly within Monism, the Monistic Religion was seen by Haeckel as a central symbol of unity and necessary logical adjunct to his Monism. It was also, to some extent, a symbol of the degree of unity Haeckel desired but did not achieve. Ironically, Haeckel believed that it was through his Monistic Religion that his system of ideas became truly monistic.

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<sup>55</sup>DeGroot, *op. cit.*, 38, suggests that Haeckel's Monism at some points approached Eduard von Hartmann's theory of the unconscious, a theory with both vitalistic and voluntaristic undertones.