

PROFESSOR CONWAY ZIRKLE'S VITRIOLIC ATTACK ON LAMARCK

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For forty-four years Conway Zirkle (1895-1972), long-time professor of botany at the University of Pennsylvania, spewed venomous literature of shameful inaccuracies concerning the professional and personal character of the French scientist and evolutionist, Jean Lamarck (1744-1829). Above all, he stressed the purported oddity and absurdity of the characteristics of Lamarck. Professor Zirkle, a member of the neo-Darwinian donnish elite, misinterpreted the evidence relative to Lamarck's scientific contributions to the development of modern evolutionary theory. This writer analyzed six major writings of Professor Zirkle and discovered that only two sources of Lamarck's voluminous works were used as material to attack Lamarck's conclusion as to the causes for biological evolutionary changes. Professor Zirkle in six writings assaulted Lamarck's respectability, wisdom, experience, and judgment by the replete use of two examples extracted from only three pages of Lamarck's many publications.

Professor Zirkle taught the history of science at the University of Pennsylvania. He capitalized on the opportunity to expose thousands of students to a dogmatic study of anti-Lamarckian theory. Professor Zirkle's prejudicial approach to Lamarck as an eccentric person raises a number of questions. The *Encyclopedia of Philosophy* (Vol. 5, 1967) defines the term *argumentum ad hominem* as "an argument that attempts to disprove the truth to what is asserted by attacking the asserter. . . .". Professor Zirkle's writings must be challenged.

Conway Zirkle's lengthy tenure at the University of Pennsylvania nurtured his far-reaching influence on the scientific community and allowed him to speak and write ill about the biological and philosophical works of the French evolutionist, Jean Lamarck (1744-1829). Most of all, he condemned Lamarck's scholarly performance on the basis of unproven insinuations, innuendoes and blatant derogatory remarks such as outlandish appearance, sad-colored qualities and lack of personal charms.

Conway Zirkle was born on October 28, 1895. In 1921, he earned both the B.S. and M.S. degrees from the University of Virginia and four years later the Ph.D. from Johns Hopkins University. Zirkle became an Instructor in Biology at the University of Virginia from 1920 to 1921 and then Assistant in Biology at Johns Hopkins University from 1921 to 1924. He did post-graduate studies at the University of London and the University of Geneva. This additional training qualified Zirkle to study at Harvard University from 1925 to 1928. He remained there two more years as a Research Associate. In 1930, he was invited to join the faculty of the University of Pennsylvania as an Associate Professor in botany and held this ranks for seven years. In 1937, he was promoted to Full Professor and taught, researched, and published in his field. Zirkle retired from the University of Pennsylvania in July, 1966.

Zirkle belonged to numerous professional organizations: Phi Beta Kappa, Sigma XI, Gamma Alpha, American Genetics Society, and the Academy of International History of Science. He served as a member of the editorial board of the prestigious scientific journal, *Isis*, and as Vice President of Section L (History and Philosophy of Science) of the American Association for the Advancement of Science. He was listed in the 1968 edition of *World Who's Who in Science*.

Zirkle wrote four books on botany and the history of biology as well as many articles on such varied topics as the chemistry of cytological fixation, plant vacuoles, and permeability of plant cells.

Zirkle lived in the town of Secane near Philadelphia and died on March 28, 1972.

Zirkle's propensity for pouncing upon Lamarck's credentials is illustrated in the following three references:

1. The idea of acquired characters being inherited is extremely old and had become embalmed in prehistoric myth. . . . Fourteen descriptions of it were published during Lamarck's own lifetime before Lamarck used it to explain evolution. It had been the generally accepted view for over 2000 years. Lamarck, however, did not help the belief along. He seems to have been a man with no trace of a sense of humor and hence he showed a real talent for making himself ridiculous. After he had finished his account of the inheritance of acquired characters it had become so laughable that a real scepticism developed. The doctrine had persisted two millennia but it could not stand Lamarck's endorsement. After Darwin had proven the fact of evolution, however, it had a brief revival until it again lost standing as a result of the discoveries of Weismann.¹
2. The theory of evolution was not fortunate in having Lamarck as its first great advocate. . . . He never knew when he was making himself ridiculous for he apparently had no sense of humor whatever.

In fact, where most men have a 'bump' of humor, Lamarck had a positive depression. The explanation he gave of the origin of the giraffe's neck was only asking for ridicule. . . .

Even though the evidence for evolution was accumulating rapidly during the first half of the nineteenth century, few biologists wished to be called Lamarckians and be laughed at.²

3. When we examine the life, work, and reputation of Lamarck, we are forced to admit that for once the Norrs displayed a real sense of humor. Lamarck is far too improbable a character for any novelist to have created; he could only have been a product of nature. As a scientist, he was a duffer, as a rule unable to understand the discoveries of his contemporaries, but always capable of making himself ridiculous. . . . It was easy for his fellow scientists to expose his errors, and his errors were multitudinous.³

In the article, "Species Before Darwin" Zirkle became a rodomontadist and labeled Lamarck as being "ridiculous." Zirkle spread false rumors and besmirched the reputations of the defenders of Lamarckian biology. In a disserviceable manner he wrote:

At the beginning of the nineteenth century belief in the fixity of species prevailed in both the religious and scientific worlds. The causes of this were many. The belief might have been inevitable—a natural consequence of a phase through which our growing science had to pass—but it was aided by a couple of historical accidents, by the personal talents and characteristics of certain men who expressed themselves definitely on the subject of special creation and evolution. We need mention but two of these, Baron Georges Cuvier and the Chevalier de Lamarck.

Cuvier was a careful, accurate, and active scientist who soon acquired great prestige among his colleagues. He was a firm believer in special creation and he explained the fossil record by assuming that the earth had experienced a number of catastrophes. Lamarck on the other hand was an evolutionist but, while he was undoubtedly a great man, he was so utterly humorless that he was forever making himself ludicrous. He could not endorse a doctrine without injuring it—without making it appear dubious. Belief in the inheritance of acquired characters had been accepted almost universally for over twenty-five hundred years; it was an ancient and honorable doctrine, but it was endangered and almost destroyed by Lamarck's endorsement. Lamarck's talents for making himself ridiculous have been described elsewhere so they need not be depicted here (Zirkle, 1946). Here we may state merely that the biologists of the first half of the nineteenth century did not want to accept his ideas nor did they want to be associated with him in any way. Certainly no sane biologist wanted to be known as a Lamarckian.

It was not until Darwin showed his fellow scientists that they could be evolutionists without being Lamarckians that evolution was welcomed. By the middle of the nineteenth century the evidence for evolution was overwhelming but the biologists did not want to be called Lamarckians and laughed at. When Darwin wrote, evolution was not so much in the air as it was underground. But when Darwin made evolution respectable intellectually, its triumph was assured. For evolution to be accepted it needed only a rational explanation.⁴

The record shows that the Lamarckists and neo-Lamarckists never displayed any embarrassment or expressed shame for supporting Lamarckian theory.

Here are two classical examples illustrating how Zirkle harped upon his interpretation of the open disclosure of the weaknesses of the Lamarckian theory:

Thus, when Lamarck sought to explain the great diversity of species through the inheritance of acquired characters, he was merely applying a universally accepted, reasonable, and orthodox doctrine to a problem which interested his contemporaries. The circumstances would seem to favor the general acceptance of his theories. He was most unfortunate, however, when he attempted to cite data to substantiate his views or when he used the inheritance of acquired characters to explain the development of particular organs. In the following passages he was simply asking for ridicule. From p. 119-120, ed. cited:

We find in the same way that the bird of the water-side which does not like swimming and yet is in need of going to the water's edge to secure its prey, is continually liable to sink in the mud. Now this bird tries to act in such a way that its body should not be immersed in the liquid, and hence makes its best efforts to stretch and lengthen its legs. The long-established habit acquired by this bird and all its race of continually stretching and lengthening its legs, results in the individuals of this race becoming raised as though on stilts, and gradually obtaining long, bare legs, denuded of feathers up to the thighs and often higher still.

From *Système des animaux sans vertèbres*, p. 14:

We note again that this same bird wants to fish without wetting its body, and is thus obliged to make continual efforts to lengthen its neck. Now these habitual efforts in this individual and its race must have resulted in the course of time in a remarkable lengthening, as indeed we actually find in the long necks of all water-side birds.

If some swimming birds like the swan and goose have short legs and yet a very long neck, the reason is that these birds while moving about on the water acquire the habit of plunging their head as deeply as they can into it in order to get the aquatic larvae and various animals on which they feed; whereas they make no effort to lengthen their legs.

From p. 122.

Since ruminants can only use their feet for support and have little strength in their jaws, which only obtain exercise by cutting and browsing on the grass, they can only fight by blows with their heads, attacking one another with their crowns.

In the frequent fits of anger to which the males especially are subject, the efforts of their inner feeling cause the fluids to flow more strongly towards that part of their head; in some there is hence deposited a secretion of horny matter, and in others of bony matter mixed with horny matter, which gives rise to solid protuberances, thus we have the origin of horns and antlers, with which the head of most of these animals is armed.

It is interesting to observe the result of habit in the peculiar shape and size of the giraffe (*Camelo-pardalis*): this animal's fore-legs have become longer than its hind legs, and that its neck is lengthened to such a degree that the giraffe, without standing up on its hind legs, attains a height of six metres (nearly 20 feet).⁴

But, Zirkle did not cite any specific points which make the above examples subject to contemptuous laughter. Zirkle's statements must be examined and then scrutinized as to their credibility and trustworthiness. They should not stand on his reputation. This writer has carefully examined the above materials and has not discovered any reference for derision.

The above quotations are presumed to be accurate extracts from Lamarck's book, *Zoological Philosophy*. However, the last paragraph was misquoted and should read as follows:

It is interesting to observe the result of habit in the peculiar shape and size of the giraffe (*Camelo-pardalis*): this animal, the largest of the mammals, is known to live in the interior of Africa in places where the soil is nearly always arid and barren, so that it is obliged to browse on the leaves of trees and to make constant efforts to reach them. From this habit long maintained in all its race, it has resulted that the animal's fore-legs have become longer than its hind legs, and that its neck is lengthened to such a degree that the giraffe, without standing up on its hind legs, attains a height of six metres (nearly 20 feet).⁵

During the late 1700's the first five giraffes exhibited in Europe were brought by Arabs from the desert plateau in the northeastern part of Africa. This area was dotted with oases and was inhabited by nomadic Arab tribes. Lamarck, an early environmentalist, clearly expressed his scientific knowledge by declaring that over long periods of time areas possessing parched and unfertile soil would cause an early species of giraffe to strive to reach the bulk of the leafage found on the upper branches of the existing trees. In order to prevent malnutrition and starvation the giraffe continued to make great effort to attain the foliage. The verdure contained both water and food nourishment.

Lamarck in keeping with his belief in geological and biological gradualism stressed the use of habit to bring about changes in the giraffe's anatomical parts. These tendencies altered growth and structure over thousands of years. He was convinced that biological cooperation and not struggle was the key factor for survival. He emphasized the important fact that all members of a primitive giraffe species had to maintain the constant effort of exercising the fore-legs. This repetitive action thus caused the front legs to stretch out and become completely extended. This acquired characteristic became inherited and manifested a distinctive form in the large *Giraffa camelopardalis* (Linnaeus).

Had Zirkle exhausted his research on the giraffe's structural development, he should have included the scientific work of Maurice Rothschild's and Henri Neuville's long-term study, "Recherches sur l'okapi et les girafes de l'est africain," *Ann. Sci. Natur., Zool.* (Paris), 9th Ser. 13: 1-185, 1911. The research of these two investigators, Rothschild and Neuville, supported the Lamarckian theory of giraffe development. Their systematic detailed examinations were considered by scholars as authoritative findings at the time of Zirkle's writing.

It is difficult to psychoanalyze a deceased scientist's motives for publishing statements without foundation. It should be emphasized that Professor Zirkle was highly respected by his professional associates. However, why didn't they query the veracity of his allegations about Lamarck's character? This writer proposes another view based on facts and established principles. This view opens new pathways in the current landscape of evolutionary theory.

Dr. Erasmus Darwin (1731-1802), grandfather of Charles Robert Darwin, English physician, poet and evolutionist, similar to Lamarck, independently hit upon the doctrine of inheritance of acquired characters. There is no evidence that communication occurred between two scientists. Each specifically came to the conclusion that both plant species and animal species had the need to transform by modification from earlier types; and then transmit the newly acquired habits to future generations. Each scientist singly developed scientific explanations to explain the changes in plants and animals. Both Dr. Darwin and Lamarck described particular physical alterations in species, and, thus, bypassed the accepted fundamental tenets of 18th century science.

In the late 18th century the English and French intellectual communities were familiar with scientific accomplishments and utilized the Baconian, Cartesian, Lockean and Newtonian paradigms of scientific argumentations to interpret a wide field of knowledge. Lamarck, a cosmopolitan Parisian, and Dr. Darwin, an affluent Court of St. James Londoner, possessed the scientific predisposition and cultural presupposition of the scientific mind. Similarly, Lamarck and Dr. Darwin were inheritors of the spirit of the Enlightenment and both developed a synchronous view that species were mutable. They agreed with the new European philosophical move-

ment that the "intellect" was the true source of knowledge. Their world concepts were expressed in the form of deistic writings. Dr. Darwin wrote a number of scientific poems. In Section 39 of his famous book, *Zoonomia*, Vol. I (1794), Dr. Darwin left behind the concept that species were immutable. He moved on to the belief that over long periods of time progressive changes of species permitted the inheritance of acquired characters. Zirkle's statement that "Today the 'inheritance of acquired characters' is synonymous with Lamarckism and, to most biologists, Lamarckism is just a pre-Darwinian theory of evolution."⁷ is totally incorrect. Equally, Dr. Darwin and Lamarck kept pace with their contemporaries and developed an open schema with its own theoretical language, assumptions, deduction with varying boundaries. The inheritance of acquired characters postulate did not act as a precedent for Charles Darwin's theory of natural selection. Charles Darwin hypothesized and then he formulated his theory carefully in 1859.

Lamarck presented a generalized idea of the inheritance of acquired characters which suggested an orderly succession of events occurring to living things. This succession caused transformations of a particular identity which then became integrated and produced a more elaborate advanced character. Six of Zirkle's writings are examples of his use of realistic language for unsubstantiated and vilifying statements about Lamarck. Zirkle, a pleonastic battologist, unnecessarily repeated two examples from three pages found in two of Lamarck's books as stated earlier. The hypothesis of acquired characters has been known to scientists and philosophers since ancient times. However, Zirkle axiomatized this hypothesis and by the use of central selected axioms, attempted to discredit predictable Lamarckian phenomena. He, then, through solemn declarations, pronounced defamatory remarks about Lamarck's temperament.

The counter-evidence demonstrates Lamarck's acute insight by his foreshadowing the modern principles of hereditary phenomena. In *Zoological Philosophy* (1809) Lamarck wrote:

Now every change that is wrought in an organ through a habit of frequently using it, is subsequently preserved by reproduction, if it is common to the individuals who unite together in fertilisation for the propagation of their species. Such a change is thus handed on to all succeeding individuals in the same environment, without their having to acquire it in the same way that it was actually created.

Furthermore, in reproductive unions, the crossing of individuals who have different qualities or structures is necessarily opposed to the permanent propagation of these qualities and structures. Hence it is that in man, who is exposed to so great a diversity of environment, the accidental qualities or defects which he acquires are not preserved and propagated by reproduction. If, when certain peculiarities of shape or certain defects have been acquired, two individuals who are both affected were always to unite together, they would hand on the same peculiarities; and if successive generations were limited to such unions, a special and distinct race would then be formed. But perpetual crossings between individuals, who have not the same peculiarities of shape, cause the disappearance of all peculiarities acquired by special action of the environment. Hence, we may be sure that if men were not kept apart by the distances of their habitations, the crossing in reproduction would soon bring about the disappearance of the general characteristics distinguishing different nations.⁸

Lamarck stressed that in order for the inheritance of a definite characteristic to become lasting and incorporated as a stable factor into a stock, it was necessary for both parents to possess a particular trait. Lamarck also emphasized that geographical barriers are a major factor in keeping populations from emerging into a universal race. Also, Lamarck did not accept that groups became naturally extinct, but merely transformed into more adjusting groups. He recognized man's recent technical power to obliterate entire species. Lamarck, a theoretician, wrote that long-standing changes in the environment indirectly caused members of a group to make adjustments in order to eliminate group extinction. Lamarck's credence was in biological and social cooperation and not in competition.

The volley of invectives that has been associated with Charles Darwin's vituperations against Lamarck is open to question. Lamarck believed that groups known as "species" were actually indefinite clusters rather than specific categories. Charles Darwin's reputation for clarity of words was exacting when he expressed Lamarckian thought in a letter to the American botanist Asa Gray (1810-88).

Down, July 20th (1856)

But as an honest man, I must tell you that I have come to the heterodox conclusion that there are no such things as independently created species—— that species are only strongly defined varieties. I know that this will make you despise me.⁹

The questions and problems raised as to the causes, methods and directions for the origin of species preyed upon Charles Darwin's psyche as the major defect in his nonpareil theory of natural selection. Charles Darwin waited more than twenty years after returning from an around-the-world trip to write his magnum opus, *The Origin of Species* (1859). He was then under pressure of losing priority to Alfred Russel Wallace (1823-1913), of the claim to being the originator of the theory of natural selection. Still, Darwin could not surmount the lack of an innovative approach to the understanding of the origin of species. Darwin's clear-headed thinking would not permit him to internalize consensual opinions. Yet, in order to keep a network of supporters in the scientific community, Darwin officially concurred with geologist Charles Lyell (1797-1875) and biologist Thomas Henry Huxley (1825-95) negative convictions concerning Lamarck's scientific thought. However, a detailed study of the period of Darwin's developing evolutionary thought proves otherwise. Thomas Hunt Morgan (1866-1945), Dean of early American geneticists, wrote that "Despite the contempt with which Darwin referred to Lamarck's theory, he himself, as we have seen, often made use of the principle of the inheritance of acquired characters, and even employed the same illustrations cited by Lamarck."¹⁰

Darwin offered the hypothesis of pangenesis to explain the mechanism of inheritance of acquired characters. He proposed that all body cells produced very minute particles called "gemmule" or "pangens" which are subject to environmental influences. The pangens travel through the blood stream and directly change the composition

of the reproductive cells, thus causing favourable modifications to come into existence. These well-timed advantageous transformations occur among a large numbers of the group and are transmitted to successive generations over long periods of time.

As a means to link heredity and evolutionary development, Darwin had no other existing scientific tenets and, therefore, utilized the Lamarckian hypothesis of pangenesis. In his autobiography Darwin apologized for being a Lamarckian. As late as 1868 he remained a Lamarckian hereditist. Darwin's cladistic approach to Lamarckian theory is expressed in the following manner:

My *Variations of Animals and Plants under Domestication* was begun, as already stated, in the beginning of 1860, but was not published until the beginning of 1868. It was a big book, and cost me four years and two months' hard labour. It gives all my observations and an immense number of facts collected from various sources, about our domestic productions. In the second volume the causes and laws of variation, inheritance, &c., are discussed as far as our present state of knowledge permits. Towards the end of the work I give my well-abused hypothesis of Pangenesis. An unverified hypothesis is of little or no value; but if any one should hereafter be led to make observations by which some such hypothesis could be established, I shall have done good service, as an astonishing number of isolated facts can be thus connected together and rendered intelligible. In 1875 a second and largely corrected edition, which cost me a good deal of labour, was brought out.¹¹

One of the questions in scientific thought that has aroused curiosity is how serious did Lamarck's contemporaries respect his theories and accomplishments? The following examples illustrate that Lamarck was a highly respected scholar.

An early English admirer was William J. Hooker (1785-1865), Director of the Royal Botanical Gardens and Arboretum at Kew, who visited Lamarck at the Institute in Paris during the year 1814-15 and continued to correspond with him on botanical problems for several more years.

French scientists, young and old, vied with each other to study with Lamarck. In 1780 Andre Michaux (1746-1802), erudite scholar, burned midnight oil with Lamarck on their studies of botanical species. They botanized in the Auvergne and Pyrenees regions of France. Michaux came to the New World and established botanical gardens in Hackensack, New Jersey. Michaux made a number of scientific expeditions in the Far West of the United States. He was supported in this endeavour by the scientist Thomas Jefferson (1743-1826). Michaux remained a true defender of Lamarckism. Count Pierre Francois Marie Auguste Dejean (1780-1845), a Lieutenant General in Napoleon's army was one of the greatest coleopterists in France. He shared his findings in the study of *Coleoptera* (beetles) with Lamarck.

Some of Lamarck's associates at the Museum were: Antoine-Laurent De Jussieu (1748-1836), professor of botany; Comte De Lacepede (1756-1825), professor of zoology, and specialist in reptiles and fish; Henri Marie Ducrotay De Blainville (1777-1850), comparative anatomist; and Pierre-Andre Latreille (1762-1833), who at the age of forty-three was given the privilege of becoming Lamarck's demonstrator

in the course, *Invertebrate Zoology* (1805). Upon Lamarck's retirement, Latreille continued to teach this course with skills and training based upon Lamarckian procedure of observing the methods of science.

Lamarck's colleague Etienne Geoffroy Saint-Hilaire (1772-1844), in his work *Philosophe Anatomique* (1818-20), supported the explanation that small variations among members of a species occur due to the direct effect of the environment. Geoffroy Saint-Hilaire, similar to Lamarck, held the view that geographical isolation led to variation among species. In February, 1830 Geoffroy Saint-Hilaire debated with Baron Georges Cuvier (1769-1832), chief defamer of Lamarck, on the question of whether species are fixed or mutable.

An extremely interesting scientific personality of the Academie Royale des Sciences was Pierre Sonnerat (1748-1814). Sonnerat was commandant of the French post at Yanam, India. He gathered plants and zoological specimens from the Philippine Islands and the Molucas Islands for the purpose of investigating their properties. An early account of Lamarck's high scientific esteem is reported:

Whenever a new collection of plants arrive in Paris, Lamarck was the first to inspect it, and when the celebrated Sonnerat returned from India in 1781, he was so much pleased with Lamarck's enthusiasm, as contrasted with comparative indifference of most other naturalists, that he presented him with the magnificent herbarium which he had made in the east. It is to zeal like this we are entitled to look for the achievement of the highest results in science.¹³

This writer and Lamarckian scholar rests his case.

CONCLUSION

The injustices against Lamarck still incite anger for the private and public wrongs which are not punishable according to present procedures and academic codes. Zirkle refused to admit or accredit Lamarck's credentials as one of the paramount founders of modern evolutionary theory. Unfortunately, one of the major weaknesses of the discipline of the history of science is the lack of answerableness for causators of pedantic transgressions against venerated mentors. It is academically acceptable to become an academic antagonist but not a libeler who feels free to publish defamatory statements about a deceased scientist. Sorrowfully, there were no academic plaintiffs to bring suit against Zirkle and present a case before an academic tribunal. Therefore, it behooves this writer to offer a trial brief in defense of Lamarckian biology and vindicate the French sage.

Zirkle reiterated two sources in six of his major writings about Lamarck's work so that he could attempt to disprove Lamarck's scientific authority. It must be stressed that Lamarck wrote eleven multi-volumed books, sections in encyclopaedias and hundreds of scientific articles and reports.

During the year 1800, Lamarck formulated his underlying principles of his philosophy of evolution. His study concluded that external transformations of anatomical structures were the results of internal transmutations. Lamarck moved to the position that change in outward forms can become inheritable to the group because these newly acquired specific characters were the result of beneficial adjustments to the environment. The adjustments were then passed on to future genealogical successions. The most important factor in this hypothesis was Lamarck's reasoning that both the male and female of the group must possess the specific character or the new trait would soon be lost. In his 1802 writing, *Investigations into the Organization of Living Bodies*, Lamarck tended that biological needs directed simple living bodies to develop into more complex living bodies. Yet, Zirkle made no reference to this study which was an important development in the maturation of Lamarck's thoughts.

Lamarck's uncommon power of intellect allowed him to develop a panoramic view of nature. He saw nature's operational methods which explained internal relationships which could not be directly observed and could be grasped intuitively. This unlimited view permitted Lamarck to prefigure the theories of modern evolution, heredity and natural selection.

Perhaps, Zirkle should have researched the notes of Professor Ernst Haeckel (1834-1919), German biologist and enthusiastic propagator of the doctrine of organic evolution. Haeckel recalled a number of conversations during his visits as a guest at Darwin's home. Haeckel kept in mind and looked back upon these important events. He reminisced that:

Darwin was just as convinced as Lamarck of the transmission of acquired characters and its great importance in the scheme of evolution. I had the good fortune to visit Darwin at Down three times and discuss with him the main principles of his system, and on each occasion we were fully agreed as to the incalculable importance of what I may call transformative inheritance.¹³

Zirkle's deep-seated hatred of Lamarckians was expressed in his malicious belittling of Lamarck's personal identity. Zirkle prepossessed neo-Darwinian philosophy and could not impartially examine Lamarckian tenets from a basis of neutrality. Zirkle's fustian outbursts about Lamarck's "oddity" is empty, high-sounding nonsense. For example, in his 1946 fifty-five page paper, "The Early History of the Idea of Inheritance of Acquired Characters and of Pangenesis," Zirkle analyzed the contributions of ninety philosophers and scientists writings on the hypothesis of pangenesis, and only Lamarck was singled out for being inconsistent with reason or the plain dictates of common sense.

Lamarck's colleagues had on many occasions certified in their letters, diaries and books that Lamarck possessed decorum and dignity. This writer has stated his arguments and offered irrefutable evidence of Jean Lamarck's augustness, and he has stated the case against the neo-Darwinian calumniators. The attempt to ingrain anti-Lamarckism into enthusiastic but unlearned students by heightening exaggerations is

still a practice today. Those who champion Lamarck and Lamarckism are similar in nature to King Mithridates VI of Pontus who became immune to venomous stings and courageously advocated the truth as a matter of record. Neo-Darwinians do not take into account the determined nature of Lamarckians.

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